

Growing Baldock

Environmental Statement Volume 2: Figures & Appendices

Chapter 4: Transport

Appendix 4.1 Transport Assessment

REPORT

Growing Baldock

Transport Assessment

Client: Urban&Civic

Reference: PC7029-ITP-XX-XX-RP-TP-0001

Status: Final/05

Date: 1 October 2025



by Haskoning

HASKONING UK LTD.

6th floor Cornerblock
2 Cornwall St
Birmingham
B3 2DX
United Kingdom
Mobility & Infrastructure
VAT registration number: 792428892

Phone: +44 (0) 121 709 6520
Email: info@uk.rhdhv.com
Website: www.integratedtransportplanning.com

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Author(s): Jay James

Drafted by: JJ/BT/NL/MLG

Checked by: Mark Lever-Green

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Approved by: Andy Ward

Date: 19 September 2025

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Executive Summary

This Transport Assessment has been prepared by ITP by Haskoning on behalf of Urban&Civic to support an Outline Planning Application for the Growing Baldock development. The proposals seek to deliver a phased masterplan comprising:

- Up to 3,200 homes
- 16 hectares of employment land
- A mixed-use local centre
- Up to two primary schools, one SEND school, and one secondary school
- A health hub and other community facilities
- Extensive green infrastructure and active travel networks
- Two new railway crossings and an internal street network

The Local Planning Authority is North Herts Council (NHC), with Hertfordshire County Council (HCC) as the Local Highway Authority. National Highways is the Strategic Highway Authority, responsible for the A1(M).

Vision-Led Approach

The Transport Assessment adopts a Vision-Led methodology, prioritising sustainable outcomes over conventional traffic-based assumptions. This approach is embedded throughout the development design and assessment process, aligning with national and local policy objectives.

The Vision-Led approach has been developed through analytical research and extensive project experience, with the objective that development delivers sustainable transport, healthy lifestyles and lower environmental impacts. The Transport Vision has been agreed with NHC and HCC through extensive pre-application discussions. The proposed vision for Growing Baldock is summarised as follows:

“Growing Baldock will be a place that prioritises quality of life over traffic movement. Walking, cycling and public transport will be a competitive mode of travel, with connections enhanced to key destinations, benefitting existing communities and businesses in the town. Through masterplan plan design, mix of uses and delivery of new infrastructure, the need to travel off-site will be reduced, with non-car options being the first choice when travel is required, encouraging active, healthy lifestyles.”

Transport Principles

Seven core principles underpin the transport strategy:

1. Reducing traffic dominance in Baldock
2. Creating safe, direct and coherent networks for active modes
3. Delivering a green infrastructure network
4. Prioritising buses over private vehicles
5. Ensuring excellent access to rail
6. Managing freight and logistics effectively
7. Reducing reliance on private cars, targeting 50% of trips by sustainable modes

Transport Strategies

Four integrated strategies have been developed to deliver the Transport Vision:

- **Active Travel Strategy:** Introduces segregated cycle routes, improved pedestrian infrastructure, and traffic calming measures. Key interventions include a new railway overbridge, an active travel underpass, and modal filters to reduce through traffic.

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- **Public Transport Strategy:** Proposes the Baldock Flyer, a high-frequency shuttle bus connecting the development sites, railway station, and town centre. Enhancements to Baldock Station include step-free access and improved public realm.
- **Road Space Reallocation Strategy:** Reconfigures key junctions and corridors to promote sustainable modes. Notable changes include banned turns at Whitehorse Street crossroads and shuttle working under the Station Road railway bridge. The nature and timing of these interventions will be set out in the planning framework (through s.106 obligations), with money allocated to the interventions, and for reviewing and responding to any challenges that arise.
- **Parking Strategy:** Reduces parking provision below NHC standards, supported by connectivity mapping. Introduces car clubs, EV charging, and mobility hubs to support modal shift.

Trip Generation and Modelling

A **Vision-Led trip generation methodology** has been applied, using ITP's **Mode Shift Model** to reflect the impact of proposed interventions. This approach results in:

- **Reduced vehicle trips** compared to Business-as-Usual scenarios
- **Increased active and sustainable mode share**
- **Internalisation of trips** through mixed-use planning and proximity to amenities

Four development scenarios have been assessed, including an Interim Year (2033) and Full Build-Out (2040) under different land use options for BA3.

Local junction modelling using VISSIM, LinSig, and Junctions 10 software confirms that most junctions operate within capacity. In the scenarios where junctions are forecast to be operating above capacity, a proposed package of interventions has been considered. In agreement with NHC, HCC and National Highways, a TA Addendum will report COMET Do-Minimum/Do-Something tests (2033,2040), including fixed growth/assignment assumptions and cumulative allocations. Findings will validate local modelling, and where relevant, adjust mitigation and Monitor and Manage triggers.

Framework Travel Plan

A Monitoring and Management Framework (MMF) will oversee implementation of physical interventions, with a Site-Wide Travel Plan Coordinator (SWTPC) and Transport Working Group (TWG) responsible for monitoring mode share, traffic impacts, and delivery of interventions. Annual surveys and real-time monitoring will inform adaptive management.

Construction Phase

Construction is anticipated to begin in 2028, with peak activity in 2033. A considerate construction strategy is proposed, including defined access routes, operation hours, and safety measures. Peak construction traffic is estimated at 80 vehicle arrivals per weekday.

Conclusion

The Growing Baldock development is policy-compliant, sustainable, and forward-looking in its approach to mobility. The Vision-Led Transport Assessment demonstrates:

- Alignment with national and local transport policy
- Delivery of high-quality infrastructure for walking, cycling and public transport
- No severe residual highway impacts
- A robust framework for monitoring and adaptive management

The proposals represent a significant opportunity to deliver growth in Baldock in a way that enhances quality of life, supports sustainable travel, and integrates with the existing town.



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- Appendix D – Road Safety Assessments and Designers Response
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- Appendix L – Junction Model Reports



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1 Introduction

1.1 Overview

This Transport Assessment has been prepared by ITP by Haskoning on behalf of Urban&Civic in association with an Outline Planning Application for the Growing Baldock development. This is a phased masterplan that seeks to deliver:

- Up to 3,200 homes
- Up to 16 hectares of employment land
- A mixed-use local centre
- Up to two primary schools, one SEND school, and one secondary school
- A health hub and other community facilities
- Extensive green infrastructure and active travel networks
- Two new railway crossings and an internal street network

The Local Planning Authority is North Herts Council (NHC), and the Local Highway Authority is Hertfordshire County Council (HCC). National Highways is the Strategic Highway Authority, with responsibility locally for the A1(M).

This Transport Assessment is Vision-Led and builds on a Strategic Masterplan and Transport Vision for the development which sets the ambition to deliver a high quality, sustainable place. The transport interventions needed to achieve that vision have been developed and iterated through consultation. Vision-led means that the way the development has dealt with transport is focused on a desired outcome, rather than assumptions based on established practice, which often result in poor decisions favouring unsustainable outcomes.

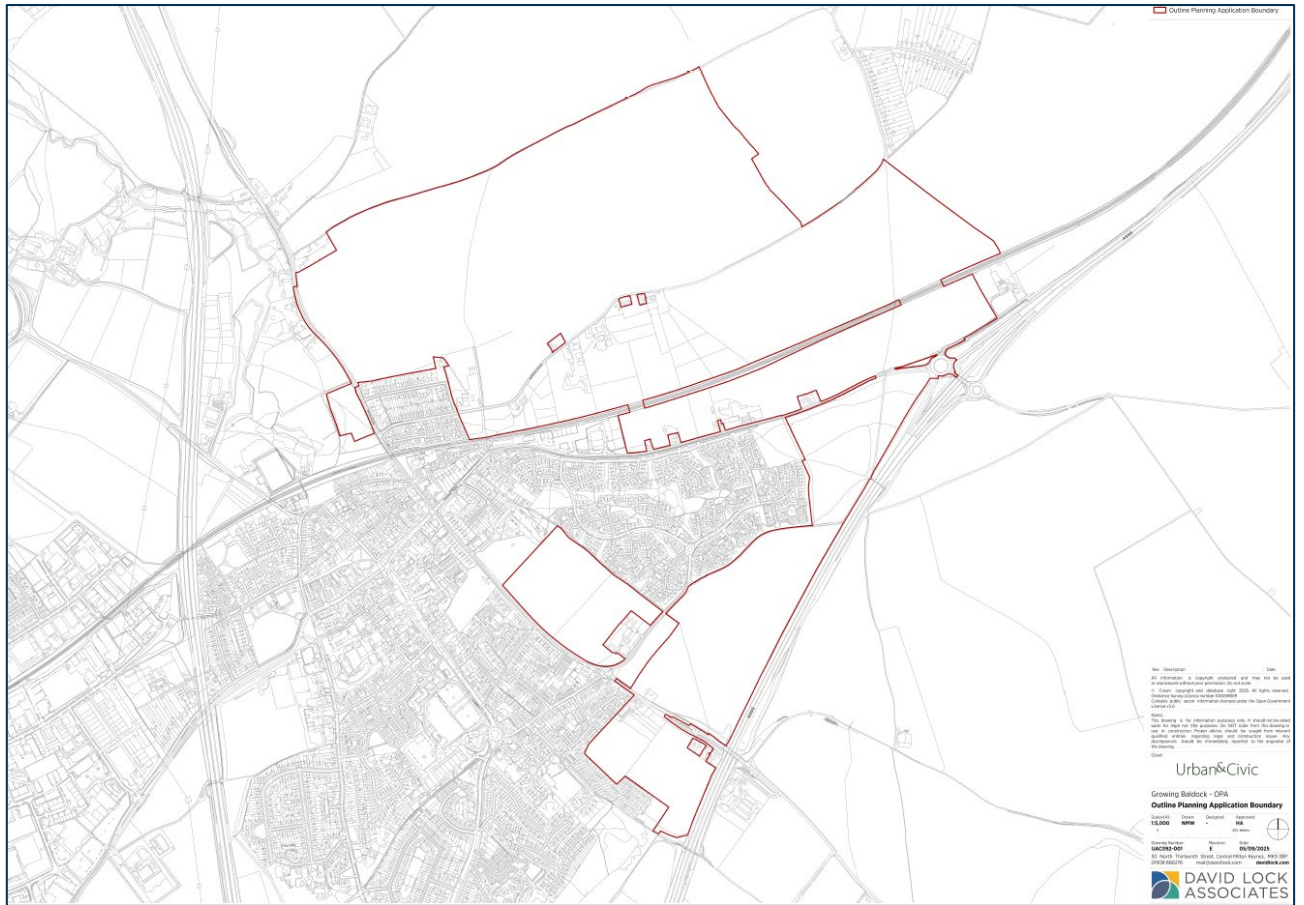
A Transport Assessment Addendum will be submitted following validation of the planning application. This will include the results of an exercise to model the proposed development in Hertfordshire's strategic transport model – COMET. The model has been unavailable at the time of preparing the application and so it was agreed with NHC, HCC and National Highways that strategic modelling outputs and analysis could follow planning validation. This Transport Assessment presents local junction modelling to understand the local impacts, and the COMET model will be used to validate this exercise and identify any residual interventions required prior to determination.

1.2 Proposed Development

The **Growing Baldock** sites include NHC Local Plan allocation sites BA1, BA2, BA3 and BA10, the location of which is shown in **Figure 1-1**. The development description has been provided, as follows:

“Outline planning application with all matters reserved except for means of highway access into the development from the A505/Royston Road, North Road and Clothall Road ;, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, a mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRow diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.”

Figure 1-1: Growing Baldock Development Site



Further detail of the proposed development is included in **Chapter 5**.

1.3 Previous Planning Applications

Two outline planning applications were submitted in 2017/2018 in relation to the allocation sites, which are summarised in **Table 1-1**.

Table 1-1: Planning History Summary

LPA Reference	Site	NH Reference	Status	Proposal Summary
17/04420/OP	Land east of North Road and north of the railway line, Baldock	NH/040/047/2 018	Withdrawn	Mixed use development comprising up to 2,800 dwellings, a new local centre, two primary schools and a secondary school, a healthcare hub, up to 1,900sqm of 'A' Class land uses (including a supermarket), open space, nature conservation, recreation, landscaping and associated facilities, following demolition of existing structures and vehicular access - outline planning application with all matters reserved other than access
17/04417/OP	Land Between The A505 And The Eastern Edge Of Baldock Inc Land Off Royston Road Baldock	NH/47/2018	Withdrawn	Outline application with all matters other than access reserved, for strategic development to the south-east of Baldock, comprising up to 495 dwellings, up to 18.3ha of Use Class 'B' Employment land uses, means of access, open space, nature conservation, recreation, landscaping and associated facilities, following demolition of existing structures Land Between The A505 And The Eastern Edge Of Baldock Including Land Off Royston Road Baldock Hertfordshire

The consultation responses regarding the two previous applications generally focussed on the vehicle traffic impact of the proposed schemes. Challenges were identified by NHC and HCC in relation to the design of site access junctions and off-site mitigation proposals, with concern raised in relation to relatively limited consideration of the implementation and promotion of sustainable travel.

The proposals that now form part of Growing Baldock have been developed in close consultation with NHC and HCC, with discussions commencing in March 2023, to embed a Vision-Led approach that comprises a suite of strategies to support an active and sustainable travel lifestyle for future, and existing, residents and visitors to Baldock.



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1.4 Pre-Application Scoping

The Growing Baldock development proposals have been developed in close consultation with NHC and HCC. The pre-application scoping reports prepared in association with Growing Baldock are summarised in **Table 1-2**.

Table 1-2 Scoping Reports

Report title	Date issued	Date comments received
Transport Scoping Report	3 February 2025	18 February 2025 & 7 March 2025
TSR Addendum	4 April 2025	23 July 2025
TSR Modelling Addendum	6 June 2025	

The Transport Scoping Report and subsequent Addendums are included in **Appendix A** and **B** respectively.

Public Consultation events were held on 12, 16 and 28 July 2025 and were attended by members of the public and local politicians. A summary of early consultation feedback was provided by Urban&Civic to HCC and NHC on 6 August 2025.

Feedback regarding transport included comments on access to Baldock Station, green space and education provision. Comments also addressed the need for transport infrastructure to be in place in advance of homes being occupied. Comments from the public consultations have been considered when developing the development proposals. Further details regarding the consultation events are provided in the Statement of Community Involvement (SCI) undertaken as part of the wider outline planning application.

A compiled record of all comments received during pre-application scoping is included in **Appendix C**, along with ITP's response. Some comments may relate to points of detail not confirmed at outline planning stage; therefore, they have been recorded to promote consideration during later stages.

1.5 Report Structure

Following this chapter, this report has the following structure:

- **Chapter 2** sets out a review of relevant national, local and regional policy.
- **Chapter 3** undertakes a review of the existing conditions within Baldock, including active transport provision, public transport and road safety.
- **Chapter 4** sets out the vision and objectives of **Growing Baldock** and highlights the Transport Vision for the development.
- **Chapter 5** summarises the proposed development to be delivered as part of Growing Baldock.
- **Chapter 6** highlights the transport strategies incorporated within the development to enable future journeys and offer genuine travel choice across modes.
- **Chapter 7** summarises all trip generation resulting from the proposed development.
- **Chapter 8** sets out the highway impact of the development, using local junction modelling.
- **Chapter 9** summarises the Framework Travel Plan which has been prepared to accompany this Transport Assessment, incorporating the Monitor and Manage Framework.
- **Chapter 10** considers the specific construction phase, recognising the early stage of the development design.
- **Chapter 11** summarises and concludes this report.

2 Policy Review

2.1 Overview

This section summarises the key planning policies relating to Growing Baldock. The full list of policies reviewed in preparing this report are summarised in **Table 2-1**, with key policies and documents set out below.

Table 2-1: Relevant policy documents

	Document name	Summary
National	National Planning Policy Framework	Published in 2012 and most recently updated in December 2024, the NPPF sets the planning policies for England and how these should be applied.
	Department for Transport Decarbonising Transport: A Better, Greener Britain (July 2021)	Published in July 2021, the report sets out commitments in the UK to reduce carbon outputs from the transport industry. Commitments include increasing walking and cycling, promoting zero emissions cars and buses and including decarbonisation initiatives in the development of new places.
	Cycle Infrastructure Design: Local Transport Note 1/20 (July 2020)	The LTN 1/20 was published in July 2020 and provides guidance and good practice for design of cycle infrastructure. The note supports the government's Cycling and Walking Investment Strategy.
	Local Transport Note 1/24: Bus User Priority	The LTN 1/24 was published in March 2024 and supports the National Bus Strategy. The note provides guidance as to how bus priority should be delivered and supersedes LTN 1/97 Keeping Buses Moving.
	Planning for the future: A guide to working with National Highways on planning matter (October 2023)	This planning guide outlines how National Highways engages with the UK planning system regarding developments affecting the Strategic Road Network, offering guidance and support aligned with government policy and statutory responsibilities.
	DfT Circular 01/2022 (January 2023)	Sets out how National Highways will engage with planning system and fulfil its remit to be a delivery partner for sustainable economic growth whilst maintaining, managing and operating a safe and efficient strategic road network.
Regional	England's Economic Heartland (2021-2040)	Adopted in 2021, covering the period up until 2040, sets out a region wide strategy to enable economic growth and deliver a net-zero transport system.
County-wide	Hertfordshire Local Transport Plan (LTP4) (2018-2031)	Adopted in 2018, covering the period up until 2031, it sets out how transport can deliver a positive future for Hertfordshire
	Highways Place Movement and Planning Design Guide	Adopted in 2024, the design guide sets out advice relating to Highway corridors, and standards that must be met for adoption of highways. The guide includes the "LTP4 Compliance Tool".
Local	North Central Herts Growth and Transport Plan (2022)	Published in 2022, supports the LTP4 as an intervention paper.
	North Hertfordshire Local Plan (2011-2031)	Adopted in 2022, replacing the retained policies from the North Herts Local Plan (2007). Identifies allocation of the sites covered in this report as part of the Growing Baldock development.
	Transport Strategy, North Hertfordshire District Council (2017)	Supports the NHC Local Plan, setting targets for new developments and including policies to inform planning application decisions.
	Baldock, Bygrave & Clothall Neighbourhood Plan (2021)	Published in 2021, forms part of the Development Plan for North Hertfordshire

2.2 National Policy

2.2.1 National Planning Policy Framework (December 2024)

The National Planning Policy Framework (NPPF) is defined as being the document that sets out the Government's planning policies for England and how these should be applied.

Regarding transport considerations for new developments, paragraph 118 of the NPPF states that,

“all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored”.

This should also consider that, as per paragraph 115,

- a) “sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;
- b) “safe and suitable access to the site can be achieved for all users;
- c) “the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and
- d) “any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a Vision-Led approach.”

With respect to planning decisions based on transport considerations, at paragraph 116 the NPPF states that,

“Development should only be prevented or refused on highways 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.”

Within this context, the NPPF requires that development applications should, as per paragraph 117,

- e) “give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- f) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- g) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- h) allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- i) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.”

The principles of sustainable development and Vision-Led transport assessment set out within the NPPF have been adopted for Growing Baldock, as set out in subsequent chapters of this Transport Assessment.



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2.3 Regional and Local Policy

2.3.1 Hertfordshire's Local Transport Plan 2018-2031 (May 2018)

Policy 1 in the HCC's Local Transport Plan sets out a Transport User Hierarchy that, *"represents a shift in emphasis to increase rates of travel by more sustainable modes"*.

Growing Baldock has been developed in accordance with the Transport User Hierarchy. There has been a focus on promoting active and sustainable travel at all stages of design development, as reflected in subsequent chapters of this Transport Assessment. The deliverables towards each user group are set out below:

"Opportunities to reduce travel demand and the need to travel"

- Facilities and amenities provided within the development sites will encourage trips generated by the development to be internalised within the development, hence reducing external travel demand resulting from the development, therefore fulfilling contributions towards *"reducing travel demand"*, as is prioritised by the HCC LTP4 Transport User Hierarchy.

"Vulnerable road user needs (such as pedestrians and cyclists)"

- The proposed development has been designed to provide walkable communities, with a focus on providing key pedestrian and cycle connections through the Site and maintaining these connections where they already exist.

"Passenger transport user needs"

- The public transport strategy is designed to offer an attractive, high-frequency service that appeals to new and existing residents. With clear routing and timetabling, seamless integration between bus and rail, and strong branding, the service aims to connect the development with the wider community, support the vitality of the existing town centre, and position public transport as a key asset of the area.

"Powered two-wheeler user needs" / "Other motor vehicle user needs"

- Motor vehicle user needs have been considered while designing the access points into the sites. There are proposed improvements to existing junctions around Baldock, and road capacity enhancements have been developed with priority given to existing trips and local users.

2.3.2 North Hertfordshire Local Plan 2011-2031 (November 2022)

Policy SP6 of the North Hertfordshire Local Plan sets out the requirements of new developments to promote sustainable development:

“We will deliver accessibility improvements and promote the use of sustainable transport modes insofar as reasonable and practicable. We will:

- a) Comply with the NHDC Transport Strategy and the provisions of the Local Transport Plan and other supporting documents as relevant;*
- b) Encourage development in locations which enable sustainable journeys to be made to key services and facilities;*
- c) Work with Hertfordshire County Council, neighbouring authorities, Highways England and service providers to ensure that a range of sustainable transport options are available to all potential occupants or users. This may involve new or improved pedestrian, cycle and passenger transport (including rail and/or bus) links and routes;*
- d) Seek the earliest reasonable opportunity to implement sustainable travel infrastructure on Strategic Housing Sites and other development sites in order to influence the behaviour of occupiers or users, along with supporting Travel Plans in order that sustainable travel patterns become embedded at an early stage;*
- e) Assess development proposals against the parking standards set out in this Plan and having regard to relevant supplementary advice;*
- f) Require applicants to provide assessments, plans and supporting documents to demonstrate the safety and sustainability of their proposals; and*
- g) Protect existing rights of way, cycling and equestrian routes and, should diversion be unavoidable, require replacement routes to the satisfaction of the Council.”*

Growing Baldock has met all the criteria above, with the Vision-Led approach meaning that sustainable travel is a priority of development, which is demonstrated throughout this document.

Regarding the specific land allocations, the following site-specific criteria are listed. Extracts have been taken to include only those relevant to transport.

Policy SP14: Site BA1 – North of Baldock – 2800 homes

“Development proposals should provide the following planning and masterplanning requirements:

- ...*
- c) A new link road connecting the A507 North Road to the A505 Baldock bypass including a new bridge across the railway;*
- d) Sustainable transport measures to include:*
 - i. a secondary rail crossing for pedestrians and cyclists in the vicinity of Ashville Way;*
 - ii. safe access routes to / from, and upgrades to, Baldock station;*
 - iii. sensitive integration of Bridleway Baldock 034 / Bygrave 002 as a north-south route through the development; and*
 - iv. the use of Bygrave Road / Ashwell Road from the southwestern edge of the allocated site to the link road as a sustainable transport corridor; and*
 - v. comprehensive integration into the existing pedestrian and cycle, public transport and road networks*
- ...”*

Policy BA2 – Circa. 200 homes, with scope for up to 250

- a) *Proposals to be informed by a site-specific landscape assessment;*
- b) *Preliminary Risk Assessment to identify any contamination associated with previous uses including mitigation;*
- c) *Consider and mitigate against potential adverse impacts upon Weston Hills Local Wildlife Site;*
- ...

Policy BA3 – 245 homes

“Local Housing Allocations and site specific policy criteria:

- a) *Deliver a southern link road connecting the B656 Royston Road to Wallington Road or the A507 Clothall Road within the southern bypass;*
- b) *Provision of suitable vehicle, cycle and pedestrian links to ensure integration with adjoining site BA4;*
- c) *Consideration of the most appropriate routes and movements for all modes between the allocation site, the existing Clothall Common estate and the wider transport network;*
- ...
- d) *Incorporate alignment of former Wallington Road and Bridleway Clothall 027 as green corridor through the site;*
- ...”

Policy BA10 – 19.6 Hectares (Ha)

“Employment allocations and site-specific policy criteria:

- ...
- b) *Ensure access arrangements control HGV movements to direct vehicles towards the A505 rather than through Baldock;*
- ...”

2.3.3 Transport Strategy, North Hertfordshire District Council (October 2017)

The NHC Transport Strategy includes specific transport strategy for Letchworth and Baldock. A series of key principles are set out, to help deliver the key strategy. Principles which are relevant to Growing Baldock include:

- ...
- 9. *“Ensuring that the new developments have sustainable transport ‘built-in’;*
- 10. *Adoption of a transport user hierarchy;*
- 11. *Deliver a step change in cycling and improved walking within the main urban centres through travel behaviour change and better facilities;*
- 12. *Deliver an improvement in bus-based public transport in the main urban centres, including better bus interchange and journey times;*
- 13. *A ‘Sustainable Spine’ corridor along the A505 with a focus on enhanced public transport and cycling connectivity between the towns.*

...

15. Rural management and improvement measures aimed at resolving particular traffic issues or taking opportunities to better link villages to each other or the main urban towns, and;
16. Review, provide for and utilise technology improvements through the strategy.”

The key elements of the transport strategy in Baldock and Letchworth are summarised in **Figure 2-1**. The key measures identified include:

“Behaviour change

- Appointment of Sustainable Travel Planner with budget for behaviour change measures, working closely with District Council, County Council, NHS, schools/colleges and rail operator.
- Focus on health, local employment, information on walking, cycling, buses, coordination with other stakeholders. Ensuring large new developments have active travel planning from the outset.

Key development sites

- Design focus on walking and cycling through all development, to local facilities and to adjacent areas. Ensure site BA1 is linked to Baldock station and town centre by bus, cycle and walk routes as ‘preferential’ modes. Introduce link road between the A507 London Road and A505 Baldock Bypass over the railway, but design to discourage through traffic from using this new link.

Improving Walking and Cycling

- More and better crossings of main roads, particularly the A505, A507, B197 and the B656, and the railway line severance. Strategic signed cycle network, some Quietway’s. Focus on town centre, station and Works Road, Icknield Way and Blackhorse Road employment areas

Bus-based improvements

- Longer-term aspiration for 4 buses per hour (bph) to Hitchin and 4 bph Stevenage. Improve bus interchange in town centre Better coverage of town services. Bus priority measures at pinch points.

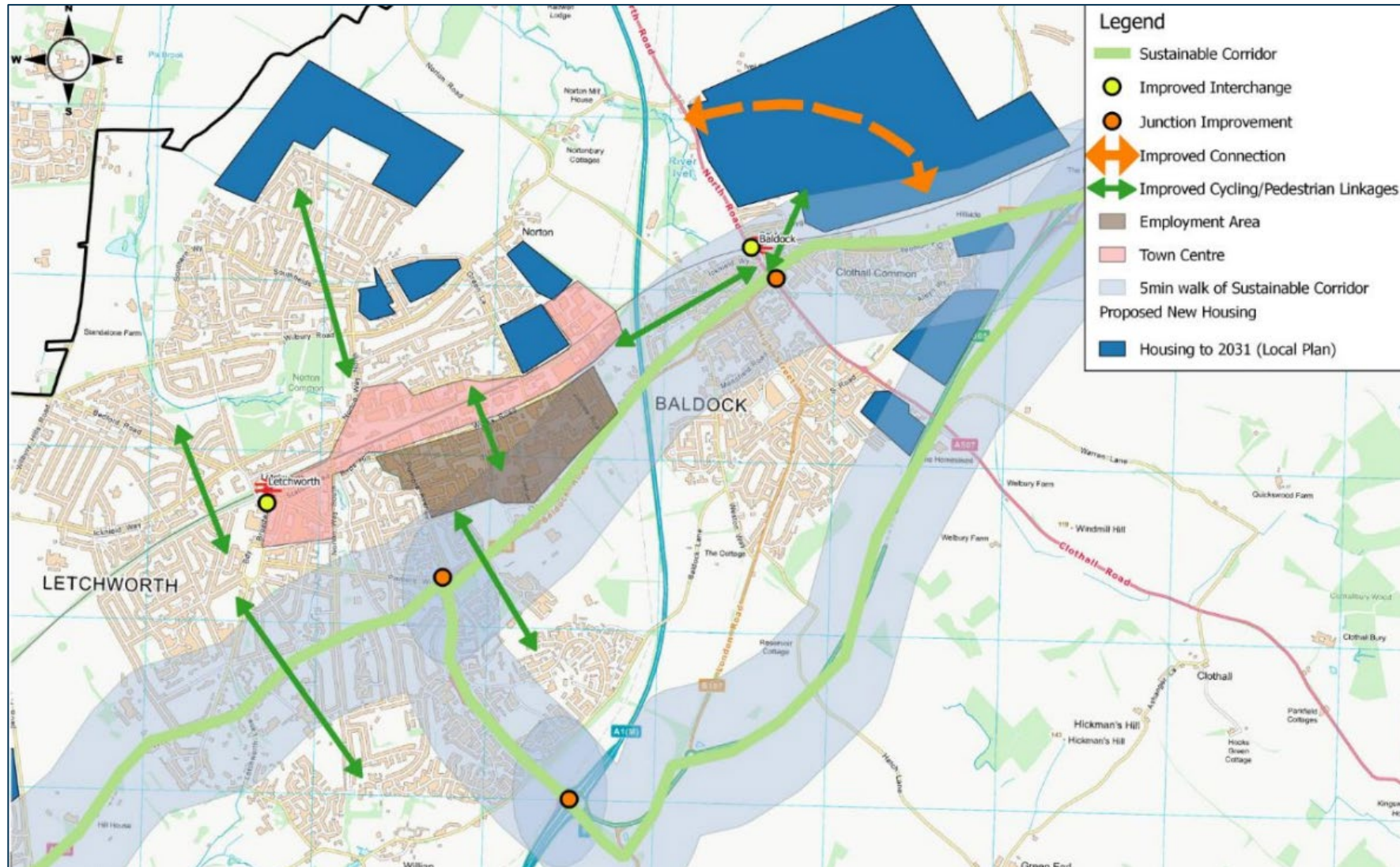
Sustainable Spine

- Longer-term aspiration 4 bph Luton/Hitchin/Stevenage/Letchworth. Better crossings and bus priority as above. Cycling facilities as appropriate.

Traffic Management

- Retain ‘gating’ function of radial junctions surrounding Baldock to manage through traffic flow through the town centre. Potential for improvement at A505 North Way and Letchworth Gate if through traffic to rest of centre will not be increased.”

Figure 2-1: Letchworth/Baldock Transport Strategy Key Elements



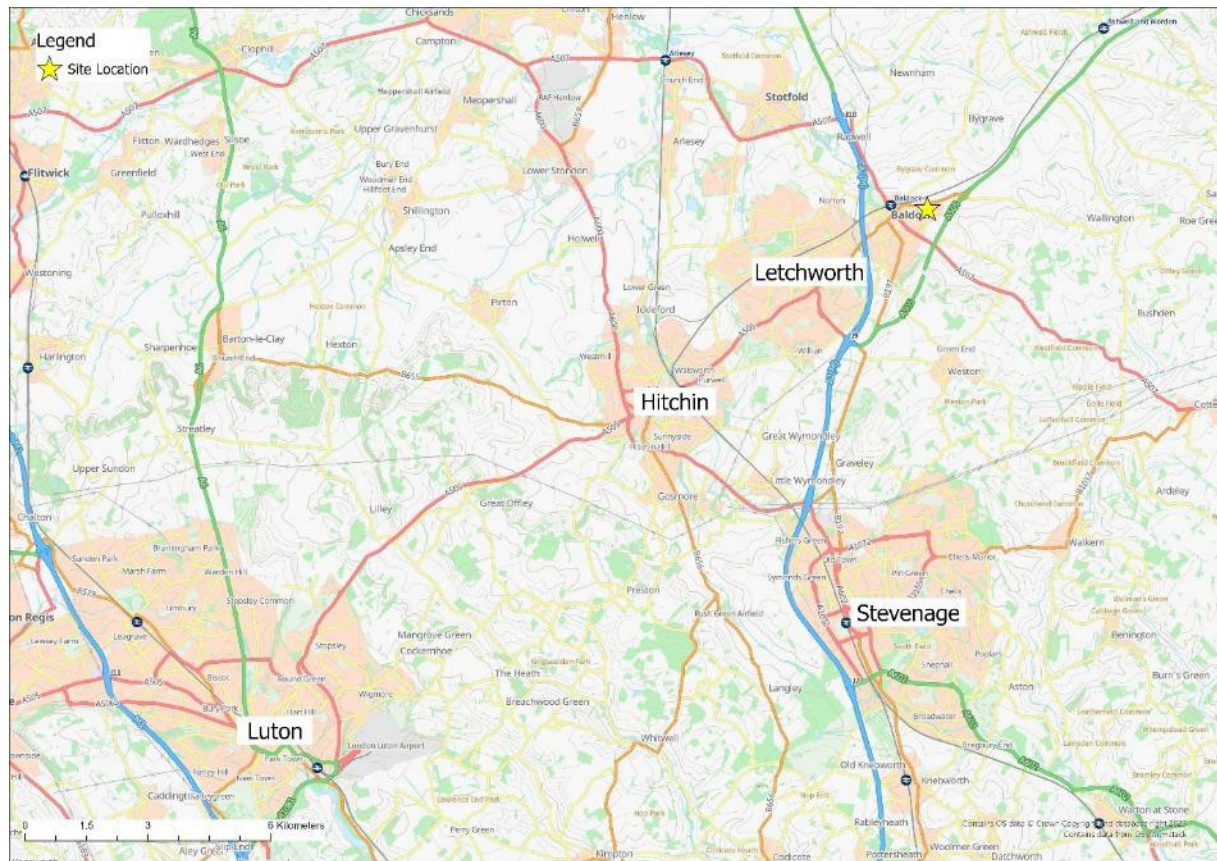
3 Baldock Today

3.1 Overview

Significant work has been carried out prior to the preparation of this Transport Assessment to understand the transport context in Baldock, including existing transport provision, key local movements, active travel infrastructure, street conditions and review of road safety. The extensive work carried out to establish the baseline facilitated formulation of a set of strengths, weaknesses, opportunities and threats which have been considered in the definition of the Transport Vision and Principles.

Baldock is situated northeast of Letchworth Garden City and Hitchin, with approximately 3 kilometres and 6.5 kilometres respectively between town centres. The larger towns of Stevenage and Luton lie 10 kilometres south and 20 kilometres southwest, respectively.

Figure 3-1: Site location



3.2 Accessibility Audits

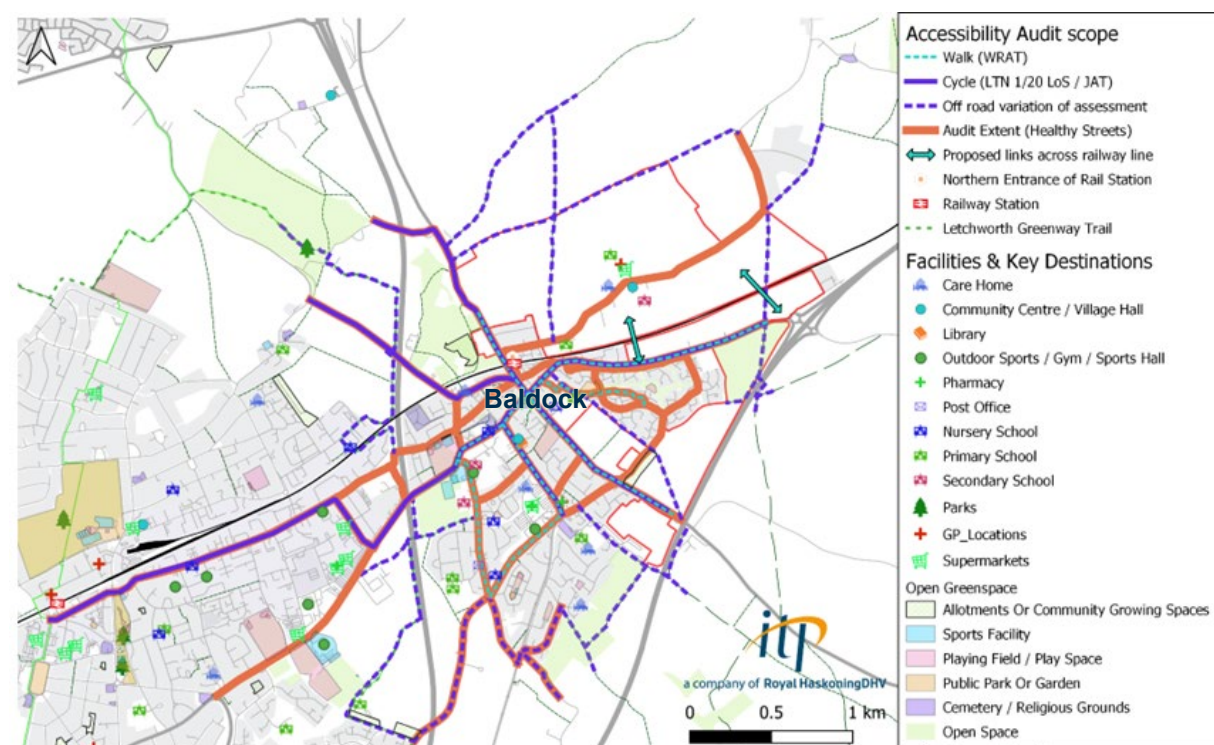
Site visits were undertaken between 1 and 3 February 2023 and on 4 May 2023 to prepare an Accessibility Audit. The findings of this audit were previously presented to key stakeholders and are summarised in this section.

Three types of audit were carried out across 75 links, according to the NHC Masterplanning Guidance on Transport and in line with Government guidance. These comprised:

- **Healthy Streets:** Design Check UK (Healthy Streets)
- **Walking:** Walking Route Audit Tool (WRAT) from the DfT
- **Cycling:**
 - **Links:** LTN 1/20 Cycling Level of Service Tool (CLoS)
 - **Junctions:** LTN 1/20 Junction Assessment Tool (JAT)

The study area for the detailed accessibility travel audits is presented within **Figure 3-2**.

Figure 3-2: Accessibility Audit Scope



The results of these audits are summarised alongside more general information on the transport context for each mode in the following sections.



by Haskoning

3.3 Healthy Streets

Creating sustainable places is not just about being able to access facilities in a reasonable amount of time; route quality is also important to making the mode an attractive prospect for users, supporting safety and confidence along the route. A Healthy Streets audit was undertaken to identify how safe, welcoming, and comfortable streets are currently.

