

Appendix A – Transport Scoping Report

REPORT

Growing Baldock

Transport Scoping Report

Client: Urban & Civic

Reference: TP1035-ITP-RP-TP-0001

Status: S1/P03

Date: 3 February 2025



a company of Royal HaskoningDHV



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Document title: Growing Baldock

Subtitle: Transport Scoping Report

Reference: TP1035-ITP-RP-TP-0001

Your reference

Status: S1/P03

Date: 03 February 2025

Project name: Growing Baldock

Project number: TP1035

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Date: 20/01/2025

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Date: 23/01/25

Classification

Project related

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Table of Contents

1	Introduction	1
1.1	Overview	1
1.2	Growing Baldock Overview	1
1.3	Planning History	2
1.4	Proposed Development Overview	4
1.5	Summary of HCC, NHC and NH Discussions in relation to Masterplan	4
1.6	Transport Assessment Scoping Discussions	5
1.7	Transport Vision for Growing Baldock	6
1.8	Guidance	6
1.9	Proposed Approach to Planning Application and Transport Assessment Structure	8
1.10	Transport Scoping Report Structure	9
2	Relevant Policy Documents	10
2.1	Overview	10
2.2	Policy and Guidance Documents	10
3	Site Context	12
3.1	Overview	12
3.2	Existing Active Travel Connectivity	12
3.3	Existing Public Transport Connectivity	14
3.4	Local Highway Context	15
3.5	Summary	16
4	Baseline Study	17
4.1	Overview	17
4.2	Active Travel Baseline	17
4.3	Public Transport Baseline	18
4.4	Highway Baseline	18
4.5	Highway Safety Study Area	20
4.6	Summary	22
5	Development Proposals	23
5.1	Overview	23
5.2	Current Land Use	23
5.3	Development Options	25



6	Transport Strategy	28
6.1	Overview	28
6.2	Mobility Vision	28
6.3	Masterplan Principles	28
6.4	Liveable Neighbourhood	29
6.5	Transport Strategy	30
6.6	Access and Movement Framework	31
6.7	Active Travel Strategy	33
6.8	Public Transport Strategy	33
6.9	Vehicle Access Strategy	34
6.10	Parking Strategy	34
6.11	Servicing Strategy	36
6.12	Wayfinding Strategy	37
6.13	Framework Travel Plan	37
7	Trip Generation, Modal Split, Distribution and Assignment	38
7.1	Overview	38
7.2	Trip Internalisation	38
7.3	Trip Generation	41
7.4	Total Trip Generation and Mode Split Comparison	61
7.5	Trip Distribution and Assignment for Development Trips	63
8	Transport Impact	64
8.1	Overview	64
8.2	Capacity Assessment Methodology	64
8.3	Active Travel and Public Transport Impact Assessments	68
9	Proposed New and Modified Infrastructure	69
9.1	Overview	69
9.2	Highway Design Parameters	69
9.3	Audits and Ancillary Assessments	69
9.4	Development Option Interventions	69
9.5	Phasing and Delivery of Interventions	70
10	Monitor and Manage Framework	71
10.1	Overview	71
10.2	Governance	71
10.3	Targets and Monitoring	71
10.4	Measures and Obligations	71



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11	Summary and Way Forward	72
11.1	Summary	72
11.2	Next Steps	73

Table of Tables

Table 1-1: Planning History Summary	3
Table 3-1: Summary of Rail Services Accessible from Baldock Railway Station	15
Table 5-1: Proposed Emerging Schedule of Land Uses by Plot	25
Table 6-1: 2021 Census Car Ownership Data	35
Table 6-2: NHC Adopted Residential Parking Standards	35
Table 6-3: NHC 2011 Parking SPD - Employment Use Car Parking Standards	36
Table 7-1: Developments Reviewed	39
Table 7-2: Summary of Methods of Calculation and Ranges of Trip Internalisation	40
Table 7-3: Trip Containment Factor Comparison (daily rates)	41
Table 7-4: Residential Business As Usual Residential Trip Rates and Associated Trips (Trip Rate per Dwelling) (2,750 dwellings)	42
Table 7-5: Employment - Business As Usual Trip Rates	42
Table 7-6: Employment - Business As Usual Total Trips (External Trips 80%)	44
Table 7-7: Pupil Mode Shares for Different Home Areas	46
Table 7-8: Summary Staff Travel Mode	46
Table 7-9: Education - Business As Usual Trips and Mode Share (Existing 1,428 Pupils / 130 Staff)	47
Table 7-10: Residential Decide and Provide Residential Trip Rates and Associated Trips (2,750 Dwellings)	48
Table 7-11: Decide and Provide Commercial Trip Rates and Associated Trips (86,500sq.m)	48
Table 7-12: Masterplan Themes and Ratings	50
Table 7-13: Theme Ratings Applied	51
Table 7-14: Vision-led Scenario Internal trips	59
Table 7-15: Vision-led Scenario Trips to Baldock and Letchworth	59
Table 7-16: Vision-led Scenario Residual trips	60
Table 7-17: Vision-led Scenario Total External Trips	61
Table 7-18: Residential Use Resultant Total Trip Generation Comparison	61
Table 7-19: Commercial Use Resultant Total Trip Generation Comparison	62
Table 7-20: Mode Split Comparison – Residential (Total Trips)	62
Table 7-21: Mode Split Comparison – Commercial (Total Trips)	62
Table 7-22: Mode Split Comparison – Education (Pupils Only)	63



Table 8-1: Indicative Modelling Scenario Overview	66
Table 11-1: Summary of Parameters and Principles to be Agreed	72

Table of Inserts

Insert 1.1: Growing Baldock Local Plan Allocations	2
Insert 3.1: Walking Isochrones and Existing Active Travel Network	12
Insert 3.2: Cycling Isochrones and Existing Active Travel Network	13
Insert 3.3: Local Bus Services and Peak Hour Frequencies	14
Insert 3.4: Local Highway Context	16
Insert 4.1: Accessibility Audit Scope	18
Insert 4.2: Identified MCC Locations	19
Insert 4.3: ANPR Cordon Camera Locations	20
Insert 4.4: Proposed Highway Safety Study Area	21
Insert 5.1: Draft Proposed Parameter Plan	24
Insert 5.2: Development Option 1 - Knights Templar Relocation/Expansion on BA3	26
Insert 5.3: Development Option 2 Knights Templar Expansion on Existing Site	26
Insert 5.4: Development Option 3: Second Secondary School on BA3	27
Insert 6.1: Illustrative Approach to Reviewing Future Accessible Facilities	30
Insert 6.2: Proposed Conceptual Active and Sustainable Travel Network	32
Insert 7.1: Mode Shift Model Approach	49

Annexures

Annex A: Scoping Meeting Minutes
Annex B: HCC Written Response
Annex C: Baseline Study and Surveys
Annex D: Draft Parameter Plans
Annex E: Residential TRICS Output
Annex F: Non-residential TRICS Outputs
Annex G: Decide and Provide Methodology
Annex H: Approach to Deriving 'Vision-Led' Mode Shares and MSM Trip Rates
Annex I: ITP Mode Share Model



1 Introduction

1.1 Overview

This Transport Scoping Report (TSR) has been prepared by ITP on behalf of Urban & Civic (U&C) in association with a developing outline planning application for the proposed 'Growing Baldock' development.

The proposed Growing Baldock development is a phased development that seeks to deliver up to 3,200 new homes, some 16 hectares (ha) of employment land, community facilities, schools, green spaces, and improved transport connections on land to the north and east of Baldock in North Hertfordshire.

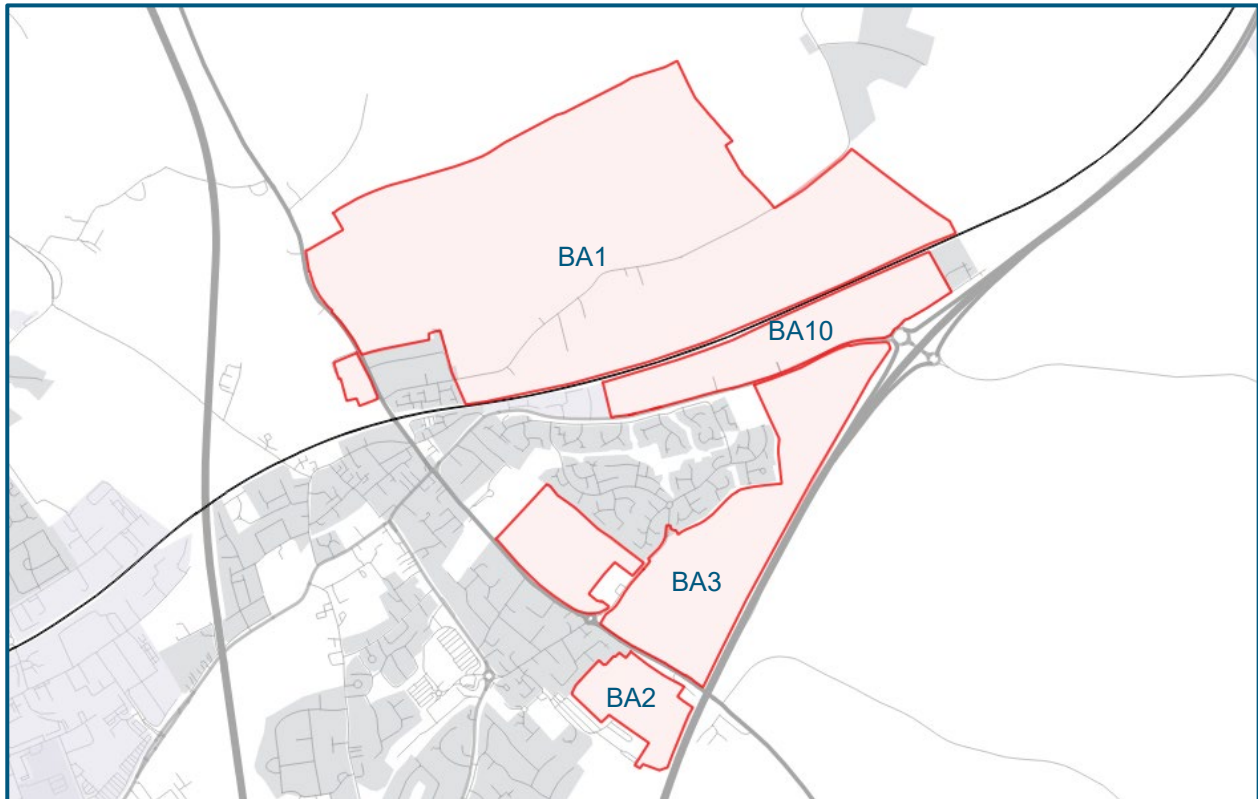
The Local Planning Authority (LPA) is North Hertfordshire Council (NHC) and the Local Highway Authority (LHA) is Hertfordshire County Council (HCC). This TSR has been prepared to facilitate pre-application discussion regarding transport implications and assessment parameters with HCC, as the LHA, and with National Highways (NH), as the Strategic Highway Authority (SHA).

This TSR has been prepared to seek pre-application advice from the LHA, NH, and SHA and to facilitate agreement of assessment principles to confirm the scope of transport planning deliverables required for the developing outline planning application (OPA) in support of the proposed 'Growing Baldock' development. This version of the TSR provides an update to a previously issued version of this document that was submitted in August 2024 and incorporates pre-application advice that was provided by HCC, while providing detail of the development options to be submitted as part of the OPA and how they will be treated within the Transport Assessment.

1.2 Growing Baldock Overview

The Growing Baldock sites include NHC Local Plan allocation sites BA1, BA2, BA3 and BA10, as shown in **Insert 1.1**.

Insert 1.1: Growing Baldock Local Plan Allocations



1.3 Planning History

Two outline planning applications were submitted in 2017/2018 in relation to the allocation sites, which are summarised at **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/040/047/2018	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 that were received with regard to the two historic applications summarised above 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.

Further to the above, early considerations with regard to the currently developing proposals that form the topic of this TSR have sought to address key shortcomings of the withdrawn applications with respect to promoting sustainable travel and reducing car trips. As discussed below, during previous scoping discussions (c. September 2024) associated with the proposals that forms the topic of this TSR, it has been acknowledged by HCC that the developing Growing Baldock scheme excels beyond the withdrawn application by proposing a vision-led approach that comprises a suite of strategies to support an active and sustainable travel lifestyle for future, and existing, residents and users of Baldock.



1.4 Proposed Development Overview

As outlined above, this TSR has been prepared to determine the transport requirements for the following developing planning application relating to allocation sites BA1, BA3 and BA10:

“Outline planning application with all matters reserved except for access in relation to junctions on North Road, Royston Road, Clothall Road and Wallington Road, for up to c. 3,200 homes, up to 16ha employment land, waste infrastructure, local centre, 2 x primary schools, 1 x SEND school, health hub, green infrastructure, primary street, public transport infrastructure and pedestrian/cycle network (including PRow diversions, mobility hubs and two bridge crossings of the railway), utilities and drainage infrastructure (including diversions of existing, new pumping stations, sustainable drainage, primary sub stations, rising main/strategic sewer, potential net-zero infrastructure), ground remodelling/earthworks and any necessary demolitions.”

It is currently envisaged that the outline planning application for the above will be prepared for submission in the third quarter of 2025.

The developing masterplan has been formulated further to consultations with NHC and HCC (summarised below in **Section 1.5**) and the currently envisaged phasing of the delivery of the scheme is discussed in **Section 5** of this TSR.

As part of the development of the conceptual basis of the proposals that form the topic of this TSR, significant work has been carried out to understand the transport context of the Site 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 a transport vision and set of objectives.

Further to the above, collaborative work was undertaken with U&C's design team to prepare a suite of strategies that have informed development of a Strategic Masterplan (SMP). The masterplan proposals have been subject to review and discussions with HCC (as summarised below in **Section 1.5**), and relevant discussions have provided a basis of agreement in respect of the 'Transport Vision' for Growing Baldock (outlined at **Section 1.6**). The masterplan work has set the context for the access, active travel, sustainable travel, parking and servicing strategies that are proposed for discussion as part of this TSR.

1.5 Summary of HCC, NHC and NH Discussions in relation to Masterplan

Since 2021 the ITP team has engaged extensively with officers at NHC and HCC to ensure broad alignment regarding the approach to development of the transport elements.

The main forum for discussion has been a series of Transport Task Groups including HCC, NHC and the U&C team. The topics discussed included:

- Development of vision and transport objectives
- Presenting baseline analysis and reporting, including the analysis of movement patterns within, through and to Baldock
- Streets and PRow auditing approach and scoping
- Approach to developing active and sustainable modes strategy
- Presentation of active and sustainable modes strategy



- Development of access road options and selection of preferred option
- Input to preferred off-site interventions strategy (including specific focus on key interventions at Whitehorse Street junction, North Road / Station Road and Royston Road)

These meetings have helped guide the preferred strategy for off-site transport interventions. The preferred approach to vision, masterplan principles and off-site interventions has also informed a series of community engagements within Baldock, including two full public consultations and targeted engagement with specific interest groups.

In addition to the formal Transport Task Group, there have also been a series of one-on-one meetings, discussions and walkabouts with HCC and NHC. Key discussions have included:

- Agreeing on the scope of surveys (agreed in 2021 and undertaken in 2022)
- Identification of highway boundaries in relation to off-site interventions
- Discussion and analysis of impacts of expanding Knights Templar school, both in terms of people movements and local off-site impacts and mitigations
- Analysis of capacity of key junctions including Whitehorse Street / Station Road and Clothall Road / Wallington Road

NHC have provided (January 2024) a note setting out residual matters they would wish to see incorporated into the Transport Assessment and/or other planning documents, including the following:

- Proposed cycle route along North Road / Station
- Detail of one-way shuttle working under the rail bridge on Station Road
- Changes to permitted movements at the Whitehorse Street junction
- Use of modal filters
- Design principles of the main site access road
- HGV movements within Baldock
- Active travel route within Clothall Common
- Northern access to the railway station
- Location, form and scale of secondary school

Initial discussions have also begun with Active Travel England. This was facilitated by NHC and focused on the proposed off-site intervention on North Road / Station Road.

1.6 Transport Assessment Scoping Discussions

An initial iteration of this TSR was submitted to HCC for discussion in August 2024. Subsequently, an initial scoping meeting was held with HCC, the minutes of which are provided at **Annex A** for reference. Further to that meeting a written response (provided at **Annex B**) was issued by HCC in which further clarifications were requested. The key points highlighted in HCC's written response are summarised below:

- **Phasing Triggers:** Agreement is required on the suitability of residential development north of the railway before key infrastructure is in place to reduce severance caused by the railway. Metrics for identifying trigger points need to be agreed upon, considering capacity, behavior change, background trips, and a broader network analysis



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- **Education Strategy:** a section addressing the emerging complexities around Secondary School proposals should be included
- **Monitor and Manage Approach:** a monitor and manage approach should be adopted over a standardised travel plan.

This update of the TSR takes account of the points raised above and provides further consideration of optioneering pertaining to the provision of education facilities and the implications of such on the proposed assessment methodology and intervention proposals. In particular, with consideration of the proposed education offer, as discussed at **Section 5**, the OPA will seek approval for the following development options which have implications for the land use mix in the flexible land use parcel in the southern half of BA3:

- Development Option 1: up to 12 Form-Entry (FE) secondary school and 1 Special Educational Needs and Disabilities (SEND) school on Plot BA3;
- Development Option 2: Financial contributions to expansion of the existing KTS site (to 8-12 FE) at existing site and provision of SEND school and residential on BA3; or
- Development Option 3: up to 5FE secondary school, SEND school and residential on BA3.

1.7 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. The proposed approach is consistent with the modal hierarchy set out in HCC’s Local Transport Plan and has been agreed by HCC and NHC as part of consultation exercises discussed below.

The proposed vision for Growing Baldock is summarised as follows:

“Growing Baldock will create a place that prioritises quality of life over traffic movement. Walking, cycling and public transport will be the quickest and most enjoyable way to travel on-site, with off-site connections enhanced to key destinations, benefitting existing communities and businesses in the town. Through masterplan 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.”

Key to achieving this Vision is the Transport Strategy which is founded on the principles of the transport system as a whole being a Sustainable System, and for this system to ensure that the Growing Baldock proposals contribute to the creation of a ‘liveable neighbourhood’. By locating facilities and services within reasonable walking and cycling distance of homes, with those that are accessed more frequently closer, a neighbourhood can be created that encourages sustainable modes of travel.

The Transport Vision that has formed an intrinsic part of the developing proposals is discussed in greater detail in **Section 5**.

1.8 Guidance

The contents of this TSR have been informed by HCC’s Roads in Hertfordshire guidance document, which sets out considerations for pre-application and planning submission requirements for proposed developments in the County. With regard to larger schemes, the HCC Guidance states that “a *Transport Assessment (TA)* will be required where a development has more significant transport implications”. The scale of the proposed development exceeds the prescribed thresholds for preparation of a TA and this TSR has been prepared with consideration of this requirement.



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Of specific relevance to this TSR, the HCC Guidance states that *“having established the need for a TA it is suggested that a scoping study is carried out at an early stage to establish:*

- *The data required and availability; The area over which analysis is required;*
- *The assessment years and analysis period at which assessment is required;*
- *Development trip generation, trip distribution, assignment and traffic growth factors to be used; and*
- *The general methodology to be employed.”*

With regard to travel planning, the HCC Guidance stipulates that *“in all cases where a TA is needed HCC will require an agreed Travel Plan (TP) with clearly defined targets and monitoring proposals. This will be secured by either a planning condition or a planning obligation under Section 106 of the Town and Country Planning Act. The TP may assist in reducing the scale of highway improvements required by reducing potential journeys by car associated with the development.”* Specific travel planning guidance is published by HCC and reliance will be made on such in preparing travel plan(s) in support of the proposed scheme.

In respect of the above, it is noted that the proposed vision-led approach for Growing Baldock will be supported by a Monitor and Manage Framework, that is discussed in greater detail at **Section 10** of this TSR.

In parallel with the above, this TSR is informed by guidance contained within ‘*Planning for the future: A guide to working with National Highways on planning matters*’, published by NH in October 2023. In particular with regard to a vision-led approach the NH guidance states the following:

“In broad terms, a vision-led approach can be summarised as follows:

- 1. Establish a vision - understand the relevant national and local policy context; identify the drivers of change/key external factors acting on the plan or proposed development; set-out a place-based vision statement with associated outcomes that supports the principles of sustainable development.*
- 2. Develop scenarios - develop plausible future scenarios that help to understand the uncertainties that may impact on the ability to deliver the vision. 10*
- 3. Generate options – generate, sift and prioritise options that can help achieve the vision.*
- 4. Test options – test how the prioritised options perform in each of the plausible future scenarios (for example, is every option effective in all scenarios or are some less resilient and have some significant risks?).*
- 5. Produce a vision strategy – produce a strategy for realising the vision that accounts for the identified uncertainty and includes a ‘monitor and manage’ approach to identify and address when the vision is unlikely to be achieved.*

The vision-led approach is relevant to both the plan-making and decision-taking stages (proportionate to the scale, sensitivity and complexity of the development proposal).

The DfT has addressed future uncertainty in the transport system in its TAG Uncertainty Toolkit¹⁹ and it is anticipated that further guidance on vision-led approaches will be forthcoming in due course, including in the Local Transport Plan Guidance due to be published by the DfT in late 2023. In the interim, there is relevant advice in the public domain including from TRICS Consortium Ltd²⁰ and Mott MacDonald/University of the West of England²¹.



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In engaging with local authorities and development promoters, we will seek to use our Connecting the county plan and relevant route strategy/strategies²² to help inform the vision for a local plan or development proposal”

1.9 Proposed Approach to Planning Application and Transport Assessment Structure

Following HCC and NH’s review and approval of the principles and parameters discussed within this TSR, a TA will be prepared by ITP for submission in support of the emerging application.

The currently envisaged assessment requirements for planning submission (informed by guidance discussed above), and key transport considerations that have informed the development of the SMP, have been used to formulate a proposed structure for the TA and Environmental Statement (ES) Transport and Access chapter that will be prepared in support of the Growing Baldock planning application.

The purpose of the TA will be to provide a robust analysis of the impact of the proposed development on the local and strategic transport network and to identify how the proposed transport strategies and interventions associated with the Growing Baldock scheme will achieve the vision and principles set out in **Section 6**.

Within the context of the above, and taking into account HCC guidance and more recent best practice (in particular suggestions from the Fixing TAs Working Group that is co-chaired by a colleague within ITP’s Baldock team), it is proposed that the TA report would be based on the following structure:

- Non-technical Summary
- Introduction
- The Vision and Objectives
- Outcomes / Metrics of Success
- Existing Baldock
 - Accessibility audit
 - Surveys / data collected
 - Road safety record
 - Existing challenges to access and mobility
- Growing Baldock
 - Description of proposed development – phasing, land uses, density, schools
 - Masterplanning principles
- Enabling all Journeys
 - Transport Strategies
 - Interventions
- Trip Generation
- Impact Assessment
- Monitor and Manage
- Summary and Conclusions



In addition to the TA, a Framework Travel Plan (FTP) will be prepared to accord with HCC guidance, providing a framework against which use-specific travel plans can be developed subsequent to achieving outline planning consent. The FTP will support the Monitor and Manage Framework that forms a key facet of the 'vision-led' approach to Growing Baldock.

Subsequent to the LHA, NH and SHA's review of this TSR, confirmation of the scope and the structure of the TA is requested to allow ITP to progress associated assessments and preparation of the report. Where required, the scope and structure can be adjusted to achieve an agreed position that can serve as a record of the scoping discussions.

1.10 Transport Scoping Report Structure

Following this introductory section, this TSR is structured as follows:

- Relevant Policy Documents
- Site Context
- Baseline Study
- Developing Masterplan
- Transport Strategy
- Trip Generation, Modal Split, Distribution and Assignment
- Transport Impact
- Proposed New and Modified Infrastructure
- Monitor and Manage Framework
- Summary and Way Forward



2 Relevant Policy Documents

2.1 Overview

This section sets out relevant national and local planning and transport policy and guidance that will be referenced in preparation of the TA and FTP.

2.2 Policy and Guidance Documents

The following documents are identified to include relevant policies and guidance that will be referenced in the preparation of the TA, FTP and the strategies that will inform the development of the scheme:

- National Planning Policy Framework (December 2024);
- Travel Plans, Transport Assessments and Statements, Planning Practice Guidance (March 2014 and subsequent updates);
- Cycle Infrastructure Design: Local Transport Note 1/20 (July 2020);
- Department for Transport Decarbonising Transport: A Better, Greener Britain (July 2021);
- 'Planning for the future: A guide to working with National Highways on planning matters', (NH, October 2023)
- Active Travel England: framework document for working with Department for Transport (2022);
- North Hertfordshire Council (NHC) Local Plan;
- Hertfordshire's Local Transport Plan 2018;
- Roads in Hertfordshire: A Design Guide
- Hertfordshire's Sustainable Modes of Travel Strategy (SMoTS); and
- Active travel strategy and road safety strategy

The proposed scheme will be developed and refined to adhere with the prevailing policies that are relevant to the developing OPA and the TA will provide an assessment of policy compliance. In particular, it is noted that the December 2024 update of the National Planning Policy Framework (NPPF) at Paragraph 109 states that *"transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:*

- a) making transport considerations an important part of early engagement with local communities;*
- b) ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places;*
- c) understanding and addressing the potential impacts of development on transport networks;*
- d) realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated;*
- e) identifying and pursuing opportunities to promote walking, cycling and public transport use; and*



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- f) *identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.”*

In regard of the above, it is highlighted that the scope of work set out in this TSR, and indeed the work that has been carried out to date in developing strategies and the SMP for Growing Baldock, align with the transport principles of this recent update of the NPPF, in particular capturing the ‘vision-led’ principles.



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3 Site Context

3.1 Overview

This Section of the TSR sets out the site context in respect of the active travel, public transport and local highway networks.

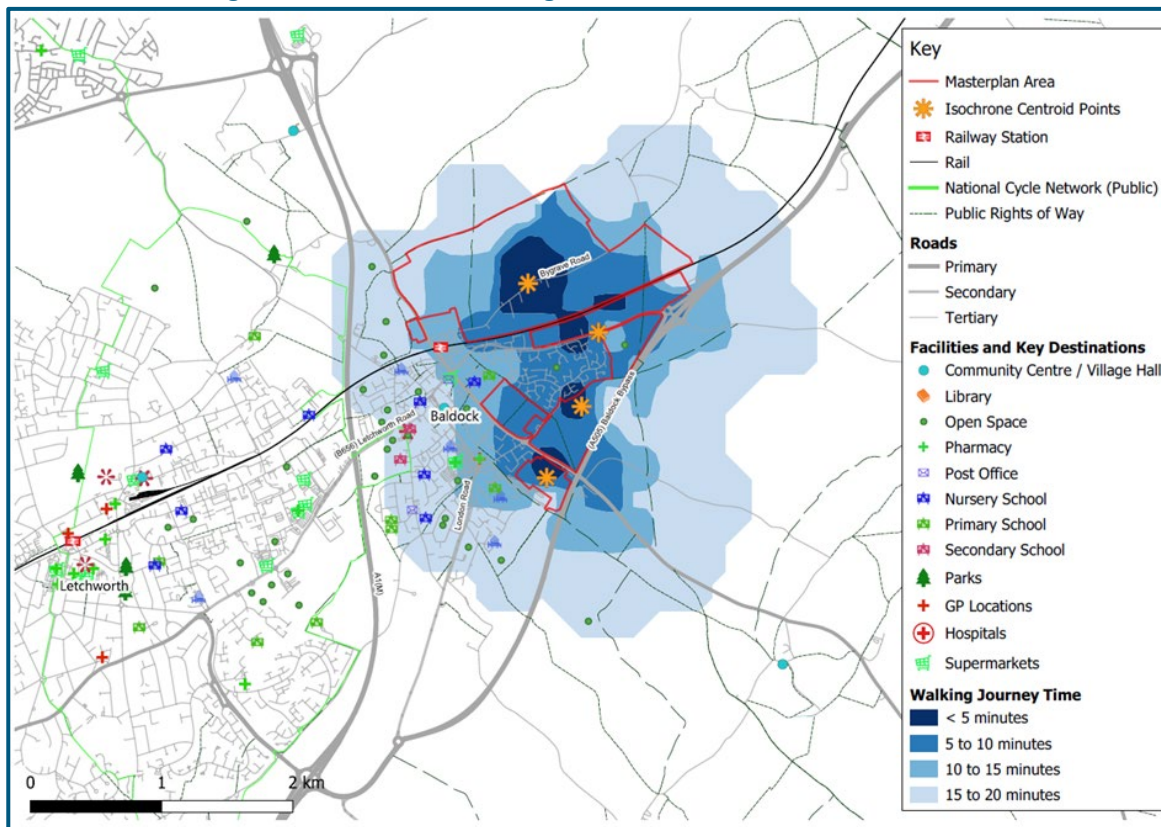
Baldock is situated within the North Hertfordshire District, which is a Local Authority in the most northerly section of Hertfordshire. To the west, the town borders Letchworth, and several small villages surround the remaining sides including Bygrave to the north. Other neighbouring towns include Stevenage, Hitchin and Royston.

3.2 Existing Active Travel Connectivity

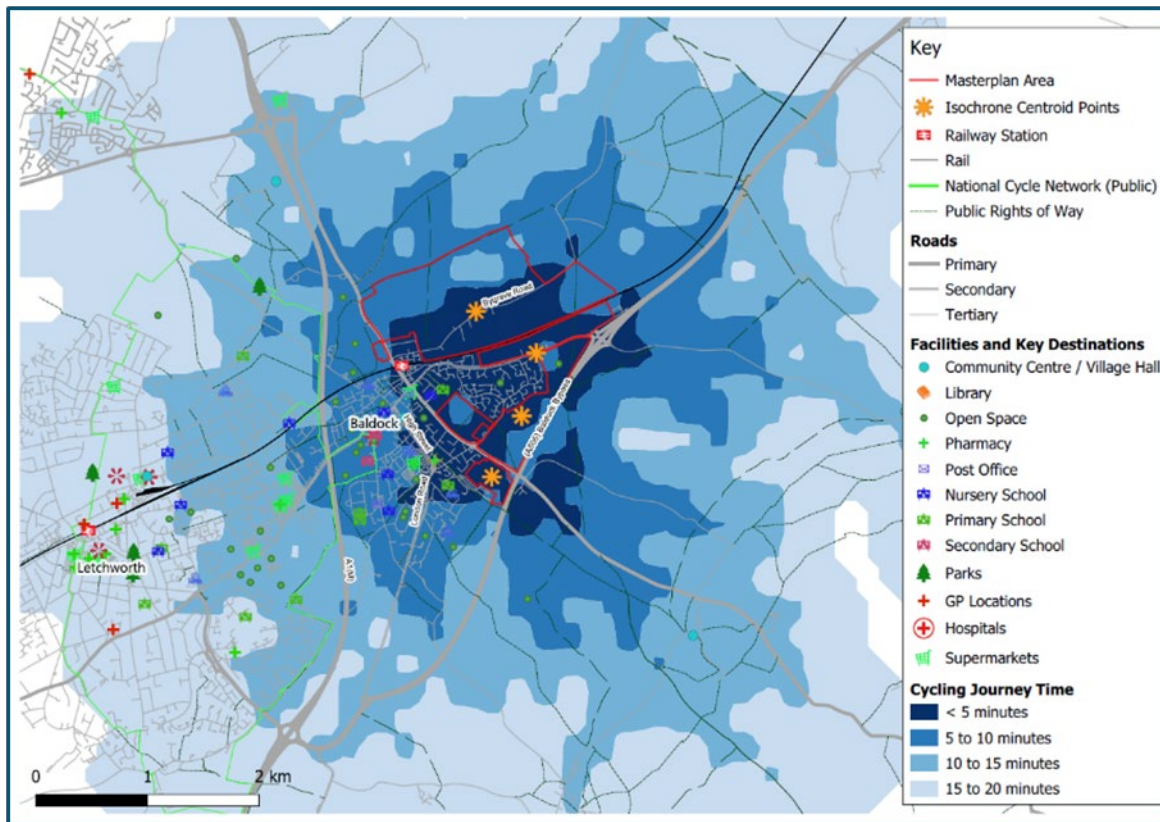
The environment around Baldock predominantly comprises farmland and rural villages with surrounding Public Rights of Way (PRoW) consisting predominantly of Bridleways. The National Cycle Network (NCN) does not run directly through Baldock, but Route 12 reaches the western extent of the town with an off-road, unlit cycle path. There is no dedicated cycle infrastructure within the existing town.

Walking and cycling accessibility are presented using journey time isochrones, within the context of existing PRoWs and the NCN at **Insert 3.1** and **Insert 3.2** respectively.

