AtkinsRéalis

Modelling Summary Report

Bath and North-East Somerset Council

August 2026

BATH AND NORTH-EAST SOMERSET COUNCIL LOCAL PLAN – MODELLING SUMMARY

DRAFT

Notice

This document and its contents have been prepared and are intended solely as information for Bath and North-East Somerset Council.

AtkinsRéalis assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 118 pages including the cover.

Document history

Document title: Modelling Summary Report

Document reference: Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Draft for comment	Various	PV	JFC	PK	Jun 2026
2.0	Draft	Various	PV	PK	PK	Aug 2026

Client signoff

Client	Bath and North-East Somerset Council
Project	Bath and North-East Somerset Council Local Plan – Modelling summary
Job number	10011261
Client signature/date	

DRAFT

Contents

Executive Summary **9**

1. Introduction **10**

1.1 Purpose of this document 10

1.2 West of England Regional Transport Model (WERTM) 10

1.3 Report Structure 11

2. WERTM Base year checks **12**

2.1 Introduction 12

2.2 Post COVID data used for checks 12

2.2.1 Traffic Data 12

2.2.2 Highway travel time data 13

2.2.3 Bus patronage data 13

2.3 Base daily travel modal share 13

2.4 Public transport model checks 21

2.5 Highway traffic flow and journey time checks 22

2.5.1 Highway model updates 22

2.5.2 Acceptability guidance 22

2.5.3 Traffic flow calibration 22

2.5.4 Journey time validation 23

2.6 TomTom Data 26

3. 2042 Model input assumptions **27**

3.1 Modelled scenarios 27

3.2 Overview of how central government data is used to forecast trips using housing and jobs assumptions 28

3.2.1 Derivation of total jobs forecast (attraction proxy) 28

3.2.2 Overview of Reference Case assumptions 28

3.2.3 Forecast households and jobs 28

3.2.4 Daily person trip demand 32

3.3 B&NES Local Plan development locations 32

3.3.1 Locations of specific employment sites 38

3.3.2 Localised jobs associated with new housing 39

3.3.3 Jobs in existing employment clusters in B&NES 39

3.3.4 Housing and employment in key locations 41

3.3.5 Freight and long distance traffic forecasts 42

3.4 Committed transport infrastructure 42

3.5 Global cost parameters 47

3.6 Parking cost and capacity assumptions 49

3.6.1 Parking Costs 49

3.6.2 Parking capacity and availability in central Bath 50

4. Transport forecasts (reference case & pre-mitigation) **54**

DRAFT

4.1 Impacts of parking policy on travel demand 54
4.2 Daily travel modal share across the region 56
4.2.1 Across the whole of the west of England 56
4.2.2 To/from and within B&NES 57
4.2.3 Car modal share of trips at development sites (pre mitigation) 58
4.3 Bus patronage 59
4.3.1 Impacts of the Reference Case 59
4.3.2 Impacts of the local plan (pre-mitigation) vs Reference Case 59
4.4 Active travel 63
4.4.1 Reference Case 63
4.4.2 Impact of the Local Plan (pre-mitigation) vs Reference Case 63
4.5 Highway impacts 70
4.5.1 Impact of the Reference Case on the highway network 70
4.5.2 Overview of highway trip rates and routing patterns for development sites (Hybrid Model) 74
4.5.3 Residential vehicle trip rates derived from TRICS 74
4.5.4 Checks on overall vehicle travel demand 79
4.5.5 Impact of the Local Plan (pre-mitigation) on highway travel time, delay and distance 81
4.5.6 Corridors with additional daily traffic 82
4.5.7 Assessment of Severity 83
5. Transport mitigation assumptions 89
5.1 Bus services, transport interchanges and travel hubs 89
5.1.1 Travel hub assumptions 93
5.1.2 Transport Interchange assumptions 94
5.2 Active travel assumptions 94
5.3 Highway assumptions 98
6. Transport forecasts with mitigation 101
6.1 Daily travel modal share 101
6.1.1 Demand Matrices - Change in trips by purpose 101
6.1.2 Modal share of trips at the major development sites with transport mitigation 102
6.2 Bus patronage 102
6.3 Active travel 107
6.4 Highway 109
6.4.1 Expected change in highway trips with transport mitigation 109
6.4.2 Impact on highway network operation (with mitigation) 110

DRAFT

Tables

Table 2-1 Base daily travel modal share 13

Table 2-2 Bus passenger boardings at key locations: 2019 base vs 2024 observed daily (7am- 7pm) 21

Table 2-3 DfT Traffic assignment calibration and validation criteria 22

Table 2-4 Proportion of (245) traffic flow links within B&NES considered acceptable using TAG 22

Table 2-5 Journey Time checks (base model vs observed online mapping) 24

Table 2-5 TomTom Data used to compare speeds in Apr-June 2019 and Apr-June 2026 26

Table 3-1 Transport Forecast Scenarios 27

Table 3-2 Household (000s) forecast assumptions 29

Table 3-3 Jobs per Household ratio (Model vs NTEM) 30

Table 3-4 Jobs (000s) forecast assumptions 30

Table 3-5 Total Person Daily Trip Productions (000s) 32

Table 3-6 B&NES Local Plan: specific employment estimates at key sites 38

Table 3-7 BRES (2024) data for B&NES (rows in red are assumed to relate to local service jobs) 40

Table 3-8 Location and Quanta of B&NES Local Plan development (agglomerated sites) 41

Table 3-9 Committed transport infrastructure in B&NES (how changes are included in WERTM) 42

Table 1 - Historic and projected 8-hour parking charges in Manvers Street, Bath, nominal and 2026 prices 49

Table 3-11 – Central Bath parking spaces (information provided by B&NES) 50

Table 3-10 WERTM Parking cost, capacity and demand management assumptions 51

Table 4-1 Forecast daily change in trips into central Bath & Bristol due to parking policy 55

Table 4-2 Impact of demand management on daily travel modal share into central Bristol and Bath 55

Table 4-3 Daily forecast change in trips by mode and scenario in the West of England 56

Table 4-4 Daily travel modal share % in the West of England 56

Table 4-5 Daily change forecast in trips by mode and scenario to/from and within B&NES 57

Table 4-6 Daily travel modal share % for trips to/from and within B&NES 57

Table 4-7 Daily travel modal share of major development sites (pre-transport mitigation) 58

Table 4-8 Highway Network (delay & distance) statistics (Reference Case) 71

DRAFT

Table 4-9 Residential observed (TRICS) total vehicle trip rate percentiles 75
Table 4-10 B&NES Local Plan residential total vehicles and vehicle trip rates per hour 76
Table 4-11 Total two-way vehicle trips (000s) in AM peak hour (includes freight) 79
Table 4-12 Highway Network (delay & distance) statistics (pre transport mitigation) 81
Table 5-1 Example of a “typical” perceived journey time (PJT) by bus 93
Table 6-1 Daily modal share 101
Table 6-2 Daily change in trips 101
Table 6-3 Car only dependency: daily travel modal share of agglomerated development sites 102
Table 6-4 Daily bus boarders at major transport interchanges 103
Table 6-5 Daily and annual estimate of bus boarders in different sub-areas within B&NES 103
Table 6-6 Highway total trips at major development sites (with transport mitigation) 109
Table 6-7 Road network operational statistics: B&NES 110
Table 6-8 Road network operational statistics: West of England 110

Figures

Figure 1-1 WERTM geographic coverage (HAM = Highway Assignment Model zones) 11
Figure 2-1 Autumn 2022 Traffic Count (123) sites (data collated by B&NES) 12
Figure 2-2 Public transport & active travel zonal structure (>2,400 zones in the whole WERTM model) 14
Figure 2-3 Daily active travel origin modal share, 2019 base model in B&NES 15
Figure 2-4 Daily Bus and rail travel destination modal share, 2019 base model in B&NES 16
Figure 2-5 Daily car travel origin modal share, 2019 base model in B&NES 17
Figure 2-6 Daily active travel origin modal share, 2019 base model in Bath 18
Figure 2-7 Daily active travel origin modal share, 2019 base model in Hicks Gate, Keynsham, Whitchurch 19
Figure 2-8 Daily active travel origin modal share, 2019 base model in Somer Valley 20
Figure 2-9 Post COVID data (2022) vs Base Model Traffic Link Flow checks within B&NES 23
Figure 2-10 Journey time validation routes (WERTM update) 24
Figure 3-1 Locations of Committed and Local Plan development in the West of England 33

DRAFT

Figure 3-2 Location of all planned development sites in B&NES 34
Figure 3-3 Locations and quanta of planned development in Bath 35
Figure 3-4 Locations and quanta of development in Bristol-Bath corridor (Hicks Gate, Keynsham, Whitchurch) ... 36
Figure 3-5 Locations and quanta of development in the Somer Valley 37
Figure 3-6 Locations of committed active transport infrastructure in B&NES 43
Figure 3-7 Locations of committed active transport infrastructure in Bath 44
Figure 3-8 Locations of committed highway changes in B&NES 45
Figure 3-9 Locations of committed bus and rail changes in B&NES 46
Figure 3-10 Bath parking districts utilised in WERTM 52
Figure 3-10 Bath & North East Somerset Transport & Development Supplementary Planning Document - Parking Standards Zones 53
Figure 4-1 2042 Reference Case daily bus patronage in the West of England 60
Figure 4-2 Total daily bus passengers in B&NES with Local Plan (pre-mitigation) 61
Figure 4-3 Bus passengers in B&NES (Local Plan pre-mitigation vs Reference Case) 12-hour totals) 61
Figure 4-4 Active travel in B&NES (2042 Reference Case, Daily) 64
Figure 4-5 Active travel in Bath (2042 RC, Daily) 65
Figure 4-6 Active travel in Hicks, Gate, Keynsham & Saltford (2042 RC, Daily) 66
Figure 4-7 Active travel in the Somer Valley (2042 RC, Daily) 67
Figure 4-8 Active travel in B&NES (Local Plan No Mitigation, Daily) 68
Figure 4-9 Increase in active travel demand in B&NES (Local Plan No Mitigation vs 2042 Reference Case, 12-hour totals) 69
Figure 4-10 Highway traffic flow differences in West of England & B&NES (2042 RC vs 2019, 12hr daily) 72
Figure 4-11 Highway flow & delay differences: B&NES (2042 Reference Case vs 2019 Base, AM peak hour) 73
Figure 4-12 Observed (TRICS) & B&NES Local Plan total vehicle trip rates (AM Peak hour) 77
Figure 4-13 Observed (TRICS) and B&NES Local Plan total vehicle trip rates (PM Peak hour) 77
Figure 4-14 Highway flow difference: B&NES (Local Plan pre-mitigation vs RC, 7am – 7pm) 84
Figure 4-15 Highway flow & delay difference: B&NES (Local Plan pre-mitigation vs RC, AM Peak hour) 85
Figure 4-16 Highway Flow & delay diff: Bath (LP pre mitigation vs RC, AM Peak hour) 86

DRAFT

Figure 4-17 Highway Flow diff: Hicks Gate, Keynsham & Whitchurch (LP pre mit vs RC, AM Peak hour) 87

Figure 4-18 Highway Flow diff: Somer Valley (LP pre mitigation vs RC, AM Peak Hour) 87

Figure 5-1 Proposed bus services, transport interchange and travel hubs in Bath 90

Figure 5-2 Proposed bus services, transport interchange and travel hubs in the Somer Valley and rural areas 91

Figure 5-3 Proposed bus services, transport interchange and travel hubs in Keynsham, Saltford and Whitchurch 91

Figure 5-4 Proposed active travel in Bath 95

Figure 5-5 Proposed active travel in the Somer Valley and rural areas 96

Figure 5-6 Proposed active travel in Keynsham, Saltford & Whitchurch 97

Figure 5-7 Proposed highway and supportive rail services, in Keynsham, Saltford and Whitchurch and wider B&NES 99

Figure 5-8 Proposed highway and traffic management in the Somer Valley, Odd Down and rural areas 100

Figure 6-1 Annual bus observed & forecast passengers within B&NES 104

Figure 6-2 Total bus patronage (Local Plan with mitigation daily 12-hour totals) 105

Figure 6-3 Increase in bus patronage (Local Plan with mitigation vs Reference Case, 12-hour totals) 105

Figure 6-4 Active travel in B&NES (Local Plan with mitigation vs reference case, daily) 108

Figure 6-5 Changes in traffic flows (Local Plan with mitigation vs Reference Case, 12-hour totals) 111

Figure 6-6 Changes in traffic flows and delays (Local Plan with mitigation vs Reference Case, AM peak hour) .. 113

Figure 6-7 Changes in traffic flows and delays in Bath (Local Plan with mitigation vs Reference Case, AM peak hour) 114

Figure 6-8 Changes in traffic flows and delays in Keynsham and Whitchurch (Local Plan with mitigation vs Reference Case, AM peak hour) 115

Figure 6-9 Changes in traffic flows and delays in Somer Valley (Local Plan with mitigation vs Reference Case, AM peak hour) 116

DRAFT

Executive Summary

This report provides a summary of the transport modelling work undertaken to support the Bath and North East Somerset Local Plan (B&NES). It supports the Transport Topic Paper by outlining the technical evidence used to assess development locations, the emerging spatial strategy, and transport mitigation proposals. The findings show that the proposed transport solutions can help to deliver a vision-led plan to promote sustainable travel and high-quality transport options across the district.

Chapter 1 explains that the report serves as a technical companion to the Transport Topic Paper, detailing how modelling has informed the scoping of mitigation measures. It describes the use of the West of England Regional Transport Model (WERTM), which covers highways, public transport, and active travel modes.

Chapter 2 reviews the steps taken to review the WERTM base model (2019) to inform accurate forecasting in 2042, considering post-COVID conditions. This review included comparing traffic counts and journey times from 2022–2025 and bus boarding data from 2024. The highway assignment meets Transport Analysis Guidance (TAG) criteria, with approximately 85–90% of traffic links and travel times falling within acceptable ranges during peak hours, giving confidence in forecasts for Local Plan testing, including public transport usage.

Chapter 3 sets out the forecasting approach, translating housing and job projections into trip demand and specifying input factors such as committed infrastructure schemes, fares, fuel costs, and parking policies. It introduces multiple scenarios for 2042, including Reference Case and Local Plan versions, with or without mitigation, and explains the use of central and local government data and forecasting methods to ensure regional consistency. It also summarizes how Local Plan developments are distributed across the area.

Chapter 4 presents the forecast impacts for the Reference Case and the Local Plan without mitigation. Results show increased car travel and modal share, likely due to higher car ownership and vehicle electrification driving lower costs of driving in future. Even in urban areas, parking policy measures will be needed to manage congestion and demand. Peak-hour delays in B&NES are forecast to rise from **4.5** minutes in 2019 to **6** minutes in the 2042 Reference Case. mainly due to extra traffic from neighbouring areas. Without mitigation, the Local Plan would result in further increases and traffic, resulting in increased congestion, with average delays rising to **7.5** minutes per journey.

Chapter 5 discusses how the proposed mitigation package is modelled, with interventions focused on improving travel choices to support the development sites and wider travel corridors, to support mode shift and reduce car dependency. This includes enhanced bus services, expanded transport interchanges and hubs, improvements for active travel, and highway access upgrades.

Chapter 6 shows the outcomes once mitigation is applied. There is a notable shift from car travel to sustainable modes in B&NES, with bus and rail usage rising (for example, trips increase from about **9.5%** before mitigation to **12.4%** after, well above the reference case of **10%**). Key hubs and improved services are forecast to attract more new users, resulting in a 4% reduction in car trips at major sites and better overall network performance (with average delay reduced to 7.1 minutes, **less than a minute** more than the Reference Case). The strategic modelling uses indicative access assumptions, so future masterplanning and detailed transport assessments are recommended for further design improvements.

Conclusions

The evidence from the comprehensive modelling demonstrates that the proposed transport mitigation would be effective at reducing car use and promoting sustainable travel and providing travel choice across the region. Targeted interventions allow highway junctions to handle growth and operate safely. The evidence is strong and complies with central government guidance.

DRAFT

1. Introduction

1.1 Purpose of this document

This report sets out details of all the transport modelling and forecasting evidence that has supported the Bath and North-East Somerset (B&NES) Local Plan. This report is intended to accompany and add technical detail to the main Transport Topic Paper[1]. The transport modelling provides the evidence base that has been used to inform all testing and appraisal of locations for new development, the development of the spatial strategy and the mitigation package.

The regional authorities have also made significant investment in building the transport evidence base. This study includes both usage of and further enhancement of the strategic regional transport model**:** known as the West of England Regional Transport Model (WERTM)[2]. This provides a consistent basis for transport forecasting, assessing and appraising regional transport policies and schemes.

These transport models have been built according to the Department for Transport's Transport Analysis Guidance (DfT TAG)[3] and in agreement of process with the West of England Mayoral Combined authority and National Highways.

1.2 West of England Regional Transport Model (WERTM)

The West of England Regional Transport Model (WERTM) covers the entire West of England Mayoral Combined Authority region and parts of North Somerset (see Figure 1-1). It considers multiple travel options: highway, bus and rail and a simplified representation of active travel. All key roads, including motorways, A-roads and B-roads, with minor roads (some, but not all) included.

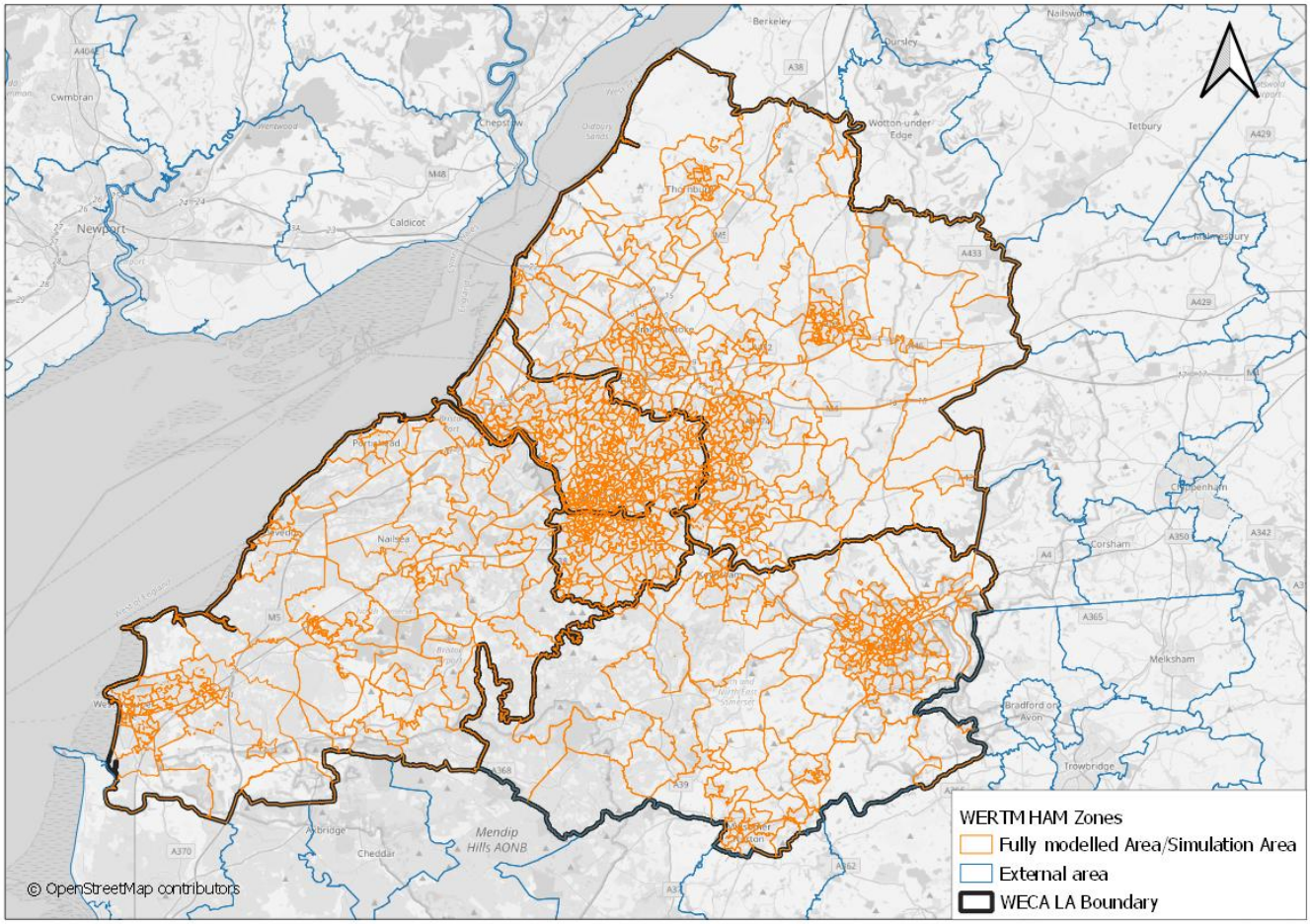
The wider baseline model represents travel conditions in 2019, but the model has been updated to reflect 2022-2025 traffic volumes and congestion in the area impacted by the submission plan. The model is used to forecast future travel conditions, using a number of local, regional and national input assumptions related to changes in demand (e.g. population changes, trip patterns etc) and changes in supply (bus fares, fuel costs, bus services, highway infrastructure changes, parking costs etc). AtkinsRéalis has undertaken checks and enhancements to the model in the area to represent local conditions. The model can then be used to forecast metrics such as bus patronage and highway congestion as a result of these assumptions. The model is considered an appropriate framework for testing the impacts of the Local Plan on the transport network.

Specifically for the Local Plan, WERTM can be used to inform the impact of different geographic scenarios for new homes and jobs across Bath and North East Somerset. It can also be used for testing the impacts of different multi-modal transport mitigation measures.

DRAFT

[1] Transport Topic Paper for Regulation 19 consultation
[2] Transport modelling - West of England Combined Authority
[3] Transport analysis guidance - GOV.UK

Figure 1-1 WERTM geographic coverage (HAM = Highway Assignment Model zones)



1.3 Report Structure

The report is structured as follows:

- Chapter 2 provides an overview of the WERTM base year model checks that were undertaken to check traffic flow representation post COVID;
- Chapter 3 describes the demand model development input process for the 2042 reference case (background growth, excluding the B&NES local plan) and including the Local Plan (with development, without mitigation);
- Chapter 4 describes the forecast transport impacts of the Local Plan (without the transport mitigation package);
- Chapter 5 outlines the modelling assumptions of the transport mitigation package; and,
- Chapter 6 presents the transport forecasts for the local plan with transport mitigation.

DRAFT

2. WERTM Base year checks

2.1 Introduction

In order to forecast the impacts of multiple changes in travel demand and supply, a suitable representation of base conditions - validated to ensure that it is representative - is required as per central government guidance. WERTM uses a 2019 base year model, recently updated and developed by expert consultants, including AtkinsRéalis, for the West of England Mayoral Combined Authority. Several checks and adjustments have been made using recent (2022-2025) data to ensure that the model suitably reflects post-COVID travel conditions and, as such, is appropriate for forecasting into the future (2042). The following considerations and checks were undertaken:

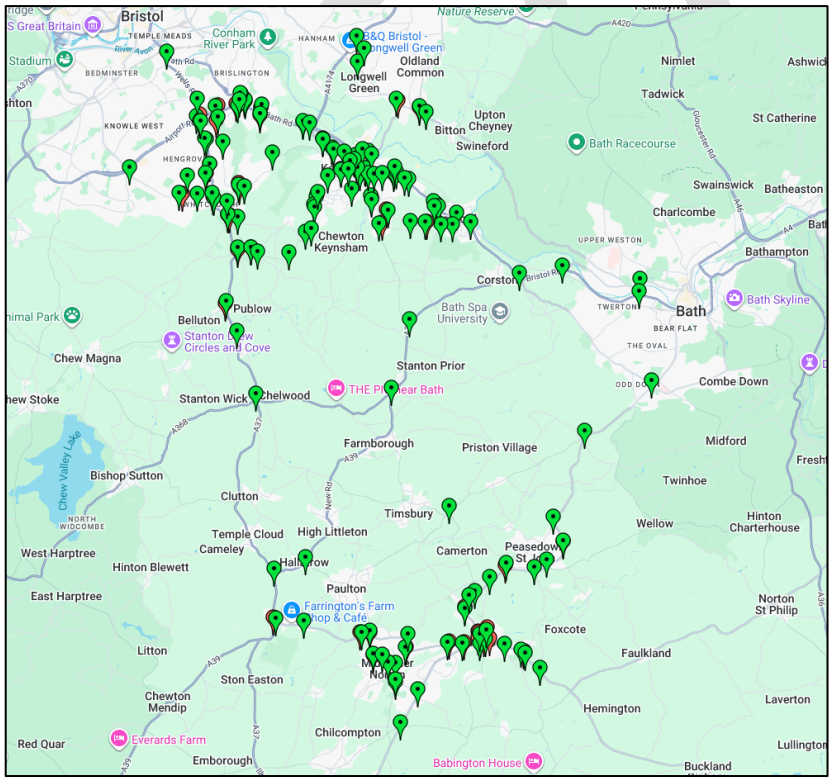
- Review of base model network coverage to ensure that it is a suitable representation of the study area; it covers the whole of the West of England and all routes in Bath & North East Somerset;
- Representation of traffic conditions using additional post COVID [2022-2025] traffic volumetric data and observed travel times, including representation of traffic delays due to congestion.

2.2 Post COVID data used for checks

2.2.1 Traffic Data

In addition to the WERTM (2019) model calibration data (outlined in the WERTM Model Development and Validation Report and WERTM Data Collation Report) additional observed traffic counts from different sources were collated for the model update. Figure 2-1 presents the locations of 123 traffic count sites (245 two-way links) from Autumn 2022.

Figure 2-1 Autumn 2022 Traffic Count (123) sites (data collated by B&NES)



DRAFT

2.2.2 Highway travel time data

TomTom and online highway travel time data (neutral months excluding bank and school holidays) for the base year 2024/2025 were collated and processed and used to check that the model accurately represents post-COVID travel conditions.

2.2.3 Bus patronage data

This included analysis of observed daily bus boarders, in 2024, for a range of bus stops in B&NES.

2.3 Base daily travel modal share

Zonal structure
The bus, rail and active travel zonal system within the B&NES area is outlined in Figure 2-2. This is able to accurately estimate travel demand, access and egress patterns, at bus stops and rail stations. The public transport zoning system (2,479 zones) is more disaggregated and therefore more granular than the highway assignment structure (1,242 zones). Both networks are represented at a level of detail sufficient to ensure high modelling accuracy.

Table 2-1 summarises existing daily travel mode share in B&NES and across the whole of the West of England. Mode share for bus and rail is slightly higher in B&NES than the regional average. However, mode share for active travel (walking, wheeling and cycling) is significantly lower, reflecting the rural geography of much of the district. This means that mode share by car is higher than in B&NES (65%) compared with the regional average (62%, which includes the Bristol urban area, where car dependency is lower).

Figures 2-3 to 2-5 show the current mode shares for active travel, bus and rail, and car, in the base year, for trip origins. Figures 2-6 to 2-8 then present more detailed mapping of active travel mode share in Bath, Keynsham and Whitchurch, and the Somer Valley respectively.

Table 2-1 Base daily travel modal share

Travel modal share	Car only	Bus & Rail (incl P&R)	Active only
All Trips for the whole West of England region	62%	9%	29%
All trips to/from/within B&NES	65%	11%	24%

DRAFT

Figure 2-2 Public transport & active travel zonal structure (>2,400 zones in the whole WERTM model)

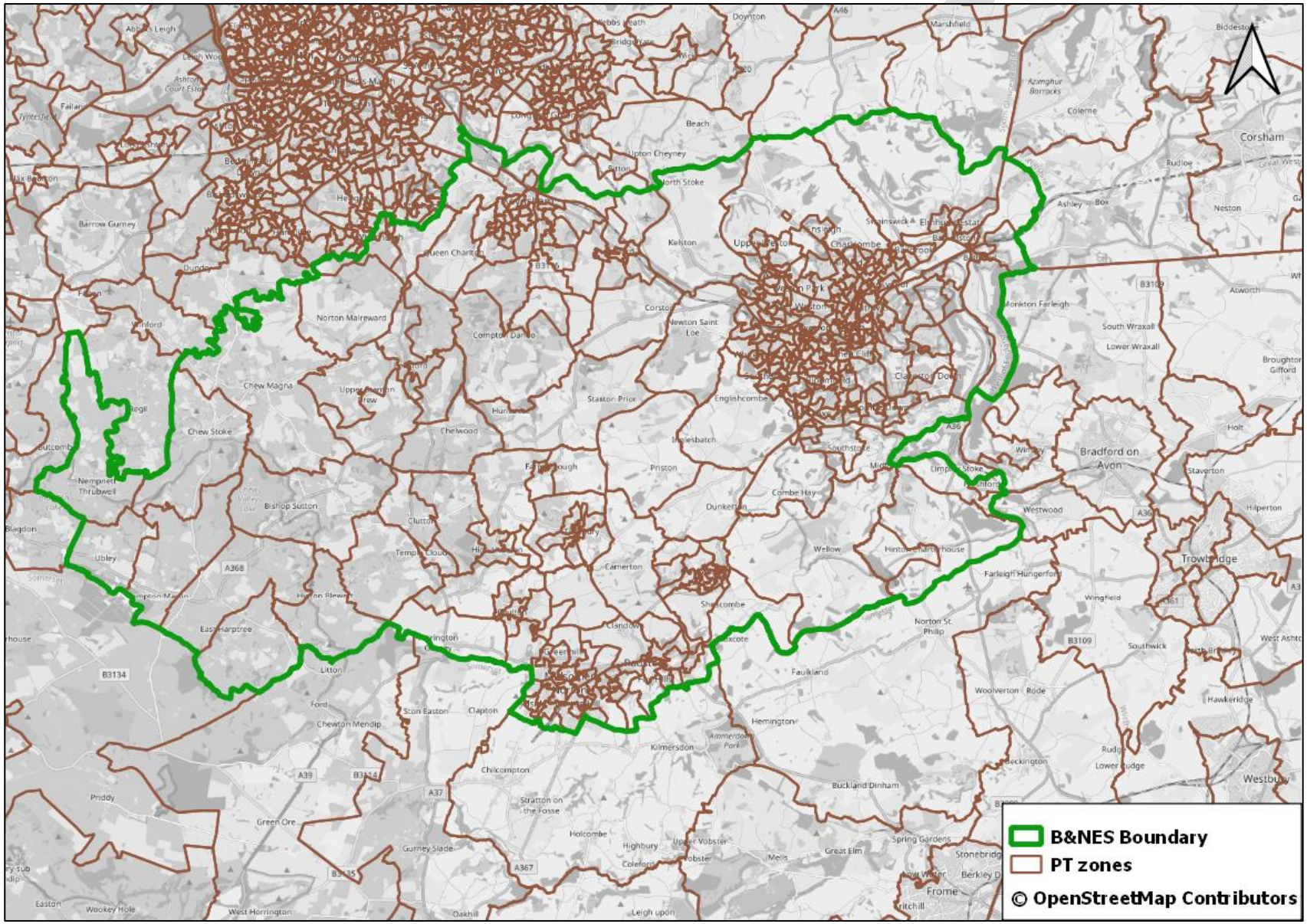


Figure 2-3 Daily active travel origin modal share, 2019 base model in B&NES

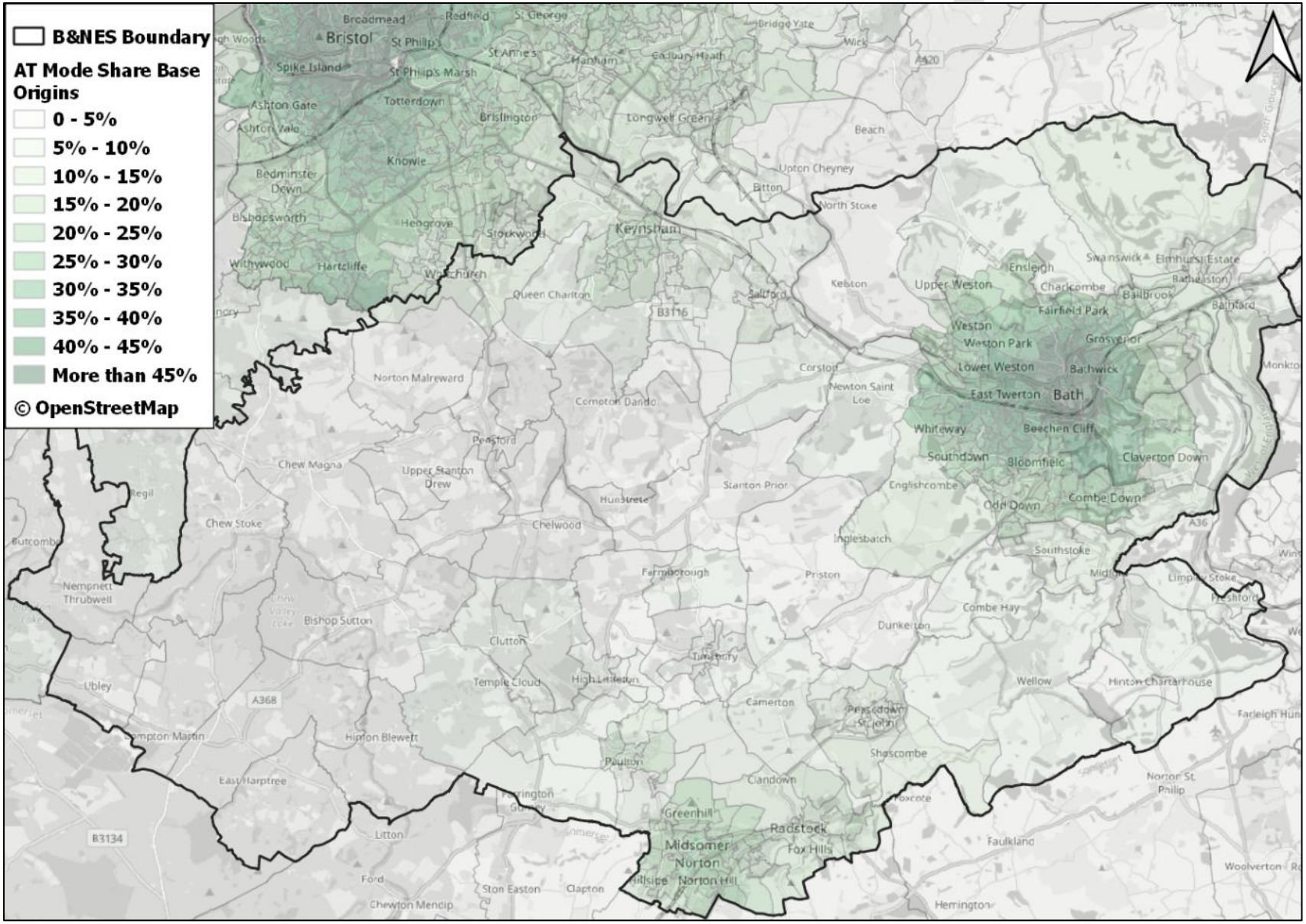


Figure 2-4 Daily Bus and rail travel destination modal share, 2019 base model in B&NES

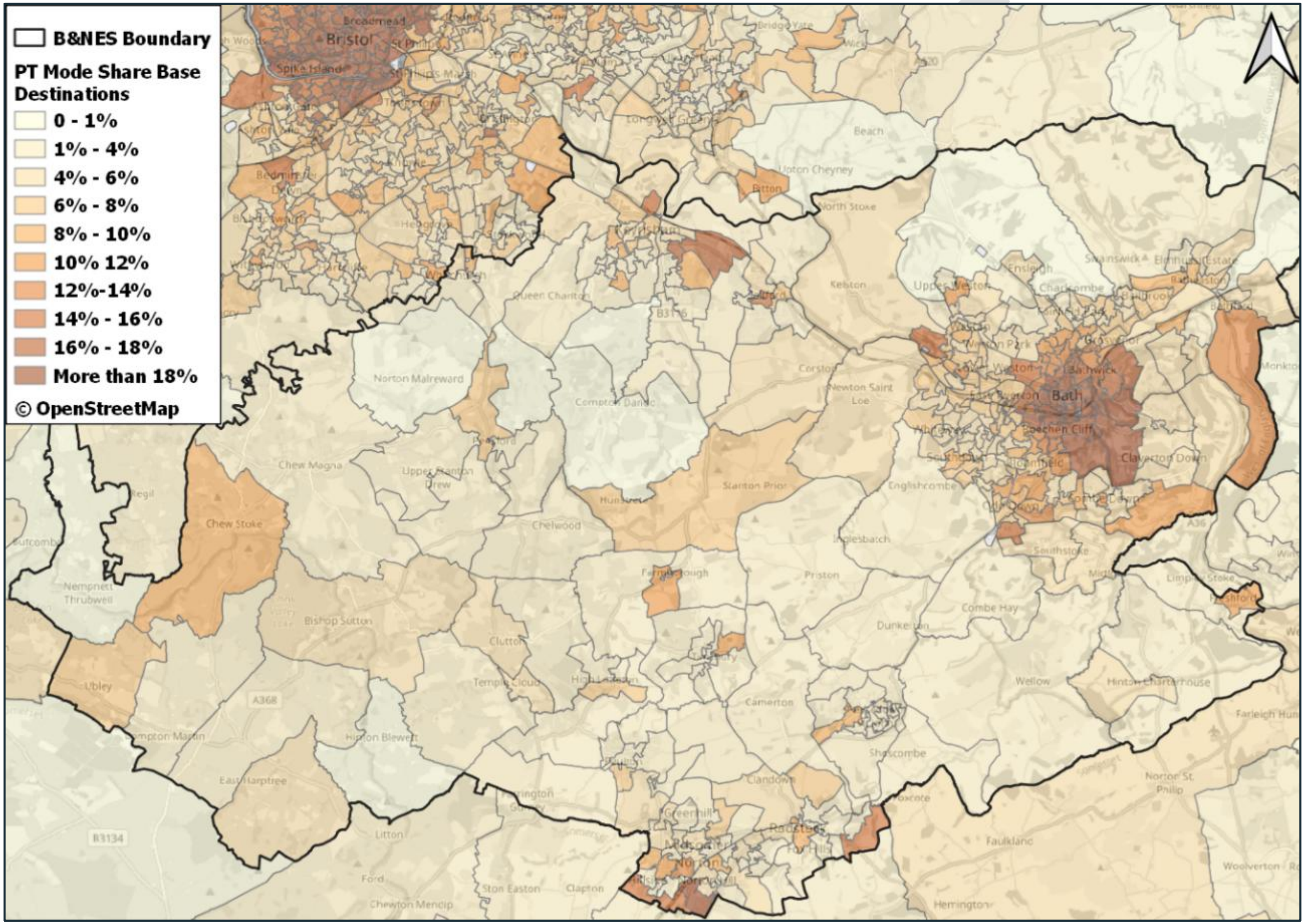


Figure 2-5 Daily car travel origin modal share, 2019 base model in B&NES

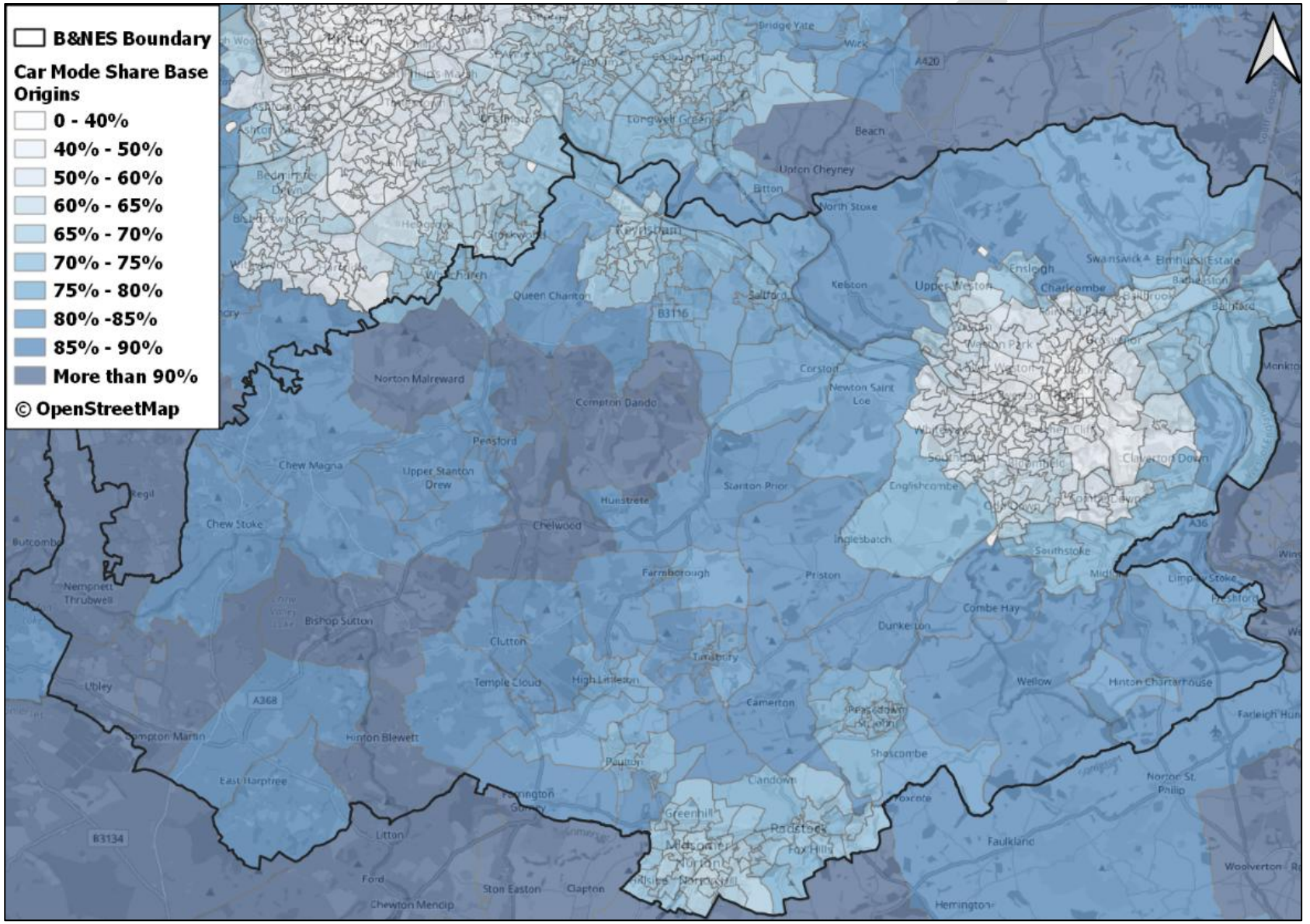


Figure 2-6 Daily active travel origin modal share, 2019 base model in Bath

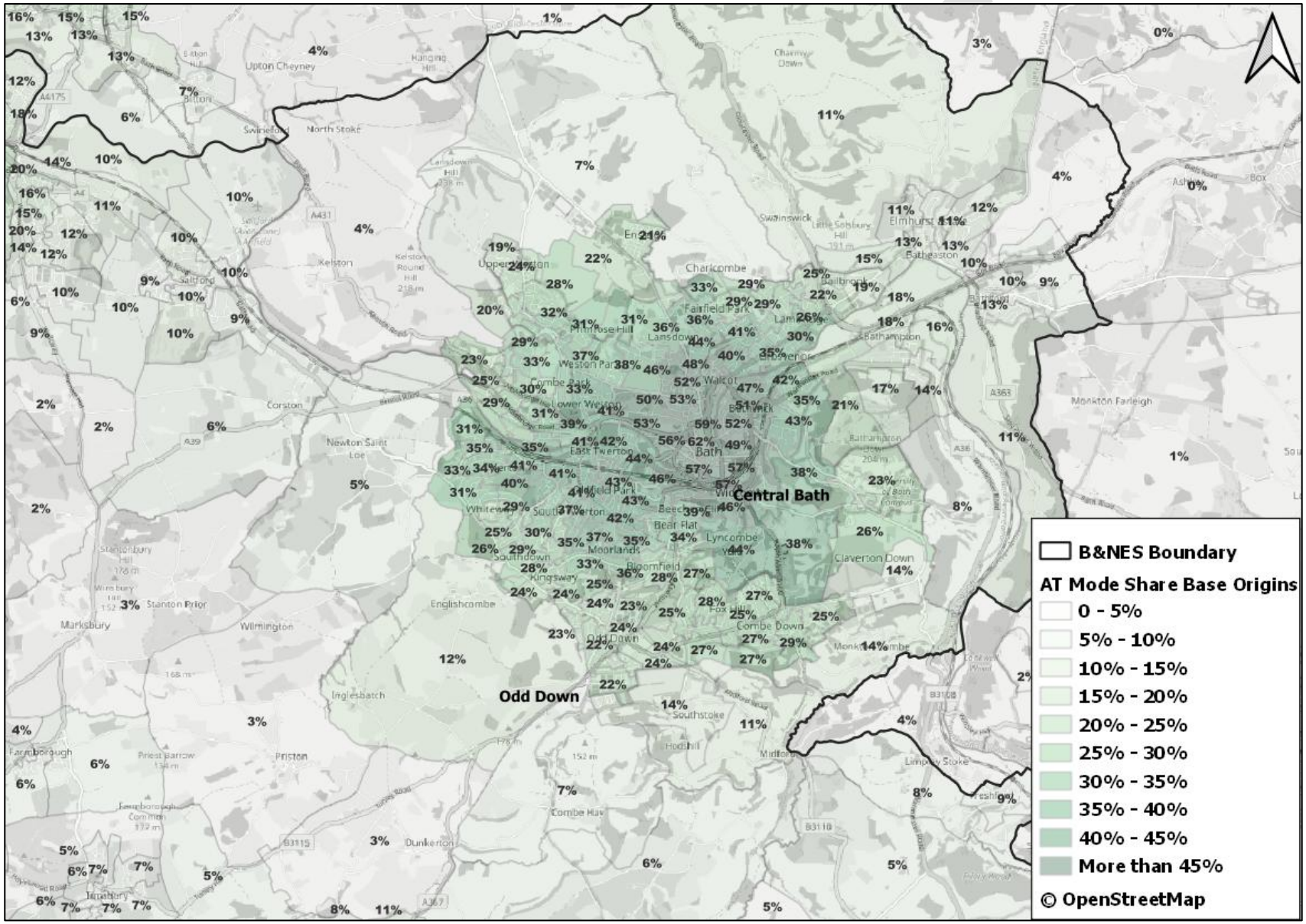


Figure 2-7 Daily active travel origin modal share, 2019 base model in Hicks Gate, Keynsham, Whitchurch

