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Wiltshire Council

Melksham Bypass OBC

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Model Forecasting Report

10/11/21

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This document has 165 pages including the cover.

Document history

Revision	Suitability	Purpose description	Originated	Checked	Reviewed	Authorised	Date
C01	A1	Updated as part of Melksham OBC (F05-B61 v1.2)Advanced for review	**IS**	**AM**	**PK**	**AM**	**10**/11/21

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1. Introduction

1.1. Overview

The Traffic Forecasting Report provides details of the forecast Wiltshire Transport Model (WTM) developed for Melksham Bypass Outline Business Case (OBC). Details of the base model validation are found in the Wiltshire Strategic Model LMVR (Issue 6a).

1.2. Background

Wiltshire Council is promoting the A350 Melksham Bypass scheme through the Department for Transport's (DfT) Large Local Majors (LLM) fund. The LLM is funded through the National Roads Fund and is intended to support a small number of exceptionally large local highway authority transport schemes that could not be funded through normal routes and would exceed the upper threshold for Major Road Network (MRN) proposals. The government has established five key policy objectives in relation to the fund:

- Reduce congestion – alleviating local and regional congestion, reducing traffic jams and bottlenecks.
- Support economic growth and rebalancing – support the delivery of the industrial strategy, contributing to a positive economic impact that is felt across the regions.
- Support housing delivery – unlocking land for new housing developments.
- Support all road users – recognising the needs of all users, including cyclists, pedestrians and disabled people.
- Support the Strategic Road Network (SRN) – complementing and supporting the existing SRN by creating a more resilient road network in England.

Sub-national Transport Bodies (STB) were tasked with prioritising potential LLM schemes for their area, alongside advice and priorities for the MRN. The Western Gateway STB prioritised the A350 Melksham Bypass scheme to be promoted through the LLM fund (alongside further A350 schemes promoted through the MRN fund). In June 2019, Wiltshire Council (via the Western Gateway STB) submitted a Strategic Outline Business Case (SOBC) to central government (DfT) for the Melksham Bypass scheme. In March 2020, Wiltshire Council was awarded £1.3m funding by the DfT to develop the scheme to the next stage of the business case process – the Outline Business Case (OBC). Atkins has been commissioned by Wiltshire Council to prepare the OBC, with submission to DfT anticipated in late 2021.

1.3. Structure of the report

This report consists of the following sections:

2. Scheme background
3. Forecast approach, assumptions and uncertainty
4. Reference case trip matrices
5. Forecast year networks and assignment methodology
6. Variable demand model
7. Core traffic forecasts
8. Alternative growth traffic forecasts
9. Summary

2. Scheme background

2.1. Need for scheme

The A350 Melksham Bypass scheme is of both local and regional significance in relation to the issues and objectives it seeks to address.

2.1.1. Regional significance

The A350 is a primary north-south route between the M4 corridor and the south coast. Improved north-south connectivity is a key regional priority, as identified by the Swindon and Wiltshire Local Enterprise Partnership (SWLEP), the Western Gateway Sub-National Transport Body, and the newly formed Western Gateway Powerhouse. These north-south connections between the south coast (the port of Poole in particular) and M4, and onwards to Bristol and the Midlands, are currently dependent upon the A350 (and A35) primary routes or the A36/A46 through Bath. These routes experience considerable congestion and road safety problems, and their increasing unreliability is significantly constraining development and business growth across the region.

2.1.2. Local significance

The section of the A350 through Melksham has been identified as a key constraint on the route, lying at the heart of the A350 corridor between the principal settlements of Chippenham and Trowbridge. It includes 30mph sections through residential areas of Beanacre and northern Melksham.

The route suffers from frequent peak period congestion through Melksham, including at several busy junctions. These conditions result in a number of associated adverse impacts on local communities, including severance, noise disturbance, and accidents.

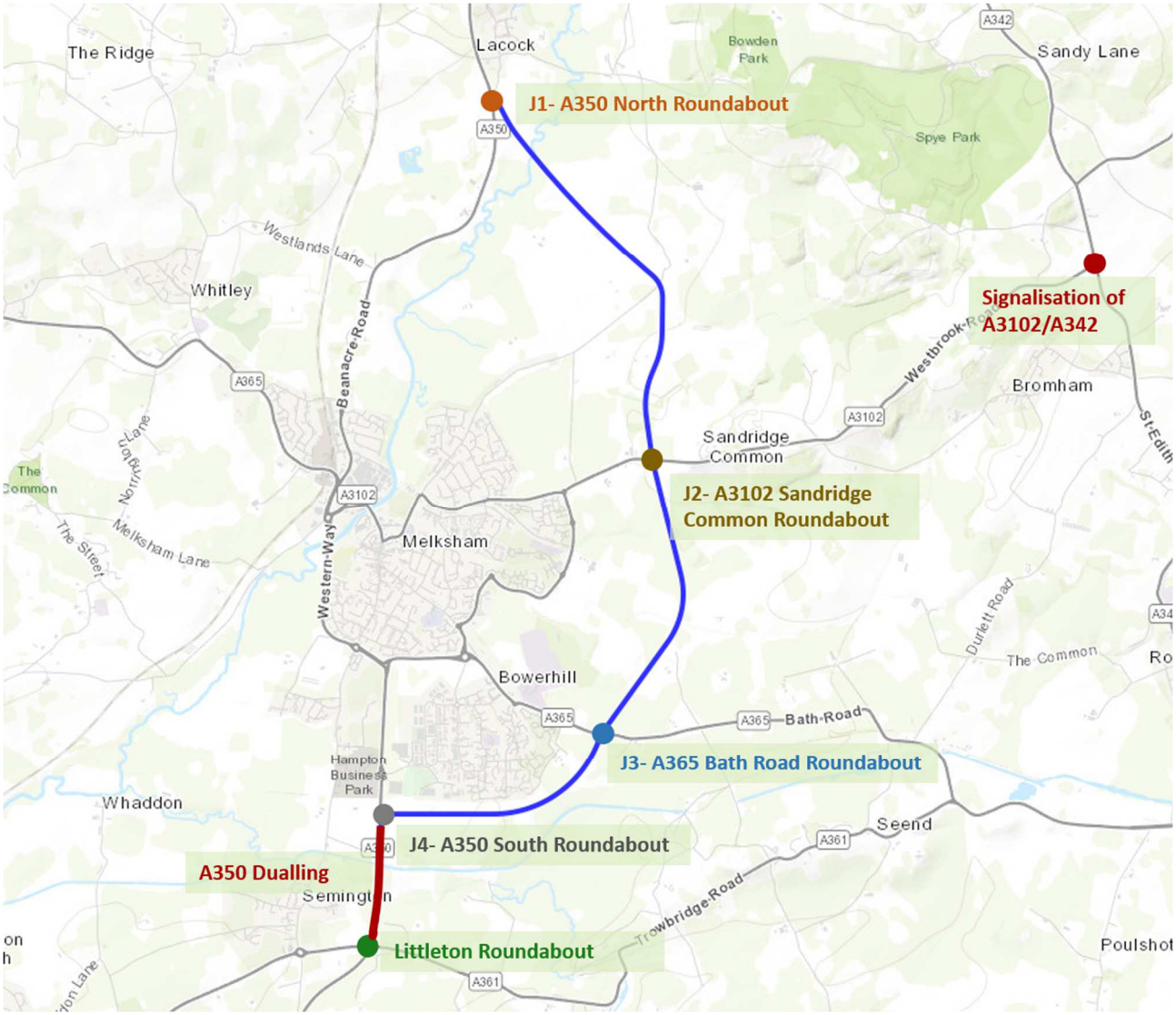
Melksham has seen rapid development in recent years and is expected to be required to accommodate further housing to 2036 through the ongoing Wiltshire Local Plan Review. This further heightens the challenges currently experienced.

2.2. Description of scheme

Figure 2.1 provides an overview of the proposed Melksham Bypass scheme, whilst detailed junction design is included in Figure 2.1. The scheme taken forward at OBC comprises of the following scheme elements:

- **Melksham bypass**: 50mph single carriageway to the east of Melksham. This includes:
    - Two new roundabouts where the proposed bypass intersects the A350:
        - A350 (N) at Lacock.
        - A350 (S) between Littleton and Bowerhill roundabouts.
    - A signalised roundabout where the bypass intersects the A3102.
    - A conventional roundabout where the bypass intersects the A365.
- **A350 dualling**: 60mph dual carriageway between Littleton roundabout and the southern junction of the bypass (i.e., between Littleton and Bowerhill roundabouts).
- **Littleton roundabout improvements**: capacity improvements at Littleton roundabout including a dedicated left-turn from the A361 to the A350 northbound.
- **A342 / A3102 signalisation**: introduction of signals at the junction.

Figure 2.1 - Melksham Bypass OBC scheme



3. Forecast approach, assumptions, and uncertainty

3.1. Wiltshire 2018 base model

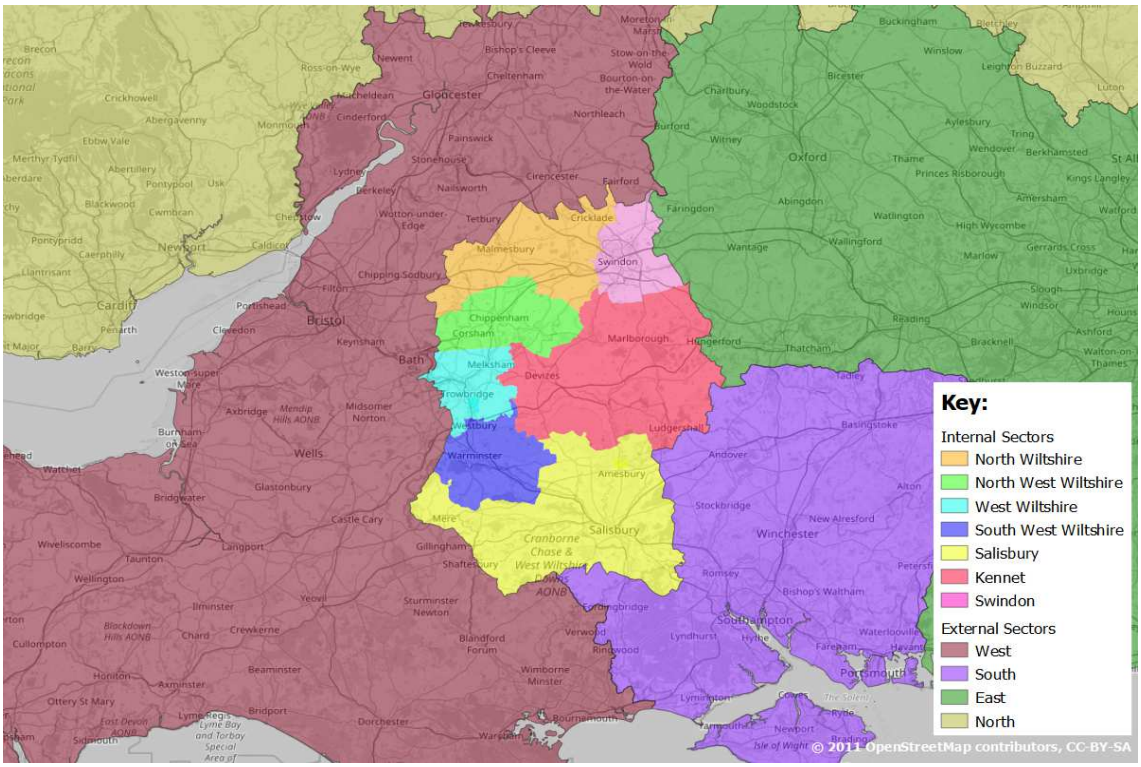
The Wiltshire strategic base model utilises the A303 Stonehenge / South West Regional Transport model developed by National Highways. It includes improvements to the network and demand in the Wiltshire area

This is a peak period model which has five user classes. A sector system was defined during base model development as shown in Figure 3.1.

The Wiltshire 2018 Base SATURN model was calibrated and validated following TAG guidance, which was fully documented in the LMVR (Issue 6a).

The parameters and specifications have stayed consistent with the base model, unless explicitly stated in this report.

Figure 3.1 - Strategic Model Sectors (11x11)



3.2. Forecasting approach

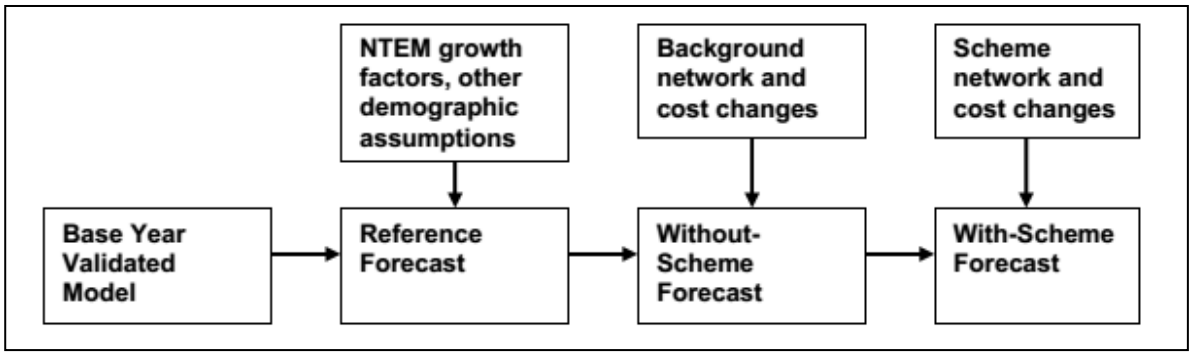
This section details the assumptions and inputs into the development of the Core forecast year traffic model. The forecasting approach applied draws on the guidance from TAG unit M2 (Variable demand modelling) & M4 (Forecasting & Uncertainty).

The overall approach to forecasting is to create a (fixed) reference case travel demand which reflects changes in population, employment, car ownership and other demographic and economic factors. The reference case forecasts do not account for induced changes in travel demand and patterns (in response to changes in future traffic conditions). However, they provide a useful indication of how traffic demand would be likely to grow if network conditions and travel costs were held constant into the future.

The changes in generalised cost between the base year and the reference case are then taken through the Variable Demand Model (VDM). The VDM process modifies the reference case forecasts to reflect the impacts of changes in congestion on the road network.

This overall forecasting approach is summarized in the flowchart in Figure 3 from TAG.

Figure 3.2 - Overview of traffic forecasting process



3.3. Forecast years

The Core scenario is intended to provide the foundation for evidenced based decision-making using a central traffic forecast. The Wiltshire Core forecast was developed using several sources, each recommended in TAG.

Traffic forecasts are provided for the proposed scheme opening year (2026), design year (2036) and horizon year (2051).

3.4. Uncertainty and the uncertainty log

Most sources of forecasting uncertainty can be classified into one of five categories:

1. Model **parameter** errors – source: base model and realism tests;
2. national uncertainty in **travel demand** - Demographic projections and traveller behaviour (source: NTEM 7.2)
3. national uncertainty in **travel costs** – forecast fuel prices or government policy (source: TAG Databook)
4. local uncertainty in **travel demand** – proposed local land use developments (source: uncertainty log)
5. local uncertainty in **travel supply** (cost) – proposed transport infrastructure (source: uncertainty log)

3.4.1. National uncertainty

National uncertainty involves national projections of demographic changes, GDP growth and fuel price trends. In the Core scenario, the impact of changes in demographic and traveller behaviour is based on the NTEM 7.2 dataset. The development of the forecast national travel demand is presented in section 4.

The assumptions regarding national costs of travel (value of time and fuel costs) are based on the TAG Databook v1.14 (July 2020). This is presented in section 5.

Infrastructure changes outside of Wiltshire and Swindon was derived from the A303 Stonehenge / SWRTM model networks. Demographic growth outside Wiltshire and Swindon was derived from NTEM 7.2 and is consistent with the A303 Stonehenge / SWRTM models.

3.4.2. Local uncertainty

TAG recommends that all known assumptions and uncertainties in the modelling and forecasting approach should be set out in an uncertainty log. The purpose of the uncertainty log is to record the central forecasting assumptions that underpin the Core scenario and record the degree of uncertainty around these central assumptions. These assumptions should be the basis for developing a set of alternative scenarios.

TAG recommends that, where the analysis covers a wide geographical area, it is sufficient to focus local uncertainty to a specific region, in this case Wiltshire and Swindon. The source of the localised assumptions (Wiltshire Council and Swindon Borough Council) and comments behind the stated level of uncertainty is, as required in TAG, presented in a local uncertainty log, this is discussed in 3.4.2 and a full log is included in Appendix D.

It is recommended in TAG that each forecast local land use or infrastructure change is classified according to the likelihood that it will occur. The definition of each classification is summarised in Table 3-1. Where a scheme or land use change is considered “near certain” or “more than likely”, it will be included in the core scenario.

Table 3-1 - Uncertainty log – classification of future inputs

Probability of Input	Status	Core Scenario
Near certain: The outcome will happen or there is a high probability that it will happen	Intent announced by proponent to regulatory agencies. Approved development proposals. Projects under construction.	Included in the Core Scenario
More than likely: The outcome is likely to happen but there is some uncertainty	Submission of planning or consent application imminent. Development application within the consent process	Included in the Core Scenario.
Reasonably foreseeable: The outcome may happen, but there is significant uncertainty	Conjecture based upon currently available information. Discussed on a conceptual basis. One of several possible inputs in an initial consultation process. Or a policy aspiration	Excluded from Core Scenario.
Hypothetical: There is considerable uncertainty whether the outcome will ever happen	Conjecture based upon currently available information. Discussed on a conceptual basis. One of several possible inputs in an initial consultation process. Or a policy aspiration	Excluded from Core Scenario.

Specific developments and infrastructure in the uncertainty log within the Wiltshire and Swindon regions are included. A list of the current and forecast number of households within each sector (see Figure 3) within Wiltshire and Swindon is shown in Table 3-2. This includes the number of households specifically included within the uncertainty log and the estimated intensification / windfall assessed to retain consistency with NTEM 7.2 projections for the whole region. The estimates are based on the existing highway demand within the base model.

A plot showing some of the main developments, from the uncertainty log, is shown in Figure 3 (note this excludes Swindon).

From the uncertainly log, the towns which are expected to have the most household growth up to 2036 include: Chippenham, Swindon, Trowbridge and Warminster all in excess of 20% growth (Note this does not include any proposed Local Plan 2036 growth).

The expected impact on transport demand, as a result of these household and demographic changes (the reference case) is discussed in the next chapter.

Table 3-2 - Projected households in Wiltshire and Swindon

Region	Base 2018	Housing included in Uncertainty Log (UL)	2036 Core (includes UL & intensification / windfalls)	2036 vs 2018 %
Chippenham	15,452	2,957	19,057	23%
Corsham	2,700	170	2,961	10%
Melksham	8,618	1,196	10,051	17%
Calne	8,379	619	9,211	10%
Devizes	6,416	343	7,038	10%
Trowbridge	17,418	3,600	21,704	25%
Westbury	7,385	855	8,444	14%
Warminster	8,058	1,720	9,984	24%
RWB	6,059	0	6,227	3%
Malmesbury	8,772	350	9,472	8%
Chipp Rural	13,109	205	14,059	7%
Rural Central	30,241	0	31,495	4%
SE Wilts	64,389	7,819	75,161	17%
West of Swindon	10,576	0	10,941	3%
Wiltshire	**207,572**	**19,834**	**235,804**	**14%**
Swindon	96,257	19,762	118,695	23%
Wilts & Swindon	**303,829**	**39,596**	**354,499**	**17%**

The number of houses in the 2018 base year is derived from AddressBase™ plus data and is consistent with overall projections within NTEM 7.2

Figure 3.3 - Core developments included within uncertainty log

Note These are indicative of the main developments within Wiltshire Authority. Sites within Swindon are included in the model, but not this map.

3.5. Alternative growth scenarios

TAG unit M4 states that the Core scenario is intended to be the best basis for decision-making given current evidence. However, there is no guarantee that the outturn will match the assumptions. A single Core scenario cannot reflect the uncertainty in national trends such as GDP and demographic growth, fuel price trends and vehicle efficiency changes.

Therefore, it is suggested to test the impact of this uncertainty through sensitivity tests. Five alternative growth scenarios have been run as sensitivity tests, using the Core growth scenario as a basis. Table 3 3 provides details of the assumptions for each alternative growth scenario developed as part of Melksham Bypass OBC. The assumptions specified are relevant for the with and without scheme scenarios. Further details of each alternative growth scenario are provided in sections 3.5.1 to 3.5.3.

Table 3-3 - Alternative growth scenarios and assumptions

Scenario	Assignment	Year	Demand	Infrastructure
Low growth national uncertainty (section 3.5.1)	VDM (DIADEM)	All	Proportion of base demand subtracted from the Core.	No change from the Core scenario.
High growth national uncertainty (section 3.5.1)	VDM (DIADEM)	All	Proportion of base demand added to the Core.	No change from the Core scenario.
Emerging Local Plan (section 3.5.2)	Fixed demand (SATURN only)	All	Demand associated with the emerging Wiltshire Local Plan added to the Core (2036 and 2051 only). Demand in 2026 is consistent with the Core.	All infrastructure included in the Core scenario plus the following (all years): • Chippenham Eastern Distributor road between Lackham roundabout and Malmesbury Road roundabout. • Development access points.
Emerging Local Plan + Mitigation (section 3.5.2)	Fixed demand (SATURN only)	All	Consistent with the Emerging Local Plan (2036 and 2051 only). Demand in 2026 is consistent with the Core.	All infrastructure included in the Emerging Local Plan scenario plus the following (all years): • Improvements to A350 Littleton roundabout. • A350 dualling between Littleton roundabout and Bowerhill roundabout. • A350 dualling between Lacock and Lackham roundabout. • MRN schemes: M4 J17, Chippenham A350 phase 4 & 5 dualling.
A350 Major Road Network (MRN) schemes (section 3.5.3)	Fixed demand (SATURN only)	All	Consistent with the Core.	All infrastructure included in the Core scenario plus the following MRN schemes: • M4 J17. • Chippenham A350 phase 4 & 5 dualling.

3.5.1. Low and high national growth uncertainty

National uncertainty has been considered by following the guidance provided in TAG Unit M4, which states that the low and high growth scenarios should consist of forecasts based on a proportion of the base year demand being added to (high growth) or subtracted from (low growth) the Core growth scenario.

The proportion of base year demand to be added (or subtracted) is based on a parameter 'p' which varies by mode. The proportion is calculated as follows:

- For 1 year after the base year, proportion p of base year demand added (or subtracted) to the Core scenario.
- For 36 or more years after the base year, proportion 6*p of base year demand added to the Core scenario.
- Between 1 and 36 years after the base year, the proportion of base year demand should rise from p to 6*p in proportion with the square root of the years. For example, 16 years after the base year, the proportion is 4*p.

For highway demand at the national level, the value of p is 2.5%, reflecting uncertainty around annual forecasts from the National Transport Model (NTM), based on the macro-economic variables that influence the main drivers of travel demand. The indicative TAG value of p for rail travel is 2%, which has been adopted for the PT demand.

3.5.2. Emerging Local Plan (2036)

One area of local uncertainty relates to future housing and employment sites. The current Wiltshire Core Strategy covers the period up to 2026 and identifies site allocations to meet the identified need. Wiltshire Council is currently undertaking a Local Plan Review, which seeks to establish the requirement for additional housing and employment sites in Wiltshire up to 2036.

A significant proportion of the additional sites are likely to be within the A350 Growth Zone (potentially accounting for up to 12,000 additional dwellings). Whilst these sites would not be reflected within the Core scenario (as not being classified as 'near certain' or 'more than likely') they could be a pertinent consideration in relation to the Melksham Bypass scheme in terms of future traffic demands and traffic distribution.

Table 3-4 summarises the total number of dwellings associated with the emerging Local Plan, with a proposed completion of 2036.

Table 3-4 - Summary of emerging Local Plan dwelling forecast (2036)

Location	Region	Emerging Local Plan dwellings
Chippenham	Chippenham	5,100
	Corsham	190
	Melksham	2,675
	Calne	420
	Devizes	245
	Malmesbury	0
	Rest of HMA	1,470
Salisbury	Tidworth/ Ludgershall	345
	Amesbury	690
	Salisbury	710
	Rest of HMA	970
Trowbridge	Trowbridge	1,800
	Westbury	1,125
	Warminster	260

Location	Region	Emerging Local Plan dwellings
	Bradford on Avon	90
	Rest of HMA	570
West of Swindon	Royal Wootton Bassett	1,026
	Marlborough	245
	Rest of HMA	358
Wiltshire		**18,289**

Table 3-3 provides details of the two emerging Local Plan alternative growth scenarios that have been developed, whilst

Figure 3.4 identifies the transport infrastructure included in the emerging Local Plan alternative growth scenarios in addition to the Core.

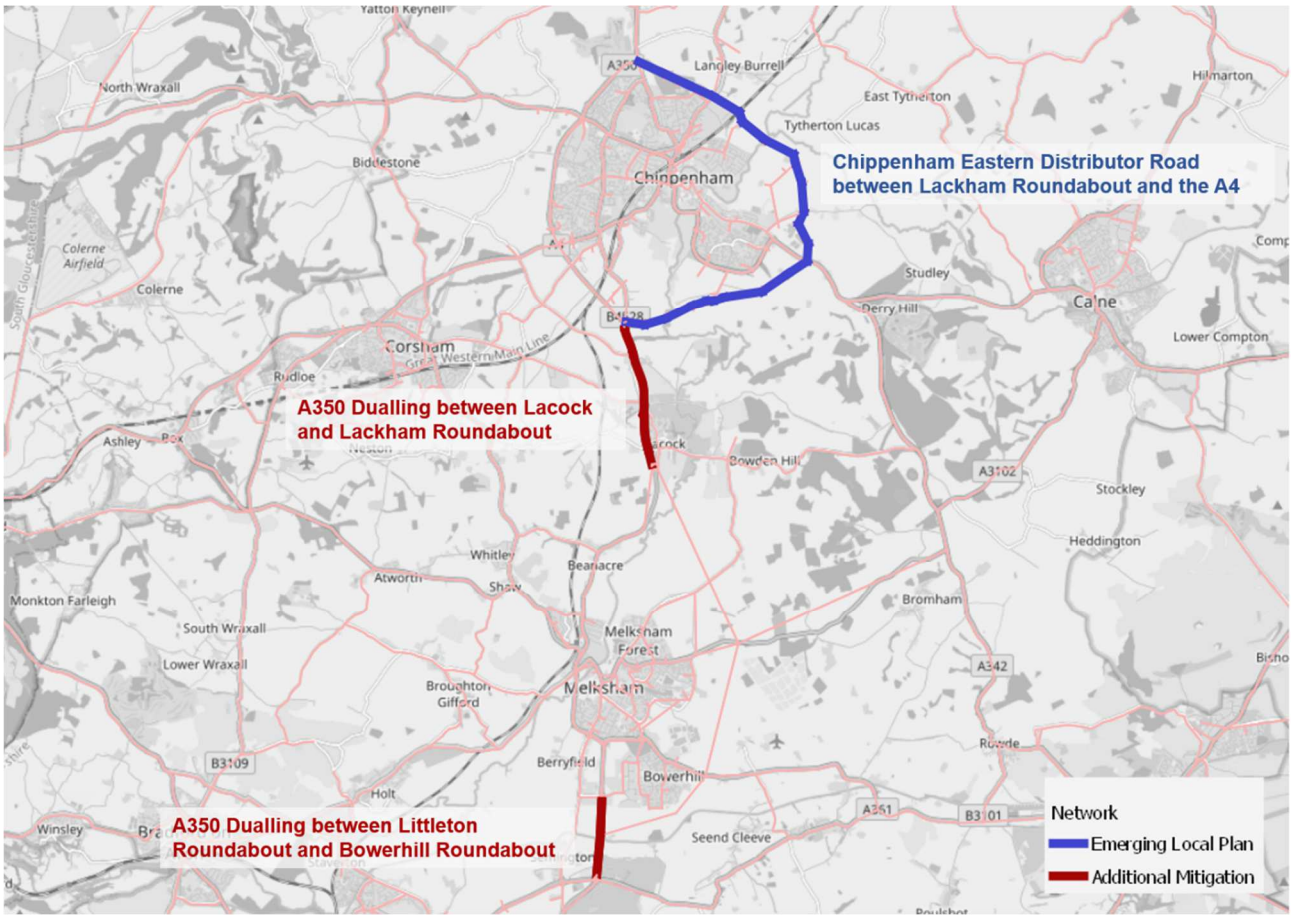
The first scenario considers the demand and highway infrastructure associated with the emerging Wiltshire Local Plan, as outlined in the Wiltshire Local Plan Transport Review[1]. The second scenario is an additional Local Plan scenario that considers further interventions (i.e., all schemes included in

[1] Wiltshire Local Pan Transport Review (Rev. 6.0, November 2020)

Figure 3.4) to mitigate the impact of the additional demand associated with the emerging Local Plan, plus the inclusion of the proposed MRN schemes identified in Figure 3.5.

A 2036 build-out year has been assumed for the emerging Local Plan, with no changed assumed in 2026 (i.e., the 2026 forecast year demand is consistent with the Core scenario).

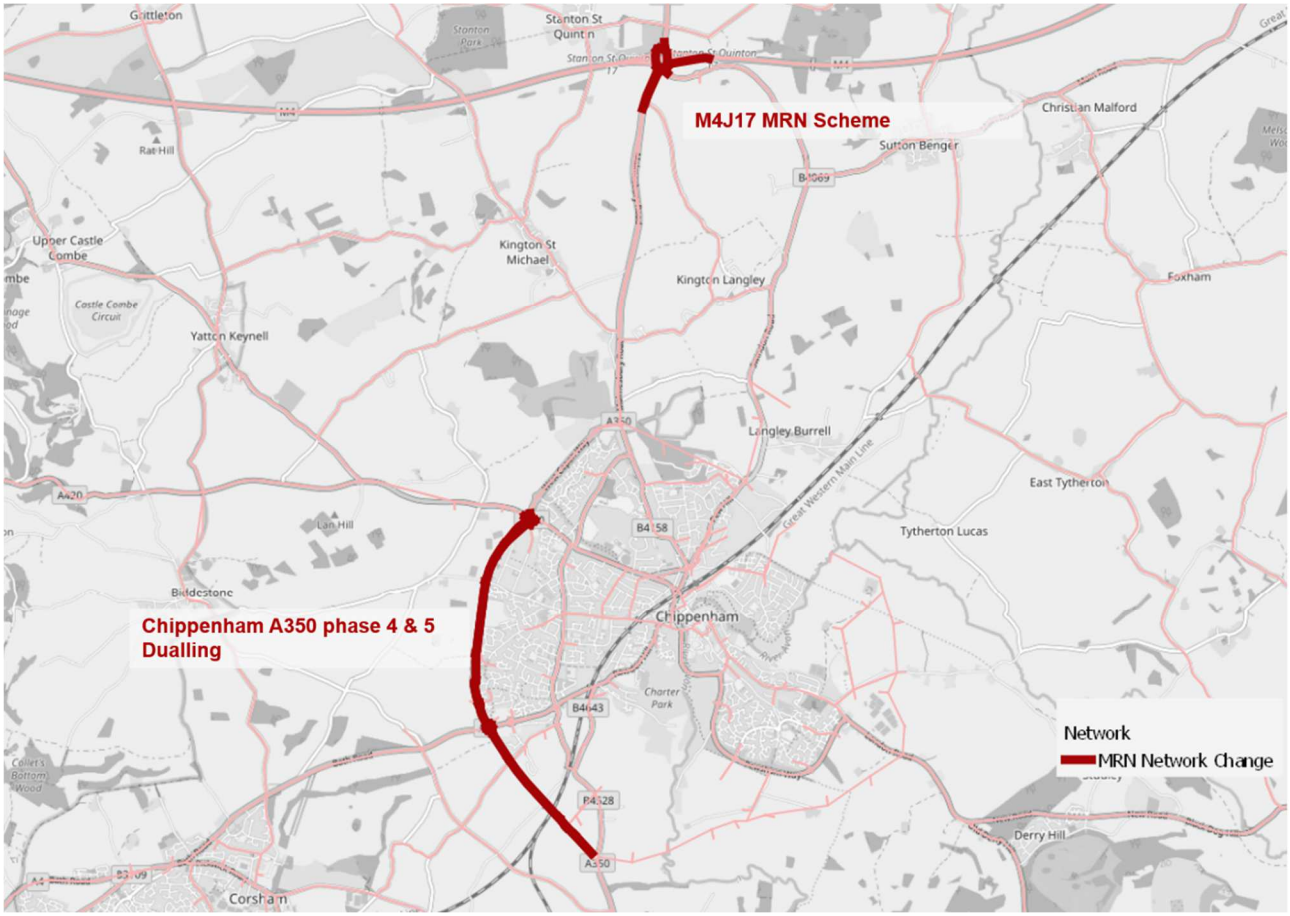
Figure 3.4 - Emerging Local Plan transport infrastructure



3.5.3. A350 Major Road Network (MRN)

A sensitivity test has been undertaken to identify the impact of Melksham Bypass in consideration of proposed MRN schemes on the A350 corridor. In addition to Melksham Bypass, a series of MRN schemes have already been identified, including M4 J17 and Chippenham A350 Phase 4&5 dualling. Figure 3.5 identifies the transport infrastructure included in the A350 MRN alternative growth scenario in addition to the Core.

Figure 3.5 - A350 MRN transport infrastructure



3.6. Model cordon

A cordon of the Wiltshire Transport Model has been derived to reduce the ADM to a more localised study area relevant for the Melksham Bypass scheme. The benefits of this approach are as follows:

- Reduced run times - a full DIADEM VDM run of the Wiltshire Transport Model takes over 24 hours per scenario.
- Improved model convergence.
- Reduced model noise - large geographic areas and convergence issues tend to result in greater levels of model ‘noise’ that may result in spurious economic assessment results.

As such, three cordoning techniques were evaluated for their suitability in defining a cordon model for the OBC. Figure 3.5 summarises the advantages and disadvantages of each cordon technique considered.

- Conventional cordoning - where the full model detail is retained in the identified study area and the rest of the model reduced to a skeletal external network and zoning system.

- Simulation Buffer Transformation (SBT) method in SATURN - where the full model detail is retained in the identified study area and the rest of the model network reduced to SATURN buffer coding without simulation.
- Fixed Cost Function (FCF) method in SATURN - where the full model detail is retained but the simulation outside the identified study area is based upon a (user) defined existing model run (e.g. the Do-Something scenario uses information from the Do-Minimum scenario).