Insert 3.1: Walking Isochrones and Existing Active Travel Network



Insert 3.2: Cycling Isochrones and Existing Active Travel Network



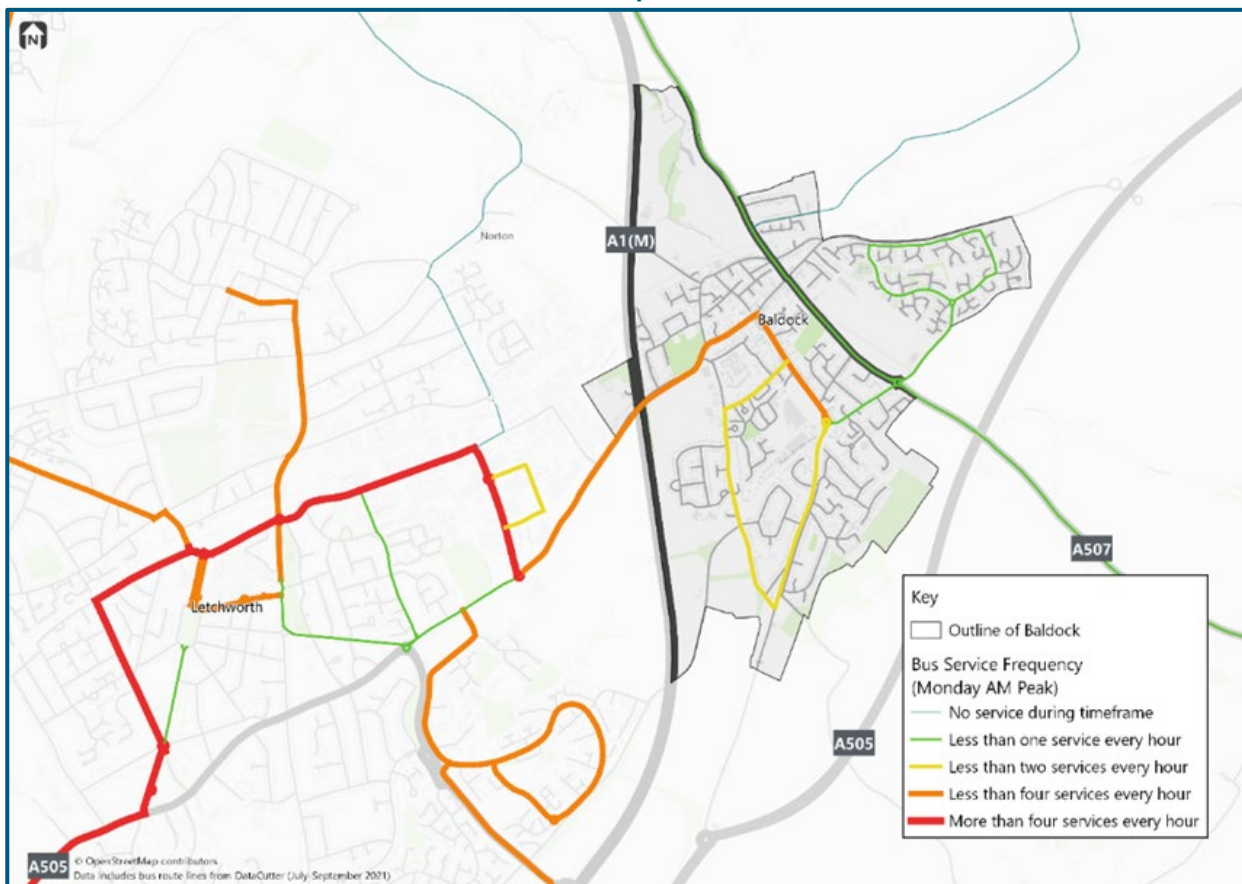
Streets within the centre of Baldock are predominantly provided with surfaced footpaths and street lighting. Detailed audits of the existing cycle and pedestrian infrastructure within Baldock have been undertaken, making use of a range of audit tools including the Walking Route Audit Tool, LTN 1/20 Cycle Level of Service and Healthy Streets. It is proposed that the outputs of these exercises will be presented as part of the TA, to assess the suitability of existing routes and support the proposed areas for improvement. Further details regarding the active travel audits are provided in **Section 4.2**.

3.3 Existing Public Transport Connectivity

3.3.1 Bus Connectivity

Baldock is served by multiple bus services of varying levels of service frequency. The most frequent services connect the Town Centre, Knights Templar School and South Baldock into Letchworth Garden City. **Insert 3.3** provides an overview of existing bus services in and around Baldock, with specific regard to peak hour frequencies.

Insert 3.3: Local Bus Services and Peak Hour Frequencies



3.3.2 Rail Connectivity

Baldock railway station is located to the southwest of BA1, accessible from Mallard Court. Baldock railway station is served by Thameslink and Great Northern services, which provide a connection to London Kings Cross within an approximate 40-minute journey time.

Baldock railway station is currently provided with a total of 85 car parking spaces, including three accessible bays, as well as 52 cycle parking spaces. The existing cycle parking spaces at the station are sheltered, lit and provided with CCTV.

A summary of the services accessible from Baldock railway station is presented in **Table 3.1**.

**Table 3-1: Summary of Rail Services Accessible from Baldock Railway Station**

Destination	Days of Operation	Frequency	Journey Time	Hours of Operation
Cambridge	Mon–Sun	3 / hour	24 mins	05:47 – 01:00
Stevenage	Mon–Sun	4 / hour	13 mins	05:17 – 00:18
Farringdon	Mon–Sun	2 / hour	46 mins	05:17 – 22:17
Hitchin	Mon–Sun	4 / hour	7 mins	05:17 – 00:18
Letchworth Garden City	Mon–Sun	4 / hour	3 mins	05:17 – 00:18
London Blackfriars	Mon–Sun	2 / hour	51 mins	05:17 – 22:17
London Kings Cross	Mon–Sun	2 / hour	40 mins	05:26 – 00:18
Finsbury Park	Mon–Sun	4 / hour	34 mins	05:17 – 00:18
City Thameslink	Mon–Sat	2 / hour	48 mins	05:17 – 21:17

3.4 Local Highway Context

Baldock is situated between the A1 (M), to its west, the A505 to its east and the A507 connects these two strategic routes via a north-south road through the town. Junctions 9 and 10 of the A1(M) provide connectivity between the locality and the wider region, including connections to London, Cambridge and the Midlands.

As indicated in **Insert 1.1**, the development area is situated to the north and east of the existing town. Baldock town centre and Rail Stations are within proximity of the western extent of the proposed development area. The key road network in vicinity of the allocated plots that form the proposed development area are summarised as follows:

■ Local Roads

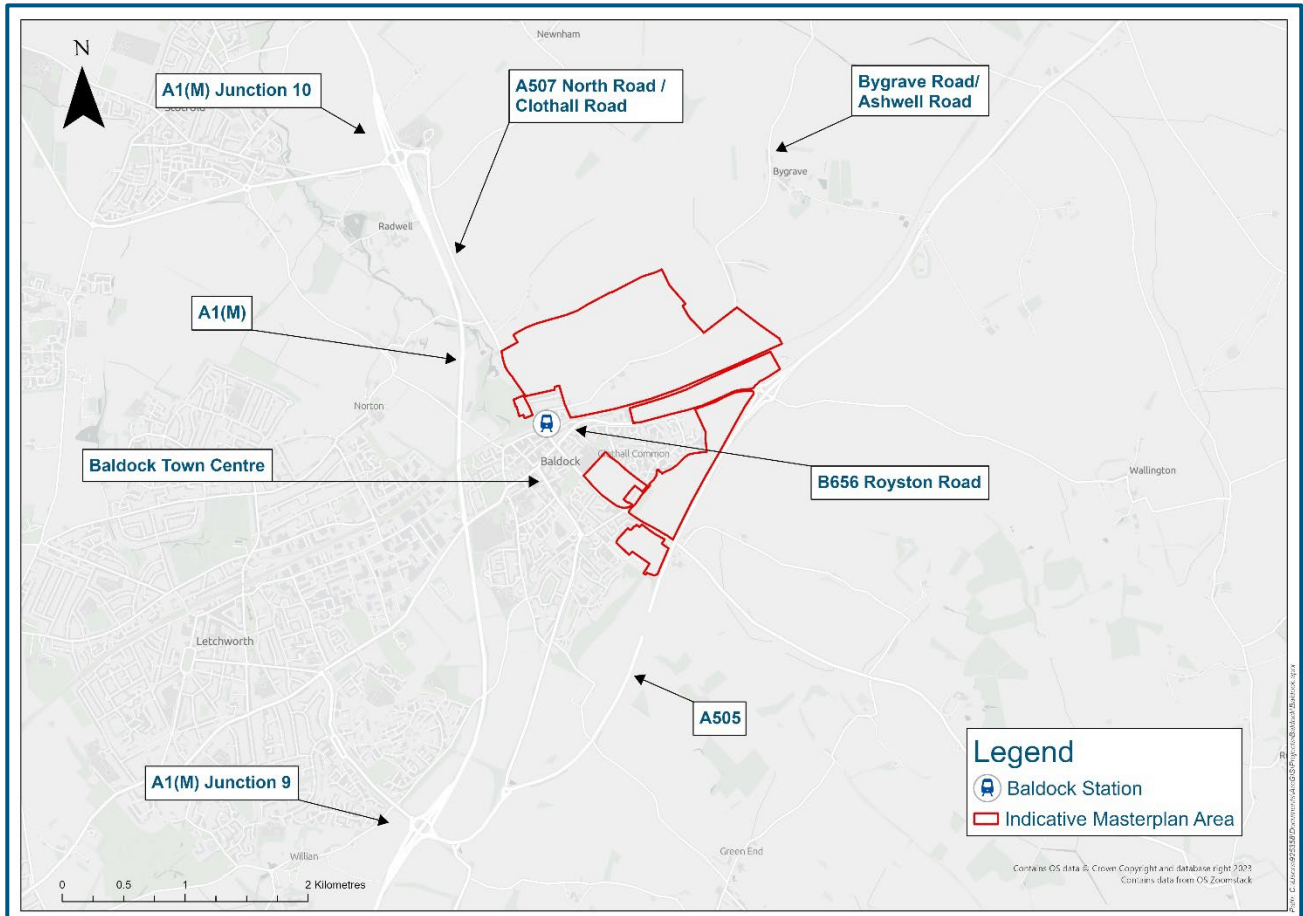
- A507 North Road / Clothall Road: The A507 is a single carriageway road, which travels through the centre of Baldock from A1(M) Junction 10 in the north, before passing over the A505 Baldock Bypass in the south
- Bygrave Road/Ashwell Road: Bygrave Road connects the A507 North Road to the North of Baldock with Bygrave. At its western extent, it meets the A507 in the form of a priority junction.
- B656 Royston Road/ Whitehorse Street/ Hitchin Street/ Letchworth Road: The B656 enters Baldock town centre from Letchworth in the west. The road is subject to a 30mph speed limit from around 80m east of the B656 Letchworth Road/ Hopewell Road junction to approximately 30m east of the B656 Royston Road/ Icknield Way East junction.
- In the vicinity of the site, the A505 operates as a dual carriageway road, located to the south of Baldock, routing between Leighton Buzzard to the southwest and Great Abington to the northeast. The A505 is subject to the national speed limit in the vicinity of the site.

■ Strategic Roads:

- The A1(M) runs approximately 750m to the west of Baldock town centre. Junction 9 is located to the south west of the town, providing access to Baldock via the A505 to the southeast of the junction and access to Letchworth to the northwest of the junction using the A505 Letchworth Gate. There are on and off slip roads to/ from the A1(M) mainline in northbound and southbound directions.

A plan which illustrates the masterplan sites with respect to the key local and strategic roads is presented in **Insert 3.4**.

Insert 3.4: Local Highway Context



3.5 Summary

A review of the existing site context indicates that the locality provides opportunities for facilitating travel by active and sustainable modes. The baseline study presented in the following Section of this TSR provides the basis for initial conceptual design development (discussed in **Section 5**) as well as the proposed approach to the assessment of transport impact (discussed in **Section 8**).



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4 Baseline Study

4.1 Overview

This Section of the TSR presents an overview of baseline studies that have been carried out to inform the transport strategy. The baseline studies to date have sought to establish a position for existing transport conditions with respect to existing active travel, public transport and highway demand, usage and patterns.

A review of baseline surveys and existing transport conditions is presented in **Annex C**.

4.2 Active Travel Baseline

Data collection exercises have been carried out with respect of the local active travel routes to formulate a broad baseline position in respect of local walking and cycling movements. The following data collection sources will be interrogated and presented as part of the assessment work presented in the TA:

- Strava Data – for local cycling and walking movements;
- PRow usage survey; and
- Mobile phone data.

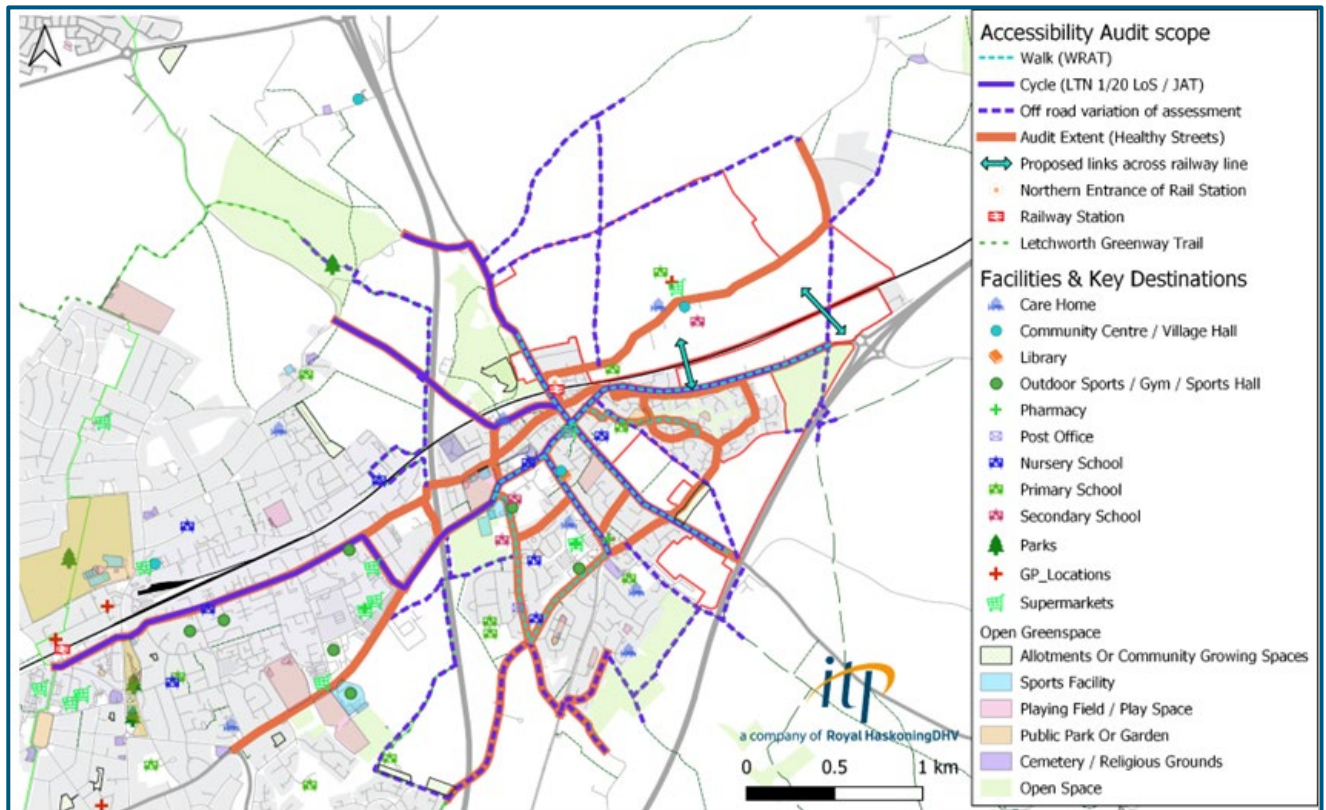
The Strava survey data was provided between the 20th–26th of September 2019. A survey of PRow was undertaken between the 8th-21st of July 2022, in the vicinity of the site. Mobile phone data, supplied by Teralytics for September 2019 and 2021, provided origin-destination data for the area in which the site is located. A summary of these data sources is provided in **Annex C**.

With consideration of the above, detailed audits of the existing cycle and pedestrian (including PRow) conditions within Baldock has been carried out, making use of a range of audit tools including the Walking Route Audit Tool, LTN 1/20 Cycle Level of Service and Healthy Streets.

It is proposed that the outputs of these exercises will be presented as part of the TA to assess the suitability of existing routes and support the proposed areas for improvement to inform the active travel strategy that has been substantially developed through the development of the masterplan in close collaboration with NHC and HCC.

The proposed study area for the detailed active travel audits is presented within **Insert 4.1**.

Insert 4.1: Accessibility Audit Scope



4.3 Public Transport Baseline

A review of existing rail and bus services, and available facilities at public transport access points, will be provided as part of the TA.

4.4 Highway Baseline

The scope of assessment, with regards to the highway baseline conditions, will be provided in accordance with the previously withdrawn application; the traffic survey study area and methodology, provided as part of the previous application, was approved by HCC.

As part of the baseline studies carried out in support of the masterplan, traffic flow data from Automatic Traffic Counter (ATC), Automatic Number Plate Recognition (ANPR) and Manual Classified Count (MCC) surveys have been commissioned to provide an overview of the operation of the existing highway within the broadly identified study area.

In developing a robust basis for data collection, a review of the assessment presented in the withdrawn applications has been carried out. While the TA for the withdrawn applications did not present a comprehensive record of scoping discussions and basis for the definition of a 'study area', it is noted that those TAs presented the following surveys:

- MCC of 15 junctions in May 2015 for the periods of 07:30-09:30 (AM Period) and (16:30-18:30)
- MCC of 2 junctions in June 2014 for the same periods as above
- Journey time surveys (10 runs per route) for the following routes:



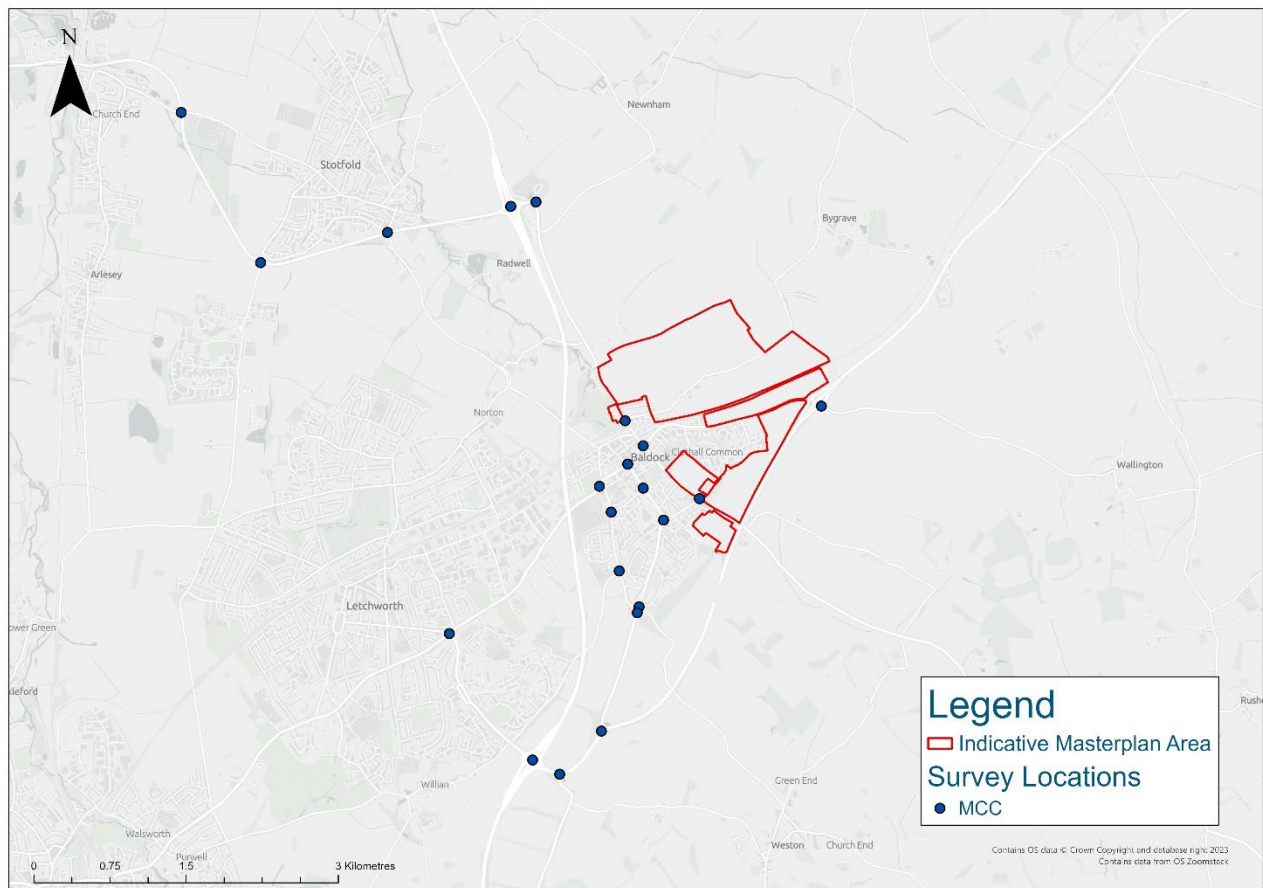
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- A507 Clothall Road/ Warren Lane junction to A507 Great North Road/ A1(M) Junction 10.
- B656 Royston Road/ A505 Baldock bypass junction to B656 Letchworth Road to the immediate west of the A1(M).
- B197 London Road/ A505 Baldock bypass junction to Church Street/ Icknield Way junction.

In developing an initial baseline study, the current proposals have built on the scope of the surveys of the withdrawn applications and extended the area of study to 22 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 (discussed at **Section 8**).

Insert 4.2 below are the locations of the 22 junctions that have been surveyed as part of the work that has been carried out to date to inform the developing proposals that form the topic of this TSR. The surveys were carried out in July 2022 with extended survey hours (compared to the withdrawn application) of weekday AM (07:00-10:00) and PM (16:00-19:00).

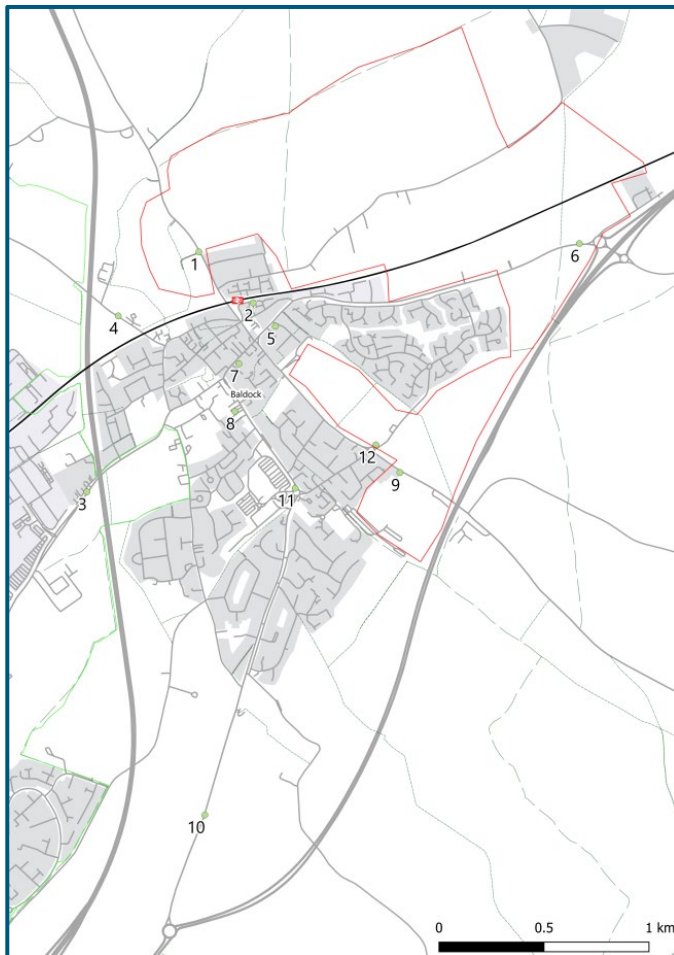
Insert 4.2: Identified MCC Locations



Similarly informed by the scope of the withdrawn applications, an ANPR cordon survey was undertaken to facilitate an understanding of existing traffic movements across the town to be created. The location of the cordon cameras for this assessment is shown in **Insert 4.3**.

The ANPR cameras recorded the vehicle class and direction of travel for each camera, as well as the point and time the vehicle entered and left the cordon. The commissioned surveys allow an analysis to be undertaken of traffic movements through Baldock, as well as information such as heavy goods vehicle (HGV) volumes and movements and proportions of through traffic.

Insert 4.3: ANPR Cordon Camera Locations



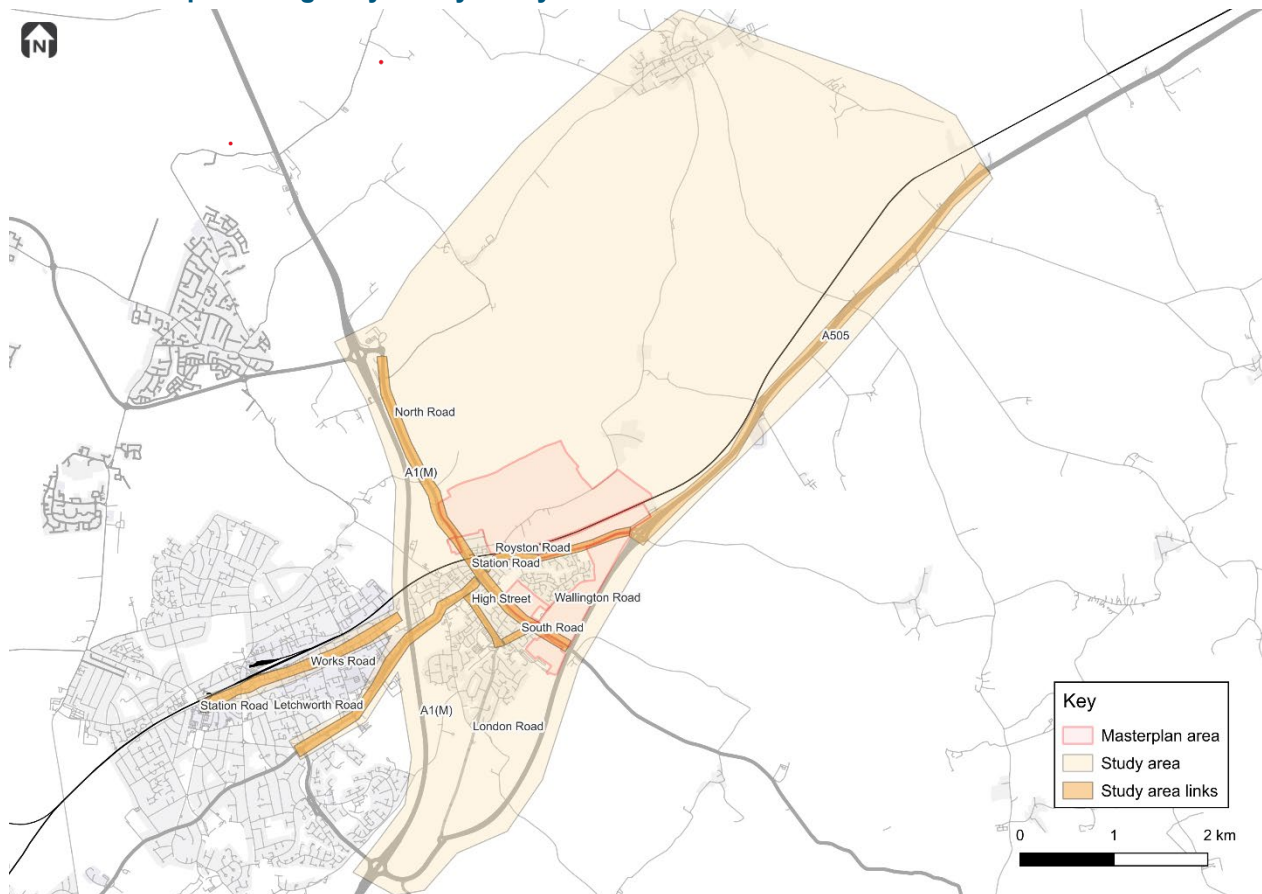
As outlined above, a review of baseline surveys and existing traffic conditions is presented in **Annex C**. It is assumed that the traffic surveys undertaken as part of the previous application, the scope of which were approved by HCC at the time, remain representative of the existing highway baseline conditions. Therefore, no additional surveys are proposed.

4.5 Highway Safety Study Area

As part of the withdrawn applications, the study area for the highway safety review of the TA associated with the 'Baldock North' and 'Baldock South' was agreed with HCC to consider *"Clothall Common and a part of Baldock, from the A507/ Bygrave Road junction in the north, Clothall Road and High Street/ South Road roundabout in the west, A507 Clothall Road to the north of its structure over the A505 in the south and a point approximately 200m northeast of the centre of the A505/ B656 Royston Road/ Wallington dumbbell roundabouts in the east. In addition, the analysis covered A1(M) Junctions 9 and 10."*

In the context of the above, the preliminary assessment work carried out in developing the masterplan considered a similar study area (to that of the withdrawn applications), with the proposed study area. During engagement with HCC there was a request for an for the highway safety review indicated at **Insert 4.4** below.

Insert 4.4: Proposed Highway Safety Study Area



The study area shown in **Insert 4.4**, spans the length of the highway network in the vicinity of the application site including A1(M), B656 Letchworth Road, Works Road, North Road / Clothall Road, High Street, South Road and the A507. The study area covers the whole of Baldock town and extends to Letchworth Garden City as shown in **Insert 4.4**.

A preliminary review of personal injury collision (PIC) data has been undertaken, using open-source data from the CrashMap website (www.crashmap.co.uk). The review, which focussed on the most recently available five-year period of PIC data (2018 to 2022) indicates that 148 collisions occurred in the identified study area. As part of the TA, it is proposed that PIC data would be obtained from HCC, in order to undertake a detailed highway safety review.

An assessment of the potential causal factors relating to these PICs would be undertaken in preparation of the TA to establish whether there is an underlying road safety problem which could be exacerbated by changes to movement patterns within the town resulting from the proposals. Should highway safety deficiencies be highlighted in the review of highway safety records within the study area, suitable measures and interventions will be considered to mitigate the impact of the proposed development on highway safety.



4.6 Summary

This Section of the TSR has presented the currently proposed study areas in respect of the key areas of impact assessment that are envisaged as part of the preparation of the TA. It is requested that the LHA, NH and SHA review and provide confirmation of the suggested study areas to facilitate a consistent approach to the technical assessment work that is to be submitted as part of the developing planning application.

It is again noted that the study area for the withdrawn applications has been used as an initial point of reference that can be refined as part of the scoping exercise. The currently developing proposals have been formulated on the aspiration to deliver a significantly lower level of car use. It is suggested that the anticipated lower levels of car use delivered by the developing proposals would result in a more limited area of impact, compared to that of the withdrawn applications. As such, where appropriate, a reduction in the suggested study areas would allow for a more focussed TA and facilitate a more efficient review of the application by the LHA and SHA.



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5 Development Proposals

5.1 Overview

As set out in the introductory Section of this TSR, the scope of the proposed outline planning application is:

“Outline planning application with all matters reserved except for access in relation to junctions on North Road, Royston Road, Clothall Road and Wallington Road, for up to c. 3,200 homes, up to 16ha employment land, waste infrastructure, local centre, 2 x primary schools, 1 x SEND school, health hub, green infrastructure, primary street, public transport infrastructure and pedestrian/cycle network (including PRow diversions, mobility hubs and two bridge crossings of the railway), utilities and drainage infrastructure (including diversions of existing, new pumping stations, sustainable drainage, primary sub stations, rising main/strategic sewer, potential net-zero infrastructure), ground remodelling/earthworks and any necessary demolitions.”

The following development options will be assessed:

- Development Option 1: up to 12 Form-Entry (FE) secondary school and 1 Special Educational Needs and Disabilities (SEND) school on Plot BA3;
- Development Option 2: Financial contributions to expansion of the existing KTS site (to 8-12 FE) at existing site and provision of SEND school and residential on BA3; or
- Development Option 3: up to 5FE secondary school, SEND school and residential on BA3.