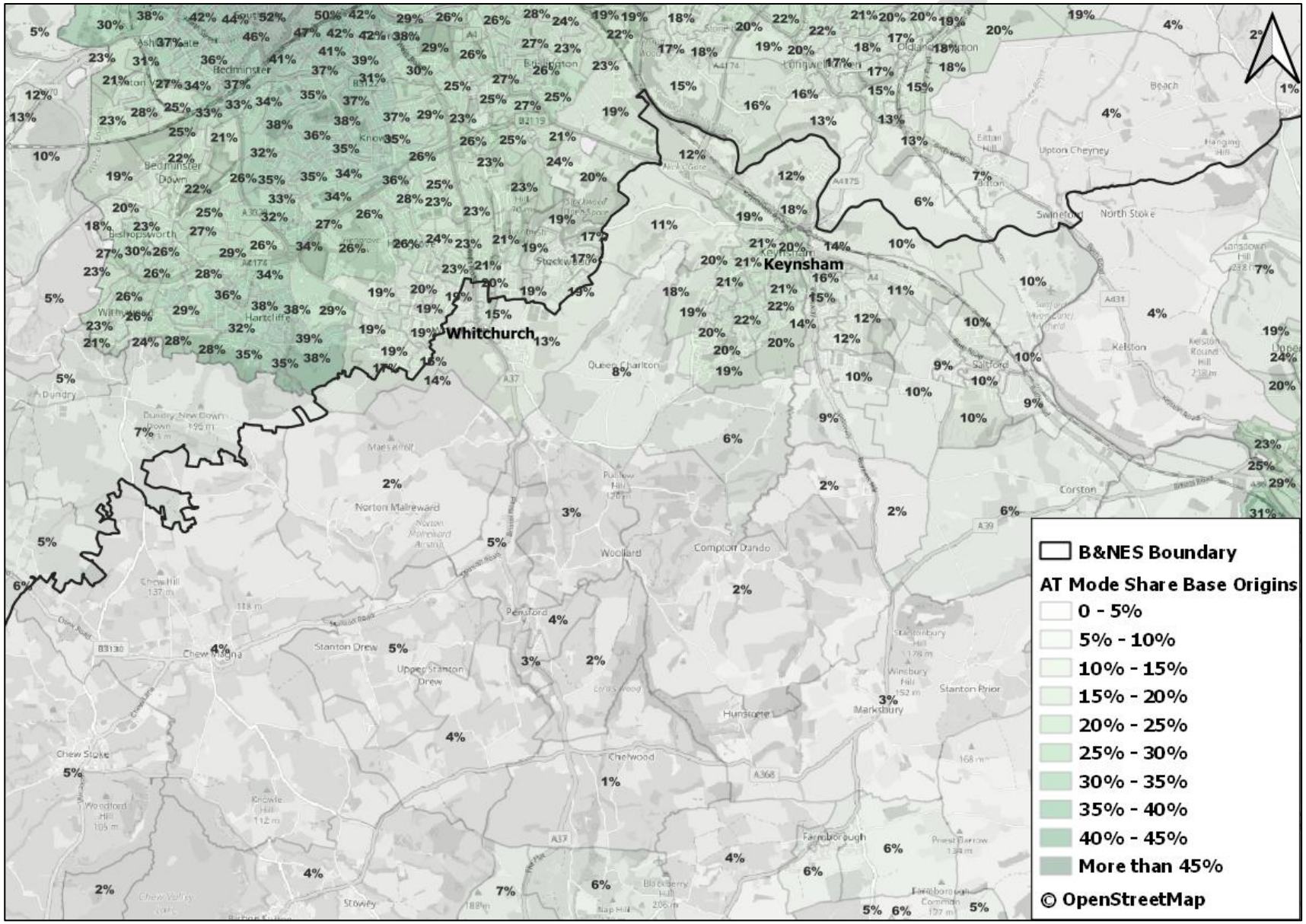
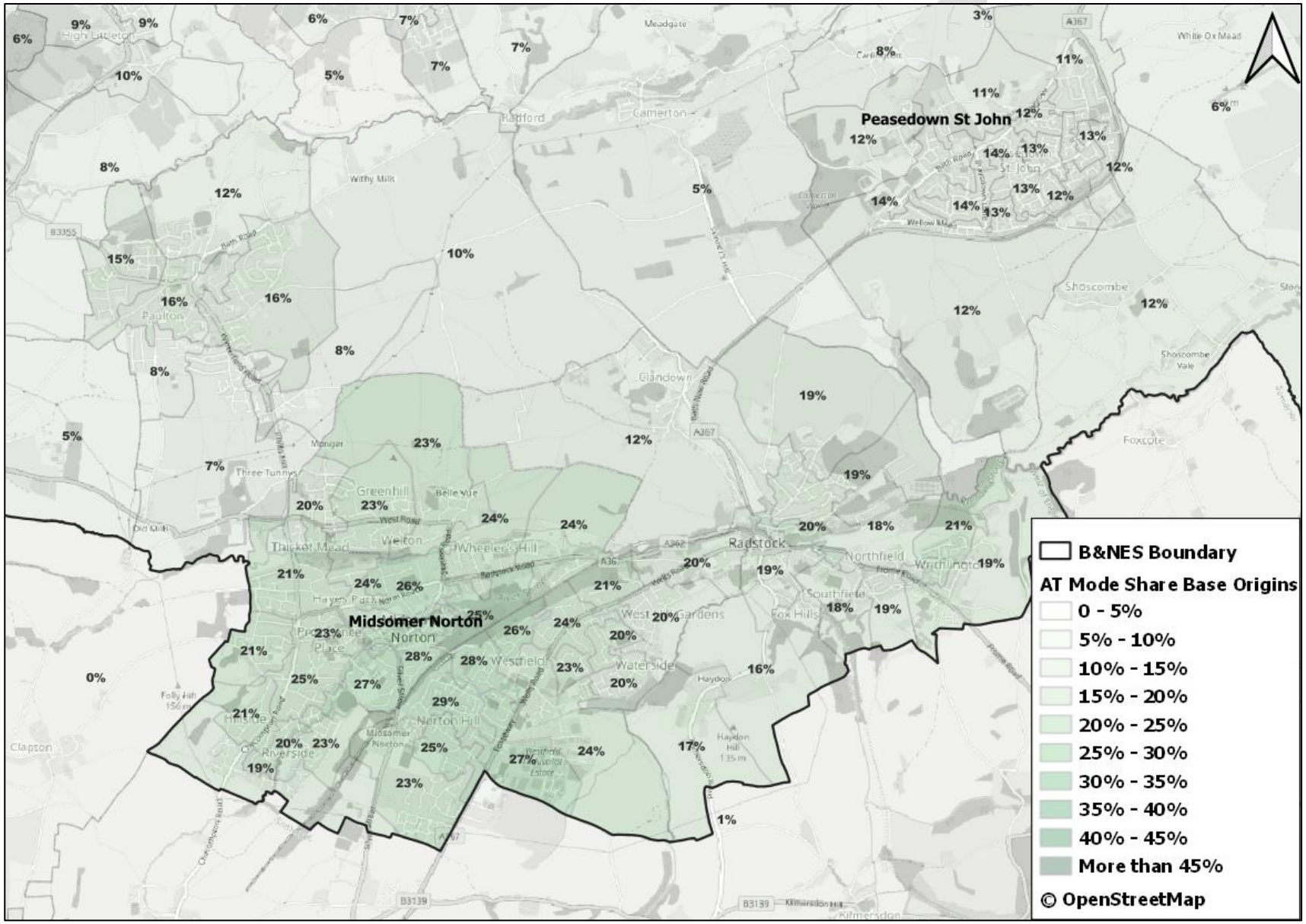


Figure 2-8 Daily active travel origin modal share, 2019 base model in Somer Valley



2.4 Public transport model checks

The calibration for public transport, mainly buses, is deemed appropriate and reliable for forecasting purposes as illustrated by the analysis in Table 2-2. This shows the level of patronage in the base 2019 model compared to observed passengers in 2024 at key bus stops. There has therefore been no need to recalibrate the base year public transport model. It is assumed that forecasting to 2042

Overview of bus, rail and active travel model

The Public Transport Assignment Model (PTAM) encompasses bus, rail, and active travel modes such as walking and cycling. It splits operations into three peak periods: AM Peak (7am-10am), Inter-peak (10am-4pm), and PM Peak (4pm-7pm). Daily active travel is included but is not calibrated against observed data. The 2019 bus usage outputs from the model align well with key B&NES stops when compared to observed figures from 2024.

It is not formally necessary for boarder numbers at individual bus stops to exactly match the observed figures for a model to be valid for forecasting; TAG recommends using judgement as the primary criterion. The following table is provided for reference only.

Table 2-2 Bus passenger boardings at key locations: 2019 base vs 2024 observed daily (7am- 7pm)

Bus stop location	2019 Base model	2024 Observed Average (Max)	Is base considered OK?
Hayesfield Park	222	62 (154)	✓
Bear Flat	224	217 (260-290 school term)	✓
Devonshire Buildings	111	65 (112)	✓
The Beeches	108	141	✓
Odd Down P&R (1,230 parking spaces)	1340	1,050 weekday in 2025/2026 1,300 (Apr/May 2025) 2,500+ (Christmas 2025)	✓
Rogers Close Clutton	<5	15	✓
Main Street Farrington Gurney	17	9	✓
Town Hall Midsomer Norton	205	269	✓
Ham Lane Paulton	<5	21	✓
Keel's Hill Peasedown St John	130	120	✓
Red Post Peasedown St John	55	104	✓
Pensford Bridge	36	41	✓
Victoria Hall Radstock	464	395	✓
Smallcombe Road Radstock	20	44	✓
Paulwood Road Temple Cloud	52	43	✓

DRAFT

2.5 Highway traffic flow and journey time checks

2.5.1 Highway model updates

Minor amendments were made to improve routings along narrow country lanes to better reflect real-world conditions. These have also been updated in the forecast model to provide a suitable comparison. A network coding review and update was undertaken to ensure that the model network accurately reflected both current and future network conditions and could suitably represent future-year impacts. This review used online mapping, using such attributes as: Junction type, speeds, lanes, turn allocations; link lengths; distances and turns.

2.5.2 Acceptability guidance

The highway assignment model was developed in line with Transport Analysis Guidance (TAG)[4]. The guidance provides requirements for model acceptability; a summary is outlined in Table 2-3.

Table 2-3 DfT Traffic assignment calibration and validation criteria

Metric	Criterion	Acceptability Guidelines
Traffic Flows	Individual modelled links <15% of observed data. “Near” <20%*	85% of cases
Journey time routes	Modelled times <15% of observed (or 1 minute) “Near” <20%*	85% of routes

2.5.3 Traffic flow calibration

Table 2-4 below provides an overview of the proportion of the 245 (two-way) post-COVID traffic flow counts, checked within B&NES, that are considered “acceptable” or “near acceptable”. This shows that the model calibration is well within acceptability guidelines. The small number of traffic volumetric sites that are not within the TAG criteria are very close and considered suitable for forecasting the impacts of the Local Plan. This is shown by location in Figure 2-9.

Only a small number of links (8%) do not meet the observed criteria , note this does not mean the model doesn’t represent vehicle volumes just that it is outside recommended levels.

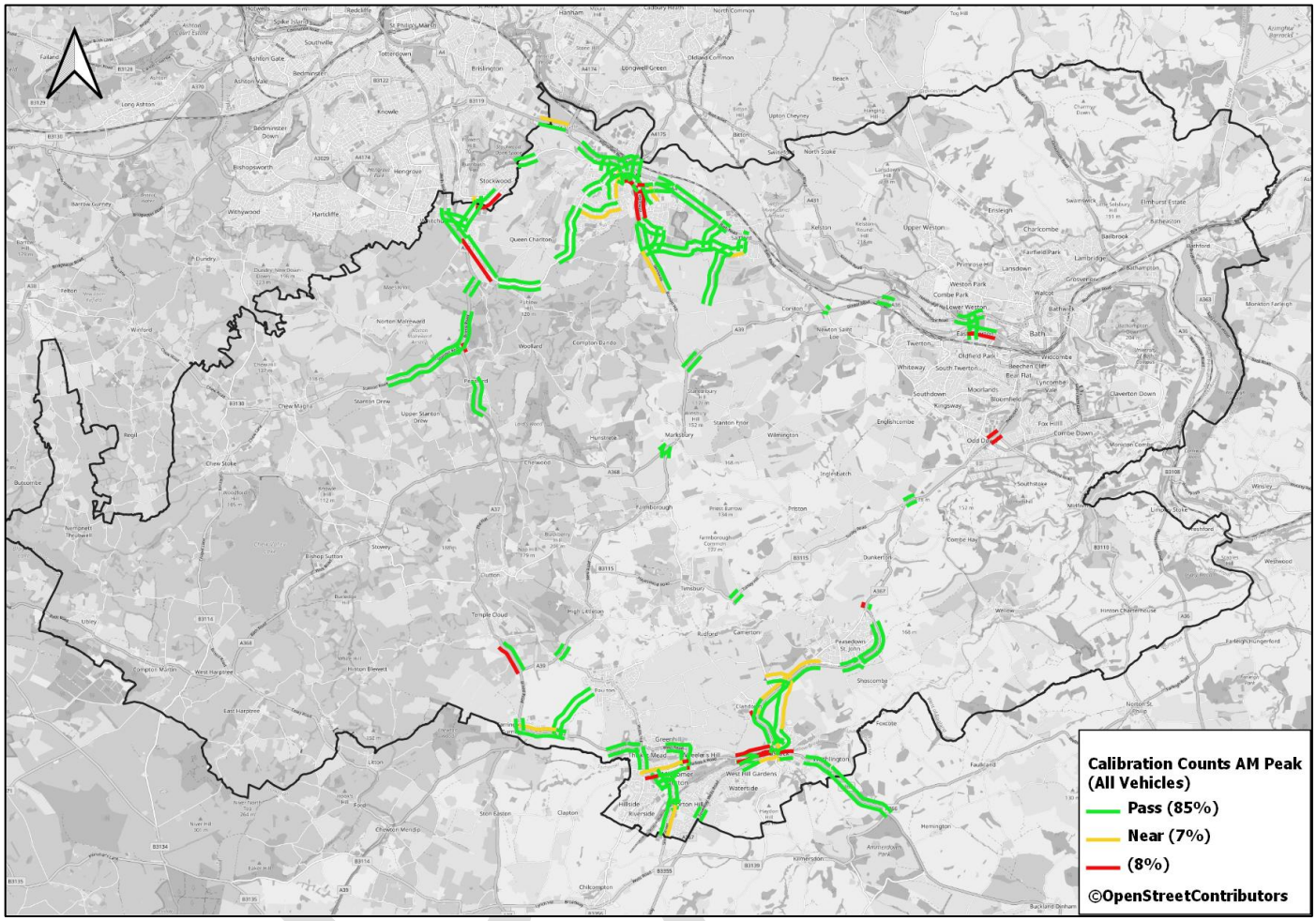
Table 2-4 Proportion of (245) traffic flow links within B&NES considered acceptable using TAG

		% acceptable	% near
AM Peak	All Vehicles	85%	92%
	Cars	88%	93%
Inter Peak	All Vehicles	88%	94%
	Cars	90%	95%
PM Peak	All Vehicles	85%	92%
	Cars	87%	93%

[4] TAG-m3-1-highway-assignment-modelling.pdf

DRAFT

Figure 2-9 Post COVID data (2022) vs Base Model Traffic Link Flow checks within B&NES



2.5.4 Journey time validation

Figure **2-10** below provides an overview of the routes that were used to check that the model replicates real-world traffic conditions, including congestion. Table **2-5** outlines the results of this validation in ensuring that the modelling reflects current (2024/2025) observed congested travel time conditions for key routes within B&NES.

Figure 2-10 Journey time validation routes (WERTM update)

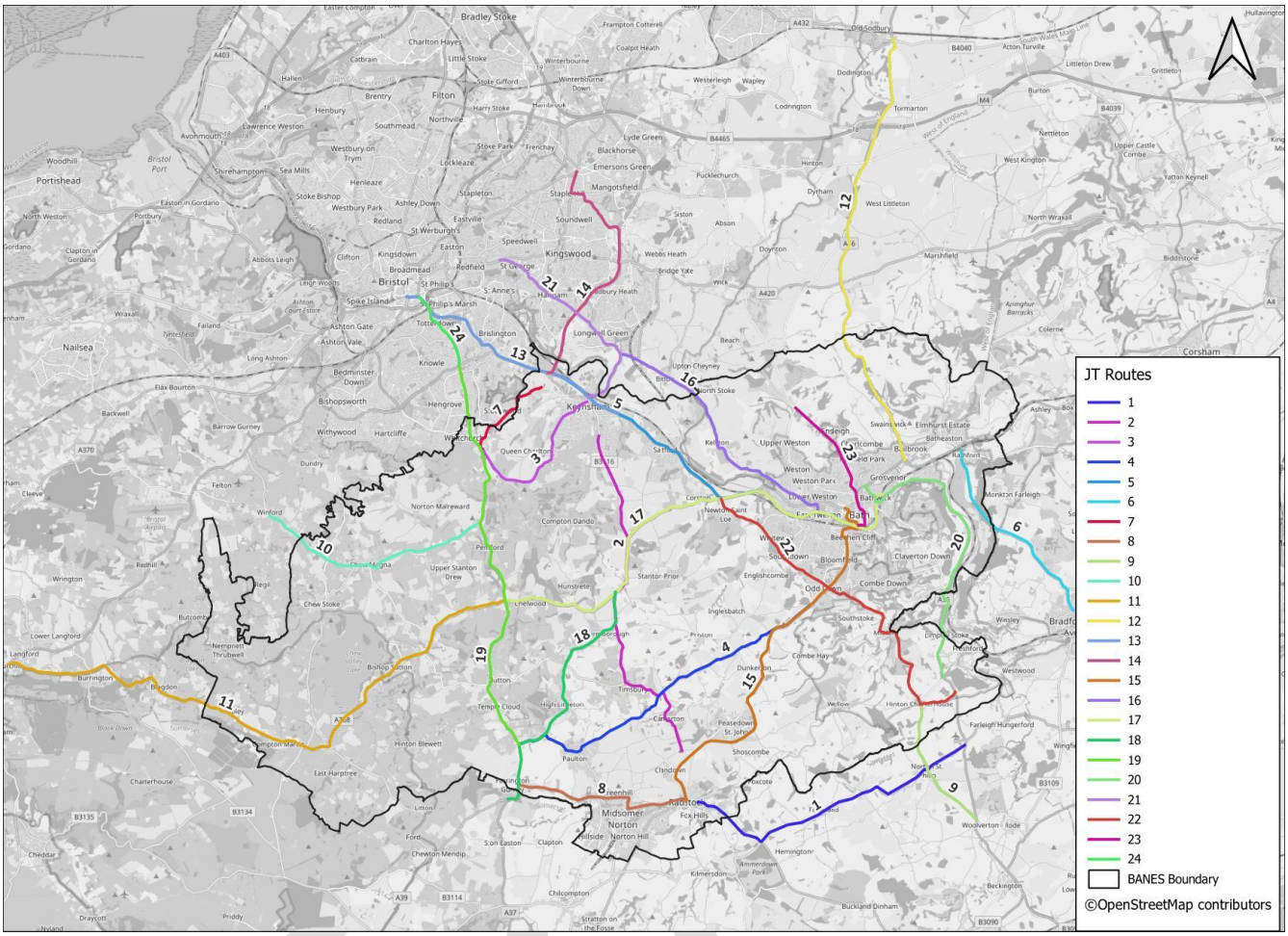


Table 2-5 Journey Time checks (base model vs observed online mapping)

ID	Direction	Journey time route	Dist (km)	Base model			Observed (range)		
				AM	IP	PM	AM	IP	PM
1	Eastbound	Radstock to A36 (via Norton St Phillip)	11	16	16	20	14-20	14-16	14-18
	Westbound	A36 (via Norton St Phillip) to Radstock		15	16	19	12-18	12-16	14-18
2	Northbound	Clandown to Pensford	13	19	17	18	18-24	16-22	18-22
	Southbound	Pensford to Clandown		17	17	20	18-24	16-22	18-26
3	Eastbound	Bristol Barbarians RFC to Keynsham High Street	6	7	7	7	8-12	7-10	8-12
	Westbound	Keynsham High Street to Bristol Barbarians RFC		7	7	7	8-12	8-10	8-12
4	Eastbound	White Cross to Combe Hay	12	17	16	16	16-26	16-22	18-22
	Westbound	Combe Hay to White Cross		15	14	16	16-22	16-20	18-22
5	EastBound	Hick's Gate Roundabout to Bath Spa Sports Ground	9	11	10	10	12-22	10-16	10-18
	Westbound	Bath Spa Sports Ground to Hick's Gate Roundabout		12	10	13	10-20	10-18	10-20
6	Northbound	B3108 North of Bradford upon Avon to Avonvale RFC	7	6	6	6	7-10	7-9	7-9
	Southbound	Avonvale RFC to B3108 North of Bradford upon Avon		7	6	9	7-10	7-8	7-9
7	Northbound	Bristol Barbarians RFC to Stockwood lane	4	7	7	7	6-8	7-7	6-8
	Southbound	Stockwood lane to Bristol Barbarians RFC		7	7	7	6-8	6-7	6-8

ID	Direction	Journey time route	Dist (km)	Base model			Observed (range)		
				AM	IP	PM	AM	IP	PM
8	Eastbound	Farrington Gurney to Radstock	7	13	11	12	10-18	9-14	10-16
	Westbound	Radstock to Farrington Gurney		15	13	14	10-16	9-14	10-14
9	Northbound	Woolverton to Hinton Charterhouse	5	4	5	7	6-8	7-7	6-8
	Southbound	Hinton Charterhouse to Woolverton		7	5	8	6-8	7-7	7-9
10	Eastbound	Winford to A37 (via Belluton)	9	10	9	9	10-16	12-16	12-16
	Westbound	A37 to Winford (via Belluton)		9	9	9	10-16	12-14	12-14
11	Eastbound	A368/B3134 to A368/A37	22	27	26	26	26-30	26-30	26-30
	Westbound	A368/A37 to A368/B3134		27	26	27	26-30	26-30	26-30
12	Northbound	A46 to A46T	16	17	17	18	16-18	14-22	18-28
	Southbound	A46T to A46		21	16	19	16-30	14-20	16-26
13	Eastbound	A4044/A38 to A4/B3116	9	21	19	31	14-35	14-35	16-40
	Westbound	A4/B3116 to A4044/A38		25	20	23	16-45	14-35	16-40
14	Northbound	A4/A4174 to A432/A4017 Mangotsfield	9	15	14	17	12-24	12-22	12-22
	Southbound	A432/A4017 Mangotsfield to A4/A4174		17	15	18	14-26	12-24	14-28
15	Northbound	A367 Radstock to A367/A4 Bath	15	25	22	23	22-45	18-28	20-28
	Southbound	A367/A4 Bath to A367 Radstock		26	23	31	20-35	20-30	22-40
16	Eastbound	A431/A4175 to A43604 East Twerton	10	20	15	17	14-26	14-20	14-20
	Westbound	A43604 East Twerton to A431/A4175		15	14	17	14-22	12-20	14-22
17	Eastbound	A368/A39 to A36 Bathwick	18	37	30	30	26-50	24-40	24-40
	Westbound	A36 Bathwick to A368/A39		27	26	32	26-40	26-45	26-45
18	Northbound	A37/A39 to A39/A368	10	16	15	15	12-20	12-18	12-20
	Southbound	A39/A368 to A37/A39		17	16	16	12-20	12-18	12-20
19	Northbound	A37 White Cross to A37/ A4174	14	23	20	22	18-35	18-28	18-30
	Southbound	A37/ A4174 to A37 White Cross		22	20	23	20-35	18-30	20-35
20	Northbound	A36/B3108 to A4/A36	11	16	15	15	14-26	12-18	14-20
	Southbound	A4/A36 to A36/B3108		20	18	23	12-20	12-18	12-18
21	Eastbound	A431/A420 to Keynsham	8	16	21	18	14-26	12-24	14-24
	Westbound	Keynsham to A431/A420		17	17	16	14-26	12-22	14-26
22	Northbound	Newton St Loe - Hinton Charterhouse (via Odd Down)	13	19	17	20	20-28	18-24	20-28
	Southbound	Hinton Charterhouse to Newton St Loe (via Odd Down)		19	17	20	20-28	18-26	20-28
23	Northbound	Lansdown Road to Broad Quay	5	15	14	14	12-18	12-20	12-20
	Southbound	Broad Quay to Lansdown Road		16	15	16	12-24	12-18	12-18
24	Northbound	A4174 Wells Road to Temple Way	3	9	8	9	7-20	6-14	6-16
	Southbound	Temple Way to A4174 Wells Road		9	9	13	10-24	10-26	12-30

DRAFT

2.6 TomTom Data

The WERTM 2019 base model provides a validated representation of pre-COVID travel demand and network conditions. COVID-19 subsequently changed the purpose and timing of travel, particularly through increased home and hybrid working. Nationally, commuting trips per person remained 21% below 2019 levels in 2024. However, this has not resulted in a sustained reduction in overall road traffic. By 2025, total motor traffic in Great Britain was 1.2% above 2019, including a 10.0% increase in light goods vehicle traffic.

This is demonstrated using locally specific TomTom congestion data[5] which provide evidence of how operating conditions have changed across approximately 630 km of the B&NES road network. The local evidence indicates that typical network speeds were lower in spring 2026 than in spring 2019 The TomTom data measure speeds and travel times, not traffic volumes, and therefore cannot identify the contribution of each factor but suggests traffic in B&NES is following national patterns of recovery, i.e. marginally above 2019 levels.

Table 2-6 TomTom Data used to compare speeds in Apr-June 2019 and Apr-June 2026

Period	observed 2019 average speed	observed 2026 average speed	change	Change in travel time per km
AM peak	33.2 km/h	30.6 km/h	-7.8%	+8.4%
Off-peak	36.4 km/h	33.9 km/h	-6.8%	+7.3%
PM peak	34.5 km/h	32.6 km/h	-5.4%	+5.8%

Therefore the 2019 WERTM base year remains an appropriate and auditable foundation for forecasting to 2042. It provides a validated representation of pre-COVID travel demand and network conditions, avoiding the exceptional and rapidly changing conditions experienced during and immediately after the pandemic. Its continuing suitability has been confirmed through targeted comparisons with post-COVID traffic counts, bus patronage and observed journey times across B&NES. These checks show that the model continues to provide a reasonable representation of current traffic volumes and network performance.

Whilst COVID-19 changed the purpose and timing of some journeys, particularly through increased home and hybrid working, but overall road traffic has recovered to broadly pre-pandemic levels. These changes do not invalidate the base model because post-2019 development, demand growth and behavioural change are represented through the forecasting process rather than by assuming that 2019 conditions remain unchanged. This approach is consistent with DfT's National Road Traffic Projections, which incorporate post-COVID behavioural evidence and forecast traffic and congestion to increase under all scenarios.

The available evidence therefore supports continued use of the 2019 base model, alongside up-to-date planning assumptions and proportionate sensitivity testing of uncertainty in future travel behaviour.

[5] BANES 2026 congestion & BANES 2019 congestion

DRAFT

3. 2042 Model input assumptions

The West of England Regional Transport Model (WERTM) has been used to forecast future travel demand and transport conditions. Transport forecasts have been generated for 2042, based on various input assumptions, from multiple sources, regarding travel demand (such as population, households, employment and trip making) and travel infrastructure supply and cost parameters. Where only "reasonably foreseeable" localised forecasts (such as parking charges etc.) are available, these assumptions have been agreed with the West of England Mayoral Combined Authority and B&NES Council as a suitable representation of the future.

3.1 Modelled scenarios

In order to determine suitable and robust future scenarios, a series of assumptions for travel **demand** (see section 3.2), transport infrastructure **supply** (see section 3.4) and global **cost** parameters (see section 3.5) have been made from credible sources. These have been used to generate **four** 2042 forecast transport model scenarios, demonstrating the evidence for the soundness of the local plan submission. These explained in Table 3-1 and include two 2042 B&NES Local Plan scenarios, which assume the Reference Case plus planned development:

1. 2042 Reference Case (RC) + continuation of existing parking policy
2. 2042 Reference Case (RC) + demand management
3. B&NES Local Plan + No transport mitigation + demand management (LP NM)
4. B&NES Local Plan + With transport mitigation package + demand management (LP WM)

Table 3-1 Transport Forecast Scenarios

Metric	**2019 Base**	**2042 Reference Case (RC) (See Chapter 4)**	**2042 All Local Plans, no transport mitigation (NM) (See Chapter 4)**	**2042 All Local Plans, with transport mitigation (WM) (See Chapter 6)**
Households and Jobs (see 3.2)	Base	Neighbouring Authority Local Plans Excludes B&NES LP	All Local Plans, including B&NES	All Local Plans, including B&NES
Total Person Trip **Demand** (3.3)		Based on household and jobs forecasts		
Transport Infrastructure **Supply** (see 3.4)	Base	Committed schemes	Committed + essential site access	Committed + Transport Mitigation (Chapter 5)
Global Parameter **Costs** (see 3.5)	Base	National (TAG Databook[6]) & Local	National (TAG Databook[7]) & Local	National (TAG Databook[8]) & Local
Parking Policy (see 3.6)	Base	no parking policy / with management	With management	With Management

[6] TAG data book - GOV.UK
[7] TAG data book - GOV.UK
[8] TAG data book - GOV.UK

DRAFT

3.2 Overview of how central government data is used to forecast trips using housing and jobs assumptions

3.2.1 Derivation of total jobs forecast (attraction proxy)

Projections of households, jobs and trips are based on central government estimates from the DfT National Trip End Model (NTEM)[9], released 2022, which follow long-term trends in trip rates and demographics. By 2042, job growth is expected to lag household growth due to an aging population. Job estimates, used as proxies for trip attraction in transport modelling, align with DfT NTEM forecasts for future jobs-to-household ratios, even if they differ from Local Plan assumptions—maintaining regional consistency.

The jobs/households ratio is set to decline in future as the relative proportions of working age population reduce. In B&NES, NTEM forecasts ~1.2 jobs per household in 2042, close to the West of England average, although there are small differences between model and NTEM figures. Jobs represent trip attractors including shopping and education. Trip forecasts use adjusted NTEM assumptions, and projected job numbers based on regional NTEM jobs/household ratios. The implications for forecasts of households and jobs are discussed in Section 3.3.3 below.

3.2.2 Overview of Reference Case assumptions

The 2042 Reference Case (RC) assumes:

- Delivered, committed and windfall housing and jobs for the whole of the West of England. In B&NES, this is forecast to be equivalent to ~8,000 households.
- All planned housing and jobs in neighbouring authorities:
  - Bristol, South Gloucestershire and North Somerset using latest Local Plan growth[10] Housing and jobs requirements as part of each local authority.
  - Growth in Wiltshire and Somerset as planned growth from **core** NTEM. The Wiltshire Local Plan has been recently withdrawn by Wiltshire Council and work will recommence on a new Plan in 2026. Somerset Council is still in the early stages of developing its Local Plan and forecast numbers have not yet been confirmed.
  - Strategic Road Network (SRN) and freight traffic growth utilises national road traffic projections[11]

The approach is considered a conservative reference case, because it includes high trip growth for the whole surrounding region. A map of the development sites is found in Figure **3-1** on Page 35.

3.2.3 Forecast households and jobs

The Local Plan for B&NES aims to provide about 16,000 new homes and 5 hectares of employment land. The parameters from the Local Plan have been used to generate forecasts of future households and jobs to inform transport modelling.

[9] National trip end model
[10] National planning policy framework
[11] National road traffic projections

DRAFT

The starting point has been used to generate future households. It has been assumed that dwellings and households are treated as identical: one dwelling is equivalent to one household. While there are small differences due to (mainly temporary) vacant occupancy, data shows that these differences are very small, and this equivalence is justified.

Table 3-2 presents the forecast numbers of households in the West of England, for the 2019 base year and 2042 growth scenarios. The 2042 NTEM column shows the numbers of households forecast in NTEM. The 2042 RC column shows the forecasts in households based on committed growth in B&NES (~8,000 additional homes) and assumptions in the Local Plans for Bristol, South Gloucestershire and North Somerset. The 2042 LP column includes the additional 16,000 new homes proposed in the B&NES Local Plan.

Table 3-2 Household (000s) forecast assumptions

	2019	***2042 NTEM***	**2042 RC**	**2042 LP**	**2042 RC vs 2019**	**2042 LP vs 2019**
Bristol	195	*223*	229	229	17%	17%
South Gloucestershire	118	*144*	159	159	35%	35%
B&NES	80	*94*	88	105	10%	30%
North Somerset	94	*111*	124	124	32%	32%
West of England	**487**	***571***	**600**	**617**	**23%**	**27%**

In the case of Bristol, South Gloucestershire, and North Somerset, the numbers of households in the 2042 RC case are higher than NTEM, because the Local Plans respond to high housing needs in these areas, which are not reflected in NTEM. Overall, this means that there would be a total of 600,000 households in the West of England in the Reference Case, which is much higher than the corresponding NTEM forecast (571,000).

In B&NES, the number of households in the Reference Case is lower than the NTEM forecasts, because the Reference Case only includes committed housing development, and there is a clear gap in current housing supply against future need. The new Local Plan includes the provision of 16,000 new homes to meet NPPF requirements, which will result in total future households (111,000) far exceeding NTEM forecasts (94,000). The overall total for the West of England would increase to 617,000 households, almost 10% higher than the NTEM forecast.

Taking the Local Plan assumptions, the Reference Case forecasts a 23% increase in households across the West of England in the Reference Case (excluding the B&NES Local Plan), and a 27% increase including the B&NES Local Plan. In B&NES itself, the number of households in the district would increase by 30% from the 2019 base. The number of households would increase by 16,000 from the Reference Case without the Local Plan.

It is then necessary to forecast the numbers of jobs in the West of England region. This needs to take account of both the parameters in NTEM and recent evidence on the economic prospects and potential for job creation across the region. NTEM plays an important role in ensuring appropriate balancing of households and jobs – and hence strategic patterns of trip-making – across the region. However, it has already been shown that the numbers of households in the Local Plan will differ from NTEM forecasts (see Table 3-2 above), so this process should be carefully managed.

The jobs per household ratio is an important metric used to translate forecast increases in households into future jobs. It is important because it takes into account demographic changes over the next 20 years, including an ageing population, which means that there will be proportionately fewer people working. Table 3-3 shows the jobs per household ratios under different scenarios.

DRAFT

The first two columns show the ratios for the 2019 base year: the 2019 base year model vs the 2019 NTEM data. It then shows the forecasts for the 2042 Reference Case model (excluding the B&NES Local Plan), 2042 with Local Plan, and 2042 NTEM forecasts.

Table 3-3 Jobs per Household ratio (Model vs NTEM)

	2019 Base model	***2019 NTEM***	**2042 RC model**	**2042 All LPs model**	***2042 NTEM***
Bristol	1.5	*1.4*	1.4	1.4	*1.3*
South Gloucestershire	1.4	*1.4*	1.2	1.2	*1.2*
B&NES	1.3	*1.3*	1.2	1.2	*1.2*
North Somerset	1.0	*1.0*	0.9	0.9	*0.9*
West of England	**1.4**	***1.3***	**1.2**	**1.2**	***1.2***

In the case of Bristol, the ratio in the 2019 base year model is slightly higher than NTEM. This is because the model was calibrated using local survey data and bespoke assumptions that reflect the unique characteristics of employment in Bristol. The Bristol economy has been very fast-growing during the past decade, which is not fully reflected in the NTEM data. This is also reflected in the forecasts, with a jobs to household ratio for the city that exceeds NTEM.

It can be seen that the ratio will reduce in all areas from 2019 to 2042, reflecting the effects of the ageing population and relative decline in the working age population available to work. In the case of B&NES, the ratio will reduce from 1.3 to 1.2, with the modelling assumptions matching NTEM. The same ratio is assumed to apply in the Reference Case and with the Local Plan. This means that the increase in the number of households with the Local Plan would be accompanied by a proportionate increase in the numbers of jobs.

Table 3-4 shows the resulting forecasts of numbers of jobs under these different scenarios. These are calculated by multiplying the numbers of households in Table 3-2 by the ratios in Table 3-3.

Table 3-4 Jobs (000s) forecast assumptions

	2019	***2042 NTEM***	**2042 RC**	**2042 All LPs**	**RC vs 2019**	**LP vs 2019**
Bristol	299	*296*	322	322	8%	8%
South Gloucestershire	162	*177*	192	192	19%	19%
B&NES	*104*	*114*	*109*	*128*	*5%*	*23%*
North Somerset	97	*105*	111	111	14%	14%
West of England	**662**	***692***	**734**	**753**	**11%**	**14%**

In the case of Bristol, the number of jobs in 2019 is already close to the 2042 NTEM forecast. The modelled forecasts in employment in Bristol (rising to 322,000 in 2042) are substantially higher than NTEM (296,000 jobs). This is caused by the higher number of households in the Local Plan and the higher jobs per households ratio. Similar issues are also seen in South Gloucestershire and North Somerset, driven by the higher numbers of planned households in their Local Plans. Overall, the forecast total number of jobs in the West of England would increase to 734,000 under the Reference Case, significantly higher than the 692,000 forecast under NTEM.

DRAFT

In the case of B&NES, the forecast number of jobs in the Reference Case (109,000) is slightly lower than NTEM (114,000), but significantly higher with the Local Plan (128,000). Again, this is caused by the very large increase in the number of households shown in Table 3-2. The total number of jobs in the West of England with the Local Plan would rise to 753,000, 10% higher than the NTEM forecast.

Taking the Local Plan assumptions, the Reference Case forecasts a 11% increase in households across the West of England in the Reference Case (excluding the B&NES Local Plan), and a 15% increase including the B&NES Local Plan. In B&NES itself, the number of jobs in the district would increase by 30% from the 2019 base, the highest proportionate increase in all of the West of England authorities. The number of jobs would increase by 26,700 from the Reference Case without the Local Plan.

DRAFT

3.2.4 Daily person trip demand

Each authority in the West of England provided the number of committed and planned dwellings by site for housing and employment developments. These were assigned to model zones based on their locations (with dwellings assumed to be interchangeable with households in the modelling, see above).

Table 3-5 presents the overall resulting total daily trip productions in the West of England. A person trip "production" is a daily round trip starting from home, covering all purposes (work, education, shopping, etc.), but excluding freight and external-external trips. It occurs before travel mode or destination is chosen.

Table 3-5 Total Person Daily Trip Productions (000s)

	2019	***2042 NTEM***	**2042 RC**	**2042 All LPs**	**RC vs 2019**	**LP vs 2019**
Bristol	544	*580*	611	611	12%	12%
South Gloucestershire	337	*388*	425	425	26%	26%
B&NES	219	246	232	275	6%	26%
North Somerset	247	281	308	308	25%	25%
West of England	**1347**	**1492**	**1576**	**1619**	**17%**	**20%**

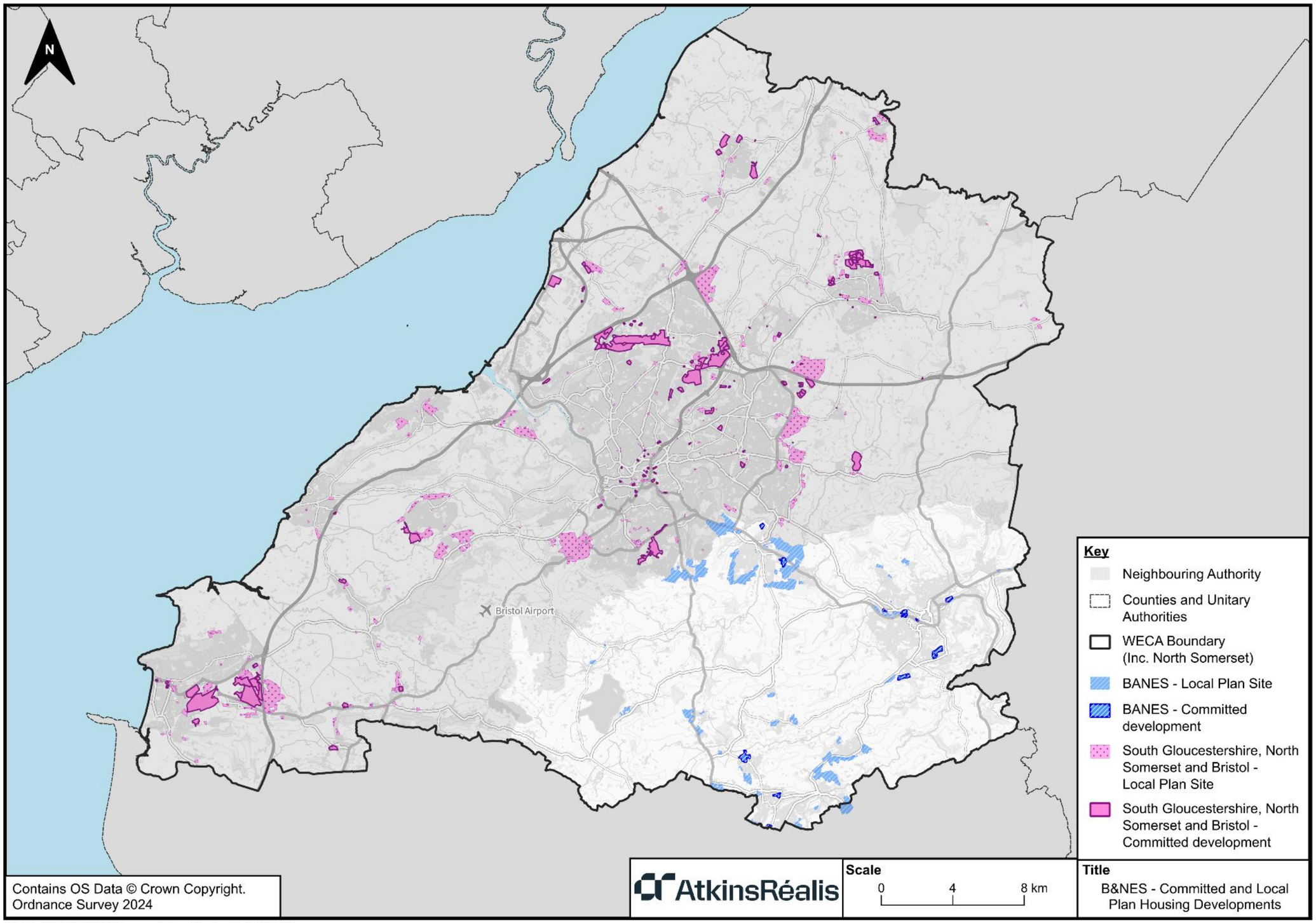
This shows that just over 1.3 million daily trip productions in the West of England were made in 2019 . These are forecast to increase by 17% in the Reference Case, and by 20% including the B&NES Local Plan. Once again, it can be seen that these forecasts are higher than NTEM. In the case of B&NES, total trip productions are forecast to rise by 26% with the Local Plan.