“Healthy Streets is a human-centred framework for embedding public health in transport, public realm and planning. The 10 Healthy Streets Indicators focus on the human experience needed on all streets, everywhere, for everyone.”
Healthystreets.com

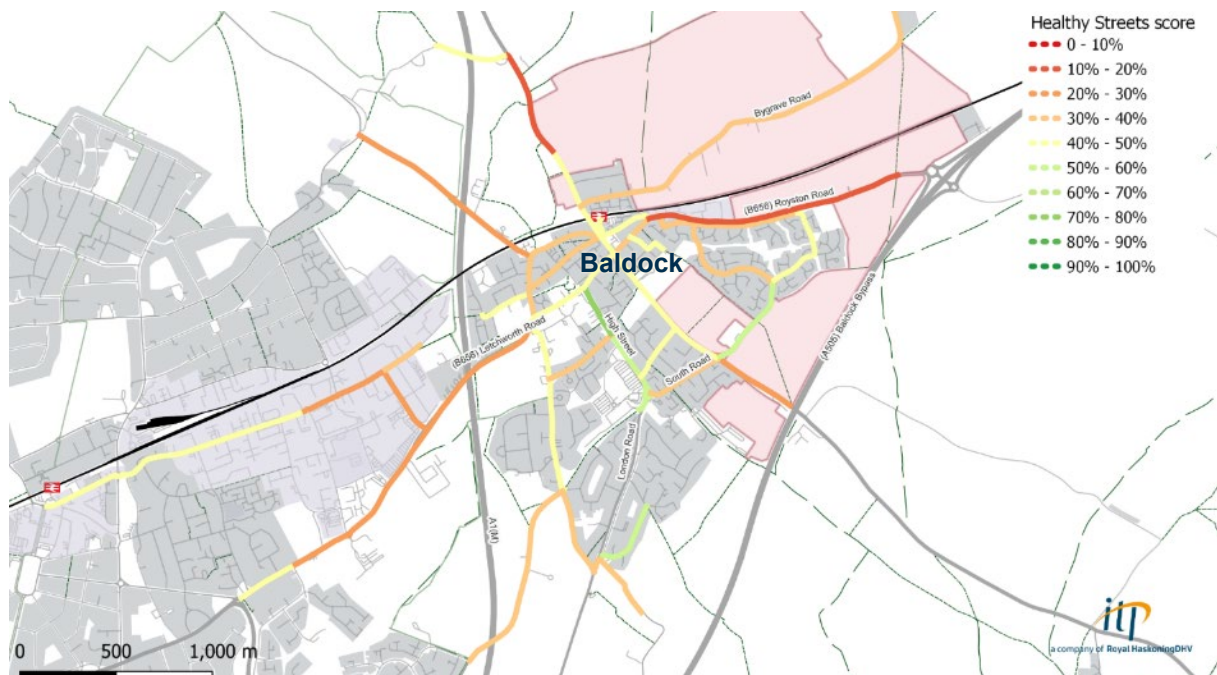


For the 46 links audited using the Healthy Streets Design Check, the average score was 40 out of a possible score of 100, with a range of 18 to 77, indicating several metrics where potential improvements could be made to better the experience of all those who are walking or wheeling. The two indicators that scored lowest across the audited links were ‘Place to stop and rest’ and ‘Things to see and do’, with an average score of 30 or less.

The function of each street should be considered when looking at potential improvement opportunities, with some streets focusing more on movement than establishing a sense of place. Of the 46 links, 19 had bus stops on them, and while many stops provided a high standard of infrastructure, some specific locations were identified where provision was more limited.

A visual summary of the results is shown in **Figure 3-3**. It indicates that routes within the centre of Baldock are generally more attractive to use for pedestrians and cyclists than routes leading into the town. If more walking and cycling is to be encouraged, improvements will be required to deliver high quality connections from front door to destination.

Figure 3-3: Healthy Streets Audit Results



Based on the results of the Healthy Streets Audit, the following key areas for improvement have been identified within the study area. The key actions included as part of Growing Baldock to combat these issues are also summarised below:

1 Cycle Safety at Junctions

- Issue: All links scored zero for cycle safety at junctions.
- Action: All junction designs prepared as part of Growing Baldock should emphasise cycle safety, including segregated facilities and traffic calming measures where possible to support cycling.

2 Inadequate Crossing Facilities

- Issue: Ease of crossing, priority at junctions and accessibility for visually impaired users scored very low.
- Action: As part of junction and key road designs prepared alongside this Transport Assessment, there should be improvements to crossing infrastructure, including refuges, tactile paving, and priority signals.

3 Insufficient Walking Space

- Issue: Metric for walking space scored an average of 0.64 out of 3.
- Action: Walking space should be prioritised in Growing Baldock, with footways widened on key routes and dedicated active travel routes created to reduce severance for pedestrians.

4 Poor Bus Stop Infrastructure

- Issue: Of 18 links with bus stops, only three scored above zero.
- Action: High-quality bus stops and bus infrastructure should be implemented to encourage uptake of bus transport as a suitable alternative to travel by private car.

5 Lack of Places to Stop and Rest

- Issue: The indicator “Places to stop and rest” scored below 30 on average.
- Action: Growing Baldock should include places to stop and rest

3.4 Walking and Cycling

The 42 links audited specially for walking scored within a range of 40-98 out of a possible 100, with an average of 78. Comfort, particularly width, was a lower scoring category throughout the Walking Route Audit Tool, both in terms of width of footways and crossings, while links fared well against directness and safety indicators. Scores for coherence were also low, although this indicator only consisted of one metric. A visual summary of the results is shown in **Figure 3-4**. Roads around central Baldock generally performed the best. The lowest scoring link was Royston Road.

The roads surrounding the sites benefit from some level of walking infrastructure, including footways and street lighting. Pedestrian infrastructure on roads surrounding the proposed development sites and Public Rights of Way are shown in **Figure 3-5**.

Footpaths and bridleways offer leisure routes to the north, east and south on a network of footpaths, bridleways and byways. Several footpaths and bridleways connect the outskirts of Letchworth to Baldock, including the popular Letchworth Greenway.

The development is well located, with most facilities within Baldock Town Centre located less than 20-minute walk from the centre of the development sites. The development sites are in a suitable location to maximise opportunities to connect into Baldock Town Centre and facilitate an increase on walking trips in and around the town.

Walking journey times from the centre of each of the sites are shown below in **Figure 3-6**. It is indicated that the majority of Baldock town centre is accessible within a 20-minute walk from the centre of the proposed development sites. Baldock town centre provides significant amenities and facilities, including healthcare facilities, groceries, leisure shopping, sports facilities and schools.

The following key areas for improvements have been identified based on the audit findings:

1 Narrow Footways

- Issue: Over 37% of surveyed links had footways less than 1.5m wide, scoring zero for comfort.
- Action: Growing Baldock should deliver high-quality walking routes throughout the sites.

2 Poor Comfort Conditions

- Issue: Comfort scores ranged from 42 to 70, affected by poor surface conditions, gradients, and temporary obstructions.
- Action: Proposed junction designs should include clear, unobstructed walking paths and smooth, well-maintained surfaces to improve pedestrian comfort. In particular, improvements along Royston Road are desirable.

3 Inadequate Safety on Certain Links

- Issue: Some links, such as Royston Road (Link 60), scored as low as 17 for safety.
- Action: Proposed interventions should include traffic calming measures and the addition of pedestrian refuges and crossings.

4 Lack of Dropped Kerbs and Tactile Paving

- Issue: Coherence was the lowest-scoring category (average 52), with many links scoring zero.
- Action: All proposed junction improvements should include provision for pedestrian crossings, including dropped kerbs and tactile paving.

Figure 3-4: WRAT Audit Results

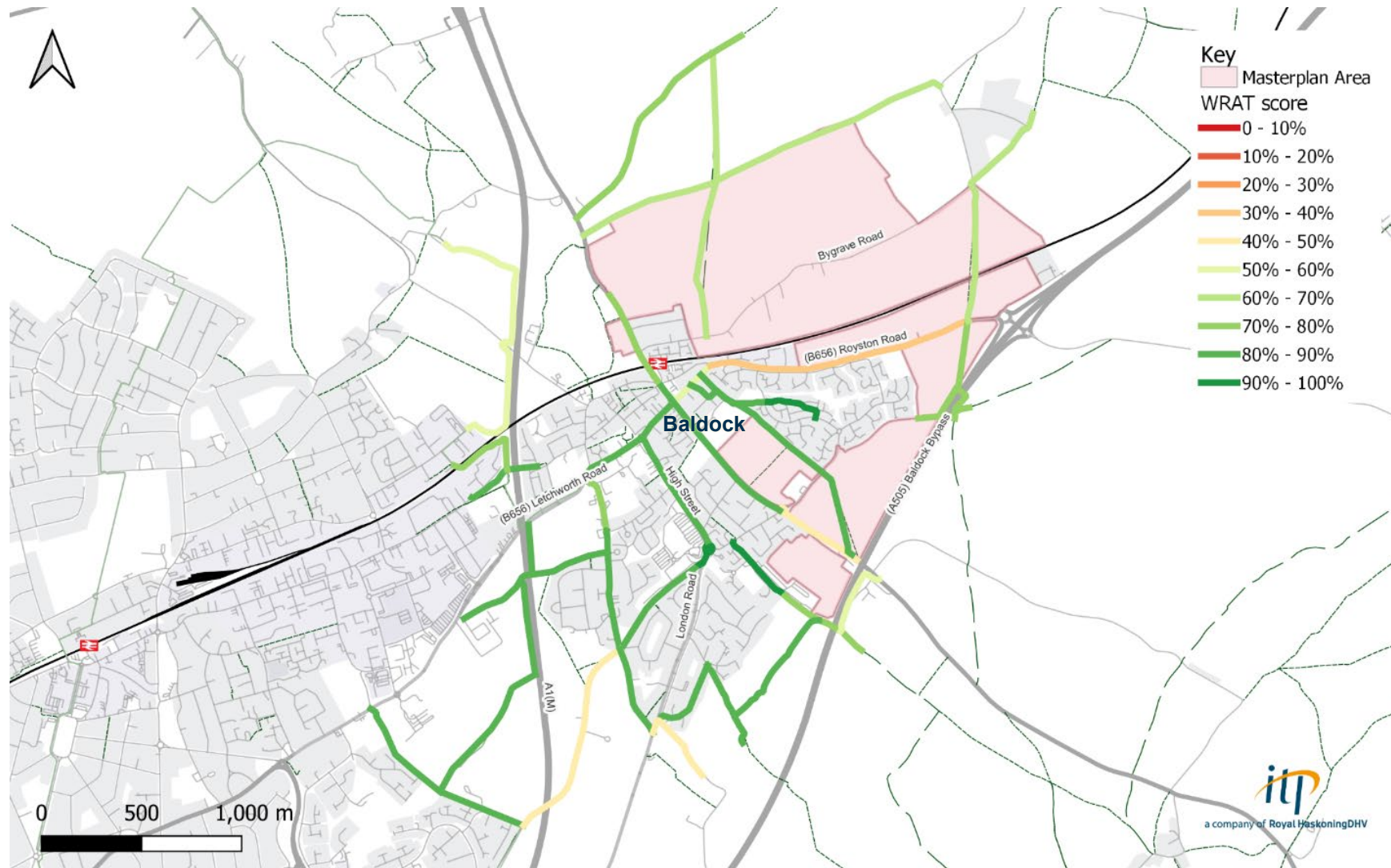


Figure 3-5: Local Walking Infrastructure

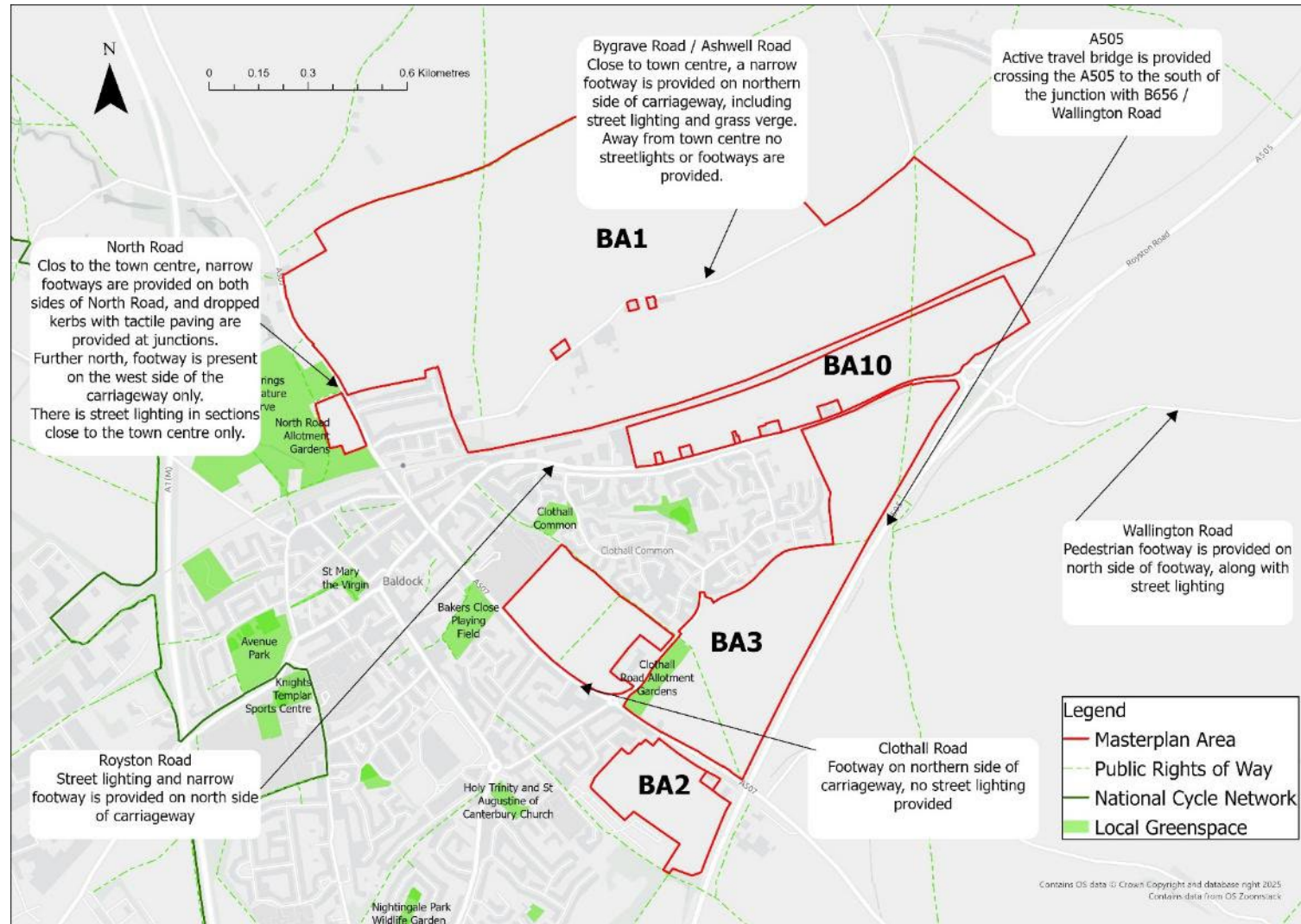
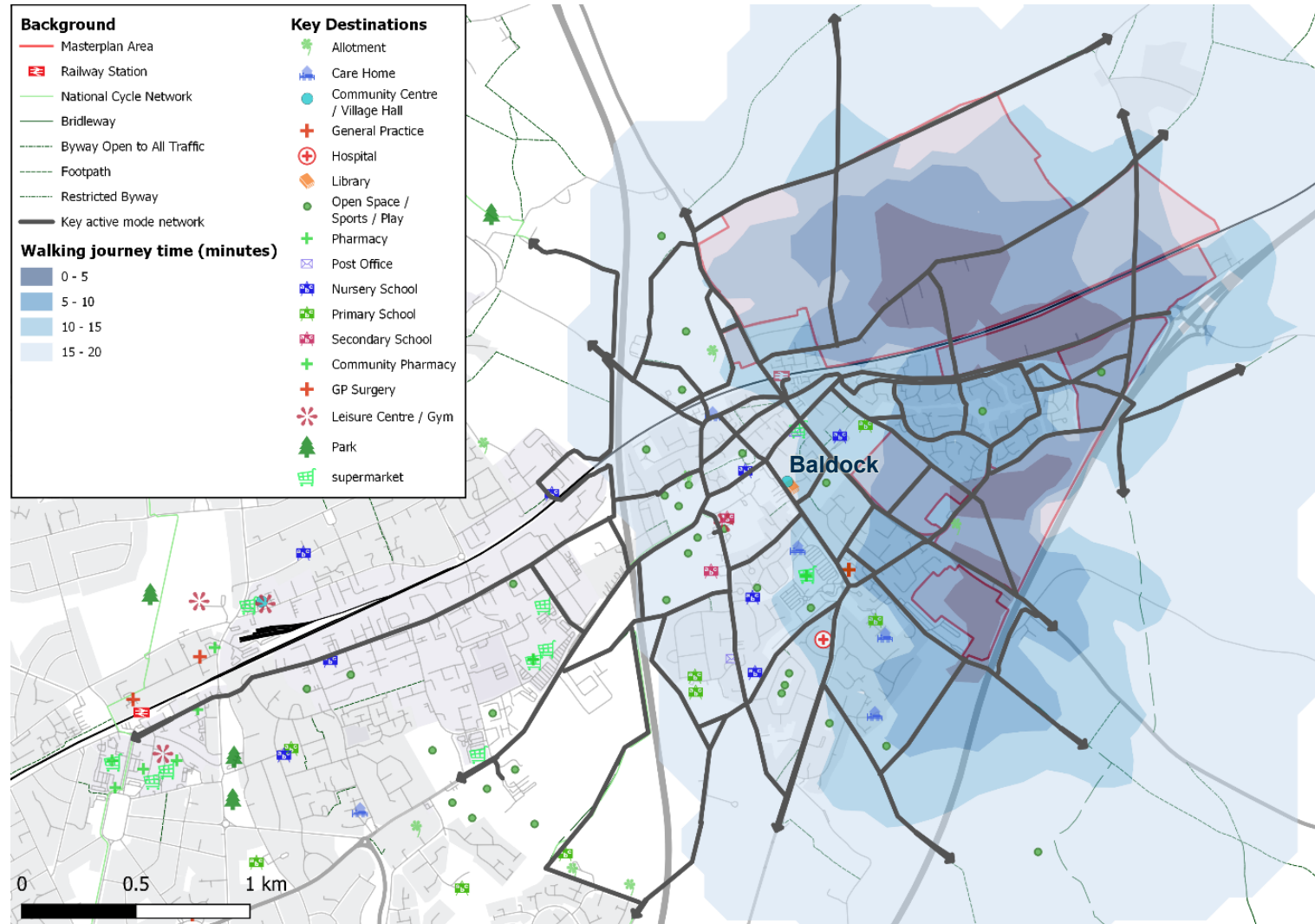


Figure 3-6: Walking Journey Time from Site



For the 26 links audited specifically for cycling using the Cycling Level of Service tool, an average of 57 was scored out of a possible 100 (with a 33 minimum and 77 maximum). Five of these links had at least one critical fail, within the categories of risk of collision, motor traffic speed and kerbside conflict. High levels of heavy goods vehicles and general lack of cycle lanes and space for cyclists was a common occurrence on links around the town. A visual summary of the results can be seen in **Figure 3-7**.

Whilst most areas of Baldock could be improved, road surfaces were of fair quality and cyclists generally shared the road with vehicles, with no segregated infrastructure. Aside from cycle parking on the High Street, there was almost no dedicated cycle parking provision. The weakest category was risk of collision, where all but two links scored a zero. This is due to high traffic volumes with at least 2% being heavy goods vehicles. This feeds into the general lack of cycle lanes and space for cyclists, with width being a weak category as well.

The majority of the existing Baldock town is within a 20-minute cycle of the proposed developments, indicating that the development is well placed to maximise opportunities for cycle trips in and around Baldock with the right infrastructure. Cycling connections surrounding the Site, and key destinations within a 20-minute cycle from the Site are shown in **Figure 3-8**.

Based on the 2011 Census, approximately 10% of residents walked to work, while 2% cycled. The 2021 Census results showed that this dropped for both modes, with 8% walking and 1% cycling, although this was captured at a time of Covid-19 lockdown. Most of these trips remain within Baldock, with some trips to the employment uses in east Letchworth Garden City.

Route 12 of the National Cycle Network, running from Enfield to Peterborough, passes through western Baldock. The route facilitates mostly car-free cycling journeys north to the settlements of Stotfold and Henlow, and south to Stevenage, Welwyn and London. There is no dedicated cycle infrastructure on any of the roads immediately surrounding the Site.

Figure 3-7: Cycling Level of Service Audit Results

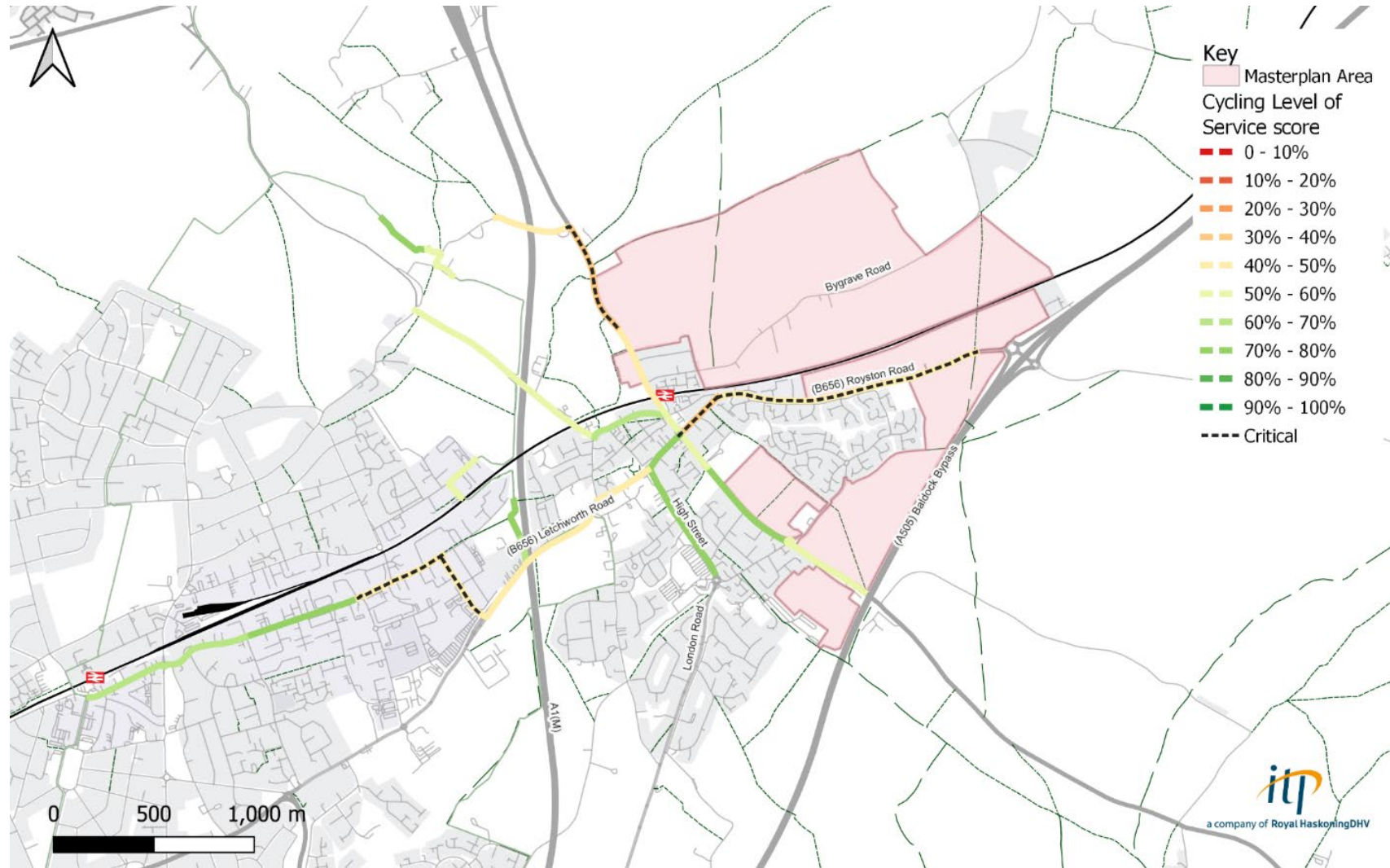
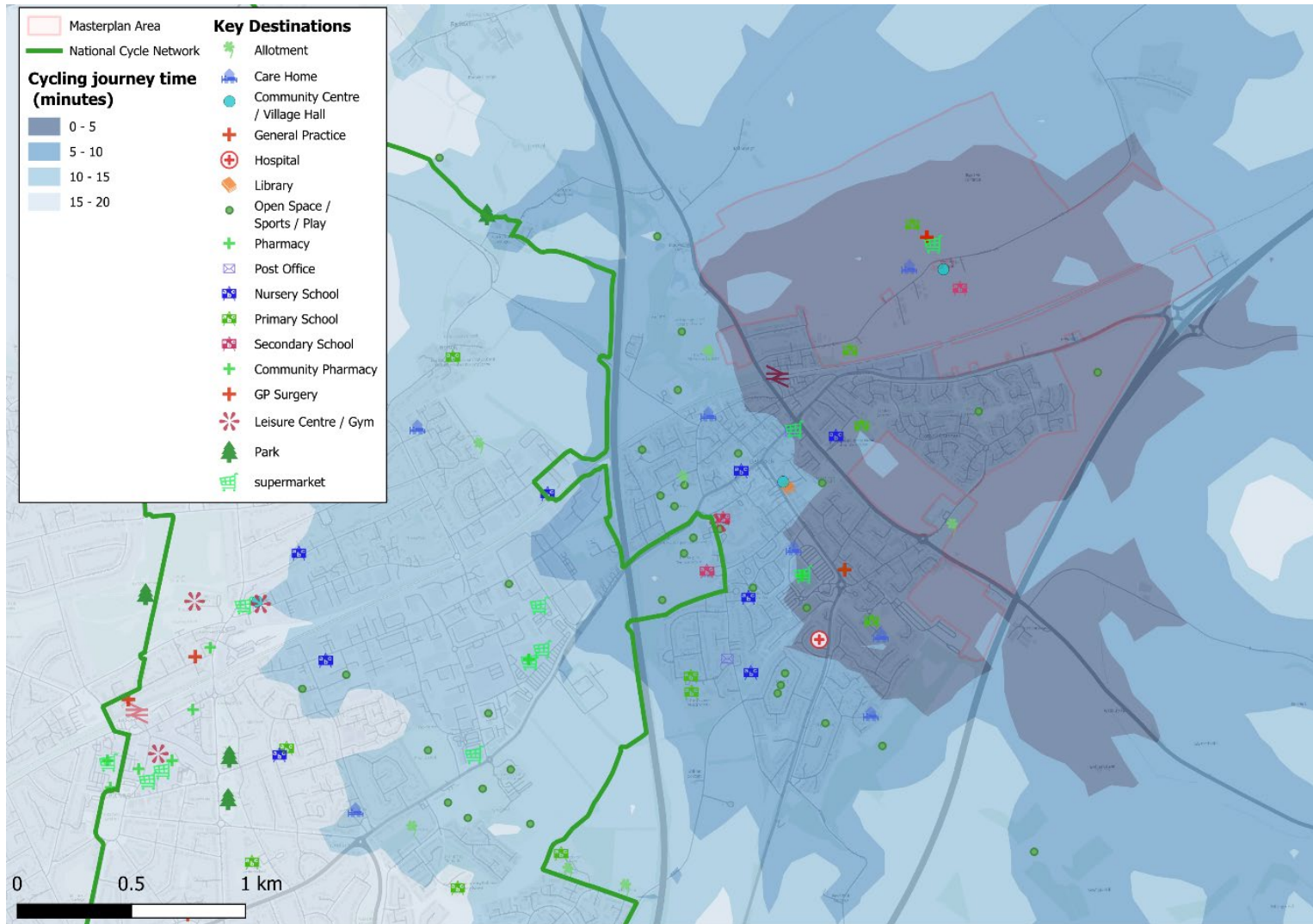


Figure 3-8: Cycle Connections from Site



The following key areas for cycling improvements have been identified based on the audit findings:

1 Risk of Collision and Lack of Segregated Infrastructure
- Issue: This was the lowest scoring category, with nearly all links scoring zero. - Action: Segregated cycle facilities and traffic calming measures should be provided where possible, to reduce collision risk.
2 Junction Safety
- Issue: The Junction Assessment Tool (JAT) found no junctions scoring above zero, indicating unsafe conditions for cyclists. - Recommendation: Key junctions should be redesigned to include protected cycle movements and clearer markings.
3 Inadequate Cycle Parking
- Issue: Aside from the High Street, cycle parking is largely absent across the town. - Action: High-quality cycle parking should be provided within the Growing Baldock sites.
4 Poor Cohesion and Network Continuity
- Issue: Many links scored poorly for cohesion, indicating fragmented or disconnected routes. - Action: Improved signage and continuity of cycle routes should be included in the Growing Baldock proposals

3.5 Rail Services

Baldock benefits from local rail services which are easily accessible from all areas of the town. Regular rail services to London, Cambridge and Brighton are readily available, with future improvements proposed as part of December 2025 timetable update. The station is central to the Growing Baldock sites with closest proximity to the largest – BA1, providing significant opportunities to access the railway station on foot or by bike.

Baldock railway station lies on the Hitchin to Cambridge line. It is served by the Thameslink and Great Northern franchises. Typical off-peak services are summarised in **Table 3-1**. The station benefits from regular services, with three trains per hour travelling through London during off-peak periods.

Table 3-1: Summary of Direct Rail Services at Baldock Station

Operator	Destination	Trains per Hour		Journey Time (approximate)
		Peak	Off-Peak	
Thameslink & Great Northern	Cambridge	4	4	0h 30m
	London Kings Cross	2	1	0h 55m
	Brighton via London	2	2	2h 00m
	Peterborough (via Hitchin)	3	3	1h 25m

Baldock station provides sheltered cycle parking in a secure location with CCTV, further encouraging rail users to travel to the station by bicycle and reducing the need for amendments to the current car parking arrangements, that serve those travelling from surrounding villages without the same sustainable transport infrastructure. There is currently stepped access to both platforms, which presents a barrier to prevent those with mobility issues or pushchairs from using rail services.

Based on the 2021 Census, rail provides a method of travel to work for 6.5% of Baldock's working population (who were not working from home). This compares to an 11% share in 2011, where most of the trips were into central London, with a smaller percentage commuting to Stevenage. 2021 Census data was collected during a Covid-19 lockdown and therefore isn't typical.

3.5.1 December 2025 Timetable Update

There are proposed improvements to the East Coast Main Line, which are planned to be introduced with the December 2025 timetable.

These proposed improvements include the following changes at Baldock Station:

- Increase in peak time services between Cambridge and London Kings Cross
- Faster journey times between Cambridge and London Kings Cross
- More evenly spaced departure times to spread demand across the services

At the time of writing, the December 2025 timetable has not been finalised, but the changes will be in place several years before the first occupation of Growing Baldock (expected to take place from 2028). The future residents of this proposed development will benefit from the increased rail service resulting from the timetable changes.

As part of the scheme development, conversations have been undertaken with Development Managers at Govia Thameslink Railway, who have confirmed that the strategic allocation of these sites is known to them, and they remain committed to monitoring and amending service patterns as necessary in the future to accommodate changing demand patterns.

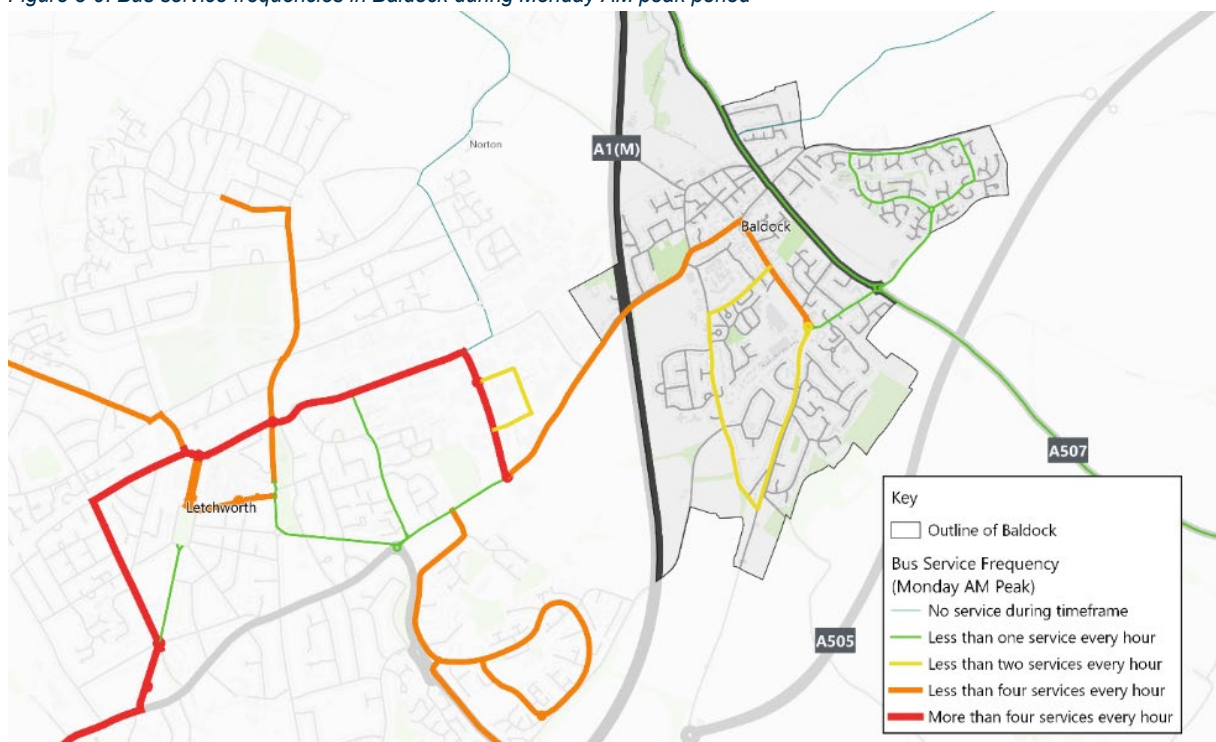
3.6 Bus Services

There are multiple bus services serving the roads local to the Site, with several bus stops surrounding the development sites. Services are summarised in **Table 3-2**, with the routes indicated in **Figure 3-9**.

Table 3-2: Summary of bus services

Service	Operator	Route	Direction	First	Last	Frequency	Sunday
37	Vectare	Stevenage – Letchworth – Baldock – Buntingford	Stevenage	07:22	17:22	1 bus every 2 hrs	No
			Buntingford	09:00	18:45		
90	Richmond's Coaches	Letchworth – Baldock – Ashwell - Royston	Letchworth	09:25	N/A	1 bus per day	No
			Royston	13:25	N/A		
91	Richmond's Coaches	Letchworth – Baldock – Ashwell - Royston	Letchworth	07:28	16:17	4 buses per day	No
			Royston	08:34	17:30		
98	Arriva Kent Thameside	Hitchin – Letchworth - Baldock	Hitchin	07:03	18:25	1 bus per hour	Yes, 1 bus per 2 hours
			Baldock	06:30	17:55		

Figure 3-9: Bus service frequencies in Baldock during Monday AM peak period



The existing bus services are not adequate to meet the needs of the existing area, with infrequent services that do not run throughout the week. Under the current operation, the bus service provided is not a suitable alternative to travel by private car.

The low frequency of these services during peak hours is reflected in the low mode share of travel to work data. Based on the 2021 Census, shared modes such as bus, minibus or coach had some of the lowest mode share at 0.3% across Baldock (this compared to 0.9% in 2011).

The following key areas for improvement regarding the public transport have been identified:

1 Access to Rail Station

- Issue: Stepped access to both platforms in Baldock Station acts as a barrier to residents with mobility issues.
- Action: Improvements to station access should be considered.

2 Update in rail services

- Issue: Only 6.5% of commuters travel by rail to work, which is reduction compared to 2011.
- Action: Improved access to rail services should be a priority of Growing Baldock, to encourage uptake of travel by rail.

3 Frequency of bus services

- Issue: Bus services are infrequent, with large areas of Baldock served less than once an hour and few weekend services.
- Action: Growing Baldock should deliver upgrades to bus provision in the local area, making bus travel an attractive alternative to private car trips.

4 Coverage of bus services

- Issue: Bus services are not located to best meet the needs of residents.
- Action: Any bus provision included with Growing Baldock should be planned to meet the needs of site users and future residents.