The development options that seek to capture the proposed secondary education scenarios. Accordingly, this Section provides an overview of the current optioneering considered for provision of secondary education to meet the needs generated by the development.

5.2 Current Land Use

The currently proposed parameter plan is provided at **Insert 5.1** below (provided at higher resolution in **Annex D**).

DRAFT

Maximum Building Heights Inset

Maximum Heights to Ridge Level

- Up to 2 Storey (5m)
- Up to 3 Storey (5.5m)
- Employment - Up to 10m
- Up to 4 Storey (5.5m)

DRAFT

Urban & Civic

DAVID LOCK ASSOCIATES

24

**Table 5-1: Proposed Emerging Schedule of Land Uses by Plot**

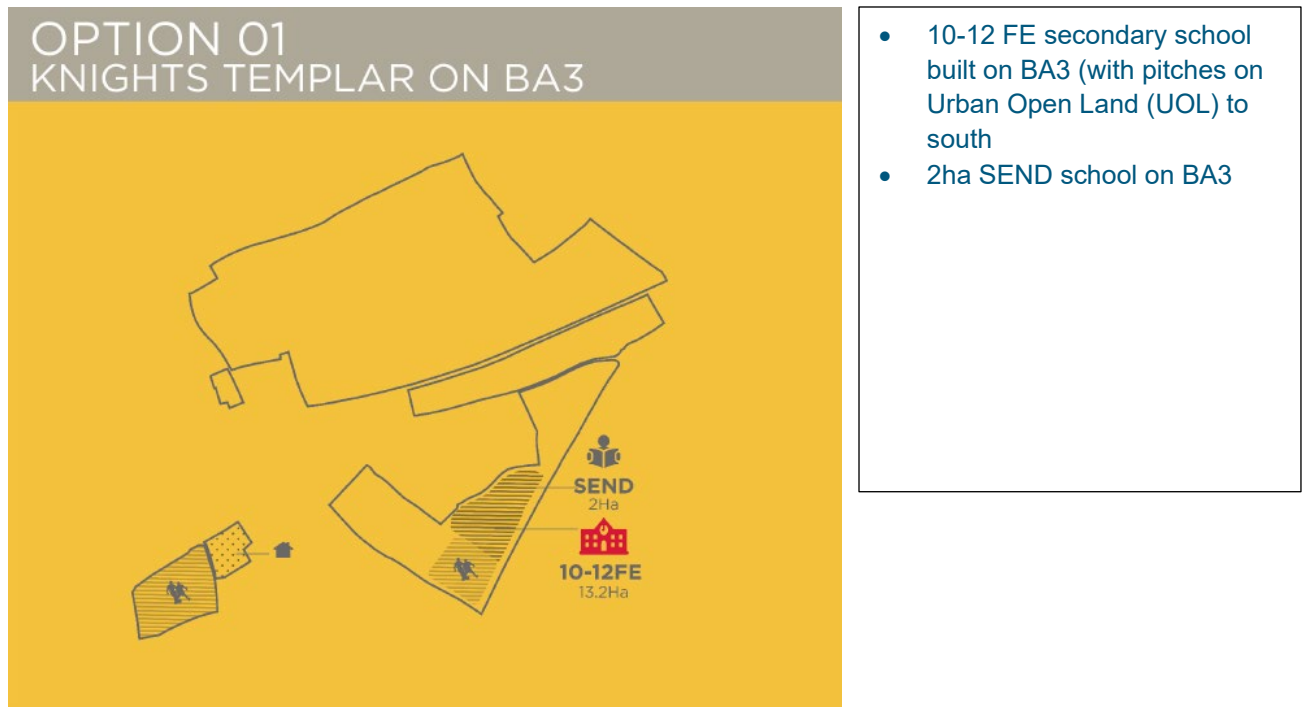
Plot / Land Use	Proposed Land Use	Quantum	Units
Plot BA1			
Residential	C3	2750	Dwellings
Convenience retail	E	700	Sqm (Floor Area)
Other retail / takeaway / café	E	800	Sqm (Floor Area)
Nursery	E	550	Sqm (Floor Area)
Gym	E	650	Sqm (Floor Area)
Office	E	550	Sqm (Floor Area)
Community hall	F2	500	Sqm (Floor Area)
Pub	Sui generis	750	Sqm (Floor Area)
Care Home	C2	3500	Sqm (Floor Area)
Sports Pavilion	D2	500	Sqm (Floor Area)
Primary School (x2)	F1	3	Form Entry
Plot BA10			
Medical Centre	E	1500	Sqm (Floor Area)
Vehicle depot	Sui generis	1500	Sqm (Floor Area)
Waste transfer station	B2	3500	Sqm (Floor Area)
Office	E	26500	Sqm (Floor Area)
Light Industrial	E	26500	Sqm (Floor Area)
Industrial	B2	26500	Sqm (Floor Area)
Plot BA3			
Flexible land use (residential or secondary school)	C3 F1	Up to 300 dwellings Up to 12	Dwellings FE (secondary)
Sports Pavilion	D2	250	Sqm (Floor Area)
SEND School	F1	2	Form Hectares
Plot BA2			
Residential	C3	200	Dwellings

5.3 Development Options

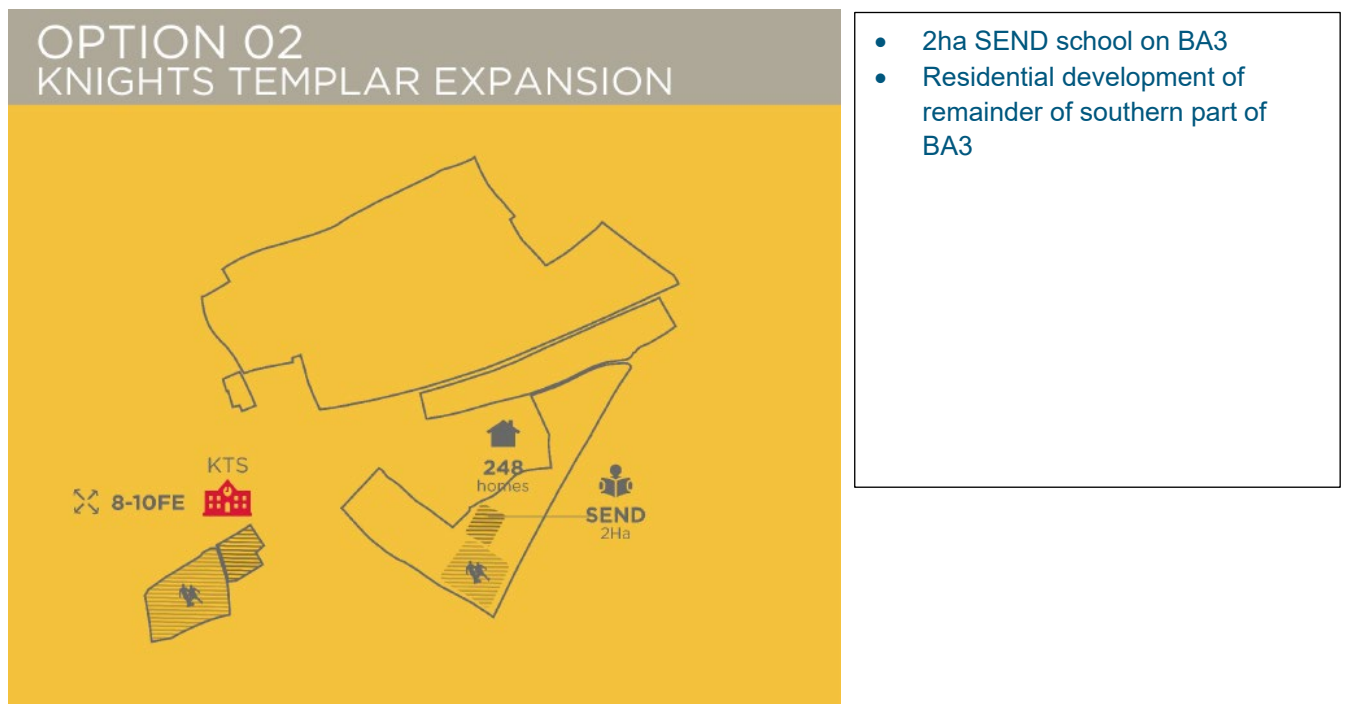
In consultation with HCC Education Authority, numerous options for the provision of secondary education places to meet the needs of the Growing Baldock development have been explored over 2024. Options have included the expansion of the existing Knights Templar School (KTS), or a new or KTS relocated school provision on parcel BA3. The North Hertfordshire Strategic Sites Project Board has agreed that flexibility to deliver one of three school options be retained in both the SMP and OPA.

Insert 5.2-5.4 illustrate the development options and provide description of the key elements of each option.

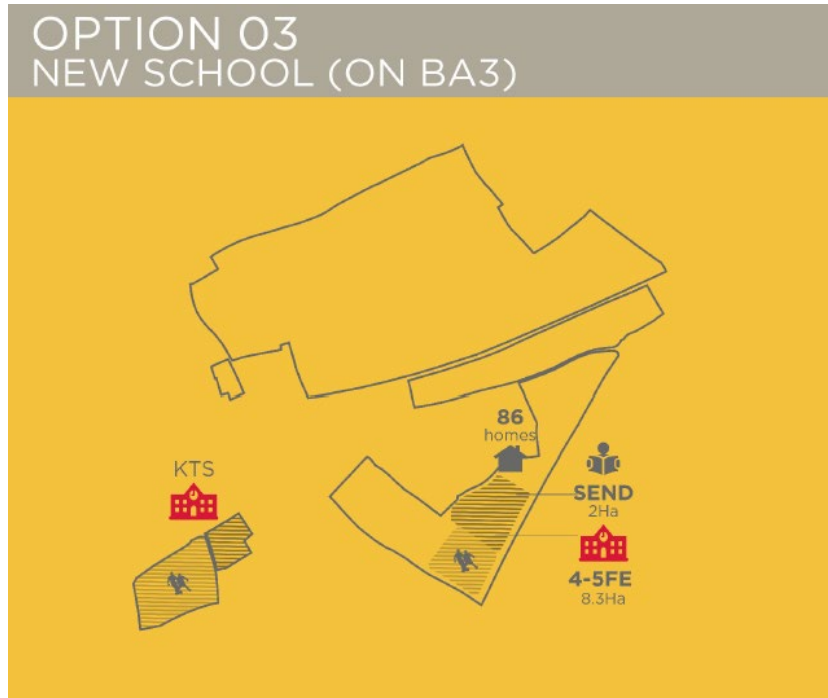
Insert 5.2: Development Option 1 - Knights Templar Relocation/Expansion on BA3



Insert 5.3: Development Option 2 Knights Templar Expansion on Existing Site



Insert 5.4: Development Option 3: Second Secondary School on BA3



- 4-5 FE secondary school built on BA3 (with pitches on Urban Open Land (UOL) to south
- 2ha SEND school on BA3
- Residential development of remainder of southern part of BA3

5.3.1 Strategic Masterplan

The SMP has been updated to reflect the three options, showing flexible land use (residential / education) on BA3 and a potential expansion of KTS. .

The OPA would also be prepared to allow flexibility for all three options to be implemented, depending on the further review of the education provision. This will allow either a contribution to be made to delivery of a KTS expansion, or for U&C to build a new school on reserved land at BA3.

The TA will present all three development options with specific consideration of transport parameters. The exact package of measures to be delivered in each scenario, either directly or by way of contribution will be established through the TA and further review of the education provision.

It is noted that the expansion of KTS on the existing site (Option 2) would not be part of the outline planning application that forms the topic of this TSR. It is however consider the transport implications of such will be considered by the TA as appropriate.

5.3.2 Subsequent Approvals

It is anticipated that all of the school options above will require further planning approval post OPA and the school review process (either reserved matters applications if the school is provided on BA3 or a detailed planning application for the works to expand Knights Templar on its existing site. In every scenario, the applications will include more detailed assessments of the transport (and other) implications and mitigation required to support the selected option.



6 Transport Strategy

6.1 Overview

Reflecting our approach to the project, as set out in the introduction, and as agreed with HCC and NHC, ITP has developed a Mobility Vision for the developing Growing Baldock proposals. This reflects the need to deliver growth differently, guided by a clear vision, and in a way that embeds active and sustainable travel first while being place, and masterplan-led. Furthermore, it is noted that this approach aligns with the vision-led principles that are promoted by the NPPF.

In the context of the above, this Section of the TSR sets out the developing Transport Strategy that currently forms the basis of relevant principles that inform the evolving masterplan design.

For the purpose of this TSR, the Transport Strategy is presenting as an overview of key considerations that are considered to be common to various configurations of Growing Baldock that may arise from the optioneering discussed at **Section 5**. Where relevant, the TA will present refinement of the Transport Strategy to capture any option-specific variations to the proposed strategy.

6.2 Mobility Vision

The Mobility Vision and Key Principles set out below will continue to be refined as the work progresses and as feedback is received from the Councils. As part of the TA, specific case studies and best practice outcomes from comparable developments would be examined. These will provide practical insights and reinforce the proposed Mobility Vision.

Growing Baldock will be a place that prioritises quality of life over traffic movement. Walking, cycling and public transport will be the quickest and most enjoyable way to 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.

6.3 Masterplan Principles

The transport strategy has been developed to deliver the vision and key objectives for the development. The key objectives are as follows:

- **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 and interventions that prioritise active and sustainable modes of travel.
- **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.
- **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.



- **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.
- **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.
- **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.
- **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 EV enabled parking standards.

6.4 Liveable Neighbourhood

A key objective of the Transport Strategy for Growing Baldock is to create new 'Liveable Neighbourhoods' that aim to reduce car dependency and promote active and sustainable forms of travel through appropriate masterplanning 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.

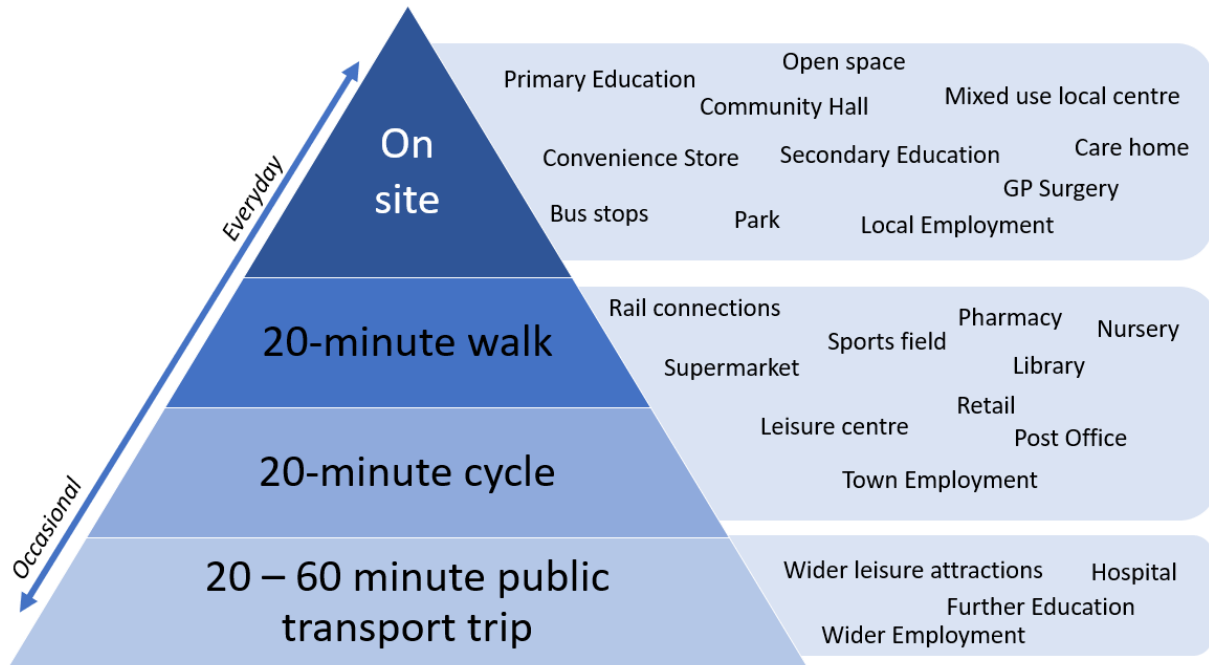
The delivery of Liveable Neighbourhoods builds on the principles of '20-minute neighbourhoods', '15-minute cities' or '10-minute towns', that are terms used to describe the concept of creating places where daily facilities and services are available to access within a short journey by foot, cycle or 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.

Insert 6.1 sets out our interpretation of the everyday and occasional facilities needed to create a 20-minute neighbourhood in Baldock.

Insert 6.1: Illustrative Approach to Reviewing Future Accessible Facilities



The TA prepared to support the application will demonstrate how the delivery of a 'Liveable Neighbourhood' is achievable through supporting masterplanning principles that will be presented and elaborated in due course.

6.5 Transport Strategy

The overarching principles discussed above will be realised through development of a series of proposed strategies that include but are not limited to the following:

- Access and Movement Framework
- Active Travel Strategy
- Public Transport Strategy
- Vehicle Access Strategy
- Parking Strategy
- Servicing Strategy
- Wayfinding Strategy

It is envisaged that through consultation with, and input from the LHA, NH and SHA on the key principles and parameters discussed in this TSR, the above strategies can be developed to support the Transport Vision for Growing Baldock.



6.6 Access and Movement Framework

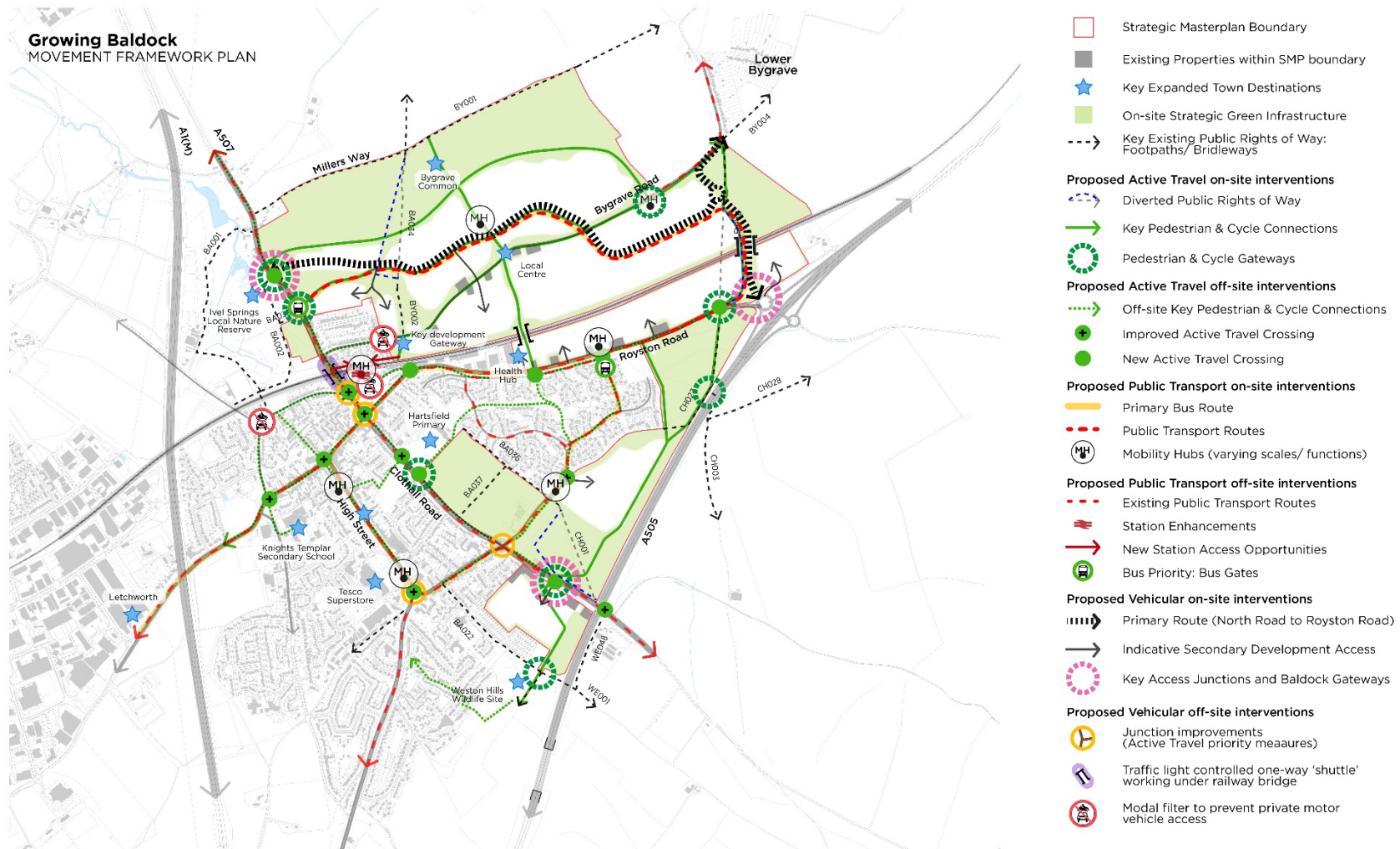
As part of ongoing collaborative work with the scheme masterplanner, David Lock Associates (DLA) and landscape designers Bradley Murphy Design (BMD), the currently proposed access and movement strategy for the developing proposals has been advanced in respect of the principles established in support of the draft parameter plan, that, as discussed at **Section 1**, has been subject to review by NHC and HCC.

Key to the delivery of the overarching vision and objectives is the integration of the off-site routes to the internal site networks and providing active travel and street networks that prioritise walking, cycling and public transport for trips from residential areas to the education, health, retail and leisure facilities on site.

Access by private car will be possible to all areas of site but will not be direct, particularly for trips between communities within BA1 and from BA1 to the town centre, BA10 and BA3. This 'filtered permeability' approach will ensure that local trips are quicker on foot, by cycle and by public transport thereby supporting the facilitation of a 'Liveable Neighbourhood'. This includes connections to the rail station.

The currently considered key points of access and movement framework for the developing masterplan are presented at **Insert 6.2** overleaf.

Insert 6.2: Proposed Conceptual Active and Sustainable Travel Network



6.7 Active Travel Strategy

The Growing Baldock proposals seek to provide a sustainable urban extension of the existing town of Baldock and by virtue of the proximity of the proposed development plots to existing town centre facilities, the scheme provides tangible opportunities for delivering a robust active travel strategy.

Discussions have been undertaken with ATE, as part of a pre-application pilot, regarding the Active Travel Strategy. Ongoing engagement will take place with ATE, as part of the pre-application process.

The active travel strategy will form a vital element of the vision-led approach for Growing Baldock that seeks to deliver a scheme that prioritises and promotes walking and cycling as a realistic alternative to private-car use for a large proportion of typical daily trips.

The proposed active travel strategy will be developed in conjunction with the landscape strategy and will seek to deliver cohesive connections between the existing streets in Baldock and the green routes that connect Baldock to the wider active travel network.

The conceptual basis of the proposed active travel strategy has been based on providing new linkages and enhancing existing links, between the proposed development plots and key destinations. The design development considered in support of the emerging proposals consisted of identifying a core set of routes based on the location of development plots and key destinations. Subsequently, a journey-based approach has been used to consider the types of interventions that can be implemented to improve the core network. The proposed approach identifies how different users would seek to travel to the key destinations from the residential development sites. This exercise has been devised to ensure that a full range of trips are considered, not just commuting. The strategy will also identify and address any potential conflicts between different transport modes and provide solutions to mitigate them, as required.

Many journeys to and from the proposed development would be undertaken as part of a multi-modal trip, with most journeys starting on foot. Therefore, the Active Travel Strategy will seek to ensure that active travel routes are integrated with existing and proposed public transport hubs, to facilitate multi-modal journeys.

6.8 Public Transport Strategy

Improving access to rail and bus services will form a vital part of the transport strategy for the developing proposals.

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. The key on-site principles could include:

- Bus access within site to best practice with sections of dedicated running
- Ensure bus alignments are able to accommodate future route enhancements and technology improvements
- Bus stops provided to maximise catchment (e.g. majority of properties within 400m of a stop) within sites
- Mobility hubs provide access to bus services at the heart of local centres and at points of interchange between modes

- Increased density around primary mobility hubs on-site (BA1)
- Seek to operate a bus service from early occupation, as part of a wider travel initiative for the town
- Provide free bus tickets and mobility credits as part of a wider 'Mobility as a Service' (MaaS) offer to residents

Excellent rail access with better facilities and access will support sustainable travel to wider destinations. These will be delivered alongside 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 bike.

6.9 Vehicle Access Strategy

The vehicle access strategy is a key part of delivering the overarching vision and key objectives for the development. As a key principle the transport strategy seeks to ensure that walking, cycling, wheeling and public transport are the quickest and easiest choice for local journeys.

The access road proposed as part of the development serving plot BA1, forms part of the overall Vehicle Access Strategy. Many of the interventions set out previously in the Active and Sustainable Modes Strategy (ASMS) have implications for car-borne trips in Baldock, but the proposed interventions which directly affect vehicles are outlined below:

- The access road and the access junctions at either end of it, on Royston Road and North Road and its role in allowing interventions on- and off-site to be completed by providing additional connections around the town
- Modal filters on Bygrave Road, Norton Road, Football Close and Icknield Way (details to be agreed through on-going consultation, including with local residents)
- Shuttle working system under the rail bridge on Station Road
- Reconfiguration of the B656 / A507 crossroads to ban turns from Station Road to Royston Road (and vice versa) and from Whitehorse Street to Station Road (phasing of interventions to be identified through the TA, and incorporated into the Monitor and Manage Framework)

Whilst most of the above relates to the reallocation of road space and greater prioritisation of active and sustainable modes, it is also proposed through the Vehicle Access Strategy to investigate highway capacity improvements at Junction 9 of the A1(M). This could reduce volumes of through traffic within Baldock.

6.9.1 Non-residential Parking Provisions

NHC parking standards for non-residential uses will be challenged to reduce car reliance for daily trips to commercial uses in the proposed development.

6.10 Parking Strategy

A key component for ensuring high levels of active and sustainable mode share is the proper 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 adopted car parking standards in developing a conceptual parking strategy that is to be further developed subject to pre-application advice that is sought as part of this scoping exercise.

6.10.1 Car Ownership

Census 2021 Car ownership data demonstrates car ownership levels above the national average. In Baldock, 85% of households own at least one car, compared with 76.5% nationally. **Table 6.1** indicates that the largest proportion of households own one car or van and that the average number of car ownership can be approximated as around 1.35 cars per household.

Table 6-1: 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	~ 1.35

6.10.2 Vehicle Parking at New Developments Supplementary Planning Document

The parking strategy for the developing proposals has given consideration to NHC's 2011 Vehicle Parking at New Development Supplementary Planning Document (SPD) that details the long-term plan for parking as part of the District's vision of being a "vibrant place to live and prosper". It is acknowledged that whilst parking has a role in promoting sustainable travel choices in most locations, demand management through parking is most appropriate at the trip destination rather than at the trip origin (i.e. at home).

The residential parking standards presented in the NHC's Parking SPD (summarised at

Table 6.2) refer to 'minimum' standards that enforce a level of car dominance in new development.

Table 6-2: NHC Adopted Residential Parking Standards

Class Use C3	Car Parking Standard	Minimum Standard Cycle Parking
1 bedroom	1 Space per dwelling Minimum	1 secure covered space per dwelling. None if garage or secure area provided within curtilage of dwelling.
2+bedrooms	2 spaces Minimum	

The SPD notes that garages are often underused, with less than half used for parking. Grouped parking designs for residential developments to be in smaller, surface parking areas (with allocated parking where appropriate) are preferred rather than garages, with visitor/unallocated parking ranges from 0.25-0.75 per dwelling.

Table 6.3 below summarises non-residential car parking standards presented in the NHC Parking SPD that will be referenced in developing a parking strategy that will support the 'Vision-led' approach to the proposals.

Table 6-3: NHC 2011 Parking SPD - Employment Use Car Parking Standards

Class Use	Maximum Car parking Standard (includes visitor spaces)
B1 – Business	
B1 (a) Offices	1 space per 30 m2 GFA
B1 (b) Research and Development, High-tech/B1 (c) Light industry	1 space per 35 m2 GFA
B2 - General Industry	
General Industry	1 space per 50 m2 GFA (lorry provision to be checked against benchmark standards)
B8 – Storage and distribution	
Wholesale distribution, builders merchants, storage	1 space per 75 m2 GFA (lorry provision to be checked against benchmark standards)
Mixed B1/B2/B8 (unless heavily orientated to B8) for use where individual land use components are not known	1 space per 40 m2 GFA (lorry provision to be checked against benchmark standards)

6.10.3 Proposed Average Residential Parking Provisions

In support of the 'Vision-led' approach, the Transport Strategy for the developing proposals will seek to challenge the minimum standards set out in the 2011 NHC Parking SPD to deliver a development that is not reliant on car use. Through the development of a suite of measures and design principles in support of reduced car reliance, and in seeking to support the sustainable transport aspirations of the proposals, the emerging proposals will seek to, on average, incorporate a level of car parking provision below NHC's prescribed parking standards across the proposed development. The level of car parking provided would be sensitive to the public transport and amenity accessibility levels across the proposed development site.

6.10.4 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 paid Car Club membership to encourage residents to use the scheme, as part of a package of travel planning measures.

Zipcar state that *"every Zipcar takes an average of 10-15 privately owned cars off the roads of the UK because members often sell (or don't replace) a car when they join."* The expansion of the Zipcar network through the site will therefore provide a tangible benefit to the sustainable credentials of the development, by encouraging reduced levels of car ownership and an associated reduction in development traffic demand.

6.11 Servicing Strategy

Managing servicing (deliveries, collections and maintenance) 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. The key on-site principles include:

- Introduce vehicle access and loading restrictions within sites to manage freight and logistics
- Introduce consolidation points and 'last mile' cargo bikes and e-vans for distribution to properties
- Provide pick up / drop off lockers at mobility hubs

6.12 Wayfinding Strategy

Vital to the effective operation of the overall access strategy will be the implementation of a Wayfinding Strategy that will be developed in outline as part of the emerging design development work that will be advanced as part of the preparation of the TA. This may include an examination of specific case studies from other relevant developments, which could provide practical guidance.

The outline Wayfinding Strategy will set out the role of signage and design features that will be used to direct all modes of travel around the parameter plan area and to facilitate efficient connectivity between various elements of the parameter plan and amenities in the wider locality.

6.13 Framework Travel Plan

A Framework Travel Plan (FTP) will be produced to cover the overall development. In accordance with national and local policy, the Travel Plan will set out measures that will be introduced into the development to enable and encourage residents to travel to and from the site by modes other than single occupancy vehicles (SOV).

The Travel Plan will include measures such as a travel options information booklet and other appropriate travel option marketing material, car clubs, a car sharing scheme and a coordinated approach to the promotion of the travel plan including participation in local and national walking and cycling events, health initiatives as well as a launch event for the Travel Plan. The introduction of a Framework Travel Plan will set out the principles for each detailed phase and enable a consistent and effective approach to sustainable travel as the development progresses. This will ensure that residents are fully aware of their sustainable travel options from the time of occupation, helping them to have access to all of their possible travel options from the start.

The Travel Plan will set targets for reducing SOV travel, and corresponding targets to increase the use of active and sustainable travel modes. Data will be collected from travel surveys and the success of the Travel Plan at meeting these targets will be monitored using surveys as necessary. The Travel Plan will accord with HCC guidance.

The FTP will support the Monitor and Manage Framework discussed at **Section 8**.

7 Trip Generation, Modal Split, Distribution and Assignment

7.1 Overview

Based on the Vision-led principles discussed with NHC and HCC as part of the development of the proposed scheme, this Section of the TSR sets out the trip generation, distribution and modal split methodologies that are proposed to be utilised as part of the TA that will be prepared in support of the emerging planning application.

It is proposed that the traditional trip generation exercise carried out for the withdrawn applications (discussed in **Section 1**) be used as an initial starting position for the residential trip rates to represent a traditional approach with limited sustainable travel interventions, that will be referred to as a 'Business as Usual' (BAU) scenario. TRICS will be used for the commercial BAU scenario, due to the new mix of uses proposed. Within the BAU scenario, the TRICS Decide and Provide methodology will be employed to derive trip rates that reflect current trends regarding working from home, but without affecting overall mode share.

The mode shift away from the car and the BAU mode share will be identified, taking into account the proposed strategies and package of interventions outlined above. This vision-led scenario will be consistent with the vision and principles. The mode shift assumptions will be made making use of a bespoke Mode Shift Model (MSM).