3.3 B&NES Local Plan development locations

Figures 3-1 to 3-5 overleaf provide more detail on development locations proposed in the Local Plan. Figure 3-1 shows locations of existing committed developments and Local Plan allocations for all four authorities, including B&NES. Figure 3-2 then provides more detail on the proposed Local Plan allocations in B&NES. Figures 3-3 to 3-5 provide more detailed mapping of these sites in Bath, the Bath-Bristol corridor, and Somer Valley respectively.

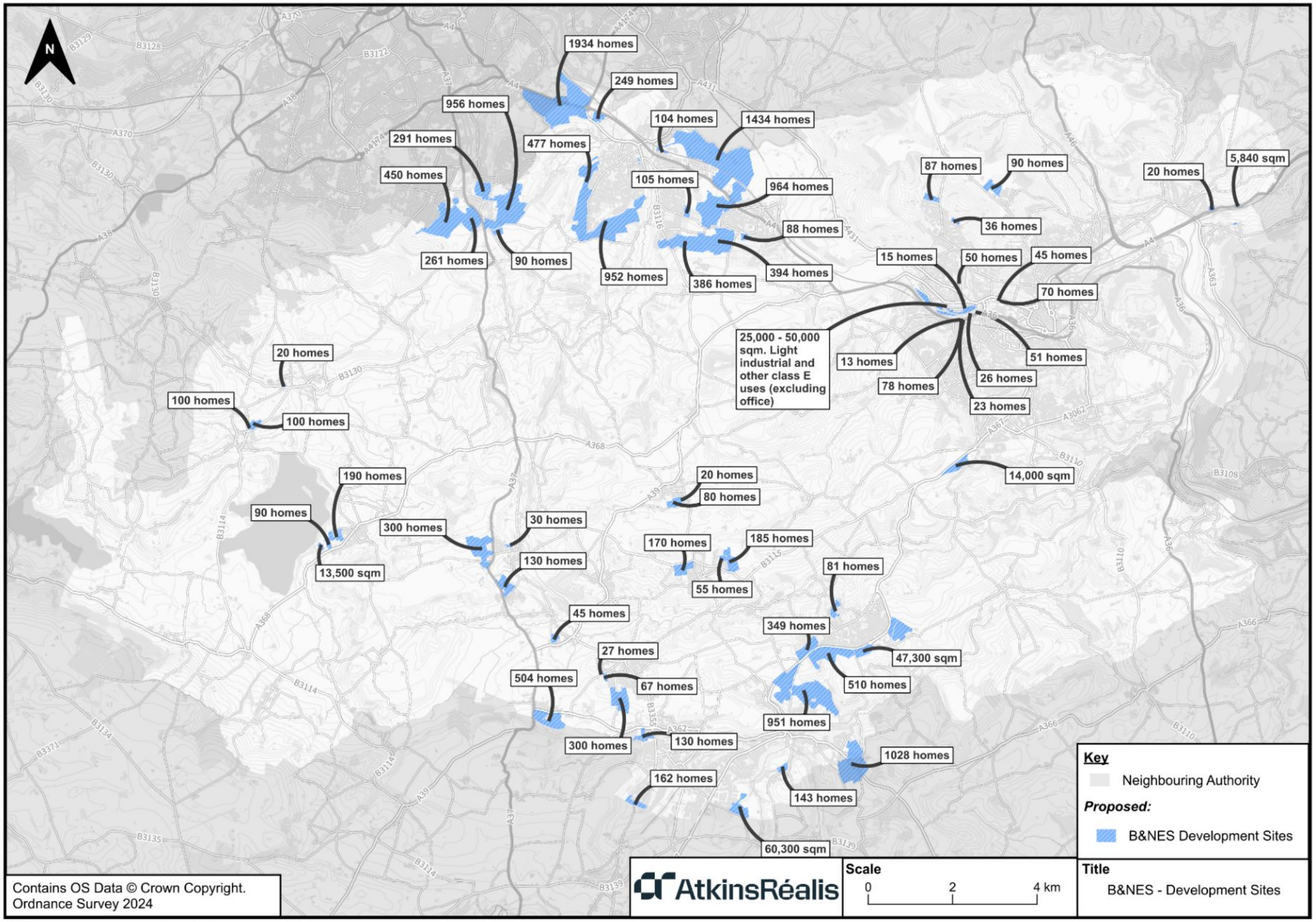
DRAFT

Figure 3-1 Locations of Committed and Local Plan development in the West of England



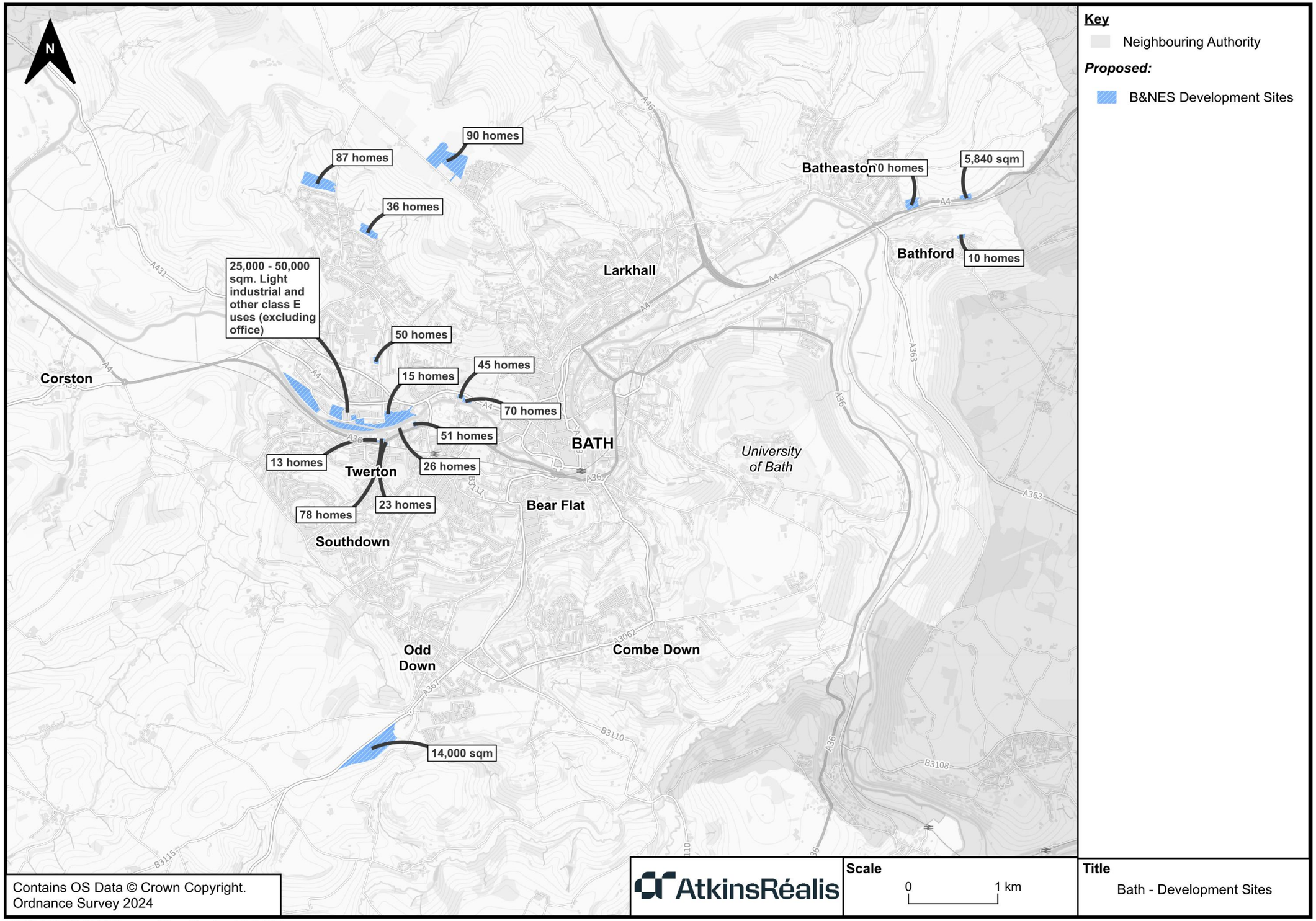
CRS: EPSG:27700 **Map Scale:** 1:180,000

Figure 3-2 Location of all planned development sites in B&NES



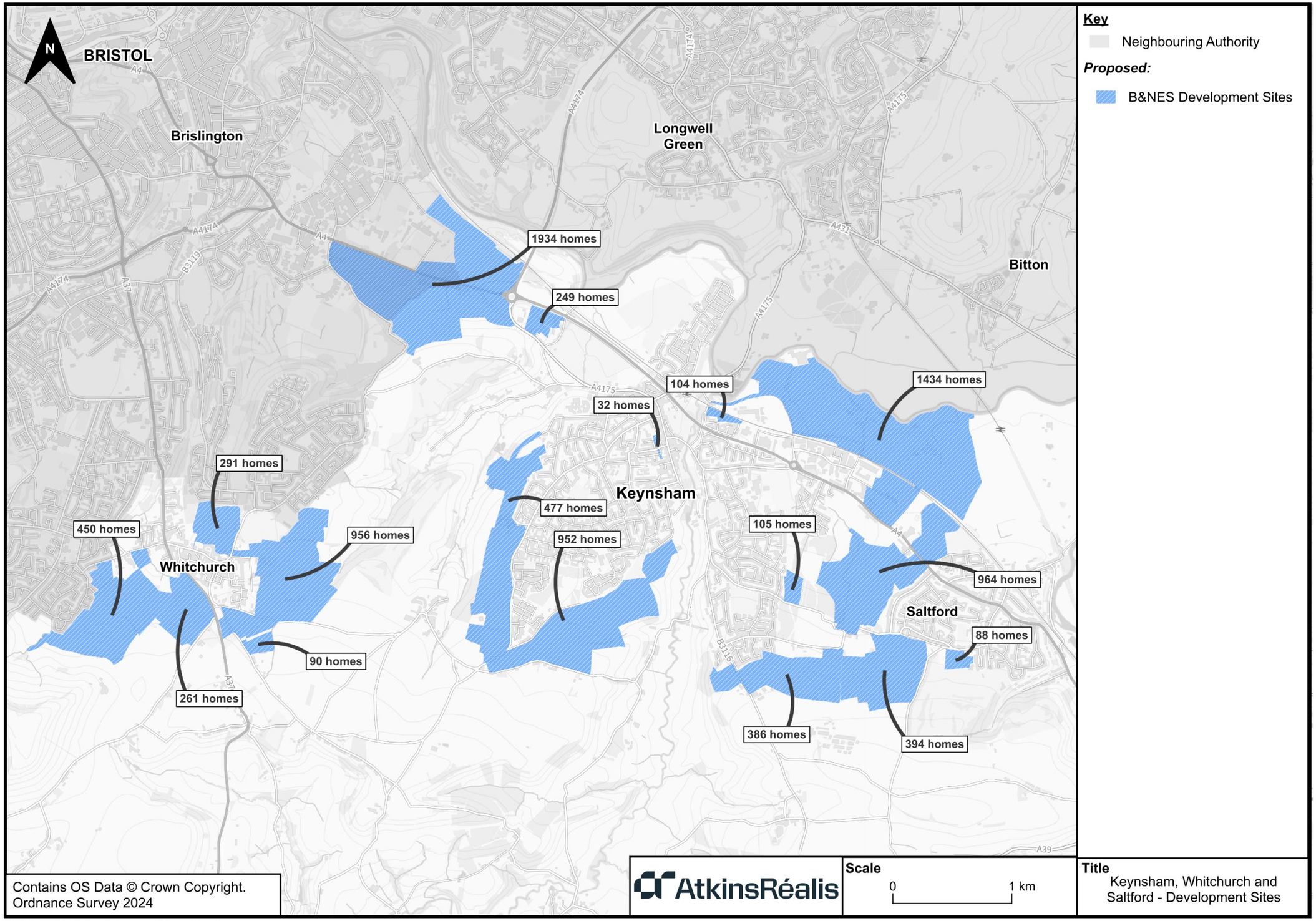
CRS: EPSG:27700 **Map Scale:** 1:76,190

Figure 3-3 Locations and quanta of planned development in Bath



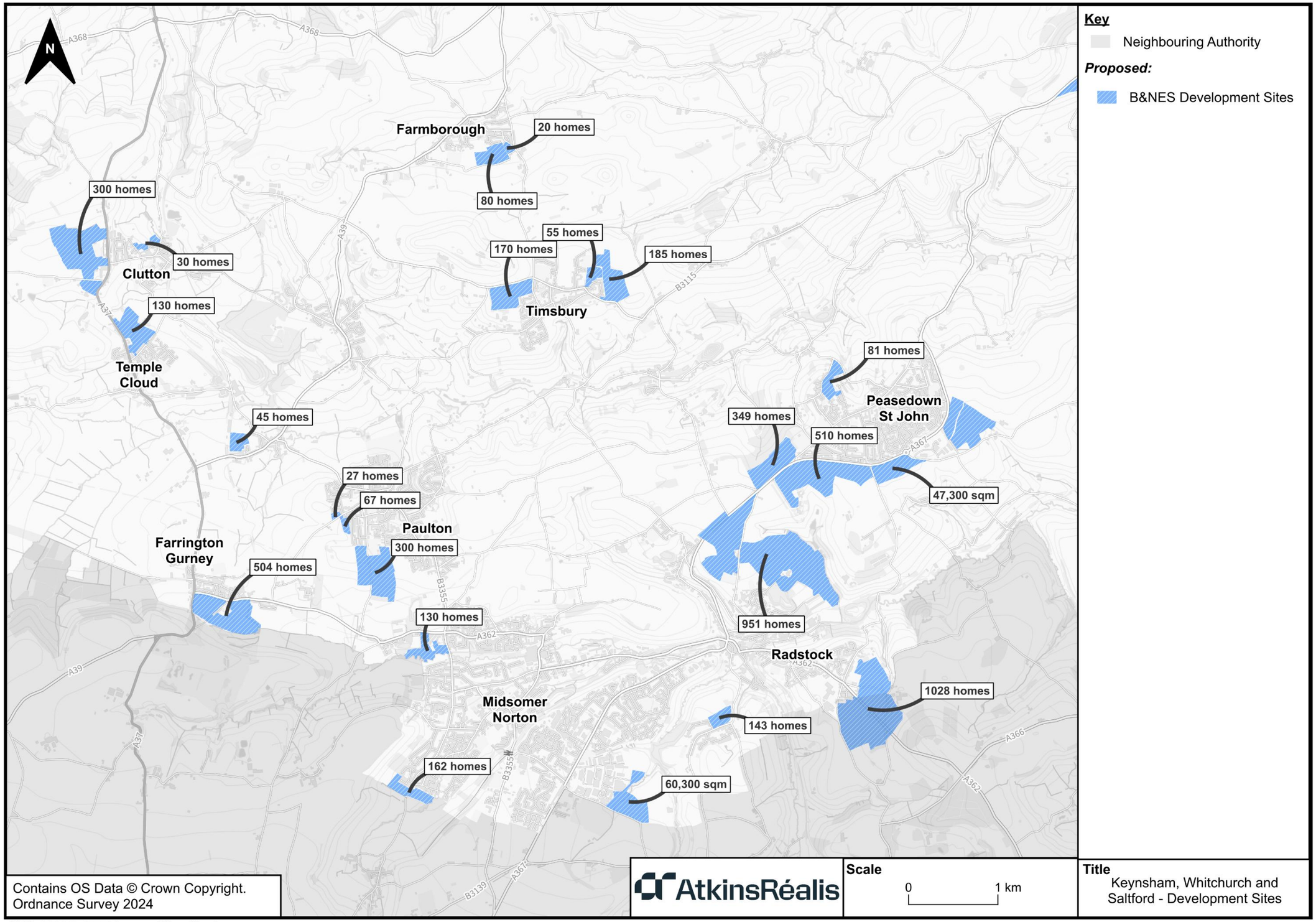
CRS: EPSG:27700 **Map Scale:** 1:36,000

Figure 3-4 Locations and quanta of development in Bristol-Bath corridor (Hicks Gate, Keynsham, Whitchurch)



CRS: EPSG:27700 **Map Scale:** 1:27,000

Figure 3-5 Locations and quanta of development in the Somer Valley



CRS: EPSG:27700 **Map Scale:** 1:36,000

The maps on the preceding pages show the locations of new housing to meet the future housing needs across B&NES. It is also necessary to consider how the future **employment** will be distributed across the district. We have assumed that there will be three components:

- Jobs located within the specific employment allocations proposed in the new Local Plan;
- Jobs that would be local to the new housing developments proposed in the new Local Plan; and
- Jobs in the existing employment clusters in B&NES, including Bath city centre, Keynsham, Midsomer Norton and Radstock.

These are discussed in turn below.

3.3.1 Locations of specific employment sites

The proposals for employment development in the Local Plan are presented in Table 3-6 below. The proposed total site areas have been converted into estimated equivalent numbers of jobs using the following process:

- Conversion of total land area into total floorspace space covered by buildings, using an assumed percentage site occupancy factor (80% of land area occupied by office space, 40% occupied by light industrial, 50% for warehousing, 60% for R&D-focused activities).
- Conversion of floorspace into numbers of jobs, using evidence from B&NES including Homes England Employment Density Guidance. We have assumed 13sqm floorspace per job for office uses, 56sqm per job for light industrial, 60sqm for R&D activities, and 70sqm for warehousing). The lower employment densities for industrial, R&D and warehousing uses reflect the lower numbers of jobs in these types of activities.
- Using these calculations, we estimate a total of 2,000 jobs in offices, 3,200 in light industrial, 500 in warehousing. **We estimate a total of approximately 5,700 jobs in these identified Local Plan employment sites.**

Table 3-6 B&NES Local Plan: specific employment estimates at key sites

Site name	Net Floorspace					convert floorspace into jobs				
	Office	Light industrial	Warehousing	R&D	Total	Office	Light industrial	Warehousing	R&D	Total
Metric	Employment space (1,000 sqm)					Jobs				
Odd Down,		14			14	-	248	-	-	248
Production Quarter		50			50	-	887	-	-	887
Box Road		5.84			5.84	-	104	-	-	104
North Keynsham	16	8			24	1,212	142	-	-	1,354
Keynsham Town centre	3.92				3.92	297	-	-	-	297
Bath Business Park (Peasedown)	6.4	50.294	15.406		72.1	485	892	193	-	1,569
Westfield Industrial Estate Extension	-	40	23.5		60.3	-	709	294	-	1,003
Westway BP (Extension)		13.5			13.5	-	239	-	-	239
Total	26.3	181.634	38.906	-	243.66	1,994	3,220	486	-	**5,701**

DRAFT

3.3.2 Localised jobs associated with new housing

It is important to understand the nature of local jobs that are directly associated with residential development. These include personal services, local schools, local healthcare facilities, local convenience retail, and local garages for repair of cars. In these cases, jobs are strongly connected with the immediate needs of local communities.

The Business Register and Employment Survey (BRES) provides annual employment data for the UK by industry and location, which provides evidence to understand the local compositions of these jobs. In 2024, BRES recorded 96,000 jobs in B&NES (see Table 3-7). Of these, approximately 48% are identified as local roles that are linked to local community needs.

On this basis, given the total forecast increase of 18,000 jobs across B&NES, and assuming that 48% would be servicing local needs, it is estimated that around 7,400 jobs would be located in the new communities or the immediate surrounds.

3.3.3 Jobs in existing employment clusters in B&NES

Existing employment centres across B&NES will continue to play a critical role in meeting the future economic needs of the district. These include Bath city centre, other employment hubs in Bath (e.g. Royal United Hospital, University of Bath), Keynsham, Midsomer Norton, Radstock and industrial estates across the district.

The number of jobs in these locations is calculated as the balance of the total from the other two sources above. The total projected number of additional jobs is 18,000, of which

- ~5,700 would be in specific employment allocations, and
- ~7,400 localised to the new housing.

This means that there would be a balance of

- ~4,900 new jobs in existing employment locations.

DRAFT

Table 3-7 BRES (2024) data for B&NES (rows in red are assumed to relate to local service jobs)

Job type / Location	Bath City Centre	Oldfield Park & Weston	South Bath	North East Bath	Rural Bath	Clutton & Pensford	Keynsham	Radstock & MSN	Chew Valley	B&NES total	
Agriculture, forestry, fishing, Mining, quarrying, Manufacturing, Electricity, gas, Water supply etc.	270	940	1825	45	510	435	460	1570	110	6165	6%
Construction	275	440	260	115	550	1050	475	450	225	3840	4%
Wholesale and retail trade; repair of motor vehicles	4450	1565	545	325	825	1350	1050	875	700	11685	12%
Transport and storage	600	105	20	30	110	240	255	260	40	1660	2%
Accommodation and food service activities	5450	1980	425	150	750	750	550	440	400	10895	11%
Information and communication, Financial and insurance, Real estate activities	5095	1790	650	195	375	655	340	250	120	9470	10%
Professional, scientific and technical activities	4750	1590	525	375	500	800	1395	650	200	10785	11%
Administrative and support service activities	850	345	215	70	275	475	525	520	800	4075	4%
Public administration, defence; social security	400	180	50	50	25	15	1780	150	10	2660	3%
Education	7000	890	1080	140	1650	450	500	1275	300	13285	14%
Human health and social work activities*	1350	11100	900	425	950	775	1000	700	125	17325	9%*
Arts, entertainment and recreation	1050	295	80	35	115	170	400	185	50	2380	2%
Other Service Activities	1125	275	110	65	85	145	145	120	35	2105	2%
Total	**32665**	**21495**	**6685**	**2020**	**6720**	**7310**	**8875**	**7445**	**3115**	**96330**	
Service jobs	18700	10260	2610	892.5	3785	3082.5	2745	3060	1498	46633	
(jobs associated with housing areas)	59%	74%	46%	55%	63%	47%	37%	46%	50%		**48%**

*Assumes half of all health jobs are local service jobs

DRAFT

3.3.4 Housing and employment in key locations

Table 3-8 draws together these analyses to present the proposed numbers of dwellings and jobs in the key locations in the Local Plan, which has directly informed the modelling of demand at these locations.

Table 3-8 Location and Quanta of B&NES Local Plan development (agglomerated sites)

Region	Major development site groups (agglomerated site clusters)	No. of House-holds	Local jobs	Specific employment (*GFA Floorspace sqm* / FTE jobs)		Total est jobs (attraction proxy)
Bath	Sites in Bath	627	301	55,840	990	1,291
	Odd Down	0	0	14,000	248	248
	Bath Sub total	**627**	**301**	**69,840**	**1,238**	**1,539**
Bristol-Bath corridor: Hicks Gate, Keynsham & Whitchurch	Hicks Gate	2,183	1,048	0	0	1,048
	North Keynsham	1,538	738	24,000	1,354	2,092
	Saltford	1,446	694			694
	Keynsham	1,952	937	3,920	297	1,234
	Whitchurch	2,048	983			983
	Bristol-Bath Sub total	**9,167**	**4,400**	**27,920**	**1,651**	**6,051**
Somer Valley / Rural	Bishop Sutton, Chew & Pensford	400	192	13,500	239	431
	Writhlington	1,028	494			494
	Chilcompton Rd & Thicket Mead	291	140	60,300	1,003	1,143
	North Radstock	951	457			457
	Paulton & Hallatrow	414	199			199
	Peasedown	939	451	72,100	1,569	2,020
	Farrington Gurney	549	264			264
	South Radstock (Haydon)	143	69			69
	Temple Cloud & Clutton	460	221			221
	Timsbury & Farmbrough	510	245			245
	Somer Valley Sub-Total	**5,686**	**2,729**	**145,900**	**2,811**	**5,541**
All LP development sites		**15,480**	**7,430**	**243,660**	**5,701**	**13,131**
Intensification of existing employment						**4,842**
All		**15,480**				**17,973**

DRAFT

3.3.5 Freight and long distance traffic forecasts

The process described above does not take into account background growth in freight traffic and through-traffic passing through the region. Growth in external-to-external car vehicle trips (i.e. mainly motorway trips passing through the model area), and freight (LGV and HGV) trips have been projected using the Department for Transport's National Road Traffic Projections (DfT NRTP) 2022[12] but revised to account for COVID. These do not vary in the demand model but are fixed within the highway model only. There is expected to be a considerable increase in freight trips within, and through, the region (due to anticipated increases in economic activity and continuing expansion of e-commerce) and long-distance trips using the motorways.

3.4 Committed transport infrastructure

The committed transport infrastructure schemes (deemed "near certain" or "more than likely") within B&NES are presented in Table 3-9 and Figure 3-6 to Figure 3-9. This includes the scheme type and the approach to modelling in WERTM. The information is available either online or, where indicated with an asterisk (*), upon request. Certain transport schemes are not included, as they either have negligible strategic impact or cannot be modelled. This applies particularly to very local schemes, such as zebra crossings or demand-responsive transport.

Table 3-9 Committed transport infrastructure in B&NES (how changes are included in WERTM)

Scheme Name	Intervention Type	Modelling Notes
Bristol to Bath Corridor	Multi-modal	Bus lane & active travel changes
Somer Valley Links	Multi-modal	bus, highway & active travel changes
Bath Quays Bridge*	Active Travel	Change in walking/cycling perception costs
Bath City Centre Security Project*	Active Travel	Change in walking/cycling perception costs
Bath River Line	Active Travel	Change in walking/cycling perception costs
Milsom Quarter Masterplan - transport proposals	Active Travel	Change in walking/cycling perception costs
Entry Hill Liveable Neighbourhood	Multi-modal	Signalised junction either side of Entry Hill Bridge Change in walking/cycling perception costs
Southlands, Weston Liveable Neighbourhood	Active Travel	Change in walking/cycling perception costs
Scholars' Way (Phase 1)*	Active Travel	Change in walking/cycling perception costs
Somer Valley Enterprise Zone - Thicket Mead*	Multi-modal	Highway capacity and active travel changes
Queen Charlton Liveable Neighbourhood*	Multi-modal	Road closed in highway model Change in walking/cycling perception costs
Sydney Place*	Multi-modal	Road closed in highway model
Farrington Gurney Mobility Hub	Mobility Hub	Mobility Hub
Midsomer Norton Mobility Hub	Mobility Hub	Mobility Hub
Radstock Mobility Hub	Mobility Hub	Mobility Hub
Peasedown St. John Mobility Hub (Keel's Hill)	Mobility Hub	Mobility Hub
Car parking price and capacity in urban area	Demand Management	Parking capacity & cost changes in demand model – see section 3.6

[12] National road traffic projections 2022 (publishing.service.gov.uk)

DRAFT

Figure 3-6 Locations of committed active transport infrastructure in B&NES

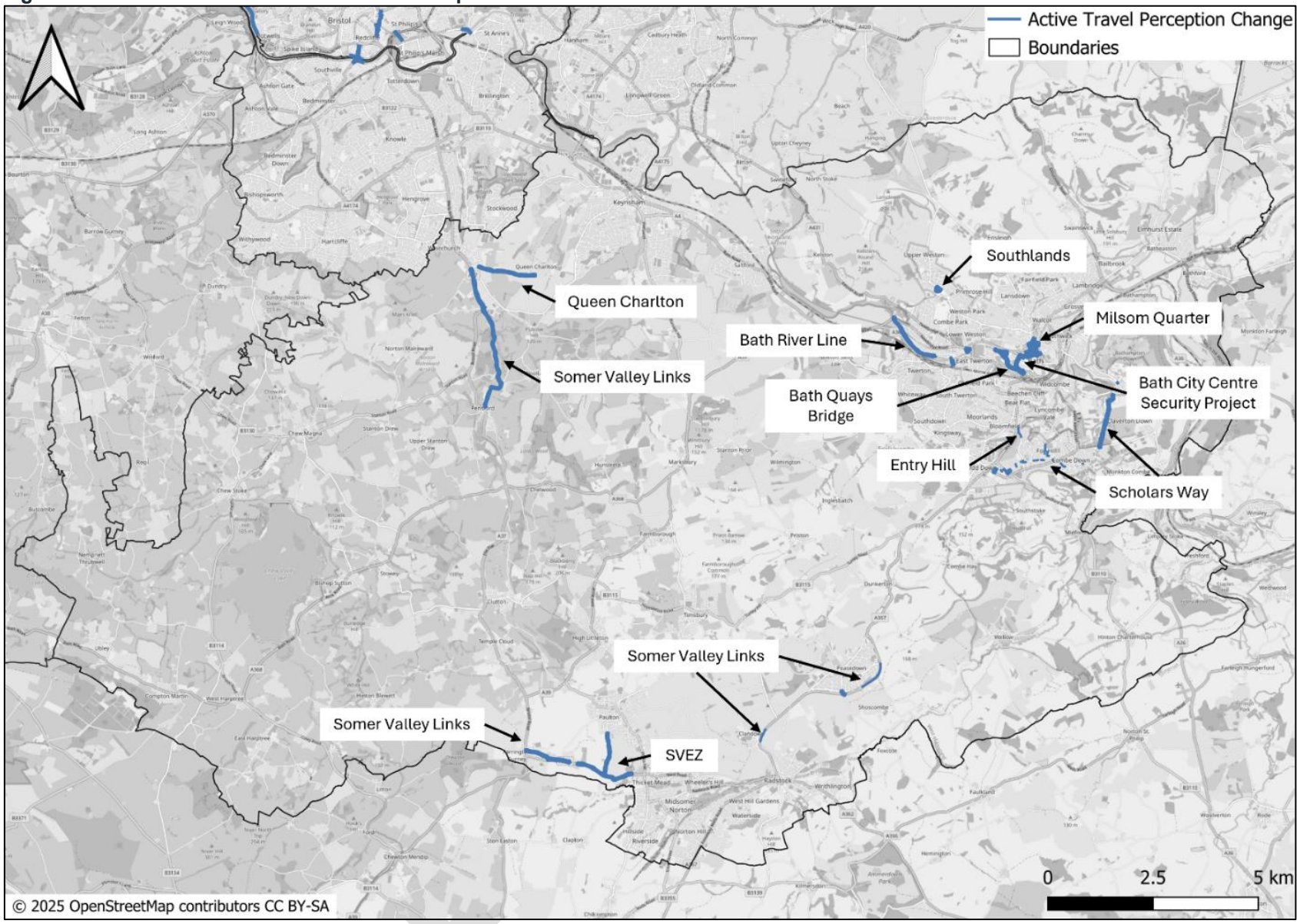


Figure 3-7 Locations of committed active transport infrastructure in Bath

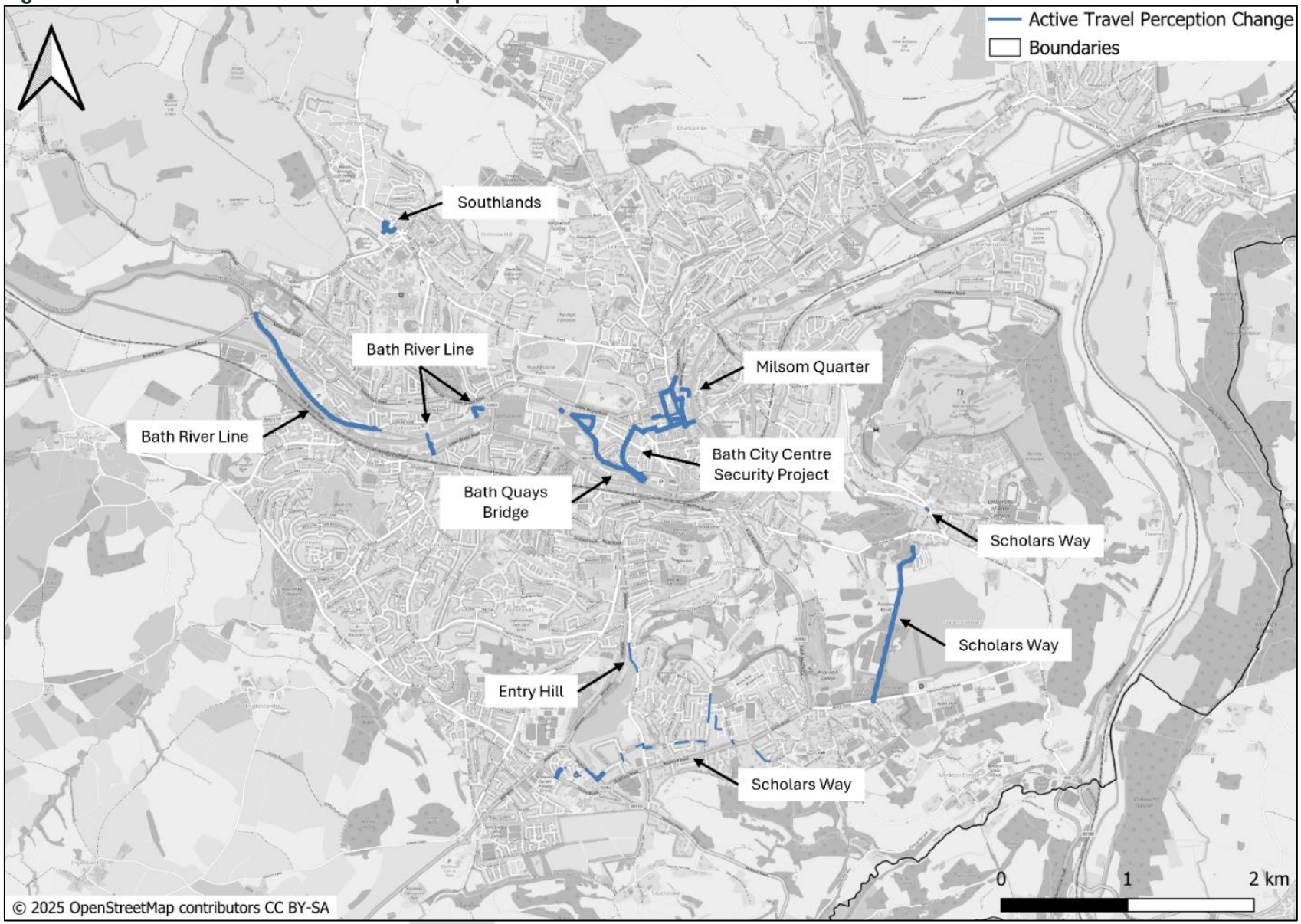


Figure 3-8 Locations of committed highway changes in B&NES

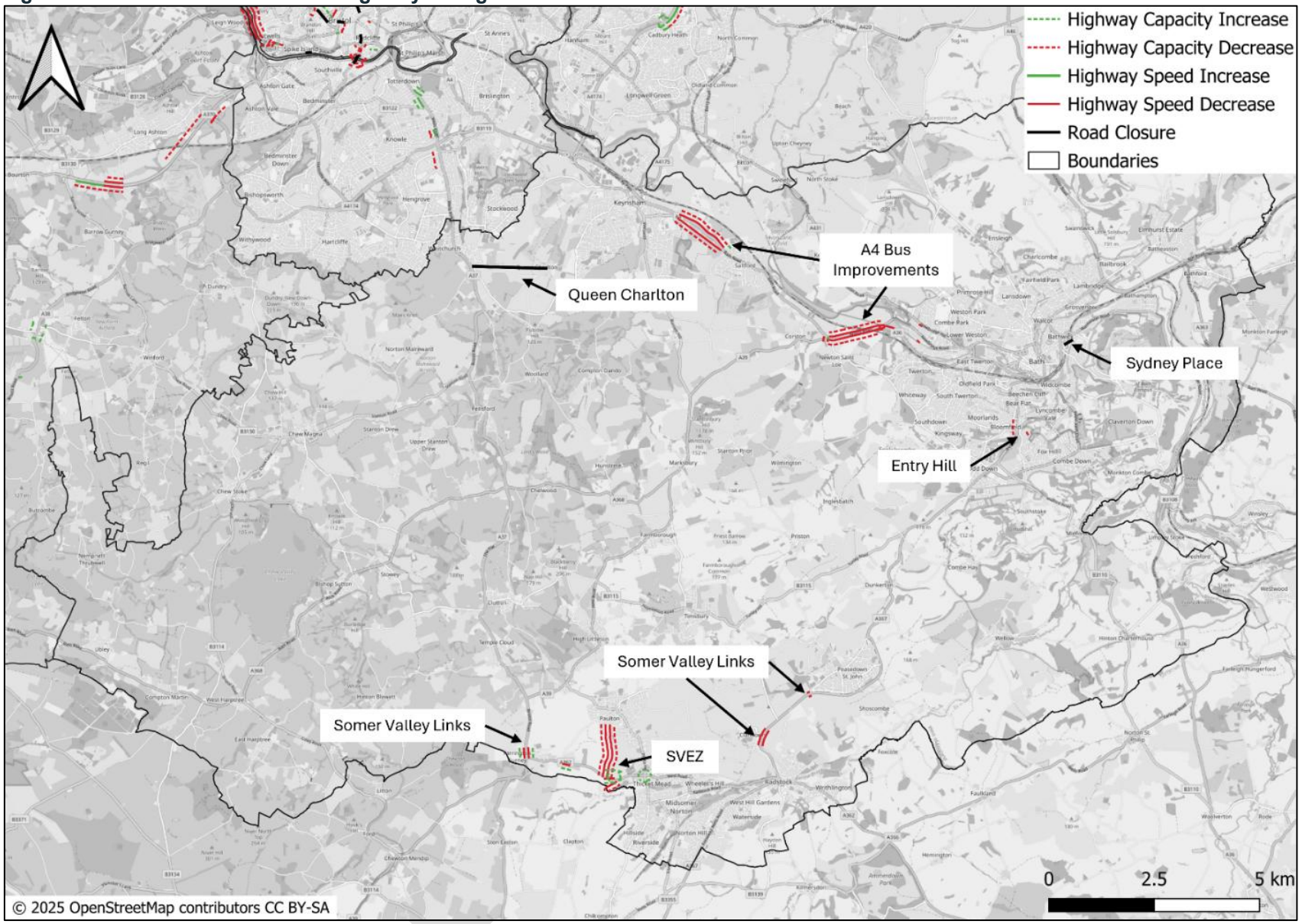
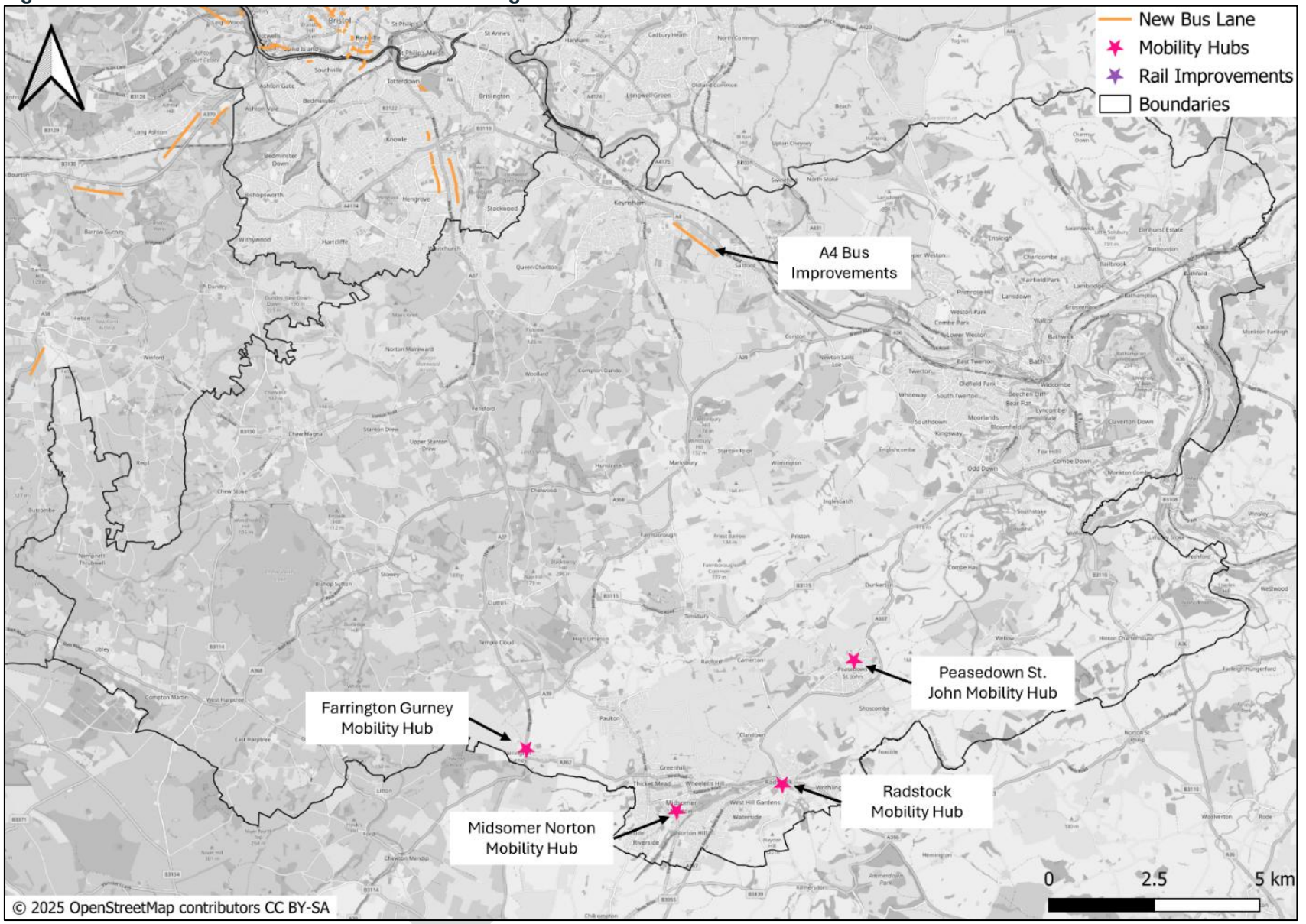


Figure 3-9 Locations of committed bus and rail changes in B&NES



3.5 Global cost parameters

Vehicle availability, fares, costs and parking forecasts
Central government forecasts indicate a 26% increase in total vehicles available (source: NTEM13) - considerably higher than the increase in population - with fewer households with no access to a car. These forecasts also project a 30% reduction in the costs of operating vehicles14, largely due to assumptions relating to electrification of the vehicle fleet. Bus and rail fares are assumed to rise marginally above long-term inflation (national and local projections), and it is assumed that parking costs will rise, in real terms, in central Bristol and Bath (based on local policies and recent trends).