Table 3-5 - Model cordon techniques

Cordon Type	Advantages	Disadvantages
Conventional cordon	• Significant reduction in run times. • Significant reduction in model noise.	• A new VDM will need to be developed. • Full trip lengths no longer available for economic analysis. • Removes opportunity for scheme effects outside of the immediate study area.
Simulation Buffer Transformation (SBT)	• Reduction in run times. • Existing VDM can be retained. • Full trip lengths retained for economic analysis.	• Removes all forms of model simulation. • Locks in whatever the simulation junction had calculated (good or bad) and will therefore be sensitive to large changes in demand. • Every buffer flow-delay curve is assignment specific (i.e. they will vary by year, scenario and time period). Therefore, considerations need to be made concerning: - which assignment(s) to use for forecast years and scenarios and how they may vary over time; - Network structure differences between scenarios. • VDM realism tests need to be re-run and adjustments made if necessary. • Assignments will differ to fully simulated assignments.
Fixed Cost Function (FCF)	• Long established technique. • Fully compatible with existing VDM. • Reduction in run times. • Retains the benefits of simulation (blocking back, downstream flow metering and modelling of individual junctions). • Assignments will be similar to assignments without FCF. • Improves convergence. Significantly reduces convergence noise between DM and DS in peripheral areas. • Reduces noise in economic analysis.	• Minimal disadvantages from a technical standpoint.

3.6.1. Fixed Cost Function (FCF)

In consideration of the cordoning techniques (i.e. a conventional cordon and Simulation Buffer Transformation) and the requirement to retain the demand response of the VDM, the FCF approach was deemed to be the most appropriate method for Melksham Bypass OBC.

The FCF methodology involves the importation of individual turn flow-delay curves from a previously converged network assignment, rather than calculating individual turn flow-delay curves based on current network flows and vehicle interactions. For example, the Do-Something network would use the (previously calculated) turn-flow delay curves from the Do-Minimum network. This approximation would only be applied to simulated turns outside the area of interest. Nearer to the scheme, the full SATURN simulation approach would be retained for optimal accuracy.

The criteria for the Affected Road Network (ARN), as specified in the DMRB LA105 air quality guidance (November 2019), has been adopted to assist with defining the extent of the FCF network. The ARN is defined at the link level by calculating the difference between the Do-Minimum and Do-Something scenarios, based on the following criteria:

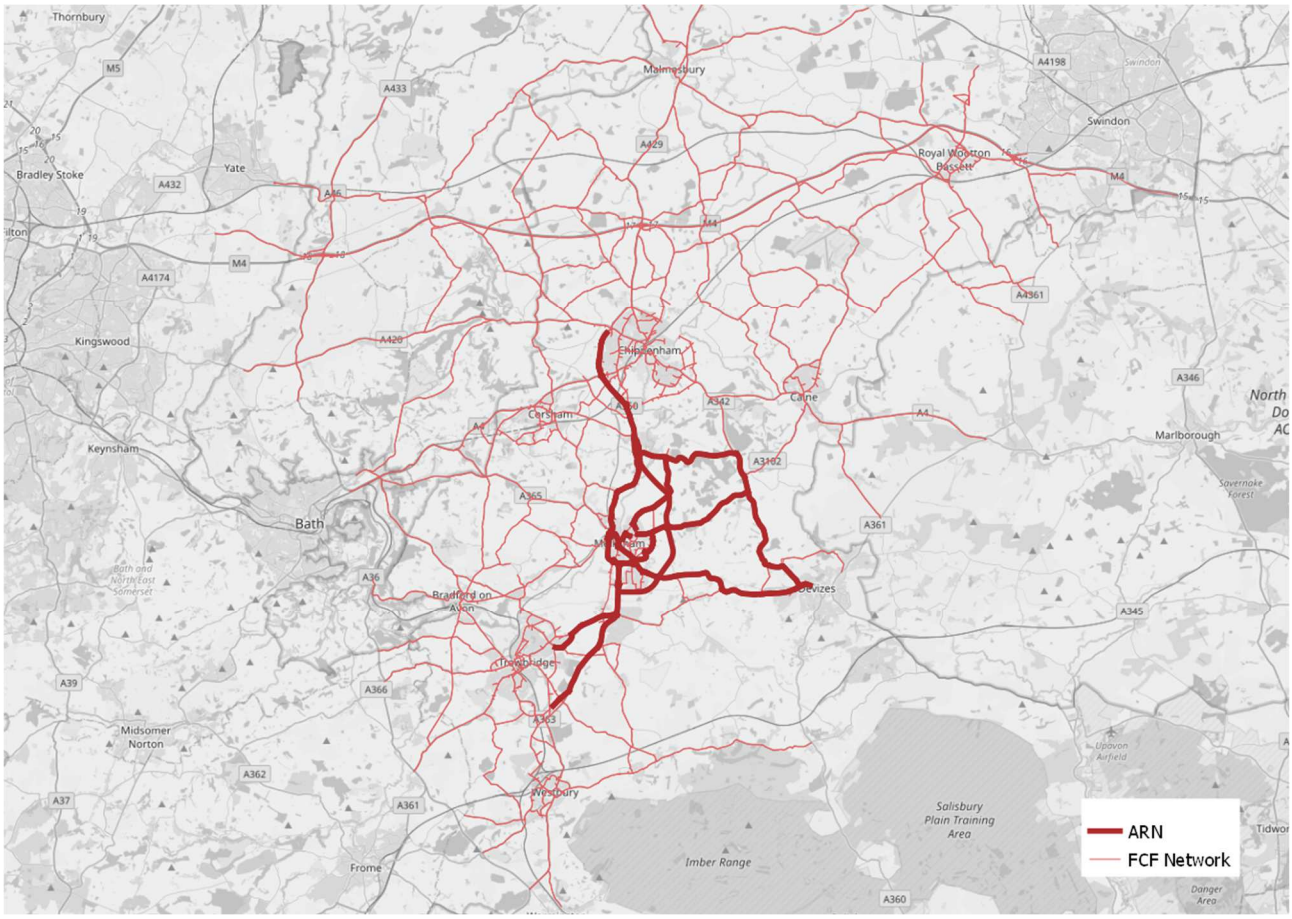
- Change in annual average daily traffic (AADT) >= ±1,000 (two-way link values combined); or
- Change in heavy duty vehicles (HDV) AADT >= ± 200 (two-way link values combined); or
- A step change in speed band for the daily average and modelled hour speeds (AM, IP, PM, OP):
  - Heavy congestion (5-20 kph);
  - Light congestion (20-45 kph);
  - Free flow (45-80 kph); and
  - High speed (80+ kph).

In addition to the DMRB ARN definition, the impact of the scheme has been monitored to inform the extent of the FCF network. The following factors were considered in determining the extent of the FCF network:

- Observations of flow difference caused by the implementation of the scheme that do not meet the ARN criteria.
- Consolidation of the model to focus on the scheme area, whilst considering key strategic highway corridors and neighbouring towns.

Figure 3.6 shows the extent of the FCF network, with reference to the links that meet the AQ ARN criteria. The FCF network has been extended beyond the ARN in consideration of the additional aforementioned factors (e.g., key strategic highway corridors).

Figure 3.6 - Fixed Cost Function (FCF) network



4. Reference case trip matrices

4.1. Introduction

This chapter outlines the process followed in developing the reference case (pre-VDM) traffic demand forecasts for the years 2026 and 2036. Travel demand changes for individual development sites within Wiltshire are included within the uncertainty log (see section 3.4 & **Appendix D**) This section describes how the overall change in travel demand for the whole region was derived to match national demand forecasts and the basis for developing localised demand changes.

The reference case matrices are intended to reflect the changes in demand from the base year attributable to demographic and car ownership changes. It represents the travel demand that would be expected to arise if there were no changes in travel costs from the base year model. The demand model (described in section 6) uses the reference case matrices to extract travel costs to generate forecast year demand matrices.

4.2. NTEM 7.2 planning data

The basis for constraining the overall Core future year car trip matrices utilised the NTEM 7.2 database. These forecasts act as control on the overall regional growth (after applying the growth from local known developments in the uncertainty log to the base demand) described later.

Origin-Destination (OD) growth factors derived from NTEM 7.2 are presented in Table 4-1 to Table 4-3, whilst Table 4-4 presents Production-Attraction (PA) growth factors. OD factors were used to growth the Reference Case fixed demand matrices by user class. PA factors were used to growth the Reference Case DIADEM demand segments by trip purpose.

All matrix forecasting was prepared at the 24-hour average weekday level and in Production/Attraction format for home-based trips (Origin/Destination for non-home based). The starting point for the application of NTEM 7.2 growth was the base year 2018 PA matrices used for realism testing (see LMVR issue 6a for details).

Table 4-1 - NTEM 7.2: OD car driver trip growth (2018 to 2026)

Time Period	Location	UC1: Business		UC2: Commute		UC3: Other	
		Origin	Destination	Origin	Destination	Origin	Destination
AM	Wiltshire	1.03	1.05	1.03	1.05	1.08	1.09
AM	South West	1.06	1.06	1.06	1.06	1.09	1.09
AM	GB	1.06	1.06	1.06	1.06	1.09	1.09
IP	Wiltshire	1.05	1.05	1.04	1.03	1.09	1.09
IP	SW	1.06	1.06	1.05	1.05	1.09	1.09
IP	GB	1.06	1.06	1.05	1.05	1.09	1.09
PM	Wiltshire	1.05	1.04	1.04	1.02	1.07	1.07
PM	SW	1.06	1.06	1.05	1.05	1.08	1.08
PM	GB	1.06	1.06	1.06	1.06	1.08	1.08

Table 4-2 - NTEM 7.2: OD car driver trip growth (2018 to 2036)

Time Period	Location	UC1: Business		UC2: Commute		UC3: Other	
		Origin	Destination	Origin	Destination	Origin	Destination
AM	Wiltshire	1.06	1.11	1.04	1.10	1.16	1.18
AM	South West	1.11	1.11	1.11	1.11	1.18	1.18
AM	GB	1.12	1.12	1.12	1.12	1.18	1.18
IP	Wiltshire	1.09	1.09	1.07	1.06	1.18	1.18
IP	SW	1.11	1.11	1.10	1.10	1.18	1.18
IP	GB	1.12	1.12	1.11	1.11	1.19	1.19
PM	Wiltshire	1.10	1.07	1.09	1.03	1.15	1.15
PM	SW	1.11	1.11	1.10	1.10	1.16	1.16
PM	GB	1.12	1.12	1.11	1.11	1.17	1.17

Table 4-3 - NTEM 7.2: OD car driver trip growth (2018 to 2051)

Time Period	Location	UC1: Business		UC2: Commute		UC3: Other	
		Origin	Destination	Origin	Destination	Origin	Destination
AM	Wiltshire	1.14	1.20	1.12	1.20	1.28	1.31
AM	South West	1.21	1.21	1.20	1.20	1.30	1.30
AM	GB	1.23	1.23	1.22	1.22	1.32	1.32
IP	Wiltshire	1.18	1.18	1.14	1.13	1.30	1.30
IP	SW	1.20	1.20	1.18	1.18	1.30	1.30
IP	GB	1.22	1.22	1.19	1.19	1.32	1.32
PM	Wiltshire	1.19	1.15	1.17	1.10	1.26	1.25
PM	SW	1.21	1.21	1.18	1.18	1.27	1.27
PM	GB	1.23	1.23	1.20	1.20	1.29	1.29

Table 4-4 - NTEM 7.2: PA (24 hour) car driver trip growth from 2018

Year	Location	DS1: HBEB		DS2: HBW		DS3: HBO	
		Production	Attraction	Production	Attraction	Production	Attraction
2026	Wiltshire	1.03	1.05	1.02	1.04	1.08	1.09
2026	SW	1.06	1.06	1.05	1.05	1.08	1.08
2026	GB	1.07	1.07	1.05	1.05	1.09	1.09
2036	Wiltshire	1.04	1.11	1.02	1.09	1.16	1.18
2036	SW	1.11	1.11	1.09	1.09	1.17	1.17
2036	GB	1.12	1.12	1.11	1.11	1.19	1.19
2051	Wiltshire	1.12	1.21	1.09	1.18	1.27	1.31
2051	SW	1.21	1.21	1.18	1.18	1.29	1.29
2051	GB	1.24	1.24	1.20	1.20	1.32	1.32

HBEB - Home Based Employer Business, HBW – Home Based Work, HBO – Home Base Others

4.3. Growth in freight

The DfT Road Traffic Forecasts (2018 RTF) were used to constrain the overall growth of freight (LGV & HGV) traffic in a similar way to constraints using NTEM. The resulting factors are summarised in Table 4-5.

Table 4-5 - Freight vehicle growth factors from 2018

Period	LGV Factor	HGV Factor
2026	9.3%	-0.06%
2036	23.3%	0.09%
2051	42.6%	3.1%

DfT RTF18 for South West region, all road types

4.4. Overall growth in reference case trip matrices

Table 4-6 shows growth in demand between the 2018 base and the three modelled forecast year Reference Case matrices. There is expected to be a 7.59% growth between 2018 and 2024, increasing to 15.69% in 2036 and 27.65% in 2051. This is the equivalent to a Compound Annual Growth Rate (CAGR) of 0.7% per annum.

Table 4-6 - Reference case 24hr highway trip matrix totals

Trip Purpose	Format	Base 2018 Matrix	2026		2036		2051	
			Reference Case Matrix	% growth	Reference Case Matrix	% growth	Reference Case Matrix	% growth
HBEB	PA	1,387,217	1,476,549	6.44%	1,557,488	12.27%	1,710,191	23.28%
HBW	PA	9,688,758	10,218,587	5.47%	10,707,743	10.52%	11,588,375	19.61%
HBO	PA	15,619,327	17,048,558	9.15%	18,497,928	18.43%	20,482,537	31.14%
NHBEB	OD	2,637,494	2,796,119	6.01%	2,942,210	11.55%	3,197,941	21.25%
NHBO	OD	9,424,577	10,174,618	7.96%	10,901,185	15.67%	11,961,294	26.92%
Fixed (Ports)	OD	30,844	32,919	6.73%	35,127	13.88%	38,356	24.36%
LGV	OD	8,871,376	9,694,009	9.27%	10,937,727	23.29%	12,652,559	42.62%
HGV	OD	4,193,702	4,166,811	-0.64%	4,205,972	0.29%	4,321,660	3.05%
Car (All)		65,524,167	70,690,428	7.88%	75,774,341	15.64%	83,344,099	27.20%
Freight		13,065,078	13,860,820	6.09%	15,143,699	15.91%	16,974,219	29.92%
Total		78,589,246	84,551,248	7.59%	90,918,040	15.69%	100,318,318	27.65%

Highway Trips numbers are based on an Average Weekday (Mon-Fri) for a 24-hour period;
Home Based trips are based on NTEM 7.2 Production Attraction factors
Non Home Based trips are based on NTEM 7.2 Origin Destination data by time period
The reference case trip matrices include development trips in the uncertainty log.
All growth is relative to the 2018 Base Year
The central reference case change refers to the entire, i.e. Global matrix, which is predominantly in the South West but includes the whole of Great Britain. All NTEM 7.2 growth refers to average weekday Production/Attraction Trip End data.
Non Home-Based trips are grown by Time period and Origin/Destination Trip Ends, hence NTEM 7.2 data is indicative only

4.5. Development trip rates & distribution

4.5.1. Treatment of specific developments

A new model zone was created for each land use development included within the uncertainty log and standard trip rates, for OD movements by time period by land use purpose, were derived from the TRICS

database for an average peak period. These rates are for sites in England and Wales and exclude London. The trip rates are shown in Table 4-7.

Table 4-7 - Development trip rates per hour (derived from TRICS)

Development Type (Unit)	AM (07:00-10:00)			IP (10:00-16:00)			PM (16:00-19:00)		
	In	Out	Tot	In	Out	Tot	In	Out	Tot
A1-A5 Retail	0.51	0.41	0.92	1.45	1.32	2.76	1.83	1.39	3.22
B1 Office & BPark	0.78	0.13	0.91	0.23	0.25	0.47	0.10	0.68	0.78
B2 Industrial	0.26	0.10	0.37	0.16	0.16	0.32	0.08	0.25	0.32
B8 Warehouse	0.14	0.08	0.22	0.13	0.13	0.27	0.07	0.13	0.20
Mixed Commercial	0.42	0.18	0.61	0.49	0.46	0.95	0.52	0.61	1.13
Residential (dwelling)	0.11	0.24	0.35	0.15	0.15	0.30	0.25	0.15	0.40

Trip rates for journeys both arriving at and departing from residential dwellings were derived from TRICS data. The two sources of TRICS data used were for mixed private housing and for privately owned houses, this can be found in tables below. The final residential trip rates were calculated using a weighting of 67% towards privately owned housing and 33% towards mixed private housing.

Table 4-8 - Housing Trip Rates

Time Segment	Private housing mixed			Privately owned houses			Housing (weighted)		
	In	Out	Tot	In	Out	Tot	In	Out	Tot
07:00-08:00	0.062	0.207	0.269	0.08	0.26	0.34	0.074	0.243	0.317
08:00-09:00	0.094	0.258	0.352	0.13	0.36	0.49	**0.118**	**0.326**	**0.444**
09:00-10:00	0.1	0.115	0.215	0.14	0.16	0.30	0.127	0.145	0.272
10:00-11:00	0.103	0.145	0.248	0.13	0.15	0.28	0.121	0.148	0.269
11:00-12:00	0.105	0.103	0.208	0.14	0.15	0.29	0.128	0.134	0.263
12:00-13:00	0.134	0.124	0.258	0.15	0.15	0.30	0.145	0.141	0.286
13:00-14:00	0.13	0.113	0.243	0.16	0.15	0.31	0.150	0.138	0.288
14:00-15:00	0.105	0.143	0.248	0.16	0.18	0.33	0.142	0.168	0.303
15:00-16:00	0.168	0.118	0.286	0.25	0.17	0.42	0.223	0.153	0.376
16:00-17:00	0.17	0.124	0.294	0.26	0.16	0.42	0.230	0.148	0.378
17:00-18:00	0.233	0.128	0.361	0.31	0.15	0.46	**0.285**	**0.143**	**0.427**
18:00-19:00	0.202	0.127	0.329	0.26	0.16	0.42	0.241	0.149	0.390

4.5.2. Development site trip distribution

A scripting process was utilised which distributed development trips using the base trip distribution of each model sector (see Figure 3.1Figure 3) by user class and time period. This process included inter-development trip movements (i.e., trips between new developments) based on the relative size/attractiveness of each development. Intra development trips was estimated based on the relative size and amount of housing and employment within each site.

5. Forecast year networks and assignment methodology

5.1. Network

5.1.1. Do Minimum (DM)

The forecast year DM network includes all infrastructure schemes and improvements listed in the uncertainty log (Appendix D.2). The model coding of the proposed schemes is based on the RTM coding manual, consistent with the base model (see LMVR Issue 6a). The validated 2018 base year model network was used as a basis for the forecast year DM scenario.

Scheme infrastructure designs have been provided by Wiltshire Council or Swindon Borough Council. Some of the main designs are included in Appendix D.3. The forecast network scheme changes outside the AoDM are consistent with A303 Stonehenge / SWRTM model. Where there were no signal plans, local assumptions were made to replicate the likely operation of the junction and has been optimised locally.

5.1.2. Do Something (DS)

The DS network coding incorporates the Melksham Bypass scheme, in addition to the schemes present in the DM network. The latest DS scheme alignment is presented in Figure 2.1, and was coded based on the RTM coding manual.

For determining an initial set of signal timings to be used in the SATURN model, a set of LinSig models were produced for all signalised junctions of Melksham Bypass (see section 2.2). Details of the LinSig models developed are provided in the Melksham Bypass Design Strategy Report.

Signal timings and phasing were reviewed for junctions with high levels of delay. Existing timings that were found to be unreasonable for the assigned flow were optimised based on observation and judgment.

5.2. Generalised cost parameters

The generalised cost of travel represents travellers' value of time by purpose (by pence per minute: PPM) and the relative distance (by pence per kilometre: PPK). These values have been defined for the entire model trip purpose. The highway model (SATURN) assigns trips to the lowest "cost" path.

The forecast generalised travel costs are based on values in the v1.14 (July 2020) TAG databook and are shown in Table 5-1 (Value of time, PPM) and Table 5-2 (vehicle operating costs, PPK.

The values come from the TAG Databook Tables A1.3.1 to A1.3.2 (monetary values of time), Tables A1.3.10 to A1.3.12 (fuel costs) and Table A1.3.15 (non-fuel vehicle operating costs).

When added together, the fuel and non-fuel elements give the total vehicle operating costs in terms of PPK for different transport users. TAG Unit A1.3 states that, in non-work time travellers do not perceive non-fuel vehicle operating costs, so these have been omitted from the overall calculation of generalised costs for commuting and other trips. Operating costs are expected to decrease overtime for car trips (due to greater fuel efficiency) but increase marginally for freight travel.

Table 5-1 - Value of Time (VoT) (in pence per minute) by time period & user: 2026, 2036 & 2051

User	2026			2036			2051		
	AM	IP	PM	AM	IP	PM	AM	IP	PM
Car Business	32.46	33.26	32.93	37.39	38.31	37.93	45.76	46.89	46.42
Car Commute	21.77	22.12	21.84	25.07	25.48	25.16	30.69	31.19	30.79
Car Other	15.02	16.00	15.73	17.30	18.43	18.12	21.17	22.55	22.17
LGV	23.52	23.52	23.52	27.10	27.10	27.10	33.16	33.16	33.16
HGV	46.85	46.85	46.85	53.97	53.97	53.97	66.05	66.05	66.05

HGV PPM values are adjusted as per guidance in TAG

Table 5-2 - Vehicle Operating Costs (VOC) (pence per kilometre) by user: 2026, 2036 & 2051

User	2026	2036	2051
Car Business	11.62	9.51	8.28
Car Commute	5.58	4.46	3.82
Car Other	5.58	4.46	3.82
LGV	13.42	12.19	11.23
HGV	39.68	36.90	36.66

Values are the same for all time periods

5.3. Highway assignment model convergence

Convergence of the highway assignment model is important to provide consistent, stable and robust model results and is particularly important for economic appraisal.

Guidance on the degree of model convergence is given in TAG and is presented in the LMVR (Issue 6a). The main measure of the convergence of a traffic assignment is the Delta statistic, or %GAP. This is the difference between the costs along the chosen routes and those along the minimum cost routes, expressed as a percentage of the minimum costs. TAG recommends a guideline target for the %GAP value of 0.1% or less. In addition, TAG recommends that the proportion of links for which the changes in traffic volumes is less than 1% should be at least 98% for four consecutive iterations.

Table 5-3 presents the convergence statistics for the Core highway assignment traffic forecasts, whilst the equivalent tabulation for the alternative scenarios (see section 3.5) are presented in Appendix E. The table shows that TAG criteria has been met for the Core DM and DS across all forecast years and time periods.

Table 5-3 - Core highway assignment traffic forecast model - convergence statistics

Time Period	Year	DM			DS		
		Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%
AM	2026	9	99.6	0.004	8	99.6	0.004
	2036	9	99.7	0.007	9	99.3	0.005
	2051	9	99.3	0.008	10	99.7	0.006
IP	2026	8	99.3	0.002	10	99.7	0.001
	2036	9	99.4	0.005	9	99.8	0.004
	2051	8	99.4	0.008	8	98.9	0.007
PM	2026	8	99.7	0.004	9	99.2	0.006
	2036	8	99.4	0.016	9	99.5	0.011
	2051	9	99.6	0.009	12	99.5	0.012

The convergence results presented are from the post VDM highway model. A description of the impact of VDM is presented in the next chapter.

6. Variable demand model

6.1. Overview of the VDM approach

The Wiltshire Transport model VDM approach is consistent with the A303 Stonehenge/SWRTM (i.e., it is an incremental VDM model). A description of the VDM modelling process is presented in the LMVR (Issue 6a, chapter 8), presenting the structure of the model process and the realism tests undertaken, which demonstrates its suitability for use in traffic forecasting.

6.2. PT costs and fares

The public transport costs and fares are calculated through the interpolation of the equivalent values derived from the SWRTM. Table 6-1 shows the totals of fares and times between all zone pairs in the model.

- PT fares are assumed to increase by 18% in 2026, 42% in 2036 and 76% in 2051.
- PT time is assumed to reduce by 1% in 2026 and 2036, and 2% in 2051.

Table 6-1 - PT fare and time

Demand Segment	2018	2026	2036	2051
HBEB	99,965,321	118,437,945	141,528,729	176,164,903
HBW	64,651,854	76,595,310	91,524,631	113,918,613
HBO	87,536,049	103,710,654	123,928,911	154,256,297
NHBEB	99,965,321	118,437,945	141,528,729	176,164,903
NHBO	87,536,049	103,710,654	123,928,911	154,256,297
PT Time	1,058,031,533	1,052,579,515	1,045,764,487	1,035,541,951

6.3. Convergence of the VDM

6.3.1. Guidance on convergence

The Department for Transports (DfT's) DIADEM software has been used to undertake the variable demand modelling process in response to changing travel times or costs. The process is iterative and modifies the model demand matrices between SATURN assignments until a balance is achieved between demand and the capacity of the road network. The success in achieving this balance, or equilibrium, is defined using convergence criteria commonly termed '%Gap'.

The objective of this process is to achieve a well converged VDM model. TAG recommends, where possible, to achieve a demand/supply gap of less than 0.1%. If this criterion cannot be met, then a demand/supply gap of no greater than 0.2% is recommended.

The regional models utilised a criterion of a %Gap of less than 0.1% for the fully modelled area and 0.2% for the sub-area, the AoDM. The same have been used for Wiltshire Transport Model.

Table 6-2 presents the convergence statistics for the Core VDM DM and DS scenarios, whilst the equivalent tabulation for the alternative growth scenarios (see section 3.5) are presented in Appendix E. The table shows that TAG criteria has been met for the Core DM and DS across all forecast years and time periods.

Table 6-2 - VDM convergence statistics

Year	Scenario	Final Loop	% GAP Full Model Area	%GAP Subset Area
2026	Core DM	7	0.06%	0.09%
2036		8	0.07%	0.09%
2051		9	0.05%	0.06%
2026	Core DS	7	0.06%	0.09%
2036		8	0.07%	0.10%
2051		9	0.05%	0.07%

6.4. Impact of VDM: change in travel demand

Table 6-3 to Table 6-5 summarise the change in highway and PT demand between the Reference Case (i.e., before the impact of VDM), post-VDM DM and post-VDM DS, by forecast year. The tables present the following:

- Highway 24hr PA demand (Table 6-3) & car OD demand (Table 6-4).
  - DIADEM induces a minimal change in highway trips between the Reference Case and the post-VDM DM (maximum of 0.02% in 2051 OD), and even less still between the post-VDM DM and DS scenarios (maximum of 0.01% in 2051 PA).
- PT 24hr PA demand (Table 6-5).
  - DIADEM induces a small reduction in PT trips between the Reference Case and the post-VDM DM (maximum of 7.6% in 2051 PA). However, in absolute terms it is a tiny proportion of overall demand in the forecast model.
  - There is an immaterial change between the post-VDM DM and DS scenarios (maximum of 0.00% in 2051).

Sectored Core highway OD demand matrices for all time periods are presented in Appendix F.

Table 6-3 - 24hr highway PA trip demand

Year	Scenario	HBEB	HBW	HBO	NHBEB	NHBO	24Hr Tot
2018	Base	1,387,217	9,688,758	15,619,327	2,637,494	9,424,577	38,757,373
2026	Reference case	1,476,549	10,218,587	17,048,558	2,796,119	10,174,618	41,714,432
	Post-VDM DM	1,477,785	10,237,232	17,054,817	2,798,569	10,181,072	41,749,475
	Post-VDM DS	1,477,786	10,237,239	17,054,818	2,798,569	10,181,073	41,749,485
	DM vs Ref %	0.08%	0.18%	0.04%	0.09%	0.06%	0.08%
	DS vs DM %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2036	Reference Case	1,557,488	10,707,743	18,497,928	2,942,210	10,901,185	44,606,553
	Post-VDM DM	1,560,268	10,748,082	18,509,125	2,947,893	10,912,675	44,678,044
	Post-VDM DS	1,560,269	10,748,090	18,509,127	2,947,894	10,912,677	44,678,057
	DM vs Ref %	0.18%	0.38%	0.06%	0.19%	0.11%	0.16%
	DS vs DM %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2051	Reference case	1,710,191	11,588,375	20,482,537	3,197,941	11,961,294	48,940,338
	Post-VDM DM	1,713,477	11,635,021	20,494,270	3,204,102	11,972,665	49,019,535
	Post-VDM DS	1,713,478	11,635,030	20,494,272	3,204,103	11,972,666	49,019,550
	DM vs Ref %	0.19%	0.40%	0.06%	0.19%	0.10%	0.16%
	DS vs DM %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 6-4 - Car only OD trip demand

Year	Scenario	AM	IP	PM	OP	24Hr
2018	Base	4,482,055	3,995,336	5,373,322	998,834	65,524,154
2026	Reference case	4,825,606	4,326,404	5,758,658	1,081,601	70,690,431
	Post-VDM DM	4,831,569	4,328,011	5,765,733	1,082,701	70,752,386
	Post-VDM DS	4,831,557	4,328,015	5,765,763	1,082,695	70,752,393
	DM vs Ref %	0.12%	0.04%	0.12%	0.10%	0.09%
	DS vs DM%	0.00%	0.00%	0.00%	0.00%	0.00%
2036	Reference case	5,157,567	4,654,369	6,137,441	1,163,592	75,774,343
	Post-VDM DM	5,170,934	4,656,313	6,154,221	1,166,562	75,912,089
	Post-VDM DS	5,170,925	4,656,315	6,154,251	1,166,556	75,912,093
	DM vs Ref %	0.26%	0.04%	0.27%	0.26%	0.18%
	DS vs DM%	0.00%	0.00%	0.00%	0.00%	0.00%
2051	Reference case	5,688,051	5,123,556	6,722,645	1,280,889	83,344,094
	Post-VDM DM	5,702,790	5,123,719	6,742,862	1,285,893	83,509,986
	Post-VDM DS	5,702,781	5,123,731	6,742,884	1,285,885	83,510,006
	DM vs Ref %	0.26%	0.00%	0.30%	0.39%	0.20%
	DS vs DM%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 6-5 - 24hr public transport PA trip demand

Year	Scenario	HBEB	HBW	HBO	NHBEB	NHBO	24Hr Tot
2018	Base	90,725	781,877	266,294	35,728	106,990	1,281,613
2026	Reference case	92,709	796,649	270,920	36,786	110,326	1,307,391
	Post-VDM DM	91,338	776,140	258,713	33,902	98,954	1,259,047
	Post-VDM DS	91,337	776,133	258,711	33,901	98,953	1,259,035
	DM vs Ref %	-1.48%	-2.57%	-4.51%	-7.84%	-10.31%	-3.70%
	DS vs DM%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2036	Reference case	94,636	809,744	284,183	37,836	114,367	1,340,767
	Post-VDM DM	91,551	765,371	262,808	31,136	94,362	1,245,228
	Post-VDM DS	91,550	765,362	262,804	31,135	94,360	1,245,212
	DM vs Ref %	-3.26%	-5.48%	-7.52%	-17.71%	-17.49%	-7.13%
	DS vs DM%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2051	Reference case	98,387	826,379	291,344	39,253	118,283	1,373,646
	Post-VDM DM	94,740	775,069	268,768	31,989	98,271	1,268,837
	Post-VDM DS	94,739	775,059	268,765	31,988	98,269	1,268,819
	DM vs Ref %	-3.71%	-6.21%	-7.75%	-18.51%	-16.92%	-7.63%
	DS vs DM%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

6.5. Impact of VDM: change in mean trip length

Table 6-6 shows the forecast change in distance (vehicle-kilometres) between the Reference Case (i.e., before the impact of VDM), post-VDM DM and post-VDM DS, by forecast year.

The VDM has resulted in an increase in mean travel distance for car trips between the base year and forecast years This response is linked to the reducing cost of car travel in real terms as result of increased fuel efficiency and income levels projected by the Department for Transport TAG databook. There are reductions in distance travelled by freight vehicles. These vehicles are not subject to VDM, and the distance is based on reassignment only.

Table 6-6 - Changes in mean trip length (kms)

Time Period	Trip Purpose	Base	Ref			DM			DS			Ref vs DM %			DM vs DS %		
		2018	2026	2036	2051	2026	2036	2051	2026	2036	2051	2026	2036	2051	2026	2036	2051
AM	Car - Business	79.1	79.2	79.3	79.5	80.5	83.1	84.8	80.5	83.1	84.8	1.6%	4.7%	6.7%	0.0%	0.0%	0.0%
	Car - Work	46.5	46.6	46.7	46.8	49.0	53.4	56.9	49.0	53.4	56.9	5.1%	14.5%	21.7%	0.0%	0.0%	0.0%
	Car - Other	36.0	36.1	36.2	36.4	38.1	41.5	43.8	38.1	41.5	43.8	5.4%	14.5%	20.4%	0.0%	0.0%	0.0%
	LGV	54.8	54.7	54.6	54.7	54.7	54.6	54.7	54.7	54.6	54.7	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%
	HGV	109.3	109.1	109.0	109.1	109.1	109.0	109.1	109.1	109.0	109.1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	**52.4**	**52.0**	**51.8**	**51.6**	**53.6**	**56.2**	**58.2**	**53.6**	**56.2**	**58.2**	**3.0%**	**8.6%**	**12.8%**	**0.0%**	**0.0%**	**0.0%**
IP	Car - Business	76.6	76.6	76.8	76.9	78.3	81.6	83.8	78.3	81.6	83.8	2.2%	6.3%	8.9%	0.0%	0.0%	0.0%
	Car - Work	51.1	51.1	51.3	51.4	54.4	60.9	65.9	54.4	60.9	65.9	6.5%	18.7%	28.3%	0.0%	0.0%	0.0%
	Car - Other	35.7	35.8	35.9	36.1	37.9	41.3	43.6	37.9	41.3	43.6	5.6%	14.9%	20.9%	0.0%	0.0%	0.0%
	LGV	54.9	54.7	54.6	54.7	54.7	54.6	54.7	54.7	54.6	54.7	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%
	HGV	109.9	109.7	109.5	109.6	109.7	109.5	109.6	109.7	109.5	109.6	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	**52.2**	**51.6**	**51.2**	**51.0**	**53.2**	**55.7**	**57.6**	**53.2**	**55.7**	**57.6**	**3.1%**	**8.9%**	**13.1%**	**0.0%**	**0.0%**	**0.0%**
PM	Car - Business	78.1	78.1	78.3	78.5	79.5	82.2	84.0	79.5	82.2	84.0	1.8%	5.0%	7.0%	0.0%	0.0%	0.0%
	Car - Work	48.7	48.7	48.8	48.9	51.3	56.0	59.7	51.3	56.0	59.7	5.3%	14.9%	22.1%	0.0%	0.0%	0.0%
	Car - Other	36.9	37.1	37.2	37.4	38.9	42.2	44.4	39.0	42.2	44.4	5.0%	13.3%	18.8%	0.0%	0.0%	0.0%
	LGV	54.2	54.0	53.9	54.0	54.0	53.9	54.0	54.0	53.9	54.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	HGV	110.7	110.4	110.3	110.5	110.4	110.3	110.4	110.4	110.3	110.4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	**49.5**	**49.3**	**49.2**	**49.2**	**51.1**	**54.0**	**56.3**	**51.1**	**54.0**	**56.3**	**3.5%**	**9.9%**	**14.4%**	**0.0%**	**0.0%**	**0.0%**

Distances in kilometres, for the whole model.