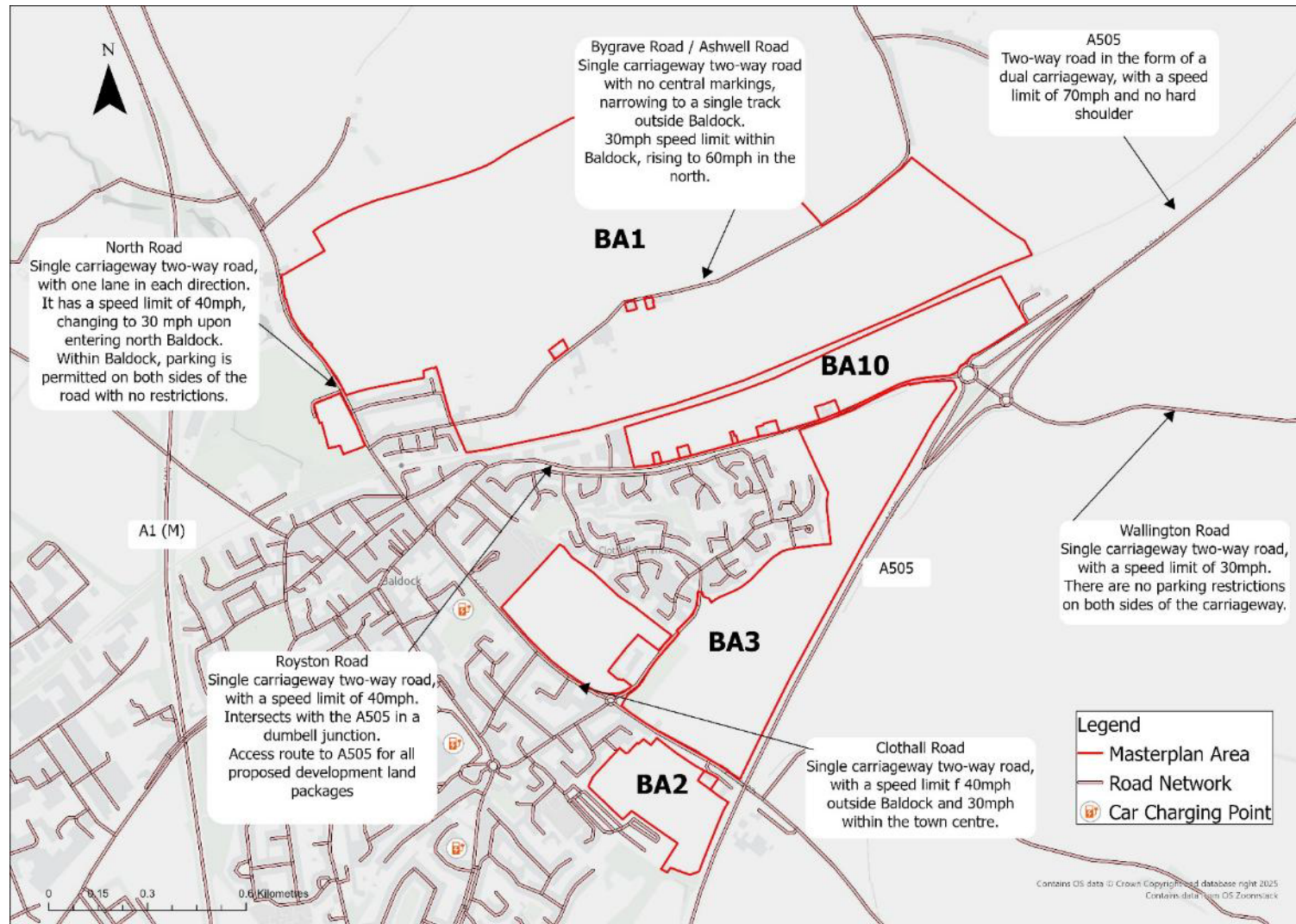
3.7 Local Highway Network

Baldock is located between the A1(M) to the west and the A505 to the east, providing connectivity between the locality and the wider region, including motorway and dual-carriageway connections to Stevenage, London and the Midlands. The A505 provides additional connection to Cambridge, East Anglia, Hitchin and Luton.

According to both the 2011 and 2021 Census, commuting by private vehicle is the most used method for residents of Baldock, at 69% and 71% respectively. A significant proportion of these trips remain within Baldock, or the neighbouring employment area in the east of Letchworth Garden City. The trips are then centred around Letchworth Town Centre, Stevenage and Hitchin.

The conditions on local roads surrounding the development Sites are shown in **Figure 3-10**.

Figure 3-10: Local highway network



3.7.1 Recorded Collisions

Local data concerning personal injury collisions was obtained from HCC for the period 1 November 2019 to 31 October 2024. The study area focuses on the transport network around all sites in the Growing Baldock masterplan and is indicated on all figures in this section. Key links are summarised below:

- A507 North Road / Station Road / Clothall Road
- B656 Letchworth Road / Baldock Road
- B656 Royston Road
- High Street
- South Road
- Works Road and Station Road in Letchworth
- Bygrave Road / Ashwell Road
- Newham Way / Newham Road

To provide context for the figures presented in this section, the '*Reported road casualties Great Britain, annual report: 2021*' has been reviewed. This allows the data on severity, road users and casualties to be compared to a national reference point. The headline figures for Great Britain are summarised below:

- Of all PICs recorded, 21% resulted in killed or seriously injured (KSIs) casualties
- Of all PICs recorded:
 - 13% were pedestrians
 - 13% were pedal cyclists
 - 12% were motorcycle riders

Nationally, the three most common causes in the dataset are: driver error, failing to look properly, and inexperienced driver.

The rate of recorded collisions within the study area resulting in killed or seriously injured casualties was 18.5%, lower than the average 21% recorded in the national data. It should, however, be noted that the study area does not include a representative range of road types or contexts, which applies to other comparisons to national data in this section.

Within the study area, 14.5% of collisions involved a pedestrian; 15.5% involved a bicycle; and 11.8% involved a motorcycle, higher than the respective 13%, 13% and 12% from the national data. This may be due to the urban character of the study area.

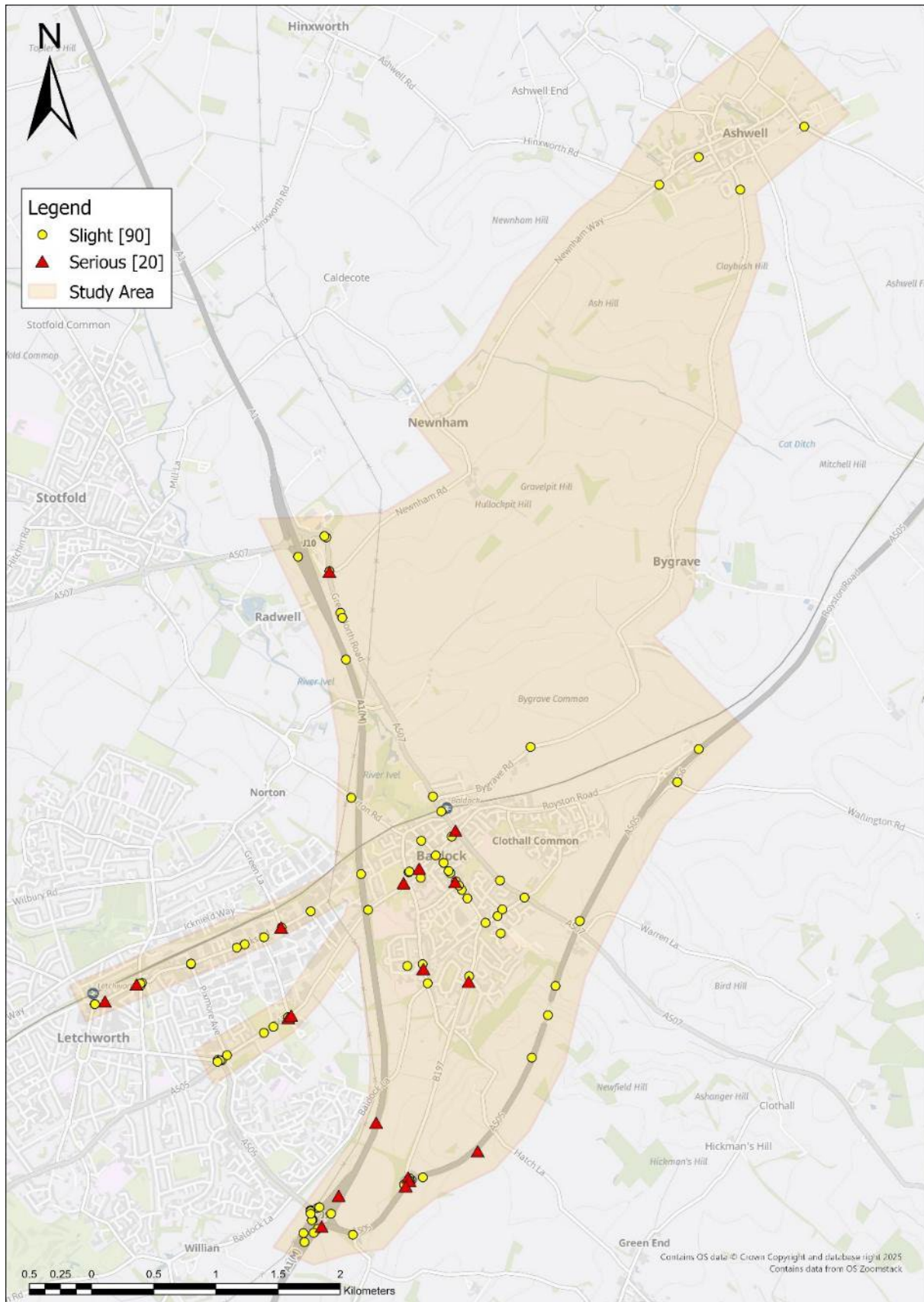
3.7.1.1 Severity

As shown in **Figure 3-11**, there were 110 recorded collisions inside the study area. Of these, 20 were considered 'serious' and 90 were considered 'slight'. No collisions recorded in this period were 'fatal'. Some collisions result in multiple casualties, so there were 157 casualties overall. Of these, 29 suffered 'serious' injuries and 128 sustained 'slight' injuries, meaning a rate of 18.5% KSI casualties.

Displaying collisions by severity also allows for identification of collision clusters, which will be analysed later in this section. Clusters identified in **Figure 3-11** are as follows:

- Central Baldock, specifically, Whitehorse Street, High Street, Hitchen Street and adjoining junctions
- Roundabout between the A505 and the B197 south of Baldock
- Junction 9 of the A1(M)

Figure 3-11: Recorded collisions by severity



3.7.1.2 Road User

Collisions that involved vulnerable road users (pedestrians, bicycles, motorcycles) are mapped in **Figure 3-12**. This shows that 16 collisions involved a pedestrian; 17 involved a bicycle and 13 involved a motorcycle, so, out of the total of 110 collisions, 14.5% involved a pedestrian; 15.5% involved a bicycle and 11.8% involved a motorcycle.

Out of the 20 collisions reported as 'serious' across the study area, 16 involved a vulnerable road user. Six involved a pedestrian, four involved a bicycle and six involved a motorcycle. This shows the importance of designing streets with pedestrian, cyclist and motorcyclist safety a priority, since most 'serious' collisions involve these road users.

Similar hotspots to those previously identified are evident in **Figure 3-12**, such as Central Baldock and Junction 9 of the A1(M). No hotspots of collisions specifically involving vulnerable road users have been identified, but it should be noted that collision hotspots already identified involve a high proportion of vulnerable road users.

3.7.1.3 Lighting Conditions

Collisions that occurred at nighttime have been plotted in **Figure 3-13**, to analyse the impact of street-lighting on collisions. **Figure 3-13** shows that nighttime collisions inside the built-up areas of Baldock and Letchworth had adequate street lighting. Nighttime collisions on the A1(M), A505 and A507 did not have street lighting.

Analysis of collision reports indicates that most nighttime collisions on the A1(M), A505 and A507 would likely not have been prevented by improved streetlighting provision, as contributory factors were driver error, excessive speed, unfavourable road surface conditions or impairment by alcohol.

Two collisions considered 'slight' may have been avoided by provision of lighting. Both were caused by vehicles failing to slow or stop in adequate time, resulting in collisions with other vehicles. The main cause was excessive speed, but it is reasonable to conclude that street-lighting provision would have improved the visibility of the road ahead, thus reducing the likelihood of these collisions occurring.

3.7.1.4 Road Surface Conditions

Potential surface drainage issues can be identified by mapping collisions which took place outside of regular 'dry' road conditions, as shown in **Figure 3-14**. Clusters previously been identified are visible in **Figure 3-14** as expected, but other patterns are also clear.

Almost all collisions on the A505 between junction 9 of the A1(M) and the junction with Royston Road occurred under 'wet' conditions. This pattern is not seen on other roads in the study area. Analysis of collision reports finds that, of the nine collisions recorded here under 'wet' conditions, three can be attributed to slippery road conditions. Other collisions were caused by driver error, excessive speed and bad weather (unrelated to road surface conditions).

One of the three collisions attributed to slippery road conditions was considered 'serious', with the others considered 'slight'. The 'serious' collision can be attributed to careless driving and poor visibility, but improved road surface conditions would likely have lowered the stopping distance and the severity of the collision. The two 'slight' collisions were directly caused by excess water on the carriageway, suggesting this section of the A505 may have inadequate drainage.

Another cluster of collisions which occurred under 'wet' conditions can be seen at the roundabout between Norton Way and Station Road in Letchworth. Almost all collisions which occurred here did so under 'wet' conditions. Upon analysis of collision reports, it can be concluded that none of the collisions which occurred at this roundabout can be blamed on the 'wet' condition of the road surface. Collisions were caused by drivers failing to look, distracted driving and speeding.

Figure 3-12: Recorded collisions involving vulnerable road users

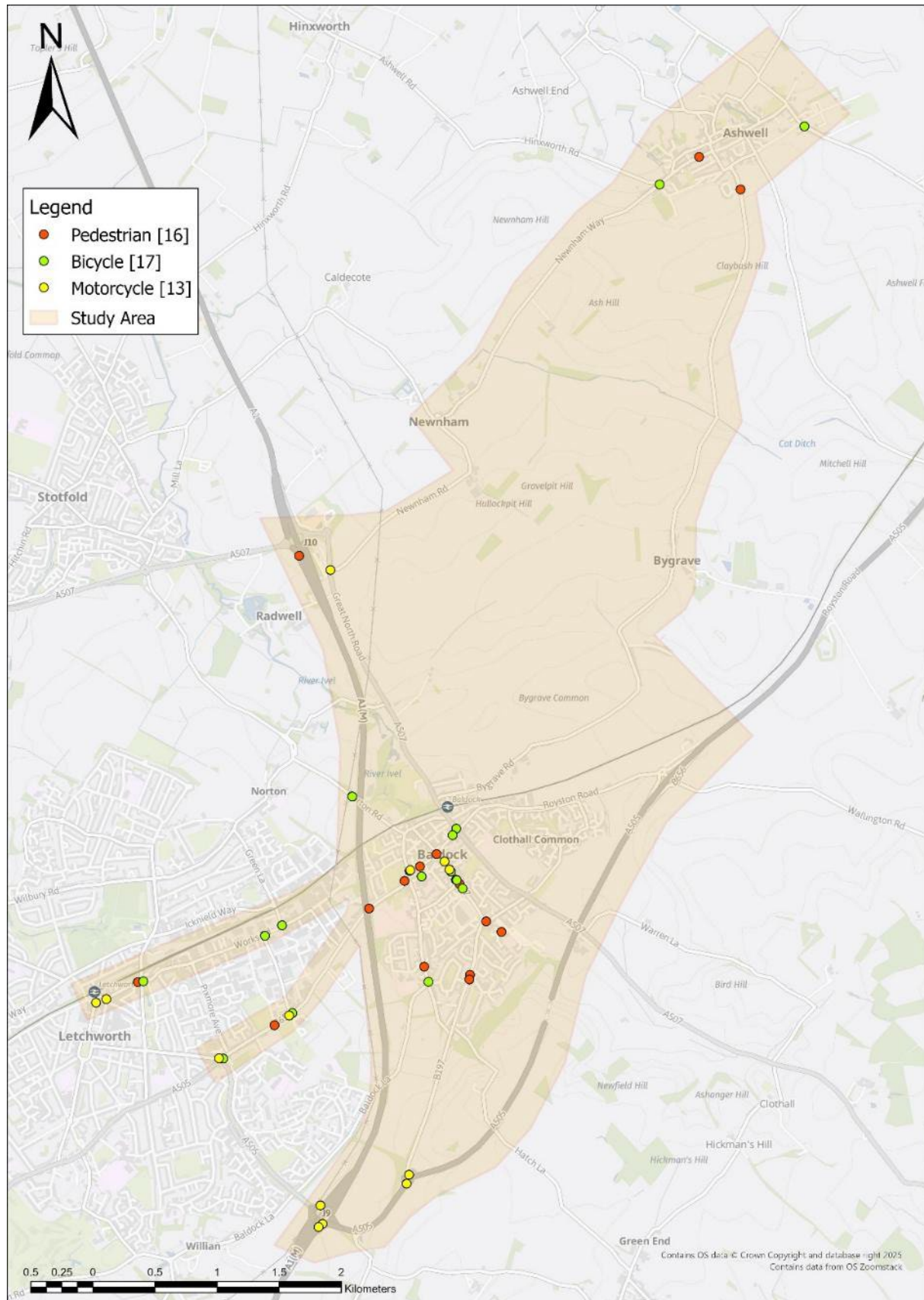


Figure 3-13: Recorded collisions by lighting condition

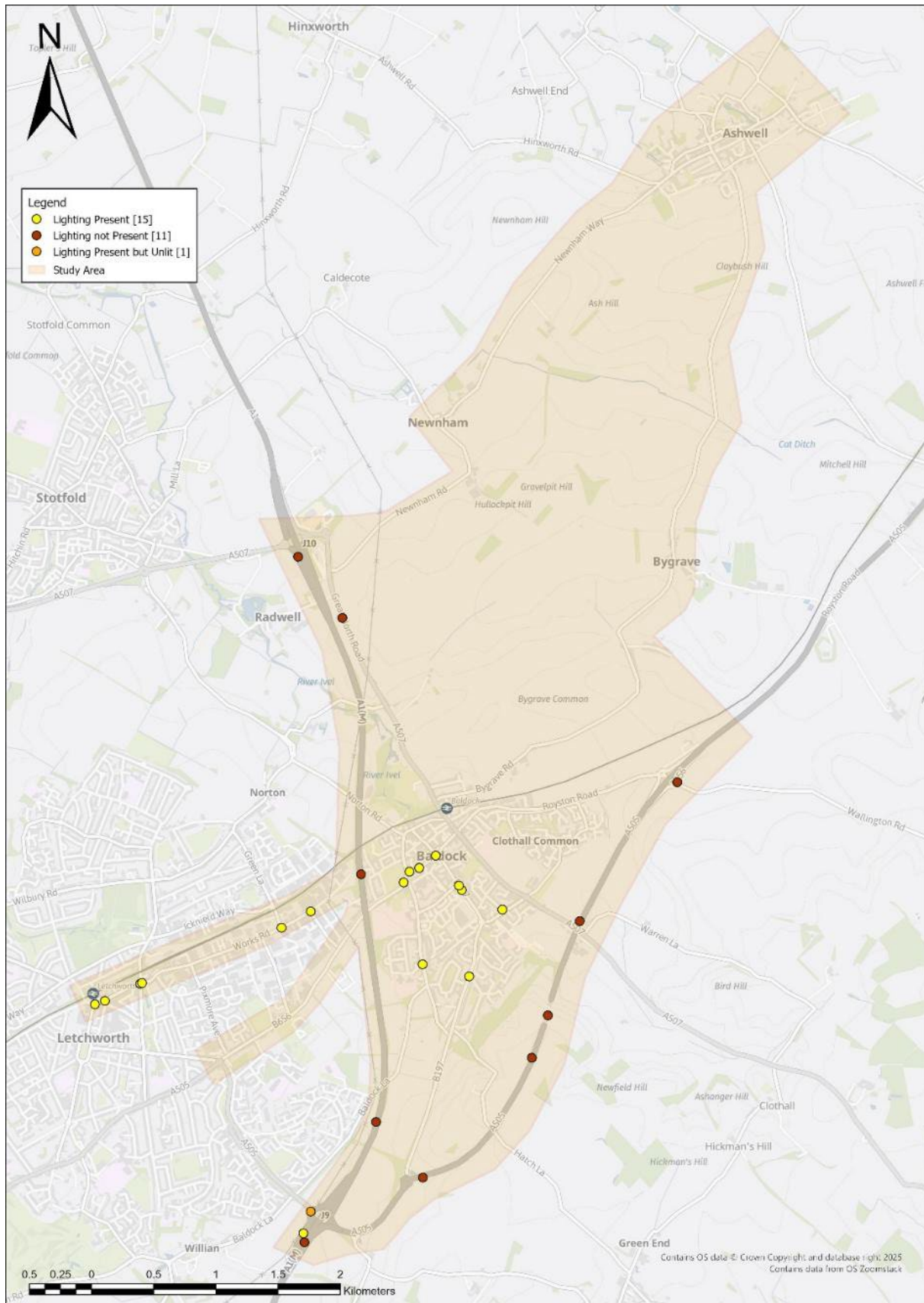
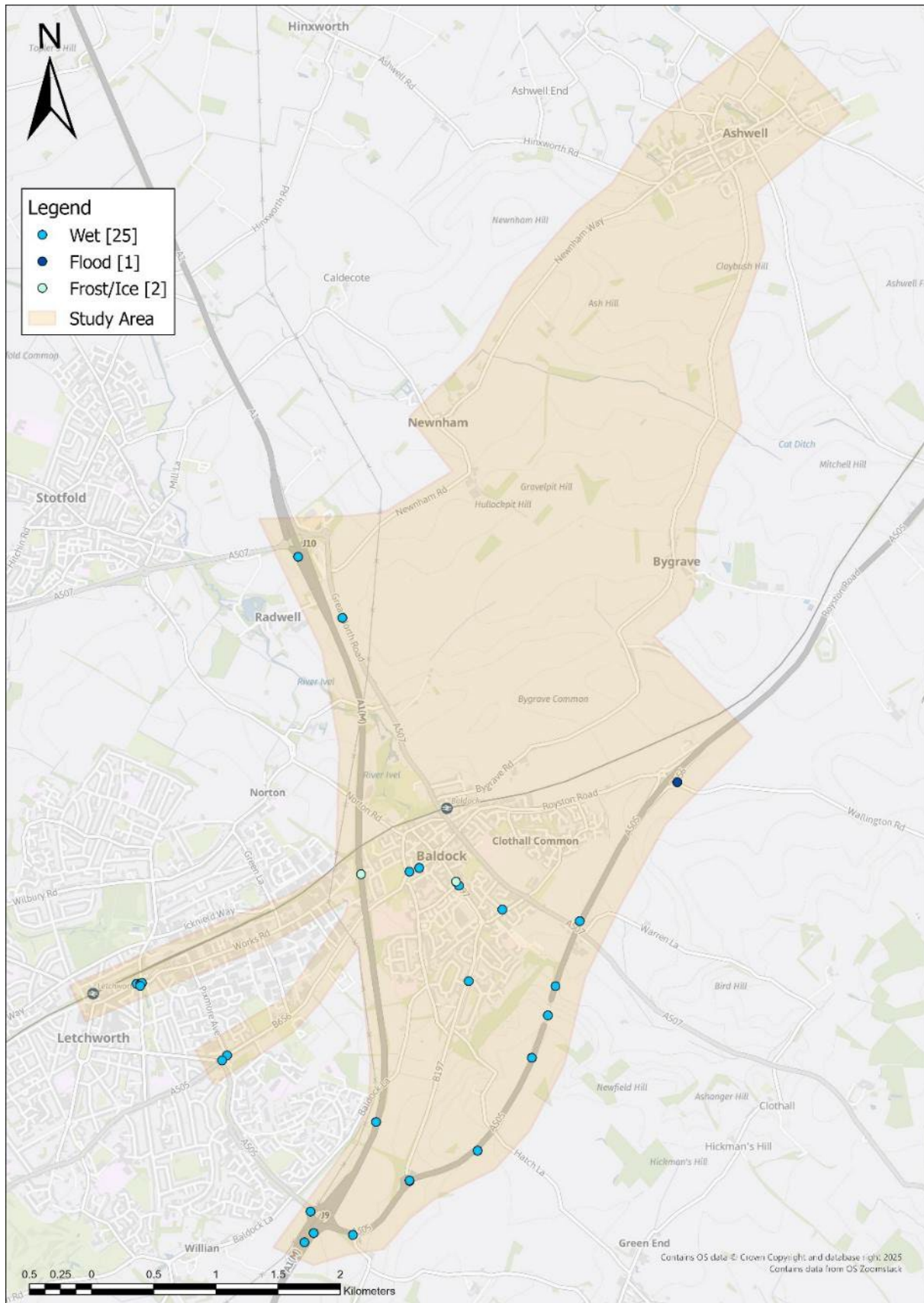


Figure 3-14: PICs by road surface conditions



3.7.1.5 Central Baldock Cluster

There is a cluster of 16 collisions (17 casualties) in Central Baldock, four of which were considered 'serious'. The area identified includes Letchworth Road, Hitchin Street, Whitehorse Street, High Street, and adjoining junctions and side streets. 14 collisions involved vulnerable road users, indicating these road users are particularly at risk in this area. Volumes of pedestrians, cycles and motor vehicles are higher in the commercial centre of Baldock, so collision rates are higher. A lack of separated infrastructure for cycles is also a likely cause of increased conflicts between these road users and motor vehicles.

Four collisions involved a pedestrian, three of which were considered 'serious'. The three 'serious' collisions were caused by a failure of either the driver or the pedestrian (or both) to look or see the other road user. This suggests poor visibility or unclear delineation between the pedestrian and vehicle environments. One of the 'serious' collisions occurred on the footway itself, between a pedestrian and a mobility scooter.

Two of the 'serious' collisions, and the 'slight' collision occurred on the B656 Hitchin Street/Letchworth Road. This road has narrow footways; large crossing distances; and a lack of formalised crossing points for 250m between the High Street and the pelican crossing near Norton Road.

Seven of the collisions involved a bicycle, one of which was reported as 'serious'. This is over half of the collisions in central Baldock and 41.2% of bicycle collisions across the study area. Most of these collisions involved vehicle drivers not being aware of a cyclist's position and turning or stopping into their path, including the collision considered 'serious'. This can be attributed to failure to look or careless driving, but the high number of interactions between vehicles and cyclists in central Baldock presents inherent risk.

Three collisions involved motorcycles, but all of these were a result of driver error. They were attributed to failing to look, and impairment by alcohol.

3.7.1.6 Roundabout between A505 and B197

A cluster of nine collisions (11 casualties) was identified at the roundabout between the A505 and B197 London Road south of Baldock. Of these, three were considered 'serious'.

Of the nine collisions, six, including one considered 'serious', were caused by a vehicle travelling southwest towards the roundabout on Baldock Bypass and failing to slow or stop in time. This then resulted in collisions with other vehicles or the roundabout itself. The roundabout is at the end of a long stretch of downhill carriageway, meaning vehicles may quickly gain speed.

Other 'serious' collisions were caused by a failure to look when changing lanes on the roundabout or impairment by alcohol.

3.7.1.7 A1(M) Junction 9

A cluster of 17 collisions (24 casualties) was identified at junction 9 of the A1(M). Of these, two were considered 'serious' and the rest 'slight'. Each of the collisions considered 'serious' only involved one vehicle, with driver illness and failure to look named as the causes.

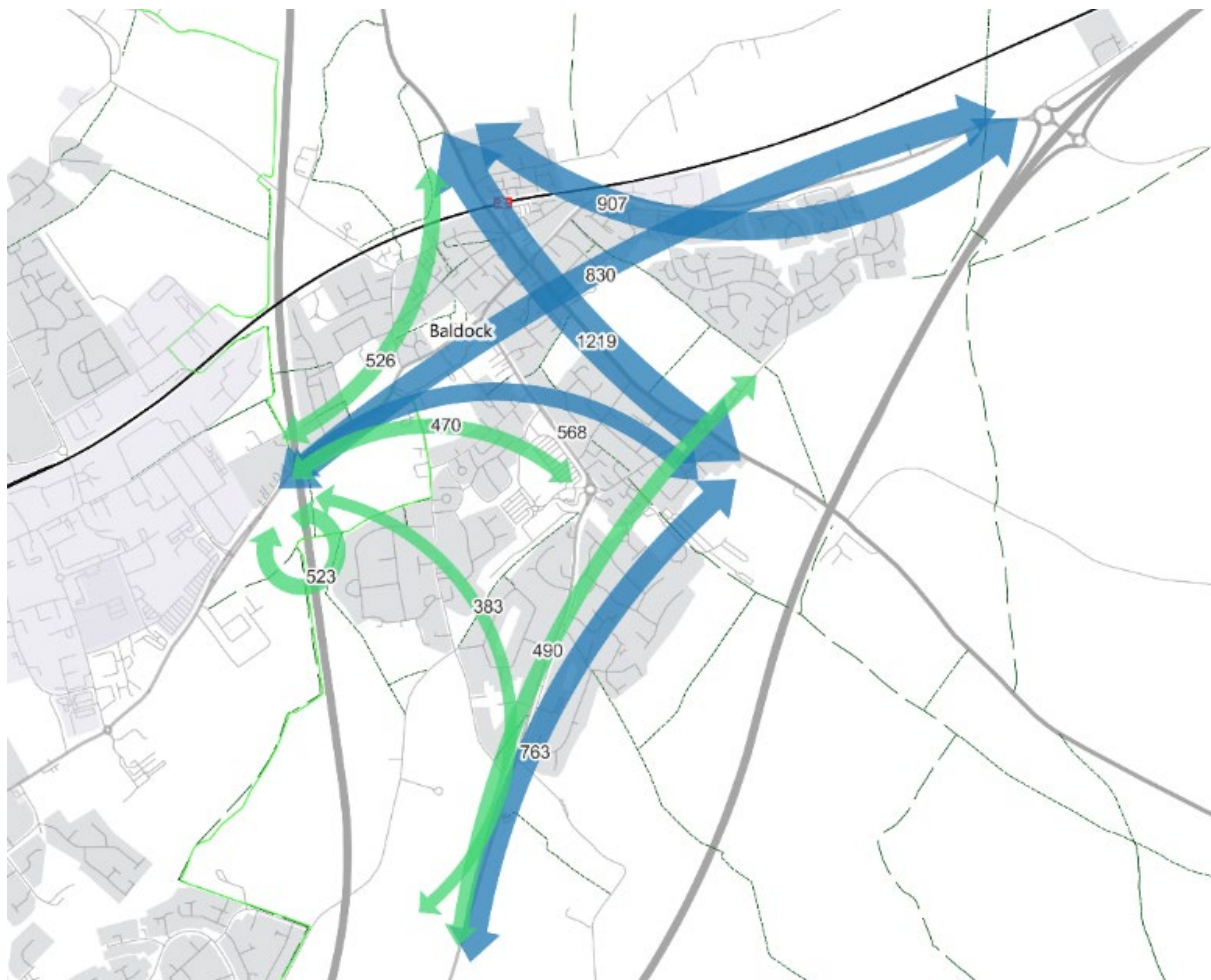
11 of the collisions, all considered 'slight', took place on exit slip-roads while vehicles were queuing to enter the roundabout. Vehicles collided with the rear of a vehicle in front, caused by a failure to look, excessive speed or being too close. This could be due to heavy traffic in these areas causing frequent queueing. Our proposed layout changes to Junction 9 of the A1(M) address these issues by better defining lanes and with new markings and wayfinding, helping to minimise 'weaving' on the roundabout.

3.7.2 Traffic Cordon Analysis

An automatic number plate recognition cordon survey was undertaken to allow an analysis to be undertaken of traffic movements through the town, as well as information such as heavy goods vehicle volumes and movements, and proportion of through traffic.

Figure 3-15 shows the aggregated total flow from the AM and PM peak periods between 07:00 and 10:00 and 16:00 and 19:00 for all motorised vehicles.

Figure 3-15: Aggregated AM and PM weekday movements



The 'top five' two-way movements are (blue arrows in diagram):

- 1,219 trips between North Road (1) and Clothall Road (9) – 9% of all trips
- 907 trips between North Road (1) and Royston Road (6) – 7% of all trips
- 830 trips between Letchworth Road (3) and Royston Road (6) – 6% of all trips
- 763 trips between Clothall Road (9) and London Road (10) – 6% of all trips
- 568 trips between Letchworth Road (3) and Clothall Road (9) – 4% of all trips

These represent a total of 33% of all trips. The remaining 'top ten' two-way movements (green arrows in diagram):

- 526 trips between North Road (1) and Letchworth Road (3) – 4% of all trips

- 523 trips between Letchworth Road (3) and Letchworth Road (3) – 4% of all trips
- 490 trips between London Road (10) and Wallington Road (12) – 4% of all trips
- 470 trips between Letchworth Road (3) and High Street (11) – 4% of all trips
- 383 trips between Letchworth Road (3) and London Road (10) – 3% of all trips

The top ten movements represent 52% of all trips. The remaining movements are smaller, with any one movement representing less than 1% of the total. They tend to be internal trips, and trips ending or starting within the town from a range of origins and destinations.

In both the AM and PM peaks the most popular destinations within the cordon are to locations around Tesco and the High Street. The most popular origins for these trips tend to be Letchworth Road, London Road, Clothall Road and South Road. In the AM and PM peaks the proportion of trips only passing a High Street or South Road camera suggest a number of very local trips being made by car.

HGV movements represent 4% of all movements in the AM peak, although for many movements HGVs represent a higher proportion of total traffic. In the absence of cycle infrastructure proportions of HGV traffic greater than 5% will create a hostile environment for cyclists. Proportions of HGV traffic above this level are seen in many locations, with particular concern where traffic volumes are also high, for example between Clothall Road and North Road, Royston Road to North Road, Royston Road to Letchworth Road and between Letchworth Road and North Road (both directions). The only current HGV restrictions in Baldock are on Clothall Road, south of South Road.

The HGV movements in the PM peak are substantially different to the AM peak, and to the general traffic movements recorded, with overall volumes substantially lower. The data suggests that there is more servicing activity taking place within the town in the AM peak, as well as movement to surrounding areas.

3.7.2.1 Through traffic

The ANPR cordon data shows 51% of trips within Baldock are through traffic (trips that do not originate or terminate within Baldock, but pass through on the way to another destination). A review of towns where data on through traffic exists suggests this is unusually high, with Baldock having higher levels than in any of the case studies identified. Reviewed case studies were generally where there was a recognition that through traffic was causing negative impacts and bypasses were being considered. Therefore, it is reasonable to conclude that through traffic levels would be higher than average in the case studies.

The survey only shows the points of entry and exit to the cordon and does not provide any data for the ultimate origins or destinations of the through traffic recorded. However, a number of inferences can be made when studying the strategic road network in the region. The strategic road network refers to roads managed centrally by National Highways – locally the A1(M). The main road network refers to roads that perform a strategic function and are recognised nationally but managed by the local highway authority.

For locations to the northwest of the town (Biggleswade, Bedford) and potentially further west such as Milton Keynes, trips to the southeast such as to Essex and Stansted are indirectly made via the strategic road network. Therefore, the connection through Baldock via the A507 is likely to be shorter. Local through trips are also likely to be a factor, for example the villages to the southeast of the town are likely to use the A507 to make trips to access the strategic road network and locations to the northwest. Many trips are also likely to be made from Letchworth through Baldock to access the strategic and main road networks, either via North Road (to the A1(M)) or Royston Road (to the A505). Congestion experienced at Junction 9 of the A1(M) is known to result in additional trips being made through the town for these destinations.

3.7.2.2 Network pressure points

Figure 3-16 shows key congestion points, with the majority identified located along the B656, travelling through the centre of Baldock, and the A507. These include:

- Station Road/Whitehorse Street
- Hitchin Street / Whitehorse Street / High Street junction
- Letchworth Road / Weston Way junction
- Bygrave Road / North Road junction
- Clothall Road / Wallington Road junction
- London Road / South Road / High Street junction
- A1(M) junction 9 (not shown in Figure)

Figure 3-16: Average queue lengths across the AM and PM peaks



3.8 Points Arising

From the extensive primary data collection exercise as well as review of existing data sources summarised above, several key findings have been identified:

- A significant proportion of Baldock trips are relatively local (23% less than 5km, 55% less than 10km).
- The network within Baldock for pedestrians is of variable quality, with the highest quality streets being the High Street and surrounding streets and the poorest being the main routes leading into the town.
- There is limited cycle infrastructure in the town, with routes leading into the town also impacted by high traffic volumes, including HGVs.
- Local bus services have low frequencies, particularly to the east of Baldock.
- Relatively low car parking accumulation figures suggest Baldock station serves a 'local' hinterland, compared to Hitchin and Stevenage, which offer higher service frequencies.
- There are high levels of through movements in Baldock, with 51% of trips passing through the town without stopping.
- The ANPR cordon survey suggests there are many very local trips being made by car.
- There is congestion on the network, particularly along the B656 and A507 corridors, with queueing on Station Road at the Whitehorse Street junction observed to be a frequent occurrence.
- Junction 9 is congested, which results in more through-traffic using the town to make connections to the A1(M) and A505

The findings of this section of work have directly informed the Transport Vision and Principles for Growing Baldock, reinforcing the Vision-Led nature of the Transport Assessment.

4 Vision and Principles

4.1 Transport Vision

The Transport Vision for Growing Baldock is to create a place where walking, cycling, and public transport are the most attractive and convenient modes of travel. The development aims to reduce car dependency, promote healthy lifestyles, and deliver a high-quality public realm.

Collaborative work has been undertaken with Urban&Civic's design team to prepare a suite of strategies that have informed the development of a separate Strategic Masterplan. This was presented to NHC Councillors and subsequently adopted on 16 June 2025. The Strategic Masterplan provides a basis of agreement in respect of the Transport Vision for Growing Baldock.

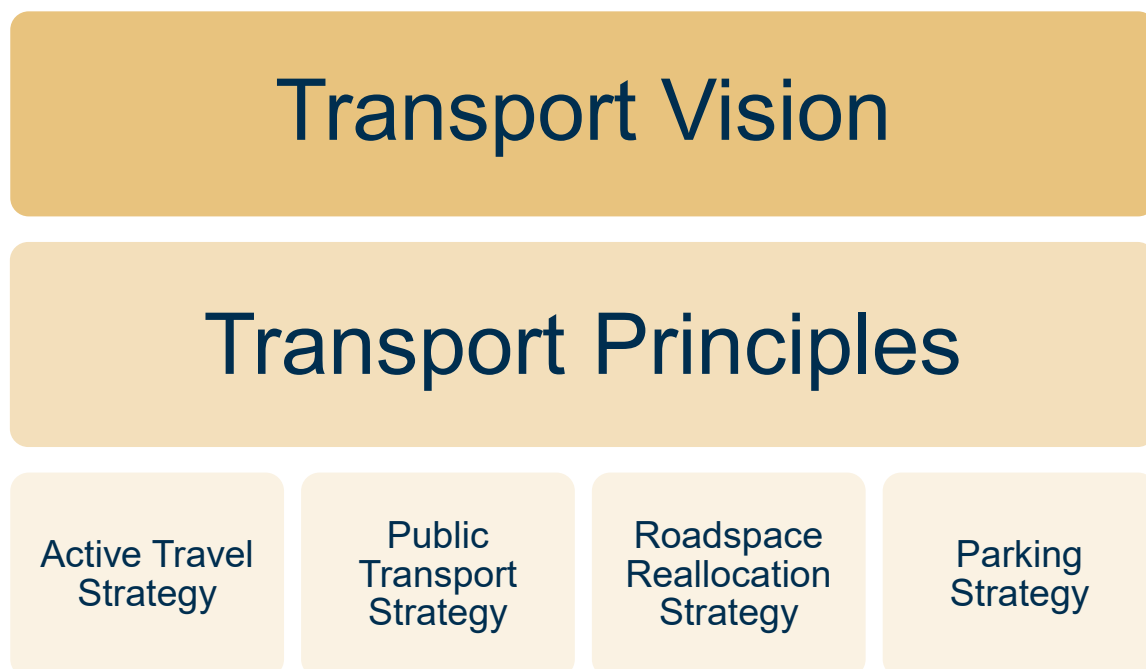
The Transport Vision for Growing Baldock applies a Vision-Led approach, which has been developed and refined through analytical research and extensive project experience. It is prepared in accordance with National and Local planning policy that seeks to ensure that development delivers sustainable transport, healthy lifestyles and lower environmental impacts. The Transport Vision has been agreed with NHC and HCC through extensive pre-application discussions.