- **Rail fares**: +4% (real terms, assumes some form of national subsidy but not fully funded over the longer term).
- **Bus fares:** +9% (real terms, assumes some form of national/local subsidy but not fully funded over the longer term).
- **Vehicle fuel/operating costs:** -28% (real terms - primarily due to assumed mass electrification of the vehicle fleet but does not include the recently announced pay-per-mile tax on EVs proposed for introduction in April 2028).
- **Vehicle ownership/access:** total vehicle growth will exceed housing and population growth and households without access to a car will fall from 21% (of households) to 18% by 2042.
- **Bus timetables:** modified to reflect Q1 2025 in B&NES.
- **Parking:** see section 3.7

Rail Fares
In WERTM forecasts, rail fares are assumed to increase modestly in real terms because fare-setting policy is expected to revert to its long-term position rather than remain held-down by recent temporary interventions. Historically, rail fares have broadly tracked the Retail Price Index (RPI), but between 2019 and 2024 actual fare increases were lower than RPI. This was largely due to exceptional circumstances, including the pandemic period, high inflation, and specific Government decisions to cap regulated rail fare increases in 2023 and 2024. As a result, fares in 2024 are estimated to be slightly lower in real terms than in 2019. However, there is no firm or funded policy in place to continue restraining rail fare increases below inflation in the long term. This is reflected in the March 2025 fare increase, which marked a return to the previous policy approach of raising regulated fares by RPI plus one percentage point. When projecting future fares, the modelling therefore assumes that the recent period of below-inflation fare growth is temporary; and over time, rail fares will return closer to their historic relationship with inflation measures.

Applying current TAG assumptions on inflation and price deflators leads to rail fares increasing slightly faster than general inflation in the medium term, resulting in an increase of around 4% in real terms by 2042 relative to the base year. This reflects a normalisation of fare-setting policy rather than the continuation of recent fare caps. Beyond around 2030, the forecasts show a small decline in real-terms fares.

Bus Fares
In WERTM forecasts, bus fares are assumed to increase modestly in real terms by 2042. This reflects a balance between recent and planned fare interventions in the West of England and the longer-term requirement, under TAG guidance, to base forecasts on policies that are firm and funded.

Since 2019, bus fares have been significantly influenced by policy intervention. National measures such as the £2 single fare cap (introduced in 2023 and replaced by a £3 cap for 2025) substantially reduced observed fares in real terms. More recently, the West of England Combined Authority has extended a number of locally funded fare initiatives beyond 2025, including the £1 child fare cap to Spring 2029, a cap on multi-operator day tickets, and free or discounted travel for specific user groups. These measures provide greater certainty that bus fares in the region will remain lower

[13] National-trip-end-model-ntem
[14] TAG data book - GOV.UK

DRAFT

than historic trends in the short to medium term, particularly for children and certain concessionary groups. This has been reflected in the updated forecasts by using a lower starting point for fares and moderating the rate at which fares recover over time.

However, while these initiatives are funded over the current programme period, there is no firm commitment that equivalent levels of subsidy or fare restraint will be maintained over the full forecasting horizon to 2042. In line with TAG requirements, the forecasts therefore assume that fares gradually adjust over time as current interventions expire, rather than remaining permanently suppressed. On this basis, bus fares are forecast to rise only slightly faster than general inflation over the long term, resulting in an increase of approximately +9% in real terms by 2042. This represents a limited and gradual increase vs inflation, reflecting partial long-term normalisation from today's intervention-driven low fares.

Vehicle Operating costs

Under the TAG Databook forecasts, average vehicle operating costs are assumed to decline by around 28% in real terms by 2042 relative to the 2019 base year. This reduction is driven almost entirely by the assumed electrification of the vehicle fleet, as electric vehicles have significantly lower energy and maintenance costs per kilometre than petrol or diesel vehicles and a different taxation and duty regime. TAG assumes a very rapid transition to electric vehicles, with around 77% of total vehicle kilometres travelled forecast to be undertaken by fully electric vehicles by 2042. As electric vehicles form a larger share of the fleet, their lower operating costs will increasingly dominate the fleet-average vehicle operating cost.

According to the Department for Transport's Vehicle Licensing Statistics[15], at the end of December 2024 there were 1.39 million zero-emission vehicles licensed in the UK, representing 3.4% of the total vehicle stock of approximately 41.7 million vehicles. When considering cars only, more recent synthesis of DfT, DVLA and SMMT data indicates that around 5.3–5.5% of the UK car parc was fully electric by the end of 2025, equivalent to approximately 1.83 million battery-electric cars[16] . Uptake is, however, accelerating strongly in the new-car market. Official Society of Motor Manufacturers and Traders (SMMT[17]) data show that fully electric vehicles accounted for 23.4% of all new car registrations in 2025, up from 19.6% in 2024, representing a year-on-year increase of over 90,000 additional BEVs.

Despite this rapid growth in new sales, achieving the 75%+ electrification of vehicle kilometres assumed within the long-term TAG forecasts would require sustained, high conversion rates across the entire vehicle fleet over multiple decades, including slower-to-turnover segments such as older vehicles, rural households and commercial fleets. The implied pace of change therefore remains challenging when benchmarked against current stock figures, even under optimistic uptake trajectories. Consequently, the forecast reductions in vehicle operating costs presented in TAG are strongly dependent on these electrification assumptions being realised in full.

It is also relevant to note that the Government has now explicitly acknowledged the need to tax electric vehicles in the longer term. In March 2026, HM Treasury[18] confirmed plans to introduce Electric Vehicle Excise Duty (eVED), a pay-per-mile charge, from April 2028, set at 3 pence per mile for battery-electric vehicles (and 1.5 pence per mile for plug-in hybrids), equivalent to approximately **half the fuel-duty rate paid by petrol and diesel vehicles. While this policy has not yet been reflected in the current TAG Databook, it signals an explicit acceptance that electric vehicles will contribute to road taxation in the future. This introduces additional uncertainty around long-term assumptions of declining real vehicle operating costs, particularly in the post-2030 period.

Vehicle ownership/access

Car ownership (access) is forecast to increase significantly over the plan period, with the total number of vehicles expected to exceed both housing and population growth. As a result, the proportion of households without access to a

---

[15] Vehicle licensing statistics, United Kingdom: 2024 - GOV.UK
[16] UK ev market share 2026: latest electric car registration stats | zapmap
[17] Electric Vehicle (EV) Data | UK Electric Vehicle Registration Statistics | SMMT
[18] Consultation on the Introduction of Electric Vehicle Excise Duty (eVED) - GOV.UK

DRAFT

car is projected to continue to decline, falling from around 21% in 2019 to approximately 18% by 2042. At the same time, traffic growth is not uniform across trip types: freight movements are also forecast to increase alongside a marked growth in longer-distance trips, particularly on the motorway network. Together, these trends indicate increasing overall car dependency and growing pressure on the strategic highway network over the long term.

3.6 Parking cost and capacity assumptions

Parking policies will play a key role in helping to manage travel demand and encourage a shift to more sustainable forms of travel. This will be particularly important in the city of Bath. Figure 3-10 presents the 'parking districts' in Bath, comprising the central area and surrounding residential areas, in which there are on-street parking controls.

3.6.1 Parking Costs

Parking costs within central Bath are expected to continue to increase well above inflation and the ongoing free all day parking at the P&R preserves a strong price differential.

Central parking charges example 1 - Manvers Street Car Park (2.5% real annual increases)

Manvers Street Car Park is a B&NES-operated, two-level, partially covered car park in central Bath, providing 148 spaces, including six disabled spaces. It is open 24 hours a day and has a 2-metre height restriction. The nominal cost of eight hours' parking increased from £9.90 in 2013 to £17.60 in 2024, equivalent to a 77% increase. Allowing for inflation, this represents an assumed real-terms growth rate of approximately 2.5% per year. The values for 2019 and 2026 have been interpolated, while the 2029 and 2042 constant-price projections assume this 2.5% annual real increase continues. Future nominal charges also include OBR CPI assumptions of 2.3% in 2026 and 2.0% per year thereafter.

On this basis, the 2029 charge is forecast to be 7.6% higher in real terms than in 2026 and 27.7% higher than in 2019. By 2029, an eight-hour stay at Manvers Street is therefore expected to cost more than £21 in 2026 prices. This compares with free same-day parking at the Park & Ride and a likely lower bus fare than today, creating a widening cost differential that is likely to strengthen the incentive to use Park & Ride for longer-stay trips into central Bath.

Table 10 - Historic and projected 8-hour parking charges in Manvers Street, Bath, nominal and 2026 prices

Year	Nominal price	Charge (2026 prices)	Real change vs 2019	Real change vs 2026
2013	£9.90	£14.22	-14%	-27%
2019	£12.55	£16.47	Baseline	-16%
2024	£17.60	£18.61	+13%	-5%
2026	£19.54	£19.54	+19%	Baseline
2029	£22.32	£21.03	+28%	+8%
2042	£39.67	£28.90	+76%	+48%

Central parking charges Example 2 – Charlotte Steet Car Park (similar cost escalation)

Parking charges everywhere in the central area show similar patterns. The costs of parking at Charlotte Street Car Park, Bath's largest Council-controlled central parking facility, providing approximately **1,056 spaces**. have increased materially between 2013 and 2024. In 2013, published tariffs were £5.40 for four hours, £6.40 for six hours and £8.50 for up to 12 hours. By 2024, emission-based charging meant that the applicable charge varied by vehicle, with four-hour parking costing £6.80 to £8.80 and six-hour parking £10.20 to £13.40. A 12-hour stay £15. Compared with 2013, this represents a nominal increase of 76% for a long-stay visit (similar to Manvers Street).

DRAFT

This widening cost differential between central parking and Park & Ride therefore provides a credible financial incentive for journeys to transfer to P&R, particularly for longer-duration visits.

3.6.2 Parking capacity and availability in central Bath

B&NES is considering a phased rationalisation of Council-operated parking in central Bath as part of wider regeneration, housing and transport demand management objectives. Information supplied by the Council indicates that city-centre Council-operated spaces could reduce from 1,798 in 2025 to 1,693 in 2026 and 1,394 between 2027 and 2029. By 2030, the scenarios under consideration provide either around 1,340 spaces or 1,132 spaces, depending mainly on the future treatment of Charlotte Street Car Park.

Compared with 2025, this would represent a reduction of approximately 458 to 666 Council-operated spaces. Under the lower-capacity scenario, part of Charlotte Street Car Park would be released for residential development and the remaining provision would be reoriented towards shorter-stay use. The reduction is not solely dependent on Charlotte Street. The Council's review also identifies potential disposal or redevelopment affecting Green Park Road, Manvers Street, Cattle Market, Broad Street and Avon Street car parks. Avon Street is assumed to close temporarily during redevelopment before potentially returning as a smaller single-deck facility of around 193 spaces.

These figures only cover Council-operated city-centre spaces and exclude parts of the wider public parking market. Major private facilities include around 1,016 spaces at SouthGate and 492 at the Podium, while the Council total excludes around 120 spaces at the leisure centre. On this broader definition, identified central parking supply is approximately 3,400 spaces, depending on the boundary and categories included. Against this broader supply, the reduction would equate to around 13% to 19%. This is still material because the losses are concentrated in Council-controlled sites that currently support longer-stay parking. Private facilities may not provide a direct substitute if they differ in price, location, opening arrangements, intended users or permitted length of stay.

Overall, the evidence suggests that central Bath parking is likely to become less plentiful, rationalised as a way to unlock regeneration, and less oriented towards long-stay use. This would reduce motorists' certainty of finding suitable central parking and increase the relative attractiveness of Park & Ride, particularly for longer-stay trips. The precise scale and timing of the 2030 reduction are not yet committed. The 1,132-space and 1,340-space figures should therefore be treated as credible planning scenarios under active consideration, rather than guaranteed outcomes. Nevertheless, the identified phasing, redevelopment opportunities and policy direction provide a stronger basis than a purely hypothetical assumption of future parking reduction.

Table 3-11 – Central Bath parking spaces (information provided by B&NES)

Scenario/year	Council-operated	Major Private[1]	Estimated total supply[2]	Change from 2025	% reduction
2025 baseline	1,798	1,508	3,426	0	0%
2026	1,693	1,508	3,321	-105	3%
2027 to 2029	1,394	1,508	3,022	-404	12%
2030: higher capacity[3]	1,340	1,508	2,968	-458	13%
2030: lower capacity[4]	1,132	1,508	2,760	-666	19%

1. Private provision comprises 1,016 spaces at SouthGate, (876 general spaces and 140 rail-related spaces), and 492 spaces at the Podium,
2. The Council's 1,798-space total excludes 120 spaces at the leisure centre, despite being Council-owned.
3. Higher-capacity scenario assumes Charlotte Street remains substantially unchanged
4. Lower-capacity assumes partial redevelopment of Charlotte Street and a shift in its remaining provision towards shorter-stay parking

DRAFT

The following outlines the assumptions regarding the cost and capacity of parking policies in central Bath (and also Bristol) for various modelling scenarios. These scenarios encompass both a "continuation of parking policy" and a prospective "demand management policy," each serving as indicative examples of potential approaches to parking regulation. It is anticipated that some form of demand management will be implemented in both B&NES and Bristol, which may reasonably be considered within the reference case as well as subsequent Local Plan scenarios. This is demonstrated in the existing B&NES parking strategy[19] which states the following: *"Parking charges in Bath and North-East Somerset should be periodically reviewed and adjusted as required to ensure that they achieve the aims of the Council's strategies and are comparative with privately operated car parks in the same location."*

Table 3-12 WERTM Parking cost, capacity and demand management assumptions

Year	Scenario	WERTM Cost vs 2019 (real terms)	Central capacity (spaces)	Residential capacity (spaces)
2019		-	Demand = "full"	30% spaces available
2042	Continuation of parking policy	+25%	-3%	No change
2042	Demand Management policy	+60%	-10%	-10%

DRAFT

[19] https://www.bathnes.gov.uk/document-and-policy-library/balancing-your-needs-parking-strategy-bnes

Figure 3-10 Bath parking districts utilised in WERTM

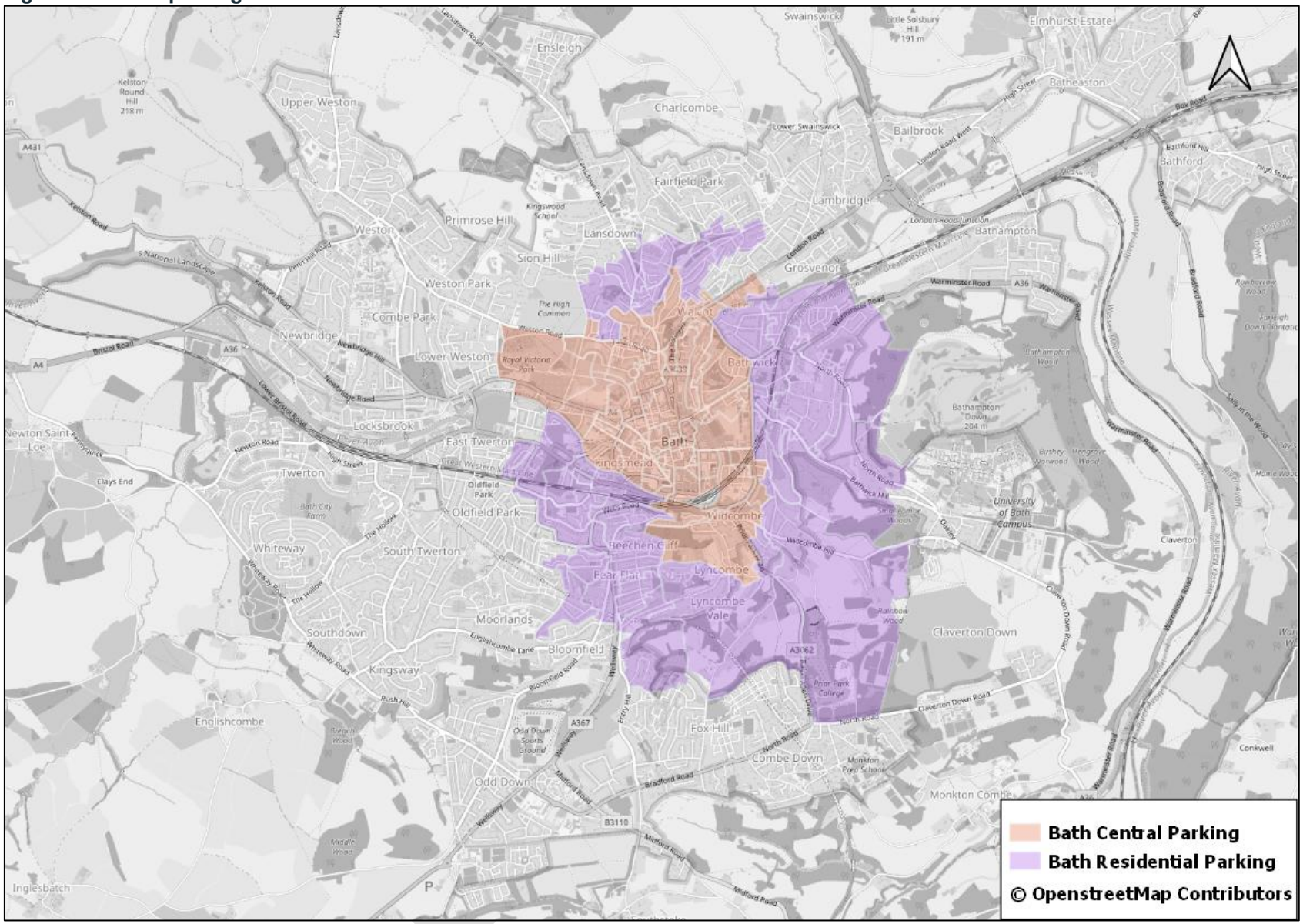
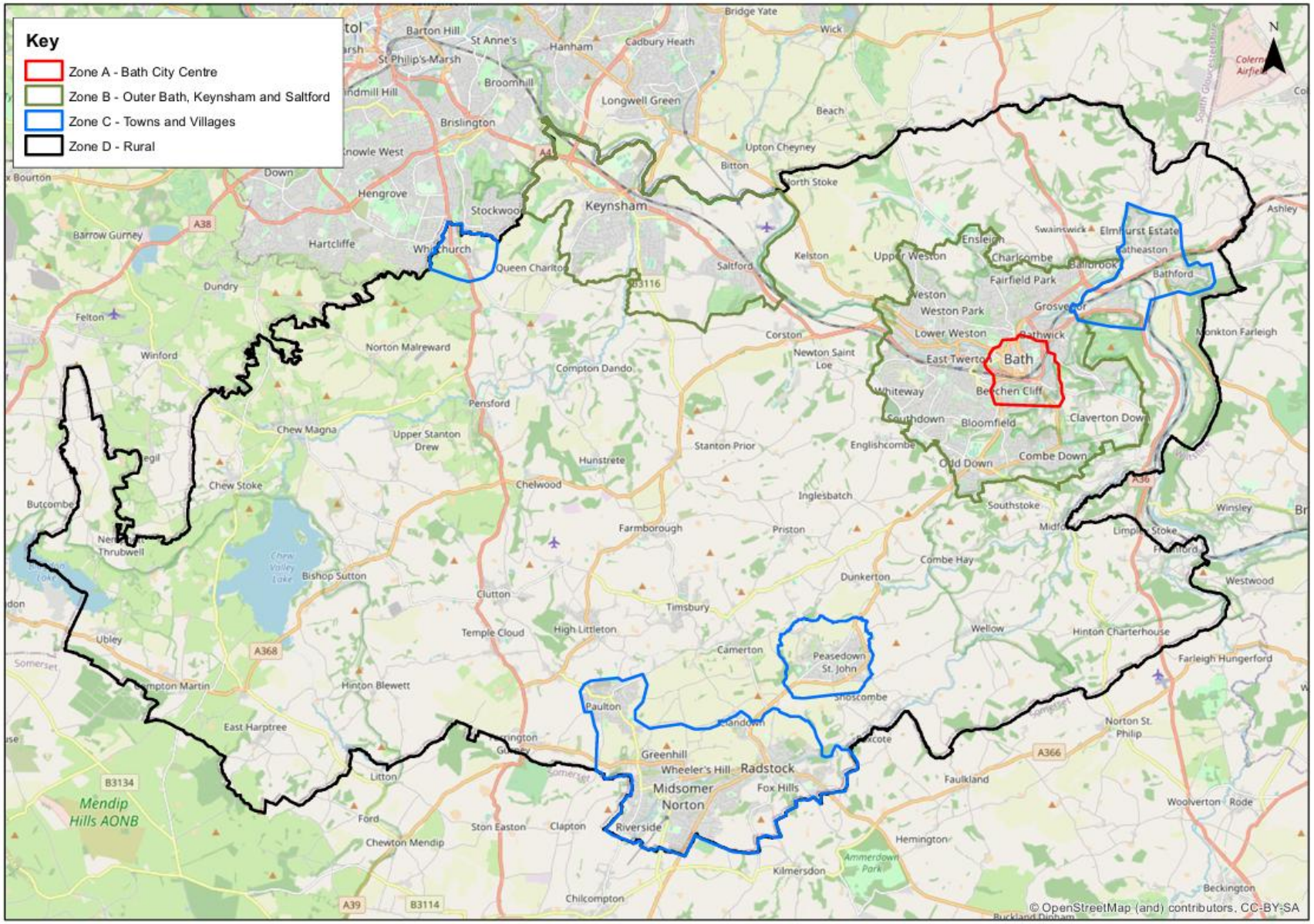


Figure 3-11 Bath & North East Somerset Transport & Development Supplementary Planning Document - Parking Standards Zones



4. Transport forecasts (reference case & pre-mitigation)

The changes in demand and supply costs, described in the previous chapter, are expected to have impacts on transport behaviour. This chapter describes those forecasts.

4.1 Impacts of parking policy on travel demand

This section explains how the application of a demand-management parking policy (as outlined in Section 3.7) is expected to influence travel behaviour into central Bristol and Bath, as represented in the modelling.

Table 4-1 shows that, under a continuation of current parking policy, vehicle demand within central areas is projected to increase over time, even where real-terms parking charges rise. This increase reflects a combination of structural and behavioural drivers, including:

- Growth in travel demand arising from adopted and emerging Local Plans in Bristol, South Gloucestershire and North Somerset;
- Rising values of time, which reduce travellers' sensitivity to congestion and parking charges;
- Increases in car ownership and accessibility, particularly outside the urban core;
- Economic growth, leading to higher trip rates for employment, retail and leisure activities; and
- Progressive electrification of the vehicle fleet, which reduces perceived and actual vehicle operating costs and therefore increases the relative attractiveness of car travel.

Taken together, these factors are forecast to result in an 8–10% increase in vehicle demand within central areas if existing parking arrangements are retained. To test the effectiveness of parking as a leaver for demand management, an illustrative scenario was assessed in which:

- The supply of available parking spaces is reduced by 10%, and
- Real-terms parking charges are increased by 60%.

This scenario does not represent an adopted or agreed policy but is intended to provide an order-of-magnitude test of the sensitivity of travel behaviour to stronger parking controls.

The modelling results indicate that, under this scenario, car trips into central Bristol and Bath reduce by approximately 10–11%. The suppressed car demand is redistributed primarily towards: Bus and rail services; Park & Ride facilities; and walking and cycling, particularly for shorter trips and access movements.

Overall trip demand to central areas is forecast to remain broadly stable, with a small reduction of 0–1%, under the assumption that no additional public transport services or active travel infrastructure are introduced alongside the parking changes. This reflects some suppression of discretionary trips in the absence of enhanced alternatives.

Importantly, the modelling also demonstrates that the parking demand-management measures are complementary to the mitigation strategy, as set out in Section 5. i.e. the introduction of:

- Increased public transport service provision,
- Improved interchange facilities,
- Enhanced walking and cycling infrastructure, and
- Leading to better integration between modes,

These, taken together, are expected to more than offset any marginal reduction in total trips, by increasing the attractiveness of central Bristol and Bath as destinations for employment, shopping and other activities.

DRAFT

In summary, the modelling indicates that a well-designed demand management parking policy can be an effective tool for managing car travel into central areas. When implemented alongside investment in sustainable travel alternatives, such a policy can support mode shift, reduce car dependency, and enhance the economic vibrancy and accessibility of Bath and Bristol, rather than constrain it. This provides a robust evidence base for the role of parking policy within the wider Local Plan transport strategy.

Table 4-1 Forecast daily change in trips into central Bath & Bristol due to parking policy

Scenario and geographic region	All Modes	Car	Bus & Rail (inc P&R)	Active
2042 Reference Case with Continuation of Parking Policy (CoPP) vs 2019 Base	5.4%	8.7%	12.1%	0.4%
2042 Reference Case with Demand Management (RC-DM) vs 2042 RC CoPP	-1.4%	-11.5%	2.7%	5.3%
2042 Local Plan No Mitigation with Demand Management (LP NM DM) vs 2042 RC CoPP	-1.0%	-11.1%	3.7%	5.5%
2042 LP NM DM vs 2042 RC DM	0.4%	0.5%	0.9%	0.2%
2042 LP with Mitigation and demand management vs 2042 RC CoPP	-0.7%	-11.6%	8.1%	4.9%

Note: All daily trip refers to the 2042 Reference Case with demand management (2042 RC DM) scenario

The regional multi-modal travel modal share into central Bristol and Bath and the impact of demand management is presented in Table 4-2.This shows how parking policy is expected to influence modal share. Note that the mitigation strategy mainly increases bus and rail trips, particularly bus park and ride. It reduces car only dependency but also marginally reduces active “all the way” trips too as using the bus becomes more attractive.

Table 4-2 Impact of demand management on daily travel modal share into central Bristol and Bath

Daily travel modal share	Car only	Bus & Rail (inc P&R)	Active only
All trips to central Bristol			
2019 Base	35.1%	16.5%	48.4%
2042 Reference Case continuation of parking policy	35.3%	17.8%	46.9%
2042 Reference Case + demand management	31.5%	18.6%	49.9%
2042 Local Plan No Mitigation + demand management	31.4%	18.7%	49.9%
2042 Local Plan With Mitigation + demand management	31.3%	19.2%	49.6%
All trips to central Bath			
2019 Base	39.4%	18.2%	42.4%
2042 Reference Case continuation of parking policy	44.3%	18.4%	37.3%
2042 Reference Case + demand management	40.4%	19.2%	40.4%
2042 Local Plan No Mitigation + demand management	40.6%	19.2%	40.2%
2042 Local Plan With Mitigation + demand management	39.9%	20.8%	39.3%

DRAFT

All transport forecasts—whether for the Reference case or any of the Local Plan scenarios—are based on the inclusion of parking demand management measures. Demand management, particularly through parking controls, is incorporated across all scenarios because it is a widely recognised and practical approach to influencing travel behaviour and reducing car trips. Given increasing urbanisation, environmental concerns, and policy trends favouring sustainable transport, it is reasonable to assume that such measures will remain central to future transport planning. Parking demand management helps limit congestion, encourages the use of public transport and active travel, and supports climate targets. By embedding these strategies in all forecast scenarios, the analysis reflects a future in which local authorities continue to prioritise the efficient use of urban space and the reduction of carbon emissions, making the assumption both realistic and aligned with current policy direction.

4.2 Daily travel modal share across the region

Based on the input forecast assumptions (see section 2.6) transport forecasts for the reference case and Local Plan (without transport mitigation), at different regional levels are presented in this section.

4.2.1 Across the whole of the west of England

Across the West of England, total multi-modal travel demand in the Reference Case is forecast to increase by 16% relative to the Base year. This growth is driven primarily by wider structural and behavioural factors, including population and employment growth, rising values of time, and reductions in the perceived cost of car travel.

- Car travel increases by approximately 20%, reflecting greater vehicle availability and lower operating costs associated with progressive electrification of the vehicle fleet.
- Public transport (bus, rail and Park & Ride) demand increases by around 18%.
- Active travel increases by approximately 8%, albeit at a slower rate than motorised modes.

The B&NES Local Plan itself has a limited impact on overall regional travel demand, adding a further ~3% increase across the West of England when considered at the sub-regional scale.

As a result, the car mode share across the West of England is forecast to increase from 62% in the Base year to 64% in both the Reference Case and Local Plan scenarios, with a corresponding reduction in the share of active travel from 30% to 28%.

Table 4-3 Daily forecast change in trips by mode and scenario in the West of England

Scenario and geographic region	All Modes	Car only	Bus & Rail (inc P&R)	Active only
All Daily Trips in West of England Ref Case	2,170,000	1,380,000	190,000	600,000
2042 RC vs 2019 Base	16.0%	19.6%	17.9%	8.1%
2042 LP NM vs 2042 RC	2.5%	2.4%	2.0%	2.9%

Note: All daily trips refers to the 2042 Reference Case with demand management (2042 RC DM) scenario

Table 4-4 Daily travel modal share % in the West of England

Daily travel modal share	Car only	Bus & Rail (inc P&R)	Active only
2019 Base	61.75%	8.66%	29.59%
2042 Reference Case (RC)	63.62%	8.80%	27.57%
2042 B&NES Local Plan No Mitigation (LP NM)	63.57%	8.76%	27.67%

DRAFT

4.2.2 To/from and within B&NES

Within B&NES, growth effects are more pronounced due to the concentration of development and local travel patterns.

In the Reference Case (reflecting only committed development), total multi-modal travel demand is forecast to increase by approximately 7% relative to the Base year, comprising:

- An 11% increase in car trips;
- A 3% increase in bus and rail trips; and
- A smaller 1% increase in active travel.

Under the Local Plan scenario (without mitigation), total travel demand within B&NES increases by a further 22% above the Reference Case. This additional growth comprises:

- A 24% increase in car travel;
- A 15% increase in bus and rail demand; and
- A 20% increase in active travel, driven by higher overall trip volumes and localised short-distance movements.

The associated change in mode share indicates an increasing reliance on the car:

- Car mode share rises from 65% in the Base to 67% in the Reference Case, and further to 68% with the Local Plan.
- Over the same period, the share of active travel declines from 30% in the Base to 23% in the Reference Case and 22% in the Local Plan.

Finally, at an individual site level, Local Plan development sites exhibit a higher car mode share, with approximately 70% of trips made by car, reflecting their location, accessibility characteristics and the absence of mitigation measures within this scenario.

Table 4-5 Daily change forecast in trips by mode and scenario to/from and within B&NES

Scenario and geographic region	All Modes	Car only	Bus & Rail (inc P&R)	Active only
All trips to/from & within B&NES Ref Case	400,000	270,000	40,000	90,000
2042 RC vs 2019 Base	6.8%	11.1%	2.9%	1.4%
2042 LP NM vs 2042 RC	22.2%	23.8%	15.6%	20.4%

Note: All daily trips refers to the 2042 Reference Case with demand management (2042 RC DM) scenario

Table 4-6 Daily travel modal share % for trips to/from and within B&NES

Daily travel modal share	Car only	Bus & Rail (inc P&R)	Active only
2019 Base	64.8%	10.5%	24.8%
2042 Reference Case (RC)	67.4%	10.1%	22.5%
2042 B&NES Local Plan No Mitigation (LP-NM)	68.2%	9.6%	22.2%
B&NES Local Plan development trips only			
B&NES Local Plan development trips only (no mitigation)	71.1%	8.8%	20.2%

These forecasts are based on daily multi-modal Production-Attraction (PA) trip mode share. This metric captures the proportion of person-trips generated (productions) and attracted (attractions) between different zones over a full weekday, across all travel modes. From a modelling standpoint, they represent people rather than vehicles and are typically used to assess how changes in land use, infrastructure, or policy affect overall travel demand. These trips are person-based and mode-agnostic, meaning they include all travel purposes (e.g. commuting, education, leisure

DRAFT

etc.) and all modes (e.g. car, bus, rail, walking, cycling), but do not reflect specific vehicle movements or boardings. It is important to note that daily PA trip totals are not directly comparable to other operational metrics such as:

- Bus boardings per day (a PA trip may involve multiple boardings)
- Vehicle trips, which reflect actual private car movements on the network
- Or freight flows, which are typically modelled separately due to their distinct choice characteristics

Instead, PA trip daily trips serve as a strategic indicator of travel demand and are used to assess the relative impacts of different planning scenarios. They help identify where and how demand is likely to grow, shift, or intensify, informing decisions on infrastructure investment, service planning, and policy development.

4.2.3 Car modal share of trips at development sites (pre mitigation)

In the absence of localised transport mitigation, the new Local Plan development sites are projected to exhibit a similar but marginally higher car modal share because they are outside existing settlements and have no transport mitigation (70% vs 68%) to the rest of B&NES, but higher than the West of England average (64%) This is attributed to the more rural nature of B&NES and, without mitigation measures, more limited travel choice options.

Table 4-7 Daily travel modal share of major development sites (pre-transport mitigation)

Region	Agglomeration of major development sites	No. HHs	Est Jobs	Car only modal share (Base model)
Bath	All Bath Sites	**627**	**1,539**	**58.3%**
Bristol-Bath corridor: Hicks Gate, Keynsham & Whitchurch	Hicks Gate	2,183	1,048	73.7%
	North Keynsham	1,538	2,092	68.4%
	Saltford	1,446	694	71.8%
	Keynsham	1,952	1,234	70.2%
	Whitchurch	2,048	983	69.6%
	All Bristol-Bath corridor sites	**9,167**	**6,051**	**70.8%**
Somer Valley and rural areas	Bishop Sutton, Chew & Pensford	400	431	82.9%
	East Radstock (Writhlington)	1,028	494	66.9%
	Chilcompton Rd & Thicket Mead	291	1143	67.4%
	North Radstock	951	457	69.1%
	Paulton & Hallatrow	414	199	74.9%
	Peasedown	939	2,020	73.8%
	South Farrington Gurney	549	264	75.3%
	South Radstock (Haydon)	143	69	70.6%
	Temple Cloud & Clutton	460	221	76.2%
	Timsbury & Farmbrough	510	245	78.3%
	All Somer Valley sites	**5686**	**5541**	**72.8%**
All LP development sites		**15,480**	**12,883**	**71.1%**
All B&NES Reference Case				67.4%

DRAFT

4.3 Bus patronage

4.3.1 Impacts of the Reference Case

Figure 4-1 shows the forecast (absolute) daily bus patronage in the 2042 Reference Case (RC) scenario. Bus patronage is expected to be highest along key corridors oriented towards urban central areas of Bristol and Bath.

4.3.2 Impacts of the local plan (pre-mitigation) vs Reference Case

The locations of the Local Plan sites (without mitigation) are expected to result in additional bus passenger demand along the:

- A37 between the Somer Valley and Bristol
- A367 between the Somer Valley and Bath
- A4 between Bath and Bristol

The proposed Local Plan therefore represents an opportunity to:

- Further enhance existing bus services along these key corridors, which will be justified through increased patronage from the new housing; and
- Provide transport interchanges, travel hubs and bus stop upgrades to provide travel choices for new and existing residents in the district.

The mitigation measures, based on these expected patterns, is explored and presented in Section 5.

DRAFT

Figure 4-1 2042 Reference Case daily bus patronage in the West of England

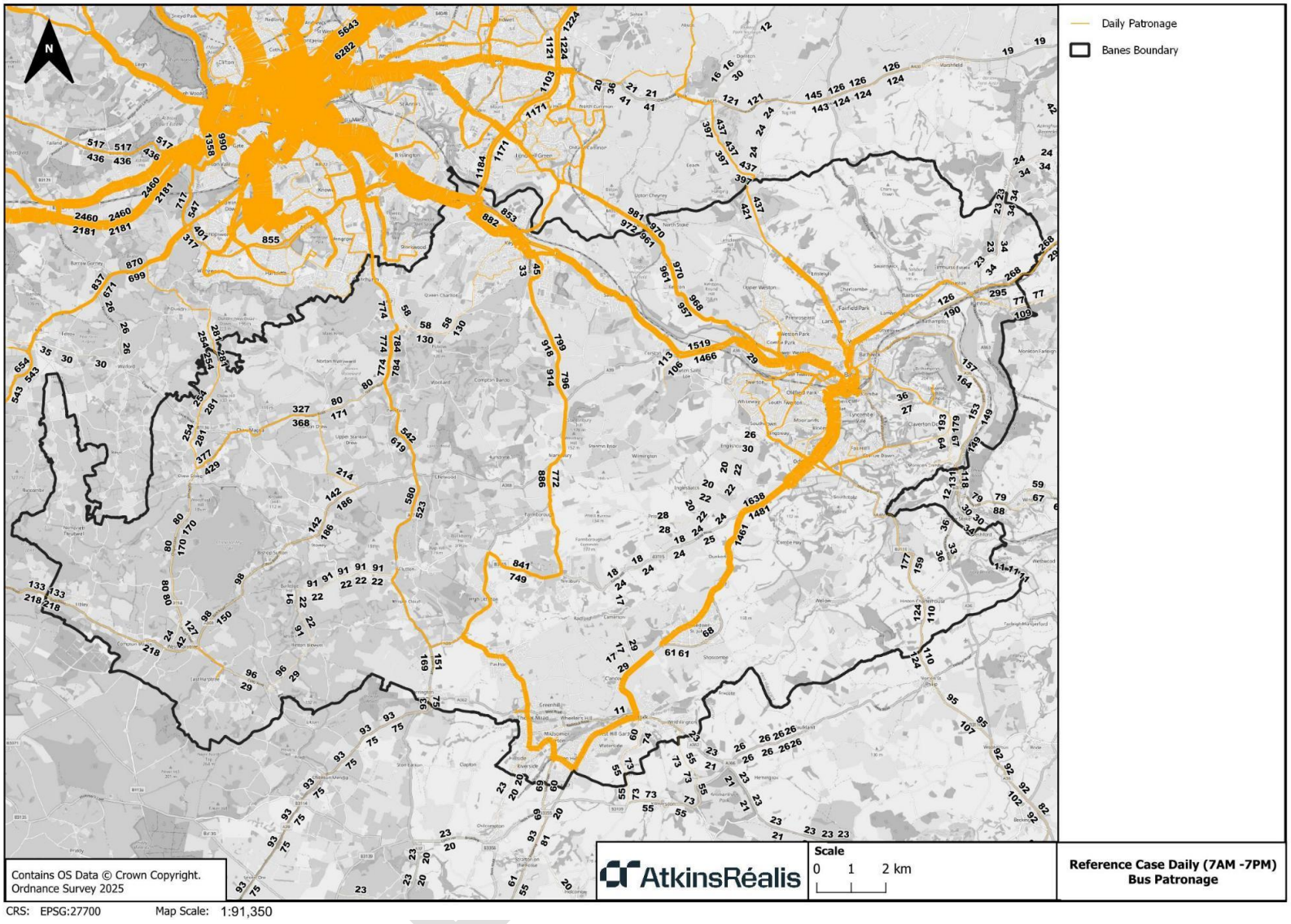


Figure 4-2 Total daily bus passengers in B&NES with Local Plan (pre-mitigation)

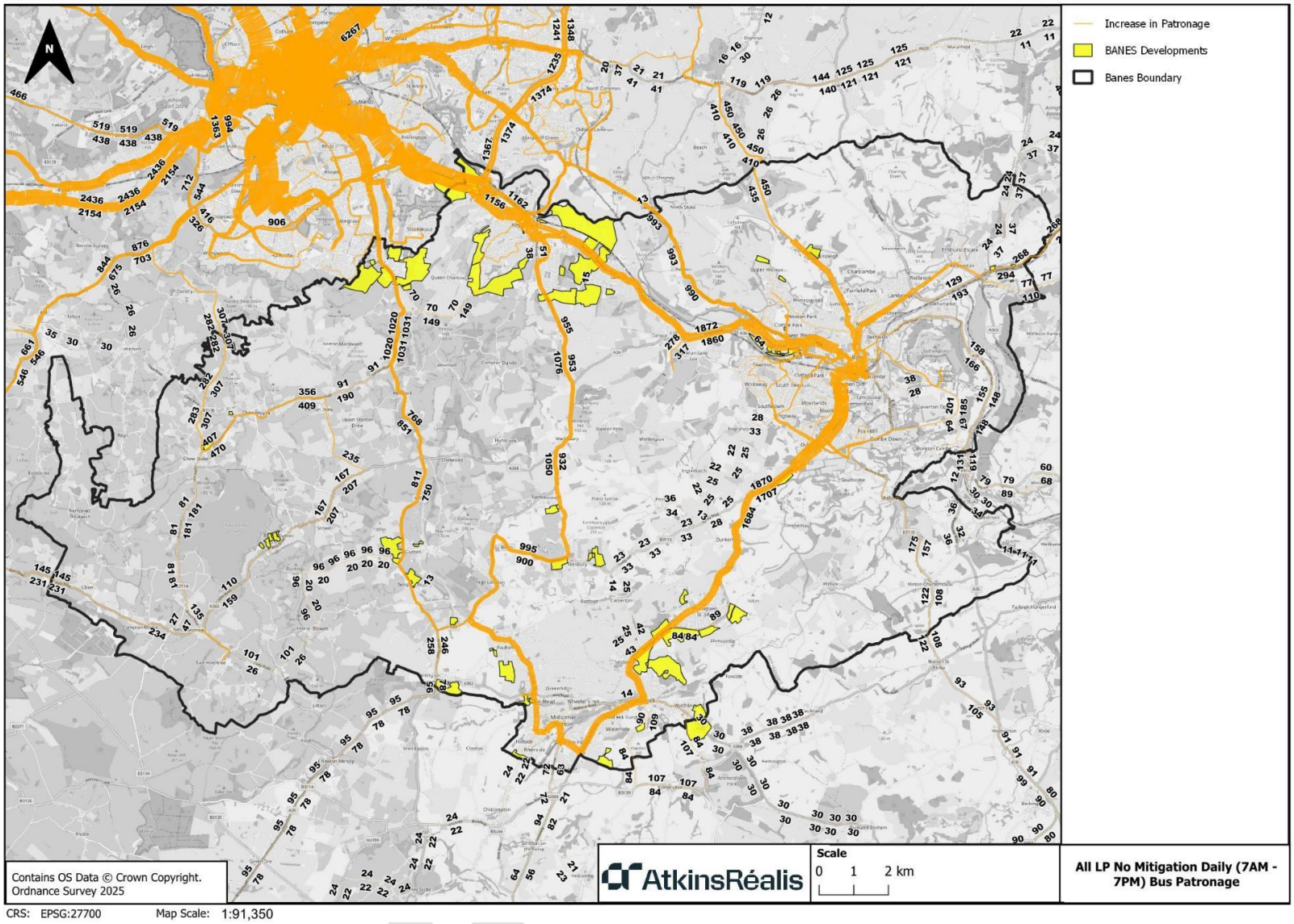
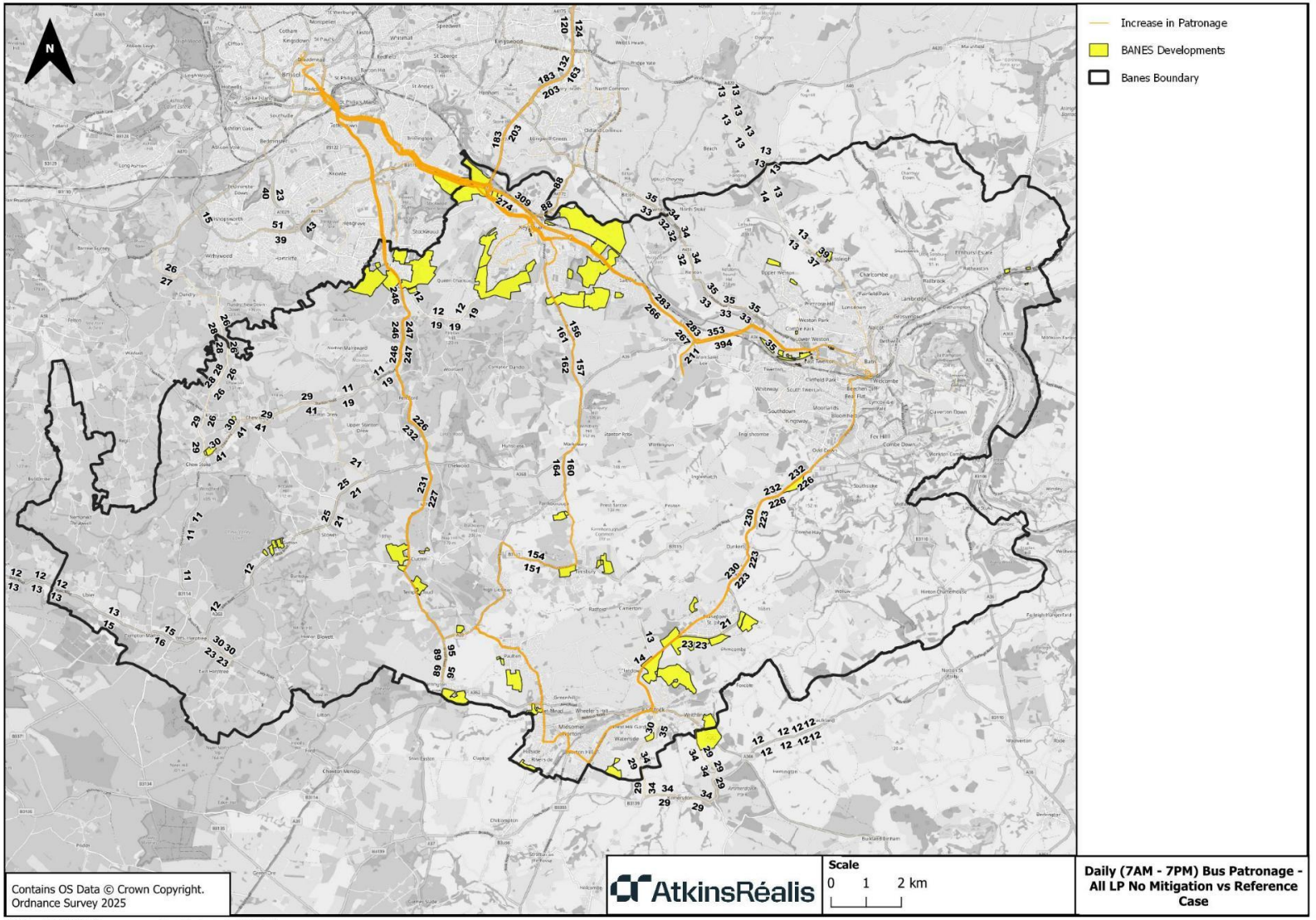


Figure 4-3 Bus passengers in B&NES (Local Plan pre-mitigation vs Reference Case) 12-hour totals)



CRS: EPSG:27700 Map Scale: 1:91,350

4.4 Active travel

4.4.1 Reference Case

Forecast active travel demand in the 2042 Reference Case is shown in Figure 4-4 to Figure 4-7.