7. Core traffic forecasts

7.1. Overview

The Core scenario traffic forecasts, based on the post-VDM modelling discussed in the previous chapter, account for the following demand and assignment responses:

- Changes in demographic and car ownership levels.
- Transport infrastructure interventions between the base year and the forecast year.
- Changes in the value of time resulting from changes in income and changes in fuel efficiency.
- Modal and time period response resulting from changes in levels of congestion arising from the changes above.

Comparisons are drawn between the Core DM and DS scenarios utilising three key indicators:

- Volume over Capacity (V/C): the ratio between network capacity and assigned highway demand.
- Traffic flow: the predicted change in assigned highway demand.
- Journey times: the predicted change in highway journey times.

For more detailed flow and V/C comparisons the Atkins Data Visualisation (ADV) tool is also included as an accompanying file (Appendix B). The ADV is a web-based platform which permits the interactive visualisation and interrogation of transport models.

7.2. Volume over Capacity (V/C)

The change in V/C (%) has been compared between the DM and DS scenarios to understand the impact of the scheme on the localised highway network. Figure 7.1 to Figure 7.3 show the change in V/C predicted in 2036 following the introduction of the scheme. The equivalent figures for 2026 and 2051 are presented in Appendix G, whilst detailed analysis is provided in the ADV tool (Appendix B).

The model predicts the following in regard to the change in V/C induced by the scheme. Values quoted are the change in percentage points in the 2036 AM peak, but observations are relevant for all forecast years and time periods.

- The scheme is predicted to alleviate localised capacity constraints as vehicles chose to travel via the bypass. This is apparent on:
  - The A350 between Littleton roundabout and Lacock (northbound: up to -53%, southbound: up to -46%).
  - Internally within Melksham on Western Way (A365) (eastbound: -27%, westbound: -25%) and Eastern Way (northbound: -20%, southbound: -22%).
  - Lacock village (northbound: -35%, southbound: -7%).
- However, the scheme is also predicted to increase capacity constraints at certain locations due to an increase in vehicle volumes. Most notably the existing infrastructure at either end of the bypass scheme:
  - The A350 between Lacock and Lackham roundabout (northbound: +25%, southbound: +15%).
  - The A361 between Semington roundabout and Littleton roundabout (eastbound: +3%, westbound: +6%).
  - The A350 between Ashton Common and Littleton roundabout (northbound: +1%, southbound: +6%).

Figure 7.1 - Difference in V/C%: Core DS - Core DM (2036 AM peak)

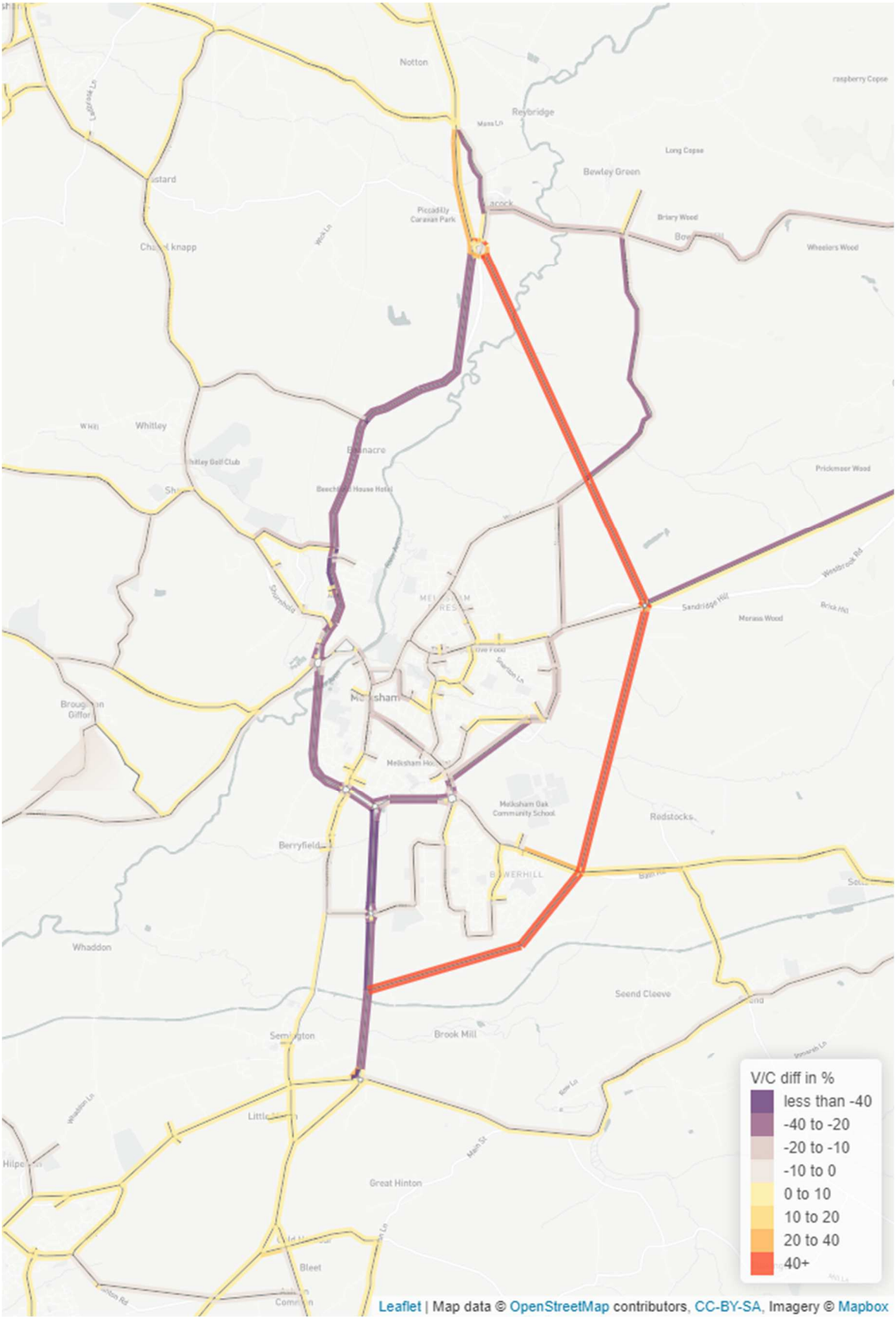
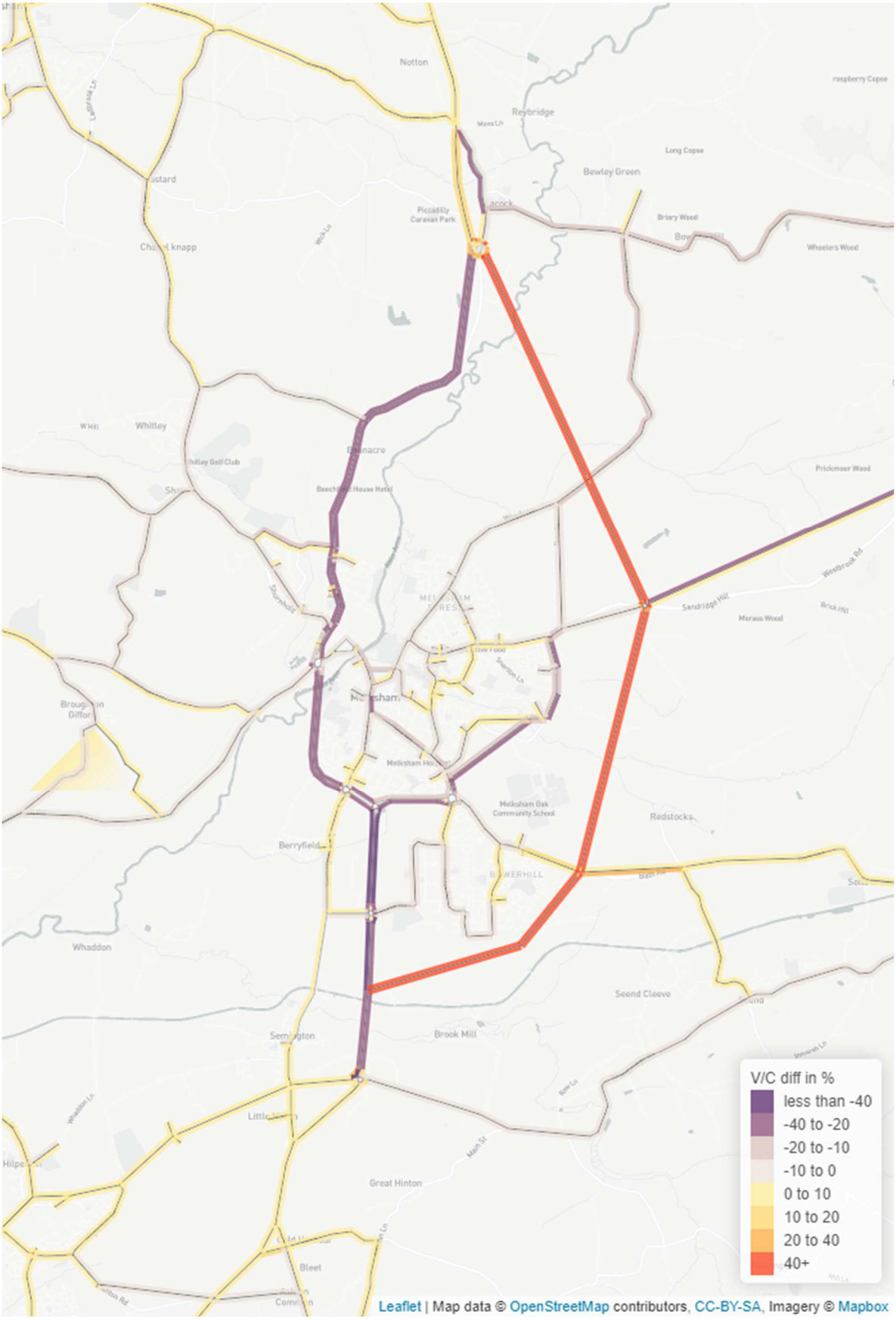


Figure 7.2 - Difference in V/C%: Core DS - Core DM (2036 IP)

Figure 7.3 - Difference in V/C%: Core DS - Core DM (2036 PM peak)



7.3. Traffic flow

The change in actual flow (PCUs) has been compared between the DM and DS scenarios to understand the impact of the scheme on the localised highway network. Figure 7.4 to Figure 7.6 show the change in flow predicted in 2036 following the introduction of the scheme. The equivalent figures for 2026 and 2051 are presented in Appendix G.

The model predicts the following in regard to the change in vehicle volumes induced by the scheme. Values quoted are from the 2036 AM peak, but observations are relevant for all forecast year and time periods (all values are rounded to the nearest 25).

- The scheme is predicted to reduce vehicle volumes on alternative routes in and around Melksham as vehicles chose to travel via the bypass. This is apparent on:
  - The A350 between Bowerhill roundabout and Lacock (northbound: up to -900 PCUs, southbound: up to -775 PCUs).
  - Internally within Melksham on Western Way (A365) (eastbound: -450 PCUs, westbound: -425 PCUs), Eastern Way (northbound: -400 PCUs, southbound: -300 PCUs), Spa Road (northbound: -100 PCUs, southbound: -125 PCUs) and Bath Road (A3102) (northbound: -150 PCUs, southbound: -175 PCUs)
  - Lacock village (northbound: -200 PCUs, southbound: -100 PCUs).
- There is likely to be small increases in vehicles where the bypass intersects the existing network:
  - The A350 between Lacock and Lackham roundabout (northbound: +175 PCUs, southbound: +100 PCUs).
  - Sandridge Hill (A3102) between the A342 and the scheme junction (eastbound: +50 PCUs, westbound: +25 PCUs).
  - Bath Road (A365) between Bollands Hill and the scheme junction (eastbound: +100 PCUs, westbound: +150 PCUs).
  - The A361 between Semington roundabout and Littleton roundabout (eastbound: +50 PCUs, westbound: +100 PCUs).
  - The A350 between Ashton Common and Littleton roundabout (northbound: +50 PCUs, southbound: +100 PCUs).

Figure 7.4 - Difference in actual flow (PCUs): Core DS - Core DM (2036 AM peak)

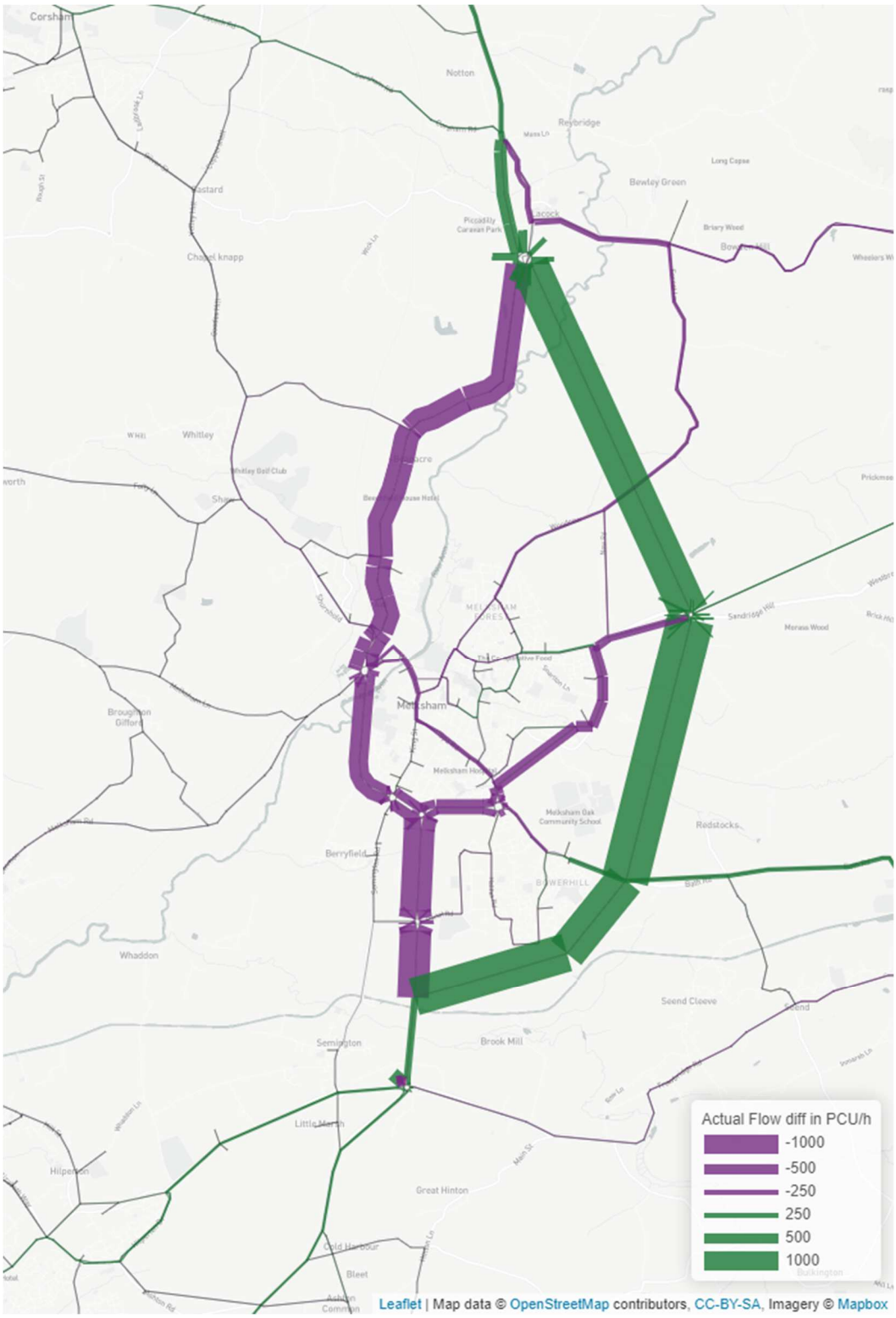


Figure 7.5 - Difference in actual flow (PCUs): Core DS - Core DM (2036 IP)

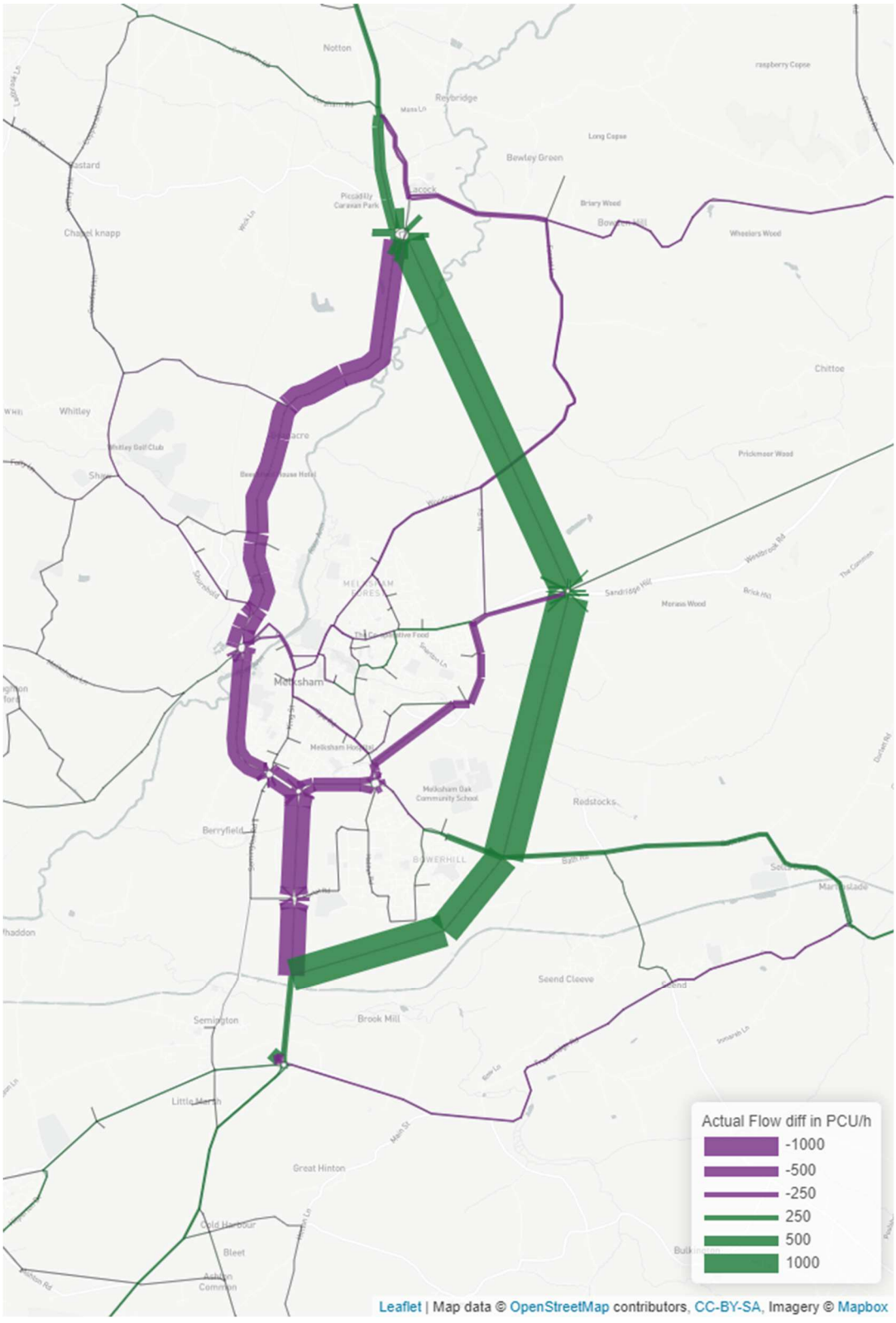
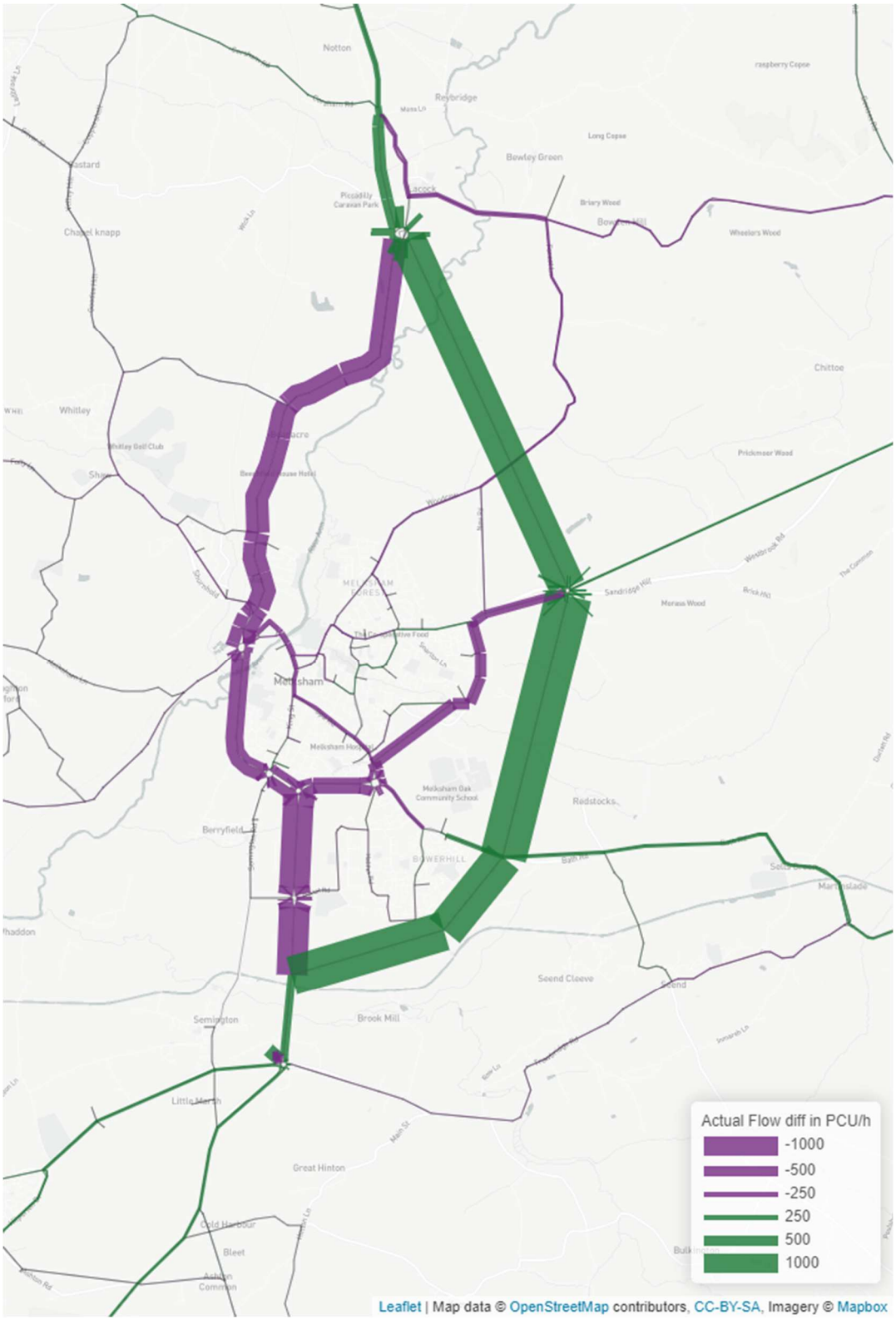


Figure 7.6 - Difference in actual flow (PCUs): Core DS - Core DM (2036 PM peak)



7.4. Journey times

Journey times have been compared between the Core DM and DS scenarios to understand the impact of the scheme on the localised highway network.

Table 7-1 to Table 7-3 compare journey times between the Core DM and DS scenarios, for all forecast years. Figure 7.7 highlights the extent of the journey time routes that have been included in the analysis. Journey times on the existing A350 between Melksham and Chippenham are compared to highlight the impact of the scheme on the existing infrastructure, whilst journey times on the bypass are compared against the existing A350 route from the DM scenario. Additionally, the forecast change in journey times on the routes used in model validation are presented in Appendix I.

As a result of introducing the scheme, the model predicts the following changes in journey times:

- In comparison to the existing A350 in the DM, the scheme is predicted to induce a notable reduction in journey times across all forecast years and time periods.
  - There is a 2-3 minute reduction in both directions in all forecast years and time periods.
- Furthermore, journey times have also improved on the A350 in all forecast years and time periods due to the reduction in vehicle volumes.
  - Northbound journey times savings are predicted to be ~2 minutes during peak periods in

Figure 7.7 - Journey time routes

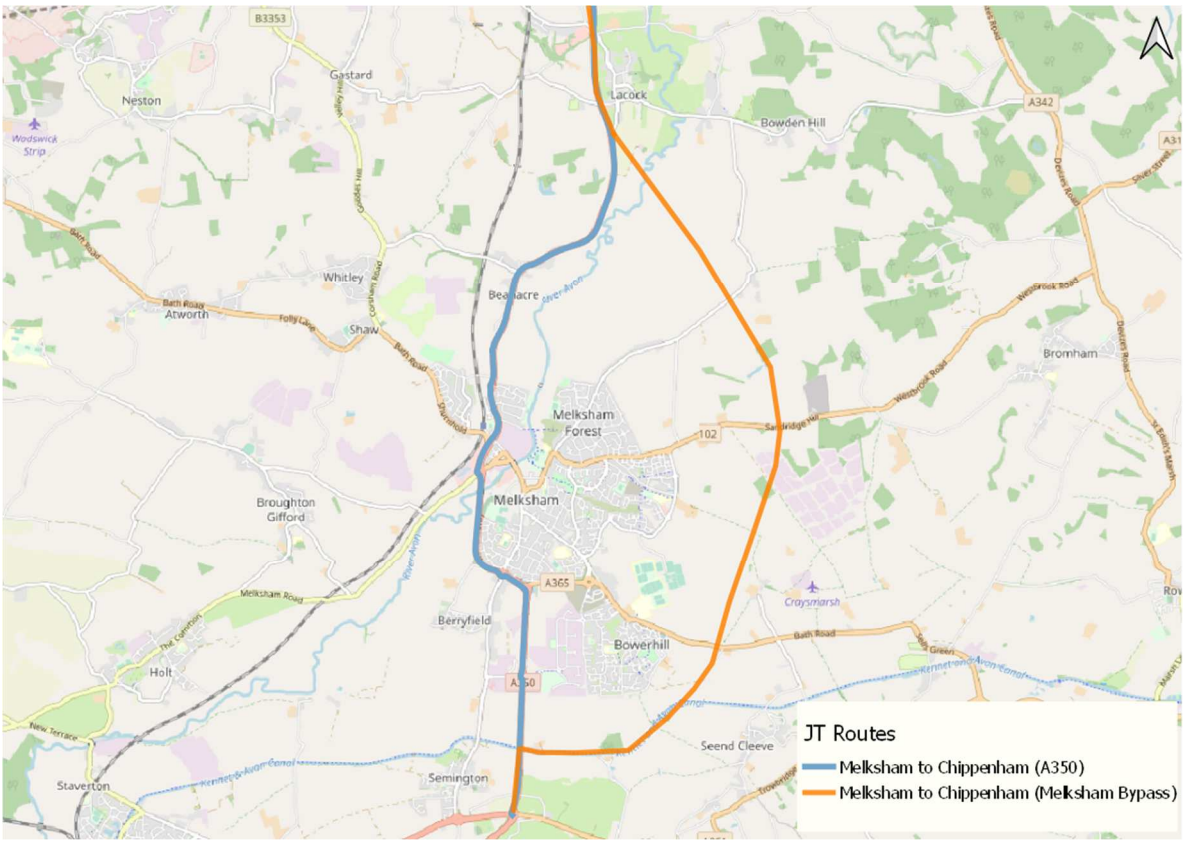


Table 7-1 - Difference in journey times (mm:ss): Core DS - Core DM (2026)

Time Period	Direction	Base	DM	DS: A350	Diff (DS-DM)	Diff%	DS: Bypass	Diff (DS-DM)	Diff%
AM	NB	14:00	14:39	13:29	-01:10	-8%	12:22	-02:17	-16%
	SB	13:54	14:43	14:07	-00:37	-4%	11:49	-02:55	-20%
IP	NB	13:20	13:56	13:04	-00:51	-6%	11:29	-02:27	-18%
	SB	13:20	14:00	13:55	-00:05	-1%	11:29	-02:31	-18%
PM	NB	13:51	14:26	13:15	-01:12	-8%	11:50	-02:36	-18%
	SB	13:42	14:47	14:11	-00:36	-4%	12:02	-02:46	-19%

Table 7-2 - Difference in journey times (mm:ss): Core DS - Core DM (2036)

Time Period	Direction	Base	DM	DS: A350	Diff (DS-DM)	Diff%	DS: Bypass	Diff (DS-DM)	Diff%
AM	NB	14:00	15:16	13:48	-01:28	-10%	12:56	-02:19	-15%
	SB	13:54	15:29	14:28	-01:01	-7%	12:27	-03:02	-20%
IP	NB	13:20	14:28	13:22	-01:06	-8%	12:00	-02:27	-17%
	SB	13:20	14:37	14:11	-00:26	-3%	12:00	-02:37	-18%
PM	NB	13:51	15:04	13:38	-01:26	-10%	12:30	-02:35	-17%
	SB	13:42	15:28	14:30	-00:58	-6%	12:36	-02:51	-18%

Table 7-3 - Difference in journey times (mm:ss): Core DS - Core DM (2051)

Time Period	Direction	Base	DM	DS: A350	Diff (DS-DM)	Diff%	DS: Bypass	Diff (DS-DM)	Diff%
AM	NB	14:00	16:09	14:20	-01:49	-11%	13:37	-02:32	-16%
	SB	13:54	16:04	14:53	-01:11	-7%	13:00	-03:04	-19%
IP	NB	13:20	15:08	13:43	-01:25	-9%	12:38	-02:29	-16%
	SB	13:20	15:21	14:27	-00:54	-6%	12:28	-02:53	-19%
PM	NB	13:51	16:12	14:13	-01:58	-12%	13:17	-02:55	-18%
	SB	13:42	16:08	15:25	-00:43	-4%	13:42	-02:26	-15%

8. Alternative growth traffic forecasts

This section provides details of the forecast model results for the alternative growth scenarios undertaken in support of the Melksham Bypass OBC submission. Comparisons are drawn against the Core scenario using the same metrics presented in section 7.

8.1. Demand

Table 8-1 to Table 8-3 compare DM and DS matrix totals by forecast year and growth scenario. The tabulations show the following trends in relation to the alternative growth scenarios:

- There is no difference in demand between the Core and MRN alternative scenario, as the same demand has been assumed for both scenarios (see section 3.5.3).
- In 2026 there is no difference in demand between the Core and Local Plan alternative growth scenarios, as a 2036 build-out year has been assumed for the emerging Local Plan (see section 3.5.2).
  - From 2036 there is a small increase in demand to reflect the additional demand associated with the Local Plan alternative growth scenario.
- The difference in matrix totals between Low and Core, and High and Core are of a similar scale, which increases in the later forecast years.

Table 8-1 - OD trip demand (all vehicles): 2026

Scenario	Scheme	AM		IP		PM		OP		24 hour	
		OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %
Core	DM	5,829,506	-	5,284,887	-	6,517,436	-	1,321,918	-	84,613,170	-
	DS	5,829,494	-	5,284,891	-	6,517,466	-	1,321,912	-	84,613,176	-
MRN	DM	5,829,506	0.0%	5,284,887	0.0%	6,517,436	0.0%	1,321,918	0.0%	84,613,170	0.0%
	DS	5,829,494	0.0%	5,284,891	0.0%	6,517,466	0.0%	1,321,912	0.0%	84,613,176	0.0%
Local Plan	DM	5,829,506	0.0%	5,284,887	0.0%	6,517,436	0.0%	1,321,918	0.0%	84,613,170	0.0%
	DS	5,829,494	0.0%	5,284,891	0.0%	6,517,466	0.0%	1,321,912	0.0%	84,613,176	0.0%
High Growth	DM	6,212,424	6.6%	5,631,439	6.6%	6,945,962	6.6%	1,409,077	6.6%	90,172,722	6.6%
	DS	6,212,423	6.6%	5,631,434	6.6%	6,945,994	6.6%	1,409,073	6.6%	90,172,726	6.6%
Low Growth	DM	5,446,434	-6.6%	4,938,337	-6.6%	6,088,653	-6.6%	1,234,848	-6.6%	79,053,459	-6.6%
	DS	5,446,427	-6.6%	4,938,339	-6.6%	6,088,672	-6.6%	1,234,844	-6.6%	79,053,461	-6.6%

Table 8-2 - OD trip demand (all vehicles): 2036

Scenario	Scheme	AM		IP		PM		OP		24 hour	
		OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %
Core	DM	6,260,375	-	5,700,740	-	6,979,394	-	1,427,667	-	91,055,754	-
	DS	6,260,366	-	5,700,742	-	6,979,423	-	1,427,661	-	91,055,757	-
MRN	DM	6,260,375	0.0%	5,700,740	0.0%	6,979,394	0.0%	1,427,667	0.0%	91,055,754	0.0%
	DS	6,260,366	0.0%	5,700,742	0.0%	6,979,423	0.0%	1,427,661	0.0%	91,055,757	0.0%
Local Plan	DM	6,265,960	0.1%	5,705,535	0.1%	6,985,820	0.1%	1,426,384	-0.1%	91,105,152	0.1%
	DS	6,265,951	0.1%	5,705,536	0.1%	6,985,849	0.1%	1,426,384	-0.1%	91,105,230	0.1%
High Growth	DM	6,835,125	9.2%	6,220,199	9.1%	7,622,587	9.2%	1,558,817	9.2%	99,400,136	9.2%
	DS	6,835,123	9.2%	6,220,201	9.1%	7,622,622	9.2%	1,558,808	9.2%	99,400,137	9.2%
Low Growth	DM	5,685,275	-9.2%	5,181,161	-9.1%	6,335,590	-9.2%	1,296,767	-9.2%	82,710,765	-9.2%
	DS	5,685,271	-9.2%	5,181,158	-9.1%	6,335,619	-9.2%	1,296,764	-9.2%	82,710,785	-9.2%

Table 8-3 - OD trip demand (all vehicles): 2051

Scenario	Scheme	AM		IP		PM		OP		24 hour	
		OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %	OD Demand	Change vs Core %
Core	DM	6,922,896	-	6,293,273	-	7,672,165	-	1,578,280	-	100,484,176	-
	DS	6,922,887	-	6,293,284	-	7,672,187	-	1,578,272	-	100,484,195	-
MRN	DM	6,922,896	0.0%	6,293,273	0.0%	7,672,165	0.0%	1,578,280	0.0%	100,484,176	0.0%
	DS	6,922,887	0.0%	6,293,284	0.0%	7,672,187	0.0%	1,578,272	0.0%	100,484,195	0.0%
Local Plan	DM	6,928,482	0.1%	6,298,067	0.1%	7,678,590	0.1%	1,574,517	-0.2%	100,503,820	0.0%
	DS	6,928,473	0.1%	6,298,078	0.1%	7,678,613	0.1%	1,574,520	-0.2%	100,503,962	0.0%
High Growth	DM	7,700,930	11.2%	6,995,833	11.2%	8,542,670	11.3%	1,756,435	11.3%	111,783,024	11.2%
	DS	7,700,881	11.2%	6,995,859	11.2%	8,542,695	11.3%	1,756,429	11.3%	111,783,026	11.2%
Low Growth	DM	6,144,379	-11.2%	5,590,372	-11.2%	6,800,692	-11.4%	1,400,585	-11.3%	89,184,467	-11.2%
	DS	6,144,367	-11.2%	5,590,375	-11.2%	6,800,722	-11.4%	1,400,581	-11.3%	89,184,490	-11.2%

8.2. Volume over Capacity (V/C)

Link V/C (%) has been compared between the Core and the alternative scenarios. Figures included in Appendix G identify the difference in V/C between the Core and the alternative scenarios in the 2036 AM peak (DM and DS). Detailed comparisons at a link-by-link basis can be identified in the accompanying ADV tool for all other forecast years and time periods (Appendix B).