In summary, the TA will set out trip generation and mode split for the following scenarios:

- Business as Usual (standard trip generation methodology from withdrawn applications) and reduced trip rates (TRICS Decide and Provide)
- Vision-led (MSM)

This Section will be structured as follows:

- Trip Internalisation
- Trip generation
- Trip distribution and assignment

7.2 Trip Internalisation

The development proposals will result in significant levels of trip internalisation, resulting from the mix of land uses proposed. This reflects people who would live, study and work at the development. These individual trips would therefore not generate external vehicular trips on the highway network. This subsection presents an overview of the methodology for estimating the proportion of trips generated by the proposed scheme that will not enter the external active travel, public transport or highway networks.

Given that standard TRICS surveys do not effectively capture the trip rates and mode shares of wholly internal trips within development sites, the previously submitted TSR proposed that mode share of 'internal' trips would be altered in all trip generation scenarios to better reflect the likelihood of these shorter distance trips being made by sustainable modes. Informed by developments of similar scale, such as the Cambourne development in Cambridge, it was previously assumed that up to 30% of residential trips and 20% of employment trips would be internal to the site.

A more robust approach will be employed within the TA, as set out below.

Case Study Benchmarking

This update of the TSR captures case study research that has been carried out by ITP to derive a robust and further refined methodology in respect of trip internalisation assumptions. Below is a review undertaken to benchmark and compare containment assumptions of other large-scale developments within England. A summary of these sites, which are at various stages of planning and delivery, is presented in **Table 7.1**. The case study research assesses trip containment methodology for each of the identified large residential-led mixed use developments.

Table 7-1: Developments Reviewed

Name of site	Location of site	Planning reference	Size
Otterpool Park	Folkestone and Hythe, Kent	Y19/0257/FH	8,500 dwellings
Harlow and Gilston	Hertfordshire and Essex	3/19/1045/OUT	8,500 dwellings
Sittingbourne and Teynham	Swale, Kent	21/503906/EOUT	1,250 dwellings
Longcross	Runnymede, Surrey	RU.22/0393	1,700 dwellings
Dunton Hills	Brentwood, Essex	21/01525/OUT	3,700 dwellings
Salt Cross	West Oxfordshire	20/01734/OUT	2,200 dwellings
Dunsfold Park	Waverley, Surrey	WA/2015/2395	1,800 dwellings
Long Marston	Stratford-upon-Avon, Warwickshire	18/01892/OUT	3,100 dwellings
Salden Chase	Aylesbury Vale, Buckinghamshire	15/00314/AOP	1,855 dwellings

Of these identified sites, all have planning permission of some form except the Sittingbourne and Teynham and Salt Cross developments.

The case study approach involves assessing a breakdown of land use and journey purpose for each of the developments presented at **Table 7.1** to gather a range of external and internal trip proportions for large residential-led mixed use developments. **Table 7.2** presents a summary of the case study research.

Table 7-2: Summary of Methods of Calculation and Ranges of Trip Internalisation

Trip purpose	Methods of calculation	Range of trip internalisation figures*
Employment	Census O-D data Census Journey to Work data Census population groupings Examples of other locations	7% - 20%
Education (primary)	Assumptions Est. pupils per household Private / state school attendance	88% - 100%
Education (secondary)	Assumptions Est. pupils per household Private / state school attendance	29% - 90%
Leisure purposes	Assumptions based on on-site land uses	80% - 100%
Health centres	Assumptions based on on-site land uses	30% - 80%
Community centre	Assumptions based on on-site land uses	90% - 100%
Retail / personal business	TEMPro data NTS data Assumption based on type of jobs and distance likely to travel for these	50% - 90%
Hotel	Assumption based on type of jobs and distance likely to travel for these	80% - 100%
Care home	Assumption based on on-site land uses	10% - 50%

**Where development includes land use type*

The initial findings of the case study research suggests that trip internalisation methodologies vary between developments, with no consistent agreed methodology for their calculation. Generally, approaches utilise an evidence base for employment and educational trips such as National Travel Survey data, sometimes alongside Origin-Destination data. For other land uses an assumption is generally made based on professional judgement, informed by demographics and site location / context.

Table 7.3 below sets out maximum, minimum and mean average levels of containment in respect of categorised trip purposes. These will be the starting point for further refinement within the TA.

Table 7-3: Trip Containment Factor Comparison (daily rates)

Purpose	Case Studies Range		
	Minimum	Maximum	Mean Average
Commuting	7%	20%	14%
Education or Escort Education	29%	100%	65%
Shopping	50%	90%	70%
Leisure	80%	100%	90%
Other (nursery and healthcare)	10%	100%	55%

As more detail on the land use assumptions (particularly) destination land uses are understood this analysis can be refined and used to inform scenario testing for future trip generation and wider network distribution.

For the remainder of this Section, the broad internalisation assumptions discussed at the beginning of this subsection (i.e., 30% of residential trips and 20% of employment trips would be internal to the site) will be utilised to facilitate initial estimation of trip generation.

7.3 Trip Generation

7.3.1 Business as Usual

Residential

The business-as-usual scenario has been based on the TRICS^[1] trip rates adopted in the TAs submitted to support the withdrawn planning applications for the development sites. As outlined above, those TAs adopt a ‘traditional’ approach to trip generation and mode share, where significant volumes of vehicle-borne trips were predicted and planned for.

The residential trips for 2,750 dwellings, presented in **Table 7.4:**, includes residential development at BA1 and BA3, and excludes trip generation for BA2’s 250 dwellings. The overall number of dwellings assessed in the TA will reflect the final masterplan. The full TRICS data is provided in **Annex E**.

^[1] TRICS refers to the Trip Rate Information Computer System, which is a database of multi-modal surveys of developments in the UK, allowing for trip rates to be calculated for different land uses.

Table 7-4: Residential Business As Usual Residential Trip Rates and Associated Trips (Trip Rate per Dwelling) (2,750 dwellings)

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way
Vehicle	0.153	0.428	0.581	0.415	0.177	0.592	2.417	2.380	4.797
Walk	0.035	0.135	0.17	0.036	0.036	0.072	0.392	0.404	0.796
Cycle	0.003	0.015	0.018	0.011	0.005	0.016	0.047	0.046	0.093
Public Transport	0	0.027	0.027	0.02	0.003	0.023	0.113	0.118	0.231
Total People	0.191	0.605	0.796	0.482	0.221	0.703	2.969	2.948	5.917
Residential Development External Trips (70% BA1, 90% BA3)									
Vehicle	305	854	1159	828	353	1181	4822	4748	9570
Walk	70	269	339	72	72	144	782	806	1588
Cycle	6	30	36	22	10	32	94	92	186
Public Transport	0	54	54	40	6	46	225	235	461
Total People	381	1207	1588	962	441	1402	5923	5881	11804

Non-residential land uses

The BA10 employment allocation would comprise different land uses, which have been outlined in **Table 5.1**. The trip rates and resultant trips are identified in **Table 7.5** and **Table 7.6** respectively. The overall quantum of development and land use mix in the TA will reflect the final masterplan. The full TRICS outputs are contained in **Annex F**.

Table 7-5: Employment - Business As Usual Trip Rates

Land Use	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Medical Centre (Use Class E) 1,500sqm	Vehicle	2.563	1.359	3.922	1.058	1.952	3.010	24.549	24.225	48.774
	Walk	0.789	0.610	1.399	0.504	0.781	1.285	8.825	9.041	17.866
	Cycle	0.049	0.000	0.049	0.016	0.041	0.057	0.359	0.344	0.703
	Public Transport	0.301	0.081	0.382	0.114	0.195	0.309	2.594	2.578	5.172
	Total People	4.328	2.286	6.614	1.952	3.514	5.466	44.026	43.693	87.719
Sports Pavillion (Use Class D2) 500sqm	Vehicle	0.315	0.105	0.420	0.189	0.315	0.504	5.347	4.247	9.594
	Walk	0.210	0.000	0.210	1.135	0.441	1.576	5.464	5.623	11.087
	Cycle	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Public Transport	0.000	0.000	0.000	0.000	0.000	0.000	1.840	1.840	3.680

Land Use	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
	Total People	0.578	0.158	0.736	1.324	0.883	2.207	13.484	12.656	26.140
Vehicle Depot (Sui Generis) 1,500sqm	Vehicle	0.971	0.261	1.232	0.213	0.663	0.876	7.289	7.336	14.625
	Walk	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Cycle	0.000	0.000	0.000	0.024	0.024	0.048	0.024	0.024	0.048
	Public Transport	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total People	-	-	-	-	-	-	-	-	-
Waste Transfer Station (Use Class B2) 3,500sqm (trip rate per ha)	Vehicle	35.981	32.243	68.224	0.000	3.261	3.261	512.445	517.891	1030.336
	Walk	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Cycle	0.000	0.000	0.000	0.000	0.000	0.000	0.467	0.467	0.934
	Public Transport	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total People	-	-	-	-	-	-	-	-	-
Office (Use Class E) 26,500sqm	Vehicle	1.531	0.153	1.684	0.096	1.133	1.229	5.223	5.344	10.567
	Walk	0.096	0.008	0.104	0.004	0.093	0.097	0.697	0.707	1.404
	Cycle	0.090	0.001	0.091	0.004	0.084	0.088	0.268	0.247	0.515
	Public Transport	0.089	0.004	0.093	0.005	0.064	0.069	0.241	0.222	0.463
	Total People	2.033	0.206	2.239	0.141	1.516	1.657	7.329	7.336	14.665
Light Industrial (Use Class E) 26,500sqm	Vehicle	0.039	0.026	0.065	0.037	0.041	0.078	0.588	0.633	1.221
	Walk	0.002	0.000	0.002	0.003	0.001	0.004	0.045	0.049	0.094
	Cycle	0.001	0.000	0.001	0.001	0.000	0.001	0.008	0.008	0.016
	Public Transport	0.002	0.000	0.002	0.001	0.003	0.004	0.012	0.013	0.025
	Total People	0.052	0.028	0.080	0.042	0.054	0.096	0.696	0.766	1.462
Industrial (Use Class B2) 26,500sqm	Vehicle	0.177	0.037	0.214	0.047	0.105	0.152	1.385	1.428	2.813
	Walk	0.005	0.000	0.005	0.000	0.010	0.010	0.029	0.033	0.062
	Cycle	0.000	0.000	0.000	0.000	0.005	0.005	0.044	0.026	0.070
	Public Transport	0.035	0.000	0.035	0.167	0.130	0.297	1.266	1.268	2.534
	Total People	0.247	0.040	0.287	0.240	0.272	0.512	3.281	3.315	6.596

**Note: discrepancies between the sum of individual modes and 'total people' figures relate to vehicle passengers trips*

Table 7-6: Employment - Business As Usual Total Trips (External Trips 80%)

Land Use	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Medical Centre (Use Class E) 1,500sqm	Vehicle	31	16	47	13	23	36	295	291	585
	Walk	9	7	17	6	9	15	106	108	214
	Cycle	1	0	1	0	0	1	4	4	8
	Public Transport	4	1	5	1	2	4	31	31	62
	Total People	52	27	79	23	42	66	528	524	1053
Sports Pavillion (Use Class D2) 500sqm	Vehicle	1	0	2	1	1	2	21	17	38
	Walk	1	0	1	5	2	6	22	22	44
	Cycle	0	0	0	0	0	0	0	0	0
	Public Transport	0	0	0	0	0	0	7	7	15
	Total People	2	1	3	5	4	9	54	51	105
Vehicle Depot (Sui Generis) 1,500sqm	Vehicle	12	3	15	3	8	11	87	88	176
	Walk	0	0	0	0	0	0	0	0	0
	Cycle	0	0	0	0	0	1	0	0	1
	Public Transport	0	0	0	0	0	0	0	0	0
	Total People	-	-	-	-	-	-	-	-	-
Waste Transfer Station (Use Class B2) 3,500sqm	Vehicle	10	9	19	0	1	1	143	145	288
	Walk	0	0	0	0	0	0	0	0	0
	Cycle	0	0	0	0	0	0	0	0	0
	Public Transport	0	0	0	0	0	0	0	0	0
	Total People	-	-	-	-	-	-	-	-	-
Office (Use Class E) 26,500sqm	Vehicle	325	32	357	20	240	261	1107	1133	2240
	Walk	20	2	22	1	20	21	148	150	298
	Cycle	19	0	19	1	18	19	57	52	109
	Public Transport	19	1	20	1	14	15	51	47	98
	Total People	431	44	475	30	321	351	1554	1555	3109

Land Use	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Light Industrial (Use Class E) 26,500sqm	Vehicle	8	6	14	8	9	17	125	134	259
	Walk	0	0	0	1	0	1	10	10	20
	Cycle	0	0	0	0	0	0	2	2	3
	Public Transport	0	0	0	0	1	1	3	3	5
	Total People	11	6	17	9	11	20	148	162	310
Industrial (Use Class B2) 26,500sqm	Vehicle	38	8	45	10	22	32	294	303	596
	Walk	1	0	1	0	2	2	6	7	13
	Cycle	0	0	0	0	1	1	9	6	15
	Public Transport	7	0	7	35	28	63	268	269	537
	Total People	52	8	61	51	58	109	696	703	1398
Total	Vehicle	424	75	499	54	305	359	2072	2111	4183
	Walk	32	9	41	12	33	45	291	298	589
	Cycle	20	0	20	2	20	21	73	64	137
	Public Transport	30	2	32	38	44	82	361	357	718
	Total People	570	98	669	121	445	566	3210	3228	6438

**Note: discrepancies between modal figures and total people figures relate to vehicle passengers, which are not counted in the individual modal figures*

Education Trips

In the business-as-usual scenario, a 'first principles' approach has been taken to calculate the multi-modal trip generation of the existing school, providing the foundation to inform travel patterns and implications of an expanded school, either on the existing Knights Templar site or at BA3. This approach has been informed by either national / publicly available data, or data and information provided by Knights Templar School.

Knights Templar School undertook a 'hands up' survey in October 2023, in which pupils across all year groups (except sixth form) were asked how they currently travel to school. Based on this information, aggregating rail trips with walking trips, scooter trips with cycling and 'car then walk' trips with car trips (as worst case), the resulting mode shares for different home areas are presented in **Table 7.7**.

Table 7-7: Pupil Mode Shares for Different Home Areas

Travel Mode	Survey Results	Pupils within Baldock	Pupils Outside of Baldock
Car	23%	20%	60%
Walk	57%	61%	6%
Cycle	6%	5%	5%
Public Transport	14%	14%	29%
Total	100%	100%	100%

Knights Templar School was unable to provide detailed data relating to where its 130 staff live and how they travel to school, however, some general/anecdotal information was provided, suggesting that most staff drive and many come from a reasonable distance away. On that basis, the Census 'Location of usual residence and place of work by method of travel to work' dataset (WU03EW) was used as a proxy to represent staff travel patterns. A summary of the resulting staff travel mode share is presented in **Table 7.8**.

Table 7-8: Summary Staff Travel Mode

Travel Mode	Percentage
Car	76%
Walk	19%
Cycle	3%
Public Transport	2%
Total	100%

The resulting pupil and staff trip rates and total trips associated with the existing school are presented in **Table 7.9**. For the purpose of this assessment, it has been assumed that all staff and pupils would arrive at the school during the traditional AM peak period (08:00-09:00). It is anticipated that most pupils would depart from school between 15:00-16:00. Therefore, it has been assumed for this assessment that all staff at the school would depart during the PM peak period (17:00-18:00).

Table 7-9: Education - Business As Usual Trips and Mode Share (Existing 1,428 Pupils / 130 Staff)

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00) *			Daily		
	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way
Vehicle	0.385	0.000	0.385	0.000*	0.741*	0.741*	0.385	0.385	0.770
Walk	0.388	0.000	0.388	0.000*	0.215*	0.215*	0.388	0.388	0.776
Cycle	0.047	0.000	0.047	0.000*	0.029*	0.029*	0.047	0.047	0.094
Public Transport	0.180	0.000	0.180	0.000*	0.018*	0.018*	0.180	0.180	0.360
Total People	1.000	0.000	1.000	0.000*	1.000*	1.000*	1.000	1.000	2.000
Total Trips									
Vehicle	600	0	600	0	96	96	600	600	1200
Walk	605	0	605	0	28	28	605	605	1209
Cycle	73	0	73	0	4	4	73	73	146
Public Transport	281	0	281	0	2	2	281	281	561
Total People	1558	0	1558	0	130	130	1558	1558	3117
*Note: It is assumed that only staff would depart the school during the PM peak period.									

7.3.1.1 TRICS Decide and Provide trip rates

The TRICS Decide and Provide methodology provides a suitable basis for estimating the downward trend in trip making, seen over recent years. As noted above this method will be used to reduce overall trip rates, making of the BAU mode share. A summary is provided below, with full details of the methodology set out in **Annex G**.

Residential

Overall, the trend data shows a substantial fall in total trip making and vehicle trips over the period of 2000-2024, which is in line with DfT data cited in the TRICS guidance. It is noted that while mathematically there has been a reduction in vehicle trips over the period, there is a substantial increase in cycling. The ITP MSM is employed later in this document to provide refined mode share estimates for the proposed development. The residential decide and provide trip rates and total people trips is presented in **Table 7.10**.

Table 7-10: Residential Decide and Provide Residential Trip Rates and Associated Trips (2,750 Dwellings)

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way
Total People	0.176	0.558	0.734	0.441	0.202	0.644	2.748	2.729	5.477
Residential Development External Trips (70% BA1, 90% BA3)									
Total People	352	1113	1465	880	404	1284	5483	5444	10927

The proposed residential development in a Decide and Provide scenario is anticipated to result in 1465 two-way total people trips in the AM peak hour and 1284 two-way total people trips in the PM peak hour, during weekdays.

Non-residential

Overall, the trend data for commercial uses shows a reduction in total trip making over the assessed period. Notably, it is observed that since 2000, there has been a slight reduction in total vehicle trips, which is in line with DfT data cited in the TRICS guidance. The commercial decide and provide trip rates and total people trips is presented in **Table 7.11**.

Table 7-11: Decide and Provide Commercial Trip Rates and Associated Trips (86,500sq.m)

Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way	Arrivals	Departs	Two-Way
Total People	0.777	0.134	0.911	0.166	0.610	0.775	4.267	4.291	8.558
Commercial Development External Trips (80% External)									
Total People	538	93	631	115	422	537	2952	2969	5922

The proposed commercial development in a Decide and Provide scenario is anticipated to result in 631 two-way total people trips in the AM peak hour and 537 two-way total people trips in the PM peak hour during weekdays.

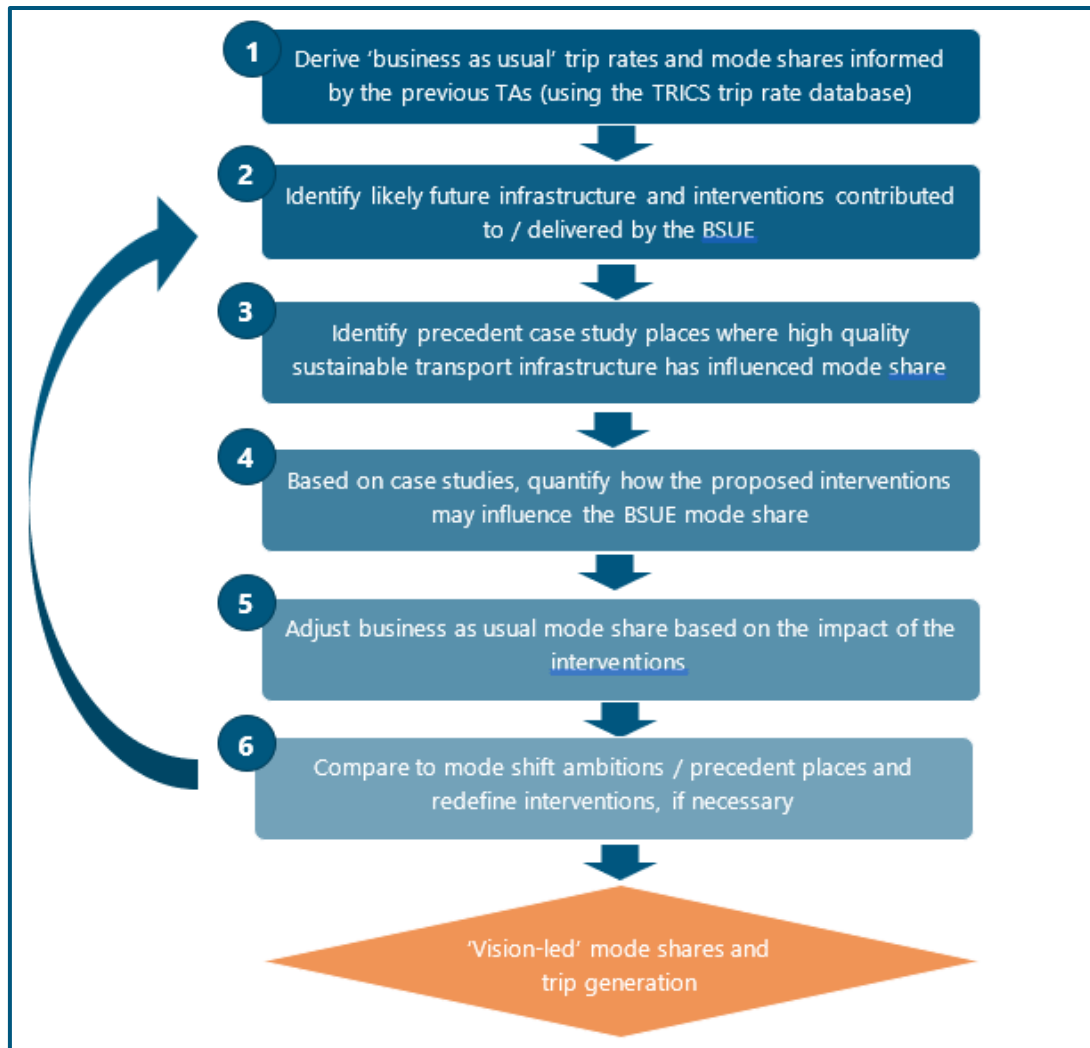
The Decide and Provide “historic trend” process is considered inappropriate for estimating changes to trip generation for educational trips, where there is a need for staff and pupils to be on-site at all times.

7.3.2 Vision-Led

The MSM will be used to determine the vision-led mode share within the TA. The MSM is a spreadsheet tool that facilitates quantification of the impacts of interventions, at a high level. It outputs the likely impacts on mode share, trip generation and carbon equivalent emissions, and allows for comparison of the BAU 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 MSM is illustrated in **Insert 7.1**. More detail on the process is set out in **Annex H**, with this section providing a summary. The proposed MSM methodology also provides an approach to estimating carbon equivalent emissions generated by vehicle trips associated with the development sites.

Insert 7.1: Mode Shift Model Approach



The MSM alters the baseline, business-as-usual mode shares (as shown in **Table 7.4** - **Table 7.5**) to reflect more sustainable places which have achieved high active and sustainable mode shares. These 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.

It is noted that trips relating solely to education within Baldock would not change so significantly, as the baseline vehicle mode share for pupil trips (as demonstrated by **Table 6.3**) is already very low. Some mode shifts, however, would be expected through introduction of the interventions, which will make trips to school very attractive for non-car modes.

Based on the masterplanning principles outlined in this Note, and the emerging interventions in the Active and Sustainable Modes Strategy (ASMS), the themes against which the business-as-usual mode shares have been adjusted (Step 5 in **Insert 7.1**) are:

- 1) Public transport
- 2) Active travel
- 3) Traffic and parking management
- 4) Placemaking and land use planning

The MSM 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 scenario).

For each theme a rating of N/A, 1, 2, 3 or 4 can be given, to reflect the package of interventions and masterplanning principles proposed. The ratings are described in headline in **Table 7.12** below.

Table 7-12: Masterplan Themes and Ratings

Rating	Description
N/A	Not applicable – this theme will be excluded from the MSM calculations
1	The proposed measures will likely have an insignificant impact on mode share for this theme, and therefore BAU mode share outcomes can be expected
2	The proposed measures will likely have a modest impact for this theme, in comparison to a BAU scenario, and a third of the potential maximum mode shift is applied (i.e. if the maximum mode shift for the theme is a reduction of 28% against the BAU mode share, then a mode shift of 9% would be applied)
3	The proposed measures will likely have a significant impact for this theme, in comparison to a BAU scenario, and two-thirds of the potential maximum mode shift is applied (i.e. if the maximum mode shift for the theme is a reduction of 28% against the BAU mode share, then a mode shift of 18% would be applied)
4	The proposed measures will likely have a transformational impact for this theme, in comparison to a BAU scenario, and the maximum mode shift is applied (i.e. if the maximum mode shift for the theme is a reduction of 28% against the BAU mode share, then a mode shift of 28% would be applied)

A record of the theme ratings applied, and their rationale is set out in **Table 7.13** below.

Table 7-13: Theme Ratings Applied

Site	Trip length	Theme	Rating	Rationale
BA1	Internal trips (30% of trips)	Public transport	3	The majority of residents will be within a short walk of a bus stop, connecting them to the full range of on-site facilities. The bus service is expected to be high frequency (~every 10 minutes at peak times) but many short local trips will be quicker and more cost effective on foot and by bike. The impact of public transport on mode share for these trips is therefore expected to be significant, but not transformational in comparison to a BAU scenario.
		Active Travel	4	All residents will have access to high-quality walking and cycling routes, including traffic-free routes. Filtered permeability will make walking and cycling the quickest choice. The impact of the active travel measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
		Traffic and Parking Management	4	The access road will have a 20mph design speed. All residential streets will have a 10mph design speed. Controlled parking zones will be investigated to manage on-street parking. Lower levels of car parking will be provided at points of higher connectivity, with a general principle of applying lower car parking levels than adopted standards across the whole site. A mix of off-plot and unallocated car parking will be provided, alongside on-plot parking. Where parking is off-plot it will be charged for annually. Filtered permeability will make walking and cycling the quickest choice. The impact of the traffic and parking management measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
		Placemaking and Land Use	4	A full range of day-to-day uses will be provided on-site, including primary schools, health, leisure and retail facilities. The public realm and landscaping will be exemplary, encouraging walking and cycling. The impact of the placemaking and land use

Site	Trip length	Theme	Rating	Rationale
BA1	Baldock / station / Letchworth trips (30% of trips)			measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
		Public transport	4	The majority of residents will be within a short walk of a bus stop, connecting them to Baldock. The bus service is expected to be high frequency (~every 10 minutes at peak times). A range of on- and off-site bus priority measures are proposed in order to provide journey time advantage. A new access to the rail station is proposed, as well as improvements to the rail station building, which will encourage use of rail for trips to Letchworth and longer distance trips to destinations such as London and Cambridge. The impact of public transport on mode share for these trips is therefore expected to be transformational in comparison to a BAU scenario.
		Active Travel	4	A network of traffic-free and low traffic cycle routes is to be provided both on- and off-site, including a dedicated active travel bridge over the railway, with connections made to the town centre and Knights Templar school. The impact of the active travel measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
		Traffic and Parking Management	3	The on-site street network will ensure result in it being quicker to get off the site and into Baldock by bike and bus than by car. The package of off-site highway interventions include a range of reductions in highway capacity and access restrictions in order to allow for reallocation of roadspace for improved walking, cycling and bus infrastructure. Taken together this will reduce the attractiveness of driving for short trips to Baldock in particularly, as well as to Letchworth. An expansion of off-site Controlled Parking Zones around the station are proposed to manage potential parking demand. Limited changes to parking within Baldock or Letchworth are proposed, however. The impact of the traffic and

Site	Trip length	Theme	Rating	Rationale
BA1				parking management measures on mode share for these trips is expected to be significant in comparison to a BAU scenario.
		Placemaking and Land Use	4	The proposed walking, cycling and public transport interventions will support safe and convenient access to Baldock town centre, with many facilities within 20 minutes of walk of much of the site. Baldock town centre is an attractive and vibrant centre with a full range of uses. The impact of the placemaking and land use measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
	Residual trips (40% of trips)	Public transport	1	Long distance rail trips are captured in the trip distance above, it is not anticipated that the package of public transport measures will influence longer distance trip making. The impact of public transport measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Active Travel	1	Very few longer distance trips are made by active travel. The impact of active travel measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Traffic and Parking Management	2	The potential changes to vehicle access and capacity within and particularly for trips through Baldock will influence mode choice for some longer distance trips. The impact of traffic and parking management measures on mode share for these trips is expected to be modest in comparison to a BAU scenario.
		Placemaking and Land Use	N/A	The proposed placemaking and land use measures are not relevant to these trips.
BA3	Internal trips (10% of trips)	Public transport	N/A	The proposed public transport measures are not relevant to these trips, given the relatively small size of the site.
		Active Travel	3	All residents will have access to high-quality walking and cycling routes, including traffic-free

Site	Trip length	Theme	Rating	Rationale
BA3				routes. The impact of the active travel measures on mode share for these trips is expected to be significant in comparison to a BAU scenario.
		Traffic and Parking Management	3	The internal road network will be designed to encourage slow speeds (10mph to 20mph design speed, depending on the street). A general principle of applying lower car parking levels than adopted standards is proposed across the site. A mix of off-plot and unallocated car parking will be provided, alongside on-plot parking. Where parking is off-plot it will be charged for annually. The impact of the traffic and parking management measures on mode share for these trips is expected to be modest in comparison to a BAU scenario.
		Placemaking and Land Use	3	Given the scale of the site, a relatively limited range of day-to-day uses will be provided on-site. The public realm and landscaping will be exemplary, encouraging walking and cycling. The impact of the placemaking and land use measures on mode share for these trips is expected to be modest in comparison to a BAU scenario.
	Baldock / station / Letchworth trips (50% of trips)	Public transport	3	The majority of residents will be within a short walk of a bus stop, connecting them to Baldock. The bus service is expected to be high frequency (~every 10 minutes at peak times). A range of on- and off-site bus priority measures are proposed in order to provide journey time advantage. Improvements to the rail station building are proposed, which will encourage use of rail for trips to Letchworth and longer distance trips to destinations such as London and Cambridge. The impact of public transport on mode share for these trips is therefore expected to be significant in comparison to a BAU scenario.
		Active Travel	3	The site will connect to a network of traffic-free and low traffic cycle routes, including to a dedicated active travel bridge over the railway, with new connections made to the town centre and station in

Site	Trip length	Theme	Rating	Rationale
BA3				particular. The impact of the active travel measures on mode share for these trips is expected to be significant in comparison to a BAU scenario.
		Traffic and Parking Management	3	The on-site street network will ensure result in it being quicker to get off the site and into Baldock by bike and bus than by car. The package of off-site highway interventions include a range of reductions in highway capacity and access restrictions in order to allow for reallocation of roadspace for improved walking, cycling and bus infrastructure. Taken together this will reduce the attractiveness of driving for short trips to Baldock in particularly, as well as to Letchworth. An expansion of off-site Controlled Parking Zones around the station are proposed to manage potential parking demand. Limited changes to parking within Baldock or Letchworth are proposed, however. The impact of the traffic and parking management measures on mode share for these trips is expected to be significant in comparison to a BAU scenario.
		Placemaking and Land Use	3	The proposed walking, cycling and public transport interventions will support safe and convenient access to Baldock town centre, with many facilities within 20 minutes of walk of much of the site. Baldock town centre is an attractive and vibrant centre with a full range of uses. The impact of the placemaking and land use measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
	Residual trips (40% of trips)	Public transport	1	Long distance rail trips are captured in the trip distance above, it is not anticipated that the package of public transport measures will influence longer distance trip making. The impact of public transport measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Active Travel	1	Very few longer distance trips are made by active travel. The impact of active travel measures on

Site	Trip length	Theme	Rating	Rationale
BA3				mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Traffic and Parking Management	1	While the changes to capacity and access could have some limited on long distance trip making on balance, the impact of traffic and parking management measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Placemaking and Land Use	N/A	The proposed placemaking and land use measures are not relevant to these trips.
BA10	Internal trips (20% of trips)	Public transport	N/A	The proposed public transport measures are not relevant to these trips, given that the proposed bus service will not run within it.
		Active Travel	4	A traffic-free active travel route is proposed within the site, connecting the land uses and proposed green and social spaces. This, combined with filtered permeability will ensure that walking and cycling is the quickest mode within the site. The impact of the active travel measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
		Traffic and Parking Management	4	Parking levels below adopted levels are proposed. Vehicle access will be managed to individual plot accesses while walking and cycling will be directly
		Placemaking and Land Use	3	A mix of uses will be provided on-site, as well as an active travel bridge to the local centre proposed in BA1. The quality of the public realm and landscaping will be exemplary. The impact of the placemaking and land use measures on mode share for these trips is expected to be significant in comparison to a BAU scenario.
	Baldock / station / Letchworth trips (40% of trips)	Public transport	4	The site will be well connected to the train station, including with proposed improved quality walking routes. The site will be served by the proposed bus service, supported by priority measures. The impact of the public transport measures on mode share for

Site	Trip length	Theme	Rating	Rationale
BA10				these trips is expected to be transformational in comparison to a BAU scenario.
		Active Travel	4	The site will be directly connected to the proposed on- and off-site traffic walking and cycling routes to BA1, Clothall Common, the station and Baldock town centre. The impact of the active travel measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
		Traffic and Parking Management	3	Changes to traffic access at the Whitehorse Street junction and speed restrictions (reduced speed limit along Royston Road), combined with enhanced walking and cycling routes and bus services will influence modal choice. Taken together this will reduce the attractiveness of driving for short trips to Baldock in particularly, as well as to Letchworth. An expansion of off-site Controlled Parking Zones around the station are proposed to manage potential parking demand. Limited changes to parking within Baldock or Letchworth are proposed, however. The impact of the traffic and parking management measures on mode share for these trips is expected to be significant in comparison to a BAU scenario.
		Placemaking and Land Use	4	The site will have access to BA1, Clothall Common, the station and Baldock town centre via high-quality traffic free and lightly trafficked routes, including via a new bridge. This provides access to a wide range of day to day uses that will be more quickly accessed by modes other than the car. This will complement the mix of uses on-site. The impact of the placemaking and land use management measures on mode share for these trips is expected to be transformational in comparison to a BAU scenario.
	Residual trips (40% of trips)	Public transport	1	Long distance rail trips are captured in the trip distance above, it is not anticipated that the package of public transport measures will influence



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Site	Trip length	Theme	Rating	Rationale
BA10				longer distance trip making. The impact of public transport measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Active Travel	1	Very few longer distance trips are made by active travel. The impact of active travel measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Traffic and Parking Management	1	While the changes to capacity and access could have some limited on long distance trip making on balance, the impact of traffic and parking management measures on mode share for these trips is expected to be insignificant in comparison to a BAU scenario.
		Placemaking and Land Use	N/A	The proposed placemaking and land use measures are not relevant to these trips.