Note: Active travel has not been specifically calibrated within WERTM and is therefore presented for illustrative purposes only. Active demand is forecast to be highest along key corridors oriented towards Bath city centre.

4.4.2 Impact of the Local Plan (pre-mitigation) vs Reference Case

The forecast increases in active travel, without mitigation, compared with the Reference Case show strong concentrations in the vicinity of the major development sites. This indicates both a demand for active travel interventions and a need to improve existing provision. There is also a requirement to provide safe and attractive sustainable route options to access key interchanges and hubs. Further details on the proposed active travel interventions are provided in Section 5, along with the resulting forecasts of active travel behaviour in Section 6.3.

DRAFT

Figure 4-4 Active travel in B&NES (2042 Reference Case, Daily)

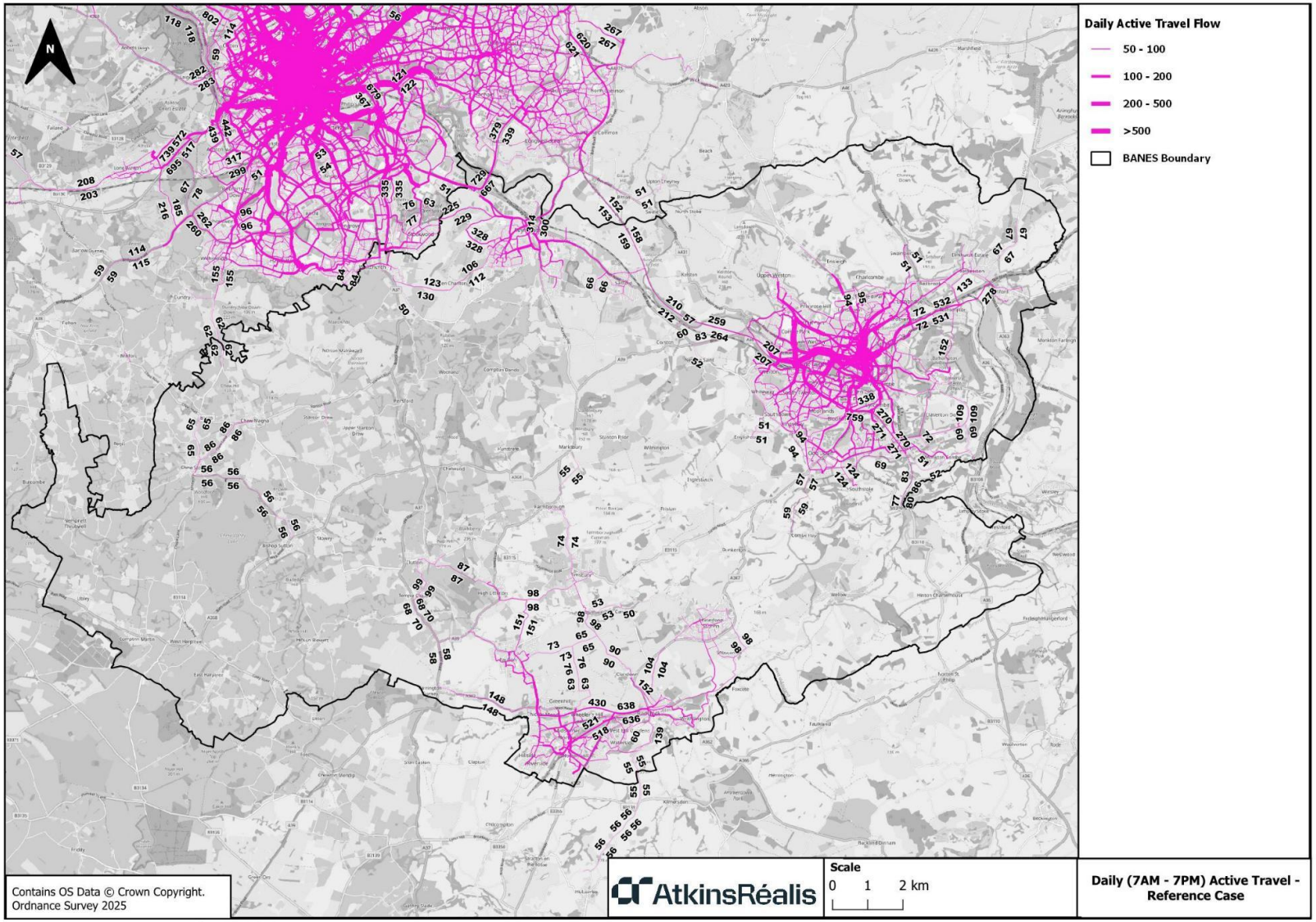
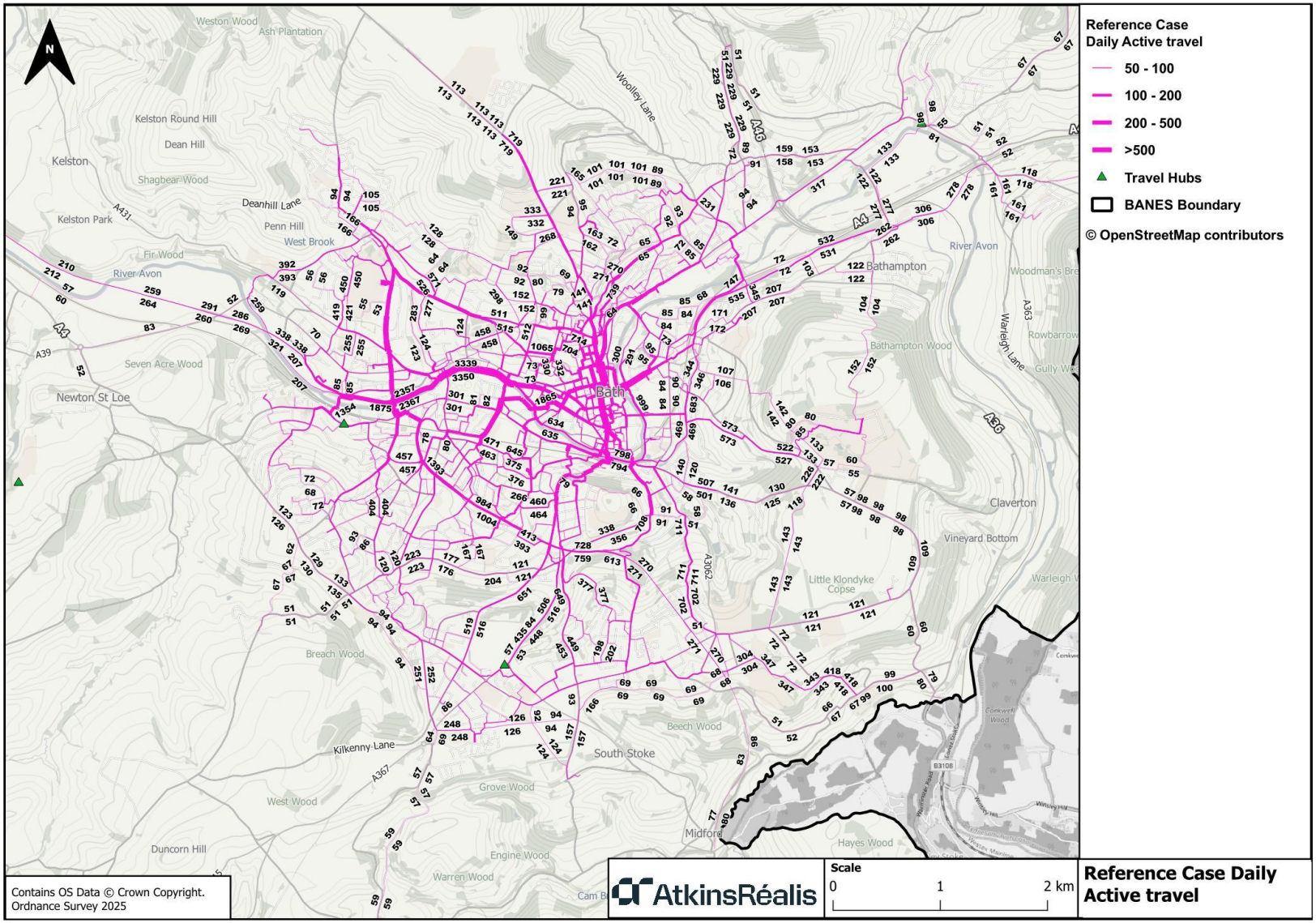
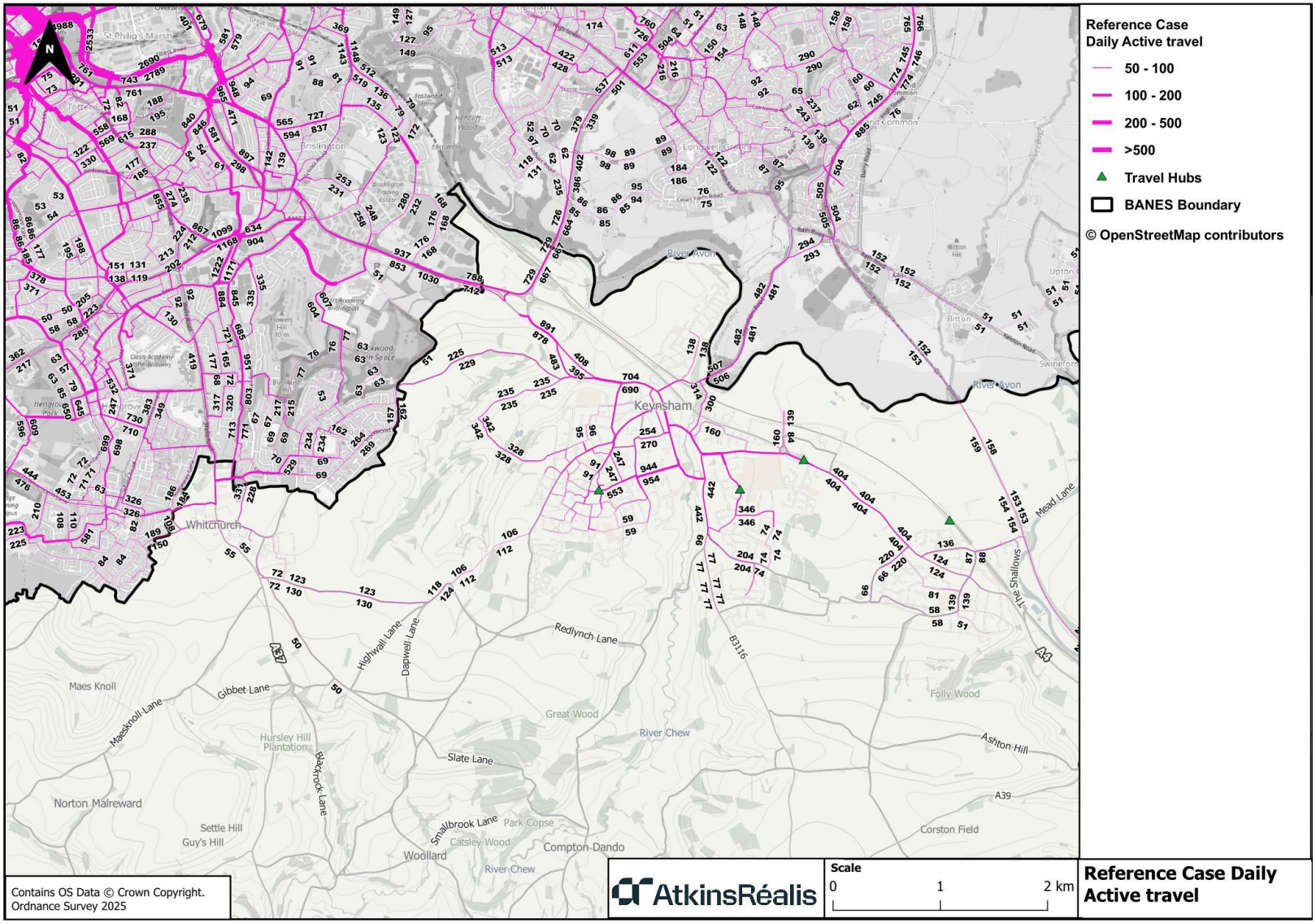


Figure 4-5 Active travel in Bath (2042 RC, Daily)



CRS: EPSG:27700 Map Scale: 1:30,000

Figure 4-6 Active travel in Hicks, Gate, Keynsham & Saltford (2042 RC, Daily)



CRS: EPSG:27700 Map Scale: 1:30,000

Figure 4-7 Active travel in the Somer Valley (2042 RC, Daily)

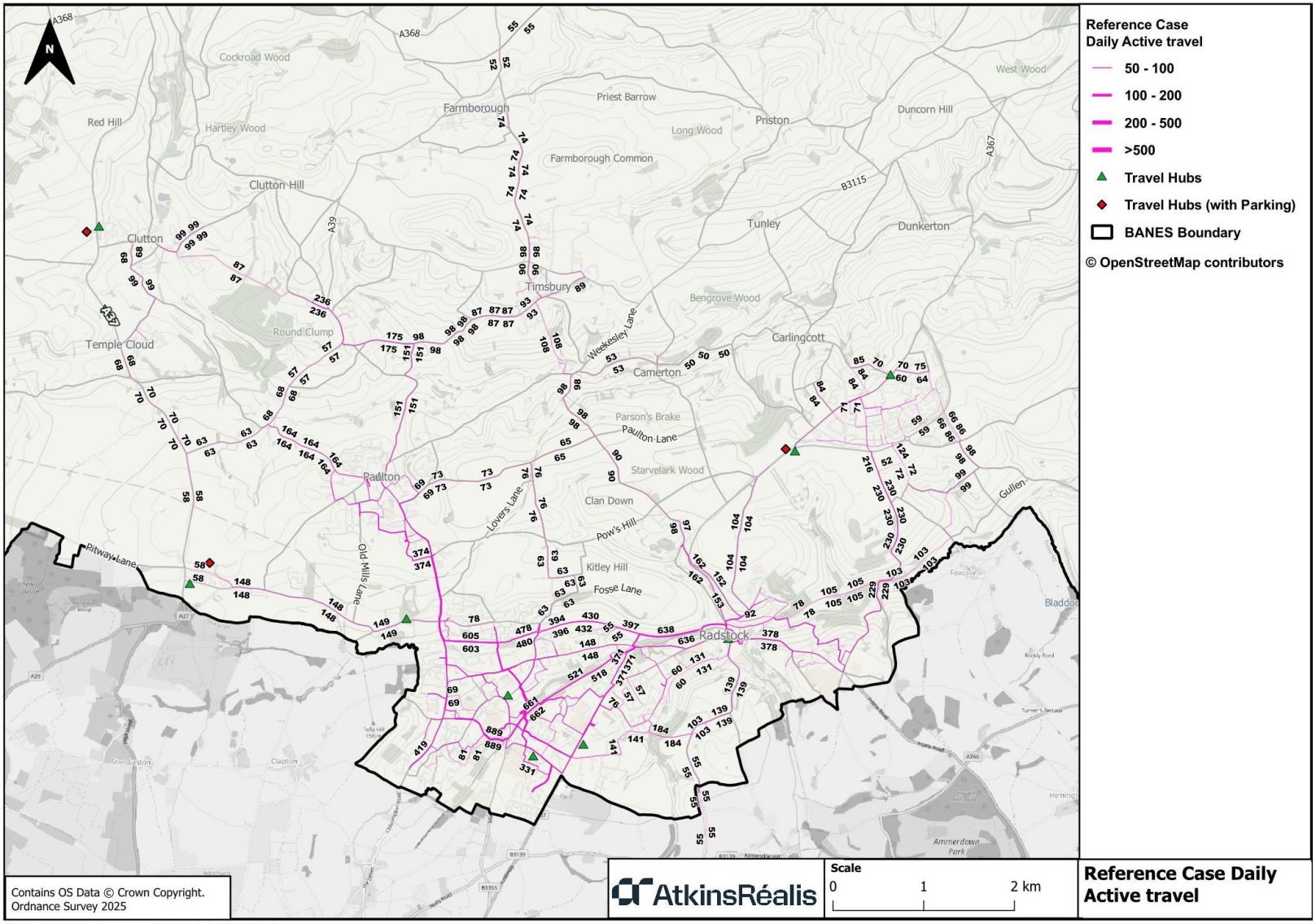


Figure 4-8 Active travel in B&NES (Local Plan No Mitigation, Daily)

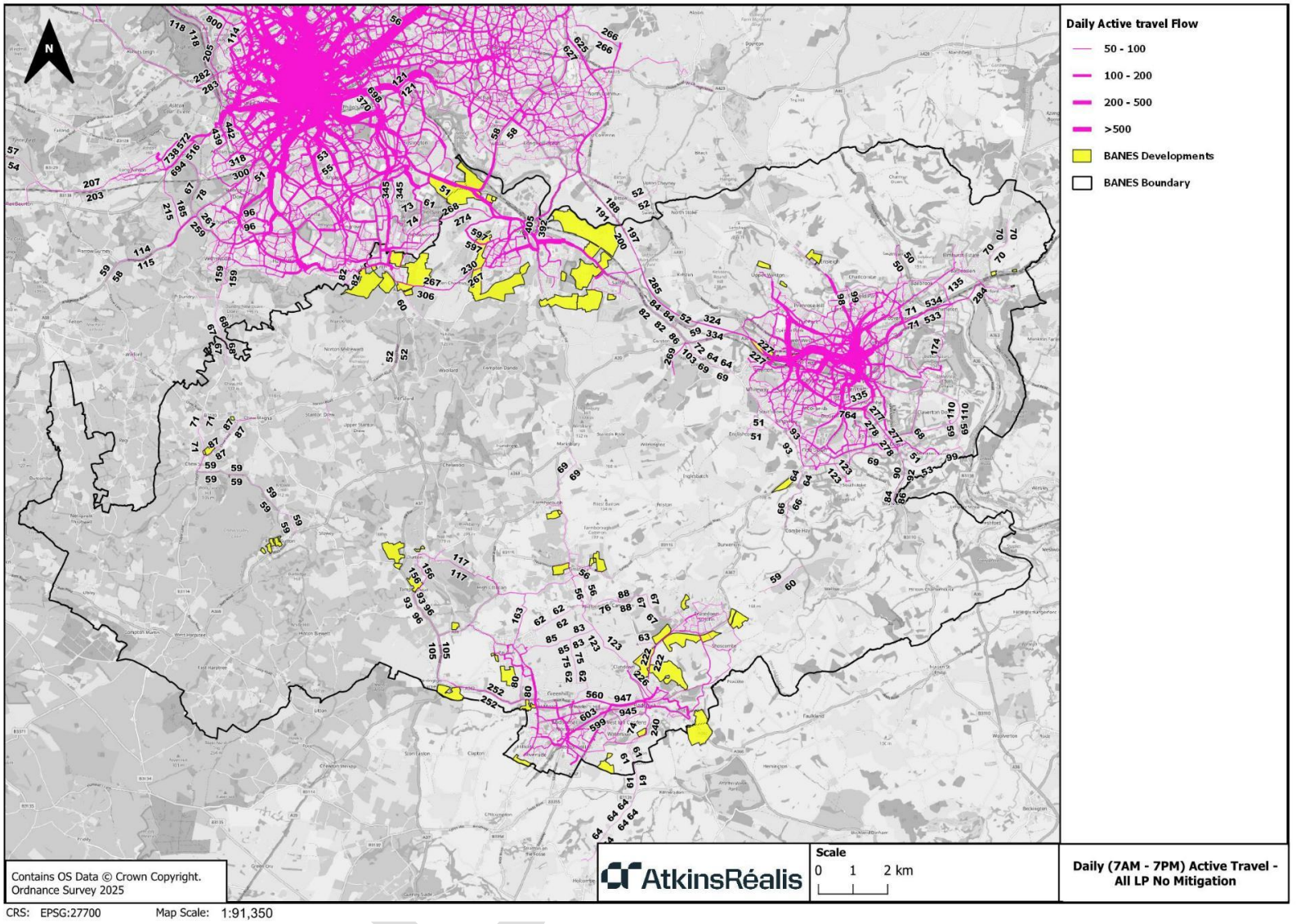
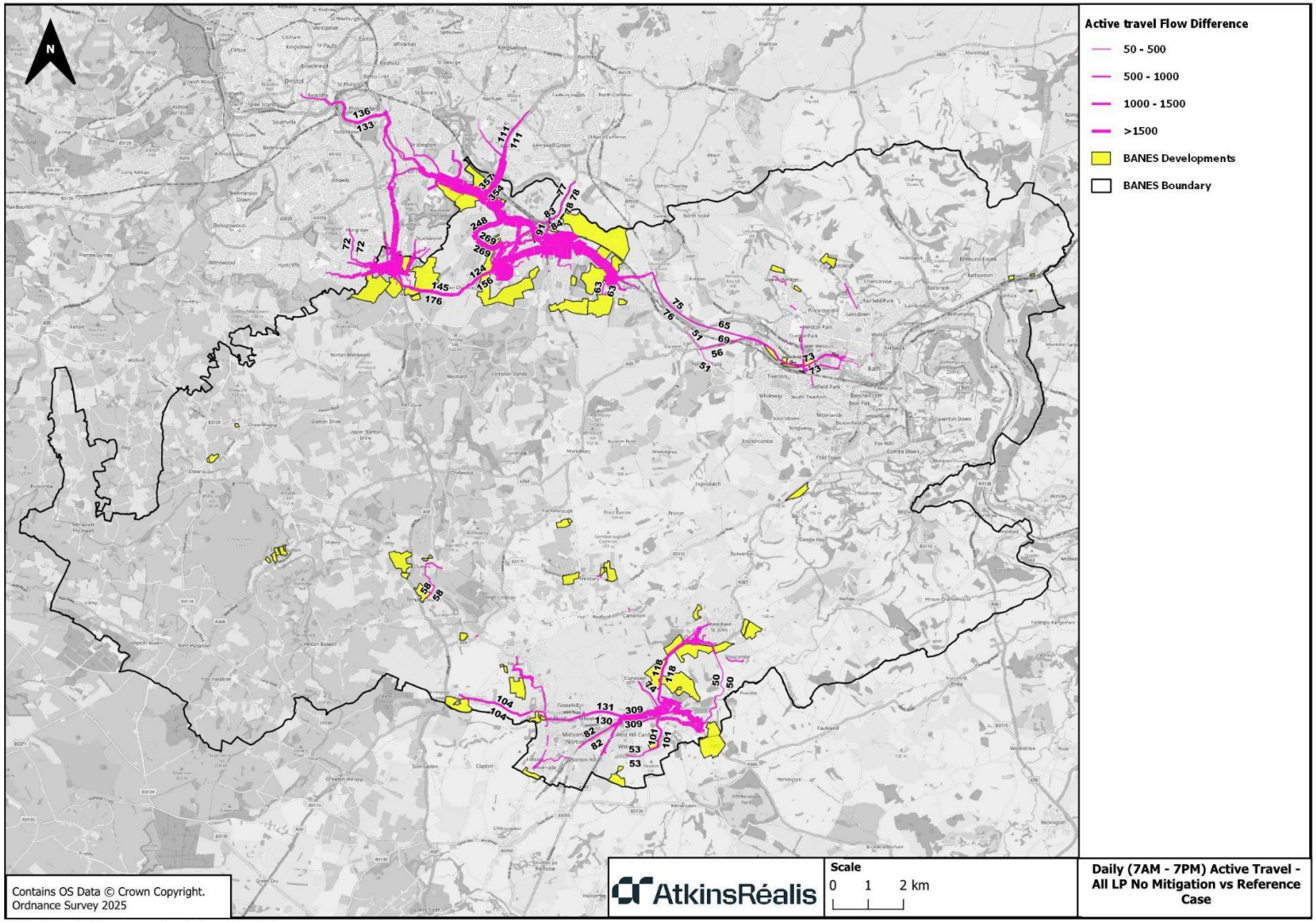


Figure 4-9 Increase in active travel demand in B&NES (Local Plan No Mitigation vs 2042 Reference Case, 12-hour totals)



4.5 Highway impacts

4.5.1 Impact of the Reference Case on the highway network

The forecast changes in peak hour traffic, from base to 2042 Reference Case for AM peak respectively on all key routes and corridors: Note - Increases in traffic (shown in green), Decrease in traffic (shown in blue), Increase in delay in the peak hour (seconds shown in red). B&NES Council has planned the necessary policies and infrastructure to support sustainable committed development.

The high levels of traffic in the West of England area result in extensive congestion and reliability issues. This is prevalent today, as illustrated in the TomTom traffic report for the greater Bristol area[20], which provides both real time and past data on traffic conditions and performance of the network.

Forecast growth in daily vehicle trips is expected to place additional pressure on routes that are already congested, resulting in longer delays and more unreliable journeys. As congestion increases, some travellers are likely to respond by rerouting, retiming their journeys, or spreading travel more widely across the peak periods. However, these behavioural responses are not expected to eliminate congestion; instead, average delays are forecast to increase on already-constrained routes, with new congestion hotspots also emerging over time.

The results indicate widespread increases in traffic delay across the road network between now and 2042. The AM peak is presented as a representative example of network performance, with similar patterns also evident in the inter-peak and PM peak periods. Within Bath & North East Somerset (B&NES), delays are forecast to increase across much of the network. Particularly notable impacts arise where traffic from neighbouring authorities increasingly “spills over” into B&NES, reflecting strategic planned development across the wider region. Key affected corridors include the A4174 Bristol Ring Road, the B3130 through the Chew Valley, and routes south of Midsomer Norton and Radstock, where growth pressures combine with limited network resilience.

More generally, widespread increases in delay are forecast across the wider West of England road network.

- In Bristol, delay increases are projected across much of the city, with the most pronounced impacts around the city centre and Temple Meads, reflecting concentrations of employment growth and travel demand.
- In South Gloucestershire, increased delays are forecast on specific links in the Cribbs Causeway area, consistent with planned development and its strategic location on the regional network.
- In North Somerset, increased delays are forecast to be concentrated around Weston-super-Mare and along the A370 corridor, reflecting planned housing and employment growth and the corridor’s role linking Weston to Bristol and the wider Strategic Road Network. Additional pressure is also expected from Bristol Airport expansion, which is forecast to increase traffic on already constrained routes connecting the airport to the A370, A38 and M5.
- The forecasts also highlight specific challenges on the Strategic Road Network (SRN). Notable problem locations include the M5 (northbound and southbound), the M4/M5 Almondsbury interchange, the M4 westbound approach to Junction 19, and M32 Junction 1. These impacts reflect growing traffic demand on the motorway network and increasing interaction with movements along the Ring Road and urban corridors.

Together, these factors are expected to exacerbate peak-period congestion on key routes where opportunities for highway capacity expansion are limited, reinforcing the need for alternative, sustainable transport solutions. Additional localised impacts are identified elsewhere, including on rural corridors, where congestion is driven by longer-distance and through-traffic rather than purely local movements.

[20] Bristol traffic report | TomTom Traffic Index

DRAFT

Addressing these challenges will require coordinated action across the region. The policy framework set out in Chapter 2 makes clear that the primary response should be to reduce the need to travel and support a shift to more sustainable modes, rather than relying on additional highway capacity as the default solution. Evidence indicates that highway-only interventions are unlikely to provide a lasting solution and may instead lead to induced demand, resulting in renewed congestion pressures over time.

For longer-distance movements, particularly those currently using the SRN, new and improved public transport options will be essential to enable meaningful mode shift. The West of England authorities—working through the Mayoral Combined Authority as transport authority, alongside local highway authorities—will need to collaborate with the Western Gateway Sub-National Transport Body and National Highways to develop these solutions. Potential measures include enhanced rail services, new or improved longer-distance coach services, and strategic interchange facilities that allow drivers to transfer to public transport and reduce pressure on the strategic road network.

Overall, committed development across the West of England, combined with background traffic growth, is forecast to result in sustained and widespread increases in congestion. These impacts cannot be fully mitigated through highway infrastructure alone. Instead, a concerted, region-wide programme to improve travel choices and enable mode shift will be required—both within the West of England and across the wider region. This approach should be embedded consistently across the area, rather than pursuing incremental highway capacity schemes that risk locking in higher traffic levels and creating the need for further intervention in the future.

Table 4-8 Highway Network (delay & distance) statistics (Reference Case)

Region / Scenario	AM/PM Peak Hr travel time (mins)	AM/PM Peak Hr delay (mins)	Daily Distance Travelled (million km)	Average Distance Travelled per day (km)	Daily Vehicle Demand (PCU)
West of England (inc. motorways)					
2019 Base	33.3	4.3	72.7	36.3	2,000,000
2042 Reference Case	36.3	6.8	89.2	36.9	2,419,000
2042 Reference Case vs 2019 Base	9%	60%	23%	1.5%	20.9%
To/from/within B&NES					
2019 Base	26.4	4.5	6.7	20.6	325,000
2042 Reference Case	28.5	6.2	7.9	21.8	362,000
2042 Reference Case vs 2019 Base	8% (+2.1)	38% (+1.7)	18%	5.7% (+1.2)	12%

DRAFT

Figure 4-10 Highway traffic flow differences in West of England & B&NES (2042 RC vs 2019, 12hr daily)

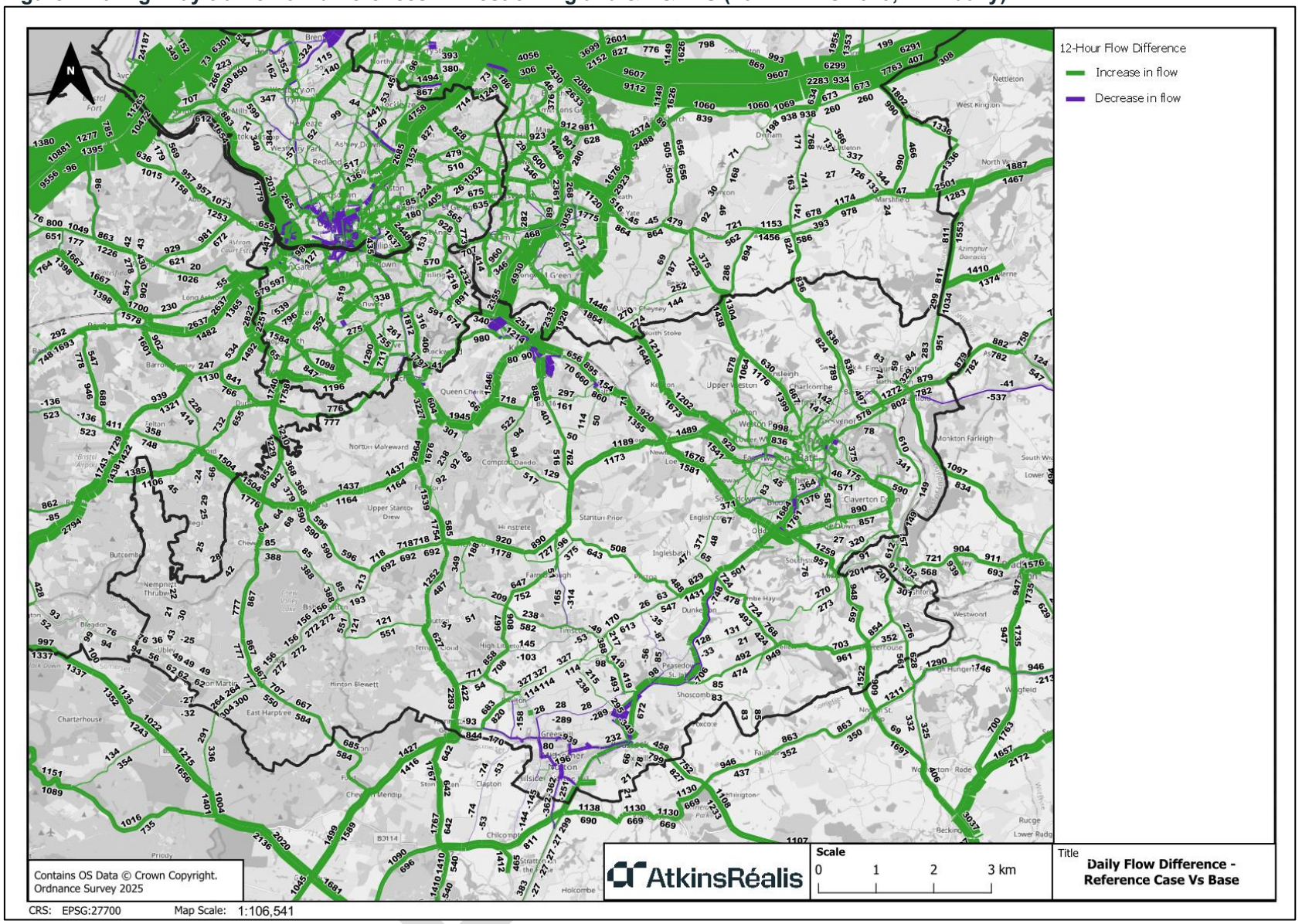
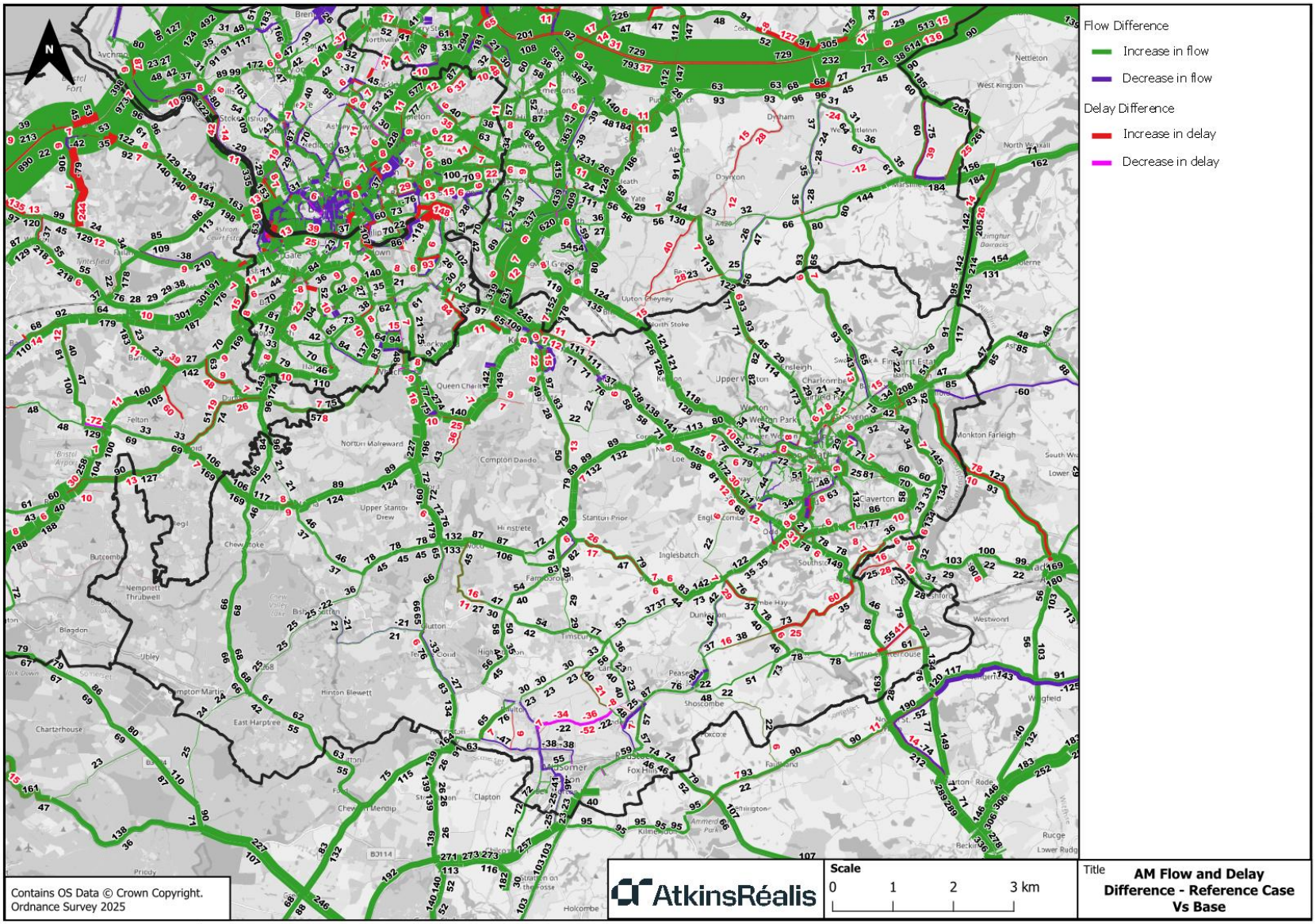


Figure 4-11 Highway flow & delay differences: B&NES (2042 Reference Case vs 2019 Base, AM peak hour)



4.5.2 Overview of highway trip rates and routing patterns for development sites (Hybrid Model)

The National Travel Survey (NTS[21]) used by the demand model, and TRICS[22] are different sources of trip rates. They are both used to understand how people travel, but they work in different ways and are used for different purposes. NTS is a government survey that examines how people across the UK travel in general, based on interviews and travel diaries. It gives a broad picture of travel habits, including walking, cycling, and public transport. TRICS, on the other hand, is a database that collects real traffic counts from specific types of developments, such as housing estates or shopping centres. It is used by planners to estimate how much traffic a new development might generate. Because NTS is based on general behaviour and TRICS is based on actual site data, their trip rates can be quite different and whilst they are both correct, they have different purposes. The demand model is based on NTS, planning applications are typically made using TRICS. This section showcases how the highway trip rates from WERTM compare to observed, similar large developments in TRICS and how this has been utilised to determine hybrid highway modelling.

An approach which combines observed (TRICS) vehicle demand data with the WERTM demand model are applied to have the most confidence in the model outputs. This hybrid modelling combines strategic transport modelling with targeted local analysis to provide a proportionate and robust assessment of the Local Plan. A strategic, multi-modal model is used to understand overall travel demand, mode share and wider network effects across the region, while more detailed travel demand from specific sites. This approach ensures that cumulative and strategic effects of growth are captured consistently, while allowing focused assessment of locations where potential transport impacts are most sensitive, without the need for comprehensive detailed modelling across the entire network.

Modal shares from the WERTM demand model, combined with TRICS vehicle trip rate data for each development location, have been used to estimate vehicle trip generation and support the hybrid modelling.

4.5.3 Residential vehicle trip rates derived from TRICS

A set of over 60 residential sites was extracted from the TRICS database to establish a robust and evidence-led range of observed vehicle trip rates. The selection was designed to reflect the type and scale of development proposed in the Local Plan, rather than replicate only local sites, recognising that the Local Plan includes a range of strategic and larger-scale allocations that are not widely represented within B&NES itself. The dataset was therefore deliberately broadened to include:

- A wide range of residential typologies (e.g. private housing, mixed-tenure schemes, urban extensions and new settlements)
- Larger developments (typically >200 dwellings), which are more comparable to the Local Plan allocations
- Sites outside London and dense urban centres, to avoid bias toward lower car-dependent environments that are not representative of B&NES

This approach ensures that the derived trip rates are based on a sufficiently large and diverse evidence base, capturing the variability in trip-making behaviour observed across comparable developments.

In total, 16 sites were surveyed pre-COVID (2017–2019) and 46 sites post-2022. The dataset therefore reflects both historic and more recent travel behaviour, providing a balanced and proportionate basis for defining trip rates. The purpose of assembling a large and varied sample was to capture the full range of observed trip rates, rather than rely on a small number of locally specific sites. This is particularly important given the scale and diversity of development proposed in the Local Plan. To ensure robustness of the derived values, median trip rates have been used rather than simple averages, reducing the influence of outliers and providing a more stable and representative central estimate.

---

[21] National Travel Survey - GOV.UK

[22] TRICS – TRICS is the system of multi-modal trip generation analysis for developments in the UK and Ireland

DRAFT

The resulting analysis shows a wide spread of observed trip rates, with a median two-way vehicle trip rate of approximately 0.45 in the AM peak and 0.44 in the PM peak. The interquartile and percentile ranges demonstrate that trip rates between approximately 0.40 and 0.55 are typical, with a broader plausible range of 0.35 to 0.60 across the dataset. The proposed trip rates fall within this observed envelope.

To ensure that the TRICS-derived trip rates are appropriately applied to local conditions, they have been adjusted to reflect variation in car mode share across B&NES. The median TRICS rates are implicitly associated with an average car mode share of approximately 65% (consistent with the base model). Two sites, Radstock and Hartcliffe, can be considered local to the study area. Both record lower trip rates than the England average (noting that Hartcliffe primarily consists of flats) Site-specific trip rates have therefore been factored using the ratio of local car mode share to this average, such that:

- Locations with higher car dependency and/or specific employment allocations generate higher vehicle trip rates
- Locations with stronger sustainable travel options generate lower vehicle trip rates

This ensures the final trip rates are both:

- Grounded in observed national evidence (TRICS) based on a broad range (60 sites) from representative locations and land use types
- Responsive to local travel behaviour and accessibility conditions (model mode share)

It is assumed that these observed residential sites incorporate “local” jobs (see section 3.3.2) that are associated with new residential development, including (for example) education, local shops and other local services.