The model predicts the following in regard to the difference in V/C between the Core and alternative scenarios. Values quoted are the change in percentage points between the Core and alternative scenarios in the 2036 DS AM peak (unless otherwise stated). Nonetheless, observations are relevant for all scheme scenarios (i.e., DM or DS), forecast years and time periods.

- The introduction of the A350 MRN schemes (i.e., M4 J17 and Chippenham A350 Phase 4&5 dualling) alleviates capacity constraints at M4 J17 and the A350 Chippenham bypass.
  - However, the MRN schemes are predicted to have minimal impact on the capacity of Melksham bypass or the existing A350 between Littleton roundabout and Lacock (northbound: up to ±1%, southbound: up to ±1%).
- The additional demand associated with the Wiltshire emerging Local Plan is predicted to increase the level of V/C in and around Melksham. Most notably on:
  - Melksham bypass (northbound: up to +6%, southbound: up to +11%).
  - The A350 between Lacock and Lackham roundabout (northbound: +13%, southbound: +17%).
  - The A350 between Bowerhill roundabout and the scheme junction (northbound: +10%, southbound: +12%).
- The most significant impact of the increased Local Plan demand occurs where the Melksham bypass scheme intersects the existing A350 at Lacock. The introduction of further mitigation measures (i.e. Local Plan + mitigation) (Table 3-3) alleviates the capacity constraints associated with the Local Plan demand.
  - The dualling of the A350 between Lacock and Lackham roundabout reduces the V/C ratio between the Local Plan and Local Plan with mitigation alternative scenarios.
  - The V/C ratio on the A350 northbound reduces from 100% in the Local Plan scenario to 49% with mitigation, and from 89% to 62% southbound.
- The difference in V/C between the Low and Core, and High and Core are of a similar scale.
  - In general, there is a slight reduction in V/C ratio between the Core and Low growth scenario, whilst there is a slight increase in V/C ratio between the Core and High growth scenario.

8.3. Traffic flow

Link flow (PCUs) has been compared between the Core and the alternative scenarios. Figures included in Appendix H identify the difference in actual flow between the Core and the alternative scenarios in the 2036 AM peak (DM and DS). Detailed comparisons on a link-by-link basis can be identified in the accompanying ADV tool for all other forecast years and time periods (Appendix B).

The model predicts the following in regard to the difference in actual flow between the Core and alternative scenarios. Values quoted are the difference between the Core and alternative scenarios from the 2036 DS AM peak (unless otherwise stated). Nonetheless, observations are relevant for all scheme scenarios (i.e., DM or DS), forecast years and time periods (all values are rounded to the nearest 25).

- The introduction of the A350 MRN schemes (i.e., M4 J17 and Chippenham A350 Phase 4&5 dualling) has no impact on vehicle volumes predicted on Melksham bypass or the existing A350 between Littleton roundabout and Lacock (northbound: up to ±0%, southbound: up to ±0%).

- The additional demand associated with the Wiltshire emerging Local Plan is predicted to increase vehicle volumes in and around Melksham. Most notably on:
  - Melksham bypass (northbound: up to +100 PCUs, southbound: up to +125 PCUs).
  - The A350 between Lacock and Lackham roundabout (northbound: +225 PCUs, southbound: +250 PCUs).
  - The A350 between Littleton roundabout and the scheme junction (northbound: +250 PCUs, southbound: +175 PCUs).
  - The A361 between Semington roundabout and Littleton roundabout (eastbound: +200 PCUs, westbound: +100 PCUs).
- The increase in Local Plan demand facilitates the requirement for further mitigation measures, hence the additional Local Plan scenario with mitigation. The most significant impact of the Local Plan mitigation measures is shown to occur on the A350 between Lacock and Lackham roundabout.
  - The dualling of the A350 between Lacock and Lackham alleviates capacity constraints between the Local Plan and Local Plan with mitigation alternative scenarios (see section 8.2). Consequently, there is an increase in vehicles volumes between the Local Plan with and without mitigation scenarios (northbound: +250 PCUs, southbound: +125 PCUs).
- The difference in actual flow between the Low and Core, and High and Core are of a similar scale.
  - In general, there is a slight reduction in vehicle volumes between the Core and Low growth scenario, whilst there is a slight increase between the Core and High growth scenario.

8.4. Journey times

Journey times between the Core and the alternative scenarios have been compared on the routes specified in Figure 7.7. Table 8-4 to Table 8-9 identify the difference in actual flow between the Core and the alternative scenarios, by forecast year and time period.

The model predicts the following in regard to the difference in journey times between the Core and alternative scenarios (unless otherwise stated). Values quoted refer to the maximum difference between the Core and alternative scenarios across all scheme scenarios (i.e., DM or DS), forecast year and time periods.

- The introduction of the A350 MRN schemes (i.e., M4 J17 and Chippenham A350 Phase 4&5 dualling) has minimal impact on journey times predicted between Melksham and Chippenham (2051 DS PM peak, Melksham bypass southbound: +12 seconds).
- In all instances the additional demand associated with the Wiltshire emerging Local Plan is predicted to increase journey times between Melksham and Chippenham (2051 DS PM peak, Melksham bypass northbound: +192 seconds).
  - In 2026 there is minimal change from the Core as the same level of demand has been assumed.
  - Following the full build-out of Local Plan developments in 2036, journey times are predicted to increase in both the DM and DS scenarios.
- In comparison to the Local Plan scenario without mitigation, there is a reduction in journey times following the implementation of mitigation measures to facilitate the additional demand associated with the Local Plan.
  - The dualling of the A350 between Lacock and Lackham is predicted to reduce journey times between the Local Plan with and without mitigation scenarios (2051 DS AM peak, Melksham bypass northbound: -116 seconds).
- In comparison to the Core scenario, journey times are greater in the High growth scenario (2051 DM AM peak, A350 northbound: +105 seconds) and lower in the Low growth scenario (2051 DM PM peak, A350 northbound: -67 seconds), for all forecast years and scheme scenarios.
  - The higher level of demand in the High growth scenario is predicted to result in higher levels of congestion, whilst the opposite effect is predicted in the Low growth scenario.

Table 8-4 - Difference in journey times (mm:ss): alternative scenarios - 2026 DM

									% change from Core				
Time Period	Route Name	Dir.	Core	MRN	LP	LP + M	HG	LG	MRN	LP	LP + M	HG	LG
AM	Melksham to Chippenham (A350)	NB	14:39	14:43	14:54	14:39	15:02	14:21	0.45%	1.70%	-0.09%	2.58%	-2.08%
		SB	14:43	14:46	14:54	14:44	15:02	14:20	0.33%	1.19%	0.05%	2.10%	-2.62%
IP	Melksham to Chippenham (A350)	NB	13:56	13:59	14:00	13:52	14:10	13:43	0.38%	0.43%	-0.48%	1.64%	-1.58%
		SB	14:00	14:02	14:10	14:03	14:15	13:47	0.23%	1.19%	0.32%	1.78%	-1.61%
PM	Melksham to Chippenham (A350)	NB	14:26	14:27	14:36	14:22	14:47	14:08	0.11%	1.13%	-0.45%	2.39%	-2.05%
		SB	14:47	14:48	15:08	14:56	15:12	14:18	0.10%	2.37%	1.00%	2.75%	-3.27%

Table 8-5 - Difference in journey times (mm:ss): alternative scenarios - 2036 DM

									% change from Core				
Time Period	Route Name	Dir.	Core	MRN	LP	LP + M	HG	LG	MRN	LP	LP + M	HG	LG
AM	Melksham to Chippenham (A350)	NB	15:16	15:22	17:31	17:11	16:03	14:39	0.73%	14.80%	12.60%	5.13%	-4.06%
		SB	15:29	15:38	16:27	16:10	15:56	15:03	0.92%	6.23%	4.40%	2.91%	-2.84%
IP	Melksham to Chippenham (A350)	NB	14:28	14:31	15:26	15:14	14:54	14:08	0.34%	6.75%	5.31%	3.06%	-2.32%
		SB	14:37	14:42	15:42	15:29	15:12	14:10	0.59%	7.40%	5.90%	3.98%	-3.10%
PM	Melksham to Chippenham (A350)	NB	15:04	15:06	17:57	17:39	15:53	14:34	0.22%	19.11%	17.11%	5.41%	-3.39%
		SB	15:28	15:31	16:49	16:22	16:02	14:53	0.35%	8.74%	5.85%	3.71%	-3.72%

Table 8-6 - Difference in journey times (mm:ss): alternative scenarios - 2051 DM

									% change from Core				
Time Period	Route Name	Dir.	Core	MRN	LP	LP + M	HG	LG	MRN	LP	LP + M	HG	LG
AM	Melksham to Chippenham (A350)	NB	16:09	16:17	18:59	18:41	17:54	15:04	0.85%	17.60%	15.77%	10.87%	-6.63%
		SB	16:04	16:14	17:12	16:46	16:36	15:28	1.02%	7.01%	4.36%	3.29%	-3.78%
IP	Melksham to Chippenham (A350)	NB	15:08	15:12	16:18	16:06	16:00	14:30	0.51%	7.76%	6.45%	5.76%	-4.18%
		SB	15:21	15:27	16:10	15:55	15:50	14:37	0.63%	5.33%	3.68%	3.17%	-4.77%
PM	Melksham to Chippenham (A350)	NB	16:12	16:19	19:08	19:01	17:44	15:05	0.76%	18.12%	17.39%	9.48%	-6.86%
		SB	16:08	16:14	17:34	16:54	17:00	15:23	0.58%	8.86%	4.79%	5.35%	-4.61%

Table 8-7 - Difference in journey times (mm:ss): alternative scenarios - 2026 DS

									% change from Core				
Time Period	Route Name	Dir.	Core	MRN	LP	LP + M	HG	LG	MRN	LP	LP + M	HG	LG
AM	Melksham to Chippenham (A350)	NB	13:29	13:34	13:43	12:59	13:43	13:19	0.56%	1.70%	-3.70%	1.74%	-1.27%
		SB	14:07	14:08	14:12	13:50	14:16	13:57	0.17%	0.61%	-1.97%	1.14%	-1.16%
	Melksham to Chippenham (Bypass)	NB	12:22	12:29	12:34	11:56	12:40	12:05	0.96%	1.65%	-3.46%	2.44%	-2.27%
		SB	11:49	11:51	11:54	11:37	12:03	11:36	0.30%	0.73%	-1.70%	1.98%	-1.83%
IP	Melksham to Chippenham (A350)	NB	13:04	13:06	13:09	12:45	13:12	12:58	0.14%	0.64%	-2.47%	0.92%	-0.87%
		SB	13:55	13:56	14:00	13:44	14:04	13:48	0.11%	0.54%	-1.38%	1.06%	-0.88%
	Melksham to Chippenham (Bypass)	NB	11:29	11:31	11:30	11:09	11:39	11:19	0.30%	0.16%	-2.83%	1.44%	-1.38%
		SB	11:29	11:30	11:33	11:20	11:40	11:19	0.15%	0.57%	-1.31%	1.68%	-1.34%
PM	Melksham to Chippenham (A350)	NB	13:15	13:16	13:24	12:54	13:24	13:07	0.14%	1.19%	-2.61%	1.18%	-0.92%
		SB	14:11	14:12	14:22	13:56	14:21	13:59	0.16%	1.31%	-1.72%	1.21%	-1.36%
	Melksham to Chippenham (Bypass)	NB	11:50	11:52	11:57	11:30	12:03	11:39	0.32%	0.98%	-2.85%	1.83%	-1.48%
		SB	12:02	12:04	12:13	11:52	12:15	11:46	0.37%	1.56%	-1.32%	1.87%	-2.22%

Table 8-8 - Difference in journey times (mm:ss): alternative scenarios - 2036 DS

									% change from Core				
Time Period	Route Name	Dir.	Core	MRN	LP	LP + M	HG	LG	MRN	LP	LP + M	HG	LG
AM	Melksham to Chippenham (A350)	NB	13:48	13:53	15:26	14:01	14:17	13:28	0.64%	11.76%	1.60%	3.42%	-2.47%
		SB	14:28	14:31	15:50	15:06	14:50	14:14	0.39%	9.49%	4.41%	2.52%	-1.56%
	Melksham to Chippenham (Bypass)	NB	12:56	13:02	14:34	13:10	13:25	12:27	0.70%	12.55%	1.76%	3.70%	-3.81%
		SB	12:27	12:32	13:59	13:19	12:54	12:07	0.75%	12.40%	6.92%	3.57%	-2.67%
IP	Melksham to Chippenham (A350)	NB	13:22	13:24	13:59	13:15	13:35	13:10	0.35%	4.64%	-0.78%	1.68%	-1.42%
		SB	14:11	14:13	14:40	14:08	14:23	13:58	0.25%	3.43%	-0.38%	1.37%	-1.51%
	Melksham to Chippenham (Bypass)	NB	12:00	12:05	12:46	12:09	12:21	11:43	0.68%	6.32%	1.24%	2.83%	-2.45%
		SB	12:00	12:02	12:43	12:14	12:16	11:43	0.33%	6.01%	1.95%	2.31%	-2.31%
PM	Melksham to Chippenham (A350)	NB	13:38	13:40	15:52	15:02	14:05	13:20	0.23%	16.38%	10.29%	3.40%	-2.18%
		SB	14:30	14:32	16:38	15:58	15:24	14:12	0.23%	14.76%	10.13%	6.19%	-2.04%
	Melksham to Chippenham (Bypass)	NB	12:30	12:33	14:51	14:09	13:02	12:04	0.47%	18.89%	13.30%	4.33%	-3.42%
		SB	12:36	12:41	14:52	14:18	13:34	12:13	0.59%	17.91%	13.41%	7.67%	-3.11%

Table 8-9 - Difference in journey times (mm:ss): alternative scenarios - 2051 DS

									% change from Core				
Time Period	Route Name	Dir.	Core	MRN	LP	LP + M	HG	LG	MRN	LP	LP + M	HG	LG
AM	Melksham to Chippenham (A350)	NB	14:20	14:28	16:56	15:00	15:20	13:41	0.96%	18.25%	4.73%	7.06%	-4.46%
		SB	14:53	14:58	16:54	15:50	15:40	14:31	0.52%	13.49%	6.41%	5.28%	-2.46%
	Melksham to Chippenham (Bypass)	NB	13:37	13:45	16:14	14:18	14:38	12:50	1.02%	19.25%	5.02%	7.45%	-5.72%
		SB	13:00	13:08	15:05	14:11	13:51	12:32	1.00%	15.96%	9.02%	6.51%	-3.66%
IP	Melksham to Chippenham (A350)	NB	13:43	13:47	14:31	13:32	14:06	13:25	0.47%	5.86%	-1.37%	2.82%	-2.24%
		SB	14:27	14:31	15:27	14:51	14:51	14:11	0.45%	6.92%	2.76%	2.81%	-1.83%
	Melksham to Chippenham (Bypass)	NB	12:38	12:44	13:35	12:43	13:11	12:09	0.81%	7.48%	0.68%	4.30%	-3.87%
		SB	12:28	12:33	13:38	13:07	12:59	12:06	0.68%	9.31%	5.21%	4.16%	-3.02%
PM	Melksham to Chippenham (A350)	NB	14:13	14:19	17:17	15:56	15:11	13:38	0.62%	21.49%	12.00%	6.73%	-4.11%
		SB	15:25	15:33	17:45	16:41	16:25	14:26	0.89%	15.15%	8.20%	6.51%	-6.34%
	Melksham to Chippenham (Bypass)	NB	13:17	13:25	16:29	15:14	14:15	12:35	0.96%	24.07%	14.64%	7.32%	-5.28%
		SB	13:42	13:54	16:02	15:07	14:41	12:38	1.42%	17.02%	10.35%	7.18%	-7.82%

9. Summary

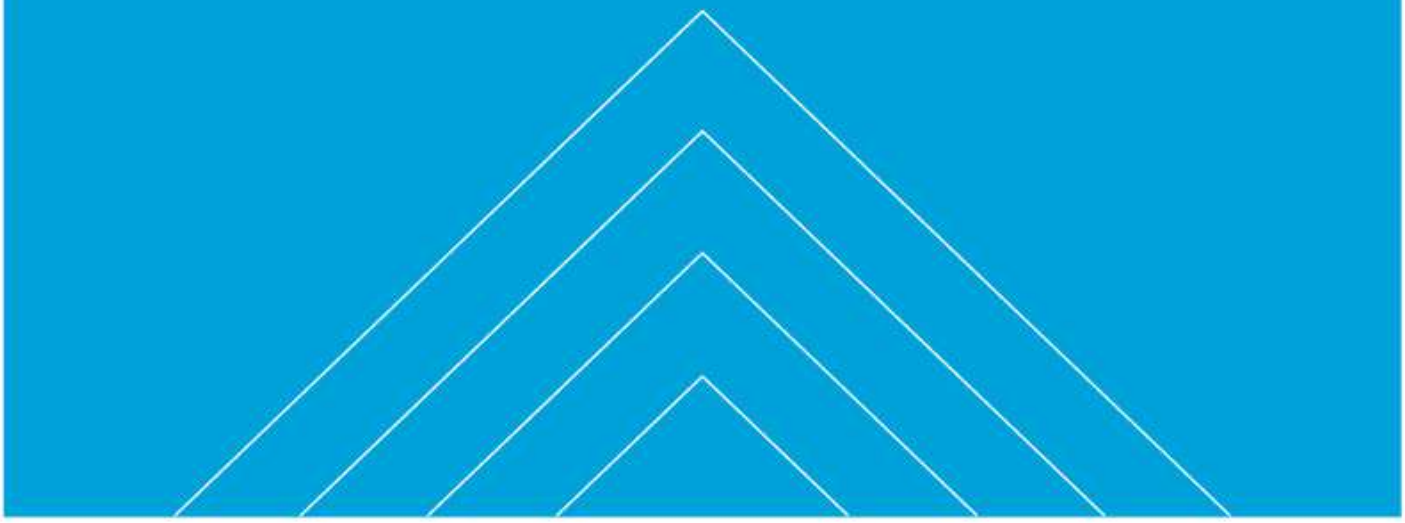
This report summarises the process followed in preparing traffic forecasts to inform the Melksham Bypass OBC. This includes outlining the forecasting assumptions and model outputs, whilst also providing details of the alternative scenarios undertaken as sensitivity tests.

The model predicts the following:

- The scheme is likely to encourage vehicles to switch from the existing A350 to the bypass, which will help to alleviate localised capacity constraints in Melksham. However, the scheme is also predicted to increase capacity constraints at locations where the bypass intersects existing infrastructure, most notably at either end of the bypass scheme on the A350.
- Journey times between Melksham and Chippenham are likely to improve following the introduction of the scheme, with savings of up to 5 minutes northbound and 3 minutes southbound in 2051 peak periods. The switch of traffic from the existing A350 to Melksham bypass is also likely to improve journey times on the A350.

The forecasts are considered fit for the purpose of informing the economic and environmental assessments undertaken as part of the Melksham Bypass OBC.

Appendices



Appendix A. Abbreviations

AADT	Annual Average Daily Traffic	NC	Near Certain
AAJV	Arup Atkins Joint Venture	NHBEB	Non-Home Based Employers' Business
AAWT	Annual Average Weekday Traffic	NHBO	Non-Home Based Other
AM	Morning peak period	Non-CA	Non-Car Available
AoDM	Area of Detailed Modelling	NTEM	National Trip End Model
AONB	Area of Outstanding Natural Beauty	NTM	National Transport Model
ASR	Appraisal Specification Report	NTS	National Travel Survey
ATC	Automatic Traffic Count	OD	Origin-Destination
CA	Car Available	OGV	Other Goods Vehicle
DF	Design Fix	ONS	Office for National Statistics
DfT	Department for Transport	OP	Off-peak period
DIADEM	Dynamic Integrated Assignment and Demand Modelling	P/A	Production/Attraction
DM	Do Minimum	PCF	Project Control Framework
DMRB	Design Manual for Roads and Bridges	PCU	Passenger Car Unit
DS	Do Something	PM	Evening peak period
EB	Eastbound	PPK	Pence per kilometre
GBFM	Great Britain Freight Model	PPM	Pence per minute
GDP	Gross Domestic Product	PT	Public Transport
FMA	Fully Modelled Area	RIS	Road Investment Strategy
GIS	Geographic Information System	RSI	Roadside Interview Survey
GFA	Gross Floor Area	RTM	Regional Traffic Model
HATRIS	Highways Agency Traffic Information System	SATURN	Simulation and Assignment of Traffic to Urban Road Net
HBEB	Home Based Employers' Business	SB	Southbound
HBO	Home Based Other	SEWTM	South East Wales Transport Model
HBW	Home Based Work	SOBC	Strategic Outline Business Case
HDV	Heavy Duty Vehicle	SR	Spending Review
HEIDI	Highways England Interactive DIADEM Interface	SRN	Strategic Road Network
HGF	Housing and Growth Fund	SWARMMS	South West Area Multi-Modal Study
HGV	Heavy Goods Vehicle	SWRTM	South West Regional Traffic Model
HPC	Hinkley Point C	TA	Transport Assessment
HW	Highway	TAG	Transport Appraisal Guidance
IAN	Interim Advice Note	TAME	Traffic Appraisal, Modelling and Economics
IP	Inter-peak period	TEMPro	Trip End Model Presentation Program
LGV	Light Goods Vehicle	TFR	Traffic Forecasting Report
LMVR	Local Model Validation Report	TUBA	Transport User Benefits Analysis
MPD	Mobile Phone Data	VADMA	Variable Demand Assessment
MPOD	Mobile Phone Origin-Destination Data	VDM	Variable Demand Modelling
MCC	Manual Classified Count	VISUM	Transport Modelling Software
MCTC	Manual Classified Turning Count	VOC	Vehicle Operating Cost
MOIRA	Model of Inter-Regional Activity	VoT	Value of Time
MOVA	Microprocessor Optimised Vehicle Actuation	vpd	vehicles per day
MTL	More Than Likely	WB	Westbound
NB	Northbound	WebTAG	Web based Transport Appraisal Guidance

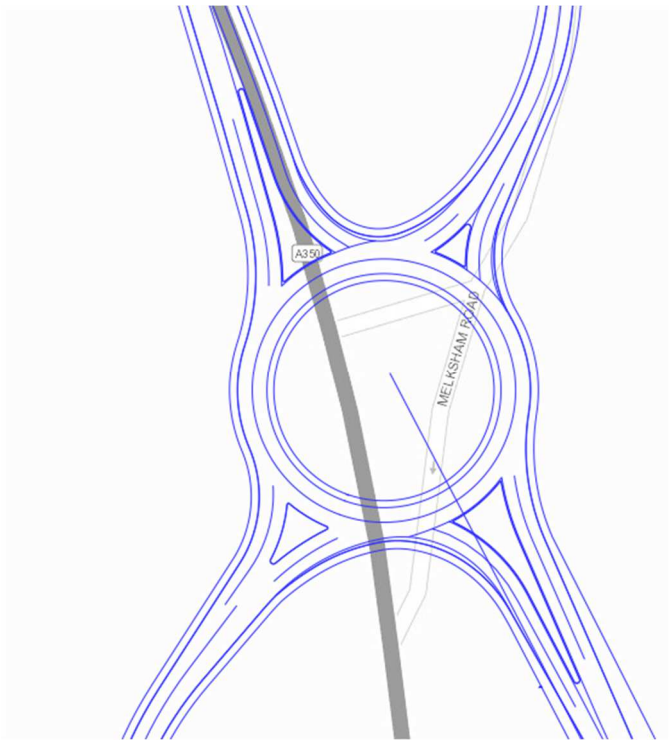
Appendix B. Atkins Data Visualisation tool

The Atkins Data Visualisation (ADV) tool is provided as an accompanying file ('F05-B61_v1.2_ADV_for_Issue'), where necessary.

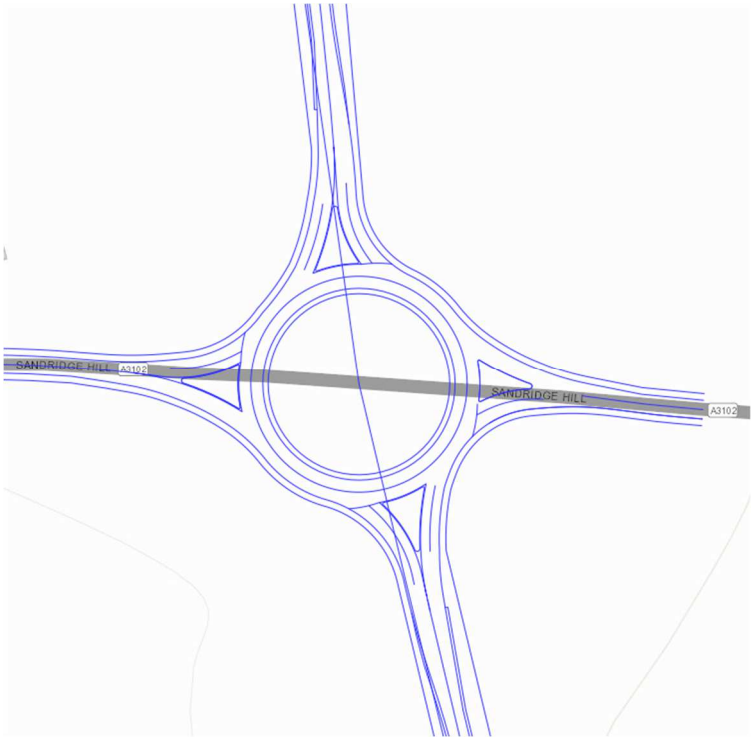
Atkins agree to provide an instance of the ADV to assist with the visualisation element of the project, on the basis that its use is limited to this project only, and it won't be copied off the Wiltshire Council virtual network or modified in any way.

Appendix C. Junction Design

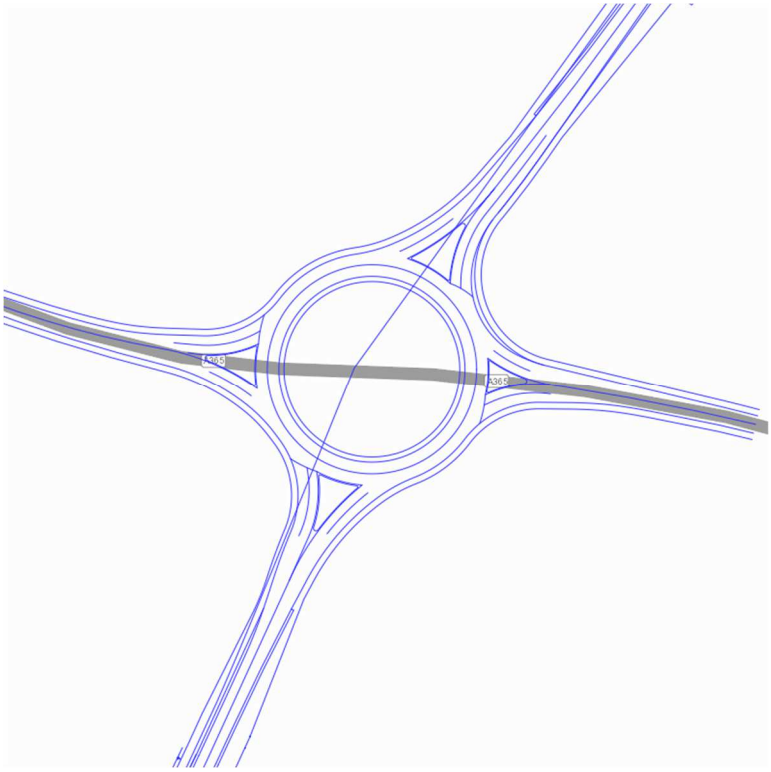
C.1. J1 – A350 North



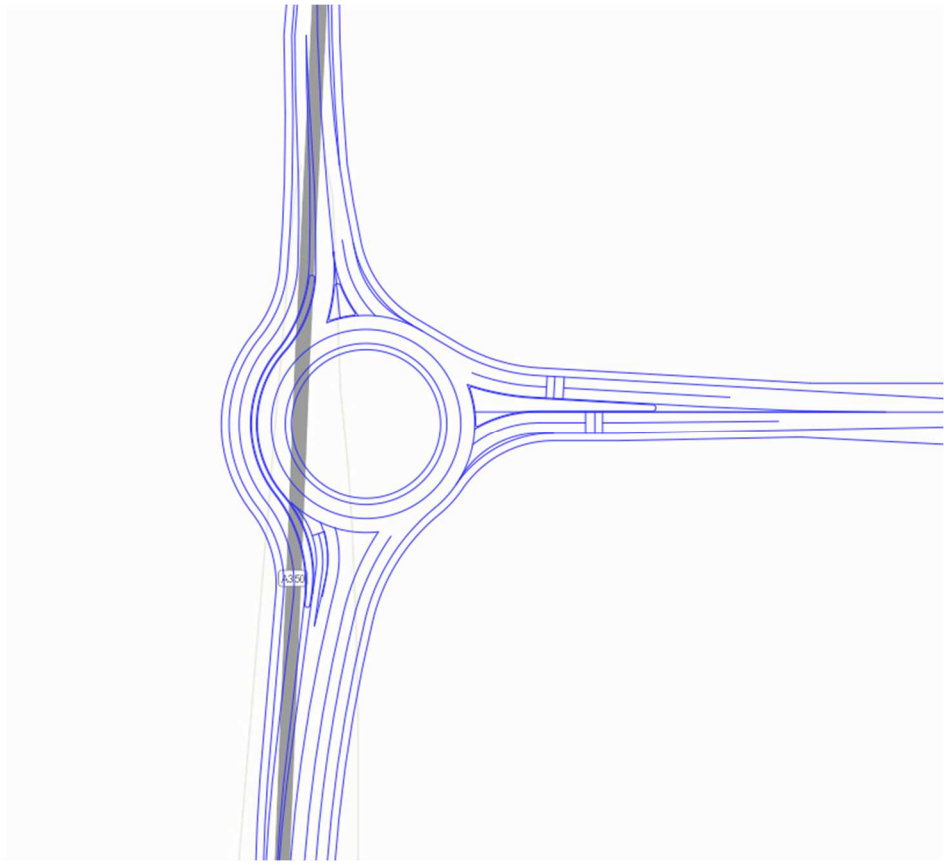
C.2. J2 – A3102 Sandridge Common



C.3. J3 – A365 Bath Road



C.4. J4 – A350 South



Appendix D. Uncertainty Log

D.1. Land developments

Note that HSAP refers to proposed allocation in emerging housing site allocation plan

Model Sector	Development site name	Planning Permission	No. of dwellings (2018 onwards)	Non-resi land use	Employment (ha)	Uncertainty Category	Completion Date	Comments	Inc ?
Rural Central	Land at Kingston Farm	W/13/00643/FUL	150	Mixed Use	3	NC	2020	Under construction	Y
Calne	Land east of Beversbrook Farm	-	0	Mixed Use	3.2	RF	Unknown	-	N
Chippenham	East of Farrells Field	-	30	-	-	NC	2026	HSAP	Y
Chippenham	Birds Marsh	N/12/00560/OUT	750	A1, B1, B2, B8	2.7	NC	2027	Under construction	Y
Chippenham	Rawlings Green	15/12351/OUT	650	A1-A4, B1, B2, B8	5	More than likely	2027	-	N
Chippenham	Rowden Park	14/12118/OUT	1000	A1-A5, C3, C3	18	MTL	2030	-	Y
Chippenham	Hunters Moon	16/12493/FUL	450	B1, B2, B8	2.3	MTL	2027	-	Y
Melksham	Land North of Sandridge Common	17/01096/REM	100	-	-	MTL	2022	-	Y
Melksham	Land East of Spa Road	14/10461/OUT	450	-	-	MTL	2025	-	Y
Melksham	Land East of Semmington Road	17/10416/VAR	150	-	-	MTL	2023	-	Y
Melksham	Land South of Western Way	16/01123/OUT	235	-	-	MTL	2025	-	Y
Rural Central	Land at Mill Lane	14/03118/OUT	0	Mixed Use	14.7	NC	Unknown	-	Y
Rural Central	North Acre Industrial Estate	-	0	Mixed Use	3.8	RF	Unknown	Saved allocation for employment uses	N
Trowbridge	Elizabeth Way	-	355	-	-	MTL	2028	HSAP	Y
Trowbridge	West Ashton Road	W/11/01663/REM	0	B1, B2, B8	10	RF	Unknown	Saved allocation for employment uses.	N
Trowbridge	Elm Grove Farm	-	250	-	-	MTL	2025	HSAP	Y
Trowbridge	Ashton Park Urban Extension	15/04736/OUT	2600	A1-A5, B1, B2, B8, C2,C3, D1	10	MTL	2031	Resolution to permit	Y