The proposed vision for Growing Baldock is summarised as follows:

"Growing Baldock will be a place that prioritises quality of life over traffic movement. Walking, cycling and public transport will be a competitive mode of travel, with connections enhanced to key destinations, benefitting existing communities and businesses in the town. Through masterplan plan design, mix of uses and delivery of new infrastructure, the need to travel off-site will be reduced, with non-car options being the first choice when travel is required, encouraging active, healthy lifestyles."

This reflects the need to deliver growth differently, guided by a clear vision, and in a way that embeds active and sustainable travel, while being place and masterplan-led. The Transport Vision hierarchy is shown in **Figure 4-1**.

Figure 4-1: Transport Vision Hierarchy



4.2 Transport Principles

The Transport Principles have been developed to deliver the vision and key objectives for the development. These have been developed in reference to the site-wide principles for Growing Baldock, as set out in the Design and Access Statement prepared for the application, especially those relating to movement and access. Particular consideration has been paid to site wide principles relating to “sustainable transport priority”, “specific on-site interventions to facilitate Active and Sustainable movement” and “Street design and hierarchy”. The transport provision at Growing Baldock has been developed to ensure active and sustainable modes of transport are considered as a point of priority, delivering a development that has non-motorised access embedded as a key facet of the scheme.

The key objectives are set out below:

- 1 **Reducing traffic dominance** in Baldock will be achieved through proposals that reduce demand for car travel, paired with off-site improvements that manage existing traffic demand, including reducing through traffic, and interventions that prioritise active and sustainable modes of travel.
- 2 **Safe, direct and coherent networks for active modes** will be prioritised on- and off-site, connecting new and existing residents to employment, education, retail and leisure facilities, supported by mobility hubs, and interventions to reduce severance of existing infrastructure, including the rail line, A1(M) and B656.
- 3 **Delivering a green infrastructure network** that will incorporate and enhance existing walking, cycling and equestrian access, encouraging leisure journeys and connecting to the existing rights of way and greenway network.
- 4 **Prioritising buses above private vehicles** will be achieved by providing efficient routes that enhance connectivity, and high quality and accessible stops that maximise catchment, connecting the sites to each other, Baldock and other key destinations.
- 5 **Excellent access to rail**, supporting sustainable travel to wider destinations. This will be delivered through enhanced pedestrian and cycling connections to the station, particularly to the north of the rail line, ensuring the first stage of rail trips are made mostly by foot or cycle.
- 6 **Managing freight and logistics** within the site through the careful consideration of access, parking, loading bays and integration of mobility hubs will allow for efficient delivery of goods, as well as access by service and emergency vehicles.
- 7 **Reducing reliance on the private car** so that around 50% of all trips are made by other modes will be achieved by designing a movement network that ensures trips within the site are quicker and easier to make on foot, by bike or by public transport, and through applying progressive, connectivity-related and electric vehicle (EV) enabled parking standards.



by Haskoning

5 Vision-Led Transport Strategies

5.1 Overview

Four transport strategies have been developed to tangibly deliver the Transport Vision and Principles:

- Active Travel Strategy
- Public Transport Strategy
- Road Space Reallocation Strategy
- Parking Strategy

5.2 Liveable Neighbourhoods

A key objective of Growing Baldock is to create new 'Liveable Neighbourhoods' that aim to reduce car dependency and promote active and sustainable forms of travel through appropriate master planning principles and supporting initiatives and strategies. Additionally, through implementing the proposed development and through creation of improved connectivity, it is envisaged that the active and sustainable travel network will be improved for existing residents.

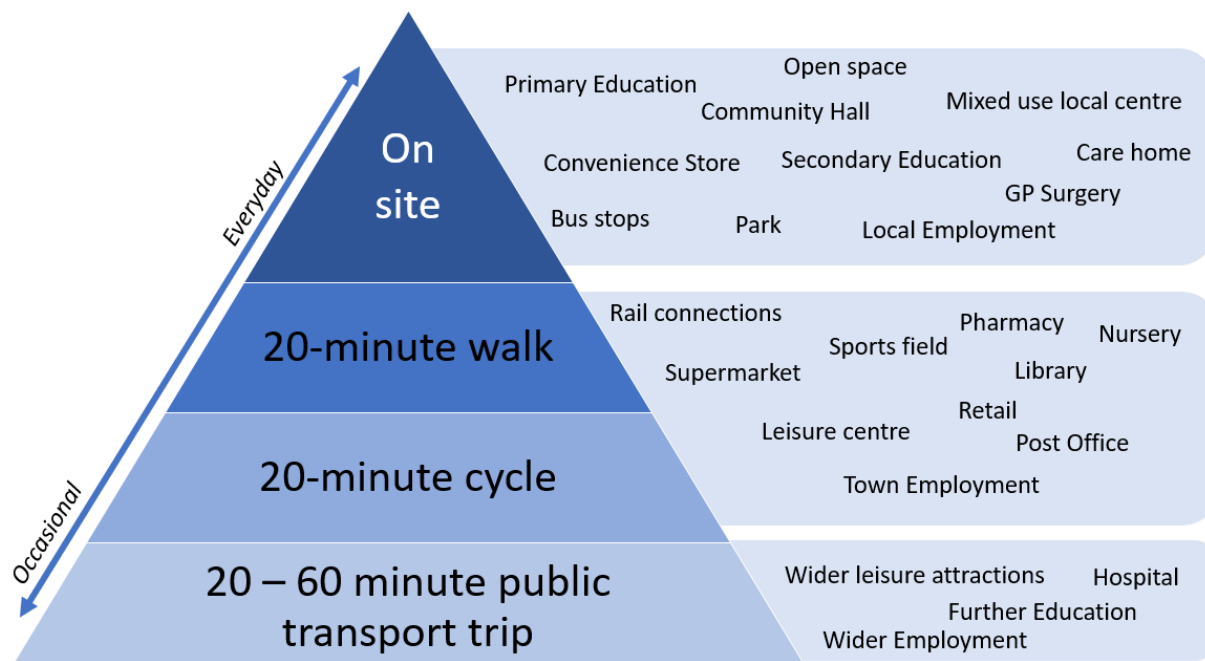
The delivery of Liveable Neighbourhoods builds on the principles of '20-minute neighbourhoods', '15-minute cities' or '10-minute towns', that are terms used to describe the concept of creating places where daily facilities and services are available to access within a short journey by foot, cycle or public transport. It centres around the improvement in quality of life for all and facilitating places where everyone can thrive without the need to own or use a car.

Nationally, 80% of journeys under a mile are made on foot, which usually equates to around a 20-minute walk (or seven-minute cycle). This means, that by locating more facilities / key destinations closer to homes, as well as designing according to the LTP4 user hierarchy and placing the movements of people (rather than vehicles) at the centre of the transport strategy and emerging masterplan design, more trips can be made by sustainable modes.

Baldock is a compact town and provides a range of facilities for existing residents, some of which will be used by those travelling from the development sites. While many everyday facilities will be provided on site, occasional facilities will be provided off-site.

Figure 5-1 Figure 5-1 sets out our interpretation of the everyday and occasional facilities needed to create a 20-minute neighbourhood in Baldock.

Figure 5-1: Illustrative Approach to Reviewing Future Accessible Facilities



This Transport Assessment demonstrates how the delivery of a 'Liveable Neighbourhood' is achievable through supporting master planning principles, which are set out in the subsequent chapters.

5.3 Active Travel Strategy

The active travel strategy is a vital element of the Vision-Led approach for **Growing Baldock**, that will deliver genuine travel choice in the town through ensuring walking and cycling are a realistic alternative to private-car use for a large proportion of typical daily trips. It will deliver cohesive connections between existing streets and the green routes that connect Baldock to the wider active travel network.

The active and sustainable mode strategy has been developed following significant baseline work to understand the policy and transport context for the site, existing transport provision, movements patterns, street conditions, road safety and review of local destinations and travel time catchments.

5.3.1 Defining the Core Off-Site network

The process for defining the core network and priority interventions was an iterative one. It considered:

- Key destinations – will the network connect key destinations and will people want to travel this way?
- Existing network quality – does the route sufficiently cater for walking and cycling already?
- Potential alternative routes – are there other, more appropriate, routes to connect to the destination?
- High level physical constraints – is there enough space to provide additional facilities if needed?
- Potential for managing traffic flows (speed and volumes) – is there a way to effectively and appropriately slow and/or reduce volumes of traffic to make the route safer and more attractive to active mode users?

Current design guidance was used during the development of the network, including LTN1/20 and designing for people trained to Bikeability level 2.

5.3.2 Key Destinations

The baseline analysis highlighted the potential of the development sites to offer new and existing residents a great range of facilities within a reasonable walking distance, including the existing High Street, education opportunities and wider transport links, namely the rail station. Journey time accessibility analysis was used to inform the key destinations alongside the analysis of movement patterns of internal trips via ANPR and mobile phone data.

From this analysis a set of key destinations and a corresponding 'area of focus' was identified, which would form the basis of the development of the active and sustainable modes strategy. These points are highlighted in **Figure 5-2** and included:

- Knights Templar School;
- High Street;
- Rail Station;
- BA10, including connections between sites.

Figure 5-2: Key destinations and areas of focus



5.3.3 Quality of Network and Constraints

Creating sustainable places is not just about being able to access facilities in a reasonable amount of time; route quality is also important to making the mode an attractive prospect for users, supporting safety and confidence along the route.

An audit of the quality of the existing network was undertaken and is discussed in **Chapter 3**. In summary the audit generally indicates that there is:

- Significant potential to make movements easier for cyclists due to the lack of existing on-street cycle infrastructure
- Several off-road routes are let down by the severance impact of key roads and poor surface quality
- A general lack of cycle parking in the town, beyond the High Street
- High volumes and speeds of traffic on certain routes, including higher volumes of HGVs
- Several instances of constrained footway widths, limiting the attractiveness of walking

5.3.4 Movement Network

The package of proposals set out will have a transformational impact on transport within the town, locking in positive travel patterns for new residents and giving the existing communities the opportunity to travel more confidently on foot and by bicycle if they wish. It will deliver on the key transport masterplan objectives set out in **Chapter 4**, which are:

- Reducing traffic dominance in Baldock
- Safe, direct and coherent networks for active modes
- Green infrastructure network
- Prioritising buses above private vehicles
- Excellent rail access
- Managing freight and logistics
- Reducing reliance on the private car

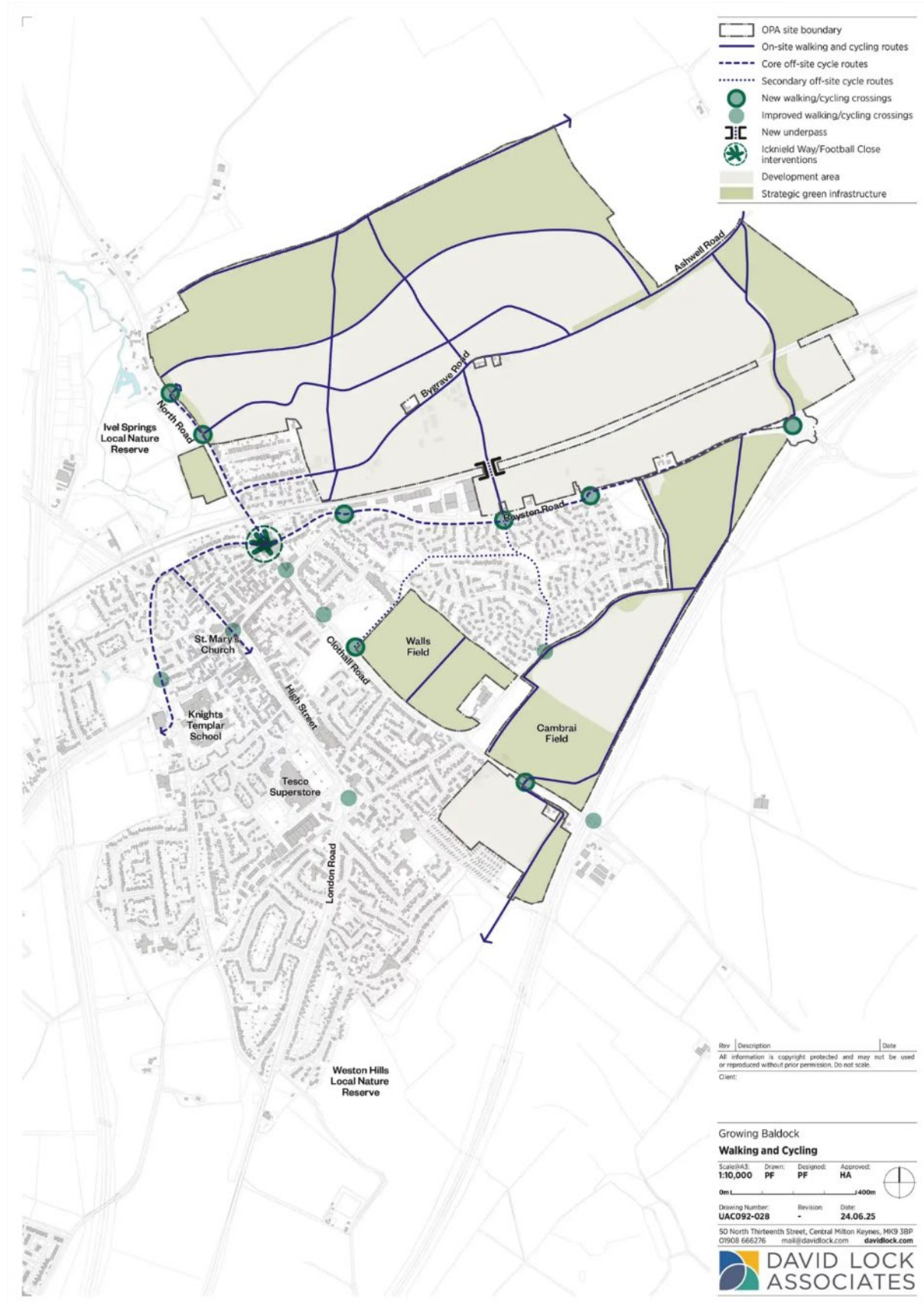
On the busiest roads – Station Road / North Road and Royston Road – segregated routes for cycling will be introduced, accommodated under the railway bridge on Station Road by traffic light-controlled shuttle working.

Where there is no space within the street for dedicated traffic-free routes, traffic volumes will be reduced to levels that most people will find comfortable for cycling or walking through the use of modal filters. Modal filters allow pedestrians and cyclists to move along a street while restricting general traffic, with benefits to air quality, safety and quality of life along residential streets.

Our proposals are focused on reducing long-distance trips while ensuring local trips remain possible. This includes Icknield Way (west of Station Road), Football Close and Bygrave Road. A traffic-free cycling route along the section of Yeomanry Drive will run parallel with Royston Road, with new crossings connecting to two new routes across the railway line and on to Icknield Way East for a low-traffic route to the railway station and town centre.

A summary map of the on- and off-site movement network is set out below and shown in **Figure 5-3**.

Figure 5-3: Summary network map



Proposed new links include the following, which are indicated in the Parameter Plan (drawing number UACO92-002) prepared by David Lock Associates. These developments are located within the sites redline boundary.

1. Railway Overbridge

- Designed to include a dedicated, segregated route for pedestrians, cyclists and equestrian users, as well as motor vehicles.
- Will reduce severance between BA1 and BA10 which exists as a result of railway line. This will in turn help to reduce journey distances and promote active modes.
- Will provide greater resilience to the local highway network and allow road space reallocation on the Station Road corridor.

2. Active Travel Underpass

- Active travel crossing in the form of an underpass, providing a dedicated route across the railway line for cyclists and pedestrians, connecting BA1 and BA10, as well as BA2 and BA3 via Clothall Common.
- Will provide a direct route between the majority of houses on BA1 and BA3 – a potential location for a future secondary school, supporting active travel.

3. Bygrave Road

- Bygrave Road will be closed to through motor traffic and converted to a low-traffic active travel greenway through BA1. Access to Bygrave from North Road will be provided via the new internal roads in BA1 prior to any closure of the existing road.
- Access to existing properties will be maintained through new connections between sections of Bygrave Road and the new internal road network.

Off-site enhancements to existing links (including at development accesses) include the following:

4. Royston Road Corridor

- Continuous segregated footway and cycle track along Royston Road, which acts as a significant improvement to existing provision (see **Figure 3-5**), and providing local dedicated cycle infrastructure, which is currently missing within the locality. The segregated route will connect into the proposed multi-modal railway overbridge and active travel underpass, improving connectivity in a north-south alignment across Baldock.
- Controlled crossings will facilitate pedestrian and cyclist north-south movements across Royston Road, facilitating connections between sites BA1 and BA10 and Clothall Common.

5. North Road / Station Road Corridor

- Dedicated segregated cycle route to be provided, giving cycle connections to the north of Baldock. This connection will tie into the proposed footways and cycle lane within site BA1, providing a seamless connection between the proposed development and Baldock railway station.
- Two new signal-controlled crossings and one new uncontrolled crossing will be provided on North Road to reduce severance and promote access between BA1 and existing public rights of way to the west. This will form part of the proposed Baldock Greenway.
- Closure of the eastern ends of Icknield Way and Football Close will create a low-traffic continuation of the cycle route towards the town centre and Knights Templar School. It will also increase pedestrian space close to the entrance of the railway station.

5.4 Public Transport Strategy

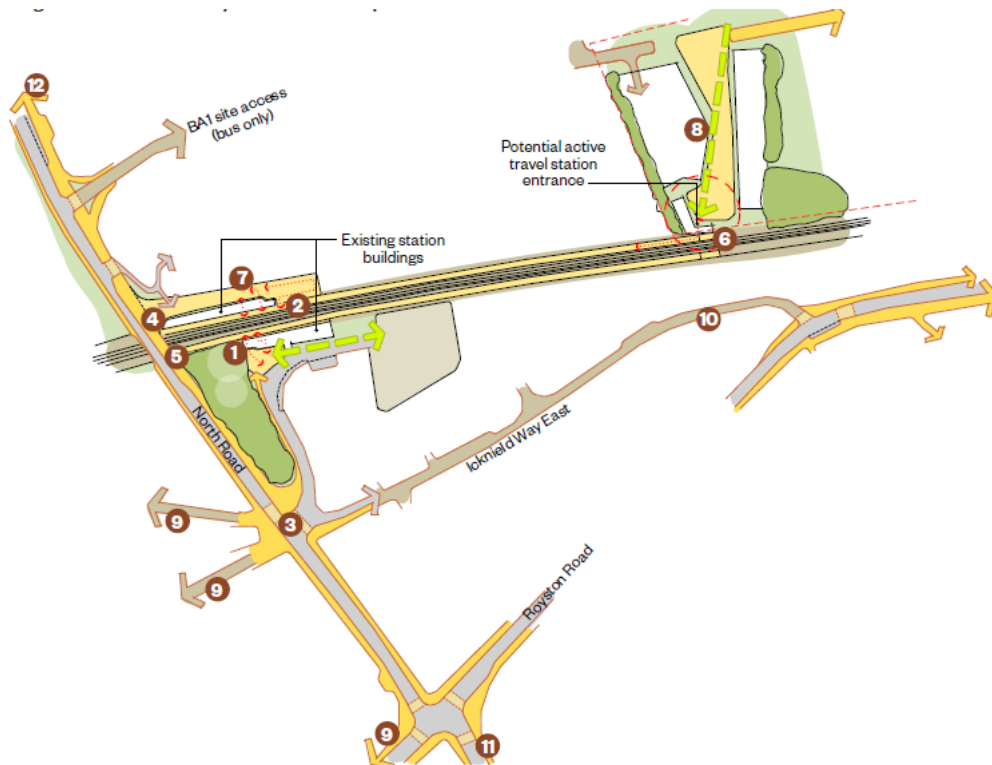
The development sites are well located to provide strong connections to the rail station, town centre, schools and each other. This section sets out proposals for public transport, taking into account movement patterns within the town and the key destinations.

5.4.1 Baldock Railway Station

The proposals to create high-quality connections to the existing railway station from the development sites are aimed at delivering sustainable transport mode share in Baldock. They would enable quick and high frequency journeys towards London, Cambridge and other towns. Currently the environment around the station presents a poor environment for arrival and the connection between the station and the town centre is poor.

Access to the existing railway station is proposed to be enhanced through a series of targeted improvements, including enhanced public realm at Station Road, the reopening of pedestrian access from North Road (north of the railway bridge), and the creation of a new pedestrian link to the north platform from BA1. Accessibility is proposed to be improved throughout the station. Potential options to achieve accessibility, which are subject to further discussion with Network Rail, are presented in **Figure 5-4**.

Figure 5-4: Baldock railway station indicative improvements



Source: Design and Access Statement, DLA

5.4.2 Local Buses

While the town is served by bus services, they are generally low frequency. There is no bus priority within the town, and the Whitehorse Street junction is a source of congestion, delaying buses as well as general traffic.

A key element of the public transport strategy is to develop an attractive, legible and frequent service that they will have advantage over the private car, with services operating at an aspirational 'turn up and go' frequency. The proposed service is intended to give future residents and employees a real alternative to car ownership.

A new shuttle bus – the 'Baldock Flyer' – will provide quick and frequent (up to four bph) connections between Baldock Railway Station, development sites, including new employment and the town centre. The shuttle bus will tie the development into the town centre, encouraging footfall for the high street. The additional public transport link through Baldock town will also be available to existing Baldock residents and provide connections to the proposed employment and services within the Growing Baldock sites.

A visualisation of how the shuttle bus and rail services are envisaged to work together is presented in **Figure 5-5**. The bus will follow a circular one-way route between Baldock Rail Station and the sites.

Figure 5-5: Public Transport Strategy - Overview



The proposed route of the shuttle bus is indicated in **Figure 5-6**. The plot shows the extensive coverage of the site and the benefit of the service to existing residents and businesses in Baldock.

As a proposed high-frequency service, the proposed routing has been balanced to capture the greatest density population, whilst maintaining a direct routing. This limits the number of buses needed to provide a higher frequency and therefore ensures greater likelihood of sustained commercial viability following an initial period of likely subsidy.

Bus priority will be provided at the Whitehorse Street junction, Station Road and North Road through the use of intelligent traffic signals. At Royston Road a new bus gate will be provided to allow bus access to Yeomanry Drive. This will help give journey time advantage to buses, offering a reliable and direct alternative to the car for new and existing residents.

The shuttle bus will need to be delivered in phases, since the full loop relies on the availability of the proposed multi-modal railway bridge. Initial housing delivery will have access to enhanced bus services through the reinforcement of existing services or an interim operation of the shuttle bus on a curtailed route. The accessibility of bus services is essential to enable the desired public transport mode share, although calculations have reflected a staged uptake over the initial years as the service is improved.

Figure 5-6: Proposed Shuttle Bus Route and Existing Services



5.4.3 Mobility Hubs

Mobility Hubs bring together a range of transport options in one place, to make travelling without a private car easier. They help facilitate multi-modal trips by making interchange as easy as possible. They help make the 'first and last mile' of trips by public transport easier. A network of mobility hubs will be provided across the development sites and, due to the detailed internal layout not being provided at outline stage, will be secured in subsequent reserved matters applications.

Figure 5-7 has been produced by CoMoUK to communicate the various aspects that can be considered for inclusion in a Mobility Hub.

Figure 5-7: Schematic Mobility Hub



Source: CoMoUK

The network will contain a hierarchy of hubs, with the highest-level community hubs being in the busiest locations and incorporating the widest range of facilities. The most local street level hubs may only contain more basic facilities.

A potential hierarchy is set out below:

- **Community** - Placed centrally in a community, such as at the local centre, the hub could incorporate a range of facilities including bus stops, cycle and scooter hire, cycle parking, car club spaces, cycle repair, shopping pick up/ drop off lockers and EV charging points. Community hubs are the largest hubs, not only delivering space for a range of modes but also benefitting from the high place function of their surroundings in a local centre.
- **Neighbourhood** - Providing features such as bus stops, cycle and scooter hire, cycle parking, car club spaces, shopping pick up/ drop off lockers, and EV charging points, neighbourhood hubs are placed at natural neighbourhood hotspots such as key junctions, playgrounds or parks.
- **Street** - Incorporates features such as bus stops, cycle and scooter hire, cycle parking, car club spaces and EV charging points, street hubs are smaller and build up the network of mobility hubs throughout the town. Their smaller scale allows there to be a greater number, provided closer to people's homes, where different uses are less dense.

5.5 Road Space Reallocation Strategy

The highway design strategy has been developed in consideration of the Transport Vision for the Site, with the various accesses to the Site and movements within the Site considered in relation to the Transport User Hierarchy set out in Policy 1 of the HCC LTP4.

Key to the delivery of the overarching vision and objectives is the shift of appropriate journeys away from private vehicles and towards walking, cycling and public transport. Not all journeys will be achievable without a private vehicle therefore it will always be possible to access all areas of Baldock by car, however routing may be amended to provide more favourable conditions to sustainable modes and to discourage through traffic and rat-running.

There is existing traffic congestion within Baldock at peak times, worsened by through traffic that does not stop in the town. The package of measures proposed would encourage through traffic to stay out of the town centre, particularly changes to the Whitehorse Street junction and the North Road corridor. Much of the through traffic is seeking to avoid congestion at junction 9 of the A1(M), therefore the strategy also proposes capacity increase at this junction to mitigate changes in Baldock and encourage people to stay on the strategic and main road network for longer rather than using Baldock as a cut through.

Led by a vision to see a significant increase in the share of trips by sustainable modes amongst new and existing Baldock residents the measures would reallocate road space to walking, cycling and public transport in a balanced way, while accommodating additional vehicle trips from development.

5.5.1 Indicative and Detailed Design

Drawings have been prepared to show a full package of designs that demonstrate the overarching strategies. As this is an outline planning application, not all areas are being sought in detail. The following junctions are being sought in detail and are therefore provided as standalone drawings within the planning application:

- Two junctions with North Road (general access and bus only),
- Access junction with Clothall Road, and
- Access from A505.

The remainder of the design elements are expected to be secured via reserved matters, or will be off-site works secured by planning condition or obligation. Where designs are only provided indicatively at this stage it is likely because of one or more of the following reasons:

- There is uncertainty over the final use of a site or parcel and therefore flexibility is required to change the form of access or how the network will tie in
- There is additional consultation required separate to a planning application, e.g. speed limit reduction or road closure
- There is uncertainty about when or whether an off-site intervention will be required

Commentary received through the consultation process to date has been captured and will be taken through to detailed design at later stages. Whilst some detail is only shown indicatively, a useful exercise has been undertaken at this stage.

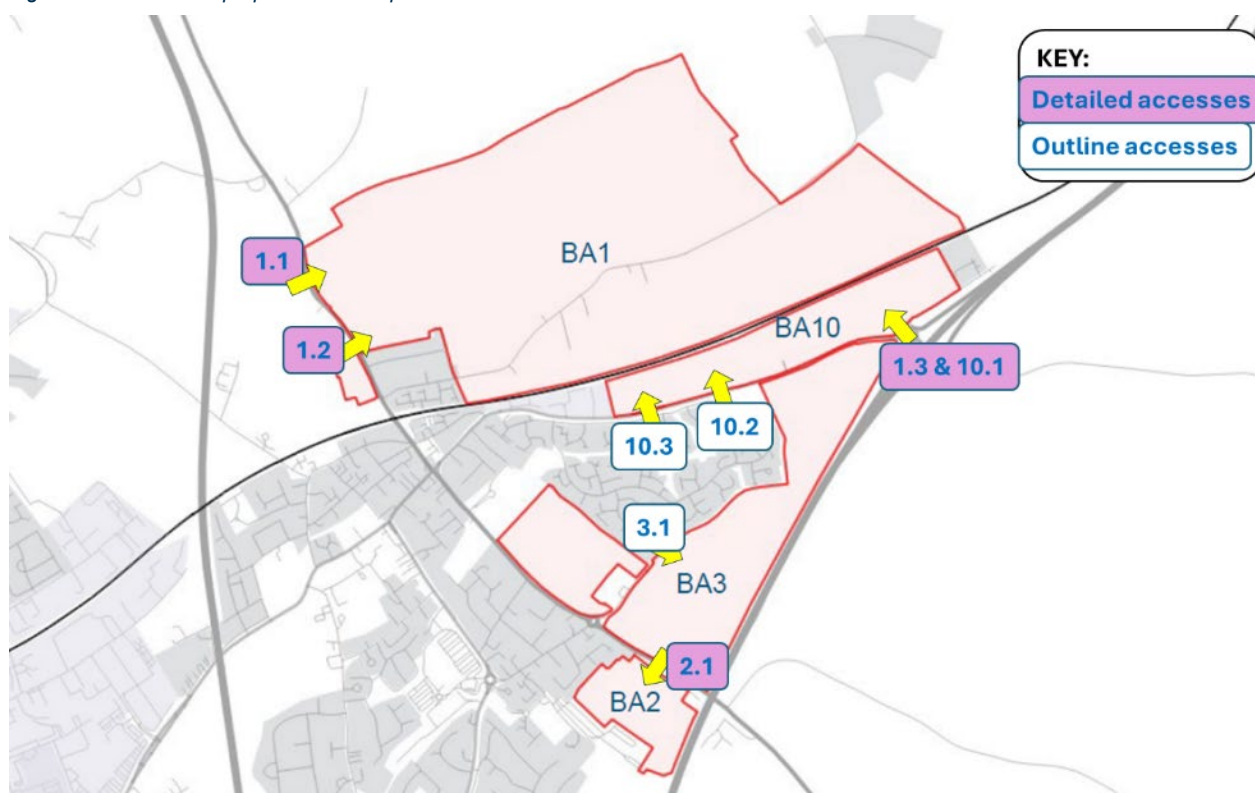
A Stage 1 Road Safety Audit was completed on an earlier design iteration, and the resulting recommendations, where relevant, have been incorporated into design changes made subsequently. The full Road Safety Audit report is included, alongside the designer's response, in **Appendix D**.

5.5.2 Site Access

The access strategy for the proposed development has been developed with consideration of the proposed land use of each site. The proposed access points to each site are indicated in **Figure 5-8** Location of proposed access points, with the individual access points described below. These are the locations shown in detail at outline planning stage. The associated drawings are included in **Appendix E**.

The access junctions have been designed to accommodate all movements associated with the site. Significant focus has been given to pedestrian, cycle, equestrian and bus needs. Junction modelling has been undertaken as part of this assessment to demonstrate the operation of the package of interventions. All proposed site accesses are located on-Site.

Figure 5-8 Location of proposed access points



Plot BA1

1.1

- New signal junction with ability to gate southbound traffic flows. In periods of congestion this will give priority to the BA1 access road to 'nudge' drivers from using the Station Road corridor for through-trips. It will also hold southbound traffic back from causing gridlock further south on Station Road and therefore offer improvements to local junctions and residents fronting the street.
- Signalised pedestrian crossing of North Road and BA1 access road.
- 3.0m shared path providing a continuous route from 1.2 (for those who have not entered BA1 further south).

1.2

- New signal junction offering bus-only access to BA1 from North Road (south). A separate right-turn lane for buses allows the signals to run on demand, allowing the primary north-south cycle route to be maintained on green unless a bus is detected, minimising delay.
- 3.0m cycle track and 2.0m footway continuing from Station Street and entering BA1.
- Access to existing properties and public rights of way maintained and improved with new signalised crossings of North Road and the bus gate.

Plot BA2

2.1

- Simple priority site access junction with Clothall Road, incorporating a raised table for traffic calming and signalised crossing to integrate with a new footway along the north of Clothall Road, linking to existing footways at the Wallington Road roundabout and proposed traffic-free links to BA3.
- Treatment of Clothall Road to include the removal of centre lines, lane narrowing and banding to encourage lower vehicle speeds and create a gateway to Baldock.
- A 3.0m and 2.0m shared footway/cycleway will be located on the northern and southern sides of the access to BA2, respectively. This infrastructure will connect with the proposed 3.0m shared route located along the northern side of Clothall Road, via the signalised crossing.

Plot BA3

3.1

- The form of BA3 access is to be determined subject to future confirmation of land use.

Plot BA10

10.1

- Enlarged roundabout junction of A505 and Royston Road with priority or signal-controlled junction to eastern extent of BA10 (depending on eventual use and trip generation).

10.2 & 10.3

- Indicative accesses along Royston Road as one priority and one signal-controlled junction, incorporating signalised pedestrian and cycle crossings.

5.5.3 Big Moves

In addition to the access points to the individual sites, a series of junction improvements and amendments are proposed in association with the development. Where necessary, as part of the overall vision, road schemes have been developed with priority given to local users and existing trips, to maintain the Transport Vision for the proposed development. Road space reallocation is prioritised on roads mostly used for existing trips within Baldock and trips directly onto the strategic road network.

5.5.3.1 BA1 Access Road (North Road to Bygrave Road and Royston Road)

A key aspiration for the Baldock development is to remove through vehicular traffic from Baldock Town Centre. One of the key aspects to achieve this will be a new road connecting North Road and Royston Road, at the junction with the A505. This new road will include the proposed overbridge crossing the railway line, which will be used by all modes of transport. It will also include a connection to Bygrave, as an alternative to Bygrave Road. The new road will deliver a high-quality environment for all modes of transport, including dedicated footways and cycleways to encourage modes of active travel, and facilitating bus routes to improve the local provision of public transport (see **Section 6.2.4**). The indicative location of the new access road is indicated in **Figure 5-9**.

The analysis suggests that a new high-speed link road through BA1 would not remove significant volumes of traffic from the town centre, while being likely to draw new trips off the major roads, increasing overall traffic volumes. A new slow-speed access road into the development will be fronted by buildings, footways and a separate cycle path, and will connect the A507 to the A505. This, combined with the proposals at the Whitehorse Street junction, will help take some traffic out of the town centre.

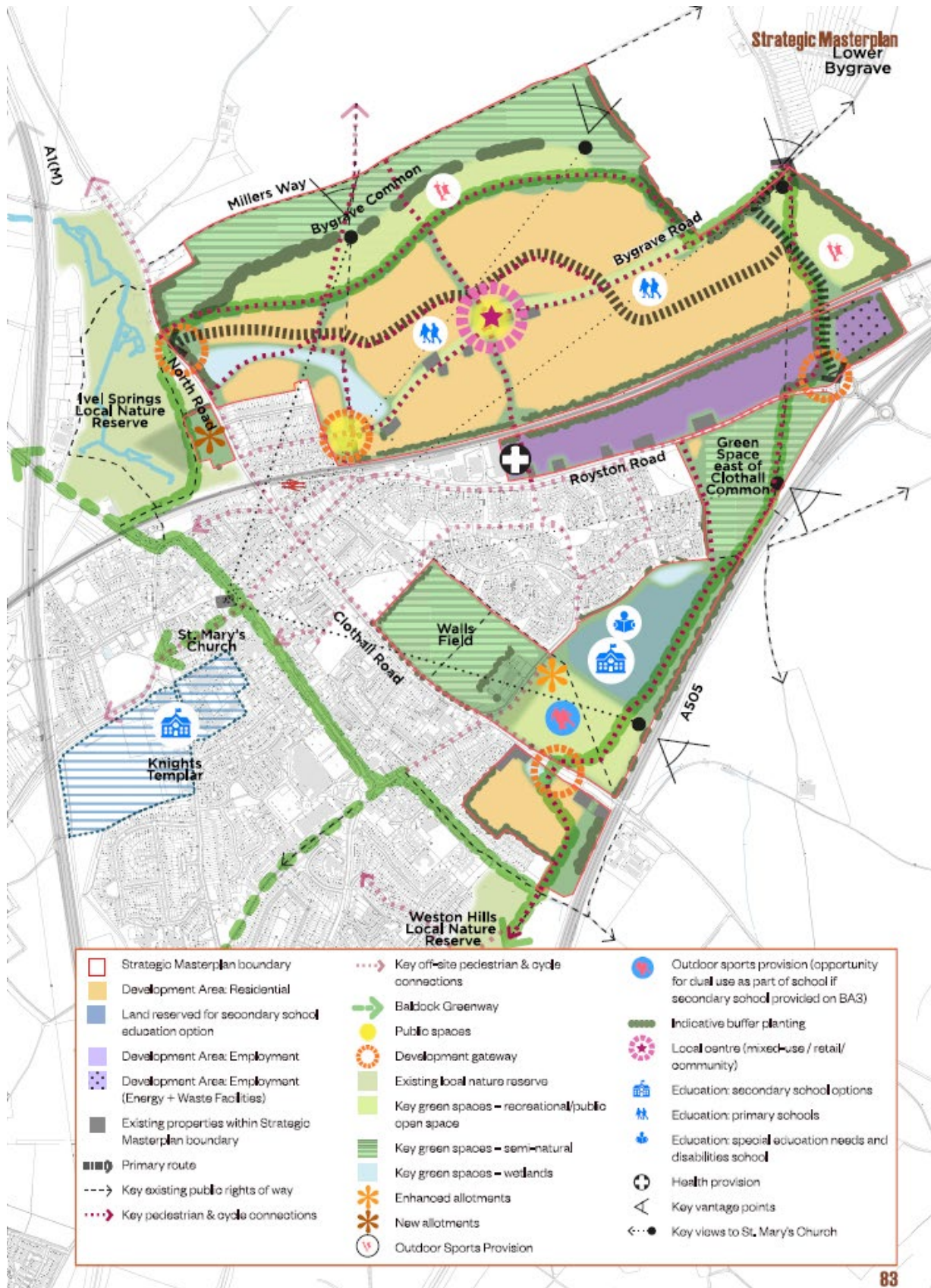
This road will replace Bygrave Road as the primary access to Bygrave village from North Road and the A505, allowing Bygrave Road to be retained for local access to properties while delivering a walking, wheeling and cycling greenway. In combination with proposed improvements on North Road, this will create a safe route between Baldock town centre, railway station, the proposed development and Bygrave village. It will provide for easier access to the A505 than currently exists from Bygrave.