Table 4-9 Residential observed (TRICS) total vehicle trip rate percentiles

Percentile	AM	PM
95%	0.71	0.69
85%	0.63	0.59
75%	0.59	0.53
50%	**0.45**	**0.44**
25%	0.38	0.36
15%	0.36	0.32
5%	0.27	0.26

*based on over 60 surveys sites

The daily origin car modal share, in the base model, (see Figure **2-5**) has been used to determine the average car mode split for B&NES which is 65%. The following process has been used to derive specific trip rates for each site:

- Assumed that average two-way vehicle trip rates of 0.45 (AM peak) and 0.44 (PM peak) would apply under typical conditions in B&NES, based on the median trip rates derived from TRICS in Table 4-9 above. It is assumed that these trip rates relate to a car mode share of 65%, the average for B&NES.
- Locations where current car mode shares are higher than 65% would therefore be more likely to have higher vehicle trip rates, in the absence of mitigations to improve travel choices.
- Locations where car mode shares are lower than 65% would have lower vehicle trip rates, given that there are more comprehensive travel choices and lower propensity to drive in these locations.
- The average TRICS trip rates have therefore been factored by the ratio of the location-specific car mode share to the B&NES average (65%).
- For mixed-use allocations, additional adjustments have been applied to reflect on-site employment, ensuring that total trip generation is consistent with both residential and employment components (which include specific

DRAFT

employment, see section 3.3.1) have been factored to include additional demand associated with this employment are shown in Table 4-10)

The resulting site-specific trip rates range from approximately 0.37 to 0.64 (two-way AM peak), reflecting variations in accessibility, land use mix and car dependency. These values have been checked against the underlying TRICS dataset and remain within the observed distribution of rates, providing confidence that they are realistic and evidence-based. The average two-way vehicle trip rate is estimated to be 0.50 in the AM peak and 0.49 in the PM peak. These trip rates assume that no mitigation measures are in place to encourage mode shift and reduce car use. Overall, this approach provides a proportionate and transparent method for deriving trip rates.

This ensures that the resulting trip rates are neither underestimated nor overly conservative and are considered appropriate for strategic Local Plan assessment. Table 4-10 shows the outcome of this process. Checks have been made at the sites with specific employment allocations to ensure that they have trip rates in line with the combination of both housing and jobs at each location. Figure 4-12 & Figure 4-13 show the proposed trip rates for the sites in comparison with the sites sourced from the TRICS database, which show that the proposed trip rates are within the ranges typically observed in TRICS.

Table 4-10 B&NES Local Plan residential total vehicles and vehicle trip rates per hour

Region	Major Sites	No. HHs	Site specific jobs	Total Jobs	Total vehs AM	Total vehs PM	HH Trip Rate AM	HH Trip Rate PM
Bath	Sites in Bath	627	990	1291	232	227	0.37	0.36
Bristol-Bath corridor: Hicks Gate, Keynsham & Whitchurch	Hicks Gate	2183		1048	1022	998	0.47	0.46
	North Keynsham	1538	1354	2092	858	837	0.56	0.54
	Saltford	1446		694	677	661	0.47	0.46
	Keynsham	1952	297	1234	786	767	0.40	0.39
	Whitchurch	2048		983	1159	1131	0.57	0.55
Somer Valley & Rural	Bishop Sutton, Chew & Pensford	400	239	431	224	218	0.56	0.55
	Writhlington	1028		494	543	530	0.53	0.52
	Chilcompton Rd & Thicket Mead	291	1003	1143	186	181	0.64	0.62
	North Radstock	951		457	419	409	0.44	0.43
	Paulton & Hallatrow	414		199	188	183	0.45	0.44
	Peasedown	939	1569	2020	567	554	0.60	0.59
	Farrington Gurney	549		264	324	292	0.59	0.53
	South Radstock (Haydon)	143		69	65	63	0.45	0.44
	Temple Cloud & Clutton	460		221	244	238	0.53	0.52
	Timsbury & Farmbrough	510		245	274	268	0.54	0.53
	All LP sites	15,480	5,701	13,131	7,767	7,558	0.50	0.49

DRAFT

Figure 4-12 Observed (TRICS) & B&NES Local Plan total vehicle trip rates (AM Peak hour)

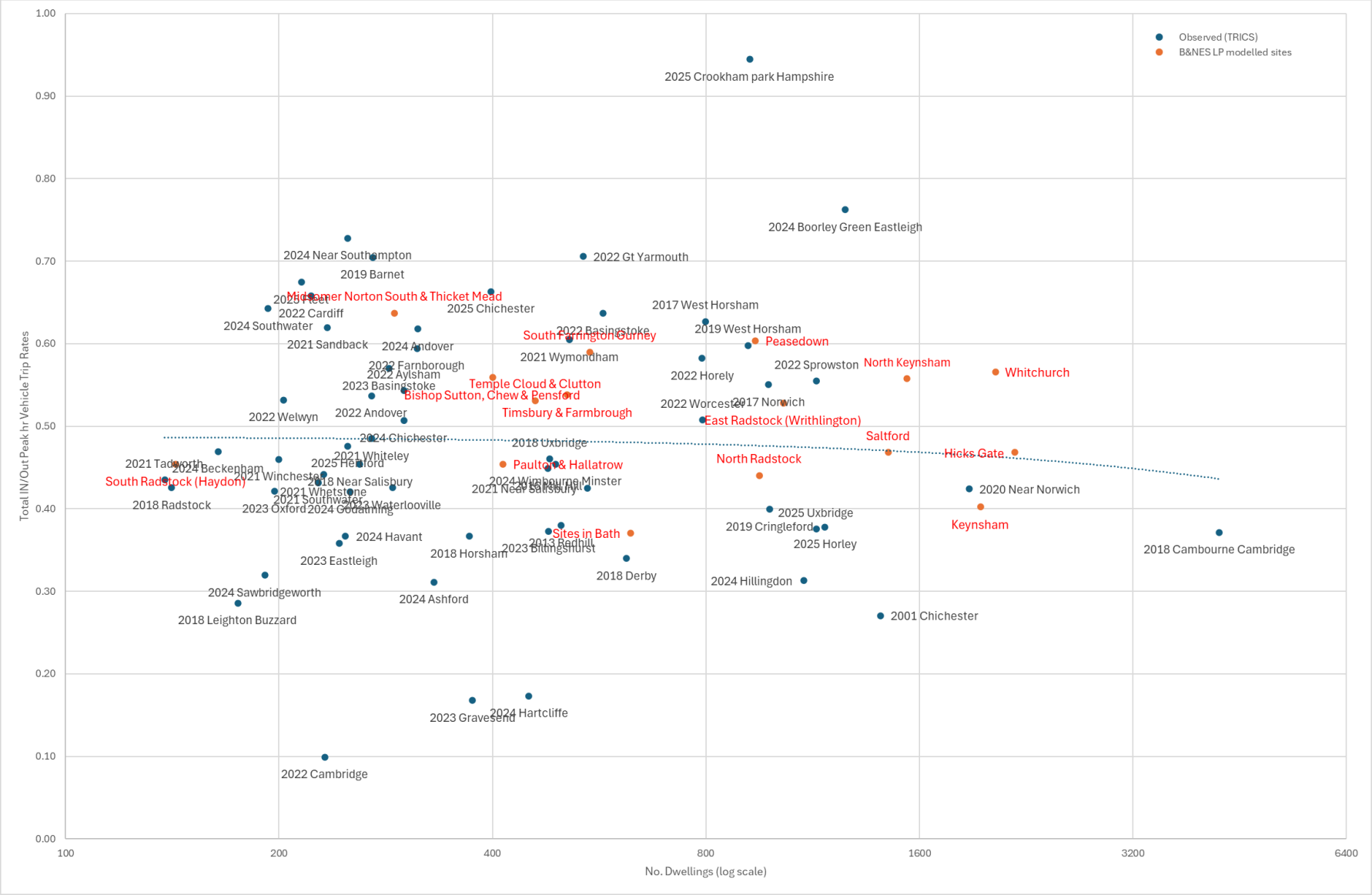
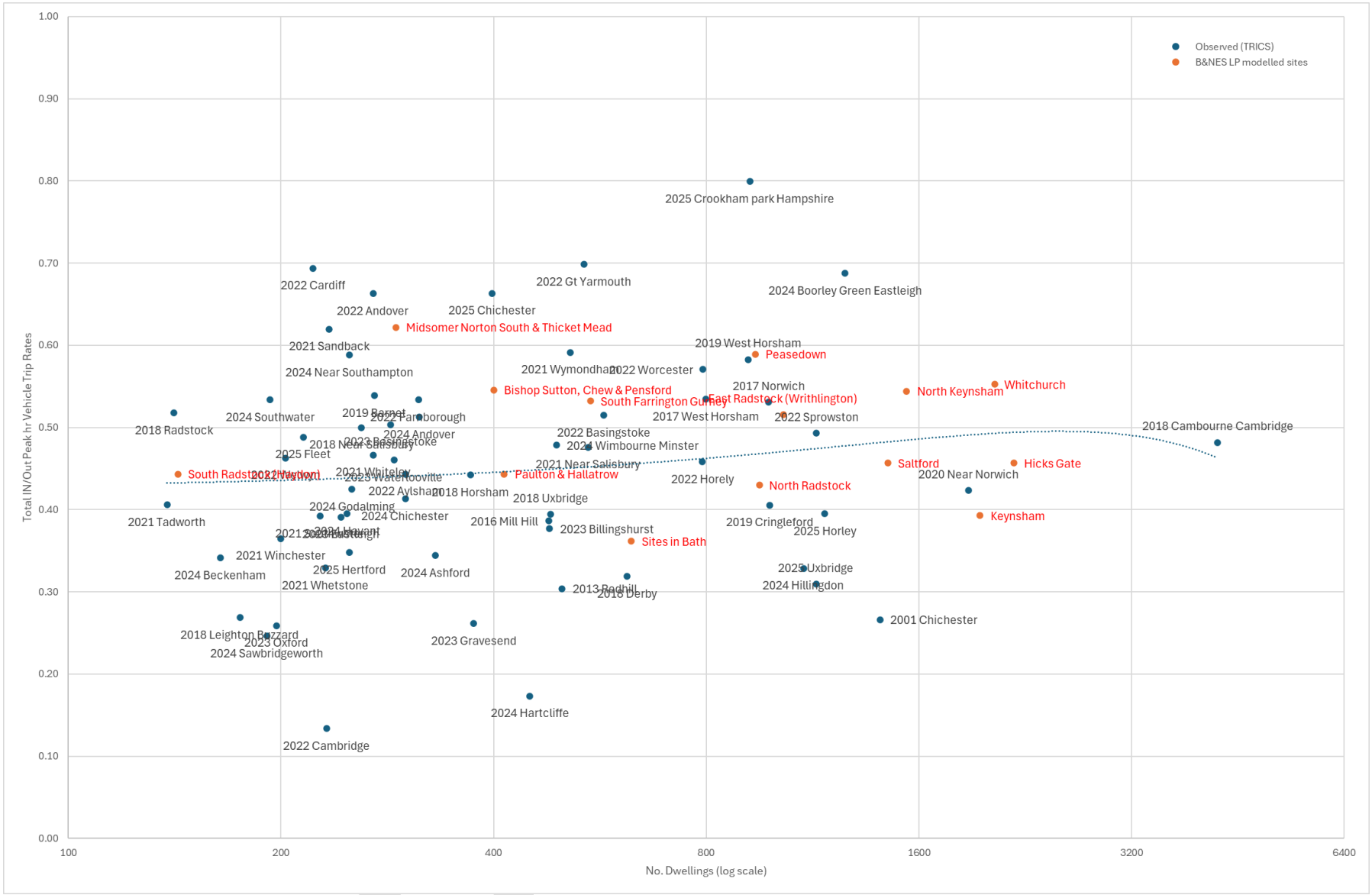


Figure 4-13 Observed (TRICS) and B&NES Local Plan total vehicle trip rates (PM Peak hour)


Observed (TRICS)
B&NES LP modelled sites
Total IN/Out Peak hr Vehicle Trip Rates
No. Dwellings (log scale)
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
100
200
400
800
1600
3200
6400
2025 Crookham park Hampshire
2022 Cardiff
2022 Gt Yarmouth
2024 Boorley Green Eastleigh
2022 Andover
2025 Chichester
Midsomer Norton South & Thicket Mead
2021 Sandback
2019 West Horsham
Peasedown
2024 Near Southampton
2021 Wymondham
2022 Worcester
Bishop Sutton, Chew & Pensford
2017 Norwich
North Keynsham
Whitchurch
South Farrington Gurney
East Radstock (Writhlington)
2024 Southwater
2019 Bernet
2017 West Horsham
2022 Sprowston
2018 Radstock
2024 Andover
2022 Basingstoke
2018 Cambourne Cambridge
2024 Wimbourne Minster
2025 Fleet
2021 Near Salisbury
Saltford
Hicks Gate
South Radstock (Writhlington)
Paulton & Hallatrow
2022 Horely
2020 Near Norwich
2021 Whiteley
2022 Aylsham
2018 Horsham
North Radstock
2018 Uxbridge
2024 Godalming
2024 Chichester
2016 Mill Hill
2019 Cringleford
Keynsham
2021 Tadworth
2023 Billingshurst
2025 Horley
Sites in Bath
2021 Winchester
2025 Uxbridge
2025 Hertford
2024 Ashford
2024 Beckenham
2021 Whetstone
2024 Hillingdon
2013 Radhill
2018 Derby
2001 Chichester
2018 Leighton Buzzard
2023 Oxford
2023 Gravesend
2024 Sawbridgeworth
2024 Hartcliffe
2022 Cambridge

4.5.4 Checks on overall vehicle travel demand

The Local Plan is projected to add approximately 7,500 vehicle trips (including freight) to the highway network during peak hour periods without transport mitigation. This matches total person trip production, derived using assumptions within NTEM (i.e. with revised housing and jobs forecasts) for the growth in Local Plan trips. The percentage growth in vehicle trips (Table 4-11) is broadly consistent with NTEM total person trips Table 3-5.

The overarching conclusion is that the ~15,000 Local Plan homes are expected to generate approximately 7,500 peak-hour vehicle trips across the region. This outcome is supported by multiple evidence sources (including NTEM, TRICS and related datasets) and is consistent with the calibrated 2019 Base Model.

In the 2019 WERTM base model, around 80,000 households in B&NES would generate approximately 47,000 vehicle trips (including freight). By 2042, the Reference Case assumes ~52,000 vehicle trips from 88,000 households (8,000 committed new homes over this period), while the full Local Plan scenario indicates ~60,000 vehicle trips from 104,000 households. The resulting ratios remain coherent and aligned across all scenarios.

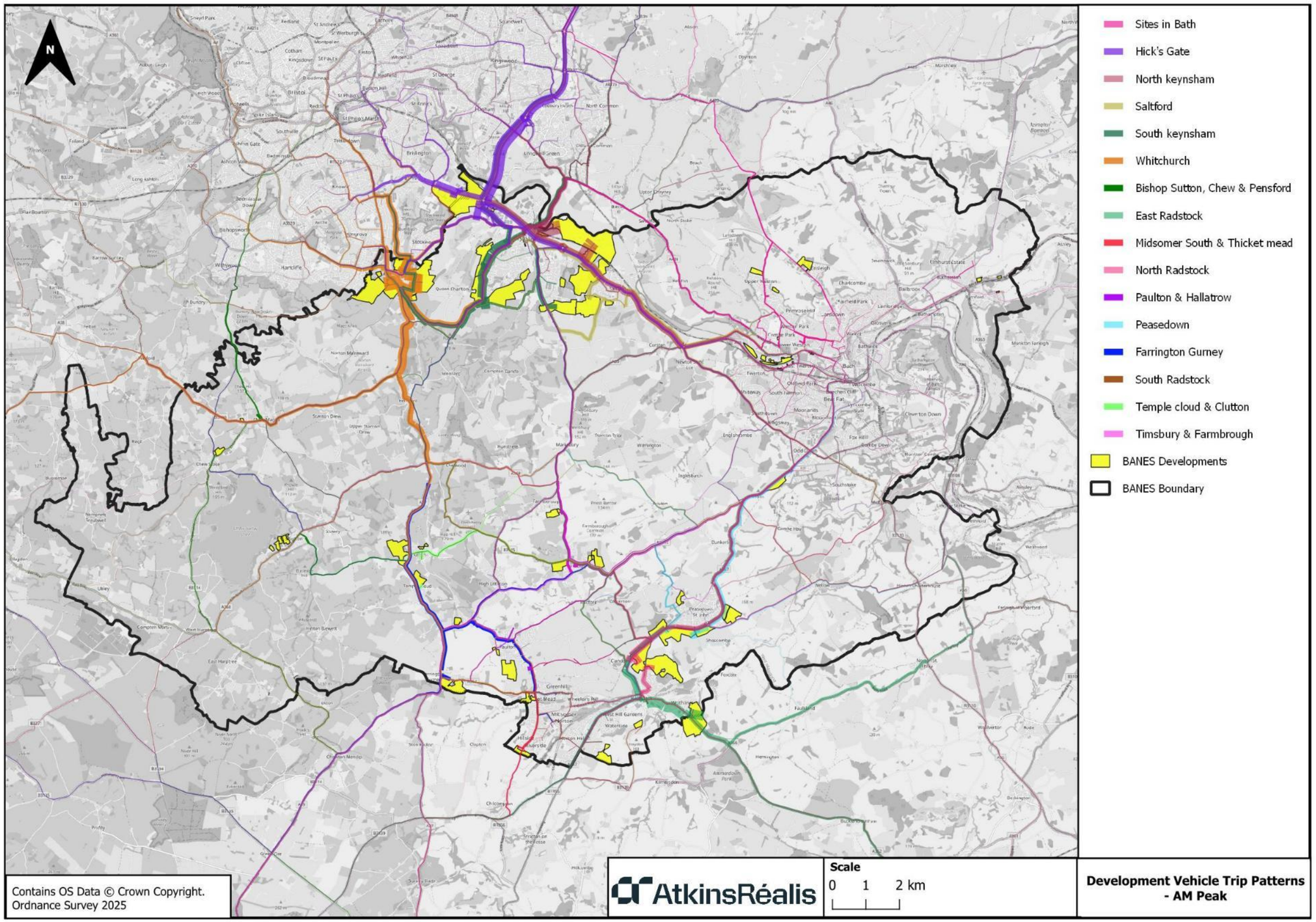
Table 4-11 Total two-way vehicle trips (000s) in AM peak hour (includes freight)

	2019	2042 RC	2042 All Local Plans	RC vs 2019	LP vs 2019
Bristol	83	95	95	14%	14%
South Gloucestershire	80	100	100	26%	26%
B&NES	47	52	60	10%	26%
North Somerset	49	61	61	24%	24%
External	113	140	141	24%	25%
West of England only	**260**	**308**	**317**	**19%**	**22%**

Figure 4-13 displays the routeing patterns for each agglomerated site. This figure shows the total vehicle trip routes as projected by the hybrid assignment model. These routes are believed to accurately represent typical travel behaviour, indicating the expected starting points and destinations of vehicle trips for each site cluster.

DRAFT

Figure 4-13 Highway trip patterns and routings for major development sites (no mitigation)



CRS: EPSG:27700 Map Scale: 1:95,917

4.5.5 Impact of the Local Plan (pre-mitigation) on highway travel time, delay and distance

The average delay (in minutes) for vehicles within the whole of WERTM, is expected to increase from approximately 6.8 to 7.5 minutes without mitigation (5.5 to 5.9 daily). Within B&NES this will be 6.2 to 8.0 minutes.

The total distance of all vehicles will increase from 89 to 90 million km within the WoE and from 7.9 to 9.0 million km within B&NES. The average distance will change very little. Note that trip lengths within B&NES exclude longer distance trips and are hence lower. Putting this into context, DfT road traffic estimates[23] and DVLA vehicle licensing statistics, in Great Britain in 2024 suggest approximately 7.500 miles (c12,000 km) per car per year equivalent to c30-36km per car per weekday. Note that DfT's National Travel Survey (England) reports an average vehicle trip length of 13.2 km per trip, in this instance this is different from vehicle distance per day which is presented below.

Table 4-12 Highway Network (delay & distance) statistics (pre transport mitigation)

Region / Scenario	AM/PM Peak Hr travel time (mins)	AM/PM Peak Hr delay (mins)	Total Daily Distance Travelled (million km)	Average Distance Travelled per trip (km)	Daily Demand (PCU)
West of England (inc motorways)					
2019 Base	33.3	4.3	72.7	36.3	2,000,000
2042 Reference Case	36.3	6.8	89.2	36.9	2,419,000
Local Plan No Mitigation	36.7	7.4	90.1	36.4	2,474,000
2042 Reference Case vs 2019 Base	9%	60%	23%	1.5%	21.0%
Local Plan No Mitigation vs 2019 Base	10%	75%	24%	0.2%	23.7%
Local Plan No Mitigation vs 2042 Reference Case	1%	9%	1%	-1%	2%
2042 Reference Case vs 2019 Base	3.0	2.6	16.5	0.5	418,000
Local Plan No Mitigation vs 2019 Base	3.4	3.2	17.4	0.1	474,000
Local Plan No Mitigation vs 2042 Reference Case	0.4	0.6	0.9	-0.5	56,000
To/from/within B&NES					
2019 Base	26.4	4.5	6.7	20.6	325,000
2042 Reference Case	28.5	6.2	7.9	21.8	362,000
Local Plan No Mitigation	29.7	7.6	8.8	20.9	421,000
2042 Reference Case vs 2019 Base	8%	38%	18%	5.7%	11.4%
Local Plan No Mitigation vs 2019 Base	13%	71%	31%	1.3%	29.5%
Local Plan No Mitigation vs 2042 Reference Case	4%	24%	11%	-4%	16%
2042 Reference Case vs 2019 Base	2.1	1.7	1.2	1.2	37,000
Local Plan No Mitigation vs 2019 Base	3.3	3.2	2.1	0.3	96,000
Local Plan No Mitigation vs 2042 Reference Case	1.2	1.5	0.9	-0.9	59,000

[23] Road traffic estimates in Great Britain, 2024: Traffic in Great Britain by vehicle type - GOV.UK

4.5.6 Corridors with additional daily traffic

The daily (7am-7pm) traffic flow (and peak hour including delay) differences as a result of the Local Plan (without mitigation) vs the reference case scenarios are shown in Figure 4-15 to Figure **4-18**.

Changes in Daily Traffic Flows and Assessment of Impact
This section describes the forecast changes in daily traffic flows arising from the Local Plan development and explains why these changes are not expected to result in severe highway impacts, either individually or cumulatively. Overall, the pattern of forecast traffic growth reflects:

- The geographical distribution of development sites,
- Existing travel patterns and desire lines, and
- The availability of residual highway capacity on key corridors.

The modelling shows that increases in daily traffic flows are localised and corridor-specific, rather than network-wide. A limited number of links experience increases in excess of 1,000 vehicles per day, which is considered moderate in the context of the function and existing usage of these routes.

Importantly, these increases represent incremental growth spread across the day, rather than concentrated peak-hour surges, and therefore do not give rise to severe capacity or operational issues in line with the definition of “severe” set out in the NPPF.

Bath Area
In the Bath area, increased daily flows are forecast on the following links:

- **A367 (towards Odd Down)** Traffic growth reflects movements to and from housing in the south-west of Bath and the Somer Valley. The A367 already functions as a primary radial route and is forecast to accommodate additional demand without exceeding typical urban capacity thresholds.

Hicks Gate / Keynsham Area
In the Keynsham and Hicks Gate area, increases are forecast on several strategic and distributor roads that serve both local and cross-boundary movements:

- **A4174 southbound and the Keynsham Bypass** Reflects additional orbital movements and access to Bristol and the A4 corridor. These routes already carry high volumes and are designed to accommodate strategic flows.
- **B3116 Burnett Hill** Increased use as a local distributor route connecting new development to the wider network.
- **Keynsham Road (northbound)** Reflects movements toward Bristol and the A4 corridor, consistent with existing travel patterns.
- **A4 east of the new site access road** This increase is associated directly with Local Plan development and reflects reasonable redistribution of traffic along the primary east–west corridor.
- **Station Road over the Keynsham Bypass** Growth reflects local circulation and access rather than through-traffic.

While daily flows increase across these links, the modelling does not identify operational breakdown or unacceptable delays, and capacity remains within acceptable limits.

DRAFT

Whitchurch / Dundry Area
In the Whitchurch and Dundry area, higher daily flows are forecast on:

- Sturminster Road
- A37 Bristol Road (south of Whitchurch)
- Broadoak Hill

These increases reflect additional trips associated with development to the south of Bristol and Bath, using established radial and local distributor routes. The A37 in particular is a principal route with a strategic function, and the scale of increase does not materially alter its operational role.

Somer Valley Area
Within the Somer Valley, increased daily flows are forecast on:

- Phillis Hill / Winterfield Road
- Tunley Road
- A367 Bath New Road
- A362 Frome Road

These routes already accommodate local and through movements associated with travel between Radstock, Midsomer Norton and Bath. The forecast increases reflect the concentration of development within the Somer Valley but remain proportionate to the role and capacity of the network.

4.5.7 Assessment of Severity

Across all locations, the identified increases of over 1,000 vehicles per day should be interpreted as:

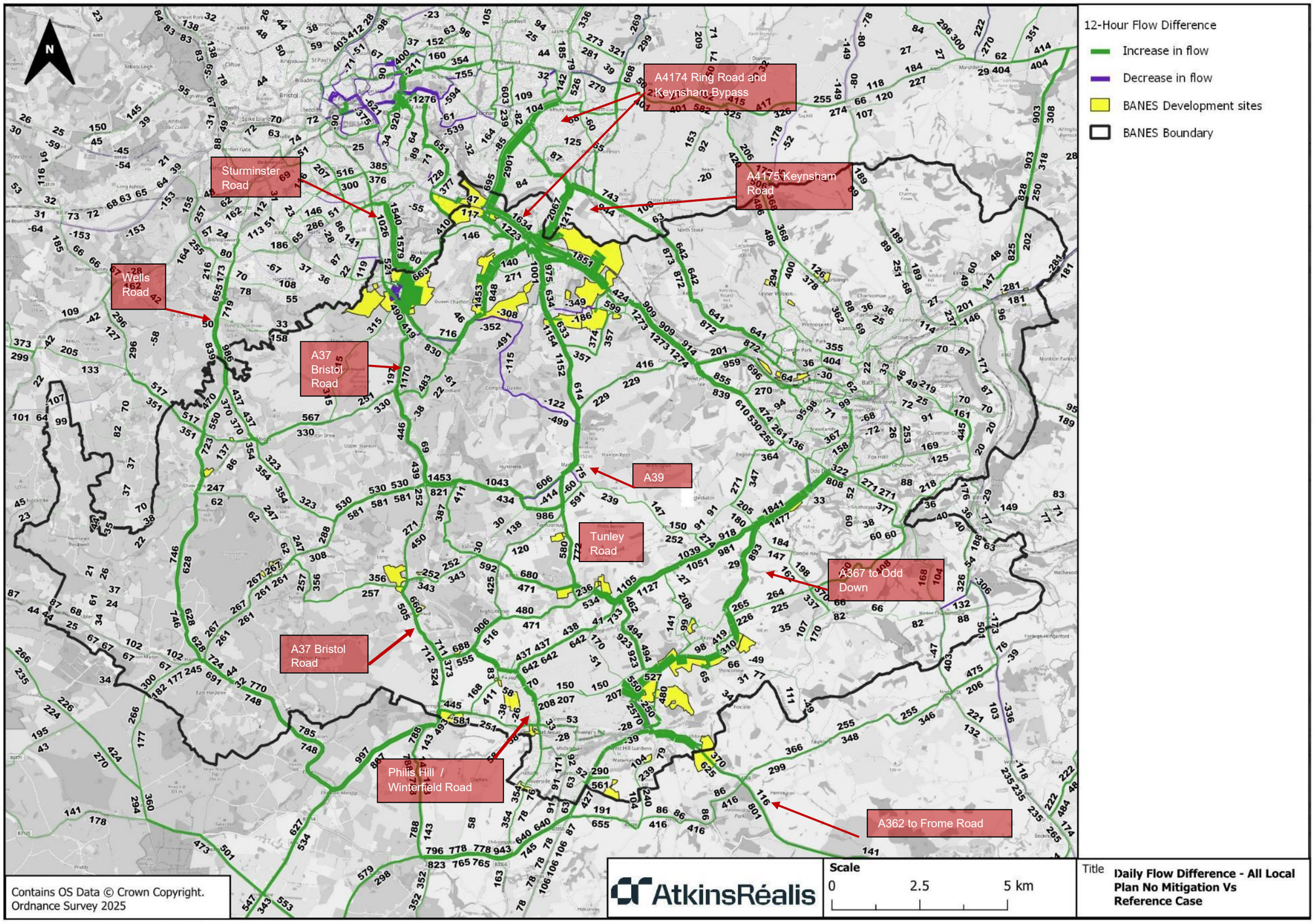
- Indicative of where traffic growth is expected, not evidence of severe impact;
- Moderate in scale relative to existing daily flows on these routes; and
- Spread across the day, limiting peak-period stress on the network.

Accordingly, the modelling demonstrates that while traffic volumes increase on certain corridors, the functioning of the highway network is maintained, and the impacts do not meet the threshold of “severe” either in isolation or cumulatively.

These findings provide a robust basis for concluding that the Local Plan is not dependent on unrealistic assumptions and that identified impacts can be appropriately managed through the wider mitigation strategy set out elsewhere in this evidence base.

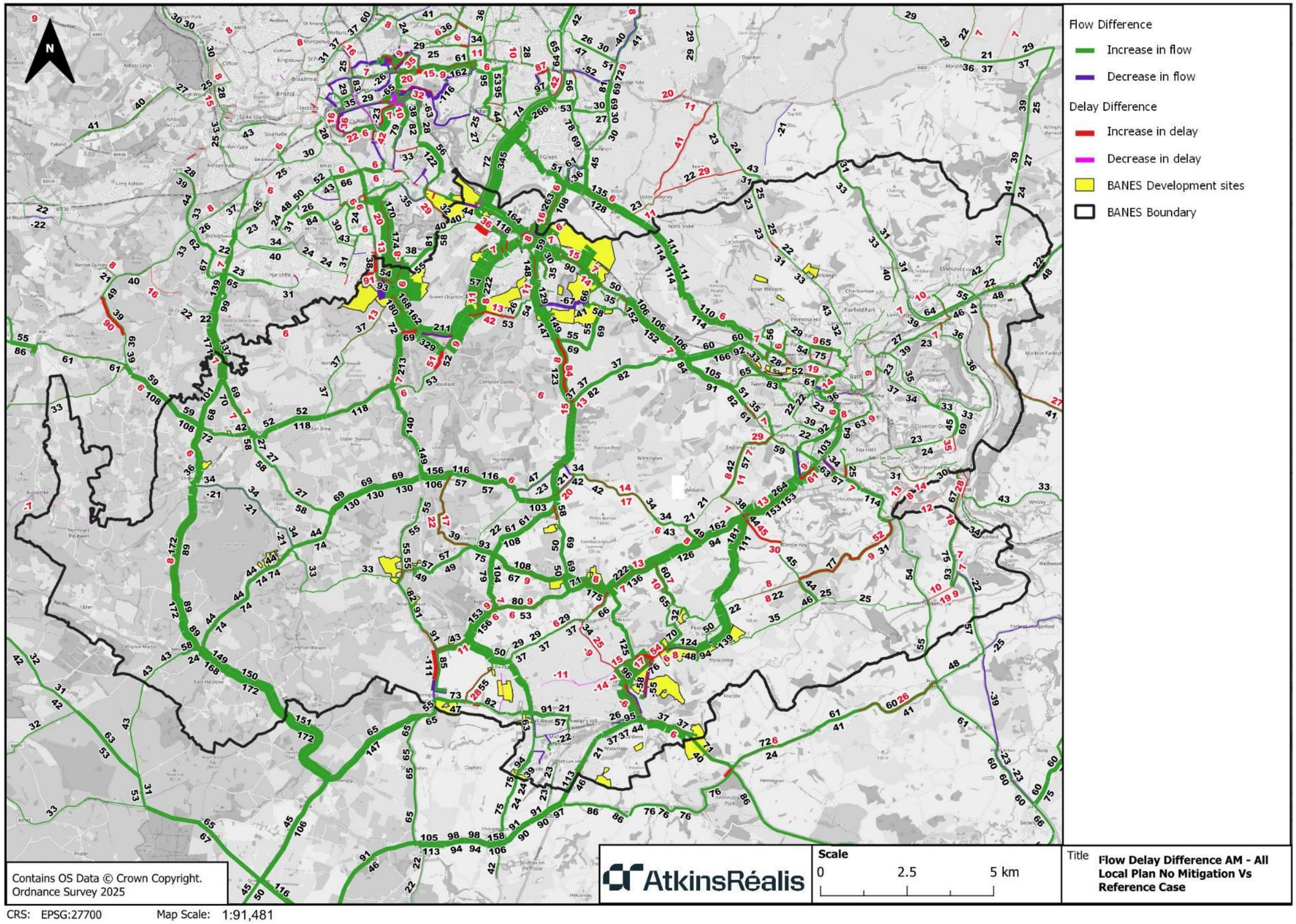
DRAFT

Figure 4-14 Highway flow difference: B&NES (Local Plan pre-mitigation vs RC, 7am – 7pm)



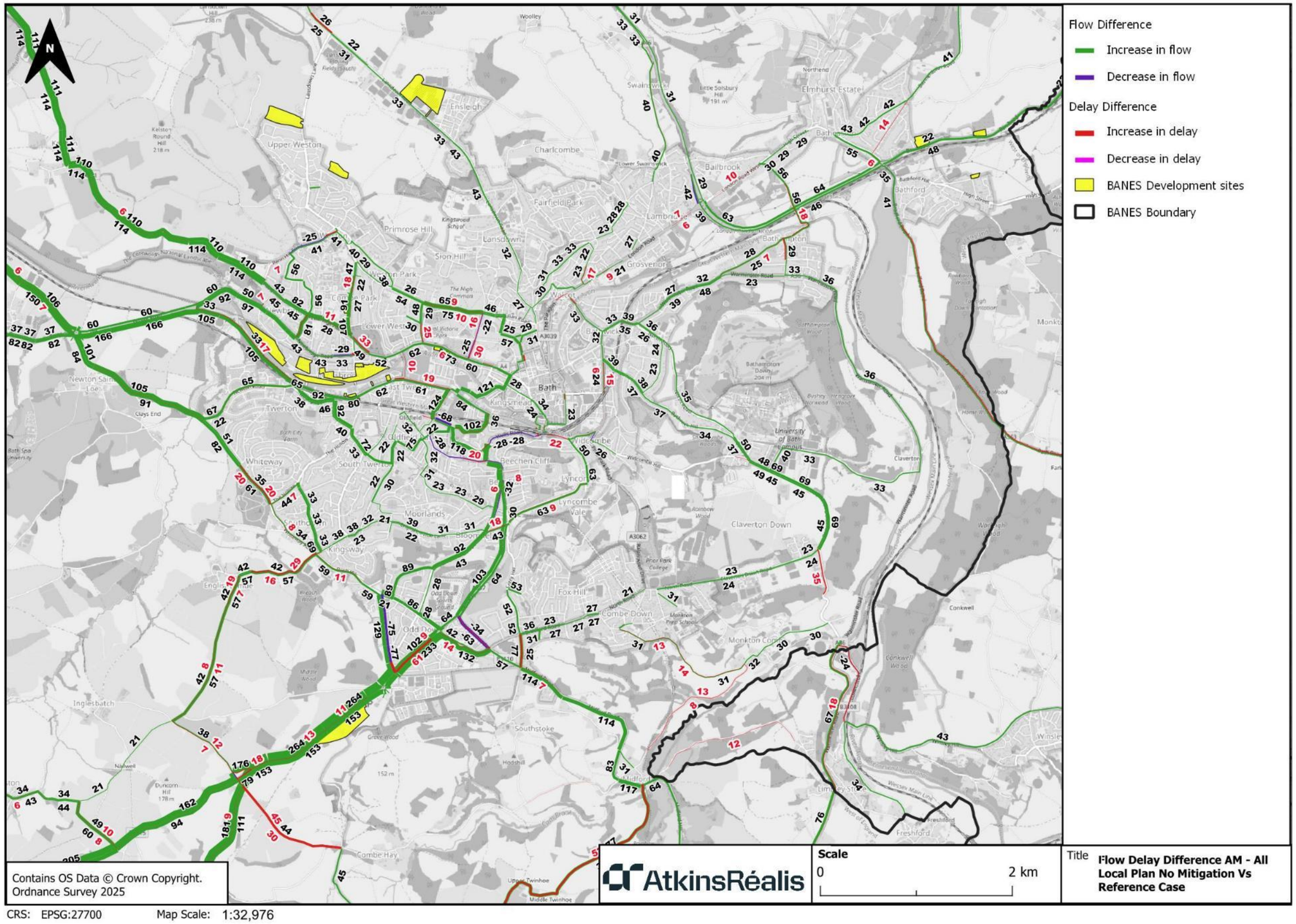
CRS: EPSG:27700 Map Scale: 1:91,481

Figure 4-15 Highway flow & delay difference: B&NES (Local Plan pre-mitigation vs RC, AM Peak hour)



CRS: EPSG:27700 Map Scale: 1:91,481

Figure 4-16 Highway Flow & delay diff: Bath (LP pre mitigation vs RC, AM Peak hour)



CRS: EPSG:27700 Map Scale: 1:32,976

Figure 4-17 Highway Flow diff: Hicks Gate, Keynsham & Whitchurch (LP pre mit vs RC, AM Peak hour)

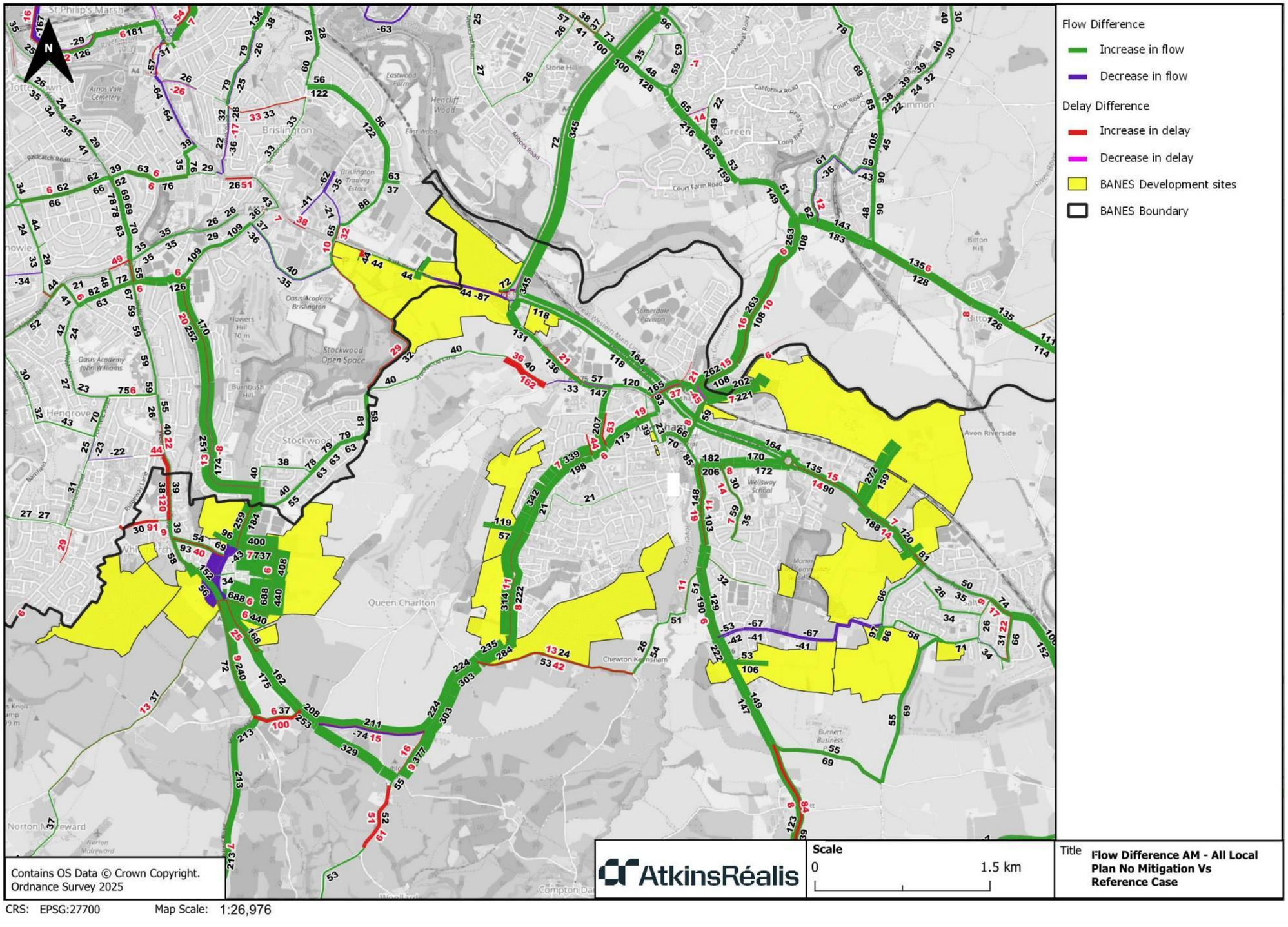
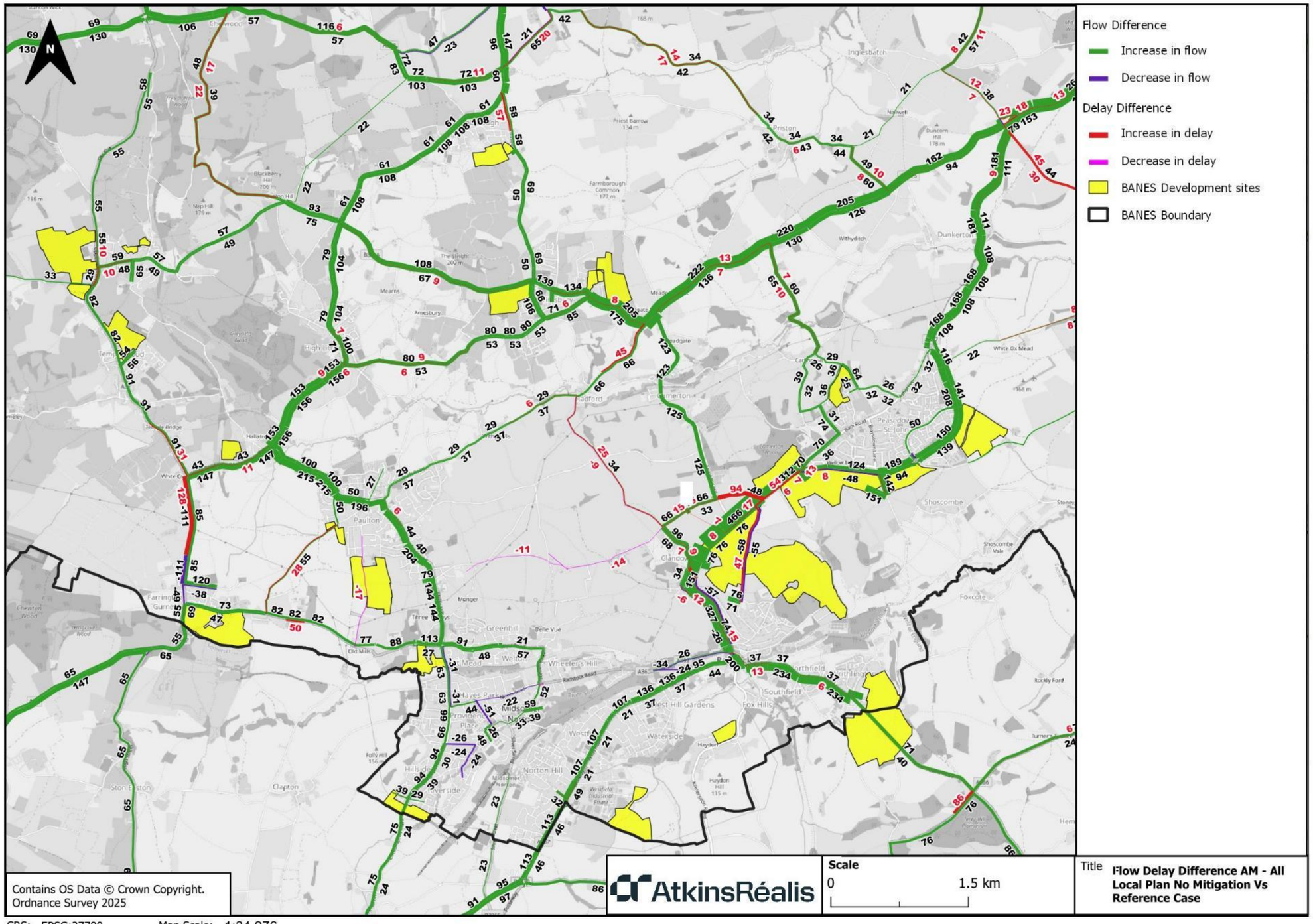


Figure 4-18 Highway Flow diff: Somer Valley (LP pre mitigation vs RC, AM Peak Hour)



CRS: EPSG:27700 Map Scale: 1:34,976

5. Transport mitigation assumptions

A transport mitigation strategy—developed from the site allocations and refined through the modelling process—was prepared to address the issues identified. The strategy aims to maximise the sustainability of individual sites while applying a top-down, vision-led approach to achieve significant mode shift across the region. This section outlines the modelling assumptions applied in WERTM to represent the transport package.