Trowbridge	Land off A363 at White Horse Business Park	-	150	-	-	MTL	2024	HSAP	Y
Trowbridge	Southwick Court	-	180	-	-	MTL	2025	HSAP	Y
Trowbridge	Church Lane	-	45	-	-	MTL	2022	HSAP	Y
Trowbridge	Upper Studley	-	20	-	-	MTL	2024	HSAP	Y
Westbury	Land at Station Road	17/12194/REM	300	-	-	MTL	2028	-	Y
Westbury	Off B3098, adjacent to Court Orchard/Cassways Braton	-	35	-		MTL	2022	HSAP	Y
SE Wilts	Drummond Park Depot	E/11/0001/OUT	475	-	-	MTL	2026	Homes England site	Y
SE Wilts	North of Tidworth Road	K/042723/O	0	Commercial	12	RF	Unknown	Units completed in 2013 and 2014. No further permissions.	N
SE Wilts	Ludgershall	15/02770/FUL	246	-	-	NC	2024	Service Families Accommodation	Y
SE Wilts	Ludgershall Garden Centre Granby Gardens	E/2013/0234/OUT	181	-	-	MTL	2021	-	Y
SE Wilts	Riverbourne Fields, Tidworth	-	311	-	-	NC	2020	Under construction	Y
SE Wilts	Riverbourne Fields	14/05389/VAR	289	-	-	NC	2016	Complete	Y
SE Wilts	Larkhill	-	444	-	-	NC	2024	Service Families Accommodation	Y
SE Wilts	Bulford	-	227	-	-	NC	2024	Service Families Accommodation	Y
SE Wilts	Land immediately to the south and west of Archers Gate	15/02530/OUT	400	-	-	NC	2027	outline permission for Phase 3	Y
SE Wilts	Kings Gate	-	1300	-	-	NC	2027	under construction	Y
SE Wilts	Fugglestone	S/2012/0814	1250	Commercial	0.08	NC	2027	Under construction	Y
SE Wilts	Hampton Park	S/2009/1943	500	-	-	NC	2018	Complete	Y
SE Wilts	Longhedge	-	673	Commercial	0.08	NC	2021	Under construction	Y
SE Wilts	UKLF	-	450	Commercial	0.03	NC	2021	Under construction.	Y
SE Wilts	Netherhampton Road	-	700	-	-	MTL	2027	HSAP	Y
SE Wilts	Churchfields & Engine Sheds	-	1100	-	-	RF	2036	-	N

SE Wilts	Central Car Park	-	200	Commercial	0.04	RF	2024	-	N
SE Wilts	Erskine	13/04870/OUT	292	-	-	NC	2021	This permission is the outline permission for UKLF record. Duplicate	Y
Swindon	Central Swindon	-	3000	A1, A2 & B1a	14.37	NC	2021	-	Y
Swindon	Wichelstowe	S/13/1524	3178	B1, A1,A2,A3	7.34	NC	2021	-	Y
Swindon	Commonhead	S/10/0842	890	B1 and/or B2, A1	13.28	NC	2021	-	Y
Swindon	NEV	-	8270	B1a, B1b/c or B2, B8, A1	41.2	NC	2021	-	Y
Swindon	Tadpole Farm	S/11/1588	1695	B1 and/or B2, A1	5.1	NC	2021	-	Y
Swindon	Kingsdown	-	1650	A1	0.1	NC	2021	-	Y
Swindon	Highworth (Blackworth Industrial Estate)	-	200	B8	5	NC	2021	-	Y
Swindon	Wroughton	S/03/1887	179	-	-	NC	2021	-	Y
Devizes	Underhill Nursery, Market Lavington	-	50	-	-	Hypothetical	Unknown	Deleted from HSAP	N
Warminster	East of the Dene	-	100	-	-	MTL	2023	HSAP	Y
Warminster	Bore Hill Farm	-	70	-	-	MTL	2023	HSAP	Y
Malmesbury	Ridgeway Farm, Crudewell	-	50	-	-	Hypothetical	Unknown	Deleted from Housing Site Allocations Plan	N
SE Wilts	Land at Rowbarrow	-	100	-	-	MTL	2023	HSAP	Y
Chippenham	Langley Park	16/04269/FUL	0	A1	0.0174	NC	Unknown	Aldi store - under construction	Y
Chippenham	Langley Park - Additional	16/03515/OUT	400	A1, A3, C1, C3	1.3656	MTL	2026	This is an outline application for the wider site	Y
Chippenham	Land South-East of Junction 17 of M4	17/03417/OUT	0	B8	9.290304	MTL	Unknown	-	Y
Chippenham	Hullavington Airfield	18/08271/OUT	0	B1	4.415	MTL	Unknown	-	N
Chippenham	Land at Hungerdown Lane	17/09445/FUL	35	A1	Unkown	NC	Unknown	-	Y
Chippenham	Land at Showell Farm	N/13/00308/OUT	0	B1 (a), (b) & (c), B2, B8	5	MTL	Unknown	Employment allocation in Chippenham Site Allocations Plan	Y

Chippenham	Forest Farm	15/11153/OUT	200	B1	Unkown	Hypothetical	Unknown	Permission refused and appeal dismissed	N
Chippenham	Land at Patterdown Road	16/09277/OUT	72	-	-	MTL	2022	-	Y
Chippenham	Riverside	15/12363/OUT	1500	A1-A4, B1-B2, C2-C3, D1-D2	5	Hypothetical	Unknown	Site deleted from draft Chippenham Site Allocations Plan	N
Devizes	Lay Wood	15/12095/REM	220		-	NC	2021	Under construction	Y
Devizes	Land at Quakers Road	15/01388/OUT	123		-	MTL	2022	-	Y
Chipp Rural	Land west of Salisbury Road	15/02026/OUT	175	C1	-	NC	2023	Under construction	Y
SE Wilts	Land at Empress Way	E/2013/0234/OUT	270		-	MTL	2025	Part permitted. HSAP	Y
Melksham	Former George Ward School	14/11295/REM	261			NC	2020	Under construction	Y
Corsham	Land at Bradford Road	16/09292/REM	170			MTL	2020	-	Y
Corsham	Land north of Bath Road	13/05188/OUT	130			RF	2025	-	N
Westbury	Land at The Mead	14/10977/REM	220			NC	2020	Under construction	Y
Westbury	Land north of Bitham Park	14/09262/OUT	300			MTL	2024	-	Y
Calne	Land at Prince Charles Drive	14/11179/OUT	130			MTL	2021	-	Y
Calne	Land off Abberd Lane	15/05254/REM	124			NC	2019	Under construction	Y
Calne	Land to east of Oxford Road	16/07209/VAR	200			MTL	2022	-	Y
Calne	Land north of Low Lane	17/00679/OUT	165	A1		MTL	2023	Calne Community Neighbourhood Plan allocation. Permitted.	Y
Malmesbury	Land to south of Filands	15/05015/REM	180			NC	2020	Under construction	Y
Malmesbury	Backbridge Farm	-	170			MTL	2023	Malmesbury Neighbourhood Plan allocation.	Y
Warminster	West of Warminster urban extension	Various	1550	A1-A5, B1, B2, B8	6	NC	2033	Under construction. Approved masterplan includes schedule for 1550 dwellings	Y
Swindon	Ridgeway Farm		700	D1		NC	2021	Under construction.	Y

D.2. Infrastructure

Note that 2024 and 2036 networks are identical for the core scenario with the exception of the A303 Stonehenge tunnel scheme which is not included in the 2024 model.

Area	Transportation intervention/name	Source / Link	Description of the intervention	Estimated opening year	Uncertainty Category	Included in Core Scenario?	Comments
Melksham	A350 Farmers Roundabout Improvements	WC	Signalisation introduced at the roundabout which will be linked to traffic signals at the Asda entrance and A365 junction. Alterations to entry traffic lanes and circulatory carriage.	2019	NC	Yes	None
Chippenham	A350 Chippenham Phase 3 - Bypass Improvements	WC	Additional widening for approximately 250m north of Cepen Park South roundabout and 250m south of Chequers roundabout, widening of A4 approach and exit to Chequers roundabout, widening of the A350 to dual two lane between Badge and Brook roundabout.	2018	NC	Yes	None
Chippenham	A350 Chippenham Phase 4 & 5 - Bypass Improvements	Early MRN 'pen picture'	Further dualling and junction improvements	2023	RF	No	To be considered as part of (early) MRN proposals.
Chippenham	Bumpers Farm Roundabout Improvements	WC	Signalisation of Bumpers Farm Roundabout.	2022	NC	Yes	Planned
Chippenham	Little George Roundabout Improvements	WC	Signalisation of Little George roundabout.	Unknown	NC	Yes	Committed - To be delivered as part of the Lidl application (16/04269/FUL) of the Langley development
Chippenham	Pew Hill and Foundry Lane through road	WC	New through road between Pew Hill and Foundry Lane	Unknown	NC	Yes	Committed - To be delivered as part of the Langley redevelopment application (16/03515/OUT)
Chippenham	Pheasant Roundabout capacity improvement	Hunter's Moon, Chippenham TA - Appendix B	Introduction of toucan crossing and new turn allocations.	2026	NC	Yes	Committed - To be delivered as part of Hunters Moon application (16/12493/FUL)
Chippenham	Malmesbury Road roundabout - Bird's Marsh Access	Drawing	New arm for Bird's Marsh Development	2026	NC	Yes	Committed - part of Birds Marsh development (N/12/00560/OUT)

Chippenham	A350 - B4258 Link Road	Chippenham Design Sketches v2	New junction on A350 and link road through to B4528	Unknown	NC	Yes	Committed - Delivered as part of Showel Farm development (N/13/00308/OUT)
Chippenham	Roundabout on B4528	-	Delivered as part of Rowden Park - to link to Showel Farm access road	2026	NC	Yes	Committed - Part of Rowden Park Development
Chippenham	Station Hill/New Road Junction	Chippenham Design Sketches v2	Conversion of mini-roundabout to signalised T-junction.	Unknown	MTL	Yes	Planned - Chippenham Transport Strategy
Chippenham	Rowden Hill roundabout improvements	Chippenham Design Sketches v2	Flare on approach from south	Unknown	MTL	Yes	Planned - Chippenham Transport Strategy
Chippenham	Pewsham Way/Ave La Fleche roundabout improvements.	Chippenham Design Sketches v2	2 lane exit on Ave la Fleche	Unknown	MTL	Yes	Planned - Chippenham Transport Strategy
Chippenham	Malmesbury Road roundabout improvements	Chippenham Design Sketches v2	Elongation and further signalisation	Unknown	MTL	Yes	Planned - Chippenham Transport Strategy - requires land from Birds Marsh in current format.
Chippenham	A4 link road - Ave la Fleche to Bath Road	-	Cuts into Rowden Park country park land	Unknown	RF	No	At pre-feasibility stage.
Chippenham	Bridge Centre Gyratory	-	Several options	Unknown	MTL	Yes	Planned - tied up with redevelopment of Bridge centre
Chippenham	Birds Marsh spine road (s/b termed North Chippenham Link Road)	Drawing	First link of northern distributor from Malmesbury Rd rdbt to Mauds Heath Causeway.	2026	NC	Yes	Committed - delivered as part of Birds Marsh (s/b North Chippenham) development (N/12/00560/OUT)
Chippenham	Parsonage Way realignment	Drawing Title - Landscape Proposals 683-02A	Double roundabout on Mauds Heath, linked to Birds Marsh.	Unknown	NC	Yes	Committed - delivered as part of Wavin application
Chippenham	Signalisation of Marshfield Road/Park Lane mini roundabout.	-	Altering the combined mini roundabout and priority junction found at the intersection of Marshfield Road and Park Lane to two signalised junctions.	Unknown	Unknown	Yes	None
Trowbridge	A350 Yarnbrook and West Ashton Relief Road	Design	Construction of 2.5km of new carriageway, conversion of West Ashton signals into three-arm	2021	NC	Yes	None

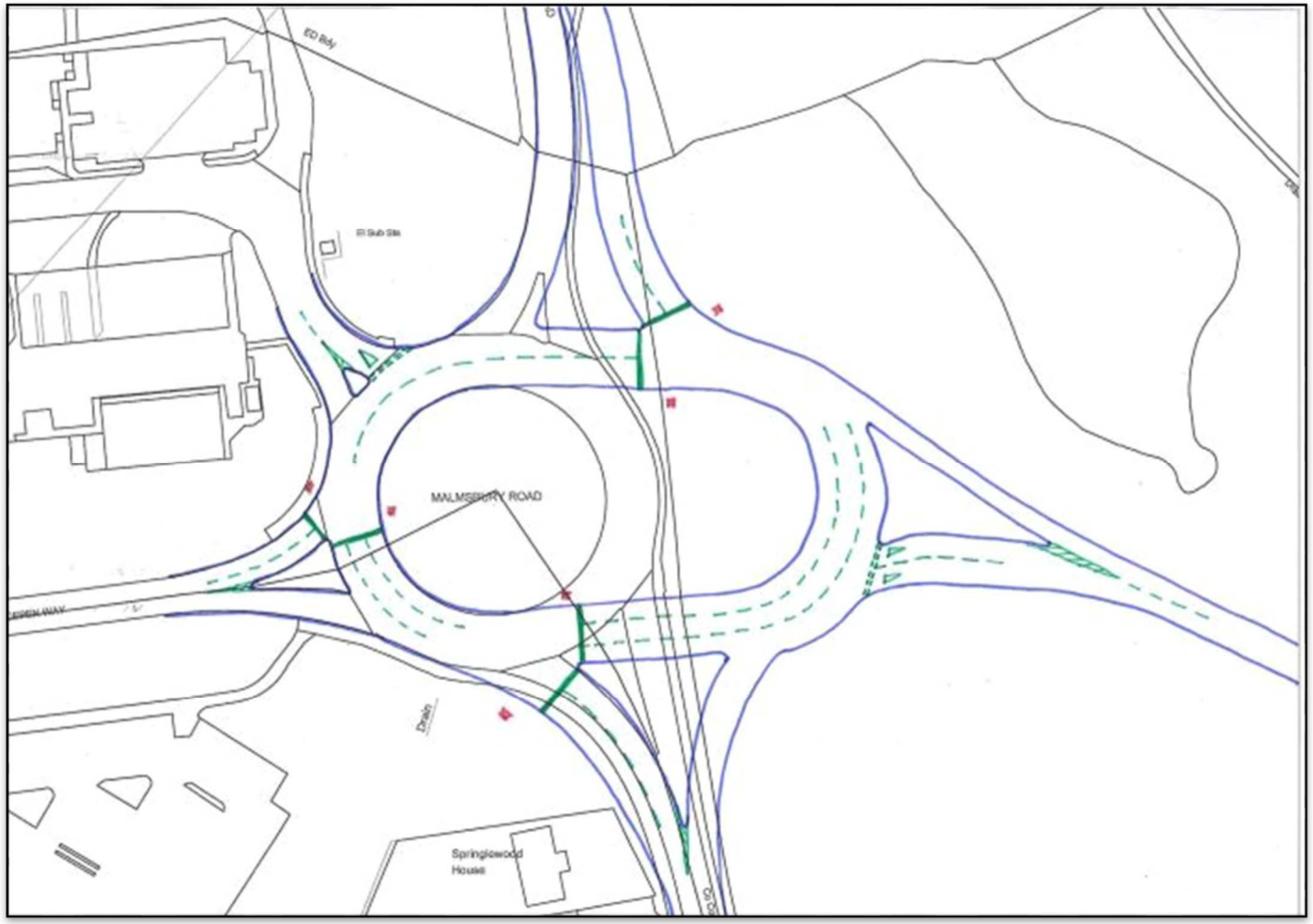
			junction, stopping up the existing A350 and construction of three new roundabouts.				
Trowbridge	Staverton Bypass	Atkins Feasibility	-	Unknown	Hypothetical	N	Undertaking sub-SOBC work.
Trowbridge	Longfield Gyratory Capacity Improvements	Trowbridge Transport Strategy	-	Unknown	Hypothetical	N	
Trowbridge	Trinity Rbout Capacity Improvements	Trowbridge Transport Strategy	-	Unknown	Hypothetical	N	
Trowbridge	Wicker Hill / Broad Street	Atkins Detailed Design	One way reversal scheme	Unknown	Hypothetical	N	
Devizes	A361 London Road / Windsor Drive	Atkins Detailed Design	Capacity improvements	2018	NC	Y	Being constructed
Salisbury	H01 Harnham Gyratory - remodelling	Transport Strategy		2026	MTL	Y	
Salisbury	H02 Exeter Street roundabout enhancements	Transport Strategy	-	2026	MTL	Y	
Salisbury	H03 St Pauls Roundabout enhancements	Transport Strategy	MOVA upgrade	2026	RF	N	
Salisbury	H04 Route hierarchy	Transport Strategy	Development of a hierarchy of routes that restricts traffic movements in the city	2026	RF	N	
Salisbury	HO5 UTMC improvements	Transport Strategy	Use and improve UTMC in accordance with the route user hierarchy in Core Policy 61	2026	MTL	Y	
Salisbury	H06 College Roundabout capcaity enhancement	Transport Strategy	-	2026	RF	N	
Salisbury	H07 A36 Bourne Way capacity enhancements (Petersfinger P&R junction)	Transport Strategy	-	2026	RF	N	
Salisbury	H08 St Marks Roundabout capacity enhancements	Transport Strategy	-	2026	MTL	Y	
Salisbury	H09 Park Wall Junction (A36/A3094) improvements	Transport Strategy	-	2026	MTL	Y	
Salisbury	H10 Clean Air Zone	Transport Strategy	-	2026	Hypothetical	N	

Salisbury	H11 Freight management scheme (hierarchy / routes)	Transport Strategy	-	2026	Hypothetical	N	
Salisbury	H12 Castle Roundabout capacity enhancements	Transport Strategy	-	2026	MTL	Y	
Salisbury	H14 Maltings/Central car park redevelopment	Transport Strategy	Long stay car parking replaced by multi-storey short stay car park	2026	MTL	Y	
Salisbury	SC01 - 05 Smarter Choices measures	Transport Strategy	Workplace, residential and school travel planning, car clubs and support for electric vehicles	2026	RF	N	
Salisbury	PC01 Pedestrian improvements	Transport Strategy	Improve pedestrian facilities and pedestrian priority in the city centre (bus routes to be maintained - pedestrianisation could be considered as part of this).	2026	RF	N	Pedestrian improvements in progress but pedestrianisation scheme subject to review / consultation
Salisbury	PC02 - PC15 Pedestrian and cycle route improvements	Transport Strategy	Various walking and cycling route improvements.	2026	RF	N	
Salisbury	PT03 - Bus priority measures on Park & Ride routes (Salisbury Road / Wilton Road, Castle Road, London Road, Southampton Road, Downton Road / Exeter Street)	Transport Strategy		2026	MTL	Y	London Road bus lane (700m). Bus priority measures through UTC on other routes, the centre and potentially Exeter Street bus lane.
Salisbury	PT04 - Bus link between the hospital and Britford Park & Ride	Transport Strategy		2026	RF	N	
Salisbury	PT05 - High frequency buses serving all new development sites - at least 4 buses per hour (PR3, Red 10, PR11, PR7, Red 5)	Transport Strategy		2026	MTL	N	
Salisbury	PT09 - Salisbury Rail Station Interchange Improvements - details subject to ongoing work being conducted in partnership between Wiltshire Council, Network Rail and public transport operators	Transport Strategy		2026	RF	N	

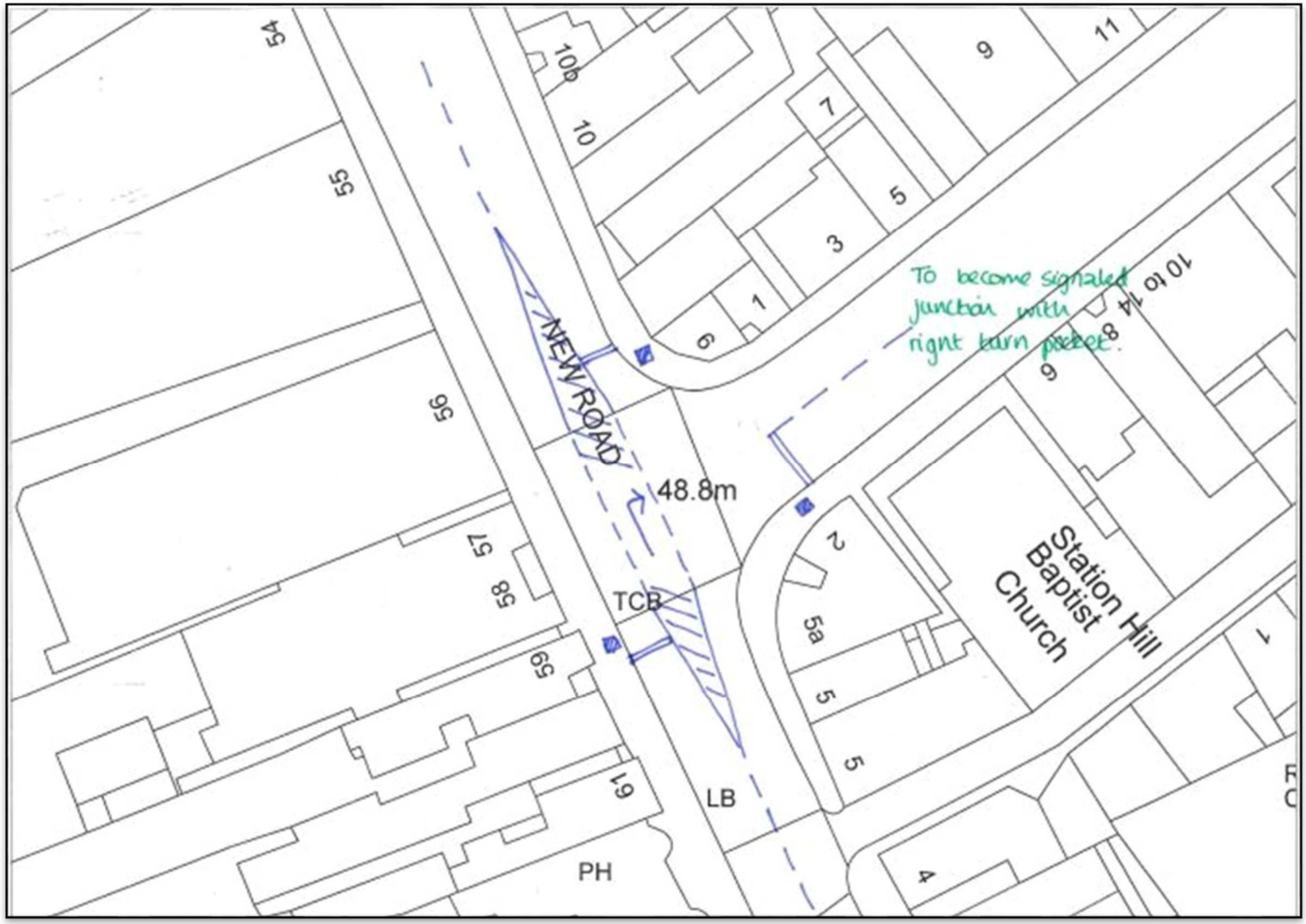
Salisbury	A36 Southampton Road upgrades		Depends on options - increased capacity; bus lanes; service lane for retail facilities along A36	Unknown	Hypothetical	N	
Wilton	Wilton Rail Station	Atkins study		Unknown	Hypothetical	N	
Porton	Porton Rail Station			Unknown	Hypothetical	N	
Amesbury	Boscombe Down access	Atkins study	-	Unknown	RF	N	Undertaking sub-SOBC work.
Strategic	M4 J15 Improvements	HE	Upgrading capacity and changing layout of gyratory at J15 (Swindon East). £4.5m 3rd party scheme required to accommodate nearby Urban Expansion of Swindon at Commonhead. Additional lane on gyratory, additional lane on A419 southbound approach, and dedicated turning lane onto eastbound M4 slip.	2020	MTL	Yes	None
Strategic	Link to Junction 16 of the M4	SLP	New road linking Wichelstowe to M4 J16 including new crossing of the M4.	2022	MTL	Yes	Design being prepared. LGF funding secured subject to FBC being approved by DfT.
Strategic	M4 J16 Improvement	LGF scheme	Junction improvement at J16 involving slip road widening, circulatory carriageway widening and new layout improving access between Wroughton and Wootton Bassett.	2018	NC	Yes	Under construction.
Strategic	M4 J17 - amendments. Three lanes on circulatory carriageway.	Drawing - Chippenham Gateway - M4 J17 -	Includes a flare on A350, 3 lane on southern circulatory, 3 lane flare on B4122, signalisation of A350 and B4122 arms	Unknown	NC	Yes	Committed - To be delivered as part of the Chip Gateway development.
Strategic	Further M4 17 Amendments	Hullavington Airfield Project)	Three lanes on northern circulatory carriageway and a signalised A249 arm	Unknown	unknown	No	Planning in progress.
Strategic	Severn River Crossing Toll	-	Toll charge to be ended by beginning of 2019.	2019	NC	No	Tolls removed
Strategic	A303 Stonehenge Tunnel	Highways England Website	To move the A303 into a tunnel that would run below Stonehenge	2026	MTL	Yes	Site construction forecast to start 2021.

D.3. Selected scheme designs

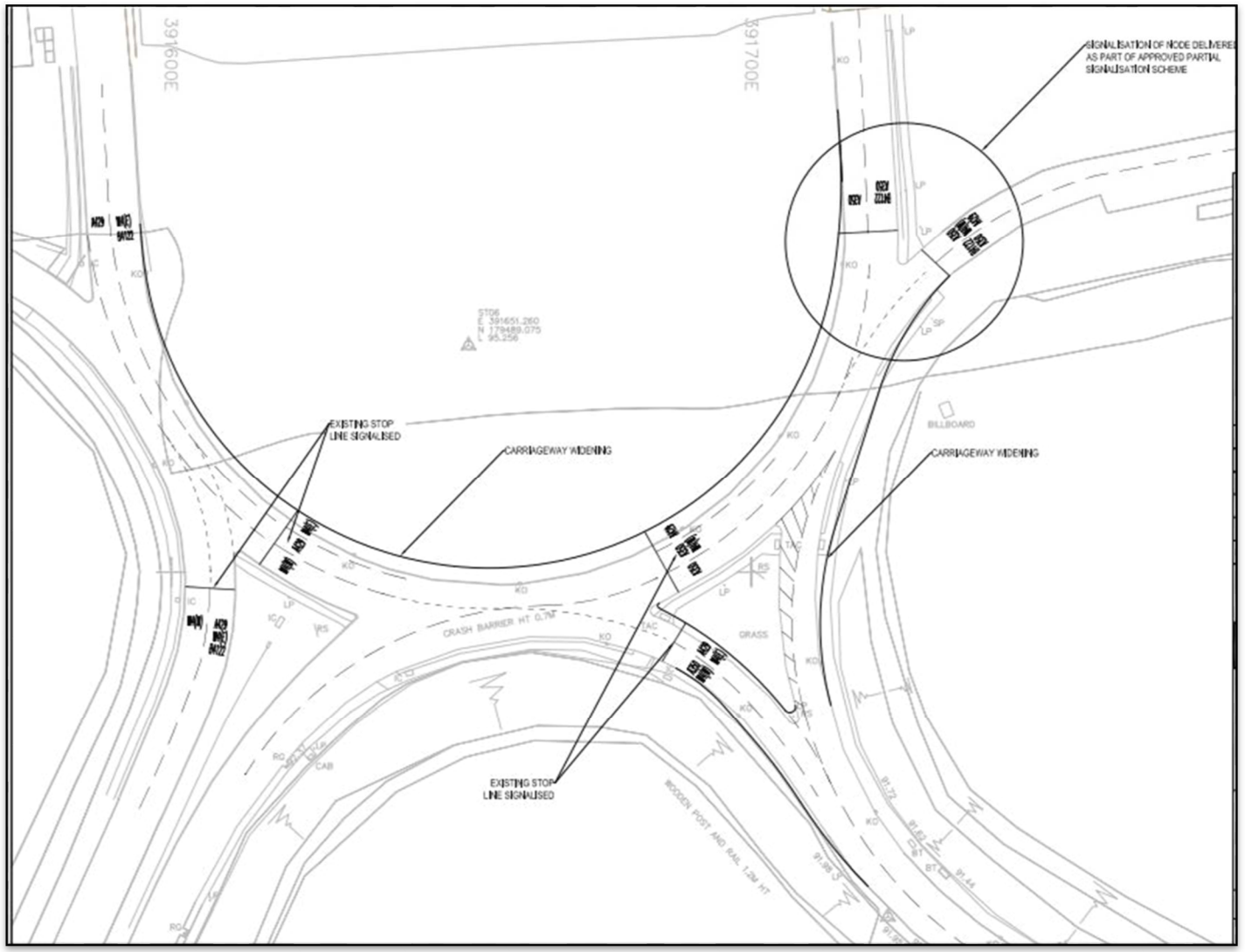
D.3.1. Malmesbury Road roundabout improvements



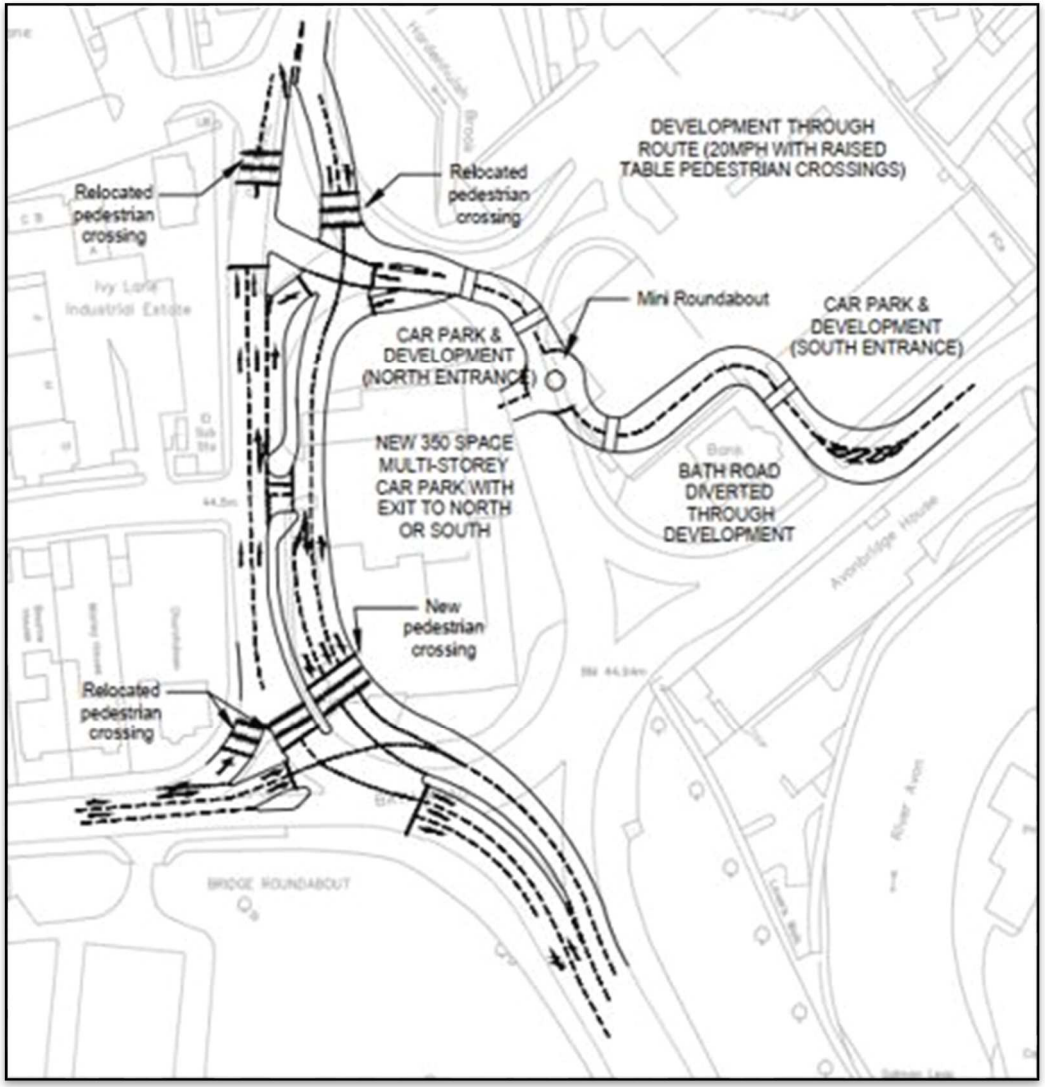
D.3.2. Station Hill/New Road Junction



D.3.3. M4 J17 - amendments. Three lanes on circulatory carriageway



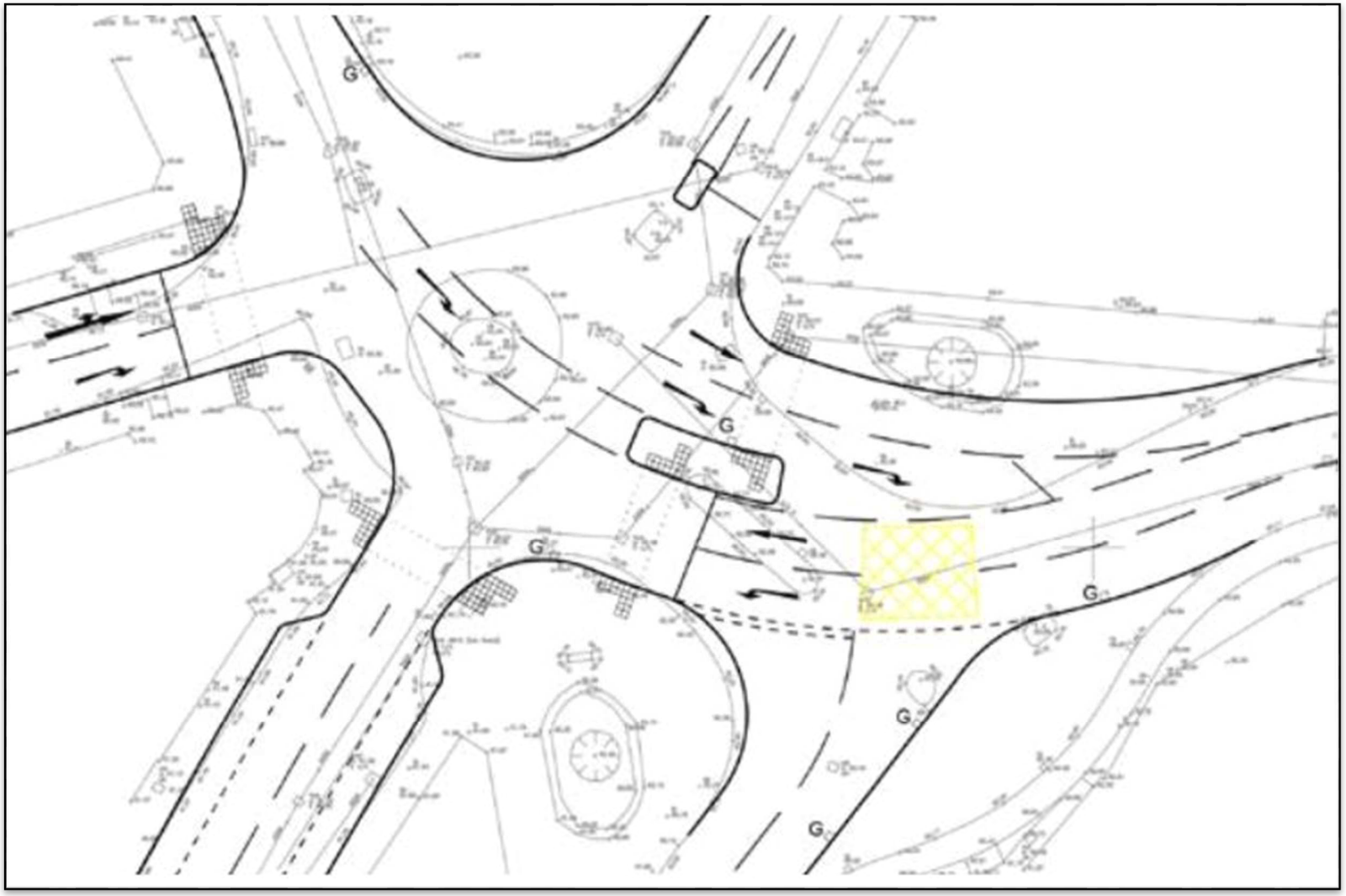
D.3.4. Bridge Centre Gyratory



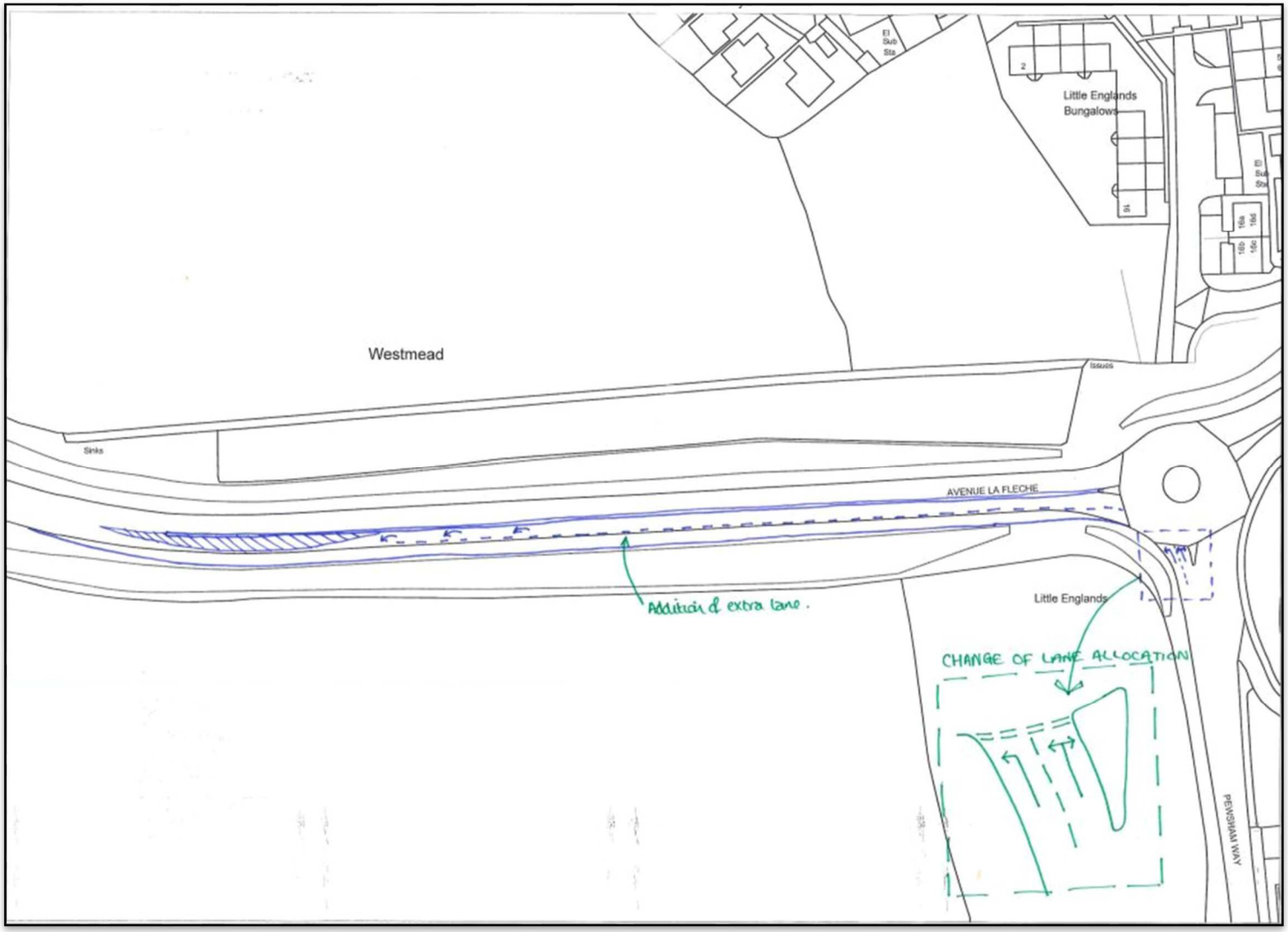
D.3.5. Birds Marsh spine road (s/b termed North Chippenham Link Road)