For the purpose of comparing the trip generation scenarios the trip generation at BA3 have been provided assuming residential land use. A summary of trip rates, mode share and trip generation outputted by the MSM for the vision-led scenario is provided in the tables below, with detailed outputs included in **Annex I**.

Table 7-14: Vision-led Scenario Internal trips

Site	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Residential (BA1 – 2400 dwellings)	Vehicles	14	44	58	35	16	51	219	217	436
	Public transport	9	28	37	23	10	33	140	139	280
	Active travel	104	329	433	260	119	379	1620	1608	3228
Residential (BA3 – 350 dwellings)	Vehicles	2	7	9	6	3	8	34	34	69
	Public transport	0	0	0	0	0	0	1	1	2
	Active travel	4	12	16	10	4	14	61	60	121
Commercial (BA10 - 86,500 sq.m)	Vehicles	93	17	110	8	64	72	417	426	843
	Public transport	17	3	20	4	17	21	113	113	226
	Active travel	10	1	10	12	14	26	112	111	224
Whole site	Vehicles	109	68	177	49	83	132	670	678	1348
	Public transport	26	32	57	27	27	54	255	253	508
	Active travel	117	342	459	282	138	420	1793	1780	3573

Table 7-15: Vision-led Scenario Trips to Baldock and Letchworth

Site	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Residential (BA1 – 2400 dwellings)	Vehicles	67	164	231	191	77	268	1074	1050	2124
	Public transport	6	42	48	32	10	41	191	194	385
	Active travel	54	196	250	94	59	154	714	721	1435
Residential (BA3 – 350 dwellings)	Vehicles	21	55	77	59	24	84	340	333	673
	Public transport	2	11	12	8	2	10	48	49	97
	Active travel	8	32	40	10	9	18	93	96	189
	Vehicles	137	25	162	8	90	98	579	594	1174

Site	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Commercial (BA10 - 86,500 sq.m)	Public transport	43	7	50	11	41	51	273	273	547
	Active travel	60	8	68	32	60	91	433	434	867
Whole site	Vehicles	225	244	469	259	191	450	1993	1977	3970
	Public transport	50	60	110	51	53	103	512	516	1029
	Active travel	122	236	357	136	128	263	1241	1250	2491

Table 7-16: Vision-led Scenario Residual trips

Site	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Residential (BA1 – 2400 dwellings)	Vehicles	135	379	515	365	156	520	2148	2115	4263
	Public transport	0	24	24	18	3	20	100	105	205
	Active travel	34	133	166	41	36	77	390	400	790
Residential (BA3 – 350 dwellings)	Vehicles	20	55	75	53	23	76	313	308	622
	Public transport	0	3	3	3	0	3	15	15	30
	Active travel	5	19	24	6	5	11	57	58	115
Commercial (BA10 - 86,500 sq.m)	Vehicles	200	35	235	26	144	170	953	971	1924
	Public transport	25	4	29	6	25	31	167	167	334
	Active travel	14	1	15	18	21	39	166	164	330
Whole site	Vehicles	355	470	825	444	323	766	3414	3394	6808
	Public transport	25	32	56	27	28	55	282	287	569
	Active travel	53	153	206	65	62	128	613	622	1235

The outcomes of the MSM are summarised in **Table 7.17** external trips associated with the residential and commercial land uses at the application site.

Table 7-17: Vision-led Scenario Total External Trips

Site	Mode	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily		
		Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way	Arr'	Dep'	Two-Way
Residential (2,750 dwellings)	Vehicles	243	654	897	668	279	948	3875	3806	7681
	Public transport	8	80	88	60	15	75	354	363	717
	Active travel	101	380	480	152	109	261	1254	1275	2529
Commercial (86,500 sq.m)	Vehicles	337	60	397	34	234	268	1532	1565	3097
	Public transport	67	12	79	17	66	83	441	440	881
	Active travel	74	9	83	50	80	130	599	598	1197

The proposed residential development is anticipated to result in 897 two-way external vehicle trips in the AM peak hour and 948 two-way external vehicle trips in the PM peak hour, during weekdays. The proposed commercial development is anticipated to result in 397 two-way external vehicle trips in the AM peak hour and 268 two-way external vehicle trips in the PM peak hour, during weekdays.

7.4 Total Trip Generation and Mode Split Comparison

This section considers the total trip generation, including internal and external trips, associated with the proposed development. **Table 7.18** and **Table 7.19** below respectively set out the resultant total trip generation for all the BAU and Vision-led scenarios for the proposed residential and commercial uses.

Table 7-18: Residential Use Resultant Total Trip Generation Comparison

Mode	BAU			Vision-led		
	Two-way Daily Trips	D&P Two-way Daily Trips	% Trip rate reduction	Two-way Daily Trips	Difference compared to BAU	% Difference compared to BAU
Vehicle	13192	10802	-18%	8185	-2617	-24%
Active Travel	2445	3792	55%	5878	2086	55%
Public Transport	635	468	-26%	998	531	113%
Total People	16272	15062	-7%	15062	0	0%

Table 7-19: Commercial Use Resultant Total Trip Generation Comparison

Mode	BAU			Vision-led		
	Two-way Daily Trips	D&P Two-way Daily Trips	% Difference compared to BAU	Two-way Daily Trips	Difference compared to BAU	% Difference compared to BAU
Vehicle	5229	4809	-8%	3941	-869	-18%
Active Travel	908	835	-8%	1421	586	70%
Public Transport	897	825	-8%	1107	282	34%
Total People	8048	6469	-20%	6469	0	0%

The mode split comparison for the BAU and Vision-led scenarios is presented in **Table 7.20** and **Table 7.21**.

Table 7-20: Mode Split Comparison – Residential (Total Trips)

Mode	Census Travel to Work Mode Split*		Business as Usual (BAU)	Vision-led	
	2011*	2021*	Mode Split	Mode Split	% change compared to BAU
Vehicle	65%	43%	72%	54%	-17%
Active Travel	12%	9%	25%	39%	14%
Public Transport	12%	4%	3%	7%	4%

Table 7-21: Mode Split Comparison – Commercial (Total Trips)

Mode	Business as Usual (BAU)	Vision-led	
	Mode Split	Mode Split	% change compared to BAU
Vehicle	74%	61%	-13%
Active Travel	13%	22%	9%
Public Transport	13%	17%	4%

In summary, the Vision-led scenario has a significant impact on active travel and public transport trips across both residential and commercial land uses, based on the proposed package of interventions.

With regards to the education land use, through the delivery of the Growing Baldock development, several interventions will be introduced within Baldock to encourage walking, cycling and bus use and to make these modes quicker and more convenient than travelling by car, for some journeys. Given that Knights Templar School is unlikely to expand without the Growing Baldock development being delivered, it is reasonable to assume that the interventions being delivered alongside the Growing Baldock development will also come to fruition and effect a modal shift.

It is not anticipated that trips relating solely to education within Baldock would change so significantly, as the baseline vehicle mode share for pupil trips (refer to **Table 7.7**) is already very low. Some mode shifts, however, would be expected through the introduction of the interventions, which will make trips to school from the new Growing Baldock development sites, in particular, very attractive for non-car modes.

The resultant MSM scenario pupil mode shares, applied in the ‘future’ scenario, are presented in **Table 7.22**. As many staff live outside of Baldock, it is not anticipated that there would be any material shift in mode share as a result of the Growing Baldock development interventions (and no shifts have been applied in this assessment).

Table 7-22: Mode Split Comparison – Education (Pupils Only)

Travel Mode	Pupils within Baldock (with MSM assumptions)	Pupils Outside of Baldock (with MSM assumptions)
Car	10% (-10)	55% (-5)
Walk	66% (+5)	6%
Cycle	10% (+5)	5%
Bus	14%	34% (+5)
Total	100%	100%

7.5 Trip Distribution and Assignment for Development Trips

Reliance will be made on the COMET model for trip distribution and assignment at strategic level. Trip distribution and assignment for localised modelling will be informed by relevant outputs from the COMET model.

8 Transport Impact

8.1 Overview

This section provides the proposed methodology for assessing the impact of the proposed development on the local highway network. The details of the proposed scenarios to be tested are provided along with a summary of the proposed modelling assessments.

The proposed assessment methodology has been provided to initiate discussions with HCC and NH, as part of the pre-application process.

8.2 Capacity Assessment Methodology

8.2.1 Capacity Assessment Overview

It is proposed that the capacity assessment element of the review of transport impacts be carried out primarily in respect of the highway network and additionally consider public transport impact as discussed further below. With consideration of the scale (level of detail) of the capacity assessment, the following methods are proposed:

- Strategic Level – COMET Modelling
- Local Level – Local Junction Modelling and VISSIM Modelling

8.2.2 Strategic Modelling – COMET

A new COMET model is expected to be available in April 2025 and it is currently proposed that reliance will be made on use of this model for the strategic impact assessment element of the TA.

It is envisaged that the COMET model will provide a basis for assessment of highway and public transport capacity. Further discussions with HCC are to be undertaken, as part of the pre-application process, to determine the scenarios to be modelled within COMET.

8.2.3 Local Modelling

The local modelling (making use of a range of appropriate tools discussed below) will test in more detail the operation of the network where interventions are proposed or where capacity challenges are suggested by the COMET outputs.

Junction capacity assessments will be undertaken using Junctions 10 (PICADY and ARCADY) software. This software is produced by TRL and is the industry's standard modelling software to assess the performance and capacity of give-way priority junctions.

It is proposed that assessments of signalised junctions within the area of study would be undertaken using the industry standard LinSig 3 modelling software. A VISSIM model has been built and will be used to test the implications of the development on the Station Road corridor. Results of the junction assessments are proposed to be considered in the context of the Ratio of Flow to Capacity (RFC) (Junctions 10), Degree of Saturation (LinSig), and the average delay and queue lengths experienced by vehicles. The outputs from these models will be used to refine our vision-led transport strategy with further model iterations undertaken as needed. While the standard model outputs above will be assessed and reported, we will seek to balance the benefits of the proposed interventions for all modes and quality of place more generally within the study area, with private vehicle capacity. The impact of congestion and delay on bus services will be carefully considered and mitigations developed, as needed.

8.2.4 Assessment Study Area

The COMET modelling will be used to determine links and junctions that are likely to require further refined modelling. With consideration of the Strategic Road Network, it is not considered that any assessment beyond that of Junction 9 and Junction 10 of the A1 (M) will be required.

8.2.5 Assessment Years

It is proposed that the following scenarios be assessed to determine the traffic impact of the scheme at each of the identified junctions for the weekday AM, PM and Saturday peak hours:

- 2028 Opening Year,
- 2033 Interim Phase,
- 2040 Future Year.

The above will be confirmed further to development phasing exercises that will be completed pending an agreed position on trip generation with HCC.

8.2.6 Base Traffic and Growth

Several traffic surveys have been undertaken in the vicinity of the site (refer to **Section 4**) in the year 2022, and these 2022 surveys would inform the baseline year scenarios. It is proposed that the traffic associated with the baseline and future year scenarios would be informed by relevant base and growth information sourced from the COMET Model.

8.2.7 Modelling Scenarios

The delivery of planned interventions will be informed by the assessment work discussed at **Section 8** and the programme of the intervention packages will be presented in the TA in respect of the phasing of the proposed development. The trigger points for delivery of intervention will respond to, but not be solely influenced by, capacity impacts and will be developed in further discussion with NHC and HCC.

The assessment of capacity impacts will make use of COMET and local modelling, as set out above. We anticipate developing a series of scenarios to test within COMET that fully capture and identify the differences between the BAU and vision-led scenarios, taking into account a range of possible assumptions in relation to background traffic growth.

Table 8.1 sets out the indicative inputs to the scenarios that proposed for modelling in COMET (and subsequent local junction modelling). The BAU scenarios take the conventional approach of adopting the ‘core’ DfT traffic growth assumptions and the development trip generation using TRICS. We will benchmark traffic growth in the area around Baldock over the last ten to fifteen years, to establish the appropriate TEMPro growth to apply in the BAU scenario. Alongside the MSM outputs, the vision-led scenarios assume that over time, the rate of background traffic growth will begin to reduce as political, societal and technological trends change.

Table 8-1: Indicative Modelling Scenario Overview

Scenario	Rationale	Background growth	Baldock growth
Business-as-usual scenarios			
Opening Year (2028)	The (new) COMET reference year is understood to be 2023, but this will be before development at Baldock commences. A future opening year / reference year would act as a useful baseline against which to understand the impacts of background growth and growth at Baldock	Standard TEMPro background growth, and committed developments	Low development trips, no mode shift
Interim Phase (2033)	This interim scenario will aid the phasing and delivery programme and will help to establish if / when there are trigger points by which time interventions need to be provided.		Higher development trips, no mode shift
Full Development (2040)	The overarching aim of using COMET to model development impact is to understand whether its impacts when complete will be acceptable, inclusive of the proposed interventions.		High development trips, no mode shift
Vision-led scenarios			
Opening Year (2028)	As above	Standard background growth, e.g. TEMPro Core, and committed developments	Low development trips, low mode shift
Interim Phase (2033)		Background growth beginning to change, e.g. TEMPro Low, and committed developments	Higher development trips, and some mode shift

Scenario	Rationale	Background growth	Baldock growth
Full Development (2040)		Low background growth, e.g. TEMPPro Behavioural, and committed developments	High development trips, high mode shift

**All years are indicative at this stage, some are based on early discussions with HCC's modelling team*

In context of the above, it is envisaged that through development of the modelling assumptions as part of the commissioning the COMET model runs, a refined list of three main scenarios will be proposed for modelling as outlined below:

- Opening Year Model (with and without development)
- Interim Phase Model (with and without development) – utilising Vision-led MSM trip rates
- Full Development Model (with and without development) – utilising Vision-led MSM trip rates

It is proposed that the above modelling years would be assessed in respect of the weekday AM and PM peak hours as well as a Saturday Midday peak hour.

It is acknowledged that the formal commissioning process will require for a pro-forma to be completed for review and approval by HCC. Supporting text will be provided to further describe the assumptions that have been utilised in completing the pro-forma.

8.2.8 Assessment of Development Options

The TA analysis will be supported by option-specific COMET model scenario testing. The outputs from the COMET model, combined with local traffic surveys, will be used to gain an understanding of trip distribution and network operation, and the outputs will inform local modelling. The local modelling (making use of a range of appropriate tools such as Junctions 10, LinSig and VISSIM) will test in more detail the operation of the network where interventions are proposed or where capacity challenges are suggested by the COMET outputs. The modelling will be used to provide the optimum balance between delivering clear priority for walking, cycling and public transport without unacceptable impacts on network operation for private vehicles. The options below, relate to the school scenarios set out in **Section 5**.

Development Option 1

Option 1 would represent a 'worst case' scenario in terms of impacts on South Road and Wallington Road, and the junction of Clothall Road / South Road and Wallington Road. A combination of COMET and local modelling will also be used to identify triggers for specific interventions, for example the delivery of changes to the junction at Clothall Road / South Road / Wallington Road, along with the wider phasing plan.

Development Option 2

The modelling process will be the same as for Option 1. As noted above Option 1 would represent a 'worst case' scenario in terms of impacts on Icknield Way, Norton Road, Weston Way and the junctions of Norton Road and Weston Way with Letchworth Road / Hitchin Street. A combination of COMET and local modelling will also be used to identify the triggers for specific interventions, along with assumptions regarding phasing more generally. The phasing plan will include a clear set of assumptions regarding expansion of KTS.

Development Option 3

Options 1 and Options 2 will have assessed ‘worst case’ impacts in relation to the school options presented. Lower trip generating schools will be present on the KTS and BA3 sites in Option 3. Moreover, the two schools will have more contained catchments than the larger schools in Options 1 and 2. In combination this means that the trip generation at each school will be lower (reflecting lower pupils numbers), as will the movements across the town (reflecting more contained catchments). Local modelling will be used to identify whether the interventions developed in Options 1 and 2 are triggered by Option 3 along the corridors identified above.

The option-specific sections of the TA for Option 3 will outline the specific trip generation, distribution and assignment outcomes, but no additional strategic COMET modelling will be undertaken as it can be assumed (for the reasons set out above) that the impacts will be lower for Option 3 than for either of Options 1 and 2. Local modelling may be used to identify trigger points for specific interventions, as needed.

8.3 Active Travel and Public Transport Impact Assessments

8.3.1 Active Travel Impact Assessments

It is proposed that key pedestrian and cycle routes will be assessed as part of the TA; detailed audits of the existing cycle and pedestrian (including PRow) conditions within Baldock have been carried out, making use of a range of audit tools including the Walking Route Audit Tool, LTN 1/20 Cycle Level of Service and Healthy Streets. Further details are provided in **Section 4**, with the proposed study area presented in **Insert 4.1**. A package of transformational active travel measures has been developed following extensive discussion with HCC, NHC and the local community as outlined in **Section 6.7**. These have informed the Mode Shift Model and trip generation approach set out above. Based on the active travel assessments and subject to further discussions with HCC, the detailed pedestrian or cycle mitigation measures will be agreed with HCC.

8.3.2 Public Transport Impact Assessment

The impact of development-related trips on the public transport network will be assessed as part of the TA. Improving access to rail and bus services will form a vital part of the transport strategy for the developing proposals. The proposed Public Transport Strategy is outlined in **Section 6.8**.

As outlined previously in this TSR, it is currently envisaged that the COMET modelling will facilitate suitable assessment of public transport impact. The proposed public transport impact assessment will examine existing and future public transport service provision and provide a forecast of the potential impact the development would have on these services. The development impact would be based on the trip generation assessment presented in **Section 7**.

The public transport impact assessment would be subject to further discussions with HCC and local public transport service operators.

9 Proposed New and Modified Infrastructure

9.1 Overview

All new and modified transport infrastructure works associated with the proposed development will be designed with reference to the appropriate active travel, public transport and highway design guidelines and standards. Drawings of all proposed works will be included as part of the assessment, at a level of detail commensurate to the outline nature of the proposed application.

9.2 Highway Design Parameters

In considering the necessary requirements for access and street layout, reference has been made to Manual for Streets and the Roads in Hertfordshire: Highway Design Guide 3rd Edition (2011).

The HCC Highway Design Guide sets out key principles for the design of residential streets.

HCC has developed guidance relating to the hierarchy of roads based on their intended function. The purpose of this approach is to ensure vehicular and pedestrian traffic is concentrated onto roads which are appropriately designed to serve the journey purpose. This approach aims to *'improve safety, discourage the use of residential roads for through traffic, and create safer conditions for all users of residential roads. This is also particularly important for vulnerable users such as pedestrians and cyclists.'*

The road hierarchy, its interface with the wider masterplan, the active travel network and its role in delivering the vision and objectives set out in **Section 5.3.2**, will be developed in the TA. Regard will be made to the HCC Highway Design Guide as a starting point, along with Manual for Streets I and II and wider best practice. A key design principle will be to manage vehicle speed through a progressive approach to carriageway width, forward visibility and design detail for junctions. A Road Danger Reduction approach will be adopted, with active travel prioritised and properly catered for throughout.

9.3 Audits and Ancillary Assessments

It is proposed that Stage 1 Road Safety Audits (RSA) be prepared for the intersection of proposed vehicular access points proposed from the Growing Baldock development sites onto the public highway.

In view of the fact that the proposals do not include any direct points of access onto the Strategic Road Network operated by NH, the currently proposed scope of transport work in support of the planning submission does not include preparation of a Walking Cycling and Horse-Riding (WCHAR) assessment. Similarly, it is not considered that Equality Impact Assessment (EqIA) screening process will be required.

9.4 Development Option Interventions

The overall package of interventions for all development options will have commonalities that will be explored through the design development and assessment processes. The anticipated variations in interventions relating to the various Development Options presented at **Section 5**, are outlined below.

Development Option 1 - Interventions

Option 1 will have the greatest impacts on the South Road, Wallington Road and Clothall Road corridors and create the greatest demand for the active travel link crossing the railway. It is likely therefore that in this option the interventions in this area will require further enhancement, in comparison to Options 2 and 3.

Therefore, greater detail will be provided as part of the OPA for the interventions proposed along this corridor, with the scale and scope of interventions, as well as the level of detail required, determined by strategic modelling and supported by local modelling (as needed). The timing of delivery of the active travel railway crossing to BA1 will be influenced by the phasing of housing on BA1, as well as by the new school on BA3, with clear triggers set out in TA.

Development Option 2 - Interventions

Option 2 will have the greatest impacts on Icknield Way, Norton Road, Weston Way, via North Road / Station Road and the junctions of Norton Road and Weston Way with Letchworth Road / Hitchin Street. This option may also generate additional demand via Mansfield Road and Park Street. In all options, demand for 2FE will be created to the existing KTS, and therefore interventions will be required to some degree in all options, and this will be determined in the TA. The scale of interventions required, as well as the level of detail required, will be determined by strategic modelling and supported by local modelling as necessary. Given our understanding of the existing context of Knights Templar School, additional feasibility work would be provided to demonstrate deliverable interventions for access to an enlarged school and the associated sports centre, incorporating likely changes on Weston Way and Letchworth Road. A separate TA would subsequently be required to support any standalone application for expansion of Knights Templar School in the future. Therefore, the indicative proposals set out in the TA for the OPA, and other supporting documents, would be provided solely to demonstrate broad option feasibility.

Development Option 3 - Interventions

Options 1 and Options 2 will have assessed 'worst case' impacts in relation to the school options presented. Lower trip generating schools will be present on the KTS and BA3 sites in Option 3. Moreover, the two schools will have more contained catchments than the larger schools in Options 1 and 2. In combination this means that the trip generation at each school will be lower (reflecting lower pupils numbers), as will the movements across the town (reflecting more contained catchments). Local modelling will be used to identify whether the interventions developed in Options 1 and 2 are triggered by Option 3 along the corridors identified above.

9.5 Phasing and Delivery of Interventions

As set out at **Section 8**, the delivery of planned interventions will be informed by the modelling assessment work and the programme of the intervention packages will be presented in the TA in respect of the phasing of the proposed development. The trigger points for delivery of intervention will respond to, but not be solely influenced by, capacity impacts and will be developed in further discussion with NHC and HCC.

10 Monitor and Manage Framework

10.1 Overview

Given the scale of the Growing Baldock proposals and associated interventions, a Monitor and Manage Framework (MMF) will be set out as part of the TA in support of the vision-led transport strategy. The MMF will incorporate the travel planning proposals discussed in the FTP and set a framework against which the mode shift aspirations of Growing Baldock will be assessed.

10.2 Governance

The MMF will identify the governance (e.g. review bodies), processes and data required (including from the new school) to continually monitor transport impacts across the town (drawing on U&C's experience at Waterbeach) from first occupation through to a defined future point.

10.3 Targets and Monitoring

The initial mode share targets and intervention triggers used to inform the MMF (and S106) will be drawn from the TA analysis. The MMF will set out how progress will be monitored against the targets, and the process for adjusting the scope and timing of interventions, as necessary to respond to monitored outcomes.

10.4 Measures and Obligations

The MMF will allow for measures to be brought forward or amended if targets are not met. It will link to the S106 and identify how funds will be held and accessed for the above, as well as the period that monitoring will take place for.

11 Summary and Way Forward

11.1 Summary

This Transport Scoping Report (TSR) has been prepared by ITP on behalf of Urban & Civic (U&C) in association with a developing outline planning application for the proposed 'Growing Baldock' development. This TSR sets out the assessment principles for the proposed Growing Baldock development for the agreement of North Hertfordshire Council (NHC), Hertfordshire County Council (HCC) and National Highways (NH). Any changes to this document after review by these parties will be incorporated and resubmitted for approval.

Our assessment and proposed measures of mitigation will be based on the methodology contained in the TSR, once this has been agreed 'in principle' by all parties. With consideration of the relative influence of strategic modelling on assessment parameters and design development, the following table provides a summary of key parameters that ITP request in-principle agreement/confirmation of, to allow critical assessment to progress.

Table 11-1: Summary of Parameters and Principles to be Agreed

Topic / Parameter	Principle to be agreed	TSR Reference
Scope of Baseline Analysis	Agreement of scope of baseline analysis and suitability of presented surveys	Sections 3 and 4
	Highway Safety Study Area proposed for approval	Insert 4.4
Transport Strategy	The range of strategies and their content relates sufficiently to the baseline analysis and provides a robust basis for the package of interventions and the subsequent analysis.	Section 6
Trip Generation	'Business as Usual' trip rates	Tables 7.4, 7.5 and 7.9 for residential, commercial and education uses respectively
	'Decide and Provide' reduction to total people trip rates	Table 7.18 and 7.19
	'Vision-led' Mode Shift Model mode split approach and suggested trip rates	Tables 7.20, 7.21 and 7.22 for residential, commercial and education uses respectively
	Application of trip internalisation (containment) rates based on refinement of average observations and benchmarking	Table 7.3

	Use of COMET Model and local modelling	
Transport Impact	Modelling Scenarios - Existing Model - Opening Year Model (with and without development) - Interim Phase Model (with and without development) – utilising Vision-led MSM trip rates - Full Development Model (with and without development) – utilising Vision-led MSM trip rates All scenarios to be run for AM, PM and Saturday peak hours	Section 8.2.7
	Proposed use of COMET for Public Transport Impact	Section 8.3.2
Audits and Ancillary Assessments	Stage 1 Road Safety Audits (RSA) be prepared for the intersection of proposed vehicular access points proposed from the Growing Baldock development sites onto the public highway	Section 9.3
	No direction junction with Motorways and Trunk Roads, as such, no Walking Cycling and Horse-Riding (WCHAR) assessments are proposed. Similarly, it is not considered that Equality Impact Assessment (EqIA) screening process will be required	Section 9.3
Monitor and Manage Framework	The initial mode share targets and intervention triggers used to inform the MMF (and S106) will be drawn from the TA analysis.	Section 10.3

11.2 Next Steps

NHC, HCC and NH are requested to comment on this scoping report to guide the preparation of the Transport Assessment and other associated documents which will accompany the planning application.

Following approval of this TSR by NHC, HCC and NH, ITP will submit a full Transport Assessment to identify the travel demand, and associated impacts, of the Growing Baldock development.

Please forward comments on this Scoping Study to:

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Annex A: Scoping Meeting Minutes

Minutes

**HaskoningDHV UK Ltd.
Mobility & Infrastructure**

Present: Geoff Burrage (GB), Amin Fouladi (AMF), Juliet James (JJ), Roger Flowerday (RF), Dan Tan (DT)
 Apologies: Anthony Collier, James Dale
 From: Juliet James
 Date: 3 September 2024
 Location: Microsoft Teams meeting
 Copy: U&C, DLA
 Our reference: TP1035-ITP-MI-01
 Classification: Project related
 Enclosures: -

Subject: Growing Baldock – Transport Scoping Meeting

Number	Details	Action
1a	Initial Scoping Meeting Recap An initial meeting was held between Anthony Collier of Hertfordshire County Council (HCC) and ITP on 15/08/2024 regarding the Scoping Note submitted by ITP, and it is understood that HCC require a proposed parking ratio to be able to agree trip generation rates. RF is also keen for the type of parking provision (off / on-plot, allocated / unallocated, parking courts etc) to be set out at this stage. GB has an upcoming meeting with the client to agree position and will come back with a response.	ITP to finalise parking offer with client
1b	Highway Safety – GB explained that further to the 15/08/2024 meeting, the study area for the highway safety review is to be extended, and the data is to be updated to most recent year available.	ITP to extend highway safety study area
2a	Scheme Overview and Land Use GB provided a summary of the current development proposals and explained that BA2 is no longer part of the outline application. RF was keen to know if there would be a cumulative run with this site included. GB confirmed it would be.	-
2b	RF enquired as to whether the land use split between BA1 and BA10 was open to change and suggested that the proposed location of the active travel link provides opportunity for intensification of residential in vicinity of employment uses.	ITP to relay suggested residential intensification at interface between BA1 and BA10 to client and design team

2c	RF noted that the Scoping Note considers no school in BA3 and GB will relay to client, highlighted that there was a political steer (from HCC) for a school to be included. and noted that current direction from the client has been to consider without school. GB noted that client are aware of this nuance but will consult further. RF suggested that it would be prudent to consider a modelling scenario which does include the school at BA3.
3a	Baseline, Future Growth and Cumulative Developments - AMF requested HCC's views on what adjustments are suggested to be applied to the existing surveys to facilitate a robust baseline for modelling and how to best ensure that application of TEMPro growth factors would not result in 'double counting' the Local Plan allocated sites. Picked up in modelling discussion below.
3b	GB Noted that LG1 and BA2 would be considered as cumulative developments that would be removed from the TEMPro growth and reassigned to the future baseline as cumulative developments. -
3c	RF and DT recommended use of the existing COMET model for baseline and future traffic modelling. GB referred to general experience that NTF tend to overestimate compared to eventual outcomes. RF said that recent experience indicates that TEMPro 'underplays' growth on certain parts of network. - National Highways and HCC have spent time agreeing COMET assumptions, which helps derisk. Further discussion regarding COMET below.
4a	Modelling Approach ITP to consider and confirm with U&C approach to be adopted RF stated he recommended use of existing COMET model run 7. RF highlighted that this requirement would be supported by NH, as the COMET modelling parameters would be consistent with local assessments and interface with A1 (M). It was further noted that the COMET approach formed part of the Local Plan development and would be familiar for 'members', whereas a bespoke/discrete model may be subject to greater levels of scrutiny.
4b	GB asked whether it would be best to use the Origin-Destination (OD) data from the old COMET run to build a model or to take the flows from the model and factor up based on recent surveys. RF - has seen both approaches used successfully in other applications.
4c	RF - The application would need to demonstrate that the wider impact on Hertfordshire has been considered. GB queried as to whether the old COMET model would produce higher trip rates -

	than current national traffic projections (RTF 18 or NRTP 22?), DT – this does not correlate with their understanding of current data and DT does not anticipate that the application would need to account for this.	
4d	DT - Running the COMET model would take three months total (2 to 3 weeks to tender, 4 to 8 weeks for the model run) and would cost between £15k and £25k.	-
4e	GB queried apparent change in position regarding use of 'old' COMET. RF noted points above. AMF/GB suggests having technical call with DT and team to go through model and all assumptions made at some point, to ensure HCC are happy. Next steps will be to commission COMET model run, once U&C agreed (noting dependency on parking).	ITP to organise separate technical meeting with HCC re: modelling
5	New COMET Model Status	-
	The surveys for 2023 have been completed and the model is now in validation and calibration stage. It is expected that the base year model would be available in early October, and the future model would be available late January / early February 2025. It is currently envisaged that all Local Plan runs use the old COMET model.	
6a	Transport Interventions	-
	RF- timing of transport interventions will need to be considered in terms of the impact of increased trips on the network resulting from the development. The relationship between development generated trips and additional capacity provided by proposed transport interventions should be considered in the application. It was also highlighted that the timing of the vehicle bridge should be considered, and the bridge should be provided at the point where the threshold for requirement is reached. There were concerns that the vehicle bridge opening too early would attract vehicle trips through Baldock, while providing the bridge late would result in congestion through Baldock.	
6b	RF expressed a willingness to help client find optimum solution regarding delivery and network management, related to delivery of the highway connection through BA1. Development proposals can create 'traffic metering' point for Baldock (eg on North Road site access(es)).	-
6c	RF would like to see a rationale for the timing of the bridge construction included in the TA. This would also determine when the mid-year model run would be. ITP suggested that the proposed improvements (e.g. on Station Road) would encourage a behaviour shift from first occupation and reduce traffic impact on the community resulting from the development. RF noted that the bridge timing may be dictated	-

by Network Rail as much as development delivery or transport requirements, but transport impacts must be understood.