In the context of the above the new link through the BA1 allocation and bridge over the railway represents an opportunity to deliver a much-improved link specifically designed to accommodate the strategic trips and move vehicular traffic out of the town centre. This in turn offers the opportunity to reallocate the available highway space within the town to strike a better balance between active, sustainable and vehicular travel.

In terms of connections to key destinations in the town the new link between the A507 and the A505 also offers a more appropriate and direct route to the new employment area at BA10 as well as a more direct link between the A505 and A507, removing through traffic from the centre of the constrained town centre, avoiding the crossroads and low bridge.

Additionally, the access road aligns with Neighbourhood Plan policy which requires any new development to improve pedestrian and cycle access between Bygrave and Baldock, through a new footpath and cycleway using the route of Bygrave Road/Ashwell Road.

Figure 5-9: New Access Road



5.5.3.2 North Road / Station Road Corridor

Whitehorse Street Junction

The Whitehorse Street junction is characterised by a constrained carriageway and narrow footways. It is necessary to discourage cars, vans and lorries from routing through Baldock as a shortcut in order to support the proposed road space reallocation. The new junction design is simplified to create wider footways, direct pedestrian crossings and safer vehicle movements. This will make it easier and more pleasant to access the town centre from the railway station and growth areas by walking and wheeling.

To provide better operation of the junction and to protect the tight corner radii and historic overhanging building, it is proposed to ban the north-east turn from Station Road to Royston Road, and the opposite east-north movement from Royston Road to Station Road. Vehicles will instead be able to use the new BA1 access road. This will reduce the amount of traffic on Royston Road and Station Road, allowing the junction to operate more efficiently.

The banned turns at Whitehorse Street Junction would only come into effect once the BA1 access road is built in its entirety, so at no point would routes through Baldock be unavailable as a result of the proposed development. The nature and timing of these interventions will be set out in the planning framework (through s.106 obligations), with money allocated to the interventions, and for reviewing and responding to any challenges that arise. The proposed turning restrictions at Station Road / Whitehorse Street have been devised as a potential mitigation measure and are considered unlikely to be required.

One-Way Shuttle Working Under Railway Bridge

The limited width of the Station Road railway bridge means the existing footways are narrow and there is no space for a high-quality cycle route. Station Road is also used as a through route for lorries and cars trying to move between the A1(M), Letchworth and the A505. This means there are regular bridge strikes and additional traffic along Station Road at peak times.

The proposals above will reduce traffic on Station Road, moving traffic onto roads outside Baldock. As such, it is proposed that the carriageway under the rail bridge is narrowed to one lane, controlled by signals with timings linked to junctions along Station Road and North Road. This would encourage fewer lorries and cars to use this route, reducing bridge strikes, as well as providing more space for pedestrians and cyclists.

These proposals are part of the holistic strategy to reduce through traffic, encourage greater use of walking, cycling and public transport.

5.5.3.3 Royston Road Corridor

The Royston Road corridor will see a number of changes, including new signalised and uncontrolled crossing points, access junctions to BA10 and a proposed bus gate to allow bus services to access Clothall Common. Treatment of the road including narrowing, rumble strips and a raised table at the access junction is proposed to encourage lower vehicle speeds and to further support the existing environmental weight restriction.

Connection to the proposed BA1 access road at an enlarged A505 roundabout will add redundancy to the network and offer a better route for vehicles that currently travel through Baldock to access Bygrave and other villages, helping to remove traffic from Royston Road and allowing for the proposed pedestrian and cycle infrastructure.

5.6 Parking Strategy

A key component for ensuring high levels of active and sustainable mode share is the careful management of car parking, both in terms of the level of car parking provision and how and where it is provided. Early consideration has been given to local car ownership levels and NHC's adopted car parking standards in developing the principles of a parking strategy. The parking strategy will be refined through Design Coding and Reserved Matters applications, as relevant.

5.6.1 Car Ownership

Census 2021 Car ownership data show car ownership levels above the national average in Baldock. Of all households, 85% own at least one car, compared with 76.5% nationally. **Table 5-1** shows that the largest proportion of households own one car (or van) and that the average number of cars per household in Baldock is ~1.4.

Table 5-1: 2021 Census Car Ownership Data

Category	Baldock
Population	4,680
No cars or vans in household	15%
1 car or van in household	45.4%
2 cars or vans in household	29.5%
3 or more cars or vans in household	10.1%
Average Cars per Household	~1.4

5.6.2 Vehicle Parking at New Developments Supplementary Planning Document

NHC's 2011 Vehicle Parking at New Development Supplementary Planning Document (SPD) presents parking as part of NHC's vision of being a "vibrant place to live and prosper". It acknowledges that whilst parking has a role in promoting sustainable travel choices in most locations, demand management through parking is just as important at the trip destination as at the trip origin (i.e. at home).

The baseline residential parking standards in the SPD are shown in **Table 5-2**.

Table 5-2: NHC Parking SPD Residential Standards

Dwelling Size	Minimum Car Parking Standard	Additional Visitor Parking
One bedroom	1 space per dwelling	0.25-0.75 spaces
Two+ bedrooms	2 spaces per dwelling	0.25-0.75 spaces

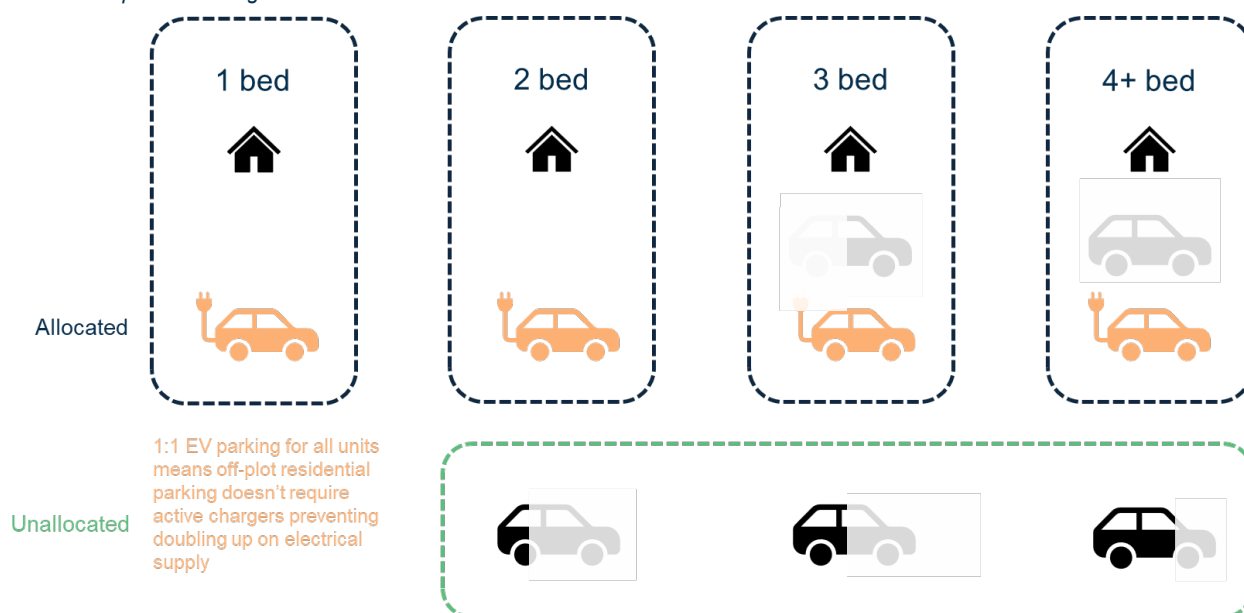
The SPD permits reductions in parking provision below these minimum standards for development within zones with good public transport access, identified by connectivity mapping. On the mapping, the application sites are located within a 30-minute walk of Baldock railway station and the town centre, qualifying them for potential reductions of 25%-50% from NHC's baseline standards.

5.6.3 Proposed Residential Parking Provision

The parking strategy for the proposed dwellings would provide parking below NHC's minimum standards, as presented in **Table 5-2**, which aligns with the connectivity approach presented in the NHC SPD and is consistent with the Transport Vision for the proposed development. This can be delivered alongside smart and flexible parking design, i.e., it is not proposed to use suppression of parking provision alone to manage demand. Parking provision and design forms part of the package of sustainable transport measures that will provide genuine travel choice and manage travel demand.

The approach to parking provision is illustrated indicatively in **Figure 5-10** and explained below.

Figure 5-10: Proposed Parking Provision schematic



Building Regulations Approved Document S requires a 1:1 ratio of EV parking spaces to residential dwellings. Therefore, all proposed dwellings will have access to one allocated EV parking space, either on-plot or, in the case of apartments, likely in a shared parking area. For the smaller one and two-bedroom dwellings, this would likely represent the only on-plot/allocated parking provision. Four-bedroomed (or larger) dwellings could have two on-plot parking spaces.

We expect the remaining parking demand for all dwellings would be provided as unallocated parking, for example on-street in parking courts, parking laybys, or as parking barns more distant from frontages. For each three-bedroom unit, around 0.5 unallocated parking space per unit could be provided, and up to 1 unallocated space could be provided per four-bedroom unit.

Whilst this has not been the conventional way of designing new residential developments to-date, a wide body of research confirms that providing parking through unallocated spaces is more efficient than providing allocated and / or on-plot parking. This relates to the (non-linear) relationship between car ownership and parking provision¹, and to how provision is utilised between households with varying car ownership².

¹For example, research collected across 400 housing schemes in Kent <http://www.spacetopark.org/go/research/the-kent-data>

² Whilst some households own multiple cars, some may own one, or none. A household with one vehicle will not regularly make use of two allocated parking spaces, and so this space, especially when provided on a driveway, is wasted. Where the additional space is provided unallocated on-street, it can be used by a household which owns multiple vehicles.

Table 5-3 summarises the indicative residential parking provision at the sites. This provides a more flexible approach to the SPD, but still aligns with policy in that the SPD allows for reductions in well-connected areas. It is envisaged that different areas of the sites will provide differing levels of parking with differing design responses, within the envelope of provision set out in **Table 5-3**.

Table 5-3: Indicative Residential Parking Provision

Dwelling Size	Maximum Allocated Parking	Maximum Unallocated Parking
One bedroom	1 space per dwelling	0 spaces
Two bedrooms	1 space per dwelling	0.25 spaces
Three bedrooms	1 space per dwelling	0.5 spaces
Four + bedrooms	1 – 2 spaces per dwelling	0.75 – 1 spaces

The above provision results in a ratio of parking spaces (allocated and unallocated) per dwelling of between ~1.4 and ~1.7 parking spaces per dwelling, depending on how many spaces are provided on and off-plot for the largest (4+ bedroom) homes.

5.6.4 Proposed Non-Residential Parking Provision

As with residential parking provision, parking provision for non-residential purposes may reflect the location of the application sites near the town centre and public transport interchanges, as identified by NHC connectivity mapping. As a result, parking could be provided at a rate of up to 25% lower than the standards for non-residential land uses.

In addition, all non-residential parking would be provided with the appropriate proportion of EV charging spaces. This will be determined by a confirmed use at reserved matters stage.

5.6.5 Parking Design

The approach to parking design will be led by the placemaking aspirations of the Transport Vision and the need to provide flexibility and future proofing. The amount and design of parking across the site will be driven by the desire to create attractive active streets which put people movement first. The masterplan and street hierarchy set out in Design Codes will inform the layout and distribution of parking, with a variety of designs to suit the housing and street typology.

The core parking design principles relevant to the proposed development are illustrated in **Figure 5-11**.

A key benefit of the use of unallocated car parking is the potential to repurpose spaces if they become surplus to requirement, for example if mode shift is particularly successful or there are changes in general travel trends. This would not otherwise be possible with wholly on-plot parking.

Figure 5-11: Parking Design Principles



5.6.6 Car Club

The aspirations for reduced car ownership will be supported with the introduction of a car club to support the development. New residents will be provided with introductory paid car club membership to encourage residents to use the scheme, as part of a package of travel planning measures.

Car clubs have the potential to support lower car ownership, by either providing access to a vehicle for households without a car or supporting the reduction of vehicles in multi-car households.

Several studies recommend access to car clubs for these occasional or harder to make journeys (for example where public transport is unavailable for the route or time of day or where heavy / awkward objects need transporting) which are infrequent enough that a second car may not be needed all the time.

Research by CoMoUK in their report “*New developments and shared transport: cutting car dependency*”³ suggests that “*each car club vehicle can on average replace 18 private cars*”. Their Car Club Annual report 2021 goes further in suggesting that one car club vehicle can take up to 20 private cars off the road, estimating the replacement of 116,811 vehicles across the UK. However, the studies suggest that car club membership was not the only reason for giving up the car, and it is likely that factors such as moving house also played a part in people making such lifestyle decisions.

³ *New developments and shared transport: cutting car dependency*, www.como.org.uk, February 2022

6 Growing Baldock

6.1 Development Overview

The Growing Baldock development comprises of the allocation sites BA1, BA2, BA3 and BA10 in Baldock, Hertfordshire, as set out in North Herts Council (NHC) Local Plan. The locations of the four land allocations are indicated in Figure 1-1, and the proposed development is shown in **Figure 6-1**. The proposed development schedule is set out in **Table 6-1**.

Figure 6-1: Growing Baldock Development Site

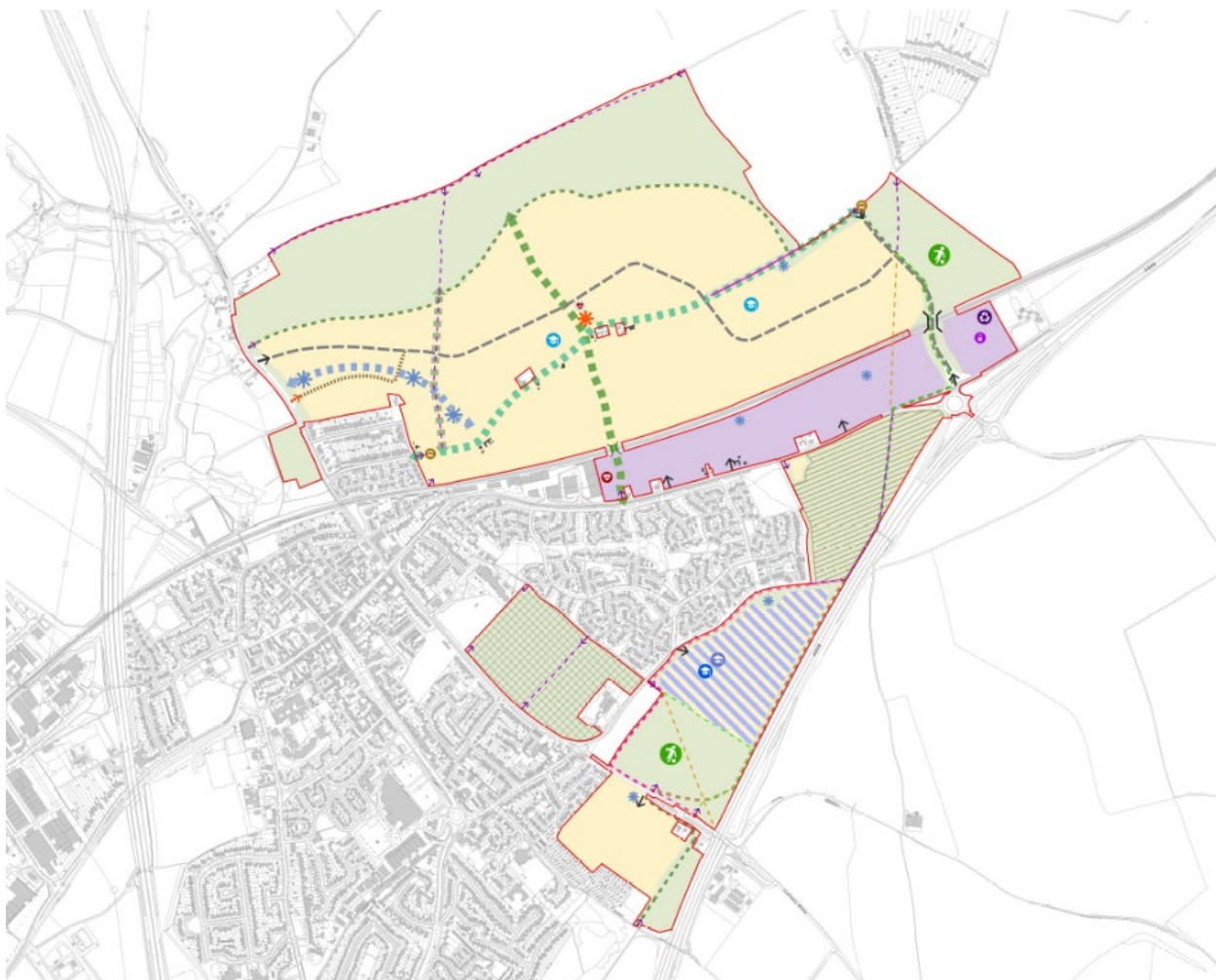


Table 6-1: Schedule of Land Uses by Plot (2040 full development)

Land Use Type	Land Use (TRICS)	Floorspace	Dwellings	Other
BA1				
Dwellings	C3		2,750	
Shops	A1-A3	700 m ²		
Financial & Professional Services				
Restaurants & Cafes				
Drinking Establishments	A4-A5	800 m ²		
Hot Food Takeaways				
Office	B1(a)/ B1(b)	550 m ²		
Hotel / Residential Institutions	C1-C2	3,500 m ²		
Leisure	D2	1,150 m ²		
Pub	Sui Generis	750 m ²		
Education – Primary School	F1			2no. 3-form
Community	F2	500 m ²		
Nursery	E(f)	550 m ²		
BA2				
Dwellings	C3		Circa. 200, with scope for up to 250	
BA3 (Option 1)				
Education – Secondary School	F1			1no. 12-form
Education – SEND School	F1			150 pupils, 50 staff
BA3 (Option 2)				
Dwellings	C3		248	
Education – SEND School	F1			150 pupils, 50 staff
BA3 (Option 3)				
Dwellings	C3		86	
Education – Secondary School	F1			1no. 5-form
Education – SEND School	F1			150 pupils, 50 staff
BA10				
Medical Centre	E	6,000 m ²		
Waste transfer station and Vehicle Depot	B2	1.4ha		
Office	E	20,000 m ²		
Light Industrial	E	26,500 m ²		

Land Use Type	Land Use (TRICS)	Floorspace	Dwellings	Other
Industrial	B2	26,500 m ²		
Gym	E(d)	5,000m ²		

Site BA2 has accommodation for up to 200 homes, and there are considerations that this site could encompass up to 250 homes in full delivery.

The flexible land use on BA3 will comprise one of the following three options:

Option 1 – Knights Templar expansion and relocation to BA3

- Relocation and expansion (up to 12FE) of Knights Templar school to BA3. BA3 to accommodate SEND school and secondary school

Option 2 – Knights Templar expansion

- Expansion of Knights Templar on existing site (up to 10FE). BA3 to accommodate SEND school and residential (c. 250 units)

Option 3 – Additional secondary school on BA3

- Provision of additional secondary school (up to 5FE) on BA3. BA3 to accommodate SEND school, secondary school and residential (c.90 units)

Therefore, the options differ in terms of the ratio of educational provision to residential provision. All three options have been assessed in the trip generation undertaken within this Transport Assessment, and subsequently the option with the highest and lowest trip generations have been carried forward into the modelling scenarios – Option 1 and 2.

6.2 Illustrative Masterplan

An Illustrative Masterplan has been developed to identify the indicative land uses of each land allocation site. This is shown in Figure 6-2, and included at a higher resolution in **Appendix F**.

The Illustrative Masterplan is an indicative representation of how the development could be delivered under the Parameter Plan that will be secured by an outline planning permission.



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Figure 6-2: Illustrative Masterplan (David Lock Associates)



6.3 Development Phasing

The development is currently anticipated to be delivered in four broad phases, which include the following elements:

- **Phase A** – Development is likely to start with BA2 as it is a discrete parcel that is less reliant on off-site infrastructure or significant changes to the highway network.
- **Phase B** – Phase B, which will commence at the same time as Phase A, is proposed to begin on BA1 from the west, linking to Royston Road with two new junctions. This phase will also include the initial delivery of BA10, including elements such as health services and employment.
- **Phase C** – It is proposed that the development of BA1 would continue to extend the form created in Phase B and the multi-modal bridge and pedestrian and cycle underpass would be delivered. This would ensure a continuity in infrastructure linking the development to the railway station and town centre, whilst also providing for the creation of the full Baldock Greenway loop around the town as a leisure route. Further development of BA10 working out from the town would also continue.
- **Phase D** – The final phase will see the development of the remainder of BA1 and BA10 furthest from the town centre. BA3 would also be delivered as a school or residential site.

The phasing has been developed with the aim of ensuring that sustainable transport and mode shift away from private car use is maximised from the first occupant moving in. This includes ensuring that development is not remote from infrastructure and amenities and delivering key off-site and internal routes at an early stage.

Figure 6-3: Indicative phasing plan

Phase A



Phase B



Phase C



Phase D





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7 Trip Generation and Assignment

7.1 Overview

As referenced in previous chapters, the Transport Vision and subsequently this Transport Assessment have adopted a Vision-Led approach. This means that aspirations for how people travel in the future are baked into trip generation and mode share assumptions. This shifts the focus of assessment from mitigating predominantly vehicle-based trips, to accommodating more active and sustainable trips.

This chapter therefore summarises trip generation and assignment assumptions, based on the Vision-Led principles discussed with NHC and HCC during scoping. The full methodology for deriving these is set out and agreed through the Transport Scoping Report and subsequent Addendums.

The TRICS database has been used as an initial starting position for the residential and employment trips, referred to as the 'Business-as-Usual' approach. Business-as-Usual refers to application of conventional assumptions and, often, 'worst case' outcomes in terms of vehicle trip generation.

The TRICS Decide-and-Provide methodology is then applied to the Business-as-Usual trip rates to reflect emerging trends of less travelling and more working from home, but without affecting overall mode share.

Modal shifts are then applied to the Business-as-Usual trip rates, taking into account the proposed strategies and package of interventions outlined in preceding chapters. This Vision-Led scenario is consistent with the Transport Vision and Principles. The mode shift assumptions are informed by use of ITP's proprietary Mode Shift Model.

7.2 Development Scenarios

To understand development impact at different points in time, four development scenarios have been considered in the remaining sections of the Transport Assessment. The scenarios combine different spatial and temporal assumptions, relating to background growth and development build-out across the sites (as detailed in previous chapters). The development scenarios are summarised in **Table 7-1**.

The interim year was developed following an exercise to establish a potential trigger point for the introduction of the multi-modal bridge on the BA1 access road, based on development phasing. This utilised a VISSIM model of the A507 corridor and focussed primarily on when the A507 / B656 crossroads exceeds operational capacity. This identified an interim year of 2033, when 650 homes would be delivered on BA1 and 200 homes on BA2, alongside some initial education and community uses on BA1. Around two-thirds of the BA10 floorspace would be delivered by this point. The full work to arrive at this interim year was set out in the TSR Addendum, included in **Appendix B**. The VISSIM model is explained in further detail in **Chapter 8**.

The trip generation of each of the options for BA3 development is calculated using the methodology set out in **Section 7.4.1.2**. This confirms that Option 1 generates the highest trip generation and Option 2 generates the lowest trip generation. Hence, these options represent the two extremes for the purpose of highway modelling. Option 3 is referenced for trip generation but is not included in local or strategic modelling.

Table 7-1: Development scenario summary

Scenario	Site	Provision
2033 with development	BA1	650 dwellings
	BA2	200 dwellings
	BA3	Not built
	BA10	36,650 sq.m Employment land uses
2040 with development (option 1)	BA1	2,750 dwellings
	BA2	200 dwellings
	BA3	1no. 12-form Secondary School, 1no. SEND school (approx. 150 pupils, 50 staff)
	BA10	100,000 sq.m Employment land uses
2040 with development (option 2)	BA1	2,750 dwellings
	BA2	200 dwellings
	BA3	248 dwellings, 1no. SEND school (approx. 150 pupils, 50 staff)
	BA10	100,000 sq.m Employment land uses
2040 with development (option 3)	BA1	2,750 dwellings
	BA2	200 dwellings
	BA3	248 dwellings, 1no. SEND school (approx. 150 pupils, 50 staff), 1no. 5-form Secondary School
	BA10	100,000 sq.m Employment land uses

7.3 Trip Internalisation

The development proposals will result in varying levels of trip internalisation, resulting from the mix of land uses proposed on each site. This relates to people who would live, study and work at the development and these trips would not generate external vehicular trips on the highway network.

This section presents an overview of the methodology for estimating the proportion of trips which would remain within the sites. Within this, internalisation refers to trips within each site and does not refer to trips between the different sites (e.g. trips from BA1 to BA3).

Table 7-2 to **Table 7-4** below summarise the trip internalisation assumptions which are set out in the TSR Addendum. These were informed by case study research and National Travel Survey (NTS) data, and then assumptions were made based on the quantum and type of facility being delivered in each future year scenario.

The different levels of trip internalisation assumed for each site in each scenario inform the volume of external trips assigning across the local network (assessed in the local modelling in the following chapter). When considering trip generation, these external trips have been further broken down into 'local' trips – those which stay within Baldock and Letchworth – and 'residual' trips – those which travel further afield. Breaking down trip lengths in this way allows for different mode share assumptions to be applied, recognising that longer-distance trips are much more likely to be made by car or rail.

The following trip length assumptions are used in the remainder of this chapter:

- Internal trips – informed by the internalisation assumptions.

- Residual trips – informed by NTS data (Table 0308) which shows that ~70% of all trips by all modes are less than five miles (8km) in length, and hence ~30% of trips are over five miles in length. It has been assumed that 40% of trips are residual, longer distance trips.
- Local trips to Baldock / Letchworth – this is effectively a residual of the internal trips and residual trips assumptions. This is supported by analysis of the Teralytics data covering Baldock, which suggests that ~25% of trips originating in Baldock are under 5km and a further ~30% are under 10km.

Table 7-2: Interim Year Scenario weighted average trip internalisation

Trip Length / Period	BA1	BA2	BA3	BA10
Internalisation - AM	37%	0%	2%	4%
Internalisation - PM	23%	0%	6%	10%
Internalisation - Daily	24%	0%	4%	8%
Trips within Baldock - AM	23%	60%	58%	56%
Trips within Baldock - PM	37%	60%	54%	50%
Trips within Baldock - Daily	36%	60%	56%	52%
Residual trips – all periods	40%	40%	40%	40%

Table 7-3: Option 1 Full Build-Out Scenario (With BA3 Secondary School) weighted average trip internalisation

Trip Length / Period	BA1	BA2	BA3	BA10
Internalisation - AM	45%	0%	36%	5%
Internalisation - PM	43%	0%	15%	13%
Internalisation - Daily	40%	0%	16%	11%
Trips within Baldock- AM	15%	60%	24%	55%
Trips within Baldock - PM	17%	60%	45%	47%
Trips within Baldock - Daily	20%	60%	44%	49%
Residual trips - all periods	40%	40%	40%	40%

Table 7-4: Option 2 Full Build-Out Scenario (No BA3 Secondary School) weighted average trip internalisation

Trip Length / Period	BA1	BA2	BA3	BA10
Internalisation - AM	45%	0%	8%	5%
Internalisation - PM	43%	0%	12%	13%
Internalisation - Daily	40%	0%	9%	11%
Trips within Baldock - AM	15%	60%	52%	55%
Trips within Baldock - PM	17%	60%	48%	47%
Trips within Baldock - Daily	20%	60%	51%	49%
Residual trips – all periods	40%	40%	40%	40%

7.4 Trip Generation

7.4.1 Business as Usual Methodology

7.4.1.1 Residential and Employment

The TSR and TSR Addendum set out the approach to deriving residential and employment trip rates. These have not been altered in preparation of the Transport Assessment, aside for in response to changes in dwellings / floor area proposed as the development specification has evolved. The employment trip rates refer to the land uses proposed on BA10.

The full TRICS outputs which have informed the Business-as-Usual residential and employment trip rates are contained in **Appendix G**. These are also reflected in the Mode Shift Model outputs, which are included in **Appendix H**. The summary at **Table 7-7** at the end of this sub-section shows resultant vehicle trip generation for each site in each scenario.

As set out in scoping, the Business-as-Usual trip generation has been adjusted to account for changes to trip making, to reflect the downward trend seen over recent years. The TRICS Decide-and-Provide methodology has been employed to achieve this, resulting in a circa 7.5% decrease in total person trip generation. The Decide-and-Provide methodology has been further embedded in the recent release of TRICS Version 8, and this continues to show declining trip rates (across various time periods, land uses and modes).

7.4.1.2 Education

The SEND school trip generation has been based on a recently consented school in Hemel Hempstead (REF: 23/02973/MFA), with permission granted in October 2024. The transport reports prepared to support the application included surveys that had been undertaken at two operational SEND school sites within Hertfordshire, the results of which were used to calculate person trip rates arriving and departing the school. These same trip rates have been applied to the proposed SEND school at BA3, based on the indicative number of pupils and staff anticipated. The vehicle trips derived from this methodology are presented in **Table 7-5**.

Table 7-5: SEND vehicle trip generation (150 pupils, 50 staff)

Vision-led & Business-as-Usual	AM Peak		PM Peak		Daily	
	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
Trips to Baldock and Letchworth	48	17	2	23	55	68
Residual trips	32	11	1	15	37	45
Total external trips	80	28	4	38	91	113
Total trips	80	28	4	38	91	113

A first principles approach has been taken to calculate the multi-modal trip generation of the secondary school options relating to BA3, based on ‘hands up’ data and staff information provided by existing Knights Templar School. This is shown for each development option in **Table 7-6** and the full calculations are contained in **Appendix I**.

In addition, to avoid double-counting secondary school trips, the existing trips at Knights Templar School were removed from the network in Option 1 scenarios, where a 12-form secondary school is provided on BA3. The trips were derived from the same ‘hands up’ survey undertaken at the existing Knights Templar School, with trips distributed based on postcode data supplied by staff and pupils.

Table 7-6: BA3 Option 1, 2 and 3 trip generation

BA3 Development Scenario	Mode of Travel	AM Peak		PM Peak		Daily	
		Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
Option 1	Vehicles	565	368	4	184	1,063	1,085
	Public transport	378	375	0	4	756	756
	Active travel	1,681	1,626	0	55	3,361	3,361
Option 2	Vehicles	108	100	69	67	507	530
	Public transport	2	11	6	2	41	41
	Active travel	10	30	17	11	135	137
Option 3	Vehicles	292	195	28	109	647	668
	Public transport	158	160	3	2	331	331
	Active travel	703	687	4	26	1,440	1,441

The trip generation for educational land uses has not been adjusted as part of the Decide-and-Provide trip rates, given that pupils and staff are on site at school full time and education-related trip making is not expected to reduce over time.

7.4.1.3 Summary

A summary of the Business-as-Usual vehicle trip generation with Decide-and-Provide adjustments is provided in **Table 7-7**, with detailed outputs for all modes included in **Appendix J**. The trips are split between those internal to each site (“int.”), local trips within Baldock and Letchworth (“Loc.”) and residual trips (“Res”).



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Table 7-7: Business-as-Usual (with Decide-and-Provide adjustments) vehicle trip summary

Scenario	Site	AM Peak (08:00 – 09:00)						PM Peak (17:00 – 18:00)						Daily					
		Arrivals			Departures			Arrivals			Departures			Arrivals			Departures		
		Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.
2033	BA1 - 650 dwellings	18	19	33	52	50	87	24	75	78	11	34	36	170	453	494	171	454	496
	BA2 - 200 dwellings	0	15	10	0	40	27	0	36	24	0	16	11	0	228	152	0	229	152
	BA3 - 0 dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BA10 – 36,650 m ² employment	7	126	89	2	40	28	5	27	21	13	77	60	113	810	615	113	813	618
	Total	25	161	133	54	130	142	28	138	123	24	128	107	283	1,491	1,261	284	1,496	1,266
2040 Option 1	BA1 – 2,750 dwellings	92	55	140	262	143	367	186	164	329	89	75	151	1204	1,096	2,091	1,211	1,099	2,097
	BA2 - 200 dwellings	0	15	10	0	40	27	0	36	24	0	16	11	0	228	152	0	229	152
	BA3 – 12-form Secondary & SEND	0	339	226	0	221	147	0	2	1	0	110	73	0	638	425	0	651	434
	BA10 – 100,000 m ² employment	27	338	243	8	107	77	17	70	58	47	199	165	410	2,107	1,678	412	2,116	1,685
	Total	118	748	620	270	511	618	202	272	412	136	401	400	1615	4,069	4,347	1,623	4,094	4,368
2040 Option 2	BA1 – 2,750 dwellings	92	55	140	262	143	367	186	164	329	89	75	151	1204	1,096	2,091	1,211	1,099	2,097
	BA2 - 200 dwellings	0	15	10	0	40	27	0	36	24	0	16	11	0	228	152	0	229	152
	BA3 - 248 dwellings & SEND	1	64	44	4	61	44	5	38	31	2	39	29	25	296	225	25	309	234
	BA10 – 100,000 m ² employment	27	338	243	8	107	77	17	70	58	47	199	165	410	2,107	1,678	412	2,116	1,685
	Total	120	473	438	274	351	515	207	308	442	139	330	355	1640	3,727	4,147	1,648	3,753	4,169
2040 Option 3	BA1 – 2,750 dwellings	92	55	140	262	143	367	186	164	329	89	75	151	1204	1,096	2,091	1,211	1,099	2,097
	BA2 - 200 dwellings	0	15	10	0	40	27	0	36	24	0	16	11	0	228	152	0	229	152
	BA3 - 86 dwellings, 5-form Secondary & SEND	0	176	117	0	119	79	0	18	12	0	66	44	0	396	264	0	409	273
	BA10 – 100,000 m ² employment	27	338	243	8	107	77	17	70	58	47	199	165	410	2,107	1,678	412	2,116	1,685
	Total	118	584	511	270	410	550	202	287	423	136	357	371	1615	3,827	4,186	1,623	3,853	4,207

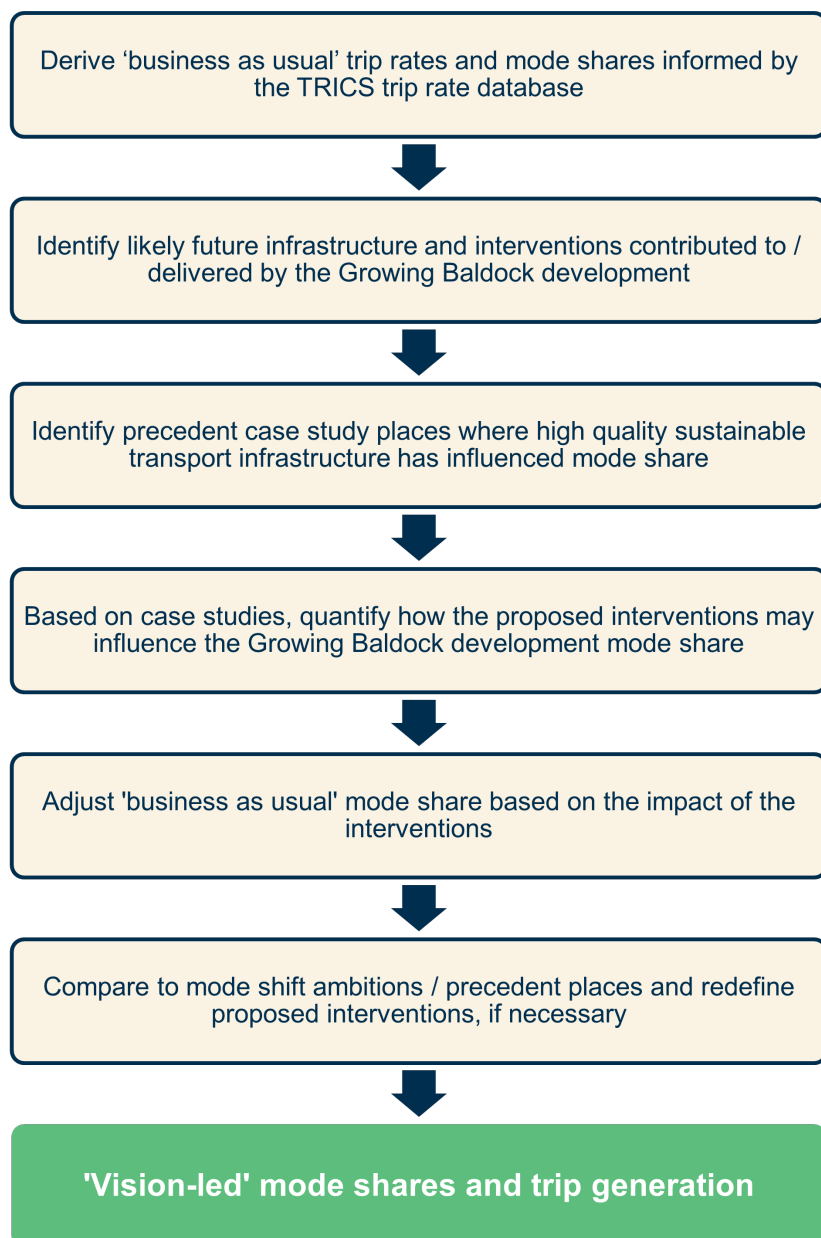
7.4.2 Vision-Led Methodology

7.4.2.1 Mode Shift Model

The Mode Shift Model has been used to determine alternative, Vision-Led mode shares for the sites. The Mode Shift Model is a spreadsheet tool that facilitates quantification of the impacts of interventions, at a high level. It outputs the likely impacts on mode share and trip generation, and allows for comparison of the Business-as-Usual approach. It is a tool for embedding the Vision-Led approach in the planning of large-scale growth.

The approach to deriving Vision-Led mode shares and trip rates in the Mode Shift Model is shown illustratively in Figure 7-1, with details of the Mode Shift Model and rationale behind ratings included in the TSR.

Figure 7-1: Mode Shift Model Approach



The Mode Shift Model alters the baseline, Business-as-Usual trip rates (as described above) to reflect more sustainable places which have achieved high active and sustainable mode shares. The way in which trip generation is calculated is also reimagined, in that different assumptions are made for different trip lengths (conventionally, a set of TRICS trip rates is applied to all potential development trips). The trip rates adjustments are dependent on a judgement of how effective the proposed on- and off-site interventions are likely to be in providing high quality, reliable, direct infrastructure which engenders low car use.