D.3.6. Bumpers Farm Roundabout Improvements

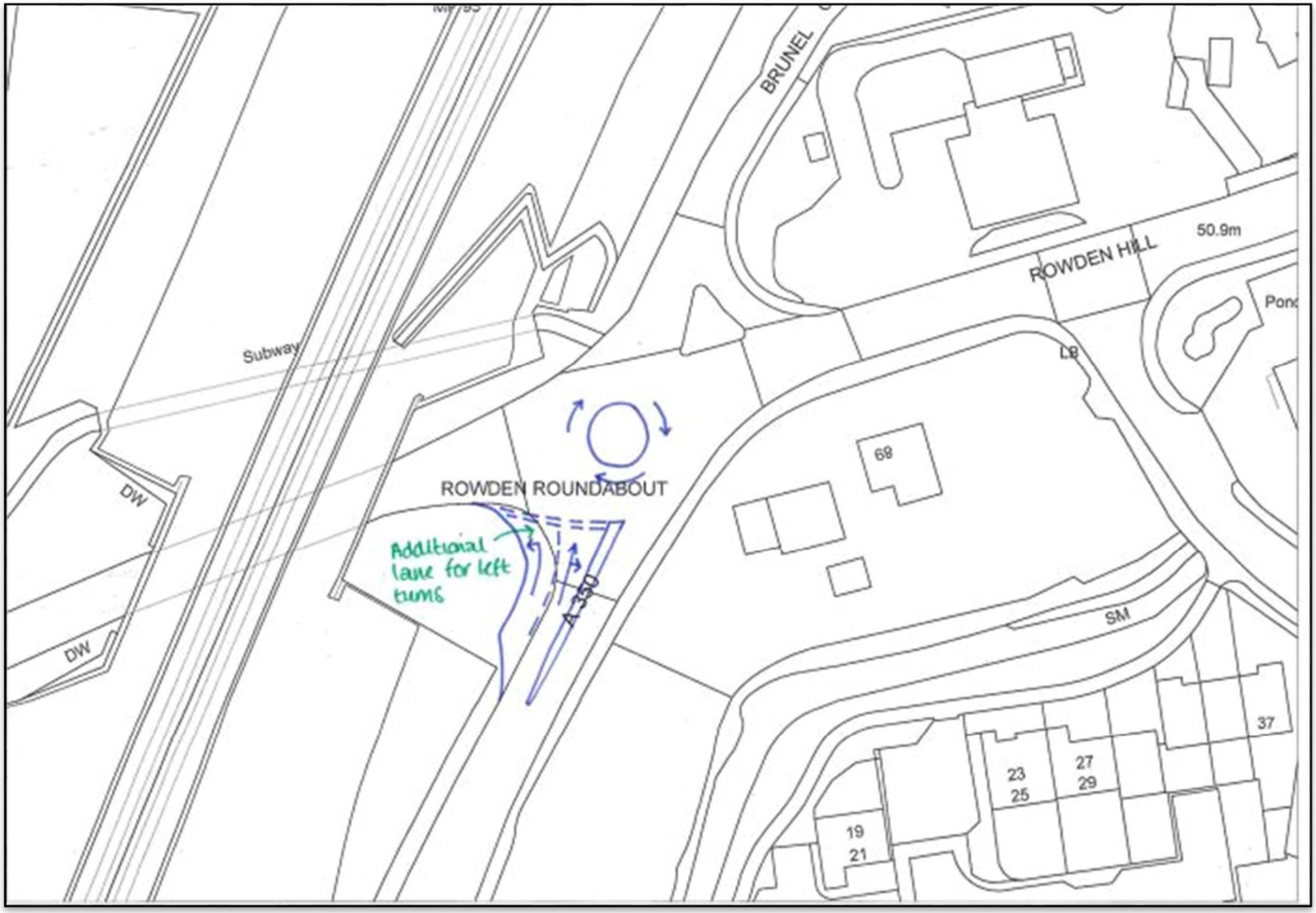
D.3.7. Little George Roundabout Improvements



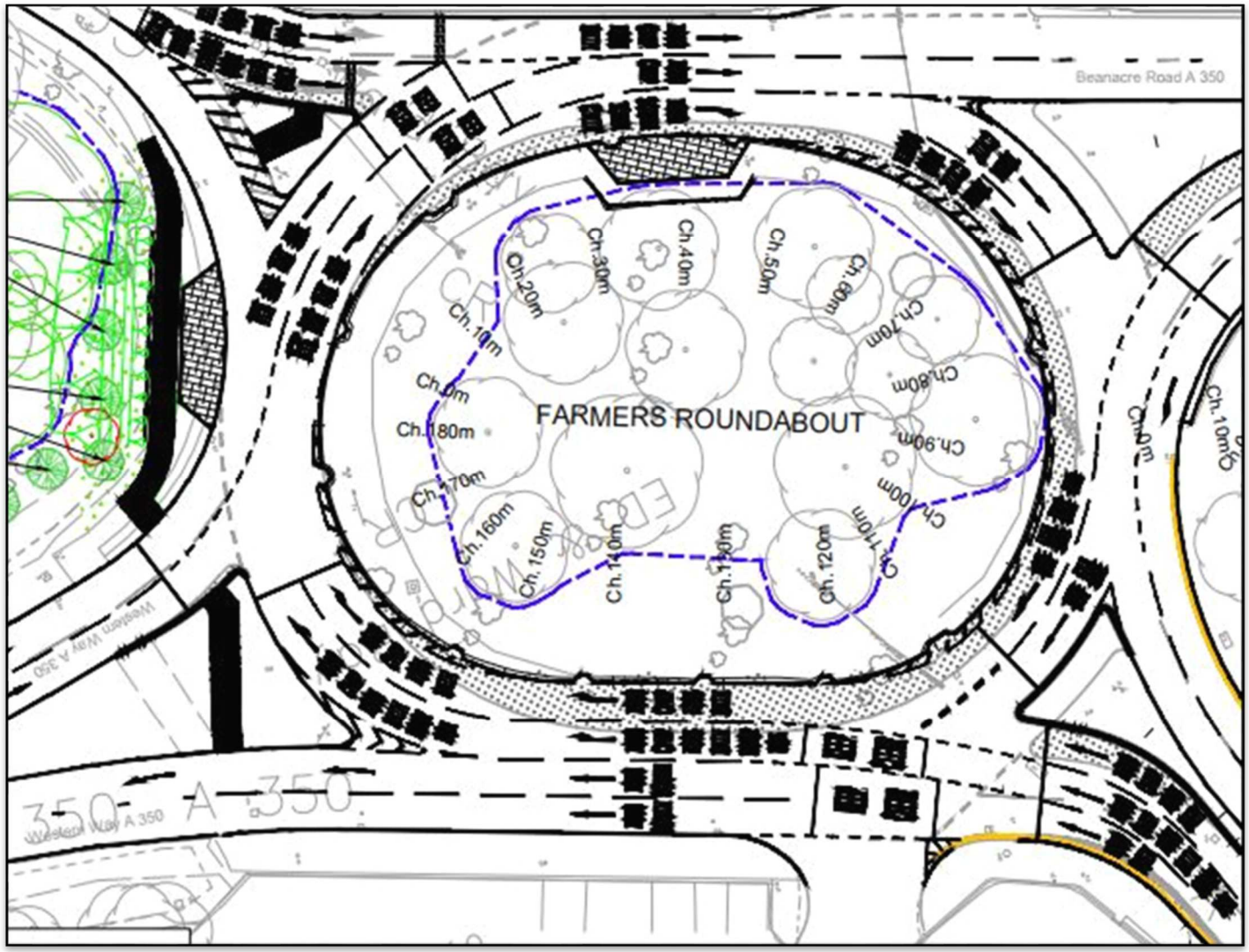
D.3.8. Pewsham Way/Ave La Fleche roundabout improvements



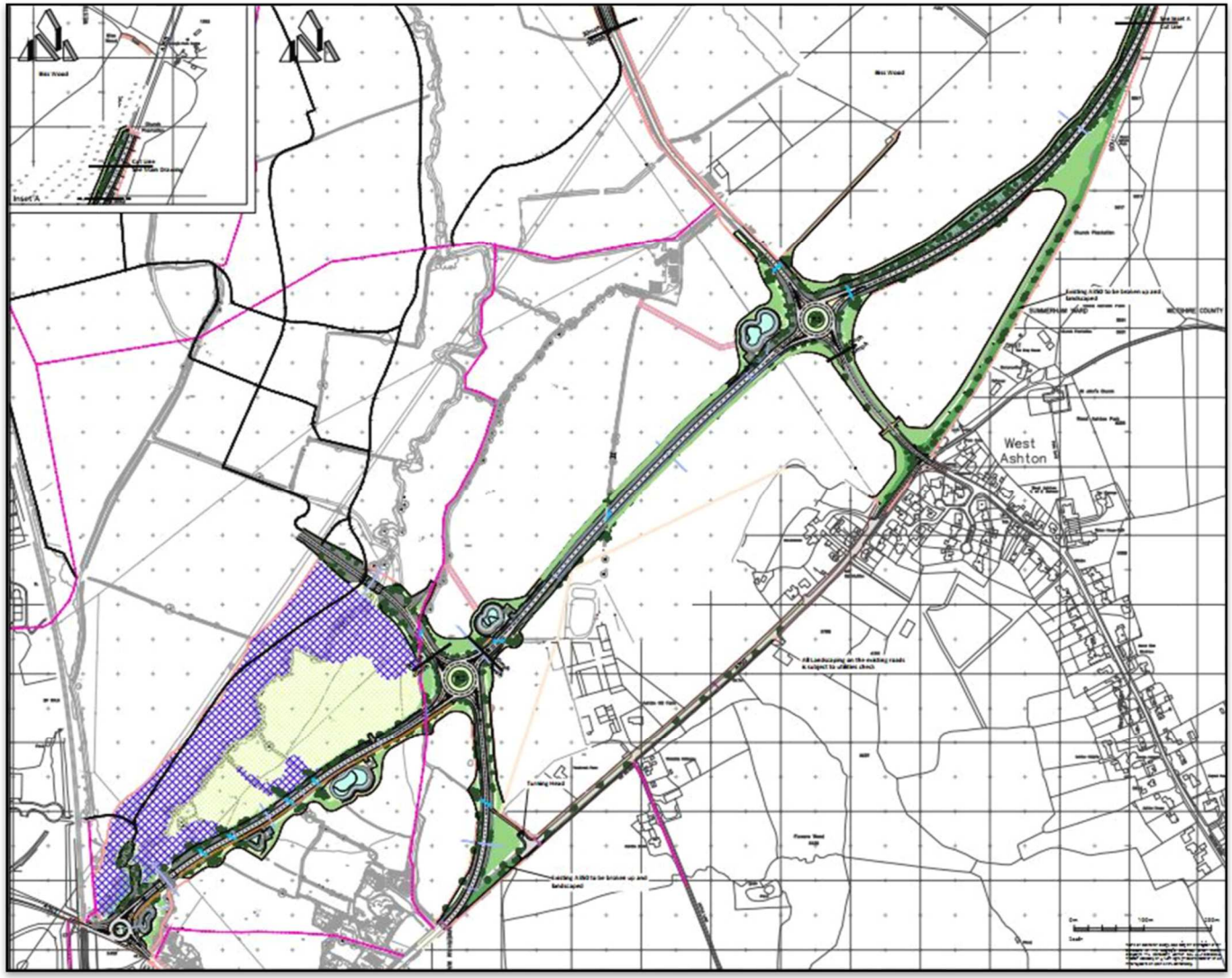
D.3.9. Rowden Hill roundabout improvments



D.3.10. A350 Farmers Roundabout Improvements



D.3.11. Yarnbrook to West Ashton relief road



Appendix E. Convergence statistics – alternative scenario

E.1. Convergence statistics – Highway Assignment Model

Table E-1 – Convergence Statistics (2026)

Scheme	Scenario	AM			IP			PM		
		Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%
DM	Core	9	99.6	0.004	8	99.3	0.002	8	99.7	0.004
	MRN	8	99.5	0.003	9	99.6	0.001	8	99.3	0.005
	Alt-LP	8	99.6	0.004	9	99.7	0.001	8	99.3	0.005
	Alt-LP Mitigation	8	99.7	0.003	11	99.7	0.001	8	99.6	0.005
	HG	8	99.4	0.007	10	99.8	0.001	8	99.7	0.006
	LG	7	99.1	0.013	7	98.5	0.002	7	99.7	0.005
DS	Core	8	99.6	0.004	10	99.7	0.001	9	99.2	0.006
	MRN	9	99.6	0.003	9	99.7	0.002	8	99.6	0.004
	Alt-LP	8	99.1	0.004	10	99.6	0.001	10	99.7	0.005
	Alt-LP Mitigation	8	99.7	0.004	8	99.5	0.002	9	99.6	0.007
	HG	10	99.6	0.004	9	99.6	0.001	8	99.6	0.005
	LG	8	99.6	0.003	9	99.4	0.001	8	99.5	0.006

Table E-2 – Convergence Statistics (2036)

Scheme	Scenario	AM			IP			PM		
		Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%
DM	Core	9	99.7	0.007	9	99.4	0.005	8	99.4	0.016
	MRN	8	99.7	0.004	8	99.3	0.005	8	99.7	0.009
	Alt-LP	9	99.3	0.004	9	99.6	0.006	12	99.4	0.009
	Alt-LP Mitigation	10	99.4	0.004	11	99.5	0.005	11	99.8	0.01
	HG	8	99.5	0.007	8	99.1	0.007	9	99.3	0.009
	LG	8	99.4	0.005	8	99.5	0.004	7	99.4	0.008
DS	Core	9	99.3	0.005	9	99.8	0.004	9	99.5	0.011
	MRN	9	99.5	0.004	9	98.8	0.005	9	99.3	0.009
	Alt-LP	10	99.6	0.007	11	99.7	0.005	9	99.5	0.009
	Alt-LP Mitigation	9	99.7	0.007	10	99.2	0.006	12	99.3	0.009
	HG	9	99.6	0.008	9	99.3	0.007	8	99.3	0.009
	LG	10	99.4	0.004	8	99.8	0.002	8	99.4	0.011

Table E-3 – Convergence Statistics (2051)

Scheme	Scenario	AM			IP			PM		
		Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%	Ass. Sim. Loops	P (%)	Gap%
DM	Core	9	99.3	0.008	8	99.4	0.008	9	99.6	0.009
	MRN	8	99.6	0.008	8	99.3	0.007	9	99.6	0.01
	Alt-LP	9	99.5	0.009	9	99.6	0.006	14	99.6	0.011
	Alt-LP Mitigation	10	99.6	0.006	10	99.4	0.008	11	98.8	0.013
	HG	7	99	0.01	10	99.7	0.007	8	99.3	0.015
	LG	8	99.5	0.007	10	99.6	0.004	7	99.4	0.015
DS	Core	10	99.7	0.006	8	98.9	0.007	12	99.5	0.012
	MRN	9	99.5	0.006	8	99.4	0.008	9	99.5	0.012
	Alt-LP	10	99.4	0.006	9	99.5	0.007	10	99	0.011
	Alt-LP Mitigation	11	99.3	0.008	10	99.3	0.007	12	99.4	0.009
	HG	10	98.9	0.007	8	99.3	0.008	9	99.1	0.015
	LG	8	99.2	0.007	9	99.7	0.005	9	99.6	0.009

E.2. Convergence statistics – Variable Demand Model

Table E-4 - Convergence statistics for High Growth and Low Growth Scenario

Scenario	Year	Final Loop	% GAP Full Model Area	%GAP Subset Area
DM HG	2026	7	0.06%	0.09%
	2036	8	0.07%	0.09%
	2051	9	0.06%	0.08%
DS HG	2026	7	0.06%	0.09%
	2036	8	0.07%	0.09%
	2051	9	0.06%	0.09%
DM LG	2026	7	0.06%	0.09%
	2036	8	0.07%	0.08%
	2051	9	0.05%	0.08%
DS LG	2026	7	0.06%	0.10%
	2036	8	0.07%	0.08%
	2051	9	0.05%	0.07%

Appendix F. Sectored Core highway demand matrices

F.1. 2026 DM: AM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,578	181	166	34	11	150	211	882	221	157	37	106	53	530	13	50	22	118	42	40
Melksham	237	797	176	38	11	45	40	304	565	138	101	16	19	308	20	63	56	27	14	24
Trowbridge	178	135	1,788	91	57	47	29	236	1,103	150	84	15	11	521	46	231	38	29	18	24
Westbury	37	47	175	308	85	14	6	36	533	50	109	7	4	138	25	67	42	6	14	10
Warminster	13	19	85	51	536	5	2	26	387	68	275	2	2	91	34	96	67	4	11	6
Swindon	127	27	20	8	3	24,909	252	190	42	499	40	1,182	1,203	511	14	109	149	1,746	159	378
Malmesbury	164	16	10	4	2	174	684	156	20	18	3	119	347	321	3	44	32	118	49	53
Chippenham Rural	1,158	161	122	22	11	255	182	2,261	225	323	55	161	93	743	9	89	32	156	44	99
West Wilts Rural	178	447	1,279	338	440	47	25	228	1,853	214	251	21	20	711	246	353	96	33	35	35
Central Wiltshire	213	119	164	52	56	570	28	310	327	4,901	898	121	59	199	36	81	705	596	62	63
Salisbury and Rural	25	29	47	34	115	47	5	25	252	873	10,873	8	12	79	474	129	2,115	77	132	41
West of Swindon	158	8	11	4	4	1,640	168	231	20	112	10	486	464	162	3	31	38	257	57	72
Gloucestershire	68	25	20	6	7	1,403	381	94	56	79	21	286	61,508	2,995	58	408	194	1,167	418	4,960
WECA	569	265	291	94	64	626	449	1,086	678	184	113	181	2,518	112,102	234	5,140	308	730	650	2,351
Dorset	11	17	35	28	32	19	3	18	332	53	1,081	5	31	200	95,598	3,867	5,424	192	463	244
South West	57	43	233	84	134	140	54	93	443	79	224	43	369	5,725	2,699	236,063	376	213	439	1,080
Hampshire	29	33	24	22	23	206	32	51	102	409	1,898	37	133	286	3,357	337	199,796	6,538	14,313	1,601

Oxford & Reading	74	13	10	7	3	1,475	97	88	35	374	70	140	733	511	184	202	5,287	189,778	25,173	9,175
South East	36	12	13	12	6	304	52	60	38	52	126	56	270	578	450	332	10,794	20,079	1,104,305	24,327
North	68	33	48	21	13	551	69	139	99	59	56	81	6,510	2,957	237	1,136	1,502	12,442	28,447	3,498,663

F.2. 2026 DM: IP

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,977	239	115	32	21	87	190	994	165	126	21	103	40	390	10	43	16	51	34	46
Melksham	216	903	143	29	15	29	26	188	506	128	43	11	18	166	17	65	42	17	14	37
Trowbridge	142	182	1,850	150	90	29	15	116	1,339	137	36	11	16	339	28	211	23	18	18	38
Westbury	24	36	161	384	87	11	5	18	397	32	42	5	6	67	18	74	29	7	11	17
Warminster	12	14	95	115	537	5	2	11	399	31	101	2	4	59	33	113	27	3	10	10
Swindon	108	32	16	6	3	22,605	110	126	33	492	26	1,147	728	477	21	135	98	1,209	143	418
Malmesbury	162	30	15	6	3	141	574	131	25	21	4	106	257	221	4	38	25	69	48	54
Chippenham Rural	930	204	139	28	22	133	142	1,894	201	269	34	139	65	550	16	84	32	66	41	96
West Wilts Rural	147	486	1,463	400	475	34	22	180	1,890	257	192	18	26	581	243	425	90	24	38	66
Central Wiltshire	109	126	118	40	48	438	22	256	272	4,576	722	98	55	164	47	70	381	357	51	74
Salisbury and Rural	18	31	55	55	125	38	3	27	217	697	10,041	8	20	90	535	159	1,445	53	132	66
West of Swindon	99	13	10	5	3	1,223	90	149	18	98	6	432	305	109	5	28	28	134	60	91

Gloucestershire	44	19	18	6	4	1,135	255	69	27	61	14	333	53,259	1,616	48	337	132	730	333	4,228
WECA	392	166	287	92	83	417	226	562	543	152	63	115	1,725	84,575	166	4,596	261	482	717	2,609
Dorset	11	20	41	22	39	18	5	9	220	33	543	5	25	162	72,265	2,884	4,064	193	412	307
South West	45	51	211	63	113	194	62	55	377	61	159	53	345	4,998	2,764	229,212	383	300	489	1,390
Hampshire	15	36	32	26	36	147	26	34	91	461	1,441	40	161	236	3,829	376	166,439	3,737	8,563	1,581
Oxford & Reading	63	20	17	5	3	1,358	54	88	33	385	66	134	863	589	233	303	3,855	162,144	14,980	7,949
South East	39	16	17	13	9	227	47	51	59	68	154	69	439	730	557	596	9,566	15,832	967,529	22,151
North	49	37	58	21	12	378	65	94	91	80	44	75	3,913	2,286	314	1,413	1,411	7,379	20,242	3,281,937

F.3. 2026 DM: PM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,910	243	179	25	12	122	199	1,165	162	173	20	129	58	504	6	46	13	72	28	46
Melksham	203	863	145	27	12	38	26	191	436	145	30	8	19	134	8	46	24	14	10	21
Trowbridge	182	275	2,032	169	95	48	13	131	1,243	201	48	8	13	346	26	268	24	17	13	17
Westbury	25	44	149	351	97	14	5	18	385	42	32	3	4	75	15	94	17	3	12	7
Warminster	7	14	78	117	541	6	3	9	442	37	96	1	2	68	32	152	21	2	7	6
Swindon	187	45	40	7	2	28,221	177	233	46	782	38	1,648	1,187	591	15	153	140	1,468	199	506
Malmesbury	223	33	26	4	1	223	610	168	20	21	2	163	407	390	1	44	13	103	44	84
Chippenham Rural	937	342	288	33	18	199	158	2,040	251	324	19	192	90	802	18	130	35	87	35	138
West Wilts Rural	200	634	1,624	559	551	59	26	236	2,189	354	234	21	37	684	290	518	88	29	38	44
Central Wiltshire	133	132	190	66	104	692	24	302	296	4,702	919	165	78	186	50	80	374	383	40	74
Salisbury and Rural	30	56	75	85	250	54	4	34	261	858	11,410	17	27	107	903	198	1,894	59	118	62
West of Swindon	95	17	17	4	2	1,438	110	193	21	138	8	425	327	132	4	30	23	159	32	94

Gloucestershire	68	17	29	4	3	1,399	333	96	38	76	14	449	65,560	2,345	17	319	105	791	268	6,587
WECA	589	281	586	165	112	648	274	870	805	248	76	150	2,771	115,653	154	5,391	264	603	721	2,890
Dorset	8	12	36	24	45	16	3	7	238	38	583	3	35	149	88,026	2,994	4,502	158	406	242
South West	40	53	263	71	139	107	30	53	391	78	129	30	344	5,958	3,407	252,307	285	194	441	1,114
Hampshire	21	50	32	51	39	220	24	43	92	733	2,129	46	156	238	5,526	318	98,812	5,305	11,051	1,223
Oxford & Reading	77	33	24	5	5	1,914	85	133	32	589	85	275	1,273	714	212	365	6,018	205,213	21,788	11,600
South East	35	23	16	14	13	264	44	51	52	87	148	72	423	527	472	562	13,103	24,746	1,221,633	26,660
North	37	25	71	13	7	322	44	88	69	86	40	61	4,621	2,055	279	1,428	1,498	9,069	3,415	4,035,691

F.4. 2036 DM: AM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,730	193	195	37	15	157	215	914	243	170	41	113	59	569	14	58	26	133	47	49
Melksham	243	805	194	39	14	46	40	304	587	147	108	17	21	314	21	65	60	30	16	27
Trowbridge	205	152	2,085	107	77	55	32	267	1,246	175	104	17	13	566	54	264	45	35	23	30
Westbury	40	48	195	314	104	16	6	38	550	53	117	7	5	142	27	73	47	6	16	12
Warminster	16	24	107	64	688	7	3	33	473	84	335	3	2	107	45	121	82	4	14	8
Swindon	157	34	28	9	5	27,436	302	234	53	596	51	1,352	1,396	609	17	135	177	2,048	199	465
Malmesbury	170	17	11	4	2	175	665	159	22	20	4	124	363	333	3	49	34	128	53	62
Chippenham Rural	1,189	168	140	23	13	261	183	2,260	242	333	61	166	101	763	10	100	36	171	48	113
West Wilts Rural	187	458	1,417	350	536	51	26	234	1,919	242	277	22	22	721	254	375	106	37	39	41
Central Wiltshire	223	125	187	54	67	573	30	320	365	4,925	959	131	65	210	39	90	726	644	70	75
Salisbury and Rural	29	31	56	38	139	55	6	28	283	971	11,133	10	14	86	522	148	2,271	90	149	50
West of Swindon	176	9	13	5	5	1,663	180	253	23	130	12	522	513	180	3	37	42	292	63	89
Gloucestershire	76	28	24	7	9	1,468	404	104	63	90	25	314	64,697	3,242	65	483	213	1,318	484	5,750

WECA	639	285	342	105	85	699	488	1,180	753	211	131	203	2,870	119,738	260	5,807	347	838	714	2,774
Dorset	12	17	41	32	41	21	3	21	362	59	1,216	5	37	225	100,838	4,256	5,870	210	511	288
South West	63	46	275	95	175	156	59	103	493	91	262	47	430	6,244	2,985	251,869	428	247	498	1,367
Hampshire	34	36	28	26	27	228	35	59	119	454	2,144	41	148	321	3,659	399	213,000	7,228	16,043	1,867
Oxford & Reading	87	15	13	8	4	1,528	108	102	41	420	85	158	836	571	206	241	5,802	201,650	28,210	0,700
South East	42	14	16	13	7	355	61	70	44	63	149	65	321	640	490	386	12,026	22,875	1,195,935	30,336
North	77	37	55	23	17	603	76	155	111	67	64	90	7,180	3,222	267	1,329	1,669	13,917	33,476	3,739,774

F.5. 2036 DM: IP

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,138	250	138	34	27	103	201	1,034	180	136	24	117	46	445	12	50	19	59	39	55
Melksham	231	914	163	30	18	34	28	198	523	138	48	13	20	181	18	69	46	20	17	43
Trowbridge	174	204	2,168	177	120	39	18	138	1,524	166	46	14	19	397	34	250	30	24	25	47
Westbury	27	37	190	392	106	14	5	20	414	34	48	6	6	75	20	85	34	8	13	19
Warminster	16	17	130	143	705	8	3	14	503	40	135	3	5	78	45	151	35	4	13	14
Swindon	124	38	26	7	4	25,170	128	156	43	550	33	1,289	840	574	24	159	117	1,363	177	516
Malmesbury	167	32	18	6	4	162	564	134	27	23	5	117	275	243	4	42	28	78	55	61
Chippenham Rural	960	211	160	29	26	155	147	1,901	216	285	39	152	73	603	18	95	37	77	48	110
West Wilts Rural	162	501	1,657	416	584	41	24	196	1,976	294	220	21	30	639	264	474	104	29	46	79
Central Wiltshire	117	135	141	43	60	474	24	269	311	4,621	799	115	63	186	54	81	419	406	63	88
Salisbury and Rural	21	35	67	62	159	48	4	31	247	776	10,306	10	23	105	615	190	1,678	65	160	80
West of Swindon	110	15	13	6	4	1,344	98	164	21	115	7	479	346	126	6	32	32	157	67	110
Gloucestershire	50	21	21	7	5	1,301	277	77	31	71	16	380	56,687	1,853	56	400	148	855	402	,883

WECA	444	180	329	100	110	496	253	614	590	174	72	134	1,972	91,208	188	5,219	299	560	807	3,010
Dorset	12	20	48	24	50	21	5	10	235	37	617	7	29	185	76,923	3,266	4,545	221	479	360
South West	51	54	247	70	146	225	68	62	416	69	186	57	412	5,619	3,121	246,090	450	365	590	1,719
Hampshire	17	40	39	30	45	173	30	40	106	504	1,632	46	182	274	4,273	458	180,069	4,245	9,988	1,872
Oxford & Reading	72	23	22	5	4	1,522	61	101	39	437	80	157	1,015	677	266	368	4,413	174,213	17,367	9,273
South East	43	18	21	14	12	275	54	60	69	83	181	81	528	823	634	726	11,065	18,196	1,055,092	26,831
North	56	41	69	24	15	452	73	106	102	95	52	89	4,520	2,619	365	1,731	1,642	8,533	24,164	3,514,629

F.6. 2036 DM: PM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,057	247	213	26	15	144	206	1,185	173	182	22	147	66	569	7	52	15	84	33	54
Melksham	211	854	164	27	15	46	28	195	440	151	33	10	21	146	9	48	25	17	12	24
Trowbridge	206	302	2,460	202	128	64	16	152	1,403	234	59	10	15	412	34	320	29	23	17	22
Westbury	27	45	172	351	115	17	5	20	394	43	36	4	4	83	17	106	19	3	14	8
Warminster	9	18	108	146	743	8	4	12	567	48	129	1	2	93	44	208	27	2	8	8
Swindon	206	48	50	8	3	30,525	190	254	52	792	45	1,725	1,240	679	16	166	149	1,533	238	574
Malmesbury	224	33	29	4	2	245	581	165	21	22	2	174	423	414	2	47	14	114	51	94
Chippenham Rural	960	338	314	33	21	228	160	1,991	257	333	21	205	99	862	21	143	40	98	41	155
West Wilts Rural	216	646	1,804	565	656	73	28	250	2,237	386	261	24	43	741	309	569	101	36	45	53
Central Wiltshire	142	137	217	67	124	777	25	307	334	4,638	1,007	190	87	210	56	91	404	426	49	86
Salisbury and Rural	33	59	91	91	320	64	4	37	287	919	11,471	20	31	122	1,000	231	2,131	71	140	75
West of Swindon	105	18	20	4	2	1,604	115	200	23	151	9	456	361	151	5	34	26	180	37	110
Gloucestershire	76	18	32	5	4	1,616	350	103	41	84	15	509	68,748	2,670	19	365	116	908	323	7,343