7a	Trip Generation AMF highlighted that the Business as Usual trip generation approach uses the 2017 WYG TA,. To be considered Business as Usual (BaU), the trips from the 2017 application would need to be considered without any modifications applied.	ITP clarification – the BaU trips were sourced from TRICS Outputs provided at Appendix C of WYG Highway Assessment Report (July 2020) for the withdrawn application.
7b	It would be preferable for only one trip generation scenario to be presented (in addition to BaU) and a preference was expressed for the Mode Shift Model approach, as a more practical approach compared to Decide and Provide (TRICS). RF supported the proposed vision-led approach and use of the MSM.	-
7c	When presenting modal split, RF would like the actual numbers to be presented in addition to the % increase. The mode split looks achievable, and RF thinks there is potential to increase it further, potentially to 60% (reference was made to Gilston as an example). S106 could be used to monitor progress against targets. The targets we include in S106 / Travel Plans may be different (higher) to the mode share assumptions in the TA.	-
8a	Trip Distribution and Assignment GB queried whether the COMET model could account for traffic that no longer uses the network as a result of changes to capacity (i.e. capacity reductions and evaporating traffic). RF - COMET has a variable demand module, although this is not precise, which can represent modal shift, but there isn't a function for removing trips from the network completely. RF also highlighted that NH would not support removing trips from the network, as these may be strategic through movements.	-
9a	Stakeholder Engagements ITP would like to schedule meeting with NH and HCC. Anthony Collier has suggested in meeting of 15/08/2024 that he would make initial contact with NH to organise a meeting.	Anthony Collier to provide update on contact with NH
9b	GB requested any updates re discussions with National Rail (NR) on improvements in the area. No specific updates, RF suggested changes to network subject to negotiation, based on U&C offer. NR will want to know if the active travel connection is to be proposed as a bridge or a tunnel, and RF suggested NR are likely to be more favourable to a tunnel for the active travel bridge, which could be delivered with less disruption to rail	ITP to relay this to client and design team for consideration

9c	services. It was noted that Train Operating Companies unlikely to be investing in station towards the end of their franchise. RF suggested Rob Hanbury and other contacts would be good points of contact for Intalink/Public Transport consultations.	RF to provide contacts.
10	Written Scoping Response ITP are keen to receive a formal written response to the Scoping Note to formulate a clear understanding and position in terms of assessment methodology and planning submission requirements, as well as further pre-application engagement requirements.	HCC to provide written response to Scoping Note

Annex B: HCC Written Response

Growing Baldock transport scope – HCC Comments

Broad agreement with the proposed format/information to be contained within the TA scoping note. Below are areas we feel need inclusion or expansion.

1. The TA will need to set out phasing triggers for key infrastructure

BA1 - Identification of trigger points for key infrastructure – notably bridges and northern access to station

Firstly – agreement needs to be sought on suitability of any residential development north of the railway prior to the key infrastructure that reduces the severance caused by the railway, that discussion hasn't happened but is needed.

What metrics are then used to identify a trigger point will need agreement, do we go pure capacity or does it need more nuanced approach that aligns to behavior change, background trips etc etc. A wider look at the areas network should be explored here,

Following that, if there is a possibility of any development, a suggested method could be to use capacity (all models) of North Road, with the identification of a residual capacity north of the railway.

Identification of trigger point for the link road to be accessible will be needed

Many factors will need consideration, notably for walking/cycling suitability within Baldock, and also when interventions are needed due to crossroad issues etc

2. Education Strategy (in transport terms)

Recognizing the emerging complexities around the Secondary School proposals, a section on how to address the emerging scenarios will be should now be included.

3. Monitor and manage approach should be taken over a standardized travel plan,

6.13

What do we think we need as a travel plan to actively monitor and manage, notably controlling the phasing of key infrastructure

We should be utilizing smart tools to monitor the scheme throughout its lifecycle.

Annex C: Baseline Study and Surveys



Urban & Civic

Baldock Sustainable Urban Extension – Transport and Movement Baseline

February 2023



a company of Royal HaskoningDHV

Baldock Sustainable Urban Extension Transport and Movement Baseline

Version 2-0

February 2023

Produced by:



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Project Information Sheet

Client	Urban & Civic
Project Code	3712
Project Name	Mobility Vision and Railway Crossing
Project Director	NT
Project Manager	GB
Quality Manager	NT
Additional Team Members	CR, BS, JP, MJ, NS
Sub-Consultants	IDC
Start Date	October 2021
File Location	F:\3712 Baldock Masterplan

Document Control Sheet

Ver.	Project Folder	Description	Prep.	Rev.	App.	Date
V2-0	F:\3712 Baldock Masterplan	Updates and additions re collisions and accessibility audit	JP, JF, PG, NS	GB	NS	24/02/2023
V1-0	F:\3712 Baldock Masterplan	Final Draft	JP, MJ	GB		14/12/2022

Notice

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Table of Contents

1. Introduction.....	1
2. Baseline Conditions.....	1
Policy Context/Review.....	2
National	2
Regional.....	3
Local.....	7
Mobility and Transport Context	12
Geographic Context.....	12
Facilities and the 15 Minute Neighbourhood	13
Active Travel.....	16
Bus	19
Rail	21
Road.....	24
3. Collision Analysis.....	26
Context.....	28
Overview.....	28
By severity	28
By year.....	30
By casualty type.....	31
Focussed analysis.....	35
Links	35
Junctions.....	39
Summary	40
4. Assessment of Existing Transport and Movement Data	42
Population profile (Census 2021).....	42
Strava Data	44
Pedestrian routes	46
Regional origin and destination movement analysis	48
Vehicle Survey Data Analysis.....	50

Rail station	64
Data Summary.....	66
5. Accessibility Audit.....	69
6. Mobility Vision and Key Objectives.....	86
7. Implications for Strategic Masterplan	88
8. Conclusions and Next Steps.....	89
Next steps	89

List of Tables

Table 2-1: Walking and cycling commute mode share comparison (census).....	17
Table 2-2: Bus commute mode share comparison (census).....	19
Table 2-3: Train commute mode share comparison (census).....	21
Table 2-4: Driving mode share comparison (census).....	24
Table 3-1: Collisions in study area by year.....	30
Table 3-2: PICs on key links by severity.....	37
Table 3-3: Casualties on key links by type.....	37
Table 3-4: Collisions in study area at key junctions* by severity.....	39
Table 4-1: Table of traffic survey data from comparable towns/areas.....	63

List of Figures

Figure 2-1: Key walking routes (extract from LCWIP Appendix F).....	5
Figure 2-2: Key cycling routes (extract from LCWIP Appendix F).....	5
Figure 2-3: Baldock Core Walking Zone.....	6
Figure 2-4: Baldock proposed Infrastructure Interventions.....	7
Figure 2-5: Site Allocations in the NHLP.....	10
Figure 2-6: Baldock's geographic context.....	13
Figure 2-7: Illustrative approach to reviewing future accessible facilities.....	14
Figure 2-8: Indicative aspirational travel time by facility type.....	14
Figure 2-9: Existing walk access.....	15
Figure 2-10: Existing cycle access.....	16
Figure 2-11: PROW and National Cycle Network surrounding Baldock.....	18
Figure 2-12: Bus service frequencies in Baldock during Monday AM peak period.....	20
Figure 2-13: Annual Passenger Entries and Exits at Baldock Train Station.....	22
Figure 2-14: Annual Passenger Entries and Exits by Station across the Local Rail Network (2020/21).....	23
Figure 2-15: Road Network.....	25
Figure 3-1: Study area.....	27
Figure 3-2: All PICs by severity.....	29
Figure 3-3: Vulnerable road user PICs.....	32
Figure 3-4: Vulnerable age PICs.....	34
Figure 3-5: Works Road and Letchworth Road.....	35

Figure 3-6: High Street and South Road	36
Figure 3-7: A507 North Road / Clothall Road	36
Figure 4-1: Baldock Census 2021 profile.....	43
Figure 4-2: Daily walking trips around Baldock (2021)	45
Figure 4-3: Daily cycling trips around Baldock (2021)	46
Figure 4-4: PRow access locations.....	47
Figure 4-5: Local origin-destination movements (weekday AM Peak)	49
Figure 4-6: Regional origin-destination movements (weekday AM Peak).....	49
Figure 4-7: ANPR cordon camera locations.....	51
Figure 4-8: Total AM and PM weekday movements.....	52
Figure 4-9: Total AM and PM weekday movements (by direction).....	53
Figure 4-10: Total AM weekday movements.....	54
Figure 4-11: Total AM weekday movements (by direction).....	55
Figure 4-12: Total PM weekday movements	56
Figure 4-13: Total PM weekday movements (by direction)	57
Figure 4-14: Average queue lengths across the AM and PM peaks.....	62
Figure 4-15: Census 2011 flow diagram for commuting movements (North Hertfordshire)...	64
Figure 4-16: Key local movements	66
Figure 4-17: Key Movements Summary	67
Figure 5-1: Accessibility Audit Scope	70
Figure 5-2: Healthy Streets Indicators and Metrics	72
Figure 5-3: Healthy Streets audit results	73
Figure 5-4: WRAT audit results	76
Figure 5-5: Cycling Level of Service audit results.....	79
Figure 5-6: A507: key observations	81
Figure 5-7: B656: key observations	82
Figure 5-8: High Street: key observations.....	83
Figure 5-9: Works Road: key observations.....	84
Figure 8-1: Next steps	90

Appendices

Appendix A	Baldock Survey Data Analysis – Technical Note
Appendix B	Baldock Accessibility Audit Report

1. Introduction

- 1.1 This Transport and Movement Baseline document, and the Interim Transport Assessment (ITA) that will follow it, are being undertaken on a 'Vision and Validate' basis. This approach seeks to visualise the type of place Urban & Civic want to create at the Baldock Sustainable Extension and then develops the active and sustainable transport focused measures needed to make that a reality, alongside any residual essential measures that will manage car use. This approach acknowledges that the traditional Predict and Provide approach to transport planning has resulted in unsustainable, car-dependent places and provides an alternative.
- 1.2 This baseline report recognises that for a Vision and Validate approach to be robust it must be supported by a clear package of transport measures, that are consistent with the vision and with consideration as to how potential uncertainty can be accommodated. This report sets out the baseline conditions on which to form a Mobility Vision and the key principles for the mobility strategy. This will, as the ITA develops, inform supporting mode specific strategies and will provide the conditions and incentives to encourage new and existing residents to travel sustainably.
- 1.3 The Mobility Vision will continue to be developed as part of the ITA, collaboratively with the wider design team and with input from HCC and NHDC. This will ensure proposals are masterplan led and that wider considerations, such as place and landscape, are properly embedded.
- 1.4 By combining the key themes and aims of the local policy context and potential for wider off-site transport interventions, this initial Mobility Vision has been established. This reflects the need to deliver growth differently, guided by a clear vision, and in a way that embeds active and sustainable travel.

2. Baseline Conditions

- 2.1 This section outlines the baseline conditions in the town and includes:
 - Policy context
 - Existing transport conditions
 - Review of existing datasets
 - Summary of transport survey data

- Overview of accessibility audit scope and high-level findings

Policy Context/Review

National

National Planning Policy Framework

- 2.2 The National Planning Policy Framework (NPPF) sets out the government's planning requirements and regulations for England, providing the basis for Local Plans and the necessary tests to ensure new development is suitable.
- 2.3 The NPPF recognises transport policies have an important role to play in facilitating sustainable development and places emphasis on encouraging developments in areas which are or can be served by high quality passenger transport and walking and cycling links. It further states strategic policy should make sufficient provision for infrastructure and transport, with transport issues to be considered from the earliest stages of development planning and plan-making.
- 2.4 Paragraph 111 states '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 would be severe.'
- 2.5 Para. 112a advises that development should prioritise pedestrian and cycle movements, both within the scheme and with neighbouring areas; and secondly, should facilitate access to high quality public transport.

Decarbonising Transport: A better, greener Britain

- 2.6 This report makes a series of commitments to reduce carbon emissions produced by transport and support healthy communities. These commitments are considered across a variety of modes, including promoting zero emission vehicles and more support to explore alternatives such as car clubs and micro mobility.
- 2.7 The document highlights that a reduction in overall private car use is also required to reduce carbon emissions. It acknowledges that 'Too many new developments – not just by housebuilders, but by public-sector bodies – are difficult to reach without a car. But if we do development in a greener way, and if we join it to existing places, we can make it lower-carbon, lower-emission and lower-traffic – and more acceptable to local communities.'

- 2.8 As such, the DfT has made a commitment to embed transport decarbonisation within spatial planning, stating that the need to 'move away from transport planning based on predicting future demand to provide capacity ('predict and provide') to planning that sets an outcome communities want to achieve and provides the transport solutions to deliver those outcomes (sometimes referred to as 'vision and validate').

Gear Change: A bold vision for cycling and walking

- 2.9 Gear Change is a strategy which outlines measures to facilitate people to walk and cycle more. This involves creating and delivering more continuous cycle routes which are physically separated from other modes and creating school streets which provided safer spaces for school pick-up and drop-off.
- 2.10 A key deliverable for new housing development is to ensure that developments are 'easily and safely accessible and navigable by foot and bike, and to make existing cycling and walking provision better.' A new statutory consultee, Active Travel England will 'press for adequate cycling and walking provision in all developments of over a certain threshold, and provide expert advice on ways in which such provision can be improved.' This threshold has not yet been established.

Regional

Hertfordshire Local Transport Plan 2018-2031 (LTP4)

- 2.11 Hertfordshire's Local Transport Plan 4 (LTP4), adopted in 2018, considers the transport network across Hertfordshire. The document seeks to create a more balanced approach for mobility, moving away from car-based networks to encompass walking, cycling and passenger transport and 'tip the balance in favour of non-car modes'. As such it places prominent consideration on sustainable modes when assessing new developments. The document stresses the need for balance and recognises that travel by car will still be required for some journeys.
- 2.12 Adopted Policy 1: Transport User Hierarchy, states that new built environments must 'encourage greater and safer use of sustainable transport modes'. The hierarchy of priority considerations are as follows:
- 1) Opportunities to reduce travel demand and the need to travel
 - 2) Vulnerable road user needs (such as pedestrians and cyclists)
 - 3) Passenger transport user needs
 - 4) Powered two-wheeler (mopeds and motorbikes) user needs

5) Other motor vehicle user needs

- 2.13 Through the LTP4, the county is seeking improvements along eight cross-county corridors, two of which directly affect Baldock:
- 1) Corridor 3: London-Stevenage-Peterborough seeks to improve the walking and cycling links between Hitchin, Letchworth Garden City and Baldock, combined with improved interurban bus connectivity. Encouragingly, the LTP4 highlights that Baldock has some of the highest rates of walking and cycling in the county.
 - 2) Corridor 7: Stevenage-Cambridge: This scheme seeks to improve rail services and station access to the A2(M) corridor towns to increase mode share.
- 2.14 A suite of documents supports the LTP4 which include an Active Travel Strategy and North Central Hertfordshire Growth and Transport Plan which are both being finalised. The Rail Strategy, published in 2020, highlights the impact that housing development is likely to have on patronage at Baldock Train Station.

Local Cycling and Walking Infrastructure Plan (LCWIP)

- 2.15 The Local Cycling and Walking Infrastructure Plan (LCWIP) was published in 2022 and covers the North Herts District. It demonstrates that Hertfordshire County Council (HCC) and North Herts District Council (NHDC) share central government's ambition to make cycling and walking the natural choice for shorter journeys or as part of a longer journey.
- 2.16 Many of the streets in and around Baldock are categorised as primary or secondary key walking or cycling routes. These are shown in Figure 2-1 and Figure 2-2.

Figure 2-1: Key walking routes (extract from LCWIP Appendix F)

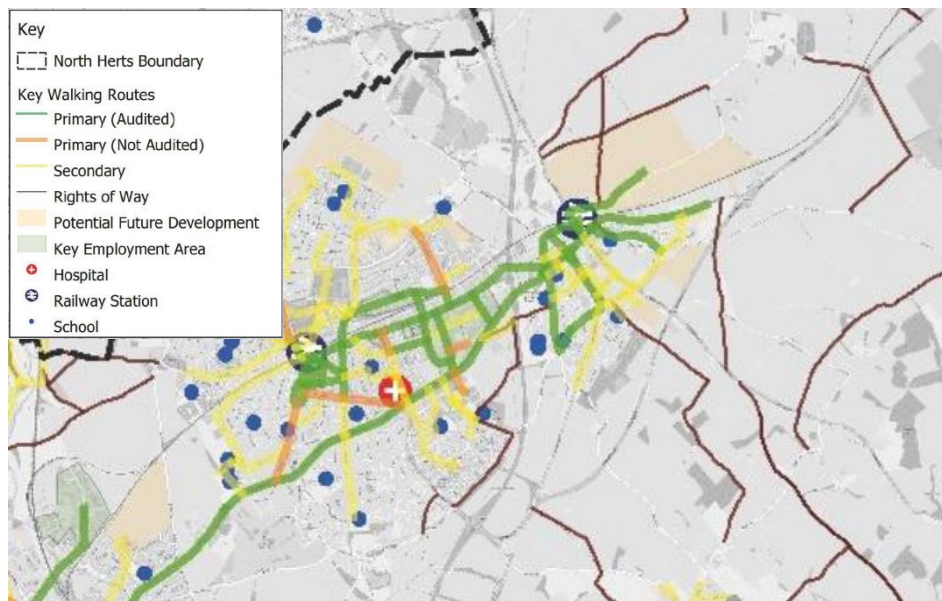
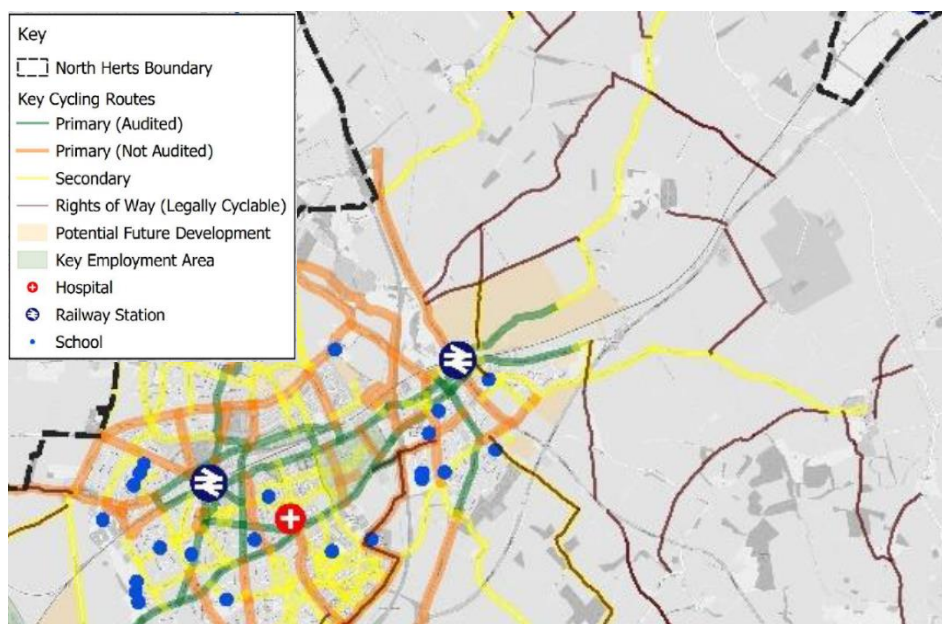


Figure 2-2: Key cycling routes (extract from LCWIP Appendix F)



- 2.17 LCWIP infrastructure proposals in Baldock centre around the provision of a segregated cycle facility on the High Street and the creation of quiet routes north of the B656. The report suggests that much of north Baldock can be made suitable for utility cycling without a need for segregated infrastructure if contraflow cycling is permitted on Church Street, a crossing over Norton Road is provided and a modal filter is added to Hopewell Road. This would also help connections to Letchworth Garden City via the bridge over the A1(M), for which improvements are also suggested.

- 2.18 A new crossing is proposed over Royston Road to help connect east Baldock with the rail station via Icknield Way East and it is proposed to redesign several junctions with improvements to walking and cycle facilities.
- 2.19 The elements relevant to Baldock are the definition of the Core Walking Zone (Figure 2-3) and proposed Infrastructure Interventions (Figure 2-4).

Figure 2-3: Baldock Core Walking Zone

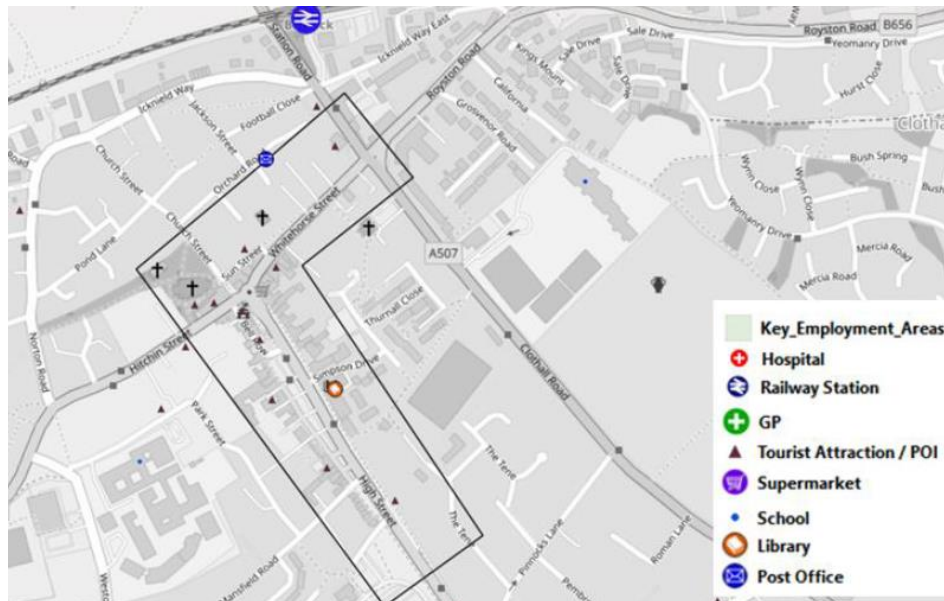
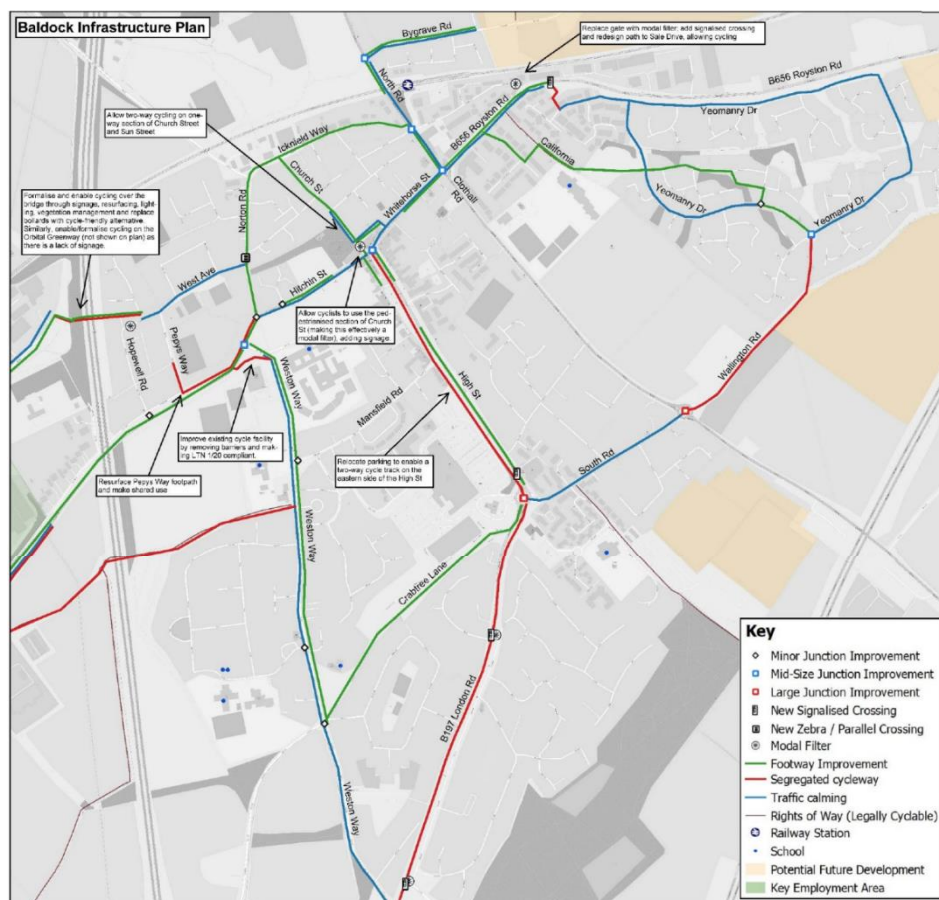


Figure 2-4: Baldock proposed Infrastructure Interventions



Local

North Hertfordshire Local Plan

- 2.20 The [North Hertfordshire Local Plan \(NHLP\)](#) was recently adopted in November 2022, covering the period 2011-2031, and replaces the saved policies of the District Plan Second Review with Alterations.
- 2.21 The NHLP has a vision for the district to 'play its part in addressing climate change by improving opportunities for travelling by public transport, walking and cycling...'.¹
- 2.22 Policy SP14 outlines the specific site requirements that will be required for the site North of Baldock (termed **Site BA1** in the NHLP, see Figure 2-5). These include the following transport measures¹:

¹ Polies outlined in the NHLP include additional elements; those listed here focus on the transport related ones (this applies to all site allocations mentioned in this section)

- A new link road connecting the A507 North Road to the A505 Baldock bypass including a new bridge across the railway;
 - Sustainable transport measures to include:
 - a secondary rail crossing for pedestrians and cyclists in the vicinity of Ashville Way;
 - safe access routes to / from, and upgrades to, Baldock station;
 - sensitive integration of Bridleway Baldock 034 / Bygrave 002 as a north-south route through the development; and
 - 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
 - comprehensive integration into the existing pedestrian and cycle, public transport and road networks
 - Built development contained to the south and south-west of the ridgeline that generally extends eastwards from the A507 south of Blackhorse Farm and southwards from Ashwell Road; and
 - Sensitive treatment of heritage assets and their settings including an access solution from the A507 North Road which satisfactorily addresses potential impacts
- 2.23 Each of the other allocated sites in South Baldock (below the railway line) have specific requirements outlined later in the NHLP.
- 2.24 **Site BA2** (see Figure 2-5) has the following transport interventions, as set out in Policy BA2:
- Creation of appropriate, defensible Green Belt boundary along the south-eastern perimeter of the site;
 - Appropriate mitigation measures for noise associated with the A505 to potentially include insulation and orientation of living spaces;
- 2.25 **Site BA3** (see Figure 2-5) has the following transport interventions, as set out in Policy BA3:
- Deliver a southern link road connecting the B656 Royston Road to Wallington Road or the A507 Clothall Road within the southern bypass;
 - Provision of suitable vehicle, cycle and pedestrian links to ensure integration with adjoining site BA4;

- 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
- Incorporate alignment of former Wallington Road and Bridleway Clothall 027 as green corridor through the site;

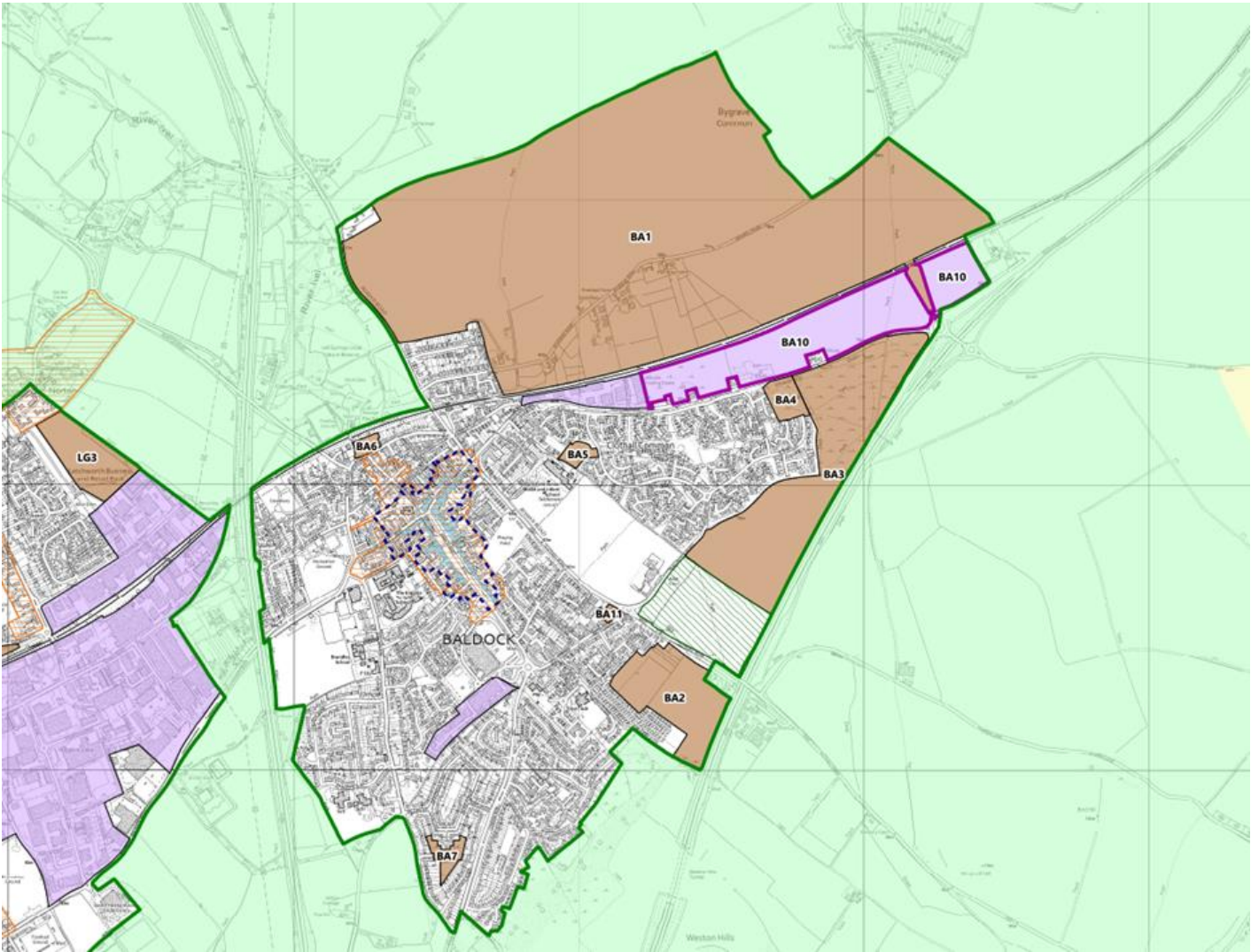
2.26 **Site BA4** (see Figure 2-5) has the following transport interventions, as set out in Policy BA4:

- Provision of suitable vehicle, cycle and pedestrian links to ensure integration with adjoining site BA3
- 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;

2.27 Meanwhile **Site BA10**, the employment site at Royston Road, is allocated and was identified as a suitable location to encourage further growth due to the proximity to A505 and that access arrangement must 'control HGV movements to direct vehicles towards the A505 rather than through Baldock'.

2.28 These site-specific policies and a suite of other sustainable travel-based policies make it clear that the NHLP has an outlook which is both supportive and encouraging of development which supports a sustainable travel approach.