Further detail on the proposed mitigation measures, including delivery mechanisms, is provided in the Transport Topic Paper.

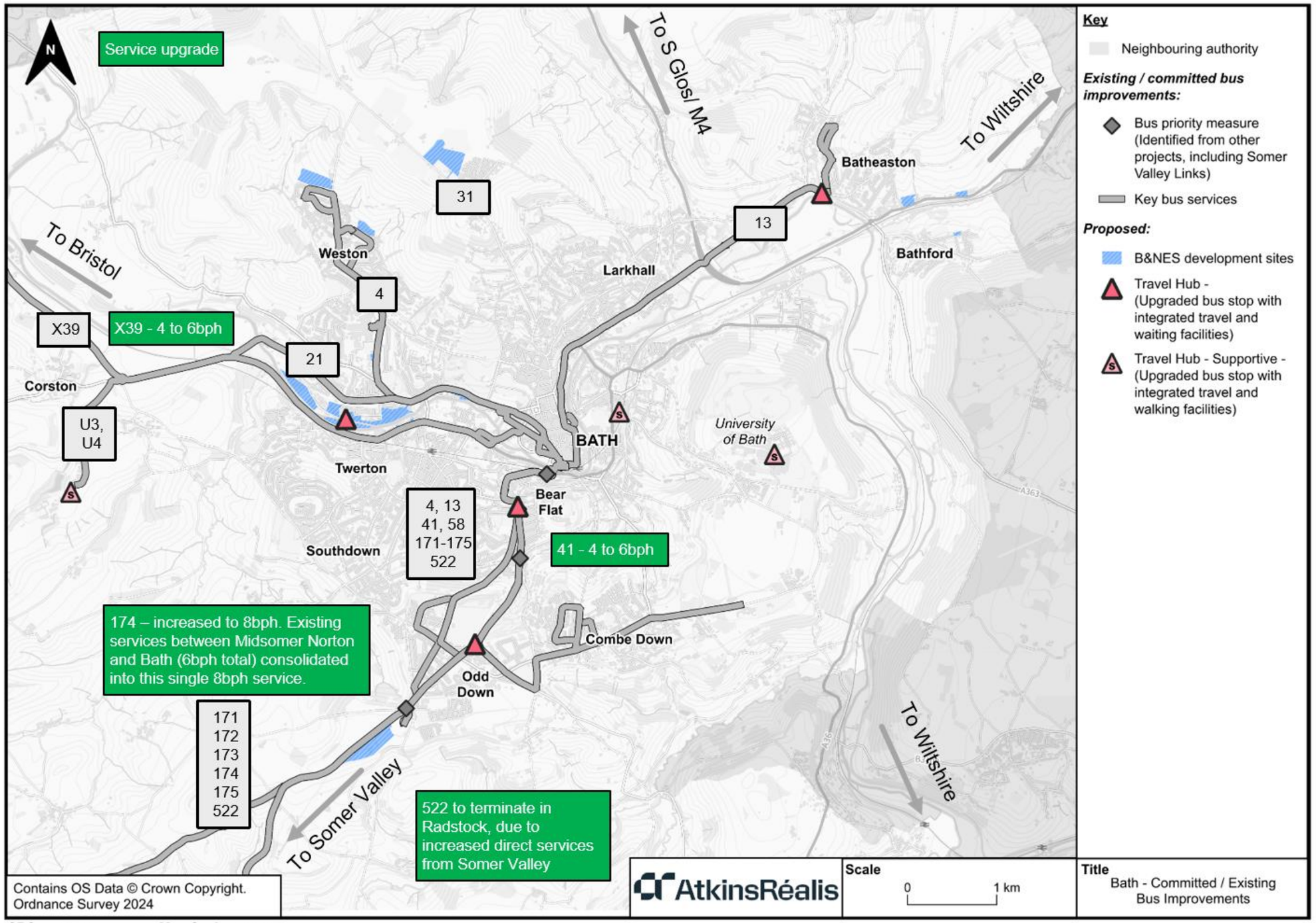
5.1 Bus services, transport interchanges and travel hubs

This section outlines the interventions, and assumptions, coded into WERTM, to represent proposed changes to bus services, transport interchanges, travel hubs and bus stop upgrades.

Figure 5-1 to 5-3 presents the new and existing amended/ higher frequency bus services and new transport interchanges and travel hubs. These are intended to serve both the wider community and the planned development sites. These are intended to focus on routes which would maximise patronage and seek to be as commercially viable as possible. The new services are assumed to stop at all existing stops and transport interchanges.

DRAFT

Figure 5-1 Proposed bus services, transport interchange and travel hubs in Bath



CRS: EPSG:27700 **Map Scale:** 1:36,000

Figure 5-2 Proposed bus services, transport interchange and travel hubs in the Somer Valley and rural areas

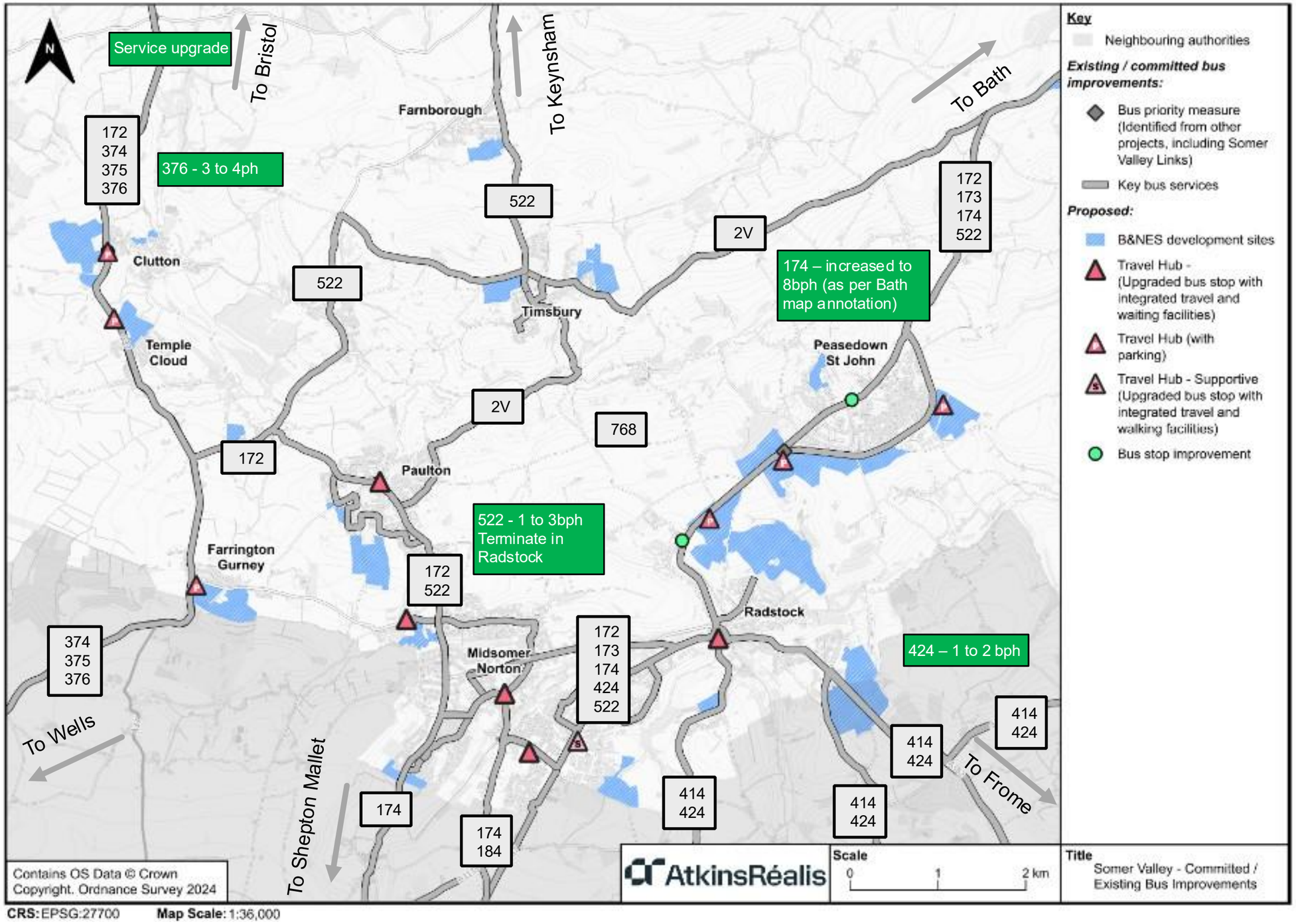
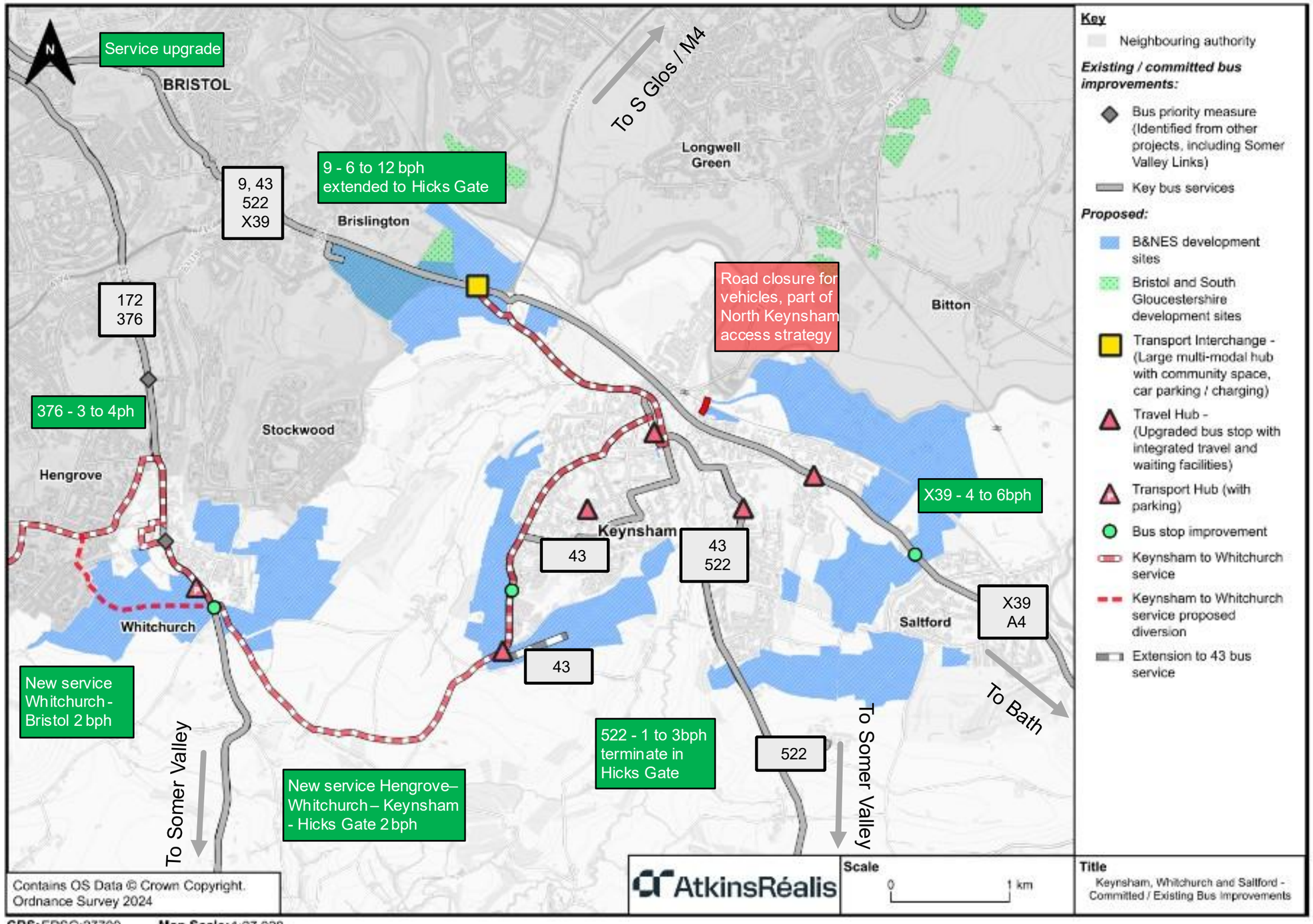


Figure 5-3 Proposed bus services, transport interchange and travel hubs in Keynsham, Saltford and Whitchurch



CRS: EPSG:27700 **Map Scale:** 1:27,028

5.1.1 Travel hub assumptions

Travel (Mobility) hubs[24] are proposed throughout the region, with the objective of integrating a wide range of travel choices, from the outset, into the planning of each development location. It is assumed that CoMoUK gold CoMO Accreditation Standards would be required for each new hub.

Travel)Hubs are coded as new bus stops and connected to the bus network. People living in zones within 800 m (as the crow flies) of each proposed hub are assumed to have access to it. This distance was established using manual walking-distance checks via online mapping. Within the model, the hubs are assumed to reduce the perceived cost of walk access and egress by 20%. This is implemented by applying a distance factor, which acts as a proxy for faster or easier walk access in the model.

Justification for perceived 20% cost reduction: Based on TAG Databook Table M3.2.1, individual "soft" bus interventions—such as CCTV, new bus shelters, interchange improvements, RTPI and ticketing enhancements (used here as proxies for a Mobility Hub)—are assumed to provide up to approximately four minutes of perceived journey time benefit. In the model, this is represented as a 20% reduction in typical walk access and egress time. This reduction is derived from an example calculation of Perceived Journey Time (PJT) to a standard bus stop.

- 400m (walk) from home (assume speed = 4.8kph takes 5 mins) (Access Time)
- Waiting for a bus, which comes every 15 minutes (assume average wait is 7.5 mins) (Origin Wait Time)
- 25 mins time on bus (In-Vehicle Time)
- 400m (walk) to destination (Egress Time)
- Note whilst this example journey would actually take 42.5 mins, the perception is that it would take **60 minutes**, due to perceived (within the model) double time for walking & waiting
- With a mobility hub - the equivalent journey - would be perceived as **56 minutes** (4 minutes quicker)

Table 5-1 Example of a "typical" perceived journey time (PJT) by bus

WERTM PJT functions	Description (time)	How calculated	Actual time (mins)	Perceived time (mins)	
ACT (Access time)	origin to bus stop	Distance * Walk speed	5	Bus stop 10	Mobility hub 8 (-20%)
OWT (Origin wait time)	waiting for bus	Varies depending on bus frequency	7.5	15	15
IVT (In Vehicle time)	Time on bus	Varies	25	25	25
EGT (Egress time)	final stop to destination	See ACT	5	Bus stop 10	Mobility hub 8 (-20%)
Total PJT			**42.5**	**60**	**56 (-4)**

Note: that bus journeys which require a transfer, additional PJT functions would include: WKT (Walk time) Walking between PT stops & stations; TWT (Transfer wait time) Transfer between PT services.& TRN (Transfer penalty time) Fixed (10min) interchange penalty.

[24] The concept of mobility hubs is described on the CoMoUK website: Mobility hubs > Overview and benefits

DRAFT

5.1.2 Transport Interchange assumptions

Proposed transport interchanges and (travel hubs with parking) are treated within WERTM as a new P&R site, with the full model P&R functionality and its associated parking capacity availability leading to assumptions around costs within the model. The way the P&R model functions is detailed in the WERTM model development report.

5.2 Active travel assumptions

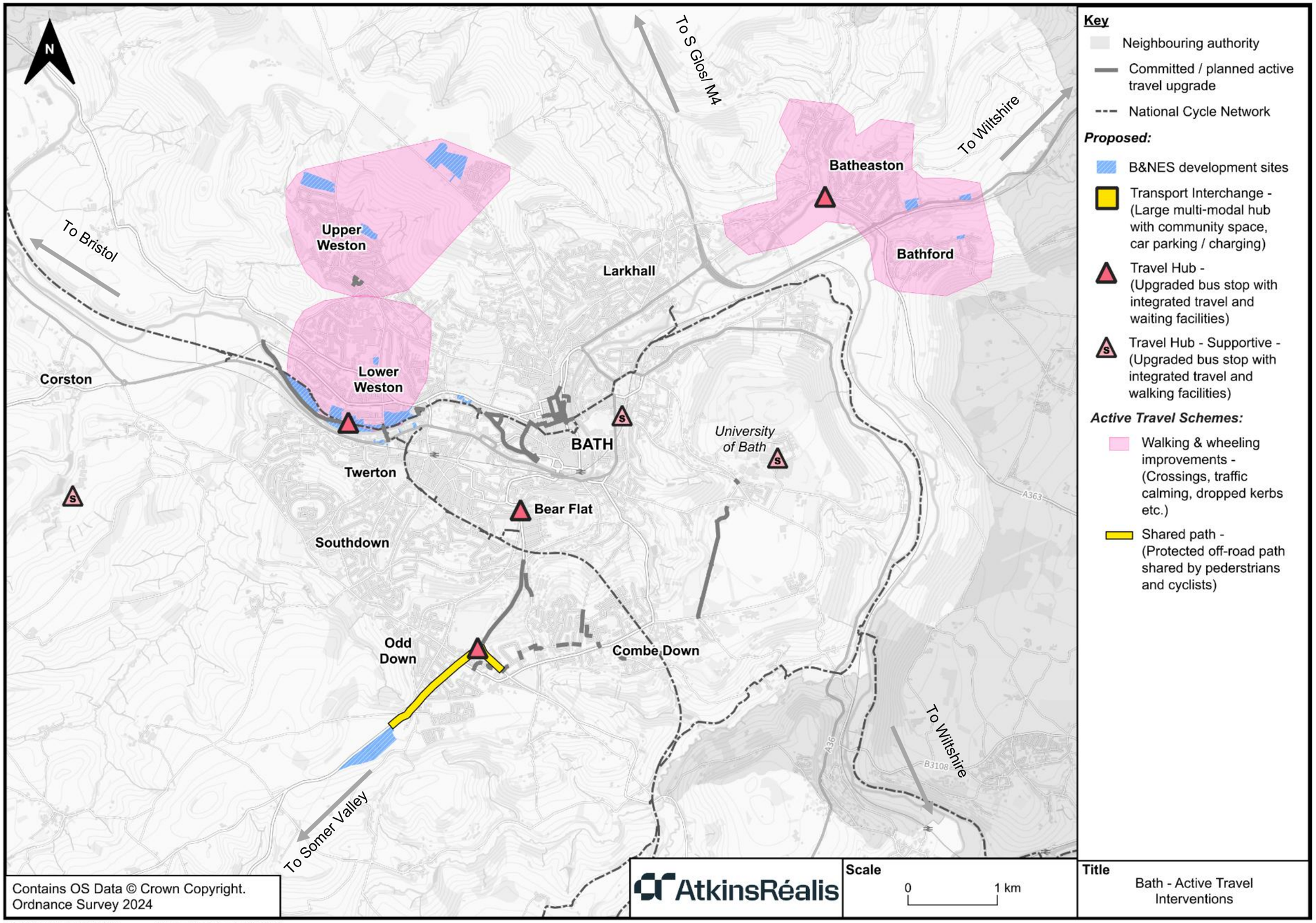
The mitigation package proposes multiple new upgraded walking and cycling routes (see Figure 5-4, Figure 5-5 & Figure 5-6). These have been coded into the model as perceived changes to walking and cycling speed. These factors are set out in the WERTM Model Validation Report[25], in-line with speed perception factors as per proposed mitigation routes.

Alterations in perceptions of walking and cycling along the proposed routes are anticipated to influence users' perceived costs, thereby affecting modal travel decisions, including access to interchanges and hubs through active transportation.

DRAFT

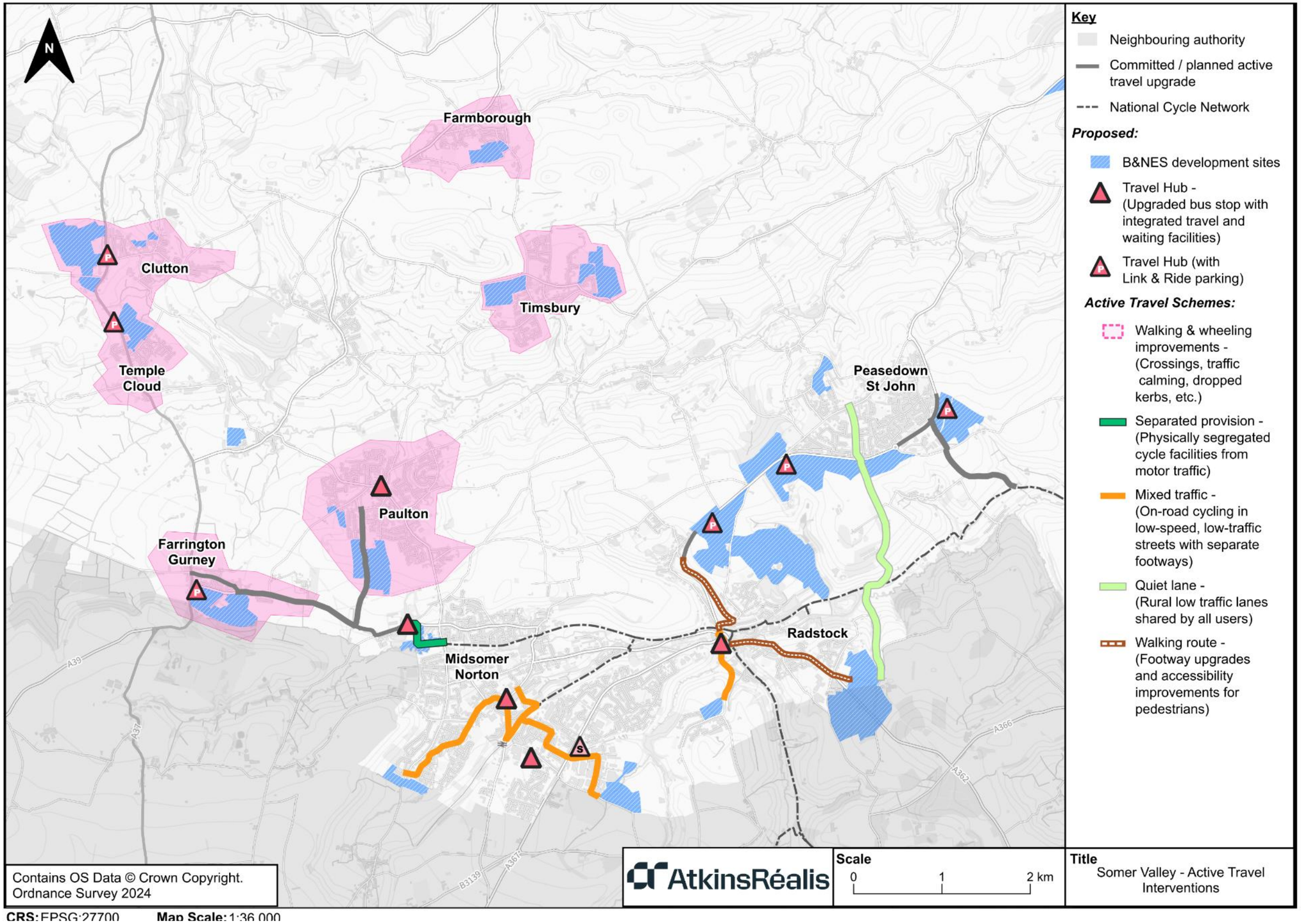
[25] WERTM MDVR v1_REV2_Issued (Section 18.5)

Figure 5-4 Proposed active travel in Bath



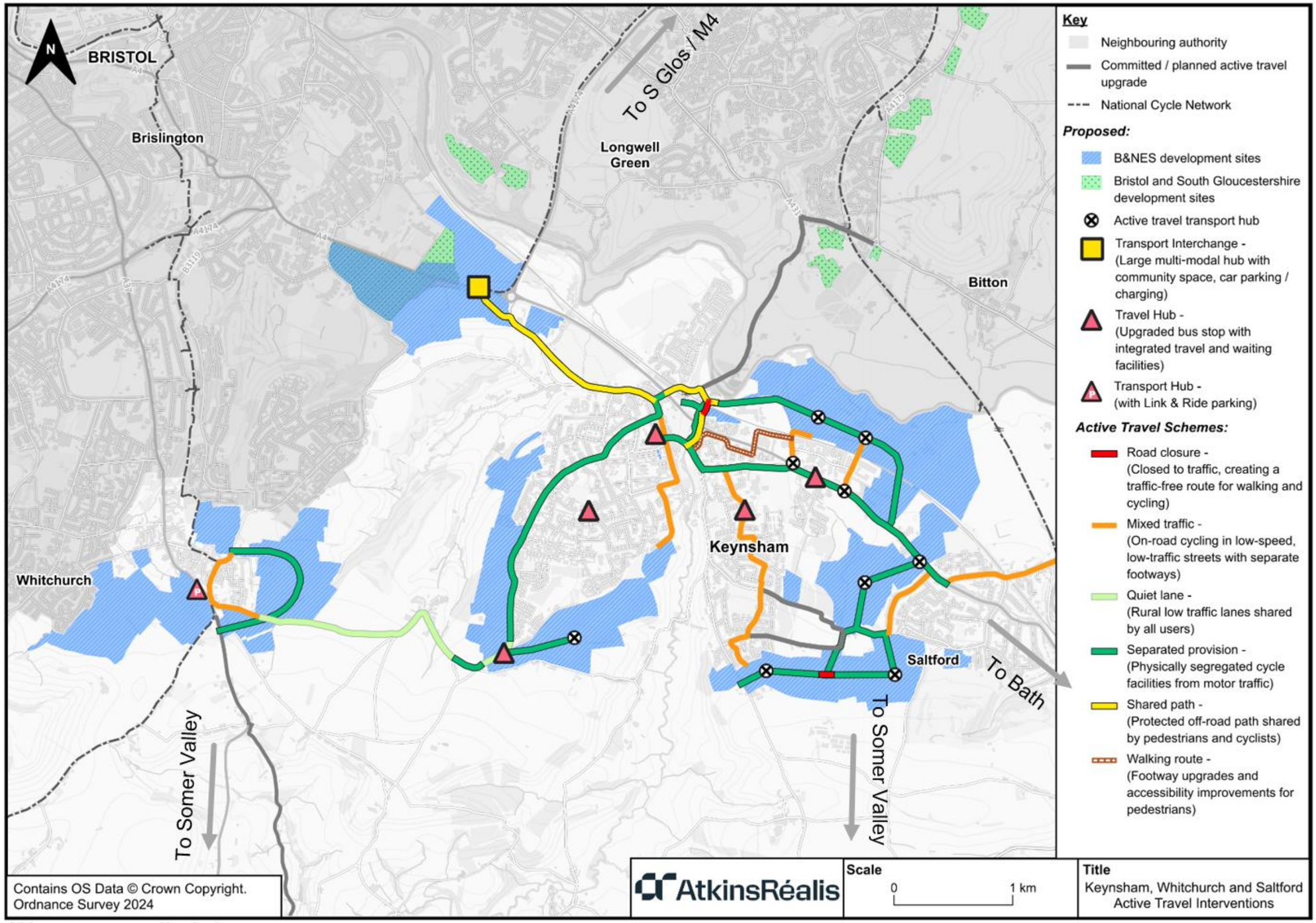
CRS: EPSG:27700 **Map Scale:** 1:36,000

Figure 5-5 Proposed active travel in the Somer Valley and rural areas



CRS: EPSG:27700 **Map Scale:** 1:36,000

Figure 5-6 Proposed active travel in Keynsham, Saltford & Whitchurch



CRS: EPSG:27700 **Map Scale:** 1:27,077

5.3 Highway assumptions

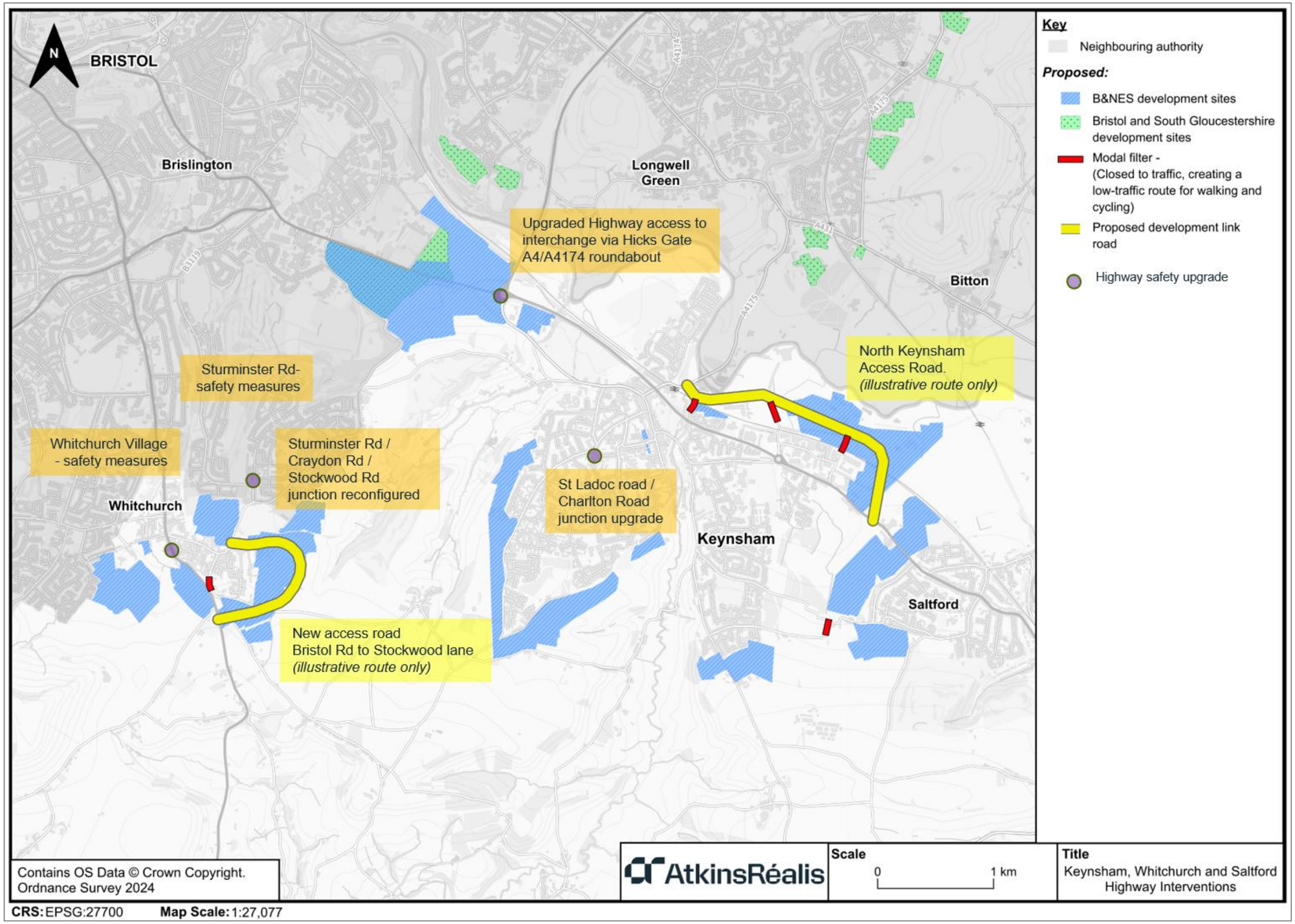
It is recognised that work on highway access and junction arrangements for all planned sites is still at a preliminary stage and has not yet been fully developed for the Local Plan. For modelling purposes, essential access to the highway network has been assumed for each site, with indicative junction forms identified in line with the scale and nature of development. Further refinement and enhancement will be required as the Local Plan progresses.

Within the strategic WERTM model, the location, number and form of access junctions have been estimated at a high level for illustrative purposes. These assumptions will evolve as each site progresses through masterplanning and a detailed access strategy is produced and agreed with B&NES through the transport assessment process. This will require separate feasibility work and operational impact testing.

The current approach provides indicative access arrangements suitable for strategic modelling only; final junction locations and designs will require further investigation and are not expected to be definitive at this stage. This is considered appropriate for Local Plan submission and allows for further scrutiny, refinement and enhancement in line with examination requirements.

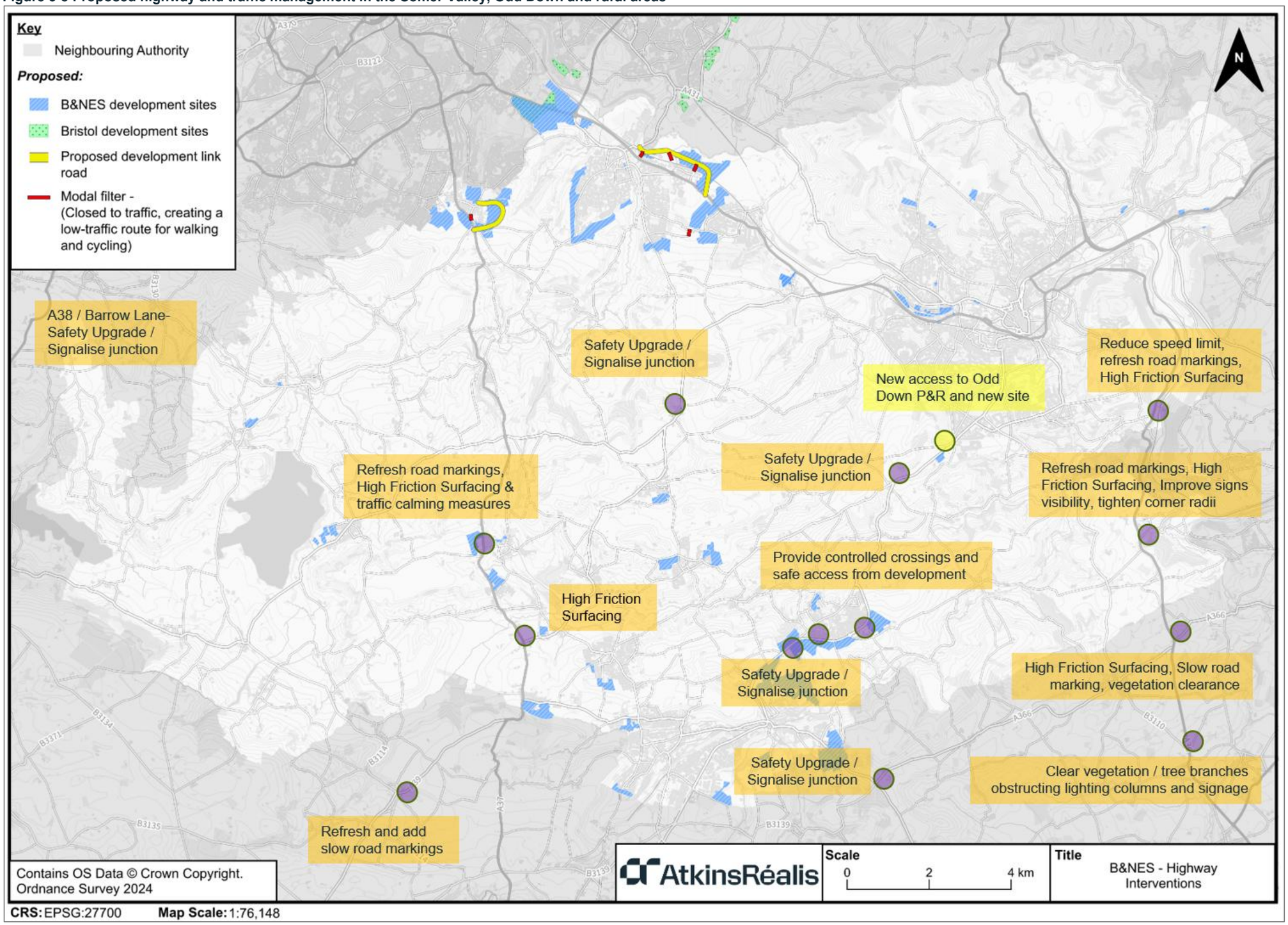
DRAFT

Figure 5-7 Proposed highway and supportive rail services, in Keynsham, Saltford and Whitchurch and wider B&NES



CRS: EPSG:27700 **Map Scale:** 1:27,077

Figure 5-8 Proposed highway and traffic management in the Somer Valley, Odd Down and rural areas



6. Transport forecasts with mitigation

6.1 Daily travel modal share

6.1.1 Demand Matrices - Change in trips by purpose

Table 6-1 shows daily travel modal share (production/attraction) across different regions and scenarios. Forecasts indicate that, with the Local Plan and associated transport mitigation in place, around 65% of trips in Bath and North East Somerset will be made by car—slightly higher than the wider region (63%) but consistent with regional trends once mitigation is applied. Targeted bus service enhancements, active travel measures and supporting infrastructure are expected to increase sustainable travel, bringing mode shares from development sites broadly in line with the Bristol and Bath area: 65% car, 13% bus/rail and Park & Ride, and 22% active travel.

This indicates that a comprehensive transport strategy can enable new development to achieve sustainability outcomes comparable to regional benchmarks. Many existing residents will also benefit from the proposed measures, as improved travel options are expected to increase the use of sustainable modes across the wider area.

Table 6-1 Daily modal share

Scenario and geographic region	Car only	Bus & Rail (inc P&R)	Active only
All Trips for the whole West of England			
Reference Case	63.6%	8.8%	27.6%
Local Plan (no mitigation)	63.6%	8.8%	27.7%
Local Plan (with mitigation)	63.2%	9.4%	27.5%
All trips to/from & within B&NES			
Reference Case	67.4%	10.1%	22.5%
Local Plan (no mitigation)	68.2%	9.6%	22.2%
Local Plan (with mitigation)	66.0%	12.4%	21.5%
B&NES Local Plan development trips only			
Local Plan (no mitigation)	71.1%	8.8%	20.2%
Local Plan (with mitigation)	69.2%	11.3%	19.5%

Table 6-2 Daily change in trips

Change in trips to/from & within B&NES vs Reference Case	All Modes	Car only	Bus & Rail (incl P&R)	Active only
2042 Local Plan With mitigation vs Reference Case	17.9%	15.5%	45.0%	12.9%

DRAFT

6.1.2 Modal share of trips at the major development sites with transport mitigation

With the proposed transport mitigation, new Local Plan development sites are expected to see a reduced car modal share of 69.2%. This is almost identical to the B&NES Reference Case (67.4%) and lower than the figure without measures (71.1%). The decrease in car usage at these sites can be credited to the transport mitigation efforts and a shift mainly toward bus (P&R) through car interchange. Although the change is not significant, it shows that people within the settlements have real travel choice options and that the outcome is achievable.

Table 6-3 Car only dependency: daily travel modal share of agglomerated development sites

Region	Agglomeration of major sites	No. HHs	Pre-mitigation	With mitigation
Bath	**All Sites**	**627**	**58.3%**	**57.7%**
Bristol-Bath corridor: Hicks Gate, Keynsham & Whitchurch	Hicks Gate	2,183	73.7%	70.9%
	North Keynsham	1,538	68.4%	66.6%
	Saltford	1,446	71.8%	69.9%
	Keynsham	1,952	70.2%	68.5%
	Whitchurch	2,048	69.6%	67.9%
	Sub-total	**9,167**	**70.8%**	**68.8%**
Somer Valley / Rural	Bishop Sutton, Chew & Pensford	400	82.9%	82.2%
	East Radstock (Writhlington)	1,028	66.9%	65.8%
	Midsomer Norton South & Thicket Mead	291	67.4%	65.7%
	North Radstock	951	69.1%	67.4%
	Paulton & Hallatrow	414	74.9%	73.3%
	Peasedown	939	73.8%	71.7%
	South Farrington Gurney	549	75.3%	73.0%
	South Radstock (Haydon)	143	70.6%	68.9%
	Temple Cloud & Clutton	460	76.2%	74.5%
	Timsbury & Farmbrough	510	78.3%	75.5%
	Sub-total	**5,686**	**72.8%**	**71.1%**
All LP development sites		**15,480**	**71.1%**	**69.2%**

6.2 Bus patronage

Table 6-3 presents forecast passenger demand at the largest transport interchanges under different scenarios. The mitigation includes the Hicks Gate Interchange, a range of Travel Hubs (with and without limited parking) increased bus service frequencies, active travel measures and highway safety measures. The increase in patronage at Odd Down would be relatively modest (+13% compared to the Reference Case which is anticipated to experience a large patronage growth); due to the committed schemes already included along the Wellsway. The site currently provides 1,230 car parking spaces, and it is likely that the site will need to be expanded in future to accommodate future demand under the Reference Case. We are also providing, and need to safeguard space, on development sites for future expansion with numerous Travel hubs with parking (Link and rides) along the A367, notably around Peasedown. The Hicks Gate site would replace the existing site at Brislington, which currently provides 1,300 parking spaces. The large increase in demand at Hicks Gate would require a significant increase in parking provision: it is currently assumed that the new site would provide up to 2,500 parking spaces.

DRAFT

Table 6-4 shows the forecast increases in bus passengers in the different sub-areas of the whole District. Actual observed bus usage in B&NES is reported in the Department for Transport's Bus Statistics[26]. The latest data indicates that there were approximately 13.1 million local bus passenger journeys in 2025, compared with 14.7 million observed in 2019. This reflects a strong post-pandemic recovery, with patronage rebounding steadily since 2022. Prior to the pandemic, bus use had followed a consistent upward trend, from around 11.4 million in 2010 to 14.7 million in 2019. If this pre-pandemic trend were to resume from current levels (13.1 million in 2025), total patronage could reasonably be expected to reach around 16–17 million by 2042. This is broadly consistent with the modelled forecasts for the Local Plan scenario, without mitigation measures. With the implementation of the proposed transport mitigation package, patronage demand is forecast to increase even more substantially, estimated up to 21 million journeys per year. While this represents an ambitious level of growth, it is considered achievable and in line with the vision through the introduction of enhanced transport interchanges, widely accessible travel hubs, increased service frequencies and parking-related demand management measures.