WECA	634	288	636	167	143	762	288	888	831	264	83	169	3,026	123,078	175	5,935	295	696	825	3,209
Dorset	8	13	42	26	58	18	3	8	249	42	645	3	42	172	92,807	3,333	4,939	180	477	288
South West	45	55	301	77	174	125	34	58	416	87	148	34	414	6,709	3,763	268,633	333	235	539	1,394
Hampshire	23	54	37	57	51	253	26	48	104	761	2,296	52	175	276	5,954	375	211,253	5,860	12,534	1,437
Oxford & Reading	87	37	29	5	6	2,148	93	146	37	645	100	319	1,455	830	237	435	6,600	217,227	25,170	13,327
South East	40	25	20	16	16	322	51	58	59	100	169	85	501	602	520	658	14,552	27,932	1,319,719	32,475
North	46	28	86	14	10	395	51	102	80	102	47	76	5,377	2,444	330	1,746	1,727	10,613	29,389	4,300,134

F.7. 2051 DM: AM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,930	211	210	39	16	167	228	987	264	185	45	121	64	603	15	64	28	147	52	57
Melksham	262	880	208	42	15	49	43	331	642	164	120	18	23	333	22	70	64	33	17	31
Trowbridge	219	162	2,258	116	84	58	34	285	1,333	190	116	18	14	592	58	286	49	39	25	34
Westbury	42	51	211	340	112	16	6	40	596	58	130	7	5	150	29	80	52	7	17	12
Warminster	17	25	114	68	734	7	3	34	505	92	370	3	2	112	49	133	90	5	15	9
Swindon	186	40	33	11	5	30,355	354	278	61	688	59	1,525	1,580	682	18	152	201	2,359	230	530
Malmesbury	184	19	12	4	2	190	720	177	24	22	4	136	403	357	3	54	37	141	58	72
Chippenham Rural	1,292	187	153	25	15	280	201	2,469	270	361	68	179	111	817	11	111	40	190	53	130
West Wilts Rural	201	502	1,525	385	580	54	28	256	2,103	263	312	24	24	765	277	414	116	42	43	46
Central Wiltshire	242	140	206	60	74	605	33	350	394	5,386	1,049	143	71	224	42	100	790	712	79	88
Salisbury and Rural	32	35	64	43	154	60	6	31	319	1,066	12,110	11	15	93	580	168	2,503	98	164	57
West of Swindon	195	10	14	5	6	1,778	202	287	26	150	14	574	567	198	4	42	47	324	68	105
Gloucestershire	84	32	26	8	10	1,574	451	118	70	101	28	343	70,349	3,498	71	540	231	1,470	544	6,689

WECA	699	310	375	118	94	755	530	1,298	831	236	152	223	3,204	131,732	290	6,523	384	941	778	3,222
Dorset	13	18	45	36	46	22	3	23	410	66	1,366	6	40	250	110,399	4,756	6,426	223	548	324
South West	69	50	306	109	196	165	66	113	557	105	305	50	470	6,769	3,332	276,479	471	268	543	1,601
Hampshire	39	40	31	30	29	247	39	68	137	516	2,442	46	163	352	4,051	452	232,888	7,945	17,992	2,122
Oxford & Reading	100	18	15	8	4	1,680	122	117	46	479	99	178	953	630	224	272	6,30	219,320	31,932	12,456
South East	48	16	18	14	8	408	70	83	51	76	174	75	368	701	530	436	13,395	26,356	1,325,177	37,365
North	85	41	59	25	19	650	85	173	121	76	72	100	8,046	3,528	294	1,497	1,832	15,460	39,286	4,135,458

F.8. 2051 DM: IP

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,366	274	150	37	29	117	221	1,125	197	151	28	129	51	490	13	57	21	66	43	63
Melksham	254	999	175	32	19	39	31	222	573	156	55	14	23	199	19	74	50	24	19	50
Trowbridge	190	220	2,339	190	130	43	20	153	1,633	184	54	15	21	433	38	275	33	28	29	53
Westbury	29	39	204	427	115	15	6	22	450	38	55	6	7	83	23	97	39	10	15	21
Warminster	17	18	139	153	749	8	3	15	538	44	151	3	5	84	50	167	39	5	15	15
Swindon	140	43	28	8	4	27,917	149	177	47	613	37	1,430	937	628	27	172	129	1,553	206	582
Malmesbury	183	35	19	7	4	186	613	150	30	26	5	131	304	269	5	46	31	89	63	69
Chippenham Rural	1,041	234	176	32	28	178	164	2,082	239	318	45	169	82	667	20	107	43	89	56	126
West Wilts Rural	178	547	1,780	452	624	46	27	219	2,156	317	250	23	34	695	296	533	118	33	54	90
Central Wiltshire	127	152	155	48	67	534	26	297	334	5,062	884	130	71	207	60	92	472	463	76	103
Salisbury and Rural	23	39	76	71	177	54	4	35	280	859	11,260	11	26	119	693	221	1,926	75	187	94
West of Swindon	120	17	14	6	4	1,486	110	182	23	130	8	527	383	138	7	35	34	178	74	127
Gloucestershire	57	25	24	7	6	1,444	312	88	35	80	18	423	61,586	2,088	61	448	162	976	464	5,638

WECA	495	201	361	110	118	554	286	688	649	197	84	150	2,209	100,606	212	5,853	334	633	896	3,433
Dorset	14	21	52	27	55	23	6	12	264	42	707	7	32	207	84,153	3,687	5,063	242	531	401
South West	57	59	274	80	162	239	76	70	469	80	216	60	460	6,248	3,525	270,500	507	410	668	1,987
Hampshire	19	45	44	34	50	192	33	46	122	570	1,869	51	200	305	4,713	522	196,833	4,753	11,435	2,142
Oxford & Reading	80	26	25	6	5	1,736	69	116	44	499	92	178	1,161	754	288	411	4,961	189,416	20,064	10,644
South East	48	21	24	15	13	315	63	69	78	98	211	91	605	904	690	824	12,580	20,916	1,165,011	32,097
North	64	45	75	26	17	508	83	119	113	111	61	102	5,218	2,955	404	1,990	1,858	9,772	28,552	3,877,963

F.9. 2051 DM: PM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,256	267	226	28	16	168	225	1,281	187	197	24	164	74	624	8	58	18	97	39	61
Melksham	231	928	174	29	16	53	31	215	479	168	36	11	24	159	10	52	28	19	14	29
Trowbridge	223	321	2,633	215	136	73	17	165	1,495	256	68	11	17	444	38	351	32	27	20	24
Westbury	29	48	186	377	123	19	5	21	427	48	41	4	5	94	20	121	22	4	17	9
Warminster	10	19	116	155	782	9	5	13	601	52	141	1	3	102	48	230	29	2	9	9
Swindon	223	52	53	9	3	33,513	210	279	55	855	49	1,861	1,363	738	17	176	163	1,711	280	632
Malmesbury	238	35	30	4	2	283	627	182	22	25	2	195	472	446	2	51	15	131	60	107
Chippenham Rural	1,033	366	337	36	22	267	178	2,167	281	364	24	229	113	940	23	157	46	114	48	175
West Wilts Rural	235	699	1,938	611	698	83	31	276	2,424	416	294	26	48	801	349	641	115	42	51	60
Central Wiltshire	154	152	237	74	135	885	28	334	359	5,049	1,106	214	98	234	62	104	454	485	59	99
Salisbury and Rural	36	65	103	102	351	74	4	42	323	1,001	12,437	23	36	139	1,119	269	2,436	83	165	90
West of Swindon	115	20	21	4	2	1,779	127	219	25	165	10	496	397	165	5	37	29	204	42	125
Gloucestershire	82	20	34	5	4	1,821	388	114	46	92	17	554	74,309	2,966	21	395	127	1,033	373	8,280

WECA	671	308	662	176	148	847	312	952	880	283	91	183	3,285	134,299	194	6,482	322	775	923	3,563
Dorset	9	13	46	29	63	19	4	8	276	46	720	3	47	195	101,086	3,728	5,450	196	533	324
South West	49	59	327	86	189	136	38	64	461	97	168	37	462	7,458	4,202	293,433	371	263	619	1,624
Hampshire	26	59	41	63	55	281	28	54	116	831	2,535	57	192	306	6,478	419	229,083	6,420	14,174	1,632
Oxford & Reading	95	40	32	6	7	2,420	102	162	41	715	111	348	1,616	923	253	479	7,177	234,296	29,104	14,995
South East	44	28	22	17	17	363	57	66	65	113	187	93	569	665	555	723	16,123	31,716	1,452,572	38,781
North	53	31	96	16	10	455	59	117	90	118	55	89	6,218	2,810	366	1,992	1,947	12,316	36,211	4,726,216

F.10. 2026 DS: AM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,560	185	181	35	12	149	210	874	230	159	38	105	53	528	14	51	23	118	42	40
Melksham	244	787	177	38	11	45	42	304	564	136	100	15	20	310	20	63	55	26	14	24
Trowbridge	191	136	1,770	90	57	48	30	251	1,096	151	83	15	11	517	46	229	38	29	18	24
Westbury	39	47	173	307	85	14	6	39	531	50	108	7	5	138	25	67	42	6	14	11
Warminster	13	20	84	51	535	5	2	28	386	69	274	2	2	91	34	95	67	4	11	6
Swindon	126	27	21	8	3	24,908	252	189	42	499	40	1,182	1,203	511	14	109	149	1,746	159	378
Malmesbury	163	17	11	4	2	174	684	155	21	19	4	119	347	321	3	44	32	118	49	53
Chippenham Rural	1,150	162	130	23	11	254	181	2,252	231	324	56	161	93	743	10	91	33	156	44	99
West Wilts Rural	184	448	1,273	337	439	47	26	233	1,849	214	251	21	20	711	245	352	96	33	35	36
Central Wiltshire	218	117	166	52	56	570	29	312	329	4,894	898	121	59	201	36	81	705	596	62	63
Salisbury and Rural	26	29	47	34	115	47	5	25	252	873	10,872	8	12	80	474	129	2,115	77	132	41
West of Swindon	158	8	11	4	4	1,640	168	230	21	112	10	486	464	162	3	31	38	257	57	72
Gloucestershire	67	26	21	7	7	1,403	380	93	57	79	21	286	61,506	2,996	58	409	193	1,167	418	4,960
WECA	566	267	290	94	64	626	449	1,086	679	185	114	181	2,518	112,101	234	5,141	308	730	650	2,352
Dorset	11	17	34	28	32	19	3	19	332	53	1,081	5	31	200	95,594	3,869	5,424	192	463	244
South West	58	44	231	84	134	140	54	95	443	79	224	44	369	5,725	2,700	236,059	376	213	439	1,080

Hampshire	30	33	24	22	23	206	32	51	102	409	1,898	37	133	286	3,357	337	199,791	6,538	14,312	1,601
Oxford & Reading	74	13	10	7	3	1,475	97	88	35	374	70	140	733	511	184	202	5,287	189,778	25,173	9,175
South East	36	12	13	12	6	304	52	60	38	52	126	56	270	578	450	332	10,794	20,079	1,104,305	24,327
North	68	34	48	21	13	551	69	138	100	59	56	81	6,510	2,958	237	1,136	1,502	12,443	28,447	3,498,661

F.11. 2026 DS: IP

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,959	249	125	33	23	86	189	989	171	128	21	102	40	389	11	44	16	51	34	46
Melksham	226	893	144	29	15	29	27	189	505	126	43	11	18	167	17	65	41	16	14	37
Trowbridge	155	183	1,834	149	89	30	16	125	1,332	139	36	11	16	338	28	210	23	18	18	38
Westbury	25	36	160	383	87	11	5	19	395	32	42	5	6	67	18	74	29	7	11	17
Warminster	12	14	94	115	536	5	2	12	399	31	101	2	4	59	33	113	27	3	10	11
Swindon	107	32	16	6	3	22,604	110	126	34	492	26	1,147	728	477	21	135	98	1,209	143	418
Malmesbury	161	32	16	6	3	140	574	131	26	21	4	106	256	221	4	38	25	69	48	54
Chippenham Rural	925	205	148	29	23	132	141	1,887	205	270	34	138	65	549	16	86	32	66	41	96
West Wilts Rural	153	485	1,457	399	474	34	23	184	1,888	257	192	19	26	581	243	424	90	24	38	67
Central Wiltshire	110	124	119	40	49	438	22	256	272	4,571	722	98	55	164	47	70	381	357	51	74
Salisbury and Rural	19	31	54	55	125	38	3	27	217	697	10,041	8	20	90	535	159	1,445	53	132	66
West of Swindon	99	13	11	5	3	1,223	90	149	18	98	6	432	305	109	5	28	28	134	60	91

Gloucestershire	44	19	18	6	4	1,135	255	68	28	61	14	333	53,258	1,616	48	337	132	730	333	4,228
WECA	391	167	286	92	83	417	226	562	542	153	63	115	1,725	84,573	166	4,596	261	482	717	2,609
Dorset	11	20	41	22	39	18	5	10	220	33	543	6	25	162	72,262	2,886	4,064	193	412	307
South West	46	51	210	63	112	194	62	56	377	61	159	53	345	4,998	2,765	229,209	383	300	489	1,390
Hampshire	15	36	32	26	36	147	26	34	91	461	1,441	40	161	236	3,829	376	166,438	3,737	8,564	1,582
Oxford & Reading	63	20	17	5	3	1,358	54	88	33	385	66	134	863	589	233	303	3,856	162,144	14,980	7,949
South East	38	16	17	13	9	227	47	51	58	68	154	69	439	730	557	596	9,567	15,832	967,528	22,152
North	49	37	59	22	12	378	64	94	91	80	44	75	3,913	2,287	315	1,413	1,411	7,379	20,242	3,281,935

F.12. 2026 DS: PM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,890	252	194	27	13	121	198	1,157	168	175	20	128	57	502	7	47	13	72	28	46
Melksham	209	854	147	27	12	38	27	191	435	143	30	8	19	135	8	46	24	14	10	21
Trowbridge	200	277	2,011	167	94	50	14	142	1,238	204	48	9	13	344	26	266	24	17	13	17
Westbury	27	45	148	349	97	14	5	20	384	42	32	4	4	75	15	94	17	3	12	7
Warminster	8	15	77	117	540	6	3	10	441	37	96	1	2	68	32	152	21	2	7	6
Swindon	186	46	41	7	2	28,220	177	232	46	782	38	1,648	1,187	591	15	153	140	1,468	199	506
Malmesbury	222	35	27	4	1	223	610	167	21	21	2	163	406	389	1	44	13	103	44	84
Chippenham Rural	930	343	306	36	19	198	157	2,032	257	324	19	190	90	801	19	133	35	86	35	137
West Wilts Rural	211	633	1,618	556	550	59	27	244	2,185	356	234	21	39	684	290	517	89	29	38	45
Central Wiltshire	135	132	192	66	104	693	24	304	298	4,695	919	165	78	187	50	81	374	383	40	74
Salisbury and Rural	30	55	75	85	249	54	4	35	261	857	11,409	17	27	107	903	198	1,894	59	118	62
West of Swindon	94	17	19	4	2	1,437	110	192	21	138	8	425	326	132	4	31	23	159	32	94

Gloucestershire	68	18	29	4	3	1,399	332	95	38	76	14	449	65,559	2,346	17	319	105	791	268	6,587
WECA	587	284	583	165	112	648	274	871	805	250	76	150	2,771	115,655	154	5,392	264	603	721	2,890
Dorset	8	12	36	24	44	16	3	7	238	38	583	3	35	149	88,023	2,996	4,502	158	406	243
South West	42	53	261	71	138	108	30	54	391	79	129	30	344	5,959	3,408	252,303	285	194	441	1,115
Hampshire	21	50	32	51	39	220	24	43	92	732	2,129	46	156	238	5,526	318	198,822	5,305	11,049	1,224
Oxford & Reading	76	32	24	5	5	1,914	85	132	32	589	85	276	1,273	714	212	366	6,017	205,213	21,788	11,601
South East	35	22	16	14	13	264	44	51	52	87	148	72	423	527	472	562	13,101	24,746	1,221,634	26,660
North	37	25	71	13	7	322	44	88	70	86	40	61	4,621	2,055	280	1,428	1,499	9,070	23,415	4,035,689

F.13. 2036 DS: AM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,708	197	213	38	15	155	213	905	254	172	43	113	58	566	15	58	26	133	47	48
Melksham	249	794	195	39	14	46	41	304	585	146	107	17	21	315	21	65	59	29	15	27
Trowbridge	222	153	2,060	106	76	57	34	286	1,238	177	103	18	13	561	54	261	45	35	23	30
Westbury	42	48	193	312	103	16	6	40	548	53	116	7	5	142	27	72	47	7	16	12
Warminster	18	24	106	64	687	7	3	36	472	85	334	3	2	107	44	121	82	4	14	8
Swindon	156	34	30	10	5	27,433	302	232	53	596	51	1,351	1,396	609	17	135	177	2,049	199	465
Malmesbury	168	17	12	4	2	175	665	158	23	20	4	124	364	333	3	49	34	128	53	62
Chippenham Rural	1,181	168	150	24	14	260	182	2,249	249	335	62	165	100	763	10	101	36	170	48	113
West Wilts Rural	192	459	1,411	349	535	51	26	240	1,915	242	277	23	22	720	253	375	106	37	39	41
Central Wiltshire	228	123	189	54	67	573	30	322	367	4,915	958	130	65	212	39	90	725	644	70	76
Salisbury and Rural	30	31	55	38	139	55	6	28	284	970	11,132	10	14	86	522	148	2,271	90	149	50
West of Swindon	175	9	14	5	5	1,663	180	252	24	130	12	522	514	180	3	37	42	292	63	89
Gloucestershire	75	29	24	7	9	1,467	403	103	65	90	25	314	r64,695	3,244	65	484	213	1,318	484	5,750

WECA	636	287	341	105	85	699	488	1,179	754	212	132	203	2,871	119,736	260	5,808	347	838	714	2,774
Dorset	12	17	41	32	41	21	3	21	362	59	1,216	5	37	225	100,836	4,256	5,870	210	511	288
South West	64	46	273	95	175	156	60	106	493	91	262	47	430	6,244	2,985	251,866	428	247	498	1,367
Hampshire	34	36	28	26	27	228	35	60	119	453	2,144	41	148	321	3,659	399	212,996	7,228	16,045	1,867
Oxford & Reading	87	15	13	8	4	1,528	108	101	41	420	85	158	836	571	206	241	5,803	201,649	28,210	10,700
South East	42	14	16	13	7	355	61	70	44	63	149	65	321	640	490	386	12,028	22,875	1,195,934	30,336
North	77	37	55	23	17	603	76	154	112	67	64	90	7,180	3,222	267	1,329	1,668	13,917	33,476	3,739,772

F.14. 2036 DS: IP

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,117	261	151	36	29	102	200	1,028	187	138	25	116	46	444	12	51	19	59	39	54
Melksham	241	903	164	30	18	34	29	199	523	136	47	12	21	183	18	69	45	20	16	44
Trowbridge	192	207	2,146	176	119	40	19	149	1,516	168	46	14	20	395	34	248	29	24	25	48
Westbury	28	37	188	391	106	14	5	21	412	34	48	6	7	75	20	84	34	9	13	19
Warminster	17	17	129	142	704	8	3	15	502	40	134	3	5	78	45	151	35	4	13	14
Swindon	123	39	27	8	4	25,173	128	155	43	551	33	1,289	840	574	24	159	117	1,363	177	516
Malmesbury	166	33	19	6	4	162	564	134	28	23	5	117	274	242	4	42	28	78	55	61
Chippenham Rural	954	212	171	31	28	154	146	1,894	221	286	39	152	72	603	18	97	37	77	48	110
West Wilts Rural	169	500	1,649	414	583	42	25	201	1,972	294	219	21	31	639	263	474	104	29	46	79
Central Wiltshire	119	133	143	43	60	474	24	271	312	4,613	798	115	63	188	54	81	419	406	63	88
Salisbury and Rural	21	35	67	62	158	48	4	31	247	776	10,305	10	23	105	615	190	1,677	65	160	80
West of Swindon	110	15	13	6	4	1,344	98	163	21	115	7	479	346	125	6	33	32	157	67	110
Gloucestershire	50	22	22	7	5	1,302	276	77	32	71	16	380	56,685	1,853	56	401	148	854	402	4,883

WECA	443	182	328	100	110	496	253	614	590	175	72	134	1,972	91,205	188	5,220	299	560	807	3,010
Dorset	13	20	48	24	50	21	5	11	235	37	617	7	29	185	76,922	3,266	4,543	221	479	360
South West	52	54	245	70	146	225	68	64	415	70	185	57	412	5,621	3,121	246,087	450	365	590	1,719
Hampshire	17	40	39	30	45	173	30	40	106	504	1,632	46	182	274	4,274	458	180,062	4,245	9,989	1,872
Oxford & Reading	71	23	22	5	4	1,522	61	101	39	437	80	157	1,015	677	266	368	4,413	174,213	17,367	9,273
South East	43	18	21	14	12	275	54	59	68	82	181	81	528	823	634	726	11,065	18,196	1,055,091	26,831
North	56	41	69	24	16	452	73	105	103	95	53	89	4,520	2,620	365	1,731	1,642	8,532	24,164	3,514,626

F.15. 2036 DS: PM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,034	256	232	28	16	142	204	1,176	180	185	23	145	65	566	8	54	15	84	33	53
Melksham	217	843	166	27	15	46	29	195	440	149	33	9	22	147	9	48	25	16	12	25
Trowbridge	228	306	2,429	200	126	68	17	165	1,397	236	59	10	16	409	33	316	28	23	17	22
Westbury	29	45	170	349	115	18	5	22	392	44	36	4	5	84	17	106	19	3	14	8
Warminster	10	18	107	146	742	9	4	13	566	48	129	1	2	94	44	208	27	2	8	8
Swindon	204	48	53	8	3	30,523	190	253	52	792	45	1,725	1,239	679	16	166	149	1,533	238	574
Malmesbury	222	34	30	4	2	245	581	165	21	23	2	174	422	414	2	47	14	114	51	94
Chippenham Rural	952	339	337	36	22	226	159	1,982	265	334	22	204	99	860	22	146	40	98	40	154
West Wilts Rural	228	644	1,796	563	654	74	30	258	2,231	388	261	24	45	739	309	569	101	36	44	53
Central Wiltshire	145	137	222	67	124	777	26	310	338	4,629	1,006	190	87	213	56	92	404	426	49	86
Salisbury and Rural	34	59	90	91	320	64	4	38	287	918	11,470	20	31	122	1,000	231	2,131	71	140	76
West of Swindon	105	18	22	4	2	1,604	115	200	24	150	9	456	361	151	5	35	26	180	37	110
Gloucestershire	75	19	33	5	4	1,616	350	103	42	84	15	509	68,747	2,670	19	365	117	908	323	7,342

WECA	631	290	632	168	143	761	288	888	830	267	83	169	3,027	123,077	175	5,937	296	695	825	3,209
Dorset	9	13	42	26	57	18	3	8	249	42	645	3	42	173	92,805	3,334	4,939	181	477	288
South West	47	55	297	77	174	126	34	60	416	88	148	34	414	6,711	3,763	268,626	333	235	539	1,394
Hampshire	24	54	37	57	51	254	26	49	104	761	2,296	52	175	276	5,953	375	211,258	5,861	12,533	1,437
Oxford & Reading	86	36	30	6	6	2,149	93	145	37	645	100	319	1,455	830	237	435	6,601	217,226	25,170	13,326
South East	40	25	20	16	16	322	51	58	59	100	169	85	501	602	520	658	14,553	27,932	1,319,718	32,476
North	45	28	86	15	10	395	51	101	81	102	47	76	5,377	2,444	330	1,747	1,728	10,612	29,388	4,300,131

F.16. 2051 DS: AM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	2,906	216	229	40	16	165	225	978	276	189	47	120	63	601	16	64	28	146	51	56
Melksham	269	867	209	43	15	49	44	332	641	163	119	18	23	334	22	70	64	32	17	31
Trowbridge	238	164	2,225	115	83	60	36	308	1,324	194	114	19	14	587	58	282	48	39	25	34
Westbury	44	51	208	339	112	16	6	43	593	58	130	7	5	150	29	80	51	7	17	13
Warminster	18	25	113	68	732	7	3	38	504	93	369	3	2	112	48	132	89	5	15	9
Swindon	185	41	35	11	6	30,355	354	275	62	689	59	1,524	1,580	682	18	152	201	2,360	230	529
Malmesbury	183	19	13	5	2	190	720	176	25	23	5	136	403	357	3	54	37	141	58	72
Chippenham Rural	1,282	188	165	26	16	278	200	2,456	278	366	71	178	111	817	11	112	41	189	53	129
West Wilts Rural	207	503	1,518	383	579	54	28	263	2,097	265	313	24	24	761	276	414	116	42	43	46
Central Wiltshire	247	138	208	60	74	606	33	352	397	5,371	1,047	143	71	228	42	101	789	711	78	88
Salisbury and Rural	33	35	63	43	154	60	6	32	319	1,065	12,109	11	15	93	580	168	2,502	98	164	57
West of Swindon	194	10	15	5	6	1,778	202	285	26	151	14	574	567	198	4	42	47	324	68	105
Gloucestershire	83	33	27	8	10	1,573	451	117	72	101	28	343	70,347	3,499	71	540	231	1,470	544	6,689

WECA	695	313	374	118	94	754	529	1,296	832	239	153	223	3,204	131,731	290	6,525	384	941	778	3,222
Dorset	13	18	45	36	46	22	3	24	410	66	1,366	6	40	250	110,397	4,755	6,426	223	548	324
South West	70	50	303	109	196	165	66	117	557	105	305	50	470	6,770	3,332	276,473	471	268	543	1,602
Hampshire	39	40	31	30	29	247	39	69	138	516	2,442	46	163	352	4,051	452	232,887	7,945	17,991	2,121
Oxford & Reading	100	17	15	9	4	1,680	122	116	46	479	99	178	953	630	224	272	6,351	219,319	31,932	12,455
South East	47	16	18	14	8	408	70	83	51	76	174	75	368	701	529	436	13,394	26,356	1,325,178	37,365
North	84	41	60	25	19	650	85	172	123	76	72	100	8,046	3,528	294	1,497	1,832	15,459	39,286	4,135,456

F.17. 2051 DS: IP

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,343	286	166	38	31	116	219	1,117	205	153	28	128	51	488	14	58	21	66	43	62
Melksham	264	986	177	32	19	40	32	223	573	154	54	14	24	200	19	74	50	23	19	50
Trowbridge	211	223	2,311	189	128	45	21	166	1,626	187	53	15	22	430	38	273	33	28	29	54
Westbury	30	40	202	425	114	15	6	23	448	38	55	6	7	83	23	96	39	10	15	21
Warminster	19	18	138	152	748	8	3	17	537	44	150	3	5	84	50	167	39	5	15	16
Swindon	139	44	29	9	4	27,915	149	177	48	614	37	1,430	937	628	27	172	129	1,553	206	582
Malmesbury	182	37	21	7	4	186	613	149	31	27	5	131	303	269	5	46	31	89	63	69
Chippenham Rural	1,034	236	189	34	30	177	163	2,074	246	319	46	168	82	666	20	109	44	88	56	126
West Wilts Rural	185	547	1,774	450	623	46	28	225	2,152	319	250	23	34	693	296	533	118	33	54	90
Central Wiltshire	130	151	158	48	67	535	27	300	337	5,049	882	130	71	210	60	92	472	462	75	103
Salisbury and Rural	24	39	76	70	177	54	4	36	280	858	11,259	11	26	119	693	221	1,926	75	187	94
West of Swindon	120	17	15	6	4	1,486	110	182	23	130	8	527	383	138	7	36	34	178	74	127
Gloucestershire	57	25	25	8	6	1,444	312	87	36	80	18	423	61,584	2,088	61	448	162	976	464	5,638

WECA	494	203	360	110	118	554	286	688	649	199	84	150	2,209	100,602	212	5,854	335	633	896	3,433
Dorset	14	21	52	27	55	23	6	12	264	42	707	7	33	207	84,150	3,688	5,063	242	531	402
South West	58	59	271	80	162	239	76	71	468	80	216	61	461	6,251	3,526	270,494	507	410	668	1,988
Hampshire	19	45	44	34	50	192	33	46	122	570	1,869	51	200	306	4,714	522	196,828	4,753	11,435	2,142
Oxford & Reading	79	26	26	6	5	1,736	69	116	44	499	92	178	1,161	754	289	411	4,962	189,417	20,064	10,644
South East	48	20	24	15	13	315	63	69	78	98	211	91	605	904	691	824	12,581	20,916	1,165,010	32,096
North	63	46	76	26	17	508	83	119	114	111	61	102	5,217	2,955	405	1,991	1,858	9,771	28,552	3,877,961

F.18. 2051 DS: PM peak

Sectors	Chippenham	Melksham	Trowbridge	Westbury	Warminster	Swindon	Malmesbury	Chippenham Rural	West Wiltshire Rural	Central Wiltshire	Salisbury and Rural	West of Swindon	Gloucestershire	WECA	Dorset	South West	Hampshire	Oxford & Reading	South East	North
Chippenham	3,231	278	248	30	17	166	222	1,269	194	201	26	162	73	620	9	60	18	96	39	60
Melksham	238	916	176	29	16	53	32	216	479	167	37	11	25	161	10	52	28	19	14	29
Trowbridge	245	322	2,597	212	134	76	18	179	1,488	256	67	11	18	442	37	347	32	27	20	25
Westbury	32	48	184	375	122	20	6	24	425	48	41	4	5	94	20	121	22	4	17	9
Warminster	11	19	115	154	780	9	5	14	600	52	141	1	3	102	48	229	29	2	9	9
Swindon	221	53	56	9	3	33,511	210	277	56	857	49	1,861	1,363	738	17	176	163	1,711	280	631
Malmesbury	234	36	32	4	2	283	628	182	23	25	2	195	472	444	2	52	15	131	60	107
Chippenham Rural	1,024	370	363	39	23	264	176	2,155	291	367	25	227	112	937	24	160	47	113	47	174
West Wilts Rural	249	699	1,928	608	696	84	33	286	2,418	419	294	26	50	799	349	640	115	41	51	60
Central Wiltshire	158	153	242	75	135	886	28	338	364	5,036	1,105	214	98	239	62	105	453	485	59	99
Salisbury and Rural	37	66	101	101	351	75	5	43	323	1,000	12,435	23	36	140	1,119	269	2,436	83	165	90
West of Swindon	115	20	23	5	3	1,778	127	218	25	165	10	496	397	165	5	38	29	204	42	125
Gloucestershire	81	21	35	5	4	1,821	387	114	46	93	17	554	74,307	2,965	21	395	127	1,033	373	8,280

WECA	668	311	660	176	148	846	312	952	879	287	91	183	3,285	134,301	195	6,483	323	775	922	3,563
Dorset	10	14	46	29	62	19	4	9	276	46	720	3	47	195	101,084	3,728	5,450	195	533	324
South West	51	59	322	86	188	136	38	66	460	98	168	37	462	7,460	4,202	293,428	371	263	618	1,625
Hampshire	26	59	40	63	55	281	28	54	116	829	2,535	57	192	307	6,478	419	229,091	6,422	14,174	1,631
Oxford & Reading	94	39	32	6	7	2,420	102	161	41	715	111	348	1,616	924	253	480	7,177	234,292	29,104	14,994
South East	44	28	22	17	17	363	57	66	65	113	187	93	569	666	554	722	16,121	31,716	1,452,573	38,781
North	52	31	96	16	10	455	59	117	91	118	55	89	6,219	2,810	366	1,993	1,945	12,315	36,210	4,726,215

Appendix G. V/C changes Core Scenario

G.1. V/C changes Core DM vs DS

Figure G.1 - Difference in V/C%: Core DS - Core DM (2026 AM peak)

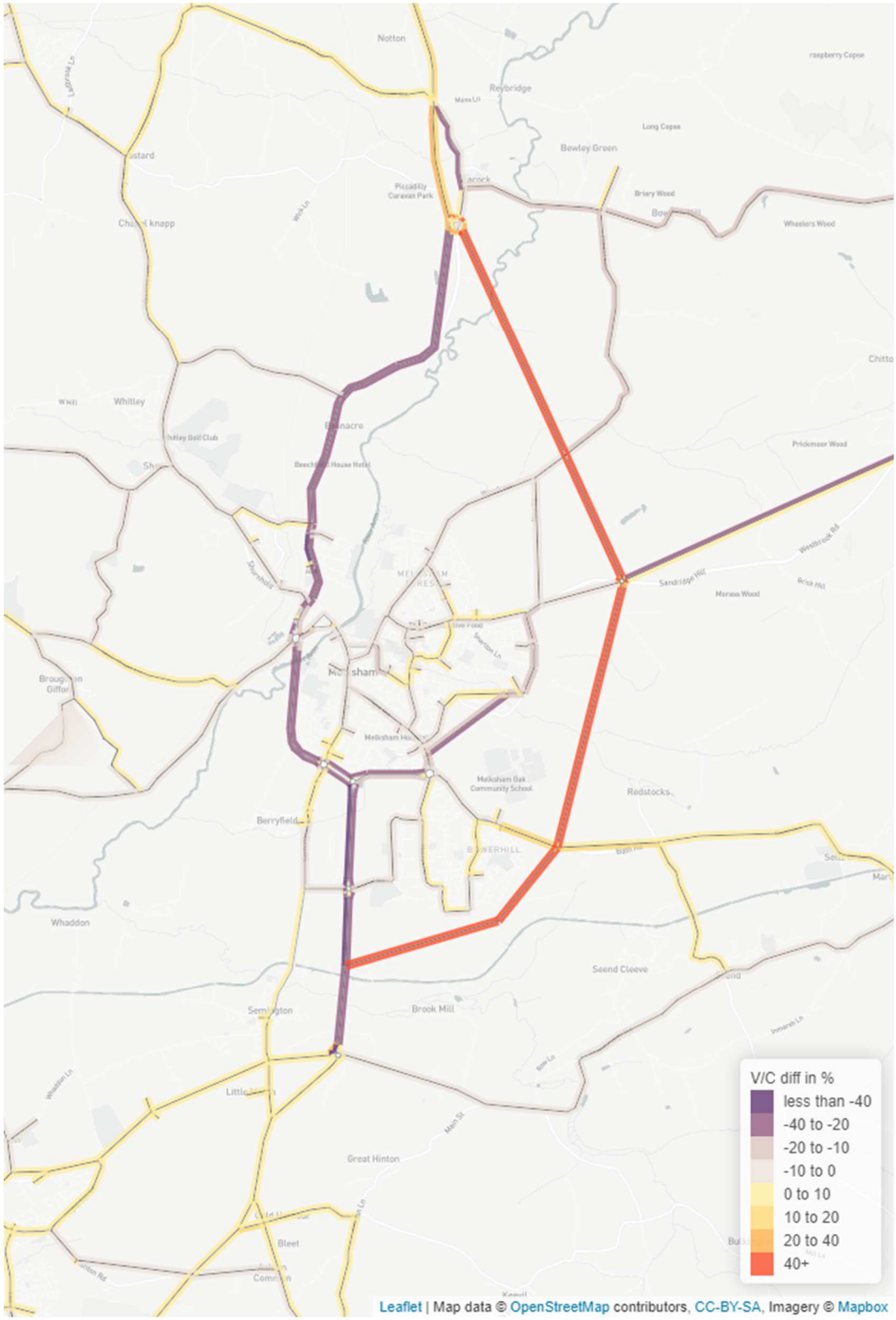


Figure G.2 - Difference in V/C%: Core DS - Core DM (2026 IP)