Figure 2-5: Site Allocations in the NHLP



Inspectors' Comments on the Local Plan

2.29 The [Inspectors' comments on the Local Plan](#) have been reviewed to understand the background for the contents and wording in the Local Plan (as presented above). Key elements included:

- 357. *At the intersection of the A507/B656 in Baldock town centre there is a signal-controlled junction ('Baldock junction'). Much of the traffic through it at peak periods is through traffic, and it is a known bottleneck.*
- 359. *Baldock junction is identified in the technical note² as a 'problem location' in both the morning and evening peak periods. The junction is at capacity during those times, causing queuing on all approach arms... It concludes that without intervention, the junction would not be able to accommodate the growth expected in Baldock.*
- 360. *As I understand it, the Council plans for three separate measures to tackle this. The most direct of these is a signal optimisation scheme – 'clever traffic lights' which reduce signal stages and adjust to traffic conditions. Policy SP14 requires the provision of a link road through Site BA1 connecting the A507 to the A505. This, in effect, would provide a route for traffic from the north and east avoiding Baldock junction. Similarly, Policies BA3 and BA4 require that these two sites provide a link road through them connecting the B656 with Wallington Road to the south. This would offer drivers from the east and south an alternative to continuing through Baldock junction. The combination of these two link roads would offer an option for north or southbound traffic on the A507 to circumvent the junction, albeit a somewhat convoluted one.*
- 361. *To secure the most appropriate solution for the link road, Policy BA3 should allow it to connect directly with the A507 as an alternative to Wallington Road. Moreover, Policies BA3 and BA4 should require suitable vehicle, cycle and pedestrian links between the two sites, and seek to ensure that appropriate routes for all modes of transport are provided between them, Clothall Common estate and the wider transport network. On a different point, to facilitate the most efficient use of Site BA3, the policy should allow for some limited reprofiling of the bund to the east of it, and no new housing should be allowed on or beyond its revised alignment.*
- 363. *I recognise that the link roads required by the Plan would be used by both residents of the new housing to access their homes and by through traffic. But that is the point, and I see no reason why they should be hazardous or especially unfriendly*

² 'Local Plan Model Testing Technical Note' (September 2016)

routes for pedestrians. That depends entirely on their detailed design, and the Council will retain control of that through the planning application process.

Baldock Bygrave and Clothall Neighbourhood Plan

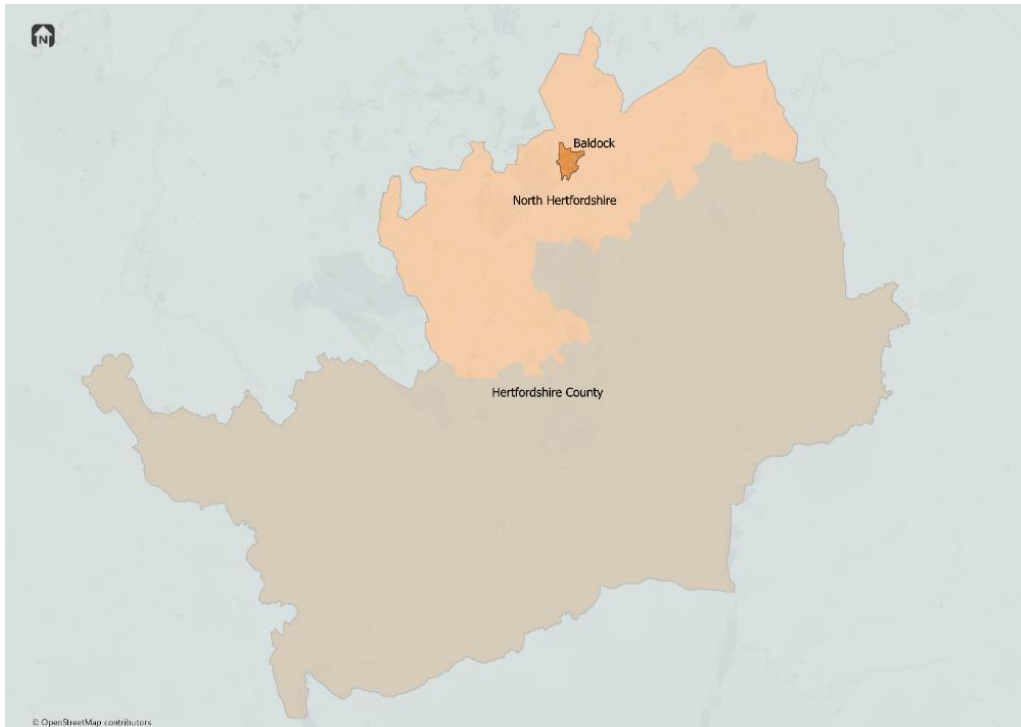
- 2.30 Neighbourhood Plans allow communities to shape the future of the places they live and work. Baldock, Bygrave and Clothall Neighbourhood Plan was adopted in 2021 and establishes several considerations for development.
- 2.31 The Plan provides an insight into the viewpoints of local residents in relation to the development, including the permeability to countryside, ability to park at Baldock Railway Station, congestion issues and reduced air quality as a result of more vehicles on the local road network. As a result, emphasis in policies is placed on ensuring good bus services to the north of the BA1 site, as well as making Royston Road a sustainable travel corridor.
- 2.32 Policy E5 outlines that development north of the railway line (Site BA1) should support the following transport provisions:
- make provision for improved pedestrian and cycle access between Bygrave and Baldock, through a new footpath and cycleway using the route of Bygrave Road/Ashwell Road, designed in a way that maintains as much as possible of its rural character and habitat value;
 - minimise the potential for increased traffic flows through Lower and Upper Bygrave, by providing for an appropriate package of measures such as: suitable access arrangements (including restrictions on heavy vehicles); physical features such as gateways and appropriate road surfaces; speed limits and signage;

Mobility and Transport Context

Geographic Context

- 2.33 Baldock is situated within the North Hertfordshire District, which is a Local Authority in the most northerly section of Hertfordshire (see Figure 2-6). The town consists of two wards, Baldock East and Baldock Town, with a population between them of approximately 10,000 people. To the west the town borders Letchworth, and several small villages surround the remaining sides including Bygrave to the north. Other neighbouring towns include Stevenage, Hitchin and Royston.

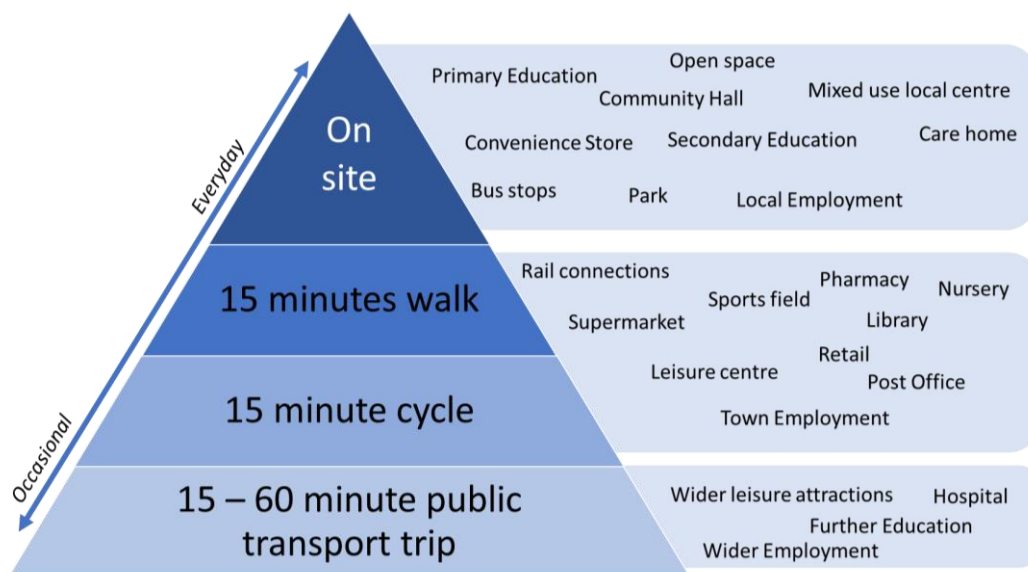
Figure 2-6: Baldock's geographic context



Facilities and the 15 Minute Neighbourhood

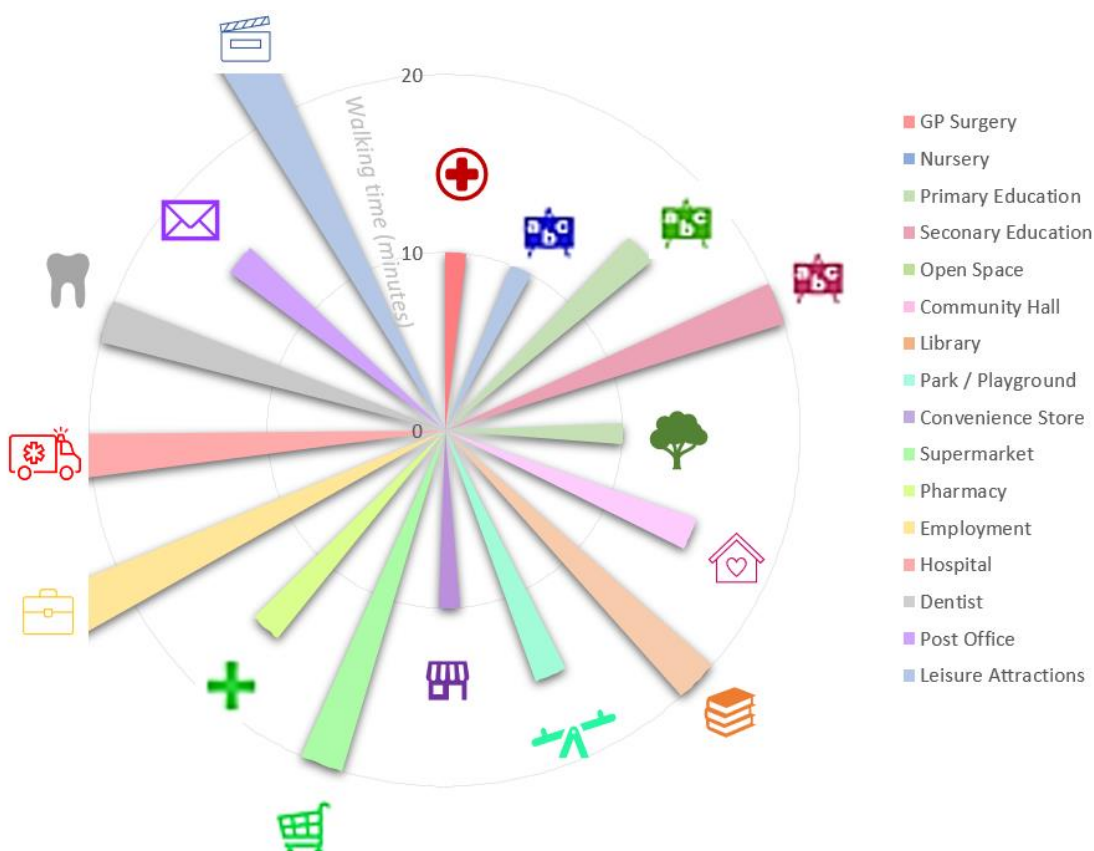
- 2.34 By locating facilities and services within 15-minutes of homes, with those that are accessed more frequently closer, a neighbourhood can be created that encourages sustainable modes of travel. This forms the basis of the 15-minute neighbourhood concept. Figure 2-7 sets out our interpretation of what the everyday and occasional facilities needed to create a 15-minute neighbourhood in Baldock. While many of the everyday facilities should be provided on site, many of the occasional facilities will be provided off-site. Access to these will be a key factor in determining the off-site connections needed to encourage walking, cycling and public transport.

Figure 2-7: Illustrative approach to reviewing future accessible facilities



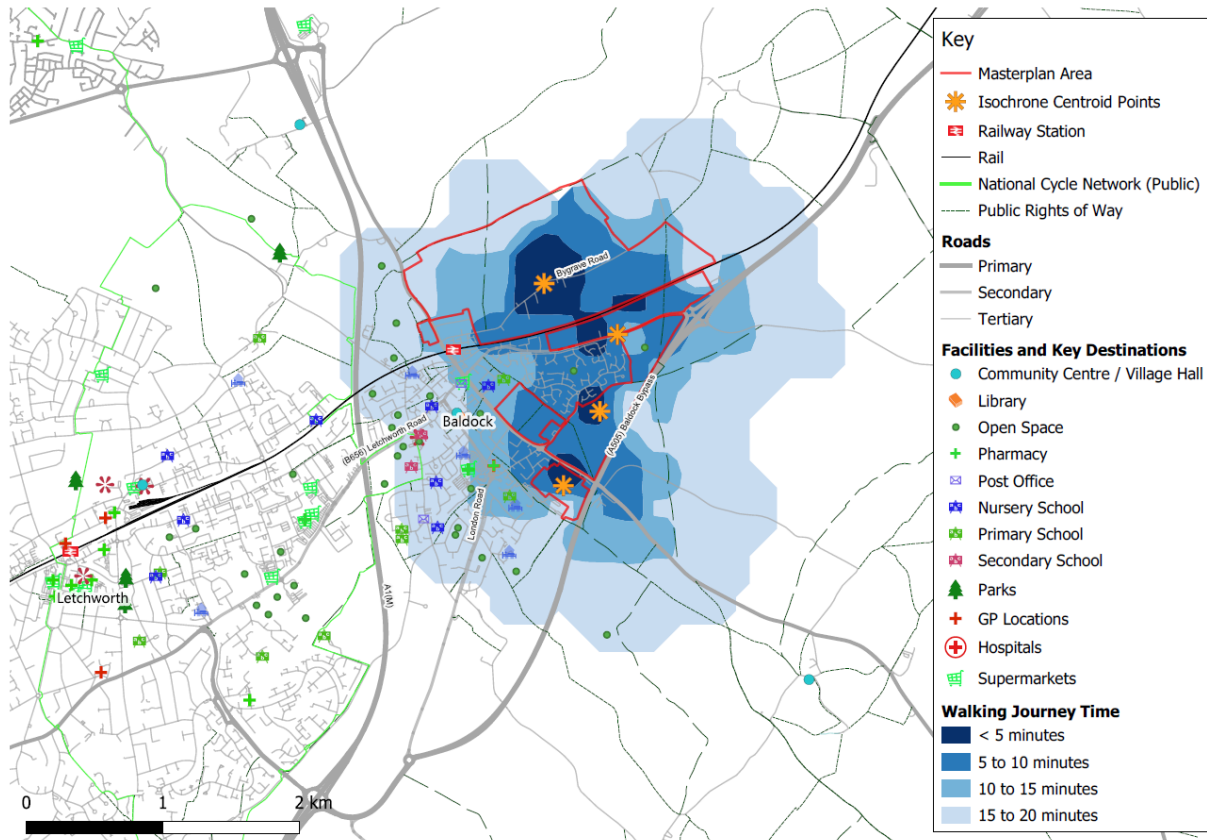
2.35 Figure 2-8 considers facilities in terms of their 'ideal' travel time to access, derived from general frequency of use, willingness to travel, and 15-minute neighbourhood ideals.

Figure 2-8: Indicative aspirational travel time by facility type



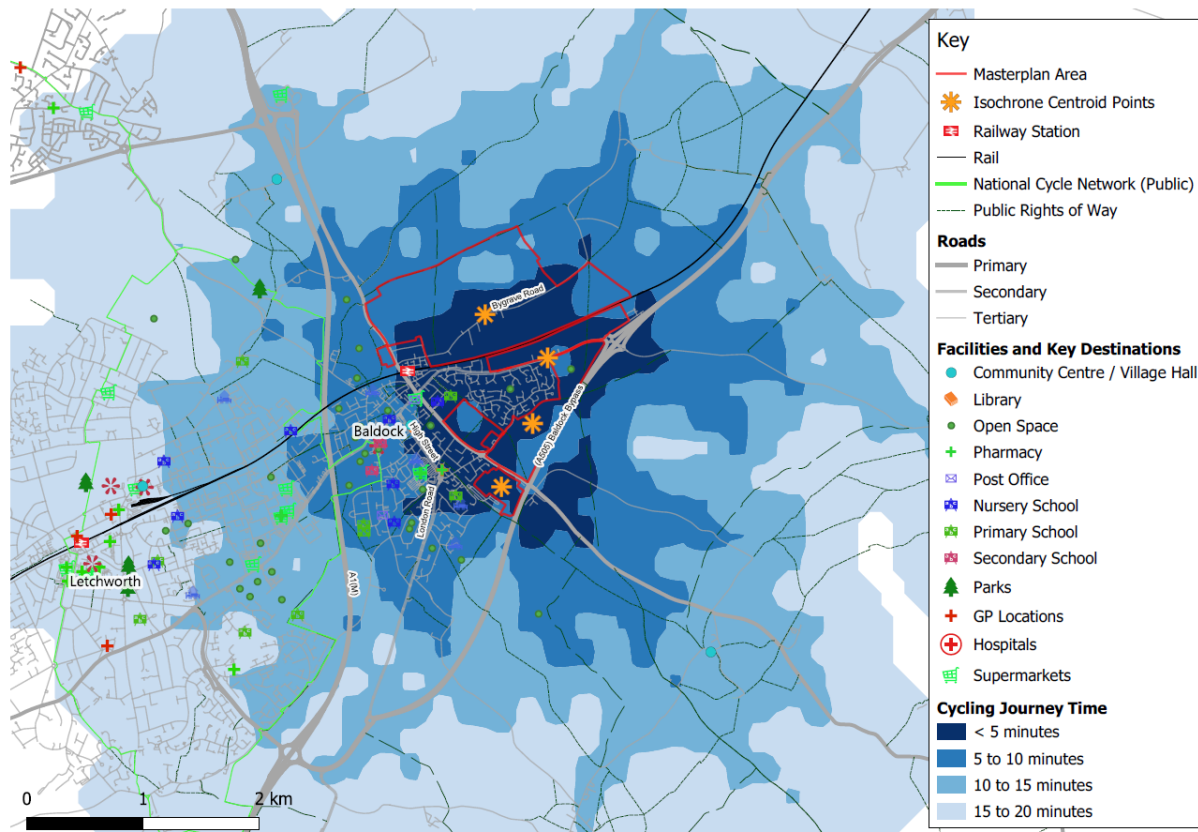
- 2.36 Applying these principles, and mapping the facilities in and around Baldock, we can illustrate the levels of existing accessibility by walking and cycling. Figure 2-9 shows where a 15-minute walk from the centre of the development could take you and the facilities available.

Figure 2-9: Existing walk access



- 2.37 A similar analysis has been done for cycling. Figure 2-10 shows the scope of a 15-minute journey from the site and the facilities that could be accessed currently.
- 2.38 For cycling the route quality is important to making the mode an attractive prospect for users, supporting safety and confidence along the route. The accessibility audit set out later in this report reviews the quality of both walking and cycling access as well as healthy streets.

Figure 2-10: Existing cycle access



- 2.39 This analysis highlights that, additional facilities will be required on site to meet day to day needs and contribute to a reduction in external trips. Additional connections, for example over the railway, may also help reduce walk and cycle times to off-site facilities. It is likely there will be significant residual trips accessing external employment and other day to day facilities that are not provided on-site.

Active Travel

- 2.40 Baldock is in close proximity to farmland and rural villages and surrounding Public Rights of Way (PRoW) are dominated by Bridleways. The National Cycle Network does not run directly through Baldock, but Route 12 does reach the western extent of the town with an off-road, unlit cycle path (see Figure 2-11). There is no dedicated cycle infrastructure within the existing town.
- 2.41 When assessing the travel to work data, Baldock has higher figures for walking than using public transport. 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% cycling³. The majority of these trips remain within Baldock, with some trips to the employment uses in east Letchworth Garden City.

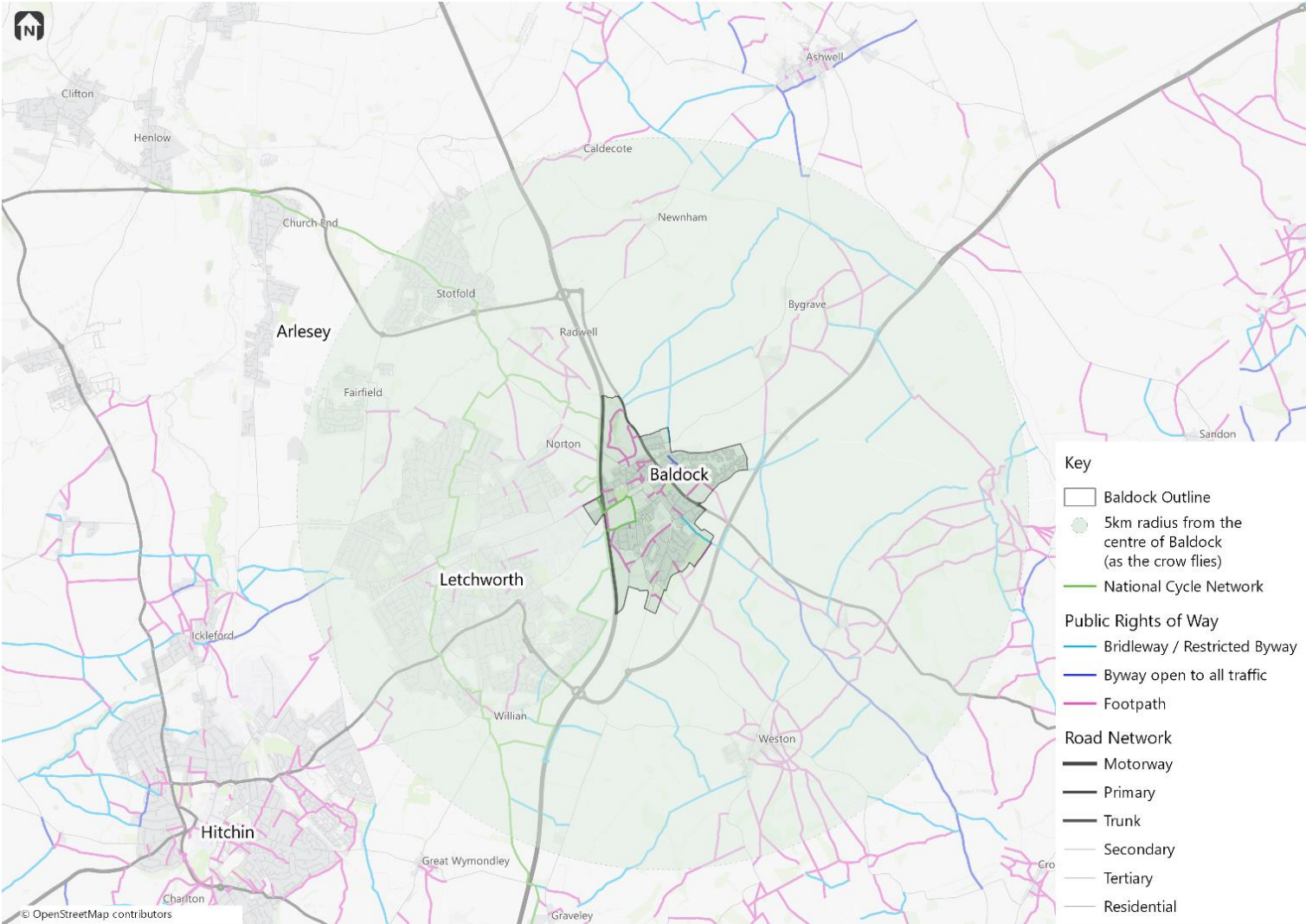
Table 2-1: Walking and cycling commute mode share comparison (census)⁴

Mode	2011	2021
On foot	10%	7.8%
Cycling	2.2%	1.4%

³ Results are likely to be influenced by the pandemic
(<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/travelto/workqualityinformationforcensus2021>)

⁴ Of commuting residents (not including those working from home)

Figure 2-11: PROW and National Cycle Network surrounding Baldock



Bus

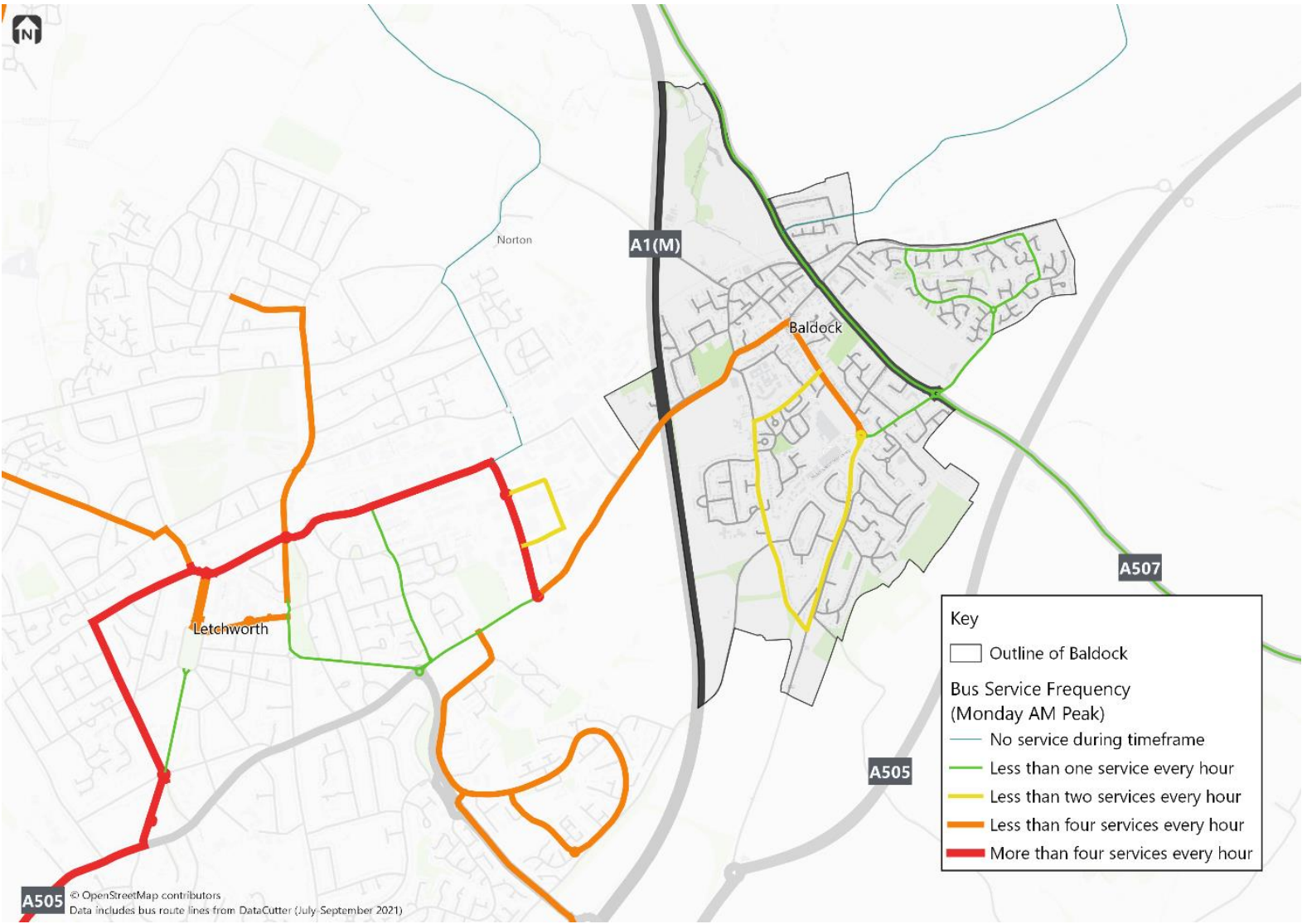
- 2.42 Baldock is served by multiple bus services, predominantly operated by A2B Bus and Coach, Galleon Travel and Arriva.
- 2.43 Figure 2-12 demonstrates the frequency of buses serving Baldock during Monday morning peak hours. The most frequent services connect the Town Centre, Knights Templar School and South Baldock into Letchworth Garden City. Services to the east of the town are more infrequent, with the most regular services operating hourly.
- 2.44 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).

Table 2-2: Bus commute mode share comparison (census)⁵

Mode	2011	2021
Bus to work	0.9%	0.3%

⁵ Of commuting residents (not including those working from home)

Figure 2-12: Bus service frequencies in Baldock during Monday AM peak period



Rail

- 2.45 Baldock Railway Station is on the Hitchin to Cambridge Line and served by the Thameslink and Great Northern franchises. Services provide connections to Cambridge, London and the South East.
- 2.46 Figure 2-13 demonstrates that the number of people using Baldock Station has been increasing over the last 20 years, although with a marked drop in 2020/2021 reflecting the impact of the pandemic.
- 2.47 However, Baldock Station is not the most frequented station when compared to the local rail network (as seen in Figure 2-14), with Stevenage and Hitchin serving significantly more people, due to their location on the East Coast Mainline. There are also some services to London King's Cross from Letchworth (non-stop at peak times) that do not call at Baldock. Therefore, some Baldock residents who can drive, cycle or be dropped off are likely to be choosing to take the train from Letchworth, where more frequent and faster services exist.
- 2.48 Based on the 2021 Census rail provides a method of travel to work for 6.5% of Baldock's working population. This compares to an 11% share in 2011 where the majority of the trips were into central London, with a smaller percentage commuting to Stevenage⁶.

Table 2-3: Train commute mode share comparison (census)⁷

Mode	2011	2021
Train to work	11%	6.5%

⁶ Origin – destination data from the 2021 Census is not yet released

⁷ Of commuting residents (not including those working from home)

Figure 2-13: Annual Passenger Entries and Exits at Baldock Train Station

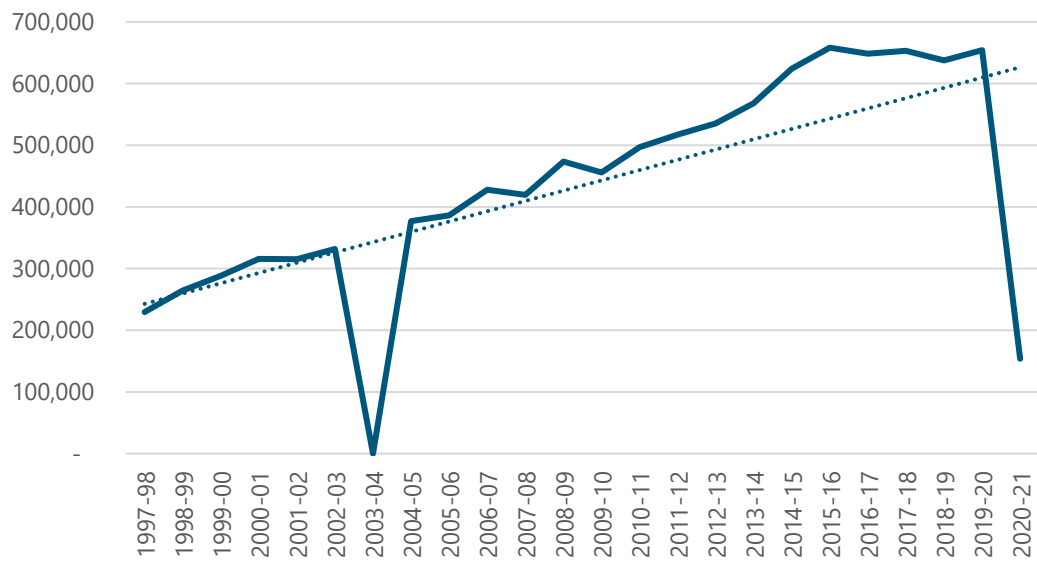


Figure 2-14: Annual Passenger Entries and Exits by Station across the Local Rail Network (2020/21)



Road

- 2.49 The A1(M), A507 and A505 connect in the area surrounding Baldock, with Junctions 9 and 10 providing regional connections to the A1(M) (Figure 2-15). This provides connections to London, Cambridge and into the Midlands.
- 2.50 The existing road network is congested, particularly at peak periods with the network providing important links across the county, and with many longer-distance journeys being made through the town.
- 2.51 According to both the 2011 and 2021 Census, travelling by private vehicle is the predominate method residents of Baldock use to travel to work. 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 Hitchin⁸.