Based on the masterplanning principles and Vision-Led transport strategies detailed in **Chapter 4 and Chapter 5**, the themes against which the Business-as-Usual mode shares have been adjusted (Step 5 in Figure 7-1) are:

1. **Public transport** – frequency and quality of public transport services – informed by the Public Transport Strategy. The proposed shuttle bus service has a significant influence on the Mode Shift Model ratings for all sites, as does the location of BA1 adjacent to the train station (rail user trips are captured as public transport trips).
2. **Active travel** – quality, coherence, attractiveness and convenience of active travel infrastructure – informed by the Active Travel Strategy. The proposed links into Baldock and between the sites have a positive influence on the Mode Shift Model ratings for all sites, especially BA1 and BA10 which will benefit from off-road, segregated active travel routes.
3. **Traffic and parking management** – how road space allocation, convenience of driving and parking availability are balanced with other modes – informed by the Highway Design and Parking Strategies. The proposed shuttle working system, traffic gating, traffic calming, lower parking provision and banned turns have positive influences on the Mode Shift Model ratings for all sites.
4. **Placemaking and land use planning** – how the proximity and mix of land uses on and off-site cater for people’s day-to-day needs – informed by the development specification and Indicative Masterplan. The provision of schools, retail, leisure and open space within the sites, but especially BA1, have a positive influence on the Mode Shift Model ratings.

The Mode Shift Model outputs mode shares and trip rates based on a rating of the proposed interventions against the above themes. A higher rating means that the intervention has very good potential to achieve mode shift away from the baseline, and the extent of the mode shift is informed by the mode shares the precedent ‘sustainable places’ achieved. A lower rating means that the proposals are likely to perpetuate the norm and achieve similar mode shares and trip rates to other historic developments in the UK (i.e. similar to the baseline in the Business-as-Usual approach).

When deriving the secondary school trip generation using the Knights Templar School’s data, modest adjustments were made to trip rates to account for the sustainable travel interventions proposed and the likelihood of more pupils coming from Baldock rather than Letchworth (and hence travelling shorter distances, with more propensity to walk and cycle). No modal shift has been applied to the SEND school trip generation as many pupils live further afield and / or need to travel by car or bus.

A summary of Vision-Led vehicle trip generation for all land uses and sites is provided in **Table 7-8**, with detailed outputs included in **Appendix J**.



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Project related

Table 7-8: Vision-led vehicle trip summary

Scenario	Site	AM Peak (08:00 – 09:00)						PM Peak (17:00 – 18:00)						Daily					
		Arrivals			Departures			Arrivals			Departures			Arrivals			Departures		
		Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.	Int.	Loc.	Res.
2033	BA1 - 650 dwellings	13	17	33	36	43	87	16	66	78	8	30	36	118	397	494	119	398	496
	BA2 - 200 dwellings	0	13	10	0	34	25	0	31	23	0	14	11	0	196	145	0	196	145
	BA3 - 0 dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BA10 – 36,650 m ² employment	6	112	89	2	35	28	3	21	21	11	66	60	96	696	615	96	698	618
	Total	19	141	132	38	111	140	20	118	122	19	111	107	214	1,288	1,254	215	1,292	1,258
2040 Option 1	BA1 – 2,750 dwellings	22	36	140	63	87	367	45	113	329	21	50	151	291	728	2,091	292	727	2,097
	BA2 - 200 dwellings	0	13	10	0	31	25	0	30	23	0	14	11	0	187	145	0	188	145
	BA3 – 12-form Secondary & SEND	0	339	226	0	221	147	0	2	1	0	110	73	0	638	425	0	651	434
	BA10 – 100,000 m ² employment	25	226	243	8	70	77	10	14	58	40	110	165	352	1,206	1,678	353	1,208	1,685
	Total	47	614	619	71	409	617	55	160	411	61	284	400	643	2,759	4,340	645	2,774	4,361
2040 Option 2	BA1 – 2,750 dwellings	22	36	140	63	87	367	45	113	329	21	50	151	291	728	2,091	292	727	2,097
	BA2 - 200 dwellings	0	13	10	0	31	25	0	30	23	0	14	11	0	187	145	0	188	145
	BA3 - 248 dwellings & SEND	1	62	44	3	53	44	4	34	31	2	37	29	19	263	225	19	276	234
	BA10 – 100,000 m ² employment	24	226	243	8	70	77	10	14	58	39	110	165	346	1,206	1,678	347	1,208	1,685
	Total	48	337	438	74	241	514	58	192	441	62	210	355	655	2,384	4,140	658	2,400	4,161
2040 Option 3	BA1 – 2,750 dwellings	22	36	140	63	87	367	45	113	329	21	50	151	291	728	2,091	292	727	2,097
	BA2 - 200 dwellings	0	13	10	0	31	25	0	30	23	0	14	11	0	187	145	0	188	145
	BA3 - 86 dwellings, 5-form Secondary & SEND	0	175	117	0	116	79	0	16	12	0	65	44	0	383	264	0	396	273
	BA10 – 100,000 m ² employment	25	226	243	8	70	77	10	14	58	40	110	165	352	1,206	1,678	353	1,208	1,685
	Total	47	449	510	71	304	549	55	174	422	61	239	370	643	2,504	4,178	645	2,519	4,200

7.4.3 Comparison of Approaches

Table 7-9 demonstrates the impact of applying the Mode Shift Model in the Vision-Led approach, compared with the Business-as-Usual approach (across all sites). This results in reduced vehicle trip assumptions and increased active and sustainable trip assumptions.

Table 7-9: Total Trip Generation Comparison (Daily Two-Way, all Trip Lengths)

Scenario	Mode	BaU with D&P		Vision-led	Difference		
		Trips	Mode Share		Mode Share	Trips	Mode Share
2033	Vehicle	6082	71%	5521	65%	-561	-7pp
	Public Transport	888	10%	891	10%	+4	+0pp
	Active Travel	1544	18%	2102	25%	+557	+7pp
2040 Option 1	Vehicle	20116	55%	15522	42%	-4594	-13pp
	Public Transport	3961	11%	4694	13%	+733	+2pp
	Active Travel	12557	34%	16418	45%	+3861	+11pp
2040 Option 2	Vehicle	18878	69%	14194	52%	-4684	-17pp
	Public Transport	2497	9%	3270	12%	+773	+3pp
	Active Travel	6063	22%	9974	36%	+3911	+14pp

The significant differences in daily trip generation and mode share between the Business-as-Usual and Vision-Led approaches are a result of the alternative assumptions made in the Vision-Led methodology. Not only are optimistic assumptions made about how people will travel – informed by case study best practice and interventions proposed – but also the Vision-Led methodology fundamentally approaches trip generation differently. It takes a more realistic view of the different types of trips made across a day and better draws these out (compared with a Business-as-Usual, purely TRICS-based approach). For example, it recognises that TRICS surveys only capture trips external to a site and so only medium to longer distance trips are reflected in the TRICS trip rates and mode shares.

The reductions in daily vehicle trips and associated increases in active and sustainable trips are informed by, and have informed, the Active Travel, Public Transport and Road Space Reallocation Strategies outlined in **Chapter 5**. Fewer trips overall are not envisaged through the Vision-Led approach, but rather emphasis has been placed on the quality and scale of the infrastructure (on and off-site) required to support trips by all modes.

The mode share summaries demonstrate the combined sites have the potential to achieve around 50% of all daily trips by active and sustainable modes when fully built out and all interventions are delivered (varying between the different 2040 options). This is compared with the Business-as-Usual assumptions, which would suggest daily mode shares of 30% - 45% of all trips by active and sustainable modes. The transport strategies collectively therefore have the potential to achieve significant mode shift and to align with best practice targets regarding active and sustainable travel mode share at large-scale residential development, as set out by the Town and Country Planning Association (TCPA)⁴.

⁴ https://tcpa.org.uk/wp-content/uploads/2021/11/gc_practicalguide_transport_newvectorslogo.pdf

The Interim Scenario represents some progress towards modal shift, reflecting the fact that in 2033 the key off-site interventions relate to BA2 access and parts of the A507 corridor. Some trip internalisation is also assumed for BA1 in 2033, which helps towards reducing external trips (by all modes).

7.4.4 Approach to be adopted in COMET

The Vision-Led approach is carried through to the local junction modelling in **Chapter 8** and will be used in the COMET strategic modelling post-submission. It has been agreed with HCC that the trip generation resulting from the Business-as-Usual approach will not be modelled as it does not reflect the delivery of active and sustainable travel infrastructure to support the development, and so would not be policy compliant. Modelling the Business-as-Usual-based scenarios would essentially represent an unrealistic level of trip generation which does not reflect likely internalisation, mode share and changes in travel habits that are secured through the design of the proposed development and supporting infrastructure.

HCC have requested that, as an alternative to modelling Business-as-Usual, a 'reduced mode shift' scenario is modelled in COMET. This will include less optimistic assumptions in the Mode Shift Model ratings of the development / proposals than are adopted in the Vision-Led approach. Hence more vehicles and fewer active and sustainable trips will be included in these scenarios, albeit not as many vehicle trips as in a Business-as-Usual approach. The post-submission Transport Assessment Addendum will set out the Reduced Mode Shift Scenario assumptions and their implications in terms of highway network performance.

7.5 Trip Assignment

This section sets out how the trips generated by the development will be distributed on the local road network. This section also considers background traffic redistribution, in the context of the proposed changes to the local road network through Baldock. The principles of this section were agreed through the TSR Modelling Addendum; however, full details of all data / assumptions were not set out.

A set of network flow diagrams has been developed using a manual spreadsheet model to calculate and present the development trip assignment in the various scenarios being assessed. The assumptions below are reflected in the network flow diagrams. In turn, the flows derived through the spreadsheet model are used in the local junction modelling presented in **Chapter 8**. The post-submission COMET run and analysis will help to validate these assumptions, and will highlight where additional assessment is required.

7.5.1 Distribution of Development Trips

The 2011 Census Location of usual residence and place of work by method of travel to work (WU03EW) dataset has been used to derive development trip assignment in the network flow diagrams. This is a more representative dataset than the 2021 Census, due to the effects of the Covid-19 pandemic on commuting patterns. Acknowledging, however, that the Census data is old, the dataset has been sense checked against other data reviewed in the strategy development such as Teralytics mobile phone data and ANPR data.

The Census data for the North Hertfordshire 004 Middle Super Output Area (considered a proxy for the proposed development sites) as place of residence have been extracted and the driving route to / from all places of work MSOAs has been derived using the Google Maps route tool.

The percentages of trips to / from place of work MSOAs are shown in **Figure 7-2**, with the following origins / destinations indicated by each letter:

- A = MSOAs towards Bygrave and Ashwell and beyond, using Ashwell Road
- B = MSOAs reached by the A505 Northbound

- C = MSOAs reached by Wallington Road
- D = A component of the 'internal' trips to / from the North Hertfordshire 004 MSOA that are assumed to relate to the Clothall Road area
- E = MSOAs reached by the A507 Clothall Road (S)
- F = MSOAs reached by the A1 (S)
- G = MSOAs in Letchworth and beyond, reached by the B656 (W)
- H = MSOAs reached by Norton Road, primarily around Norton and Stotfold
- I = MSOAs reached by the A1 (N)
- J = A component of the 'internal' trips to / from the North Hertfordshire 004 MSOA that are assumed to relate to the London Road area
- K = A component of the 'internal' trips to / from the North Hertfordshire 004 MSOA that are assumed to relate to the High Street area

Figure 7-2: Census 2011 Trip Distribution – Baldock as Usual Residence



A value of 0% does not necessarily mean that no trips would travel to / from the area, but that it is a very low value relative to the ~130 MSOAs included in the analysis, for example 0.3%. Also, a circular arrow indicates that trips are distributed to a destination internal within Baldock (North Hertfordshire 004) and could use a variety of minor roads within that area.

The network flow diagrams present the trip distribution for each individual development site (i.e. BA1, BA2 etc.). The full network flow diagrams are included in **Appendix K**.

The development trip distribution has also taken into account the effects of the proposed off-site interventions, e.g. where there are banned turning movements proposed, development traffic does not undertake these turns.

To derive trip distribution for Baldock as a place of work, a similar exercise was undertaken. North Hertfordshire 004 Middle Super Output Area was used as the place of work, Census data was extracted, and the driving route to / from all places of work MSOAs were derived via the same methodology. The trip distribution for Baldock as a place of work is set out in **Figure 7-3**.

Figure 7-3: Census 2011 Trip Distribution – Baldock as Place of Work





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7.5.2 Redistribution of Background Traffic

The interventions proposed will mean that background trips will be displaced and redistributed across the local and strategic networks. The network flow diagrams (in **Appendix K**) reflect the rerouting as described below.

7.5.2.1 A507

Most of the off-site interventions provide more space for active and sustainable modes, balanced against space for private vehicles. The result will be streets which feel more comfortable for people to use and are less dominated by vehicles. This will work to reduce through traffic in the town, with trips either retiming, rerouting, or 'evaporating' from the network entirely.

Specifically, through trips on the A507 (North Road, Station Road, Clothall Road) will be affected, and as there are minimal options for rerouting, some are likely to stop making the journey on the A507 altogether. In the network flow diagrams, it is assumed that 30% of existing background traffic using these routes is removed, i.e. a 30% reduction is made to observed background traffic flows. The principle of evaporating traffic as a result of capacity reduction is well established across several studies⁵ (with the opposite also evidenced when capacity is increased and induces demand) and the proportion of disappearing traffic can vary significantly depending on context.

Therefore, off-site interventions are expected to influence future travel behaviour by encouraging active and sustainable modes and reducing capacity for vehicle traffic, which would result in background trips displaced and redistributed across the local and strategic networks. The COMET exercise will provide further insights on the extent of traffic retiming, rerouting or stopping travelling through Baldock altogether.

⁵ For example, the 'Disappearing traffic?' paper: https://nacto.org/wp-content/uploads/disappearing_traffic_cairns.pdf and follow up work: <https://www.transportxtra.com/publications/local-transport-today/news/48672/-disappearing-traffic--the-report-that-didn-t-quite-disappear/> and <https://reconnectaustin.com/resources/cnus-highways-to-boulevards-2/traffic-studies/>

7.5.2.2 Bygrave Road

The section of Bygrave Road between Bygrave village and Station Road will be closed for general traffic and used as an active and sustainable travel corridor once the access road is delivered. Trips that currently use Bygrave Road will be able to use the new access road (see **Figure 7-4**). Trips to destinations towards the north and north and west will use the North Road access, and trips to the south and east will use the Royston Road access. It is envisaged that this intervention would be delivered by 2033.

Figure 7-4: Bygrave Road Reassignment



7.5.2.3 Whitehorse Street Crossroads

The left turn from Station Road to Royston Road, and the opposite movement from Royston Road to Station Road will be banned once the proposed BA1 access road is completed. Therefore, trips which currently make these turns at the crossroads will travel through BA1 instead (see **Figure 7-5**).

Figure 7-5: BA1 Link Road Reassignment



7.5.2.4 Reassignment to Strategic Road Network

The proposed interventions will make journeys through Baldock slower, which will encourage vehicles to stay on the Strategic Road Network (SRN). The COMET model exercise (post-submission) will indicate if and where this is likely to happen.

To reflect this potential outcome, a test with alternative traffic assignment assumptions at A1(M) J9 has been undertaken, assuming that:

- 30% of all existing background trips between Station Road and Whitehorse Street will instead route between Letchworth Gate and A1(M) North at Junction 9 of the A1(M).
- 30% of all existing background trips on the B656 through Baldock will instead route between Letchworth Gate and A505 at Junction 9 of the A1(M).

These proposed routings are indicated in **Figure 7-6**. These assumptions have been included at A1(M) J9 only in the local modelling exercise in this Transport Assessment (**Chapter 8**), i.e. they do not affect the traffic flow assumptions through other local junctions.

Note that the figure below does not suggest that left turns will be banned from Whitehorse Street to Station Road (as was included in previous iterations of the transport strategy). Instead, it is suggesting that the interventions on these roads could cause some drivers to change routes.

Figure 7-6: Assumptions of Background Traffic Re-routing for Reassignment Assumptions at Junction 9



If other local junctions require reassessment following analysis of rerouting in the COMET outputs, updated modelling will be presented in the post-submission Transport Assessment Addendum. The COMET model is a strategic model which will allow testing of a cumulative assessment with all potential Local Plan site allocations included. Hence, COMET will be used as a tool to validate the assumptions and outcomes of this Transport Assessment.

The modelling presented in this Transport Assessment is based on amended but static assignment of trips. It is therefore limited in considering the wider unexpected impacts on the highway network. COMET, meanwhile, as a strategic model is better suited to dynamic rerouting of trips based on consequential changes to the network. It does not invalidate the approach taken to date but provides further certainty and a wider perspective.



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7.5.2.5 Reassignment of Knights Templar Education Trips

As set out in **Section 7.4.1.2**, the existing trips generated by Knights Templar secondary school have been removed from the network in the Option1 scenario, where a 12-form secondary school is provided on BA3. This reassignment was undertaken to avoid double-counting secondary school trips, as the proposed secondary school associated with Growing Baldock will replace the existing Knights Templar School.

To remove trips from the network, data from the 'hands up' survey undertaken at Knights Templar was used to assign trips through the network, with postcode data provided by staff and pupils used to assign routes to the school. These flows were then subtracted from the network in the 2035 Option 1 future scenario.

7.6 Local Modelling Study Area

Application of the above assumptions results some key changes in background traffic flows on the network, summarised below. For simplicity, these are comparisons relevant to the 2040 future year, when the full development and associated interventions would be delivered:

- The proposed off-site interventions would reduce background traffic flows on the A507, both through physical measures to ban turns and through the introduction of shuttle working and other demand management. In the peak hours, background traffic on Station Road would reduce by around 550 two-way vehicles, which equates to a reduction of around 65% (in the vicinity of Bygrave Road).
 - This opens up capacity on the corridor to reduce road space and provide higher quality walk and cycle infrastructure adjacent to the carriageway, and to accommodate new vehicles associated with the development.
- Banning turns at the Whitehorse Street crossroads would reduce background traffic on Royston Road by around 270 two-way vehicles in each peak, equating to a reduction of around 40%. As detailed in Section 5.5.3.2, the restriction would include the north-east turn from Station Road to Royston Road, and the opposite east-north movement from Royston Road to Station Road.
 - As above, this opens up capacity on the corridor to create a more pleasant environment for pedestrians and cyclists, and to accommodate new vehicles associated with the development.
- The combination of interventions and assumptions on the A507 and B656 reduce background traffic through the Whitehorse Street crossroads by around 500 peak hour two-way vehicles, equating to around 30%.
- The reductions in traffic flows on these key corridors do not entirely offset the vehicles generated by the proposed development, and so when development trips are added to the network, the net increase in trips through the Whitehorse Street crossroads is up to 680 two-way vehicles in the 2040 Option 1 scenario (AM peak) and up to 300 two-way vehicles in the 2040 Option 2 scenario (AM peak).
- The A1(M) Junction 9 alternative assignment assumptions would increase background traffic through the junction by around 200 two-way vehicles.
 - These vehicles would be rerouting from the B656 and A507, further reducing background traffic on those routes and hence reducing the net development impact.
- Considering all of the above, there are locations within the town which will see minimal changes to traffic flows and junctions which will see material increases. The key junctions which have been identified for assessment as a result of these traffic flow assumptions are:
 - Station Road / Royston Road / Whitehorse Street / Clothall Road
 - Clothall Road / Wallington Road / South Road
 - London Road / South Road / High Street Roundabout



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- A1 (M) Junction 9
- A1 (M) Junction 10

These form the study area for the local modelling exercise summarised in **Chapter 8**. Whilst other junctions may lie in-between these key locations, they are less likely to be impacted by changes in traffic flows and / or they have not been identified as pinch points or constrained locations through the baseline work and consultation.

8 Residual Highway Impacts

8.1 Modelling Approach

The updated COMET model suite was not ready in sufficient time for use at the time of preparing this Transport Assessment. It has been agreed with HCC, NHC and National Highways that a Transport Assessment Addendum will be prepared to present the COMET outputs, once the model suite results are made available. This will be submitted during the determination of the planning application.

The COMET model is a strategic model, so will confirm assumptions set out in this Transport Assessment around assignment of development trips and rerouting of background traffic. It will also allow testing of a cumulative assessment with all potential Local Plan site allocations included. Hence, COMET will be used as a tool to validate the outcomes of this Transport Assessment.

This section reports on the results of local junction modelling using LinSig, Junctions 10 and VISSIM. The local modelling approach has been agreed during scoping.

LinSig has been used to model signal-controlled junctions and Junctions 10 priority junctions. A VISSIM model of the A507 corridor between the BA1 site access on North Road and the Whitehorse Street crossroads (A507 / B656) was built, reflecting the complex and sensitive nature of the corridor, particularly once the proposed off-site interventions are introduced. The VISSIM model has informed development of the transport strategy and identified the timing Interim Year scenario and is described in the TSR Addendum (found in **Appendix B**).

Consistent with industry best practice, surveyed queue lengths have been used to validate the models, using the queue length data collected in the 2022 and 2025 surveys. The validation exercise ensured that similar levels of capacity are reflected in the models as are observed on the ground, recognising also that queue survey data is recorded differently to how junction models report queue lengths.

8.2 Assessment Study Area

The study area for local modelling has been informed by the trip assignment exercise summarised in **Section 7.5**, and is corroborated by previous COMET runs (related to the withdrawn application for the Site), discussions with HCC, and early modelling and scenario testing undertaken through development of the transport strategy.

As previously set out, the proposed local model study area comprises the following junctions, which are indicated in **Figure 8-1**:

- 1 Station Road / Royston Road / Whitehorse Street / Clothall Road
- 2 Clothall Road / Wallington Road / South Road
- 3 London Road / South Road / High Street Roundabout
- 4 A1 (M) Junction 9
- 5 A1 (M) Junction 10

These junctions are in addition to the site access junctions proposed on:

- North Road – Access to BA1
- Royston Road – Access to BA10 and BA1
- Clothall Road – Access to BA2

Figure 8-1: Assessment study area



8.3 Baseline Surveys

Traffic flow data from automatic traffic counter, automatic number plate recognition and manual classified count surveys have been commissioned to provide an overview of the operation of the existing highway within the broadly identified study area. This was later supplemented to make up for gaps left by the late availability of the COMET strategic model.

The scope of surveys undertaken in this Transport Assessment has been informed by the assessments undertaken in the withdrawn applications. The current methodology builds on the scope of the surveys of the withdrawn applications and extended the area of study to junctions that were deemed to be of interest in ensuring that the availability of data can extend beyond the anticipated area of impact of the development, to facilitate some resilience in analysis of future year modelling scenarios.

The traffic surveys undertaken to feed into local junction modelling are set out in **Table 8-1**. The location of the manual classified counts and queue length surveys are indicated in **Figure 8-2**.

Figure 8-2: MCC Locations

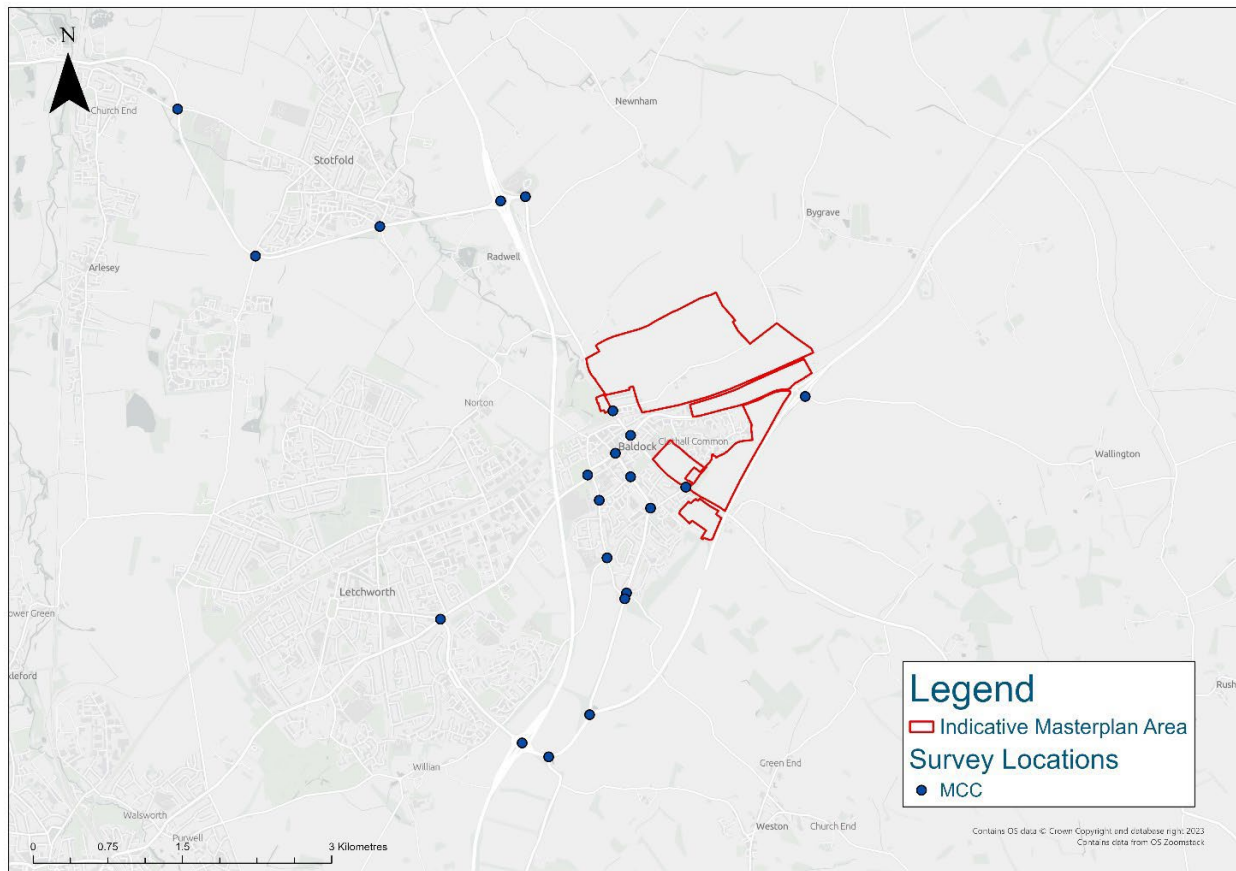


Table 8-1: Baseline Traffic Surveys for Junction Modelling

Location	Year	Type of traffic surveys
Roundabout between Stotfold Road and A507	2022	MCC and Queue Length
Roundabout between Hitchen Road and A507	2022	MCC and Queue Length
Roundabout between Norton Road, Tansy Avenue and A507	2022	MCC and Queue Length
Mini roundabout between High Street, Hitchin Street and Whitehorse Street	2022	MCC and Queue Length
Roundabout between Letchworth Gate, Baldock Road and Pixmore Way	2022	MCC and Queue Length
Junction 10 of the A1(M)	2022	MCC and Queue Length
Roundabout near J10 providing access to Baldock Services	2022	MCC and Queue Length
T - Junction between North Road and Bygrave Road	2022	MCC and Queue Length
Eastern roundabout at junction between A505 and Wallington Road	2022	MCC and Queue Length
Roundabout between Clothall Road, Wallington Road and South Road	2022	MCC and Queue Length
Roundabout between A505 and B197 south of Baldock	2022	MCC and Queue Length
Junction between A505 and B197 near J9 of A1(M)	2022	MCC and Queue Length
Junction 9 of the A1(M)	2022	MCC and Queue Length
Junction between B197 and Weston Way	2022	MCC and Queue Length
Junction between B197 and Chalk Hills	2022	MCC and Queue Length

Location	Year	Type of traffic surveys
Junction between Weston Way, Willian Way and Baldock Lane	2022	MCC and Queue Length
Roundabout between South Road, London Road and High St	2022	MCC and Queue Length
Junction between the High Street and Mansfield Road	2022	MCC and Queue Length
Junction between Weston Way and Mansfield Road	2022	MCC and Queue Length
Junction between Letchworth Road and Weston Way	2022	MCC and Queue Length
Junction between Clothall Road, Station Road, Whitehorse Street and Royston Road	2022	MCC, Queue Length and Pedestrian and Cycle Count

A further three surveys were conducted in 2025 to both increase the baseline survey scope area and supplement the previous traffic data collection. These surveys were undertaken on 2 July 2025, and the details are set out in **Table 8-2**. The data obtained in these surveys was compared with that collected in 2022, with very little variation in overall flows observed.

Table 8-2: 2025 Additional Traffic Surveys

Location	Year	Type of traffic surveys
Junction between Clothall Road, Station Road, Whitehorse Street and Royston Road	2025	MCC and Queue Length
Dumbbell junction between A505, Royston Road and Wallington Road	2025	MCC and Queue Length
Junction between Norton Road, Letchworth Road and Hitchin Street	2025	MCC and Queue Length

8.4 Assessment Years and Periods

Each of the development scenarios set out in **Section 7.2** are built up as follows in the network flow diagrams:

- **2028 without development** – background traffic only, as very low quanta of development will be complete
- **2033 with development**– background traffic plus Vision-Led development trips (Phase A and B)
- **2040 with development (option 1)** – background traffic plus Vision-Led development trips (Phase A, B, C and D)
- **2040 with development (option 2)** – background traffic plus Vision-Led development trips (Phase A, B, C and D)

The following peak periods have been adopted in each scenario:

- **Weekday AM peak hour:** 08:00 – 09:00
- **Weekday PM peak hour:** 17:00 – 18:00

A 2040 future year has been developed based on early discussions with Urban&Civic relating to likely build-out rates. This is now understood to represent an ambitious scenario and in reality, build-out may extend further into the future and therefore the impact be diluted across a longer period of time. Nonetheless, the 2040 scenarios shown in this Chapter represent the full development quantum, representing a robust outcome.

8.5 Background Traffic Growth

Several traffic surveys have been undertaken in the vicinity of the site (refer to **Section 8.3**) in the year 2022, and these 2022 surveys inform the baseline year scenarios. This is except for the junction of Royston Road with the A505, for which the baseline surveys were undertaken in 2025. The growth factors for the future scenarios at this junction have been adjusted accordingly.

The approach to background traffic growth has been agreed with HCC, NHC and National Highways through the scoping process, and reflects the growing recognition that traffic in the UK has not increased in alignment with DfT forecasts. An analysis of permanent DfT traffic count points around Baldock has been undertaken and is shown in **Figure 8-3**, which suggests that traffic has not uniformly grown on all roads in the area over the last decade. In some locations, vehicle numbers have not reached pre-Covid-19 levels.

Figure 8-3: DfT Count Data

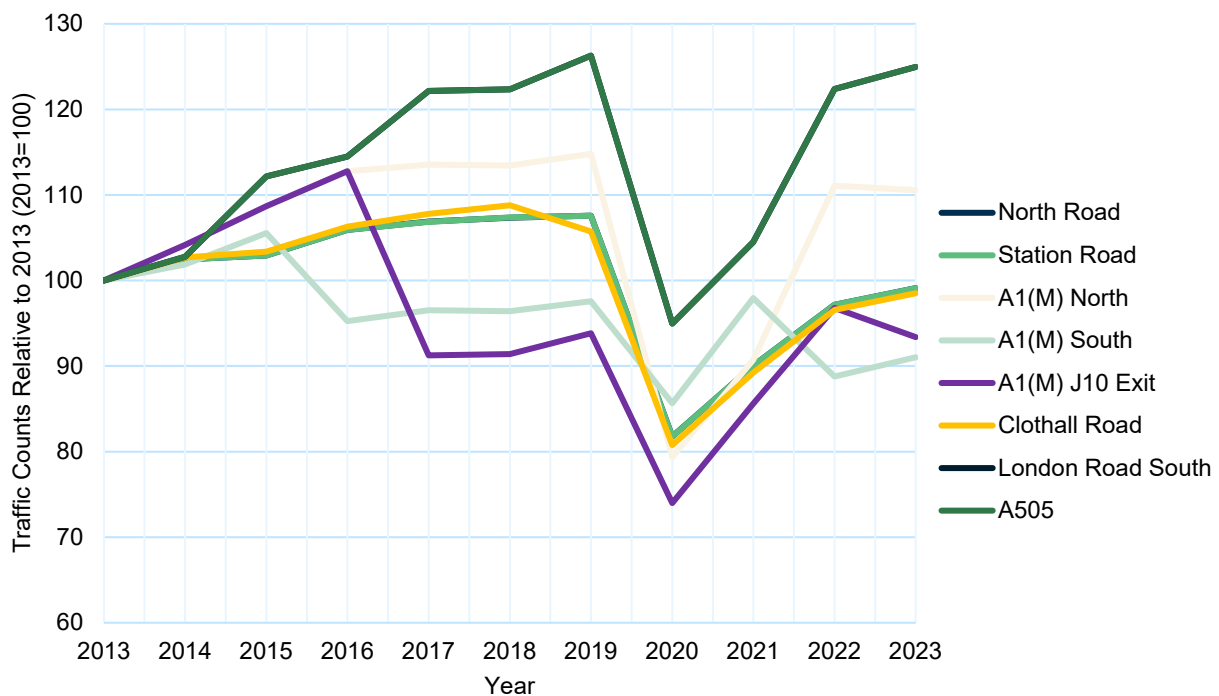


Table 8 shows the growth factors agreed through the TSR Modelling Addendum, which are derived through TEMPro Version 8. These are applied in the network flow diagrams deriving traffic flows for each modelled scenario.

The different scenarios available through TEMPro have been used to represent the behaviour change expected to result from the development. For growth up to 2028, the 'core' scenario has been used to represent a continuation of current travel patterns. Also, existing communities will not yet be greatly influenced by interventions introduced by the development. For the growth factor from 2028 to 2033, the more optimistic 'mode balanced decarbonisation' scenario is used, to represent the initial behaviour changes resulting from new interventions in the town and from wider societal change. Between 2033 and 2040, when major interventions will be delivered and policy and technological drivers will likely influence wider trip making, the optimistic 'behavioural change' scenario is used. The behaviour change scenario represents a stalling and reduction in background traffic growth.

The growth factor from 2022 to 2040 using the 'core' scenario only is also indicated below, for comparison.



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Table 8-3: TEMPro Growth Factors (North Hertfordshire 004)

Time Period	TEMPro Scenario	AM Peak Factor	PM Peak Factor
2022 – 2040 (For Comparison)	Core	1.0982	1.1036
Factors adopted in Transport Assessment			
2022 – 2028 (Traffic Count Data to Opening Year)	Core	1.0486	1.0470
2028 – 2033 (Opening Year to Interim Year)	Mode Balanced Decarbonisation	1.0220	1.0217
2033 – 2040 (Interim Year to Final Year)	Behavioural Change	0.9635	0.9623
Weighted combined factor 2022-2040		1.0081	1.0070

*for the more recent 2025 surveys, 2025 – 2028 factors of 1.0269 and 1.0277 were used for the AM and PM peaks, respectively.

8.6 Inclusion of Interventions

The proposed off-site interventions discussed in **Chapter 5** have been inherently included in the Vision-Led scenarios in the local models, insofar as their physical presence and their impacts on mode share. The interventions are the result of significant background work and engagement with HCC and NHC and are intended to support the sustainable mobility of the sites from the earliest possible stages of development.

The schemes are integral to achieving the Transport Vision and are not simply mitigation schemes as are conventionally conceived after modelling the highway impacts of developments. Many of the interventions are also required from a policy compliance perspective.

8.7 Local Modelling Results

A summary of the modelling results is set out in **Table 8-4** and the text below provides narrative for key locations in Baldock. The detailed results for each modelled junction are presented below, and the full modelling reports are included in **Appendix L**.

Table 8-4: Summary of Local Junction Model Results

Junction Name	Software	Summary of performance
A1(M) Junction 10	Junctions9	Within capacity in all scenarios.
BA1 Access, North Road	VISSIM	When viewed as a corridor, the model operates without queuing back through adjacent junctions in all scenarios. In the 2033 Interim Year scenario (with development), the junction operates similarly to the present day. The modelling has demonstrated that it is possible to use 'gating' of traffic at the proposed BA1 access to hold back queuing from the town centre, which has been implemented to prioritise local, rather than through movements.
Station Road / Icknield Way / Football Close	VISSIM	
Station Road / Royston Road / Whitehorse Street / Railway Underpass	VISSIM	
BA2 Access, Clothall Road	Junctions9	Within capacity in all scenarios
High Street / South Road / London Road	Junctions9	Within capacity in all scenarios
A1(M) Junction 9	LinSig	Above capacity on some arms in all scenarios, including those without development traffic. Capacity is improved by a proposed mitigation scheme and brought back to how the junction is modelled to behave were there to be no development.
BA3 Access, Wallington Road	Junctions9	Within capacity in all scenarios aside from AM peak in 2040 Option 1 scenario. Approval is being sought for access in principle and hence the form and layout of the junction can be amended to suit the finalised proposals for BA3 as part of Reserved Matters.
BA10 Access, Royston Road (western access)	LinSig	Within capacity in all scenarios.
BA10 Access, Royston Road (eastern access)	Junctions9	Within capacity in all scenarios
Royston Road Roundabout	Junctions9	Within capacity in all scenarios

8.7.1 Format of Results

For all results, industry standard thresholds have been used to derive where junctions perform at or above capacity. These thresholds applied throughout this chapter are summarised below.

The Junctions 9 / Junctions 10 software package is used to predict capacities, queues and delays at priority junctions. The software outputs values for each junction arm for the Ratio of Flow to Capacity (RFC) and the maximum queue length (vehicles).

- An RFC value of below 0.85 indicates that the junction is operating well within capacity.
- An RFC value between 0.85 and 1.00 indicates that the junction continues to operate within capacity, however, may be sensitive to discrete periods of demand.
- An RFC value of over 1.00 indicates that the junction is operating over its theoretical capacity with some degree of queues and delays likely to be experienced at the junction. At this point, junction models may behave unpredictably given software limitations.



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The LinSig software package produces similar values for signalised junctions; the Degree of Saturation (DoS) and Mean Maximum Queue Data (MMQ).

- A DoS of below 85% indicates that the junction is operating well within capacity.
- A DoS of between 85% and 100% indicates that the junction is operating within capacity, but may be sensitive to periods of high demand.
- A DoS of above 100% indicates that the junction is operating over its theoretical capacity with some queues and delays likely.