Table 6-4 Daily bus boarders at major transport interchanges

	Base	Ref Case	Local Plan No Mitigation	Local Plan With Mitigation
Odd Down P&R (improved access to site)	1,370	1,890	1,840	2,150
Newbridge P&R	710	1,050	1,060	1,230
Brislington P&R (Hicks Gate in mitigation)	1,420	1,960	1,970	4,700

Table 6-5 Daily and annual estimate of bus boarders in different sub-areas within B&NES

	Base model	Ref Case	Local Plan No Mitigation	Local Plan With Mitigation
Bath (inc Odd Down, Newbridge & Lansdown)	28,900	28,500	29,600	36,000
Somer Valley	5,200	5,800	7,000	10,000
Keynsham & Whitchurch (inc Hicks Gate WM)	4,500	6,800	8,800	16,300
Rural	2,200	2,900	3,100	3,400
Total daily within B&NES	**40,800**	**44,000**	**48,500**	**65,700**
Growth vs Base (vs RC)		7%	19% (10%)	61% (49%)
Annual Boarders (est from daily boarders)	13.9m	15.0m	16.6m	20.9m

DRAFT

[26] Bus-statistics-data-tables#local-bus-passenger-journeys-bus01

Figure 6-1 Annual bus observed & forecast passengers within B&NES

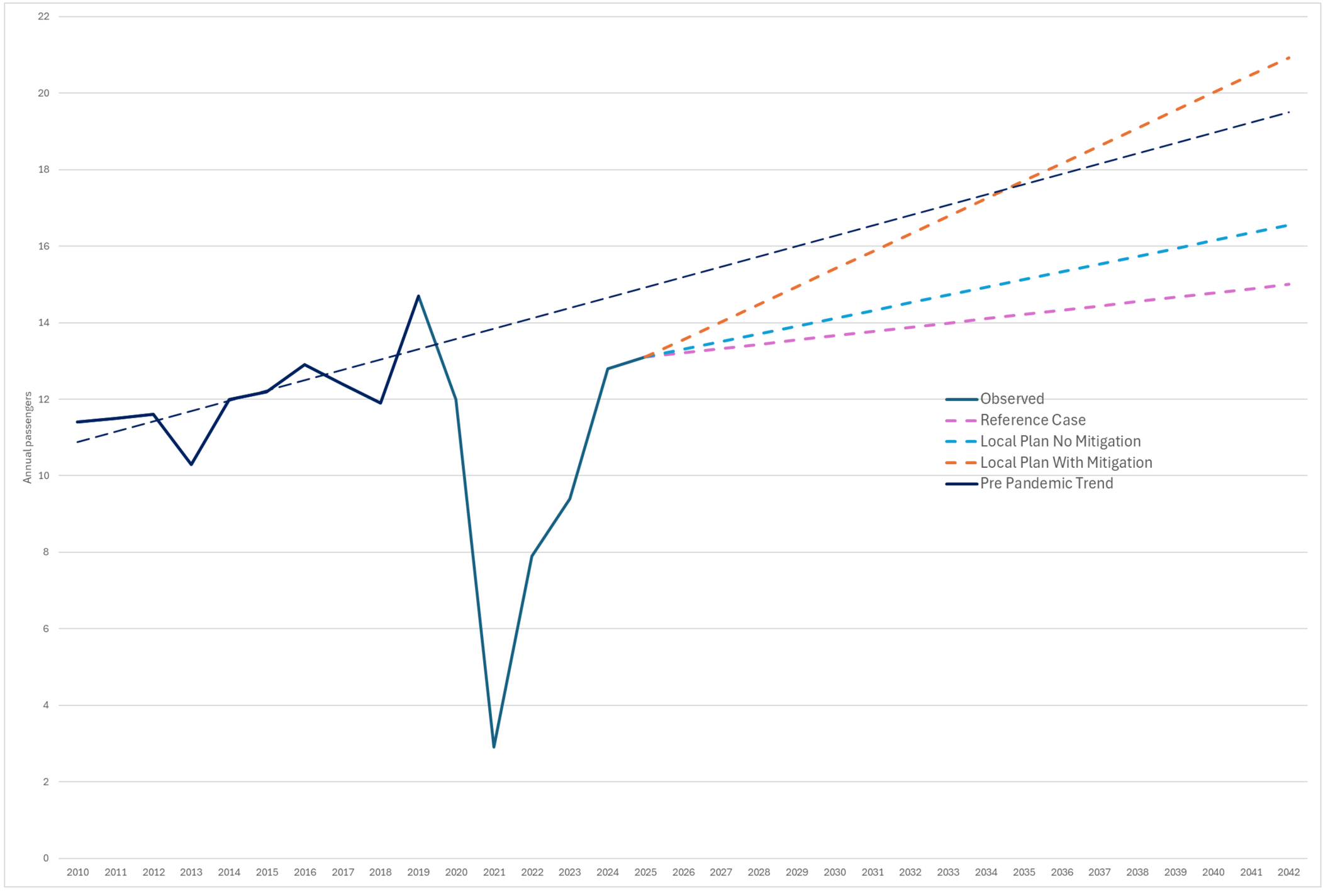


Figure 6-2 Total bus patronage (Local Plan with mitigation daily 12-hour totals)

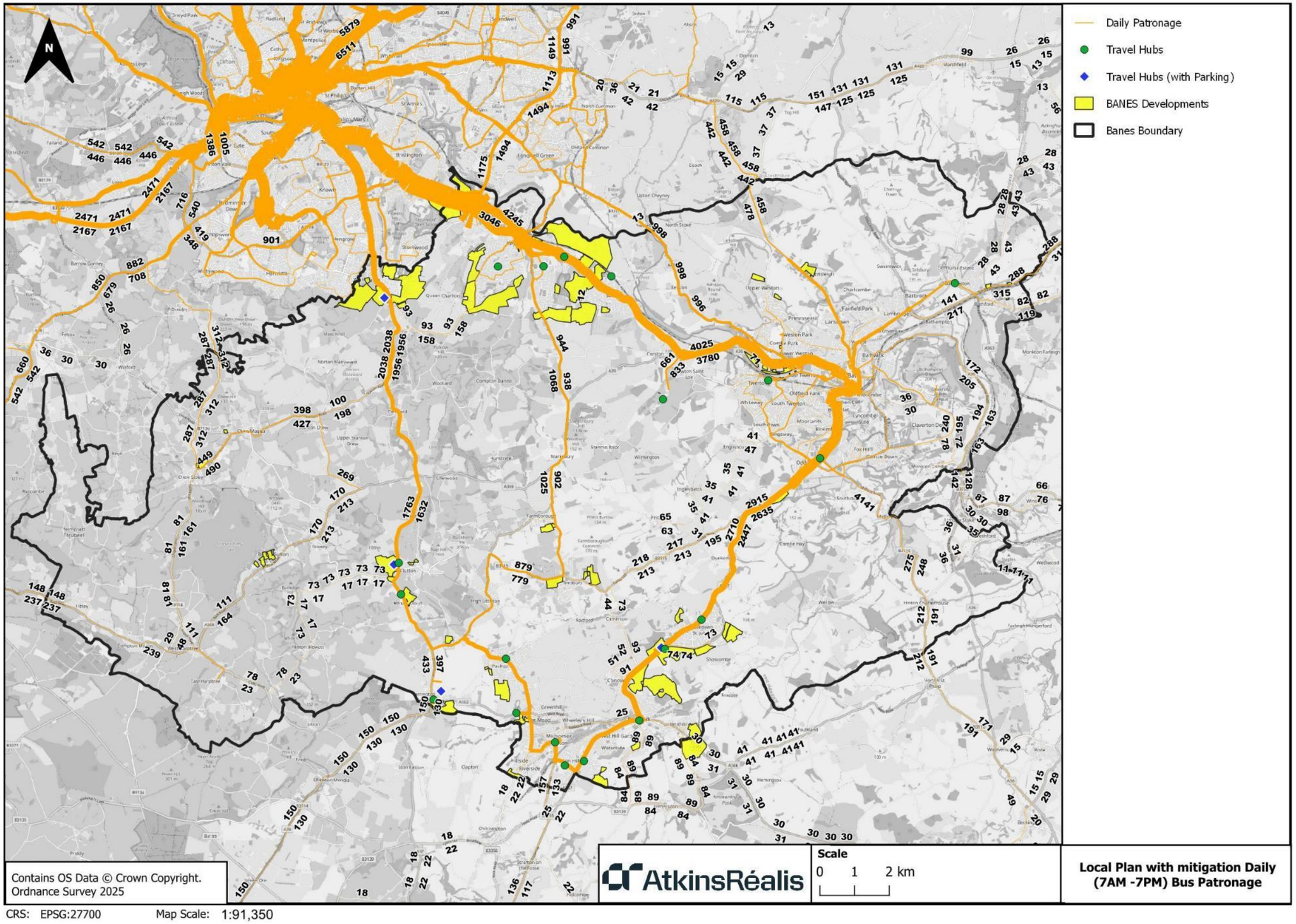
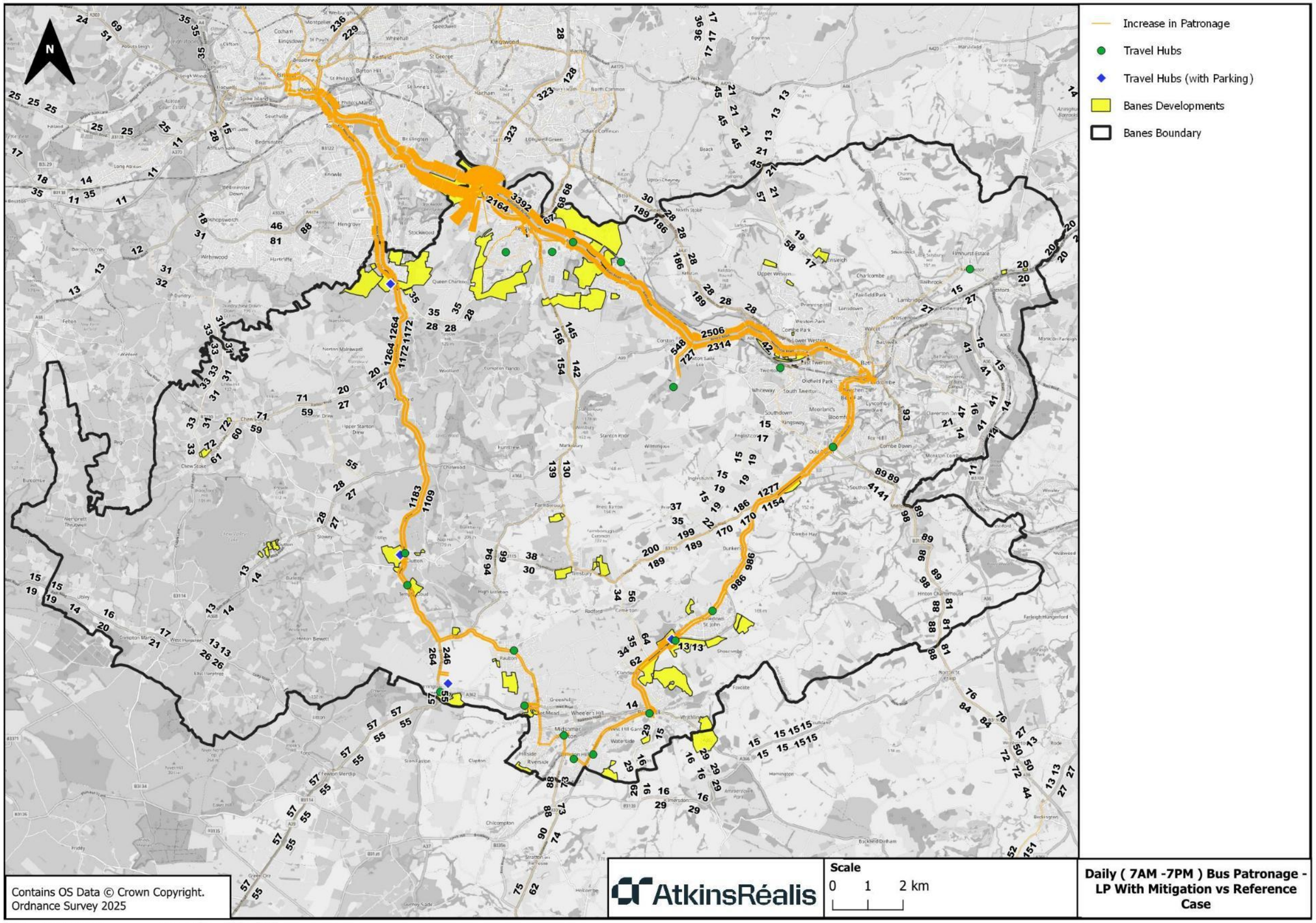


Figure 6-3 Increase in bus patronage (Local Plan with mitigation vs Reference Case, 12-hour totals)



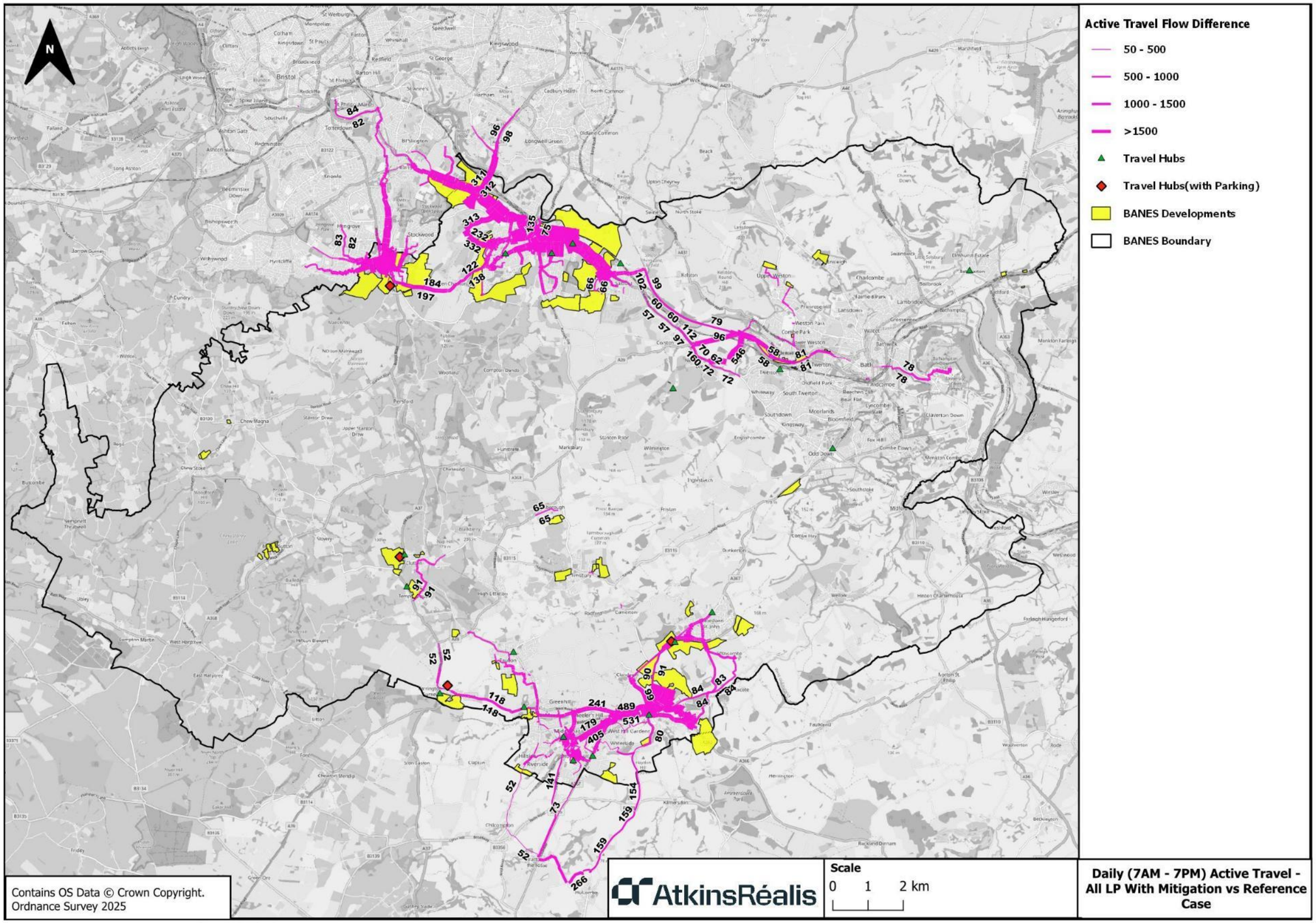
CRS: EPSG:27700 Map Scale: 1:91,350

6.3 Active travel

The Figures below illustrate the change in daily active travel demand, comparing the Local Plan with the transport strategy against the Reference Case. They show substantial increases in active travel, driven by both the additional housing growth and the package of active travel measures encouraging walking, cycling and wheeling—either directly to destinations or via interchanges and travel hubs.

DRAFT

Figure 6-4 Active travel in B&NES (Local Plan with mitigation vs reference case, daily)



CRS: EPSG:27700 Map Scale: 1:91,350

6.4 Highway

6.4.1 Expected change in highway trips with transport mitigation

The table below summarises the total highway trip rates applied across the three scenarios at each major site. Overall, net highway trips are expected to reduce by around 4% as a result of the proposed interventions. A significant proportion of trips—both from new development and existing areas—are expected to reroute to interchanges or travel hubs to continue their journeys by public transport rather than driving the full distance.

Table 6-6 Highway total trips at major development sites (with transport mitigation)

Region	Agglomeration of major development sites	No. HHs	Veh trips AM		Veh trips PM	
			Pre-mit	with mitigation	Pre-mit	with mitigation
Bath	**Sites in Bath**	**627**	**232**	**230**	**227**	**235**
Bristol-Bath corridor: Hicks Gate, Keynsham & Whitchurch	Hicks Gate	2,183	1,022	978	998	982
	North Keynsham	1,538	858	832	837	812
	Saltford	1,446	677	673	661	655
	Keynsham	1,952	786	762	767	750
	Whitchurch	2,048	1,159	1,138	1,131	1,111
	All Bristol-Bath corridor sites	**9,167**	**4,501**	**4,383**	**4,394**	**4,310**
Somer Valley / Rural	Bishop Sutton, Chew & Pensford	400	224	218	218	216
	Writhlington	1,028	543	527	530	516
	Chilcompton Rd & Thicket Mead	291	186	125	181	130
	North Radstock	951	419	392	409	395
	Paulton & Hallatrow	414	188	179	183	175
	Peasedown	939	567	530	554	534
	Farrington Gurney	549	324	313	292	277
	South Radstock (Haydon)	143	65	51	63	53
	Temple Cloud & Clutton	460	244	231	238	228
	Timsbury & Farmbrough	510	274	265	268	260
	Somer Valley sub total	**5,686**	**3,033**	**2,831**	**2,937**	**2,784**
	All LP sites	15,480	7,767	7,444	7,558	7,329

DRAFT

6.4.2 Impact on highway network operation (with mitigation)

Table 6-7 shows the impacts of the mode shift strategy on traffic demand and overall performance of the network in Bath & North East Somerset. With Local Plan growth but no mitigation, total daily distance travelled in B&NES will increase from 7.9 million (Reference Case) to 8.8 million (Local Plan with no mitigation) vehicle-kilometres per day. The scenario with mitigation will reduce total daily distance travelled to 8.7 million vehicle-kilometres per day (a reduction of 1%). The mitigation strategy will play an important role in providing our communities with viable sustainable transport options, reducing average congestion and delay during the peak periods, from 7.6 minutes without mitigation to 7.1 minutes with mitigation. This will be slightly higher than the average 6.2 minutes delay in the Reference Case scenario excluding the Local Plan. Total peak hour average journey times are forecast to increase by less than 3% (from 28.5 to 29.1 minutes). Note all numbers are rounded.

Table 6-7 Road network operational statistics: B&NES

Scenario	AM/PM Peak Hr travel time (mins)	AM/PM Peak Hr delay (mins)	Daily Distance (million km)	Average Distance per day (km)	Daily Vehicle Demand (PCUs, 000s)
2019 Base	26.4	4.5	6.7	20.6	325
2042 Reference Case	28.5	6.2	7.9	21.8	362
Local Plan No Mitigation	29.9	7.6	8.8	20.9	421
Local Plan With Mitigation	**29.1**	**7.1**	**8.7**	**20.9**	417
With Mitigation vs 2019 Base	+10% (+2.7)	+59% (+2.6)	+30% (+2.0)	+1.2% (0.3)	28% (+92)
With Mitigation vs 2042 Ref Case	+2.0% (+0.6)	+15% (+0.9)	+10% (+0.8)	-4.3% (-0.9)	15% (+54)
With Mitigation vs No Mitigation	-2.1% (-0.6)	-7.2% (-0.5)	-1.1% (-0.1)	-0.1% (-0.02)	-1.1% (-4)

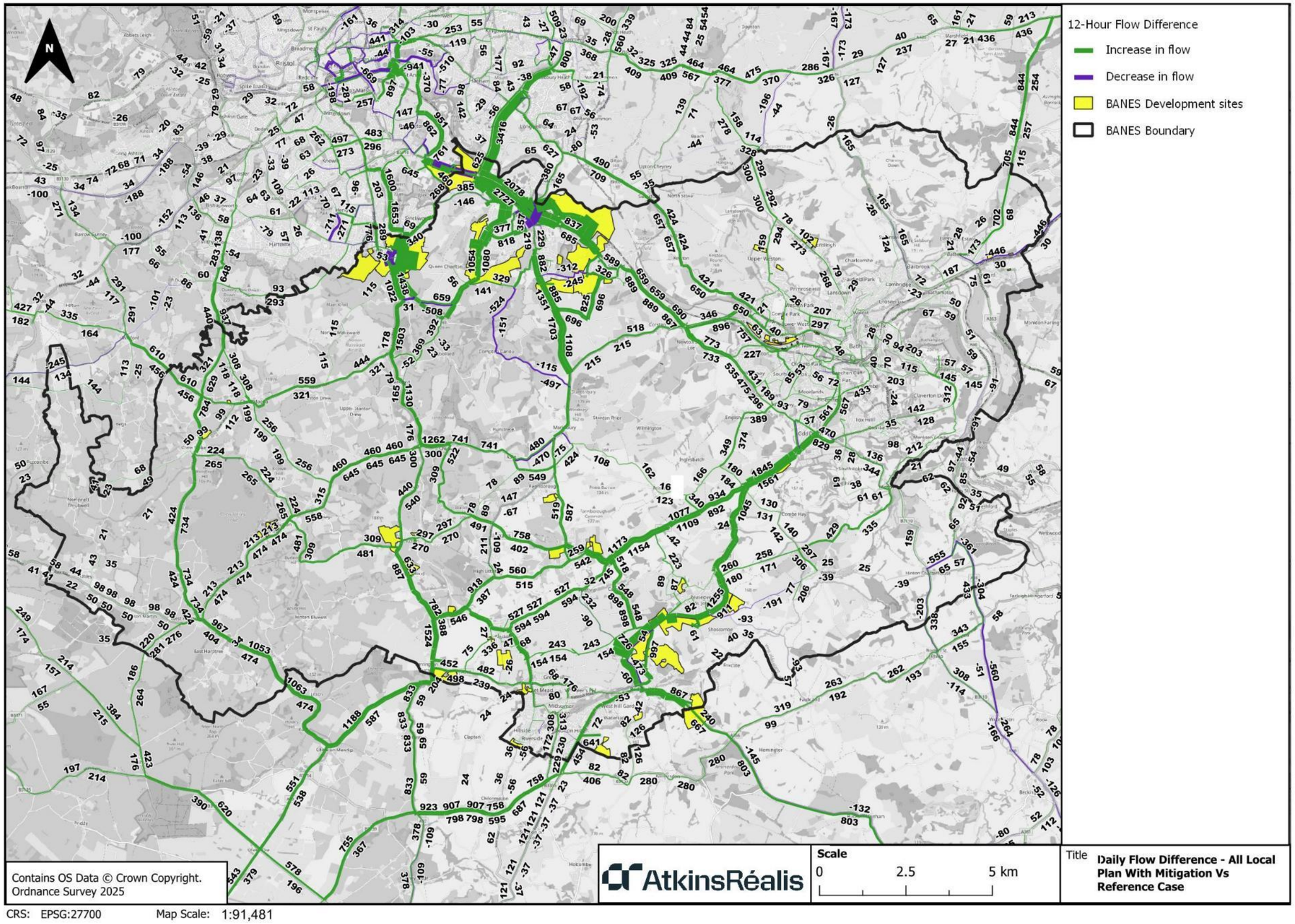
Table 6-8 shows the corresponding statistics for the West of England (including motorways) as a whole. Without mitigation, total daily distance travelled in B&NES will increase from 89.2 million (Reference Case) to 90.0 million (Local Plan with no mitigation) vehicle-kilometres per day. The scenario with mitigation will reduce total daily distance travelled to 89.7 million (a reduction of 0.5%) compared to without mitigation. This reduction in distance travelled by car (-0.3m) in the region is larger than the forecast reduction in B&NES because of the relocation of the Park & Ride from Brislington to Hicks Gate which is expected to reduce trips, especially on the A4 corridor into Bristol. The mitigation strategy will play an important role in reducing average delay during the peak periods, from 7.5 minutes without mitigation to 7.3 minutes with mitigation. This will be slightly higher than the average 6.8 minutes delay in the Reference Case, but the overall increase (~30 seconds, or 7%) is modest. Total peak hour average journey times by road are forecast to be unchanged from the Reference Case. This is in part because more drivers will shift to sustainable modes via the transport hubs and to Park & Ride services, reducing the time spent driving. Figure 6-12 shows the total forecast daily (0700-1900) changes in flows on the road network with the Local Plan, with mitigation, compared to the Reference Case

Table 6-8 Road network operational statistics: West of England

Scenario	AM/PM Peak Hr travel time (mins)	AM/PM Peak Hr delay (mins)	Daily Distance (million km)	Average Distance per day (km)	Daily Vehicle Demand (PCUs, 000s)
2019 Base	33.3	4.3	72.7	36.3	2,000
2042 Reference Case	36.3	6.8	89.2	36.9	2,419
Local Plan No Mitigation	36.6	7.5	90.0	36.4	2,470
Local Plan With Mitigation	**36.3**	**7.3**	**89.7**	**36.3**	2,457
With Mitigation vs 2019 Base	9% (+3.0)	71% (+3.0)	23% (+17.0)	0% (+0.0)	22.8% (+457)
With Mitigation vs 2042 Ref Case	0% (+0.0)	6.6% (+0.5)	0.5% (+0.4)	-1.5% (-0.6)	1.6% (+39)
With Mitigation vs No Mitigation	-0.9% (-0.3)	-2.7% (-0.2)	-0.3% (-0.3)	-0.1% (-0.1)	-0.5%(-13)

DRAFT

Figure 6-5 Changes in traffic flows (Local Plan with mitigation vs Reference Case, 12-hour totals)



CRS: EPSG:27700 Map Scale: 1:91,481

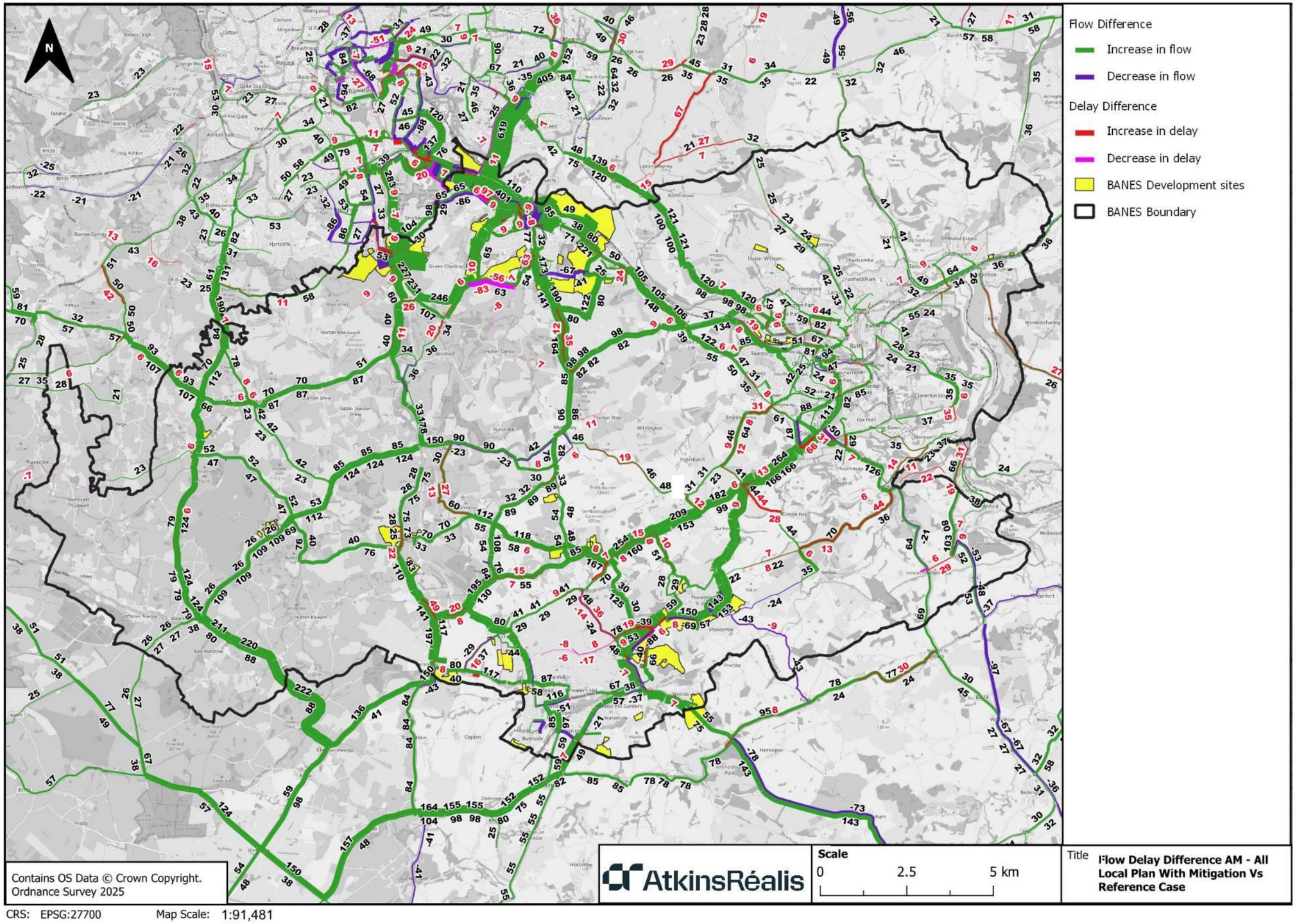
Figure 6-12 shows that there will still be significant increases in daily traffic with the mitigation in place. There are clear patterns of traffic increases around the major development sites, and wider impacts caused by traffic heading to major destinations, including Bath, Bristol and the East Fringe in South Gloucestershire.

- There will be increased traffic on the A367 Wellsway and other routes resulting from increased traffic from the Somer Valley.
- Keynsham area: increases in traffic generated from the group of large sites around Keynsham and Saltford. This will include significant increases in traffic on key routes including the A4 Keynsham Bypass, routes into the town centre, A4175 to Willsbridge and Bitton, B3116 Wellsway, and Charlton Road.
- Hicks Gate: this area will experience significant change. The proposed transport interchange will result in large-scale mode shift to buses on the A4 towards Bristol as well as increase in active travel. Whilst the interchange will also support high volumes of bus travel towards Bath, Gloucestershire (via the Ring Road) and Keynsham, new development in the area will still generate large volumes of traffic.
- Whitchurch Village: the proposed travel hub in the village, together with both new and improved existing bus services along the A37 corridor, will help to reduce car dependency for trips towards Bristol, but there will be increases in traffic on several routes in the area.
- Somer Valley: the map shows a clear traffic demand generated by new development, along the A362 from Writhlington, through Radstock town centre and continuing along the A367 past Clandown and Peasedown towards Odd Down.
- Rural areas: there will be increases on traffic on key routes across the district, most notably the B3116 south from Keynsham through Burnett, continuing on the A39 to Marksbury and Farmborough, onwards to Timsbury, and also the B3115 through Tunley. Traffic will also increase on other parts of the network, including through the Chew Valley, to avoid congestion on the A37 in Whitchurch.

Figures 6-13 to 6-16 show the forecast impacts of the Local Plan, with mitigation, on the road network in the morning peak period. It shows changes in traffic flows (green = increases, blue = decreases) and changes in delays, in seconds (red = increases, pink= decreases). Figure 6-13 shows the whole network, and Figures 6-14, 6-15 and 6-16 show more detail for Bath, the Keynsham area, and Somer Valley respectively.

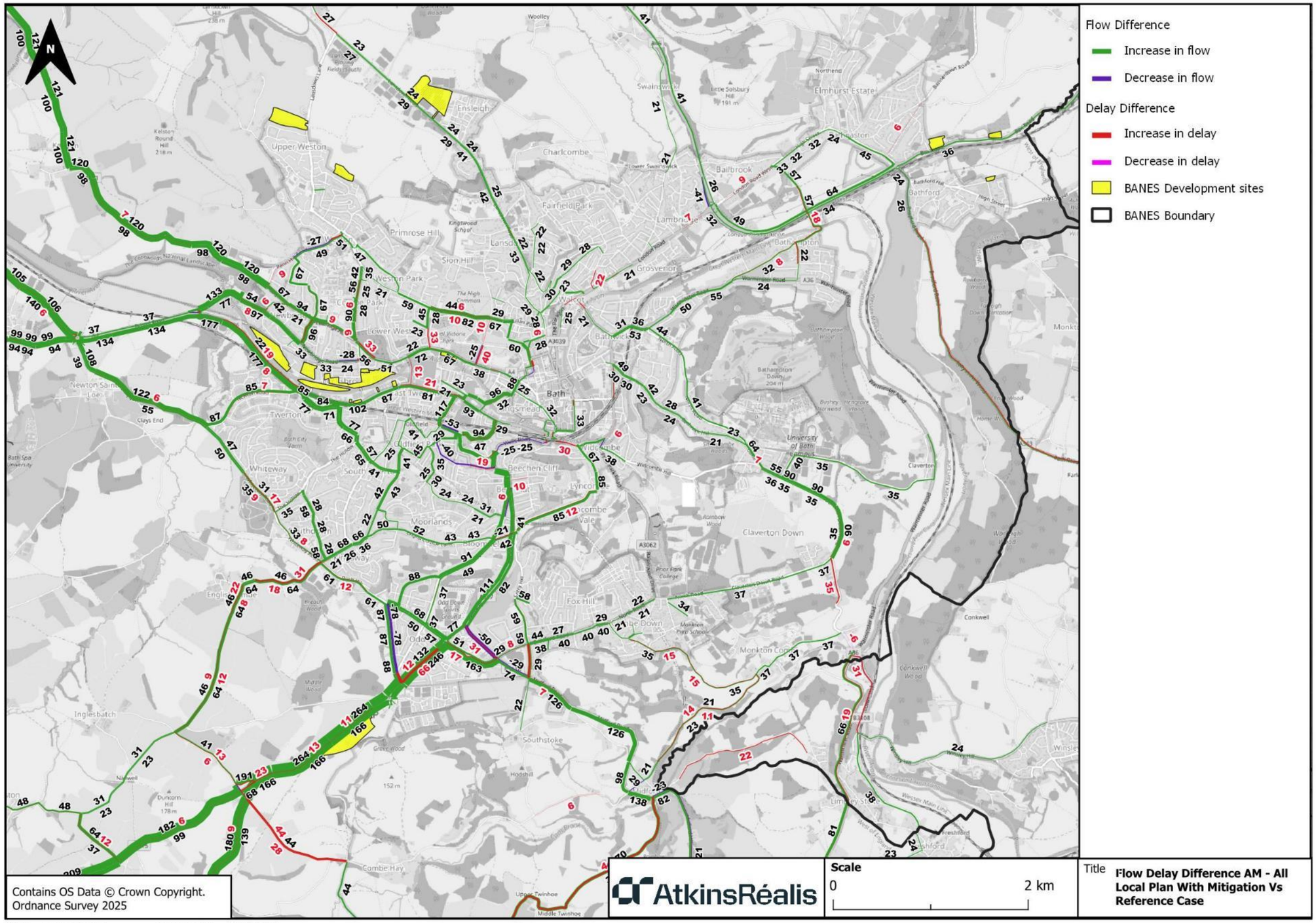
DRAFT

Figure 6-6 Changes in traffic flows and delays (Local Plan with mitigation vs Reference Case, AM peak hour)



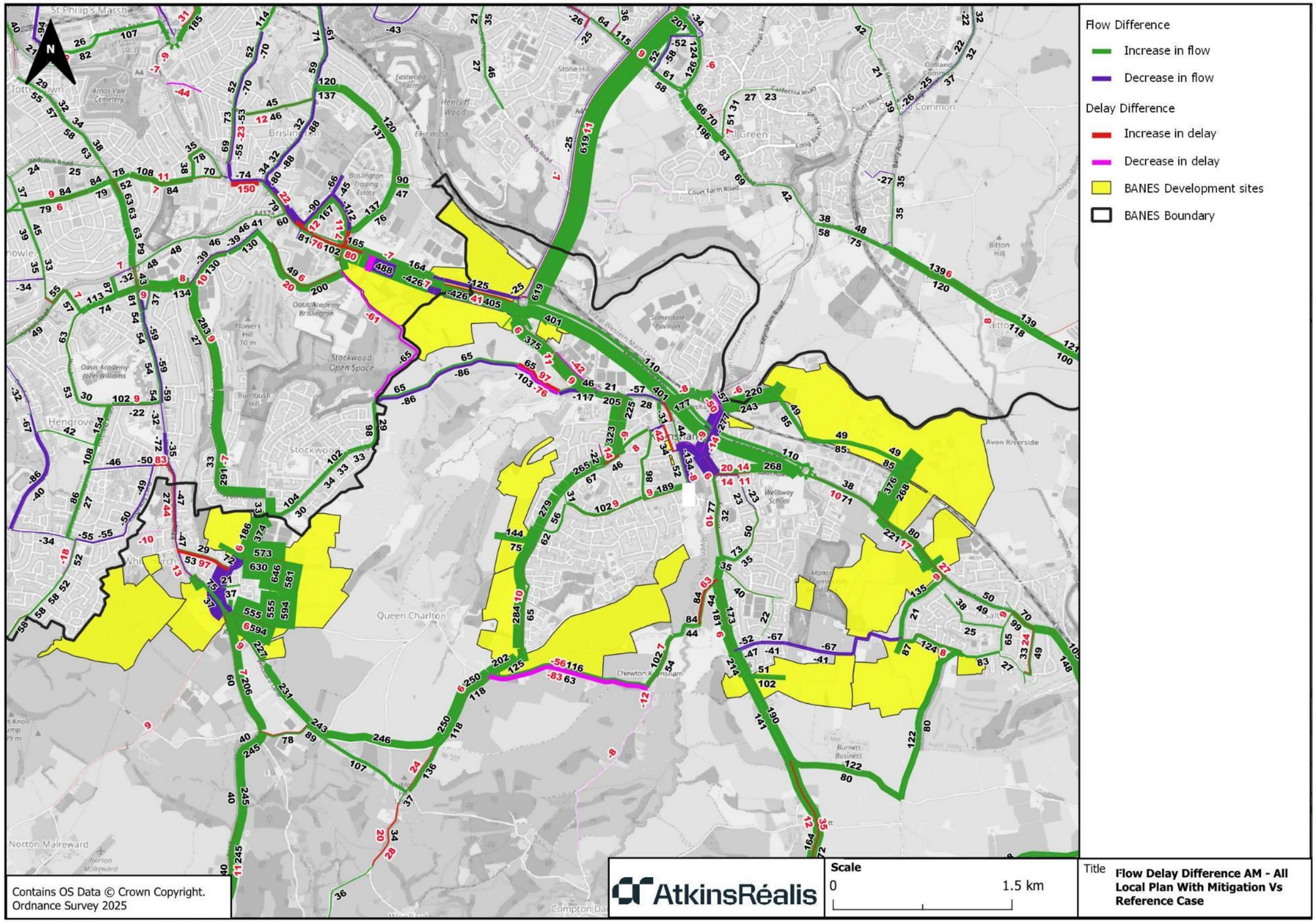
CRS: EPSG:27700 Map Scale: 1:91,481

Figure 6-7 Changes in traffic flows and delays in Bath (Local Plan with mitigation vs Reference Case, AM peak hour)



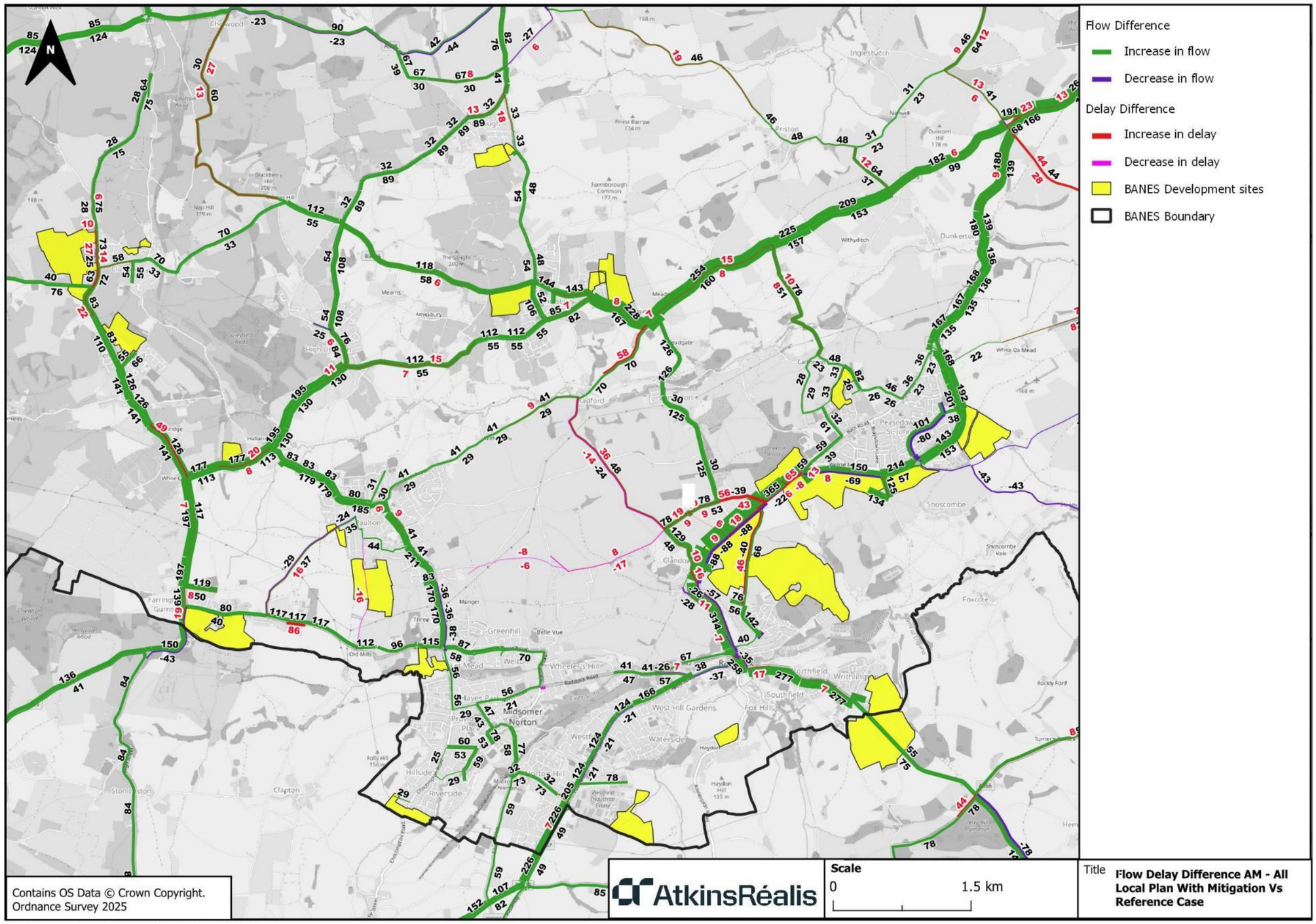
CRS: EPSG:27700 Map Scale: 1:32,976

Figure 6-8 Changes in traffic flows and delays in Keynsham and Whitchurch (Local Plan with mitigation vs Reference Case, AM peak hour)



CRS: EPSG:27700 Map Scale: 1:26,976

Figure 6-9 Changes in traffic flows and delays in Somer Valley (Local Plan with mitigation vs Reference Case, AM peak hour)



CRS: EPSG:27700 Map Scale: 1:34,976

APPENDICES

DRAFT

AtkinsRéalis

DRAFT

AtkinsRéalis
AtkinsRéalis
The Hub
500 Park Avenue
Aztec West
Bristol
BS32 4RZ

Tel: +44 (0)1454 662000

© AtkinsRéalis except where stated otherwise