Table 2-4: Driving mode share comparison (census)⁹

Mode	2011	2021
Driving to work	69%	71%
Passenger	5%	5%

⁸ Considers origin-destination data from 2011 only (as 2021 not released at time of writing)

⁹ Of commuting residents (not including those working from home)

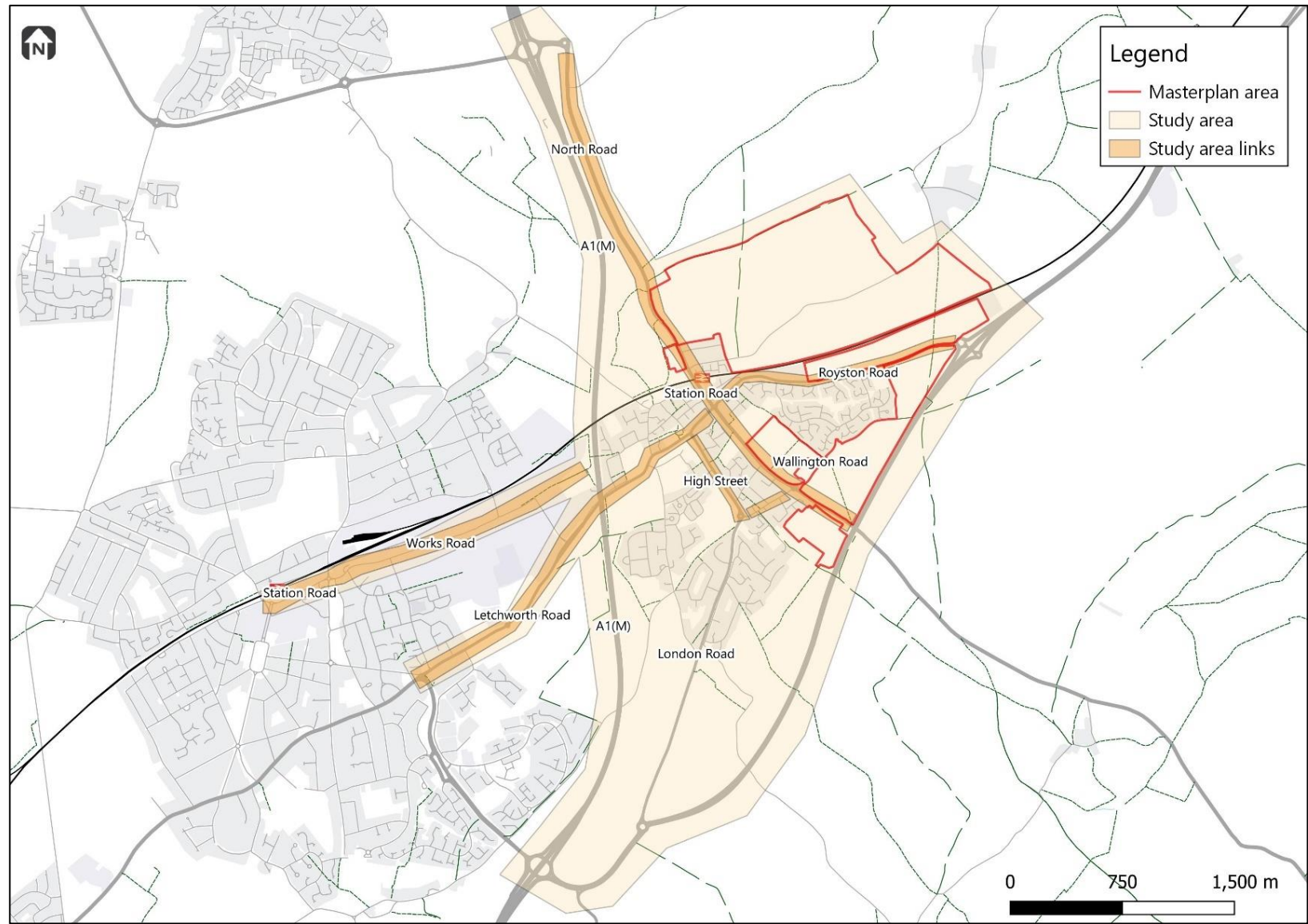
Figure 2-15: Road Network



3. Collision Analysis

- 3.1 The chapter summarises a review of Personal Injury Collisions (PICs) recorded in Baldock in the period 2017 to 2021. The information has been obtained from the Department for Transport [Road Safety Data](#), and corroborated with [CrashMap](#) data. The PIC analysis has been used to inform the Transport and Movement Baseline report prepared by ITP in support of the emerging Strategic Masterplan. It is therefore relatively high level at this stage and is not intended to replicate the detailed analysis provided as part of Transport Assessments – this will be undertaken at the planning application stage.
- a. The time period analysed comprises 01/01/2017 to 31/12/2021 (inclusive), reflecting the latest available range of complete data. The data are informed by the STATS19 records collected by UK Police forces, noting that the publicly available data exclude some sensitive information such as causal factors. It is also noted that from March 2020 onwards, changes in the volumes and distribution of people moving around Baldock will have been affected by the Covid-19 pandemic. This could have resulted in changes to trends in collisions, or in fewer collisions occurring overall. This is referenced in the analysis where relevant.
- 3.2 The study area reviewed is shown on Figure 3-1, with key areas of interest highlighted. This focuses on the transport networks around the Baldock Sustainable Urban Extension (SUE) sites, as well as the links and junctions which have been identified as the potential subject of future transport interventions. These are summarised as follows:
- 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

Figure 3-1: Study area



Context

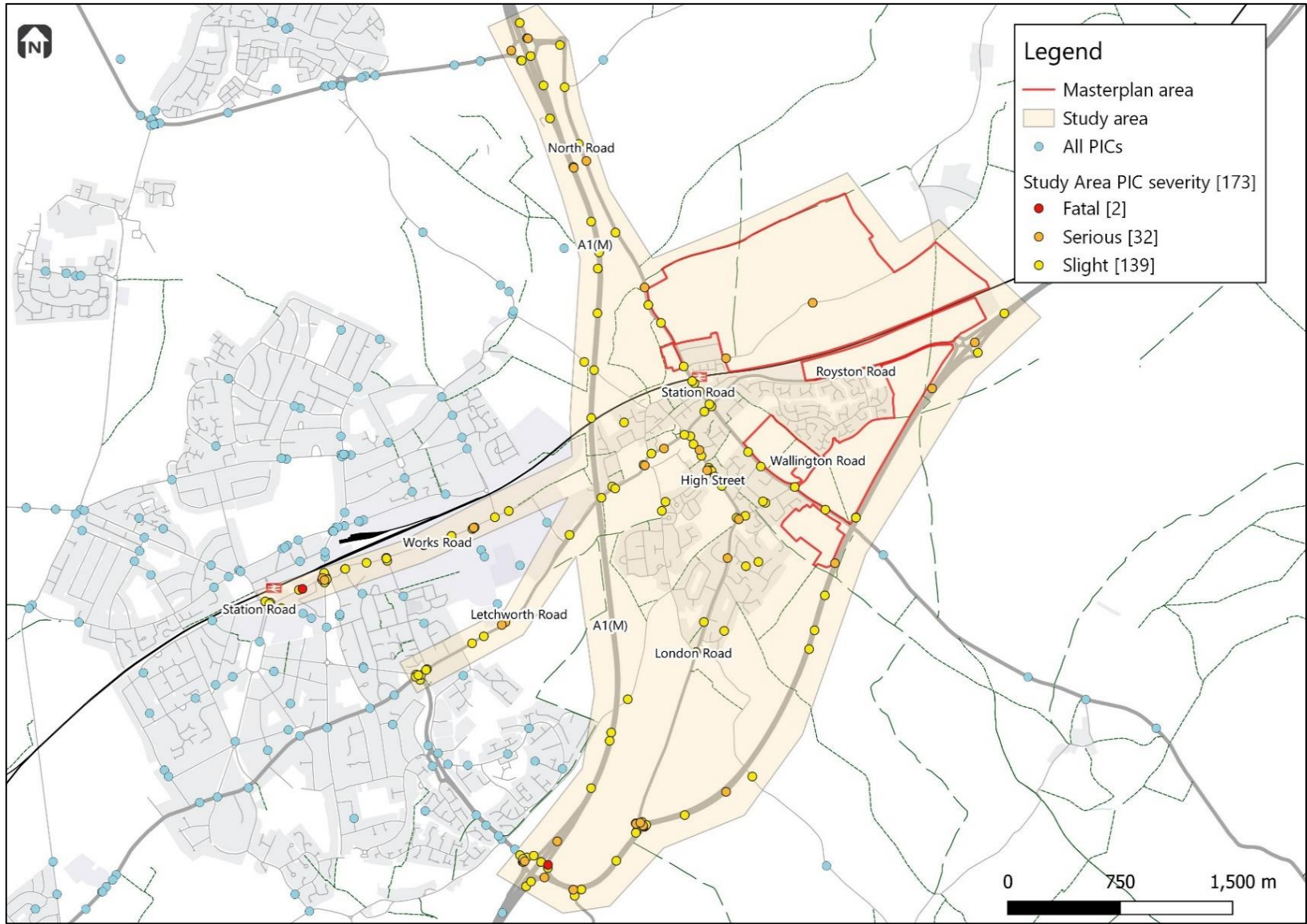
- 3.3 To provide context for the figures presented in this Technical Note, the [Reported road casualties Great Britain, annual report: 2021](#) has been reviewed. This allows the data on severity, road users and casualties to be compared to a national reference point. The headline figures are summarised below:
- In 2021, PICs were 11% higher than 2020 but 16% below 2019
 - Of all PICs recorded, 21% resulted in killed or seriously injured casualties
 - Of all PICs recorded:
 - 13% were pedestrians
 - 13% were pedal cyclists
 - 12% were motorcycle riders
 - Of all casualties, 10% were aged 16 and under
 - Of all casualties, 6% were aged 70 or over
- 3.4 Whilst the causal factors of PICs in the Baldock study area are not publicly available, for information the three most common causes in the national dataset are: driver error, failing to look properly, and inexperienced driver.

Overview

By severity

- 3.5 Figure 3-2 summarises all PICs recorded across the study period and area, categorised into PICs resulting in injuries classified as slight, serious or fatal.

Figure 3-2: All PICs by severity



- 3.6 In total, 172 PICs occurred, of which two resulted in fatal injuries, 32 resulted in injuries classified as serious and 139 resulted in injuries classified as slight. As a result of the 172 PICs, there were 220 casualties; in other words some collisions resulted in more than one person being injured.
- 3.7 Of the 220 casualties:
- 1% were fatalities
 - 15% were seriously injured
 - 84% suffered slight injuries
- 3.8 This results in 16% killed or seriously injured (KSIs) casualties. This is lower than the national data, wherein 21% of casualties were KSIs. It should however be noted that the study area chosen for this analysis could have introduced bias, as it does not include a representative range of road types or contexts, as would be included in the national dataset. This is true for several of the comparisons to national data.
- 3.9 The distribution of PICs in Figure 3-2 is clearly focussed around the higher volume movement corridors in the study area, such as the A1(M), B656 Letchworth Road, Works Road, North Road / Clothall Road, High Street, South Road and the A507. There are notably fewer PICs within residential areas such as Clothall Common, but also Royston Road shows a notable lack of collisions despite being the primary route accommodating east-west movements through the town.

By year

- 3.10 Table 3-1 breaks the study area collisions down by year and severity.

Table 3-1: Collisions in study area by year

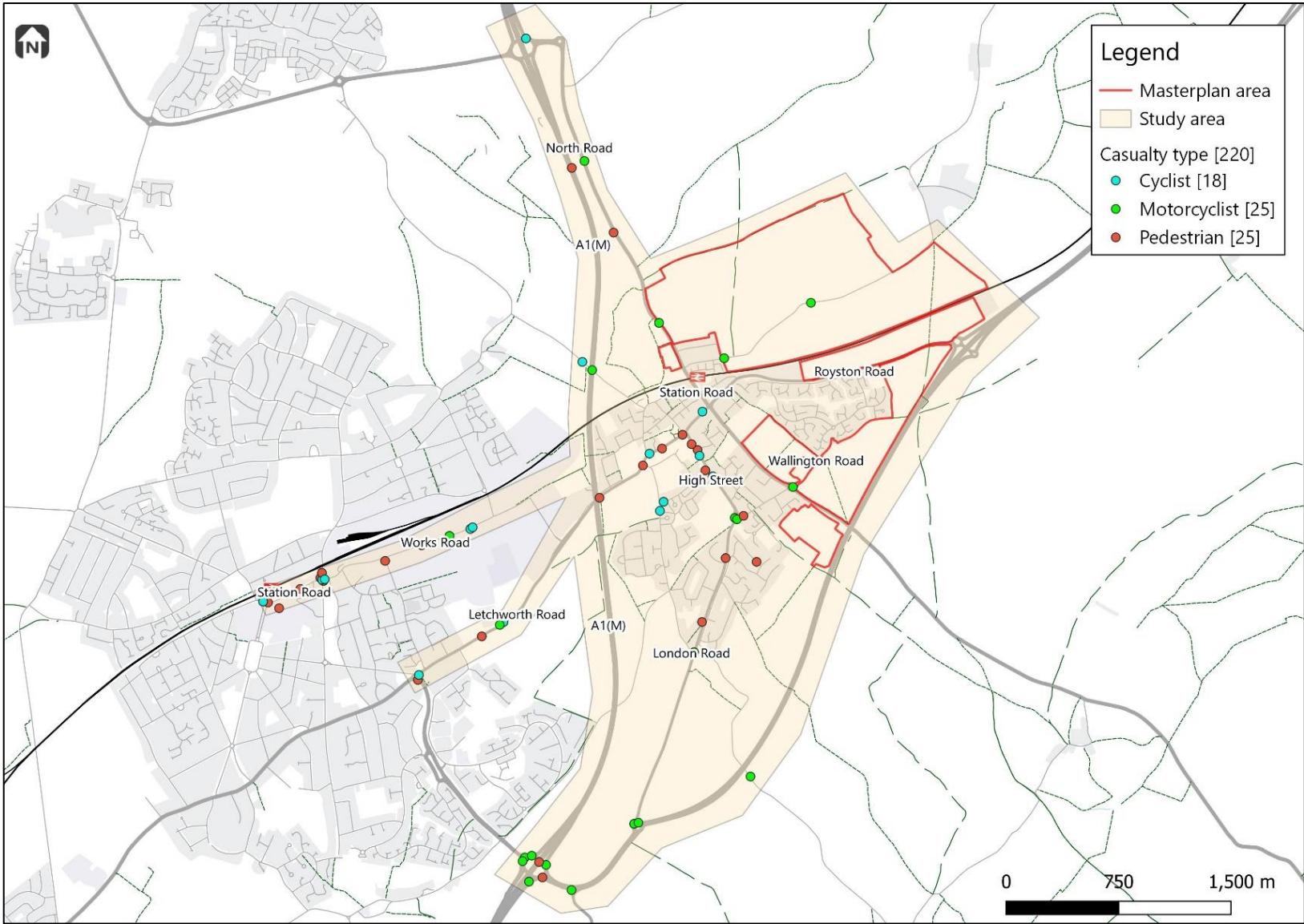
Year	Slight	Serious	Fatal	Total
2017	34	12	0	46
2018	34	5	2	41
2019	32	5	0	37
2020	14	3	0	17
2021	25	7	0	32
Total	139	32	2	173

- 3.11 Table 3-1 shows a relatively consistent number of PICs occurring in each year analysed, with the exception of 2020 where significantly fewer were recorded. This may be explained by the reduced volumes of people travelling during 2020 as a result of the pandemic. This is reflected in the national data.
- 3.12 Both of the fatal collisions occurred in 2018, however, there is no reason to conclude this was a result of specific characteristics of that year – they occurred on different dates and at different locations. One occurred on Station Road in Letchworth on a Friday evening in September and one occurred at the A1 southbound slip road at Junction 9 on a Sunday afternoon in May.
- 3.13 The frequency of serious PICs reduces from 2017 onwards, although in relative terms the change is not significant. Serious collisions contributed to around 26% of all PICs in 2017 but to between 12% and 17% between 2018 and 2020. In 2021, this contribution rose again to 21% of all PICs recorded.

By casualty type

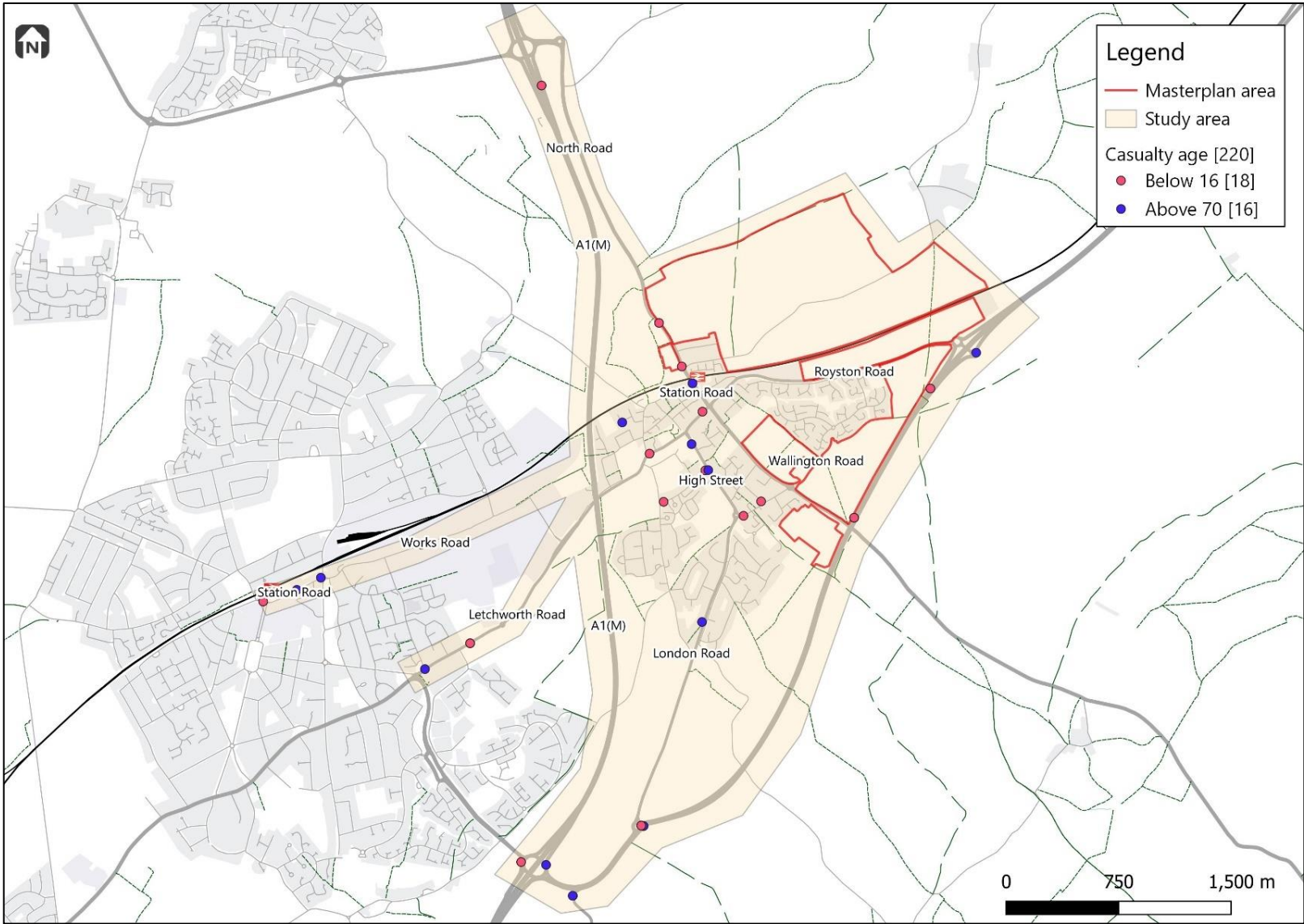
- 3.14 Figure 3-3 shows PICs by casualty type (showing vulnerable modes only). Rather than discrete PICs, the values indicate total casualties by any mode/type, and therefore several casualties could be shown in one location as a result of a single PIC. It should be noted that within the study area, there were no PICs involving horse riders or mobility scooters during the five-year period.

Figure 3-3: Vulnerable road user PICs



- 3.1 This shows that out of all 220 casualties, 31% were vulnerable road users. This is more positive than the national data, which recorded 38% of all PICs involving pedestrians, cyclists or motorcyclists.
- 3.2 Figure 3-4 shows PICs by vulnerable age groups – children (16 or younger) and elderly (70 or older). For simplicity, these are shown across all types of PIC, i.e. vehicle-only collisions, pedestrian / cyclist collisions, motorcyclists etc.

Figure 3-4: Vulnerable age PICs



- 3.3 Of all casualties, 15% were in vulnerable age groups. This is similar to the national road casualties data, wherein 16% of all casualties were older or younger people.
- 3.4 Comparing these with the pedestrian, cyclist and motorcyclist PICs does not show a particularly strong relationship - 18% of casualties involving pedestrians, cyclists or motorcyclists also involved older or younger people.

Focussed analysis

Links

- 3.5 PICs occurring at the key links within the study area are shown in Figure 3-5 to Figure 3-7. Royston Road is not shown because no PICs occurred. This may be because, relative to its length, Royston Road features very few junctions or frontage developments.

Figure 3-5: Works Road and Letchworth Road



Figure 3-6: High Street and South Road

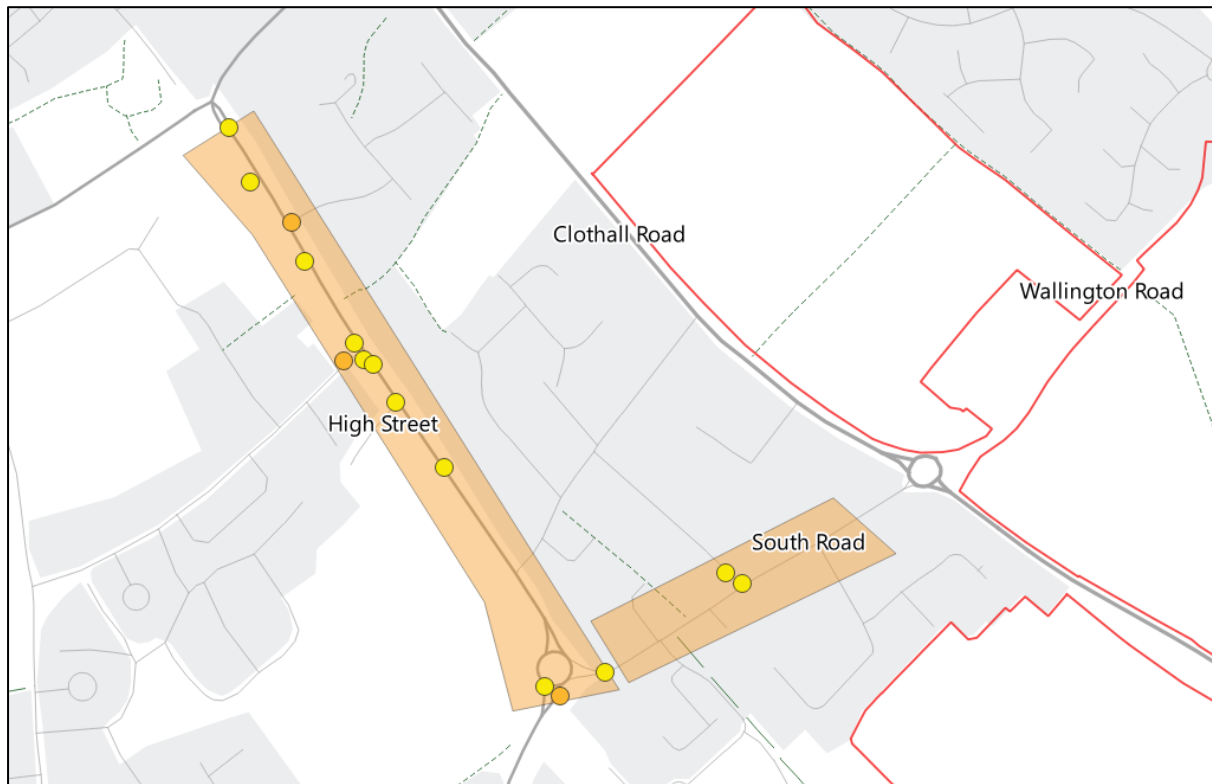


Figure 3-7: A507 North Road / Clothall Road



- 3.6 Table 3-2 summarises the number of PICs on each link by severity, and by rate per km. This demonstrates that the High Street and Works Road / Station Road in Letchworth had the most PICs per km.

Table 3-2: PICs on key links by severity

Location	Total PICs	Length*	PICs per km	Slight	Serious	Fatal
A507	17	3.8km	4.5	15	2	0
Letchworth Road	21	2.3km	9.1	17	4	0
Royston Road	0	1.8km	0.0	0	0	0
South Road	2	0.3km	6.7	2	0	0
Works Road	32	2.0km	16.0	26	5	1
High Street	13	0.6km	21.7	10	3	0

*approximate, within areas highlighted in Figure 3-1

- 3.7 Table 3-3 summarises PICs on the links by casualty type.

Table 3-3: Casualties on key links by type

Location	Cyclist	Motorcyclist	Pedestrian	Total
A507	0	4	1	5
Letchworth Road	4	1	6	11
Royston Road	0	0	0	0
South Road	0	0	0	0
Works Road	8	3	7	18
High Street	2	2	4	8

- 3.8 Considering the overall PIC/km rate, the number of casualties involving vulnerable road users at Royston Road, South Road and the A507 is not considered significant. Letchworth Road, Works Road and High Street are considered in further detail below.

Letchworth Road

- 3.9 On Letchworth Road, 21 PICs occurred involving 28 casualties. The largest cluster of PICs occurring on the Letchworth Road / Baldock Road corridor is at the roundabout with Letchworth Gate, where five PICs occurred, involving seven casualties. Of these, one involved a pedestrian casualty and one involved a cyclist casualty, both of which suffered slight injuries.

- 3.10 The PICs at the Letchworth Gate roundabout occurred under a range of situations and were mostly during daylight and fine weather. The detailed data suggests that most occurred on the A505 Baldock Road, though this is not apparent from the easting/northing data and therefore it is difficult to conclude exactly which roads or movements are most commonly involved.
- 3.11 Elsewhere along Letchworth Road, there are four junctions where two PICs occurred, but the occurrence of two is not considered to reflect a pattern. At the eastern end - broadly speaking between the A1(M) and High Street - five PICs occurred during the hours of darkness, generally when streetlights were lit. Based on the data available, there is no clear underlying cause for the 11 PICs involving vulnerable road users occurring on Letchworth Road, though some of these were on the easternmost section.

Works Road

- 3.12 On Works Road, 32 PICs occurred involving 38 casualties. More than three PICs occurred at the following locations:
- Station Road / Broadway roundabout – four slight PICs; one pedestrian casualty and one cyclist casualty.
 - Station Road / Birds Hill / Norton Way roundabout – nine PICs, six of which were slight and three of which were serious. Two pedestrian casualties and three cyclist casualties.
 - Birds Hill / Works Road / Pixmore Avenue priority junction – three slight PICs.
 - Works Road / Avenue One roundabout – two slight PICs and two serious PICs; Two cyclist casualties and one motorcyclist casualty.
- 3.13 One of the two fatal casualties within the study area occurred on Station Road near to The Arcade. This involved a pedestrian in the hours of darkness (with streetlights lit) and no specific hazards were recorded, although it appears the pedestrian was not at a formal crossing point. This does necessarily mean that they were attempting to cross the road – they may have been hit by a vehicle whilst walking along the footway.
- 3.14 There are relatively few PICs occurring away from junctions along Works Road and Station Road, though it is noted that the corridor has a proliferation of junctions in general (which in itself could be a causal factor). Whilst Works Road features many employment and industrial land uses, none of the PICs involved vans or heavy goods vehicles.
- 3.15 Of the 32 PICs, nine occurred in the hours of darkness (with streetlights lit) and all of these were between Norton Way and Broadway on Station Road.

High Street

- 3.16 On High Street, 13 PICs occurred involving 13 casualties. It has the highest proportion of all casualties that are vulnerable road users (62%). It might be expected that the High Street accommodates higher volumes of pedestrians overall, compared with other links in the study area, and therefore the risk of conflict with pedestrians is greater.
- 3.17 Four occurred within 50 metres of the junction with Mansfield Road, one of which was serious, and three occurred within 50 metres of the South Road / London Road roundabout, one of which was serious.
- 3.18 Three of the pedestrian casualties along High Street involved vulnerable age groups – two children and one 74-year-old. One was during the hours of darkness with street lighting but otherwise there are no clear contributing factors from the data available.
- 3.19 Two PICs involving motorcyclists occurred on London Road at the approach/exit from the roundabout with South Road and High Street, and one of these resulted in injuries classified as serious. The available data does not indicate any common causal factors.

Junctions

- 3.20 Table 3-4 summarises PICs occurring at junctions in the study area which are either not included in the above analysis, or are of particular interest to the Baldock SUE proposals.

Table 3-4: Collisions in study area at key junctions* by severity

Location	Slight	Serious	Fatal	Collisions total
A507 Station Road / Icknield Way / Football Close	1	0	0	1
A507 Station Road / B656 / Clothall Road	2	0	0	2
B656 / High Street	2 (1 pedestrian)	0	0	2
Clothall Road / South Road / Wallington Road	1 (1 motorcyclist)	0	0	1

*within 50m of junction

- 3.21 Whilst not the focus of this analysis (as this is intended to inform sustainable transport focussed interventions more so than highway mitigation), it noted that higher numbers

of PICs occurred at the A1M junctions. At Junction 9 and its slip roads, 19 PICs occurred and at Junction 10 and its slip roads, nine PICs occurred. These are heavily trafficked junctions and therefore the risk of conflict is increased.

- 3.22 The occurrence of PICs at the junctions of interest is relatively low. This is contrary to some anecdotal perceptions, particularly around the A507 Station Road junctions with Icknield Way and Clothall Road. The A507 is also a particularly highly trafficked route compared to others within Baldock.
- 3.23 The cause for this may be that PICs are only recorded when an injury is sustained, and therefore 'near misses' or even some collisions that did not result in any injuries are not recorded. The prevalence of traffic in itself on the A507 may also result in perceptions of an unsafe and unattractive environment and deter pedestrians and cyclists.

Summary

- 3.24 The key findings and their potential implications for further work, particularly the Active and Sustainable Modes Strategy, are outlined below:

Findings

- The study area follows the national trend over the last five years in terms of a reduction of PICs recorded during the pandemic; it is not yet clear whether there is an overall downward trend but the recorded collisions seem to have reduced since 2017.
- The study area has 16% killed or seriously injured (KSI) casualties over the five-year period, which is lower than the national data. There may be bias introduced in the study area which excludes the type of road / area where more KSIs typically occur.
- Within the study area and time period, 31% of all casualties were pedestrians, cyclists or motorcyclists, which is slightly lower than the national figure of 38%. None recorded in the study area involved horse riders or mobility scooter riders.
- Within the study area and time period, 15% of all casualties were below 16 or above 70, which is similar to national data.
- Of all pedestrian, cyclist and motorcycle PICs, 18% involved children or people aged over 70.
- In terms of rate of PICs per kilometre of road, Works Road and High Street were the two key links analysed with the highest rates of PICs. Letchworth Road also had relatively high rates.
- No PICs were recorded along Royston Road in the five-year period.

- Regards specific links:
 - There may be an underlying road safety problem at the Baldock Road / Letchworth Gate / Pixmore Way roundabout, where five slight PICs occurred, two of which involved vulnerable road users.
 - There may be a relationship between hours of darkness / street lighting and PICs at the eastern end of Letchworth Road, east of the A1(m).
 - Works Road has a relatively high number of junctions and frontage developments (e.g. compared with Royston Road). Most PICs occurred at junctions on Works Road, and involved cars.
 - A notable number of PICs occurred on Station Road during the hours of darkness, although street lighting was present and lit.
 - High Steet has the highest proportion of vulnerable road users out of all casualties, and several of these involved pedestrians below 16 or over 70. This may be expected as more people are likely to walk along the high street.
- The frequency of PICs at junctions of interest in the study area is relatively low.

3.25 The findings of this review will be used to inform the development of the active and sustainable mode and link road strategies, as part of the ITA.

4. Assessment of Existing Transport and Movement Data

4.1 To build an understanding of existing travel patterns and be able to assess the impact of any proposed transport interventions, a range of data sources have been collated and analysed within this section, with further information in Appendix A. This includes:

- Census 2021 data – for car ownership and commuting data
- Strava Data – for local cycling and walking movements
- Public Right of Way (PRoW) usage survey
- Teralytics mobile phone data
- An Automatic Number Plate Recognition (ANPR) cordon survey – for vehicles, including HGVs
- Junction turning movements and queue length surveys
- Baldock Rail Station survey – reviewing parking usage, drop-off and pick-up

Population profile (Census 2021)

4.2 A profile of Baldock¹⁰ from the [Census tool](#) has been generated (shown in Figure 4-1), with relevant data for transport. Key findings for Baldock include:

- Approximately 10,600 people live in Baldock
- 34% live in single person households (above England average)
- Lower than England average levels of deprivation
- About average levels of disability in the population (17%)
- 25% are economically active (above the England average)
- Above average levels of working mainly at or from home (40%) – this compares to 4% of the working population working from home in 2011 as the 2021 census was heavily influenced by changing travel behaviours as a result of the pandemic
- 42.5% drive a car or van to work
- 28% travel less than 10km to work
- Higher than England average profile population of 40 – 60-year-olds
- A lower than England average proportion of households with no access to a car
- A higher than England average proportion of one or more car households

¹⁰ Baldock Built up area (comprising Baldock Town and Baldock East)