VISSIM microsimulation software produces results relating to Level of Service (LOS) which are ranked as follows:

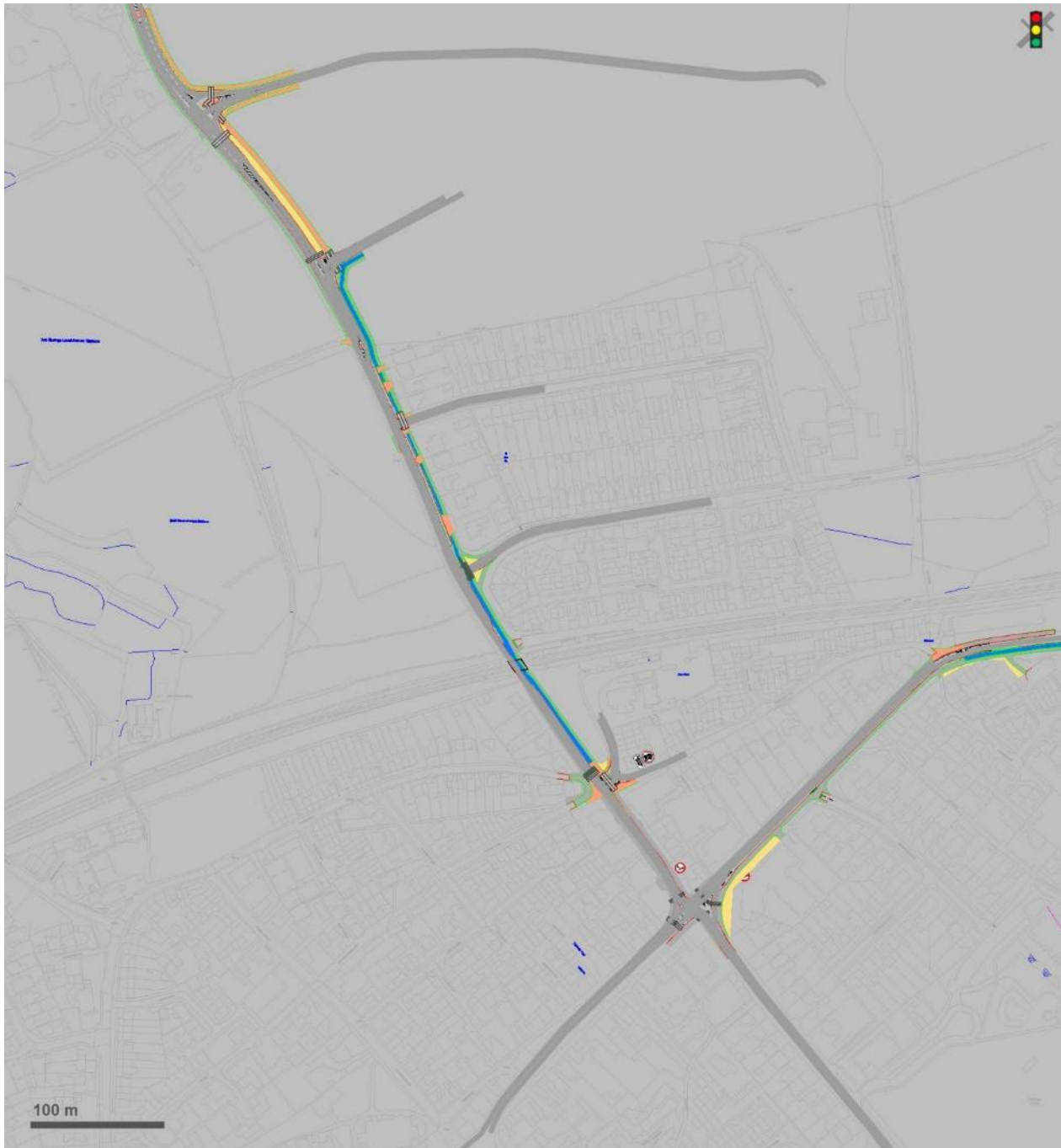
- LOS A – Free Flow
 - Traffic flows at or above the posted speed limit and all motorists have complete mobility between lanes.
- LOS B – Reasonably Free Flow
 - Slightly more vehicles than LOS A, but speeds are maintained, and drivers have reasonable freedom to manoeuvre.
- LOS C – Stable Flow
 - Traffic density begins to restrict manoeuvrability and speeds are slightly reduced.
- LOS D – Approaching Unstable Flow
 - Speeds are noticeably reduced, and manoeuvrability is limited, small increases in traffic can cause substantial delays.
- LOS E – Unstable Flow
 - Traffic is at or near capacity, with speeds varying significantly and frequent stoppages.
- LOS F – Forced or Breakdown Flow
 - Traffic exceeds roadway capacity, leading to stop-and-go conditions and significant delays.

8.7.2 A507 Corridor

The A507 North Road / Station Road / Clothall Road corridor is noted as a sensitive route locally and within policy and will be the subject of significant transformation through delivery of the BA1 site access and bus access, shuttle working under the rail bridge, and reconfiguration of the Whitehorse Street crossroads.

The VISSIM model built to test the corridor is a microsimulation model which provides understanding of the interactions between the individual junctions, as well as of the corridor as a whole, as shown in the modelled network in Figure 8-4.

Figure 8-4: Extent of VISSIM Model



The traffic signals coded into the model are timed such that platoons of vehicles travelling from one end of the modelled corridor to the other (e.g. from Clothall Road to the BA1 North Road access) can generally travel on consecutive green signals, reducing potential for blocking back through individual junctions.

In all scenarios, the BA1 bus only access is given priority over general traffic; when buses arrive to the junction, they are given a green signal and traffic on Station Road is stopped. The VISSIM model assumes four buses per hour in each direction using the BA1 bus access, and bus stops are coded into the model to simulate situations where halting buses briefly slow traffic.



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8.7.2.1 2033 Interim Year

The 2033 Interim Year scenario is the last point before many of the significant off-site interventions are introduced (as described in **Section 7.2**). That said, the shuttle working system under the rail bridge will be introduced by this point, as well as the BA1 North Road access and bus access will be delivered, and so some traffic is assumed to have been displaced away from the A507 as a result of this. Further details of the methodology for traffic redistributed away from the A507 are summarised in Section 7.5.2.1.

The VISSIM results in 2033 are not significantly different to the existing situation in 2025 (based on queue survey data). At the crossroads, queues on Station Road are reduced in length compared with the present day; average maximum queues are ~280m in the present day and reduce to ~120m in the 2033 scenario. This is a function of the off-site interventions proposed, the mode shift they would result in, and the timing signals in the model. Queues on other arms moderately increase as a result of the retiming in the model, with the longest maximum average queues being ~100m on Whitehorse Street in the morning peak hour.

The signals at the BA1 site access junction on North Road are timed so as to gate some traffic back from entering the southern section of the corridor. Average maximum queues on approach to the junction from the north are ~120m.

8.7.2.2 2040 Option 1

The 2040 Option 1 scenario worsens performance of the junctions along the corridor because this is the highest trip generation scenario. This is most notable in the morning, when the commuting peak is combined with peak school drop-off. Signals are timed and sequenced to avoid any blocking back through the shuttle working or crossroads, and therefore average maximum queues extend up to ~340m on Clothall Road and ~320m on Whitehorse Street. These have potential to block back through adjacent junctions (not included in the VISSIM model), for example Pinnocks Lane and Norton Road.

As above this is the worst-case scenario and time period in terms of trip generation, as schools tend to result in short term pulses in traffic.

8.7.2.3 2040 Option 2

The corridor operates better in the 2040 Option 2 scenario compared with 2033. Queues are reduced at the BA1 site access and most arms of the crossroads, with the longest queue being on Whitehorse Street (circa 160m average maximum queue). Whilst the BA1 access junction is used to gate traffic, this does not result in extensive queues on North Road north of the junction.

This is a result of the transport strategy and interventions proposed; the shuttle working, signal timings along the corridor and banning of turns at the crossroads all contribute to reduced vehicle movements on the corridor.

The results of all three scenarios are summarised in **Table 8-5**.



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Table 8-5: A507 Corridor junction modelling summary

Junction	Arm	AM Peak				PM Peak			
		Queue length – Average	Queue length – Maximum	Vehicle Delay (seconds)	LOS	Queue length – Average	Queue length – Maximum	Vehicle Delay (seconds)	LOS
2033 with development									
North Road - BA1 Proposed Access Junction (1.1)	A507 - Station Road (N) - Left Turn	129.89	196.19	67.68	LOS_D	120.43	200.21	67.50	LOS_D
	A507 - Station Road (N) - Ahead Only	129.89	196.19	143.02	LOS_F	120.43	200.21	160.28	LOS_F
	BA1 - Access - Left Turn	17.00	29.33	32.82	LOS_D	10.28	18.91	32.64	LOS_D
	BA1 - Access - Right Turn	12.84	24.58	32.82	LOS_C	7.81	15.72	32.64	LOS_C
	A507 - Station Road (S) - Ahead	45.42	76.11	13.73	LOS_B	80.78	123.51	17.47	LOS_B
	A507 - Station Road (S) - Right Turn	45.42	76.11	49.84	LOS_D	80.78	123.51	59.95	LOS_E
North Road - BA1 Bus Priority Junction (1.2)	North Road S	30.92	73.47	10.59	LOS_A	63.72	130.47	15.10	LOS_B
	North Road N	66.47	104.53	26.19	LOS_C	71.71	124.82	49.77	LOS_D
Proposed Railway Underpass One-Way Working	Railway Underpass - Southbound	95.15	126.53	47.75	LOS_D	87.72	138.79	57.44	LOS_D
	Railway Underpass - Northbound	56.28	98.19	17.65	LOS_B	94.19	144.61	18.68	LOS_B
Station Road / Royston Road / Whitehorse Street / Clothall Road	Station Road	116.63	148.95	41.80	LOS_D	80.98	123.16	48.33	LOS_D
	Royston Road - Ahead	83.52	156.71	59.37	LOS_D	78.40	145.32	45.40	LOS_D
	Royston Road - Left	77.15	150.63	42.42	LOS_C	69.03	139.03	29.80	LOS_C
	Clothall Road	73.67	115.58	115.89	LOS_F	55.99	88.27	59.16	LOS_E
	Whitehorse Street – Ahead & Left	102.43	184.59	56.14	LOS_D	74.43	141.21	48.86	LOS_D
	Whitehorse Street – Right	102.43	184.59	55.83	LOS_D	74.43	141.21	51.11	LOS_D



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Junction	Arm	AM Peak				PM Peak			
		Queue length – Average	Queue length – Maximum	Vehicle Delay (seconds)	LOS	Queue length – Average	Queue length – Maximum	Vehicle Delay (seconds)	LOS
2040 with development (option1)									
North Road - BA1 Proposed Access Junction (1.1)	A507 - Station Road (N) - Left Turn	37.31	54.27	15.41	LOS_B	58.03	123.86	20.09	LOS_B
	A507 - Station Road (N) - Ahead Only	37.31	54.27	48.36	LOS_D	58.03	123.86	86.48	LOS_E
	BA1 - Access - Left Turn	35.51	75.86	25.36	LOS_C	12.31	41.40	35.69	LOS_C
	BA1 - Access - Right Turn	63.15	100.69	25.36	LOS_C	61.63	95.20	35.69	LOS_C
	A507 - Station Road (S) - Ahead	44.29	75.74	38.27	LOS_D	75.66	126.22	26.66	LOS_C
	A507 - Station Road (S) - Right Turn	44.29	75.74	61.93	LOS_E	75.66	126.22	62.57	LOS_E
North Road - BA1 Bus Priority Junction (1.2)	North Road S	23.38	54.20	11.95	LOS_B	62.02	122.88	17.68	LOS_B
	North Road N	54.20	92.09	30.82	LOS_C	49.96	81.52	49.43	LOS_D
Proposed Railway Underpass One-Way Working	Railway Underpass - Southbound	70.67	101.16	33.25	LOS_C	72.09	114.46	71.46	LOS_E
	Railway Underpass - Northbound	35.41	58.44	17.12	LOS_B	73.54	121.88	15.12	LOS_B
Station Road / Royston Road / Whitehorse Street / Clothall Road	Station Road	110.74	162.97	64.69	LOS_E	73.58	109.33	92.24	LOS_E
	Royston Road - Ahead	73.10	128.74	55.21	LOS_D	53.34	90.42	36.83	LOS_D
	Royston Road - Left	64.36	120.88	57.62	LOS_E	40.07	85.54	37.74	LOS_D
	Clothall Road	345.42	505.42	280.63	LOS_F	107.39	165.77	73.68	LOS_E
	Whitehorse Street – Ahead & Left	321.25	481.30	205.25	LOS_F	140.35	226.89	52.87	LOS_D
	Whitehorse Street – Right	196.46	456.15	221.87	LOS_F	8.82	43.08	55.11	LOS_D



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Project related

Junction	Arm	AM Peak				PM Peak			
		Queue length – Average	Queue length – Maximum	Vehicle Delay (seconds)	LOS	Queue length – Average	Queue length – Maximum	Vehicle Delay (seconds)	LOS
2040 with development (option 2)									
North Road - BA1 Proposed Access Junction (1.1)	A507 - Station Road (N) - Left Turn	46.06	83.28	18.42	LOS_B	44.96	79.48	14.86	LOS_B
	A507 - Station Road (N) - Ahead Only	46.06	83.28	75.24	LOS_E	44.96	79.48	54.89	LOS_D
	BA1 - Access - Left Turn	22.24	65.42	35.78	LOS_D	12.37	40.38	35.65	LOS_C
	BA1 - Access - Right Turn	63.75	99.79	35.78	LOS_C	60.06	93.73	35.65	LOS_C
	A507 - Station Road (S) - Ahead	53.12	85.75	34.26	LOS_D	69.39	120.21	24.56	LOS_C
	A507 - Station Road (S) - Right Turn	53.12	85.75	50.60	LOS_D	69.39	120.21	66.59	LOS_E
North Road - BA1 Bus Priority Junction (1.2)	North Road S	29.65	56.53	10.60	LOS_B	55.07	118.59	16.78	LOS_B
	North Road N	60.91	97.05	67.71	LOS_E	58.00	89.97	45.69	LOS_D
Proposed Railway Underpass One-Way Working	Railway Underpass - Southbound	53.78	73.97	28.30	LOS_C	70.79	101.74	53.30	LOS_D
	Railway Underpass - Northbound	36.35	69.05	14.28	LOS_B	71.53	121.99	15.67	LOS_B
Station Road / Royston Road / Whitehorse Street / Clothall Road	Station Road	93.14	149.95	83.73	LOS_E	81.25	125.79	82.18	LOS_E
	Royston Road - Ahead	61.90	100.38	36.32	LOS_D	51.48	85.04	34.44	LOS_D
	Royston Road - Left	44.63	87.46	35.51	LOS_D	37.57	78.05	34.14	LOS_C
	Clothall Road	110.11	165.13	93.66	LOS_E	98.13	151.41	89.48	LOS_E
	Whitehorse Street – Ahead & Left	166.56	270.32	60.05	LOS_E	157.13	263.28	54.27	LOS_D
	Whitehorse Street – Right	13.53	64.45	65.41	LOS_E	9.02	34.05	56.77	LOS_E

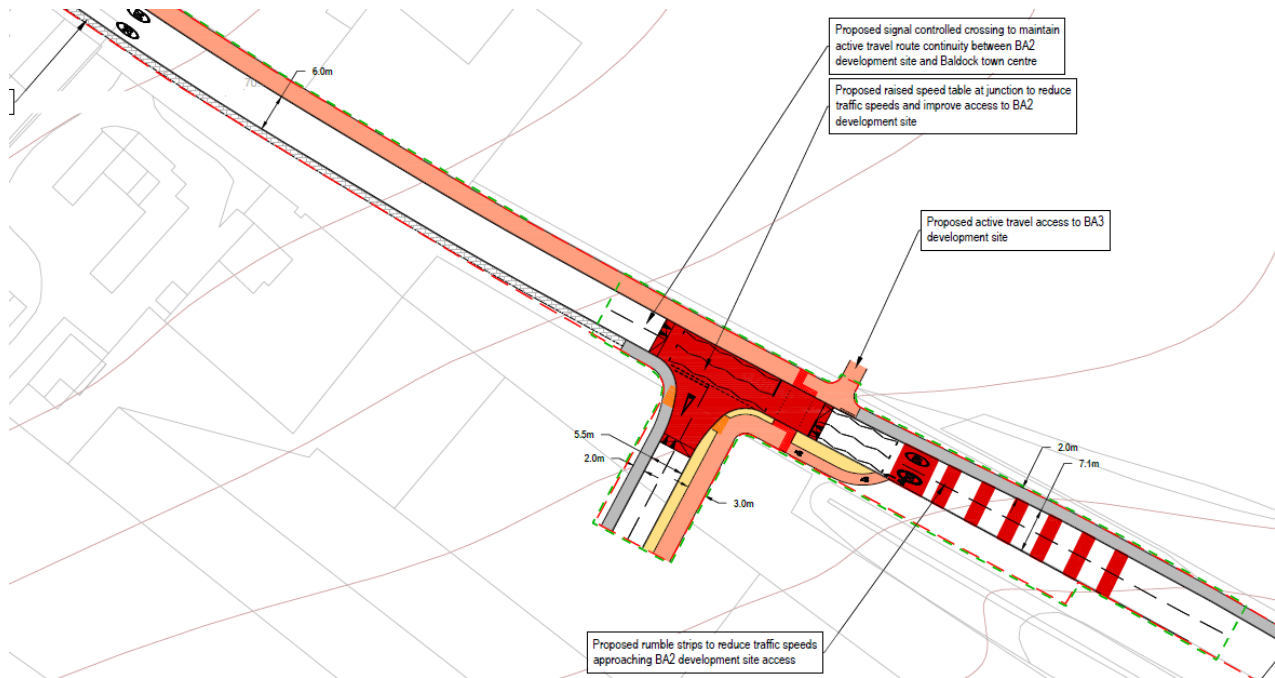
8.7.3 BA2, BA3 and BA10 Site Access

The proposed accesses to sites BA2, BA3 and BA10 have been modelled using a combination of Junction9 and LinSig software, with the results presented below. Of the five access junction models, four models operate within capacity across all arms in all scenarios.

At Wallington Road (BA3 access) the inbound arm operates above capacity (RFC above 0.9) in the 2040 1 scenario, in the AM Peak. The 2040 Option 1 scenario includes a 12-form secondary school on BA3, and the highest volume of vehicle trips are generated in this scenario. This is especially the case in the AM peak, when school arrivals coincide with the local network peak. Therefore, some localised queueing at the access to the secondary school site is expected, given the context of the development. Option 1 represents just one potential development at site BA3, and in scenarios considering Option 2 the junction performs within capacity across all arms in both network peaks.

8.7.3.1 Clothall Road (2.1)

Figure 8-5: Clothall Road – BA2 Proposed Access Junction (excerpt from PC7029-RHD-CE-GB-DR-D-0116)





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Table 8-6: Clothall Road – BA2 Proposed Access Junction – Model Results

Junction Arm	AM Peak				PM Peak			
	Queue (Veh)	95 th % Queue	Delay (s)	RFC	Queue (Veh)	95 th % Queue	Delay (s)	RFC
2033 with development								
From Site Access Road	0.1	0.5	5.84	0.10	0.0	0.5	5.57	0.04
From Clothall Road West	0.1	0.5	4.82	0.05	0.2	0.9	4.99	0.11
From Clothall Road East	0.2	0.5	2.35	0.17	0.2	0.5	2.33	0.18
2040 with development (option 1)								
From Site Access Road	0.1	0.5	5.82	0.09	0.0	0.5	5.57	0.04
From Clothall Road West	0.1	0.5	4.81	0.04	0.2	0.9	4.97	0.11
From Clothall Road East	0.2	0.5	2.37	0.17	0.2	0.5	2.33	0.18
2040 with development (option 2)								
From Site Access Road	0.1	0.5	5.82	0.09	0.0	0.5	5.58	0.04
From Clothall Road West	0.1	0.5	4.79	0.04	0.2	0.9	4.99	0.11
From Clothall Road East	0.2	0.5	2.37	0.17	0.2	0.5	2.34	0.19

8.7.3.2 Royston Road / A505 Roundabout (10.1)

The results of a model of Royston Road / A505 Roundabout with the existing layout is indicated below, which tested all background traffic scenarios. A subsequent model was created to test the updated layout of the roundabout, which includes the new access road connecting to BA1. The model of the proposed roundabout layout was used to test all future scenarios with development.

Within the model results, the proposed roundabout layout performs within capacity across all arms in all future year scenarios tested.

Figure 8-6: Royston Road Roundabout with A505 (excerpt from PC7029-RHD-CE-GB-DR-D-0117)

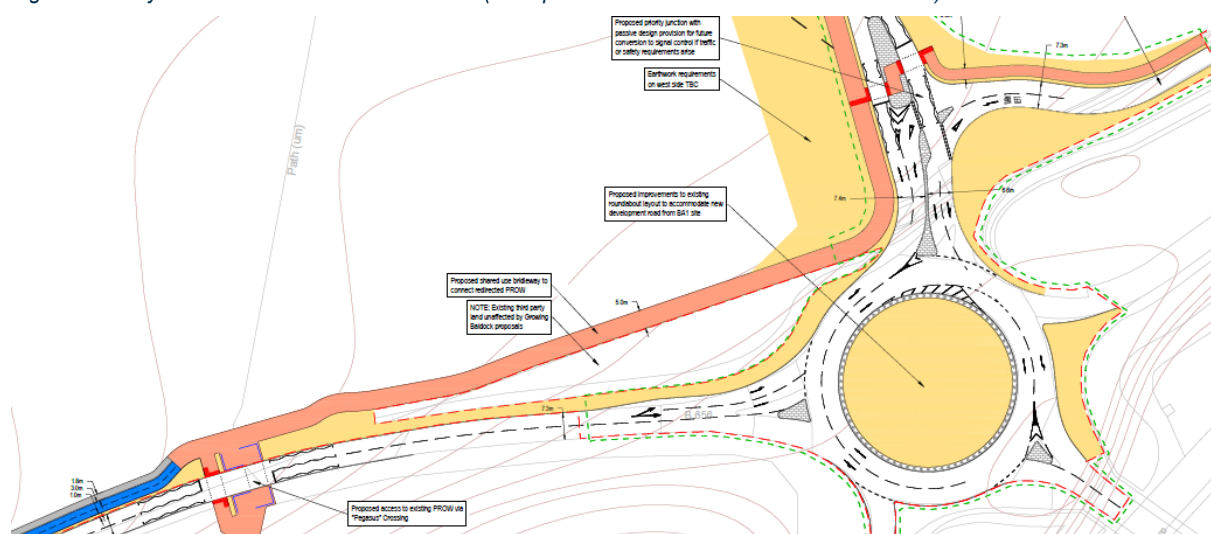


Table 8-7: Royston Road Roundabout with A505 – BA1 and BA10 Proposed Access Junction – Model Results

Junction Arm	AM Peak				PM Peak			
	Queue (Veh)	95 th % Queue	Delay (s)	RFC	Queue (Veh)	95 th % Queue	Delay (s)	RFC
2033 with development								
Royston Road	0.0	0.5	1.92	0.00	0.0	0.5	1.88	0.01
B656 Baldock	0.3	1.2	3.44	0.22	0.3	1.3	3.39	0.24
A505 Off-Slip	0.0	0.5	2.12	0.03	0.0	0.5	2.08	0.03
B656 Royston Road	0.4	1.1	2.75	0.27	0.3	1.1	2.54	0.22
2040 with development (option 1)								
Royston Road	0.4	1.5	2.62	0.29	0.1	0.5	2.14	0.12
B656 Baldock	0.3	1.1	3.76	0.21	0.2	0.5	3.27	0.18
A505 Off-Slip	0.1	0.5	2.58	0.13	0.0	0.5	2.12	0.04
B656 Royston Road	0.3	1.3	2.82	0.24	0.5	1.9	3.05	0.32
2040 with development (option 2)								
Royston Road	0.4	1.4	2.61	0.29	0.1	0.5	2.14	0.12
B656 Baldock	0.3	1.2	3.76	0.22	0.2	0.5	3.28	0.18
A505 Off-Slip	0.1	0.5	2.58	0.13	0.0	0.5	2.13	0.04
B656 Royston Road	0.3	1.3	2.79	0.25	0.5	1.9	3.05	0.32

8.7.3.3 Royston Road Priority Junction (10.2)

Figure 8-7: Royston Road - BA10 Proposed Access Junction (excerpt from PC7029-RHD-CE-GB-DR-D-0114)

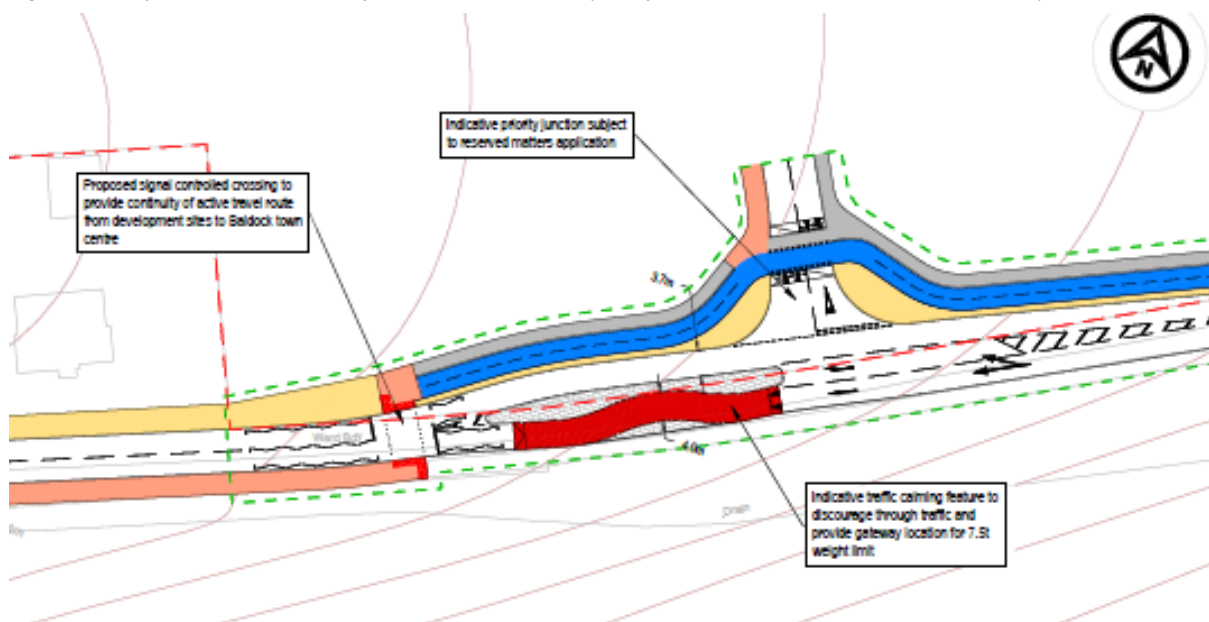


Table 8-8: Royston Road - BA10 Proposed Access Junction – Model Results

Junction Arm	AM Peak				PM Peak			
	Queue (Veh)	95 th % Queue	Delay (s)	RFC	Queue (Veh)	95 th % Queue	Delay (s)	RFC
2033 with development								
From Site Access	0.0	0.5	9.68	0.04	0.1	0.5	9.16	0.08
From Royston Road	0.0	0.5	6.98	0.01	0.0	0.5	6.52	0.00
2040 with development (option 1)								
From Site Access	0.1	0.5	9.12	0.09	0.1	0.5	8.06	0.07
From Royston Road	0.1	0.5	7.43	0.10	0.0	0.5	6.52	0.02
2040 with development (option 2)								
From Site Access	0.1	0.5	9.34	0.09	0.1	0.5	8.08	0.07
From Royston Road	0.1	0.5	7.53	0.11	0.0	0.5	6.52	0.02

8.7.3.4 Royston Road Signalised Junction (10.3)

Figure 8-8: Royston Road - BA10 Proposed Access Junction (excerpt from PC7029-RHD-CE-GB-DR-D-0114)

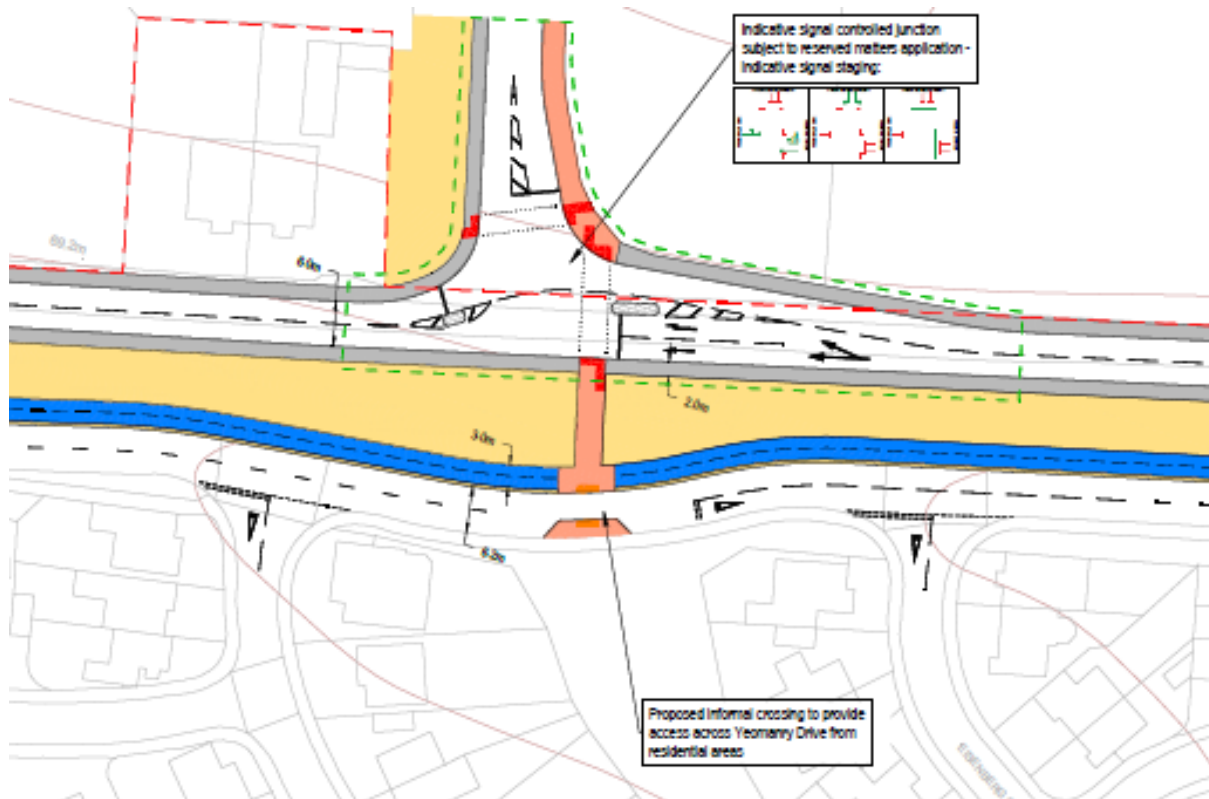


Table 8-9: Royston Road - BA10 Proposed Access Junction – Model Results

Arm	AM Peak		PM Peak	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
2033 with development				
Royston Road EB	29.9%	4.0	40.2%	6.4
Royston Road WB	51.1%	9.1	32.0%	4.9
Access Road	25.8%	1.2	36.7%	2.3
2040 with development (option 1)				
Royston Road EB	38.7%	4.3	25.1%	3.3
Royston Road WB	47.3%	8.2	36.3%	5.8
Access Road	48.0%	3.0	34.4%	2.3
2040 with development (option 2)				
Royston Road EB	41.4%	5.0	25.5%	3.4
Royston Road WB	41.3%	6.8	36.3%	5.8
Access Road	40.0%	2.8	34.4%	2.3

8.7.4 Local Junctions

In addition to the Site access junctions, and junctions included as part of the A507 corridor VISSIM model, two further local junctions have been modelled using Junctions9 software to derive the impact of the development on the local highway network. The results of these two junctions are set out below, demonstrating that the models of both junctions perform well within capacity in all scenarios.

8.7.4.1 Clothall Road / Wallington Road / South Road

Figure 8-9: Clothall Road / Wallington Road / South Road



Table 8-10: Clothall Road / Wallington Road / South Road – Model Results

Junction Arm	AM Peak				PM Peak			
	Queue (Veh)	95 th % Queue	Delay (s)	RFC	Queue (Veh)	95 th % Queue	Delay (s)	RFC
2033 with development								
A507 Clothall Road South	0.4	1.5	3.52	0.29	0.3	1.4	3.26	0.25
South Road	0.6	2.7	5.55	0.38	0.9	2.0	6.53	0.48
A507 Clothall Road North	0.2	0.5	2.54	0.14	0.2	0.5	2.73	0.17
Wallington Road	0.3	1.3	4.13	0.24	0.2	0.5	3.89	0.18
2040 with development (option 1)								
A507 Clothall Road South	0.5	2.1	4.63	0.33	0.4	1.2	3.71	0.28
South Road	3.1	15.1	16.62	0.77	1.3	1.9	8.32	0.56
A507 Clothall Road North	0.9	2.3	4.44	0.46	0.2	0.5	2.79	0.20
Wallington Road	1.1	2.0	6.68	0.52	0.6	2.6	5.04	0.36
2040 with development (option 2)								
A507 Clothall Road South	0.4	1.6	3.97	0.30	0.4	1.5	3.42	0.26
South Road	1.5	1.8	8.93	0.60	1.3	1.6	7.94	0.56
A507 Clothall Road North	0.3	1.4	3.05	0.25	0.3	1.2	2.95	0.23
Wallington Road	0.5	2.4	4.97	0.34	0.3	1.3	4.26	0.24



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8.7.4.2 London Road / South Road / High Street Roundabout

Figure 8-10: London Road / South Road / High Street Roundabout



Table 8-11: London Road / South Road / High Street Roundabout – Model Results

Junction Arm	AM Peak				PM Peak			
	Queue (Veh)	95 th % Queue	Delay (s)	RFC	Queue (Veh)	95 th % Queue	Delay (s)	RFC
2033 with development								
South Road	1.4	1.6	7.54	0.59	1.1	1.9	6.82	0.53
South Lodge Mews	0	0.5	15.63	0.03	0	~1	0	0
London Road	0.7	2.8	4.67	0.4	0.9	2	5.27	0.48
Supermarket Access	0.2	0.5	2.89	0.19	0.5	2.3	3.47	0.34
High Street	0.4	1.7	3.08	0.3	0.6	2.8	3.72	0.39
2040 with development (option 1)								
South Road	2.4	7.1	10.39	0.71	1.3	1.6	7.45	0.57
South Lodge Mews	0	0.5	18.65	0.04	0	~1	0	0
London Road	1.3	1.5	6.52	0.57	1	1.7	5.48	0.51
Supermarket Access	0.3	0.9	3.31	0.21	0.5	2.2	3.5	0.33
High Street	0.5	2.2	3.53	0.33	0.6	2.8	3.71	0.38
2040 with development (option 2)								
South Road	1.9	3.1	8.97	0.66	1.2	1.8	6.96	0.54
South Lodge Mews	0	0.5	17.31	0.04	0	~1	0	0
London Road	1	1.9	5.47	0.49	0.8	2.4	4.93	0.45
Supermarket Access	0.2	0.5	3.08	0.2	0.5	2.1	3.4	0.33
High Street	0.4	1.8	3.29	0.31	0.6	2.8	3.68	0.38

8.7.5 Strategic Road Junctions

Two strategic junctions have been modelled; Junction 9 and Junction 10 of the A1(M). The results of the modelling exercises at these two junctions are set out below.

8.7.5.1 A1(M) Junction 9

Based on the results presented below, the existing layout of A1(M) Junction 9 does not perform within capacity in present and future year scenarios. Letchworth Gate is the worst-performing arm, with DoS over 90% in all future scenarios.

These results reflect anecdotal evidence and comments received during public consultation suggesting that the junction is congested, to the extent that some people avoid it and use alternative local routes through Baldock and Letchworth. The results of the junction modelling exercise with the existing layout of Junction 9 are set out below.

Figure 8-11: A1 (M) Junction 9 Existing Layout



Table 8-12: A1 (M) Junction 9 – Model Results

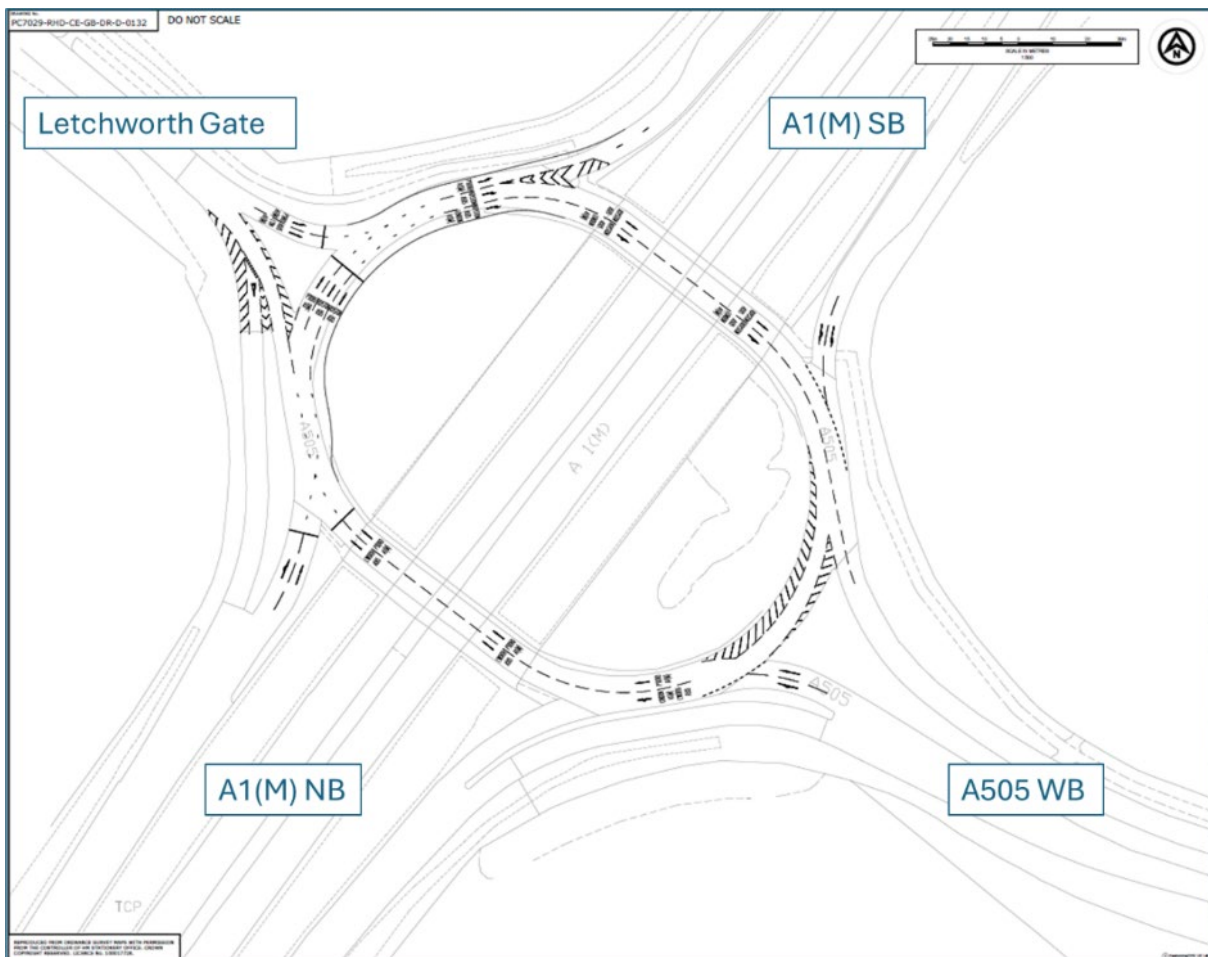
Scenario	Arm	AM Peak		PM Peak	
		DoS	MMQ (PCU)	DoS	MMQ (PCU)
2033 without development	A1 (M) SB	79.1%	4.7	50.7%	3.1
	A505 WB	91.9%	6.8	104.9%	33.1
	A1 (M) NB	80.8%	10.5	79.0%	12.2
	Letchworth Gate	95.7%	25.4	84.2%	13.3
2033 with development	A1 (M) SB	80.7%	5.1	60.9%	3.2
	A505 WB	91.9%	6.8	104.9%	32.8
	A1 (M) NB	80.8%	10.5	80.3%	12.9
	Letchworth Gate	96.6%	27.6	84.9%	13.7
2033 with development and mitigation	A1 (M) SB	80.6%	5.8	59.1%	3.5
	A505 WB	91.9%	8.3	104.9%	35.6
	A1 (M) NB	80.8%	11.6	79.0%	12.3
	Letchworth Gate	49.9%	7.4	48.8%	7.8
2040 without development	A1 (M) SB	71.0%	3.9	51.8%	1.9
	A505 WB	87.0%	4.1	99.4%	13.1
	A1 (M) NB	77.3%	8.9	76.0%	11.5
	Letchworth Gate	91.4%	18.5	80.1%	10.1
2040 with development (option 1)	A1 (M) SB	77.4%	4.7	55.9%	2.9
	A505 WB	86.3%	3.7	99.2%	12.8
	A1 (M) NB	77.1%	9.9	80.7%	13.0
	Letchworth Gate	93.7%	21.6	81.8%	11.9
2040 with development (option 1) and mitigation	A1 (M) SB	77.6%	5.3	54.8%	3.2
	A505 WB	86.3%	6.4	99.2%	13.8
	A1 (M) NB	77.1%	10.0	76.0%	12.3
	Letchworth Gate	49.0%	7.9	46.9%	22.6
2040 with development (option 2)	A1 (M) SB	77.7%	4.7	56.2%	2.9
	A505 WB	87.0%	4.6	99.4%	13.0
	A1 (M) NB	77.3%	10.2	81.3%	13.3
	Letchworth Gate	93.9%	22.1	82.1%	11.9
2040 with development (option 2) and mitigation	A1 (M) SB	78.0%	5.4	55.6%	3.3
	A505 WB	87.0%	6.5	99.4%	14.0
	A1 (M) NB	77.3%	10.1	76.0%	12.4
	Letchworth Gate	49.2%	8.0	46.9%	7.4

In light of the junction results with the existing junction layout, an alternative layout of the junction has been tested, which includes signalisation of Letchworth Gate. This alternative layout and the results of testing the alternative layout are set out below.

The results confirm that the proposed mitigation is effective in improving the operation of the junction overall, especially on Letchworth Gate, which operates well within capacity (DoS below 85%) in all scenarios. In this 'with mitigation' scenario, the junction operates satisfactorily in the context of delivering a tangible/meaningful mitigation scheme, without providing so much additional capacity that it could induce additional traffic.

It is therefore proposed that this scheme be delivered as an off-site intervention to mitigate the impacts of the development at Junction 9. It should be noted that this proposed intervention is subject to the results of the forthcoming COMET model results and would be further considered subject to monitoring undertaken as part of the MMF.

Figure 8-12: A1 (M) Junction 9 Proposed Layout (excerpt of PC7029-RHD-CE-GB-DR-D-0131)



A1 (M) Junction 9 – Reassignment Assumptions

The A1(M) Junction 9 model has been run with additional background traffic, using alternative traffic assignment assumptions which assume that more of the through traffic from Baldock reroutes onto the strategic and main road networks (described in **Section 7.5.2.4**). The results of the model with the reassignment assumptions are set out below, for both the junction's existing layout and the proposed layout with mitigation. With these assumptions, the model has only been run for the 2040 Option 1 and Option 2 scenarios, to represent a 'worst-case' scenario.

In the existing layout, the additional background traffic exacerbates the queueing, with both Letchworth Gate and the A505 WB reporting DoS above 100%. When the mitigation is applied, the DoS is significantly reduced on Letchworth Gate, with the arm operating within capacity in both 2040 Option 1 and Option 2 scenarios. The performance on the other arms of the junction are not worsened as a result of the mitigation.

Table 8-13: A1 (M) Junction 9 Existing Layout – Reassignment Assumptions Model Results

Scenario	Arm	AM Peak		PM Peak	
		DoS	MMQ (PCU)	DoS	MMQ (PCU)
2040 with development (option 1)	A1 (M) SB	93.9%	9.3	76.20%	4.8
	A505 WB	94.4%	8.2	107.10%	36.1
	A1 (M) NB	100.2%	19.7	86.20%	14.1
	Letchworth Gate	100.4%	64.6	87.70%	15.5
2040 with development (option 1) and mitigation	A1 (M) SB	89.7%	8.7	75.90%	5.3
	A505 WB	94.5%	9.6	107.10%	39.1
	A1 (M) NB	79.4%	11.1	77.0%	12.6
	Letchworth Gate	52.1%	8.6	52.9%	8.7
2040 with development (option 2)	A1 (M) SB	93.7%	9.2	77.4%	4.9
	A505 WB	95.2%	8.8	107.4%	36.7
	A1 (M) NB	82.8%	11.3	84.0%	13.7
	Letchworth Gate	100.6%	66.8	87.9%	15.8
2040 with development (option 2) and mitigation	A1 (M) SB	90.0%	8.7	76.1%	5.3
	A505 WB	95.4%	10.1	107.4%	39.7
	A1 (M) NB	79.5%	11.3	77.0%	12.9
	Letchworth Gate	52.4%	8.7	52.9%	8.7

8.7.5.2 A1 (M) Junction 10

The results of the junction model at Junction 10 of the A1(M) is set out below, demonstrating that the model operates within capacity in all scenarios.

Figure 8-13: A1 (M) Junction 10



Table 8-14: A1 (M) Junction 10 – Model Results

Junction Arm	AM Peak				PM Peak			
	Queue (Veh)	95th % Queue	Delay (s)	RFC	Queue (Veh)	95th % Queue	Delay (s)	RFC
2033 with Development								
A507 WB	0.8	2.9	4.43	0.43	1.1	1.5	4.33	0.53
A1 (M) NB	0.4	1.8	3.86	0.31	1.9	2.4	7.66	0.65
A507 EB	2.3	4.4	5.96	0.7	1.9	3.2	5.54	0.66
A1 (M) SB	1.5	1.6	6.4	0.59	0.9	2.2	4.34	0.46
2040 with development (option 1)								
A507 WB	1.5	1.8	6.15	0.61	1.9	3	5.96	0.66
A1 (M) NB	0.5	2.3	4.43	0.34	2.4	6.4	9.84	0.71
A507 EB	2.8	6.4	7.54	0.74	2.3	4	6.73	0.7
A1 (M) SB	3.5	14.8	11.8	0.78	1.3	1.5	5.44	0.57
2040 with development (option 2)								
A507 WB	1.5	1.7	6.02	0.60	1.8	2.8	5.77	0.65
A1 (M) NB	0.5	2.3	4.40	0.34	2.3	5.8	9.58	0.70
A507 EB	2.8	6.0	7.42	0.74	2.3	3.9	6.59	0.70
A1 (M) SB	3.1	11.8	10.85	0.76	1.3	1.5	5.44	0.57



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8.8 Summary

The local modelling demonstrates that the majority of off-site junctions operate within operational capacity thresholds in all future scenarios. Recognising that the baseline situation influences junction performance, the other contributing factors related to the proposed development and off-site interventions are as follows:

- The transport strategy provides genuine transport choice, giving more opportunity for future site users to travel by active and sustainable modes, alongside private vehicles.
- The proposed off-site interventions are transformational and ambitious; they will likely change how some existing road users travel.
- Some capacity is released as a result of reassignment of background traffic, which is then taken up by development traffic.
- Whilst through-trips may reduce within Baldock, the SRN will perform an important role in accommodating some of these trips.
- The expected mode shift and background traffic reassignment is embedded within the traffic flows which have been modelled; the modelling has not driven the mode shift assumptions.

Where the modelling has suggested potentially unsafe or unacceptable levels of congestion and delay (above conventional operational capacity thresholds), mitigation has been explored. Along the A507 corridor, gating of traffic at the BA1 site access junction on North Road works to reduce the potential for blocking back of queues through the adjacent junctions.

At the A1(M), a scheme which signalises the A505 Letchworth Gate is proposed. This mitigates the impact of the proposed development, whilst unlocking some additional capacity to account for potential rerouting of through traffic in Baldock and Letchworth onto the A1.

Overall, the results of the local modelling exercise align with HCC's LTP4, which places weight on improvements for active and sustainable modes over and above highway capacity-based improvements. Where there are material increases in queues and delay, these are balanced against the clear and tangible enhancements which will be delivered such as new crossing points, dedicated cycling infrastructure and bus priority measures.

The transport strategy set out in this Transport Assessment therefore validates against key policy and the Transport Vision envisaged for the proposed development. When available, the COMET model will be used to confirm these conclusions and provide greater insights into potential route assignment and cumulative impacts.

9 Framework Travel Plan

Alongside this Transport Assessment, a Framework Travel Plan (FTP) has been prepared in association with this application. The FTP will act as a live document; elements will need to be reviewed and updated as progress is made with the outline planning application and further application stages. ITP has prepared the FTP in line with *HCC's Travel Plan Guidance*⁶ and the Department for Transport's (DfT) *Good Practice Guidelines: Delivering Travel Plans through the Planning Process*⁷.

9.1 Scope of FTP

HCC's Travel Plan Guidance indicates that mixed-use or phased developments with multiple occupants require an FTP. The Site-Wide Travel Plan Coordinator (SWTPC) will centrally administer the overall objectives and targets for the entire development site, which the FTP will clearly outline. The FTP covers all residential, employment and educational sites included within the outline planning application for Growing Baldock in relation to site allocations BA1, BA2, BA3 and BA10.

All individual site occupiers who come forward as part of future development plans will need to prepare and implement Full Travel Plans for residential, educational or workplace developments. Each Full Travel Plan should comply with and be consistent with the wider targets and requirements laid out in the FTP.

Developers must agree on detailed trigger points for baseline monitoring and Full Travel Plan submission in liaison with HCC, ensuring they align with the anticipated build-out schedule and development size. For workplace developments, the trigger point for baseline monitoring and submission of a Full Travel Plan will be within three months of first occupation.

Developers must agree on the trigger point for baseline monitoring and Full Travel Plan submission for educational developments in liaison with HCC. Full Travel Plans for educational establishments should be incorporated into the Modeshift STARS National Accreditation Scheme. Programmes to build new schools and to redevelop or expand existing ones are an opportunity to ensure sites are well designed to support active and sustainable travel. This is particularly pertinent to the educational proposals as part of Growing Baldock.

9.2 Aims and Objectives

The FTP is underpinned by a Transport Vision that prioritises quality of life and sustainable transport. Its overarching aim is to ensure that 50% of all trips are made by non-car modes. This acts as the overarching aim of the FTP, and more granular targets which can be monitored in greater detail, are included in the full FTP.

To achieve the overarching aim of this FTP, the supporting objectives are:

- To set out an action plan which includes measures that are commensurate with Growing Baldock and will promote and encourage sustainable travel,
- To increase awareness of sustainable travel options and include suggestions for marketing and promotion,
- To encourage a shift from single-occupancy vehicle trips to more sustainable trips across short, medium and longer journey lengths, and
- To encourage active travel (particularly for shorter journeys) to support and promote healthier lifestyles.

⁶ *HCC's Travel Plan Guidance*

⁷ *Good Practice Guidelines: Delivering Travel Plans through the Planning Process*

9.3 Targets

ITP has developed the targets to support the aim and objectives of the FTP, based on HCC's Travel Plan Guidance. Targets set within the FTP will be broader than targets included within individual sites' Full Travel Plans. Targets included within individual sites' Full Travel Plans will both align and feed into the overarching FTP targets. The Site-Wide Travel Plan Coordinator will administer the overarching FTP targets centrally.

Table 9-1: FTP Targets

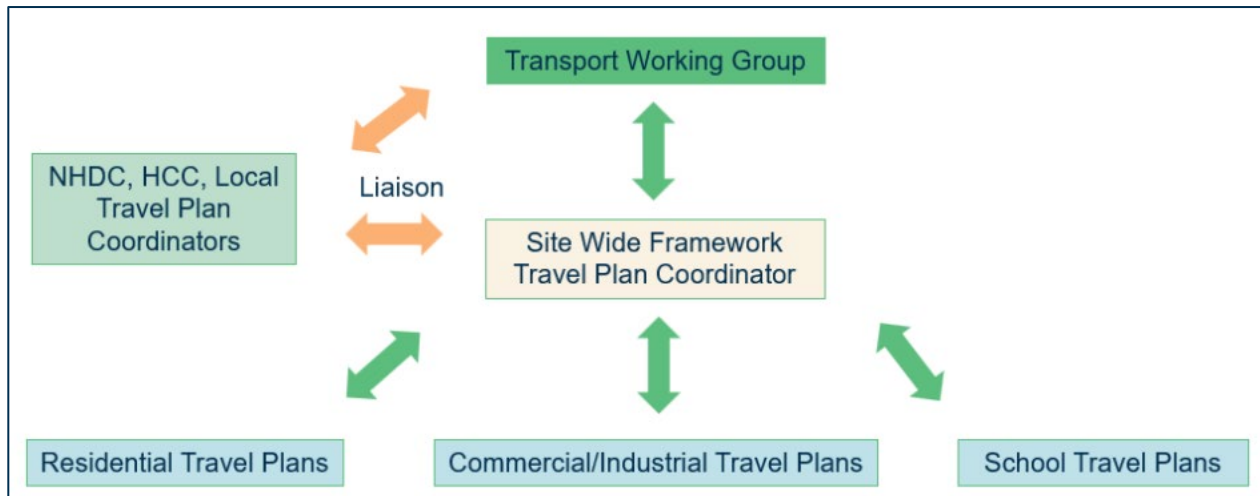
Development Type	Target	Indicator(s)
Residential	At least 30% of households have at least one occupant who travels by public transport weekly for medium/long trips At least 40% of households have at least one occupant who travels by walking or cycling weekly for short trips	% of short trips made by walking or cycling % of medium/long trips made by public transport % of short, medium and long trips made by car sharing % of short, medium and long trips made by single-occupancy vehicle
	Number of peak-hour trips	ATC Surveys
Educational	At least 40% of students will travel to the institution by active travel modes, public transport or park and stride	% of student trips made to the institution by walking, cycling, wheeling, public transport and park and stride
	At least 30% of staff will travel to the institution by active travel modes, car sharing or public transport	% of staff trips made to the institution by walking, cycling, public transport and car sharing
Workplace*	At least 35% of staff will travel to work via active travel modes, public transport or car sharing	% of commuting trips made by walking, cycling, public transport and car sharing % of trips removed due to home or remote working
Development-Wide	Achieve an average of 40% occupancy on the shuttle bus by the time 75% of the site is built out and operational.	- Weekly patronage statistics - Tracking of ridership growth % increase % uptake of free / discounted ticket incentive
	Achieve an increased awareness of sustainable travel modes across residents, students and employees	% of people aware of sustainable transport options % of people aware of how to find further information such as timetables, cycle route maps etc. - Number of promotional or marketing materials provided to residents, students and employees to help promote sustainable modes

*Bespoke targets for individual Full Travel Plans linked to workplaces will also need to include separate targets for visitor, business, freight and delivery travel.

9.4 Implementation

The FTP will be implemented via a combination of the Site-Wide Travel Plan Coordinator and individual site Travel Plan Coordinators (TPCs). All Travel Plan Coordinators will have the opportunity to attend or provide updates to the wider Transport Working Group (TWG). A plan which illustrates the relationship between the Site-Wide Travel Plan Coordinator, individual TPCs and TWG is presented in **Figure 9-1**.

Figure 9-1: FTP Governance Structure



The TWG will be the body that reviews the work of the Site Wide Travel Plan Coordinator and the operation of the transport network around the site as it is built out, to make decisions on the phasing and delivery of defined travel plan measures. The TWG will be established by the Site Wide Travel Plan Coordinator, reporting to the applicant team and engaging with the local planning and highway authorities. Further details of the TWG and its role in relation to the FTP and MMF are provided in the FTP document, which will be submitted as part of the wider outline planning application.

9.4.1 Site-Wide Travel Plan Coordinator (SWTPC)

A Site-Wide Travel Plan Coordinator will oversee and implement the monitoring of the FTP once planning permission is granted. ITP is fulfilling this role up to planning determination. The Site-Wide Travel Plan Coordinator will be responsible for a wide range of tasks, including but not limited to:

- Implementation and promotion of the FTP at a site-wide level,
- Liaising with the developers of each individual residential, educational and workplace site to gain their initial support and commitment to the aim, objectives and target of the FTP, including the commitment and understanding of the need to produce individual Full Travel Plans for any sites they oversee,
- Guiding developers through the process of developing individual site Full Travel Plans or Occupier Travel Plans and coordinating the approvals process via HCC (essential for obtaining reserved matters planning consent),
- Attending the TWG meetings,
- Overseeing the delivery of site-wide measures detailed in Table 7 1 as part of the action plan implementation and ensuring those responsible for wider measures are progressing these,
- Managing the FTP budget,
- Acting as a single point of contact for transport-related advice and information to developers and occupiers,
- Liaising with individual site or occupier Travel Plan Coordinators and third parties such as public transport operators, local authority representatives, National Highways, etc. on travel planning matters, and
- Monitoring the success of the FTP in achieving its aim and objectives by coordinating baseline and annual monitoring all of which should be reported to the TWG.

9.4.2 Individual Site/Occupier Travel Plan Coordinators (TPC)

Due to the nature of the Growing Baldock development, there will likely be several residential Travel Plan Coordinators, School Travel Plan Coordinators and Workplace Travel Plan Coordinators. It will be the responsibility of these individual site or occupier Travel Plan Coordinators to develop a Full Travel Plan for their residents, staff and students, based around the principles, aim, objectives and targets set out in the FTP.

Full Travel Plans must be prepared prior to the occupation of each individual site. The individual or occupier Travel Plan Coordinators must implement, maintain and update the Full Travel Plan, conducting baseline and annual surveys and updating progress towards targets annually. Individual site Travel Plan Coordinators will submit each Full Travel Plan to HCC for review and approval.

Each individual site or occupier will nominate a named Travel Plan Coordinator who will act as the lead contact and will be responsible for delivering site-specific travel plan measures, liaising with the Site-Wide Travel Plan Coordinator on issues which are relevant to the development site as a whole.

The Site-Wide Travel Plan Coordinator will provide the necessary resources, advice and support to ensure Full Travel Plans are successfully implemented at each individual site.

The FTP recommends that developers working on similar parcels of land (particularly residential sites) collaborate and partner when selecting a Travel Plan Coordinator. This collaboration helps ensure consistency and alignment with the overarching FTP and maximises available resources. The Site-Wide Travel Plan Coordinator can support developers throughout this process if needed.

9.4.3 Action Plan

The full Action Plan setting out implementation of the plan is included in the FTP submitted with this application.

9.4.4 Monitoring and Reporting

The FTP monitoring period will be from first occupation at the Growing Baldock development site until five years following full occupation. The estimated build-out rate for Growing Baldock at the time of writing is 15-20 years, meaning the FTP will need to cover this period as a minimum. Individual site Full Travel Plans will need to follow a monitoring period of five years post-occupation.

9.4.5 Baseline Monitoring Surveys

Individual site Travel Plan Coordinators will carry out baseline travel surveys at each site within the first three months of occupation or once the site reaches an occupancy level agreed with HCC (typically 50%), whichever comes first. It will be the responsibility of each developer / individual site Travel Plan Coordinator to disseminate the survey to residents/students/staff.

9.4.6 Annual Monitoring Surveys

Following the baseline surveys, individual site Travel Plan Coordinators will need to conduct a travel survey to assess any change to mode share and travel patterns compared with the established baseline. As with the baseline survey, the Site-Wide Travel Plan Coordinator will provide a template survey to ensure consistency for monitoring purposes.

Results from all surveys will feed into the annual site-wide FTP monitoring reports to identify progress towards targets and the requirement for any updated measures or actions.

9.4.7 Reporting

The Site-Wide Travel Plan Coordinator will produce an annual monitoring report for HCC, which will include:

- An update on the build-out and occupation levels of the Growing Baldock development,
- The sustainable travel initiatives delivered throughout the year, and
- Results from annual travel surveys and traffic counts.

The Site-Wide Travel Plan Coordinator will also share approved annual monitoring reports with the TWG.

9.4.8 Monitor and Manage Framework and Enhanced Travel Plan Measures

The TWG, in coordination with the MMF, will regularly review and update the FTP and may propose enhanced measures to address congestion and capacity issues identified through MMF monitoring. These issues will need to be discussed on a case-by-case basis but may include physical interventions detailed within the MMF or softer measures to help capacity creation.

This may include investigating a strategy that could include actions focused around the 4Rs of TDM to help reroute, retime, remode or remove journeys from the impacted network.

HCC must sign off any enhanced Travel Plan measures linked with the MMF, which should only be considered if existing FTP measures fail to achieve the desired impact.

The TWG will include an annual review of the FTP on its agenda and will review budgets and timelines during these annual meetings.

Table 9-2: MMF Performance - RAG Assessment

Scenario		Indicative Action Plan
Exceeding both Transport Assessment mode share assumptions and all Framework Travel Plan targets	Green	Planned mitigation has been very effective to date, and intervention packages to be delivered in accordance with the initial schedule. No further potential interventions are required post-completion.
Exceeding or meeting Transport Assessment mode share assumptions but underperforming against some Framework Travel Plan targets	Amber	Planned mitigation has been effective to date; intervention packages to be provided broadly in accordance with the initial schedule. Minor amendments to the proposed intervention packages may be considered, only if on-going monitoring indicates this is required. No further potential interventions, as outlined in Table 9-2, are required post-completion; additional measures to be considered as part of the FTP.
Underperforming against Transport Assessment mode share assumptions	Red	Planned interventions have resulted in a failure to meet the MMF mode share expectations; remedial mitigation measures are required. Prior to completion, physical interventions planned for later phases could be expedited. Post-completion, if the implementation of all planned interventions results in an underperformance against the MMF mode share expectation, further interventions will be considered. Potential additional interventions are outlined in Table 9-2.



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10 Construction Phase

10.1 Overview

This section provides the outline construction phase plan associated with the Growing Baldock development. Full consideration of the proposed development's construction will be provided, in detail, within subsequent RMAs associated with each development phase. It should be noted that this outline construction chapter has been prepared in advance of the appointment of a contractor(s).

10.2 Construction Programme

The proposed development would be constructed as one continuous project. It is anticipated that work on-site will commence in 2028, with the build programme continuing until 2042. It is estimated that the duration of the construction work would be 14 years. The preliminary construction programme is presented in **Table 10-1**.

Table 10-1: Preliminary Construction Programme

Phase	Approximate timing	Activity Description	Activity Plan
Phase A	2028-2031	Development is likely to start with homes at BA2.	
Phase B	2028-2033	Construction activity on BA2 will commence at the same time as BA1; while BA2 is built out, enabling work will begin at BA1. Construction on BA1 will commence from west to east. It is expected that the primary school will be delivered alongside homes at BA1. It is expected that health services will be agreed through planning, and this will influence when the mixed-use employment area (BA10) comes forward.	

Phase	Approximate timing	Activity Description	Activity Plan
Phase C	2033-2039	The central section of BA1 will come forward, as well as the local centre north of railway line. To the south of the railway line work will continue in BA10 to deliver the central employment zone.	
Phase D	2039-2042	The final phase will see the completion of the area north of the railway line and the delivery of the employment space. By this time a decision will be made on BA3, where the secondary school or homes will be delivered.	

10.3 Construction Operation Hours

It is reasonably expected that construction activity associated with the masterplan will operate within the times noted below:

- Monday to Friday: 08:00–18:00;
- Saturdays: 08:00–13:00;
- Sundays and Bank Holidays: No operations.

In accordance with HCC guidance, to manage construction traffic, particularly at peak hours, construction vehicle movements would be restricted to the hours of 9.30am to 4.30pm on weekdays and between 8.00am and 1.00pm on Saturdays. If there is a school in the vicinity of the relevant land parcel to be constructed or on the proposed access routes, deliveries will be restricted to the hours of 9.30am and 3pm on weekdays during term time.

Vehicles may be permitted to arrive at construction site(s) at 8.00am if they can be accommodated on-site. In this case, vehicles must then wait on-site with the engines switched off.

No works would be permitted to be undertaken on Sundays and Bank Holidays except in exceptional circumstances and only with prior approval from the local planning and highway authorities. If or when required, the appointed contractor would seek permission from NHC and HCC for out-of-hour deliveries.

10.4 Construction Vehicle Access

Unless materials are being transported from local suppliers, construction vehicle journeys would be restricted, unless otherwise advised, to the strategic and main road networks, which are best suited to this type of heavy traffic. The use of strategic routes is less likely to create congestion and will help minimise the impact on local air quality.

All construction vehicles accessing the plots would be managed by banksmen. The banksmen would direct the movement of construction vehicles to and from the site, maintain pedestrian safety, minimise congestion and assist in preventing incidents on and off-site.

The appointed contractor would consider the use of a Construction Consolidation Centre (CCC) as a means to reduce the overall vehicle demand of the building project, where bulk material would be stored and transported.

The proposed outline construction vehicle routing plan is presented in **Figure 10-1**.

Figure 10-1: Proposed Outline Construction Routing Plan





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10.5 Highway Safety and Considerate Behaviour

The appointed principal contractor(s) will prioritise sustainable modes of transport for contractors travelling to and from the construction sites. Contractors will be informed that parking will not be permitted on-site or along the adjacent roads. A summary of local public transport options to access the construction site(s) will be provided to all staff as part of their induction. Safe and secure cycle parking will be made available at the construction site.

All construction deliveries will take place from within pre-defined areas. Special arrangements for abnormal loads, cranes and other heavy-lifting equipment deliveries will be made separately by the appointed contractor with HCC, if required.

Within any subsequent Outline Construction Logistics Plans (CLPs) submitted as part of future RMAs, it will be confirmed that:

- A Detailed CLP will be prepared once a principal contractor is appointed and this document would contain full contact details for the appointed contractor.
- While traffic management will be required at the construction site entrances and exits, all operations (compound/ site accommodation and amenities) would be located so that it does not impact the safety of the public highway.
- Detailed road safety and traffic management proposals will be prepared to support the construction project, with input from the appointed contractor.
- No heavy goods vehicle traffic will be permitted to unnecessarily route to or from minor roads, with all movements to route via the SRN, where possible.
- Wheel washing and road sweeping to be undertaken as necessary.
- The developer and their appointed contractor are committed to ensuring that all suppliers comply with safety and environmental standards and programmes. It will be a requirement that all vehicle and driver management practices comply with the Fleet Operators Recognition Scheme (FORS) and Construction Logistics and Community Safety (CLOCS). Compliance with FORS Bronze accreditation, as a minimum, will be requested of all sub-contractors and suppliers intended to be used.
- It is envisaged that HCC would seek to monitor the construction activities so that commitments made in a Detailed CLP (or alternative planning document) are adhered to.

10.6 Construction Traffic Volumes

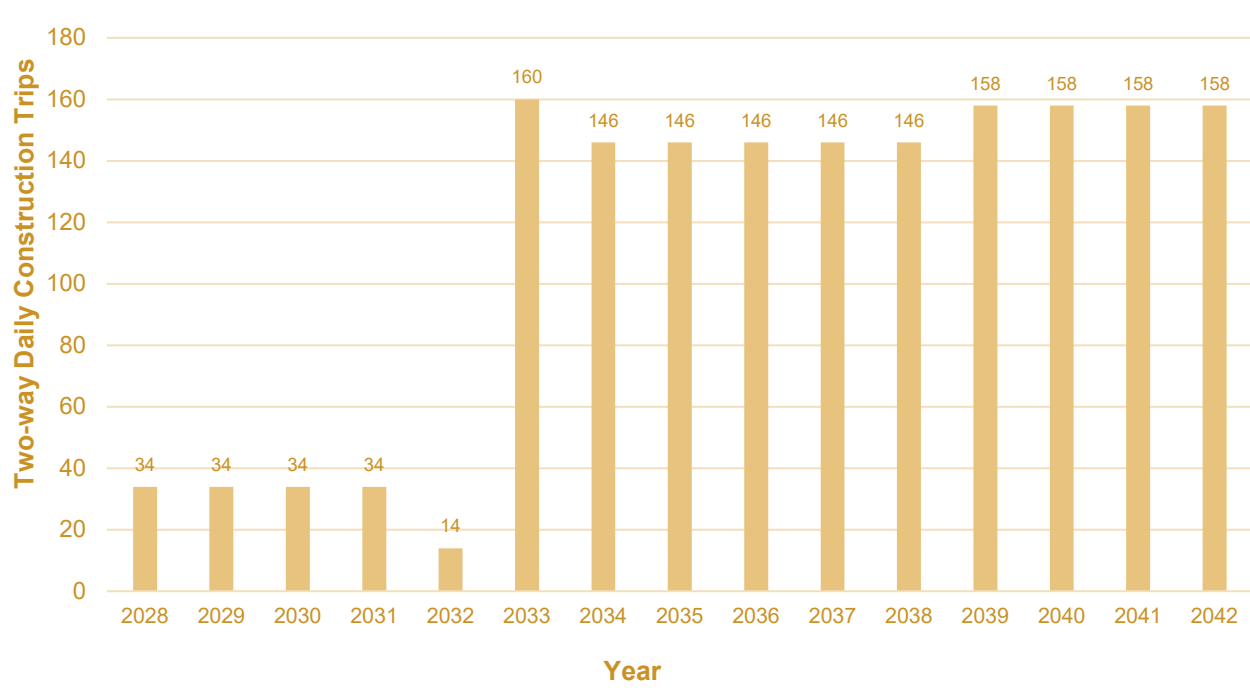
A projection of anticipated construction vehicle movements has been prepared. The outline construction vehicle trip profile over the course of the construction project is presented in **Figure 10-2**. The peak of construction-related traffic is expected to occur in 2033, when plots BA1 and BA10 are scheduled to be under construction. During this time, approximately 80 construction vehicle arrivals would be expected over the course of an average weekday. Of these, 72 vehicle arrivals (c.89%) would take the form of HGVs.



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Figure 10-2: Indicative Construction Traffic Profile





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11 Summary and Conclusions

11.1 Summary

This Transport Assessment has been prepared by ITP by Haskoning on behalf of Urban&Civic in association with the outline planning application for the proposed Growing Baldock development. This Transport Assessment sets out the Growing Baldock development and has provided a comprehensive review of any implications the proposed development may have on people in terms of highways and transport.

The development scheme has been designed to reflect local and regional policy, incorporating the Transport User Hierarchy as defined by HCC, and incorporating site-specific requirements and other relevant national, regional and local planning policies.

This document has identified that the development would bring significant benefit to the area of Baldock, whilst encouraging a shift to active and public transport in line with local policy. The development will specifically provide:

- Significant improvements to the local pedestrian and cycling environment, including improvements to specific areas of low safety and high severance along Royston Road,
- Two new connections over the railway line, reducing severance for active travel users between the north and south,
- Substantial improvements to local bus services, with the proposed shuttle bus operating as a key facet of the proposed deliverables, maximising the potential of existing public transport connections into Baldock,
- At least one vehicle charging spot per dwelling, to support the shift to low-carbon transport in line with Decarbonising Transport, and
- Improvements to local junctions to increase dedicated space for cyclists and pedestrians whilst ensuring easy traffic movement to prevent increases in congestion.

Growing Baldock proposals have been developed in communication with HCC and NHC, and with reference to the land allocations in local policy. The plot-specific requirements of the sites in relation to local policy are set out in Table 11-1.



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Table 11-1 Growing Baldock Performance Against Land Allocation

Policy	Summary	Addressed
North Hertfordshire Local Plan		
Policy SP14 – Site BA1 – North of Baldock:	Sustainable transport measures to include: A secondary rail crossing for pedestrians and cyclists in the vicinity of Ashville Way;	Growing Baldock includes an active travel underpass across the railway line, which facilitates safe travel for pedestrians and cyclists in a north - south alignment
	Safe access routes to / from, and upgrades to, Baldock station;	Access to the existing railway station will be enhanced, with upgrades to the approach from Station Road and the introduction of new pedestrian and cycle connections from North Road and Bygrave Road, and accessibility between platforms will be improved with the installation of lifts, ensuring step-free access throughout the station. A dedicated passenger drop-off facility will be provided to support more flexible and inclusive travel options.
	Sensitive integration of Bridleway Baldock 034 / Bygrave 002 as a north-south route through the development; and	All bridleways will be retained through the development, and will benefit from improved connections to the
	The use of Bygrave Road / Ashwell Road from the south western edge of the allocated site to the link road as a sustainable transport corridor; and	Bygrave Road will be retained and closed to additional motor traffic to act as a sustainable transport corridor.
	Comprehensive integration into the existing pedestrian and cycle, public transport and road networks	Additional cycleways and footways are proposed on the local highway network, such as along Royston Road, and existing footways on the local highway network will be expanded. At site accesses, pedestrian and cyclist desire lines will be facilitated by providing continuous footway crossings or crossings with tactile paving and refuge islands are proposed.
Policy BA2:	Minimal transport-specific policies.	Development on BA2 will benefit from the active-travel-first principles that are in place throughout the sites.
Policy BA3:	Deliver a southern link road connecting the B656 Royston Road to Wallington Road or the A507 Clothall Road within the southern bypass	A signal-controlled bus gate is proposed connecting Yeomanry Drive to Royston Road, which provides access to Wallington Road. A segregated cycle route along Royston Road and additional footways allow active travel connections between Royston Road and the developments surrounding Yeomanry Drive.
	Consideration of the most appropriate routes and movements for all modes between the allocation site, the existing Clothall Common estate and the wider transport network	Whilst vehicular access is retained as current into Clothall Common, new and upgraded walking and cycling routes are proposed to link BA3, BA2, BA10 and BA1. A bus gate will also allow Clothall Common to be integrated into the new shuttle bus service.



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Policy	Summary	Addressed
Policy BA10:	Ensure access arrangements control HGV movements to direct vehicles towards the A505 rather than through Baldock	Accesses into BA10 have been designed to encourage all traffic to travel from Royston Road roundabout which connects into A505, hence preventing traffic routing through the centre of Baldock. Upgrades to this roundabout, along with increased space for cyclists and pedestrians at junctions through Baldock, will encourage long-distance traffic to route via the SRN as an alternative to the local highway network.
NHC Transport Strategy		
Letchworth/Baldock Transport Strategy – Table 5.3 Strategy Elements	Behaviour Change - Ensuring large new developments have active travel planning from the outset.	Growing Baldock has followed the HCC Transport User Hierarchy, ensuring that active transport provision is considered first at every level of design.
	Key development sites - Design focuses on walking and cycling through all development, to local facilities and to adjacent areas. Ensure site BA1 is linked to Baldock station and town centre by bus, cycle and walk routes as 'preferential' modes. Introduce link road between the A507 London Road and A505 Baldock Bypass over the railway, but design to discourage traffic from using this new link.	As above, walking and cycling provision has been considered at every stage of design of Baldock. Proposed active travel infrastructure will be provided to encourage non-motorised modes of travel, and a new shuttle bus will provide easy public transport links between Baldock railway station and the development sites.
	Improving walking and cycling - More and better crossings of main roads, particularly the A505, A507, B197 and the B656, and the railway line severance. Strategic signed cycle network, some Quietway's. Focus on town centre, station, and Works Road, Icknield Way and Blackhorse Road employment areas	Widened footways, crossing facilities and continuous footways are included in the proposed design of Station Road through Baldock, encouraging walking and cycling. Changes to traffic flows at Station Road / Whitehorse Street are designed to encourage traffic to route via the SRN, hence reducing traffic through Baldock Town Centre. All interventions are proposed to create a pleasant and safe environment for active travel through Baldock.
	Bus-based improvements - Improve bus interchange in town centre. Better coverage of town services. Bus priority measures at pinch points.	Shuttle bus working between Baldock Station and the sites will provide a key bus link and improve the provision of bus services, both for future site users and existing residents.
	Sustainable spine - better crossings and bus priority as above. Cycling facilities as appropriate.	As above, crossing facilities are incorporated into proposed amendments and proposed shuttle bus increase provision of bus services.
	Traffic Management - Potential improvement at A505 North Way and Letchworth Gate if through-traffic to rest of centre will not be increased.	Proposed mitigation at Junction 9 of A1(M) includes signalization of Letchworth Gate to reduce queueing on this arm.

11.2 Conclusion

The National Planning Policy Framework (December 2024) paragraph 116 states that “*Development should only be prevented or refused on highways 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 report has established that there would not be a severe impact.

In light of the above and the preceding assessment, it is concluded that the development proposals are in accordance with the principles of sustainable development set out within the National Planning Policy Framework, and are therefore fully acceptable in transport planning terms.