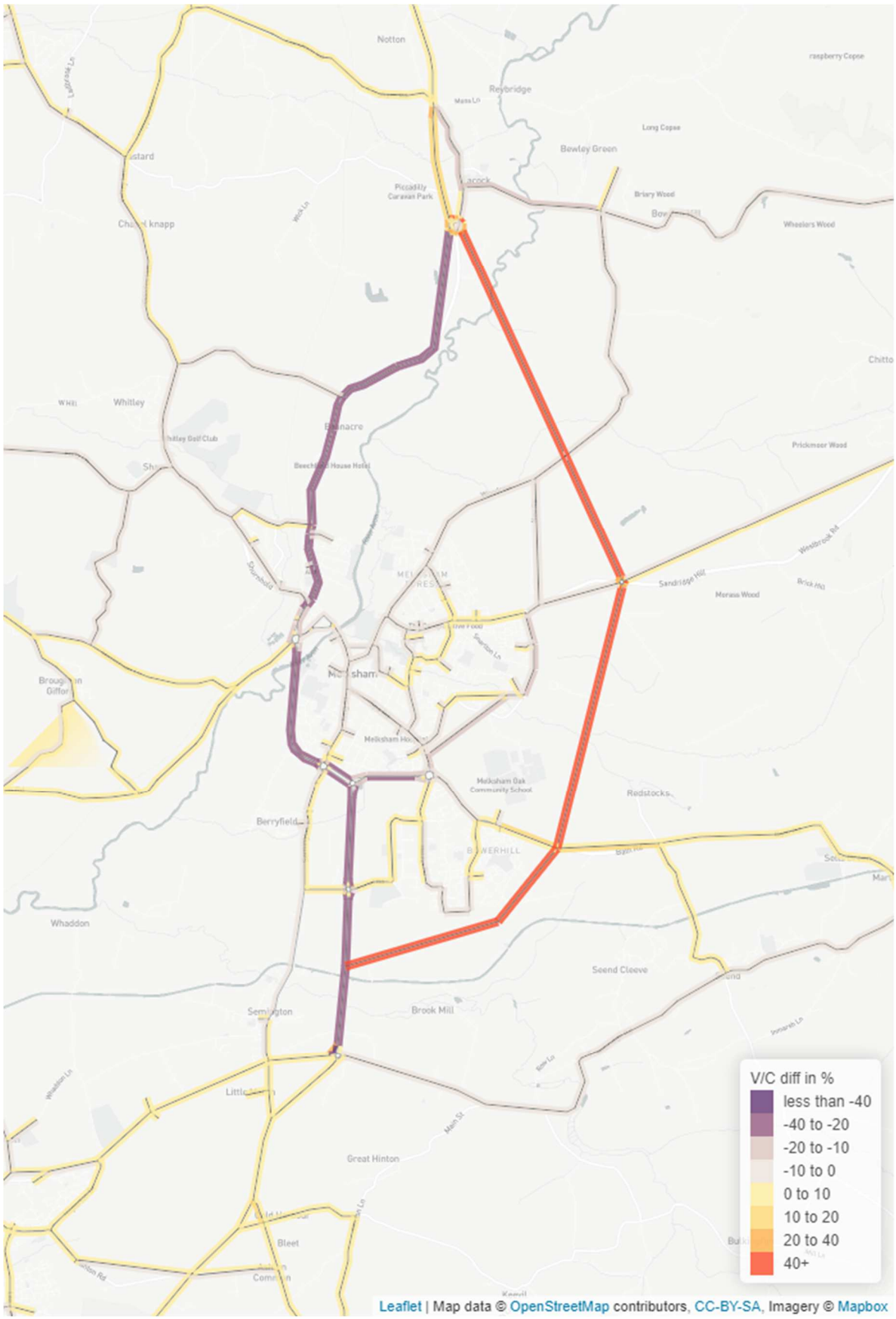


Figure G.3 - Difference in V/C%: Core DS - Core DM (2026 PM peak)

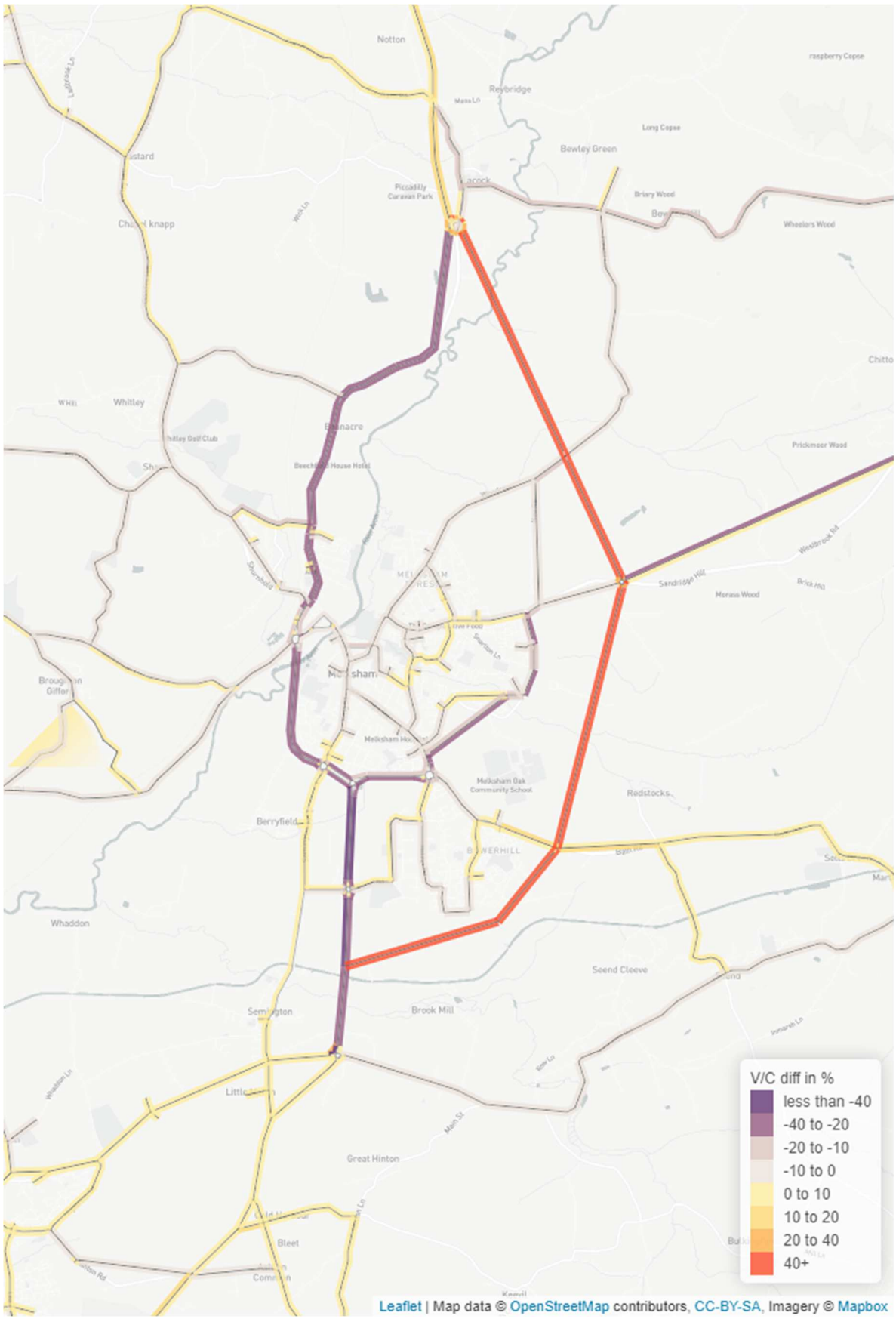


Figure G.4 - Difference in V/C%: Core DS - Core DM (2051 AM peak)

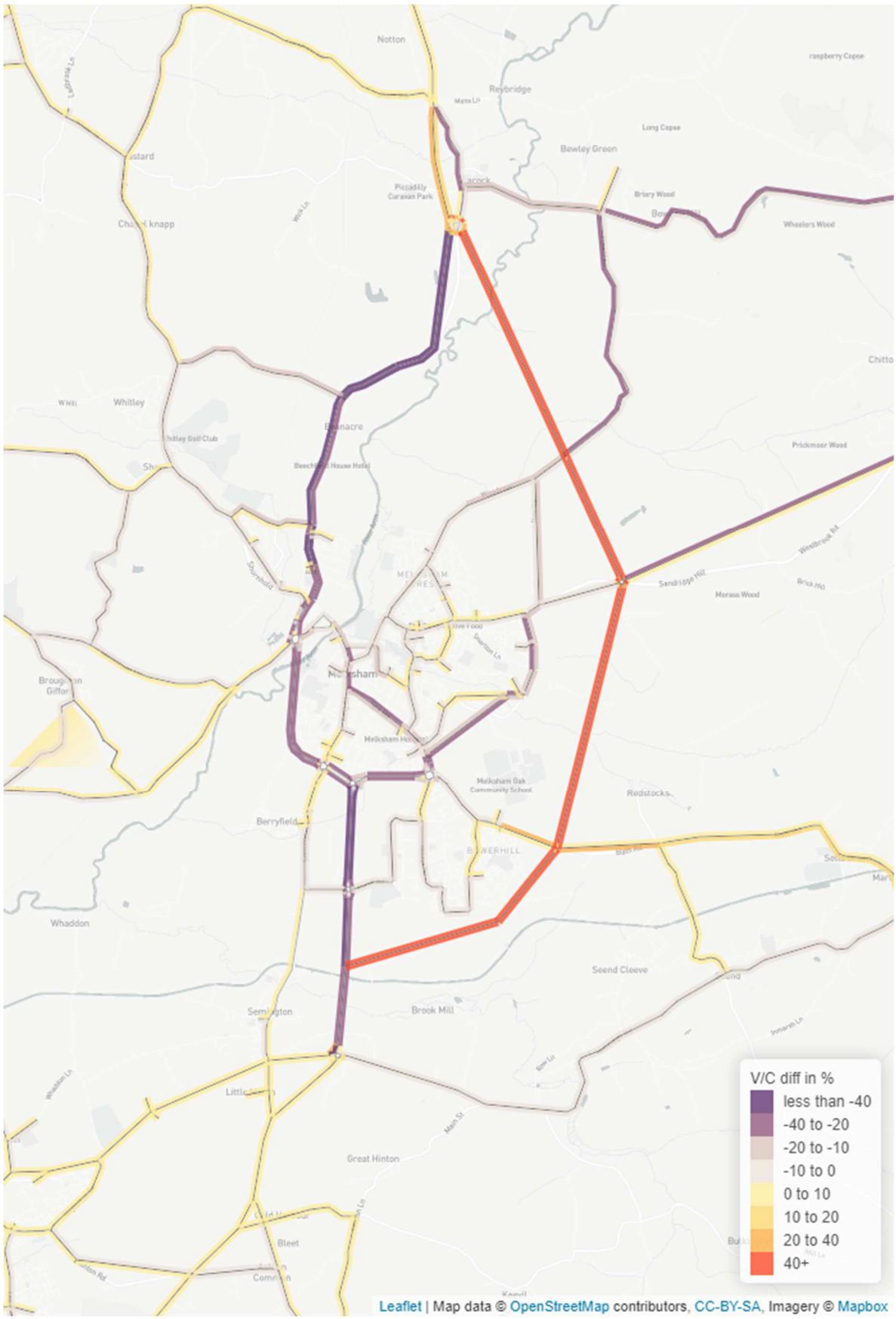
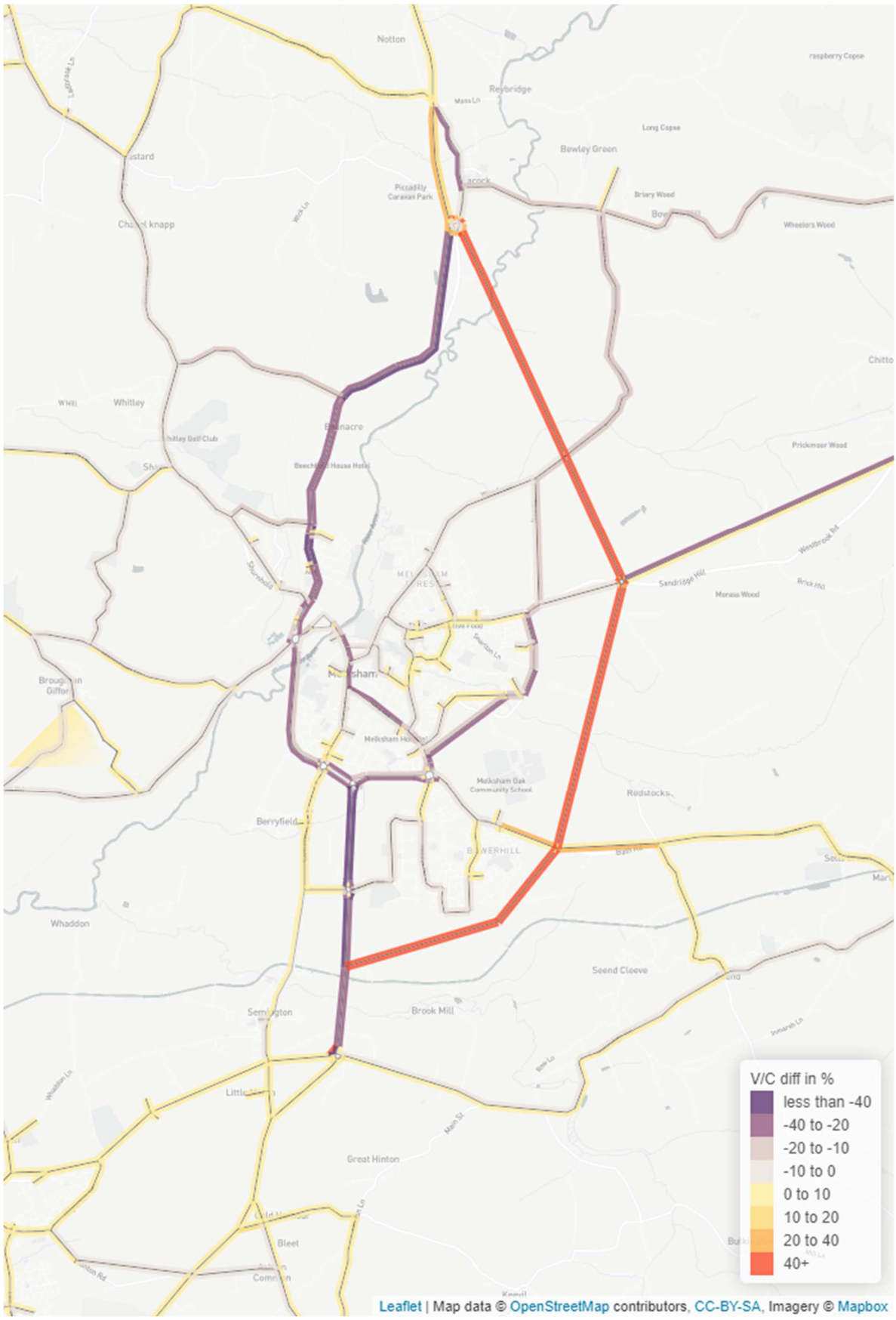


Figure G.5 - Difference in V/C%: Core DS - Core DM (2051 IP)

Figure G.6 - Difference in V/C%: Core DS - Core DM (2051 PM peak)



G.2. V/C changes Core vs Alternative Scenarios

Figure G.7 - Difference in V/C%: MRN DM - Core DM (2036 AM peak)

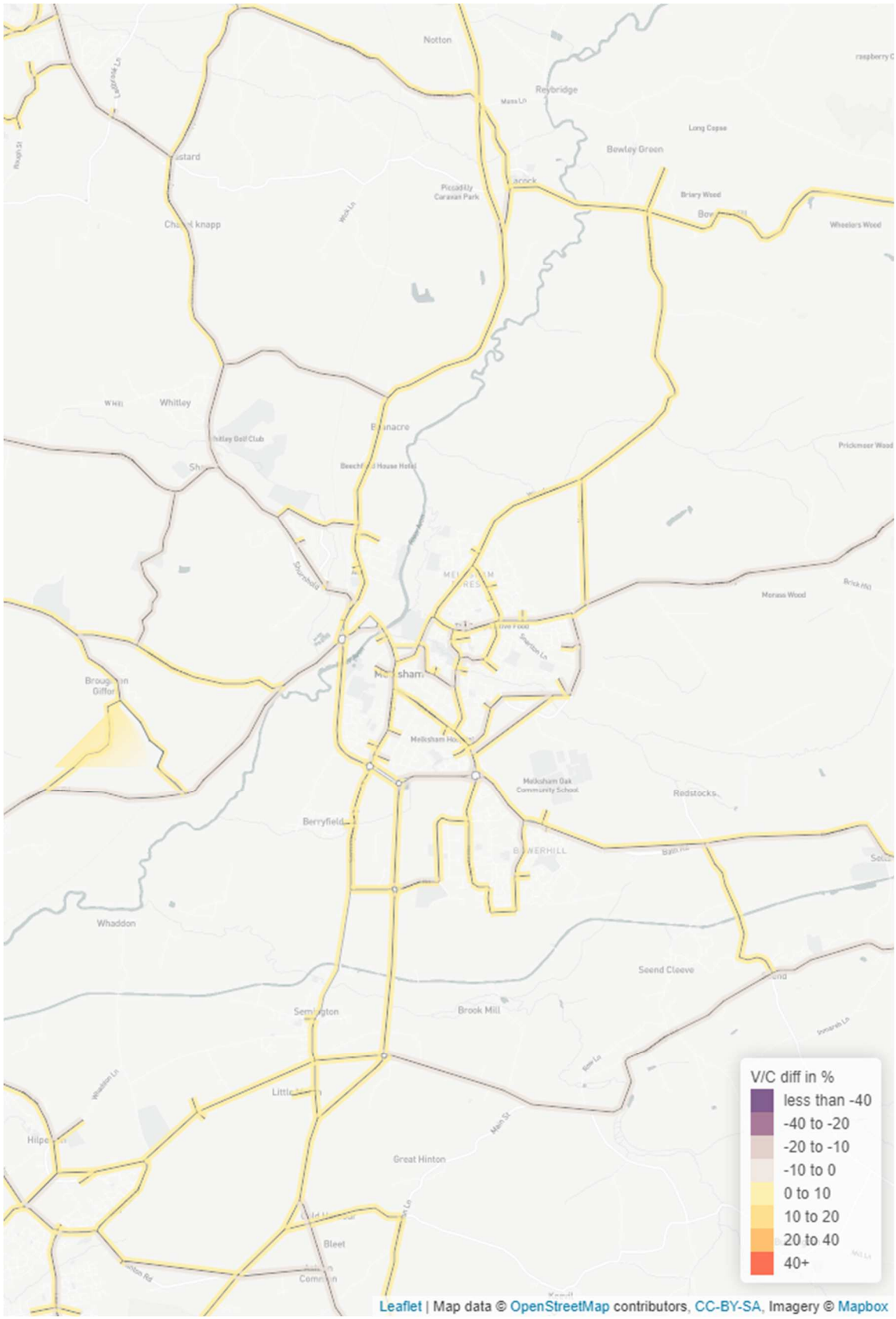


Figure G.8 - Difference in V/C%: Alt-LP DM - Core DM (2036 AM peak)

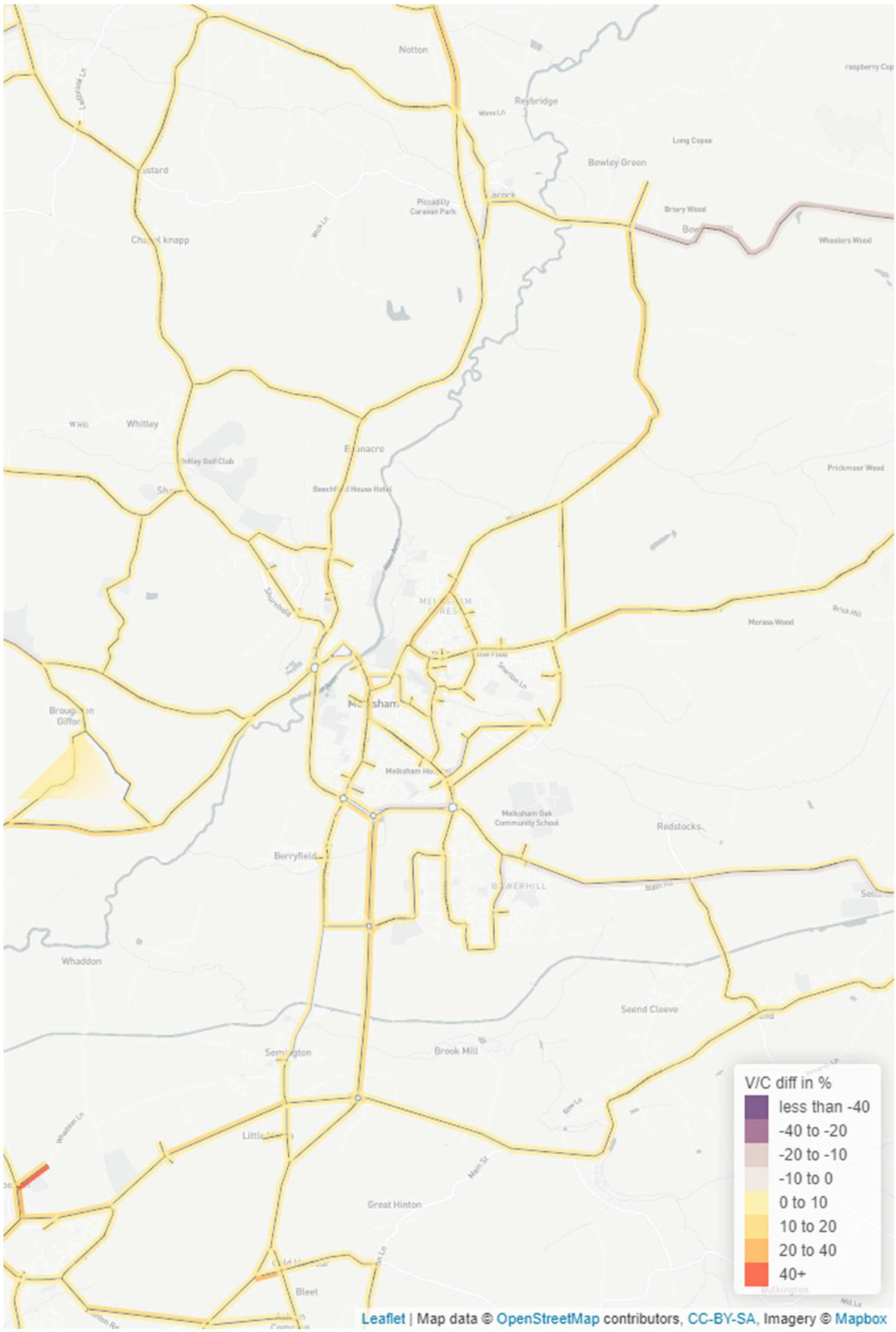


Figure G.9 - Difference in V/C%: Alt LP + Mitigation DM - Core DM (2036 AM peak)

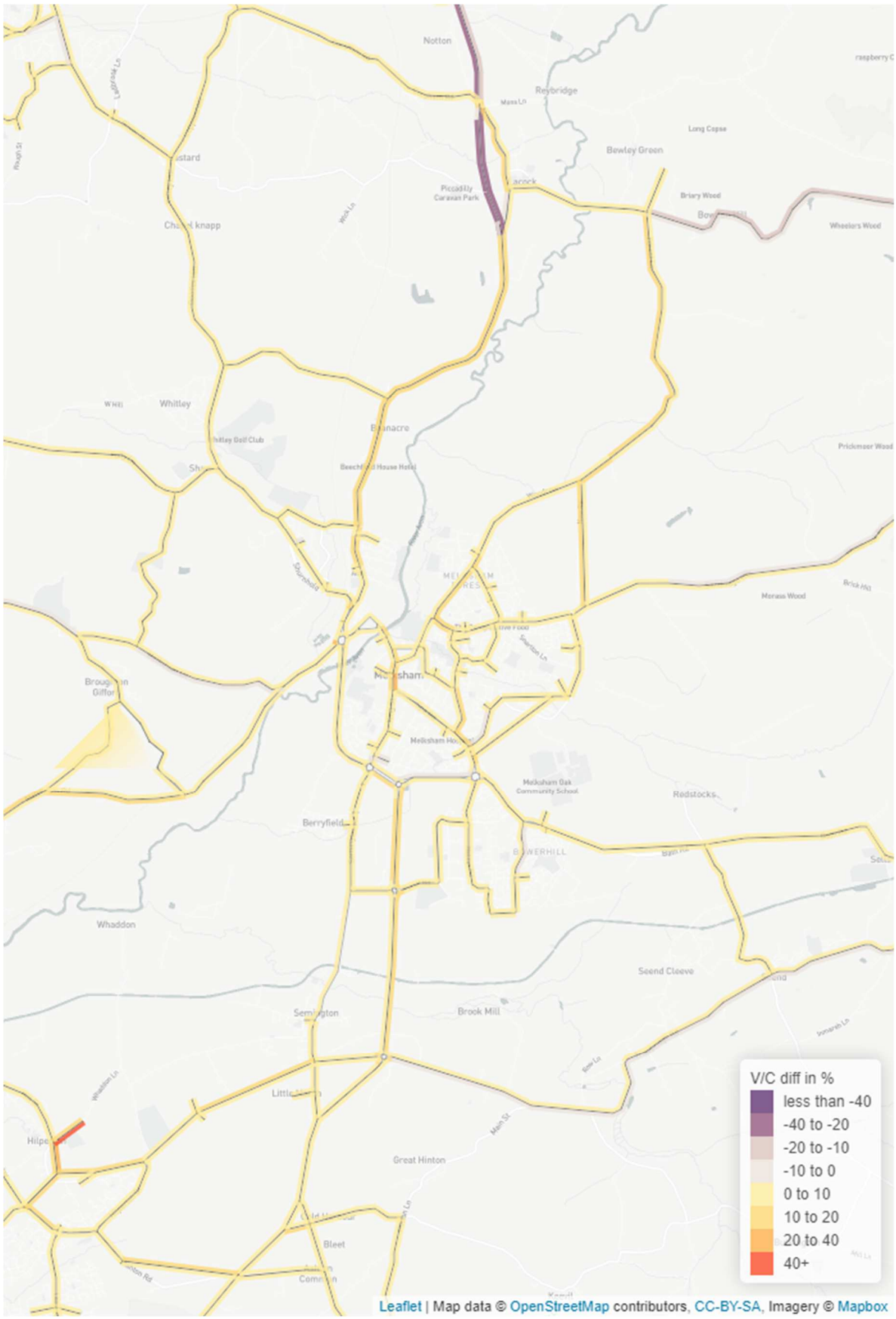


Figure G.10 - Difference in V/C%: High Growth DM - Core DM (2036 AM peak)

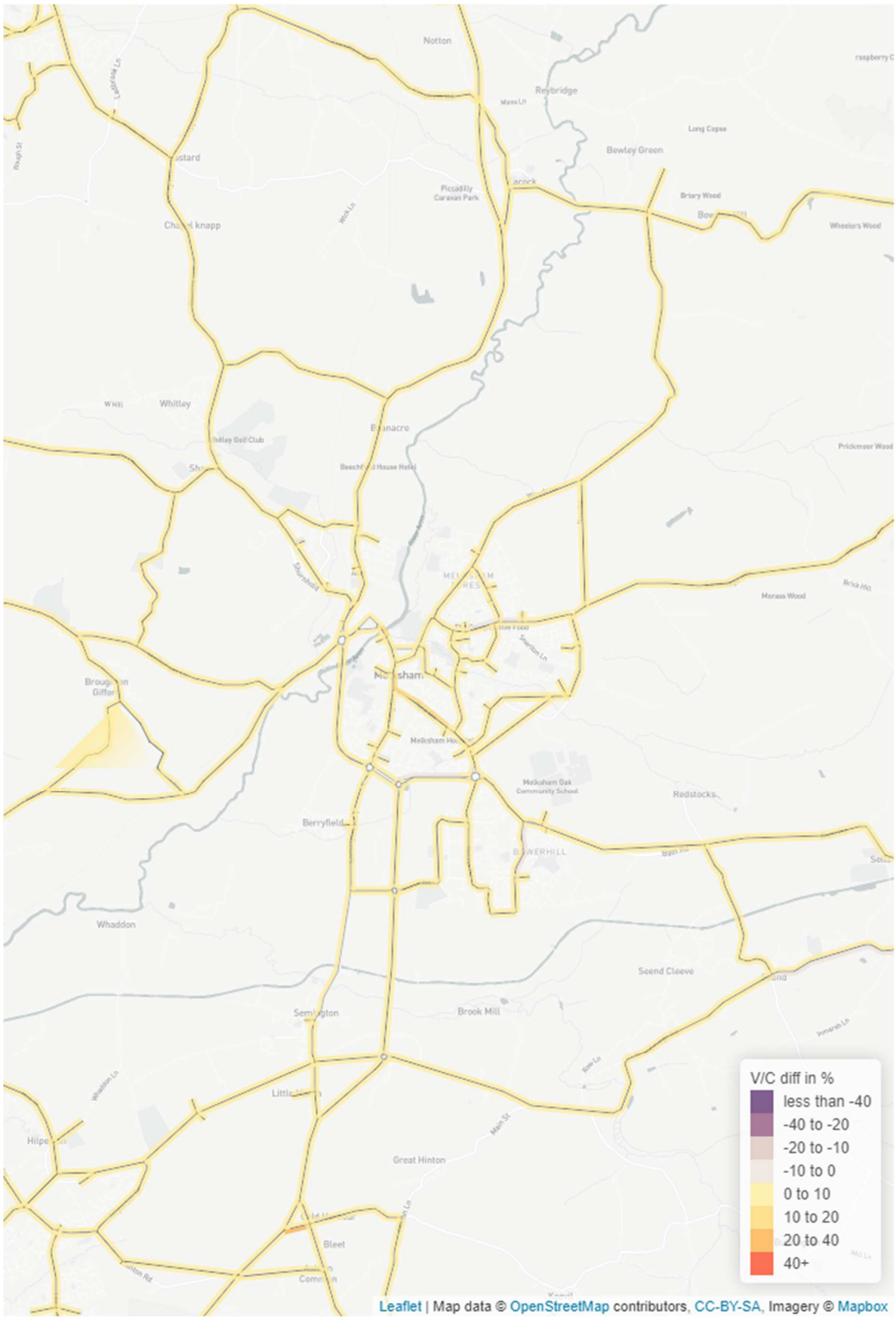


Figure G.11 - Difference in V/C%: Low Growth DM - Core DM (2036 AM peak)

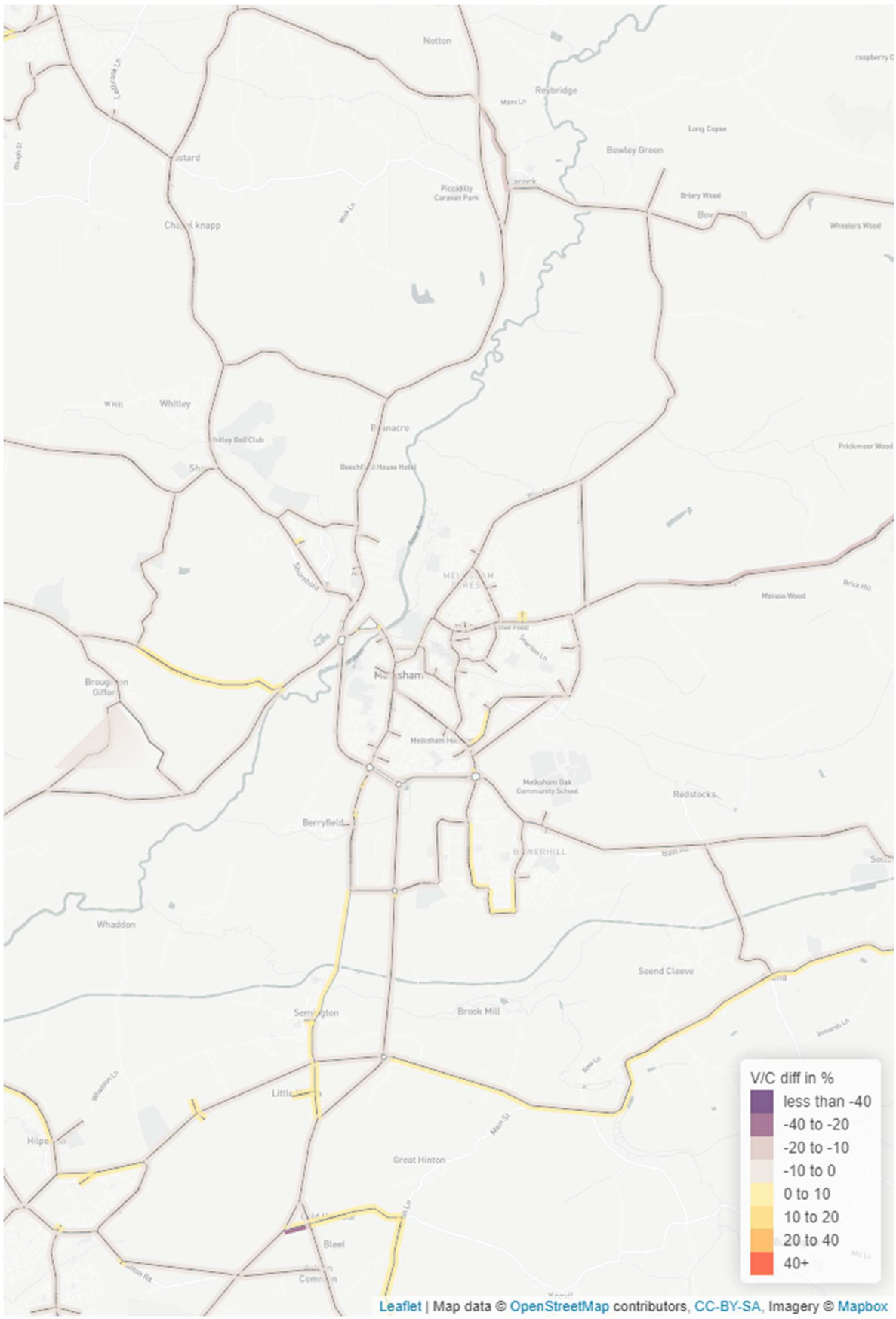


Figure G.12 - Difference in V/C%: MRN DS - Core DS (2036 AM peak)

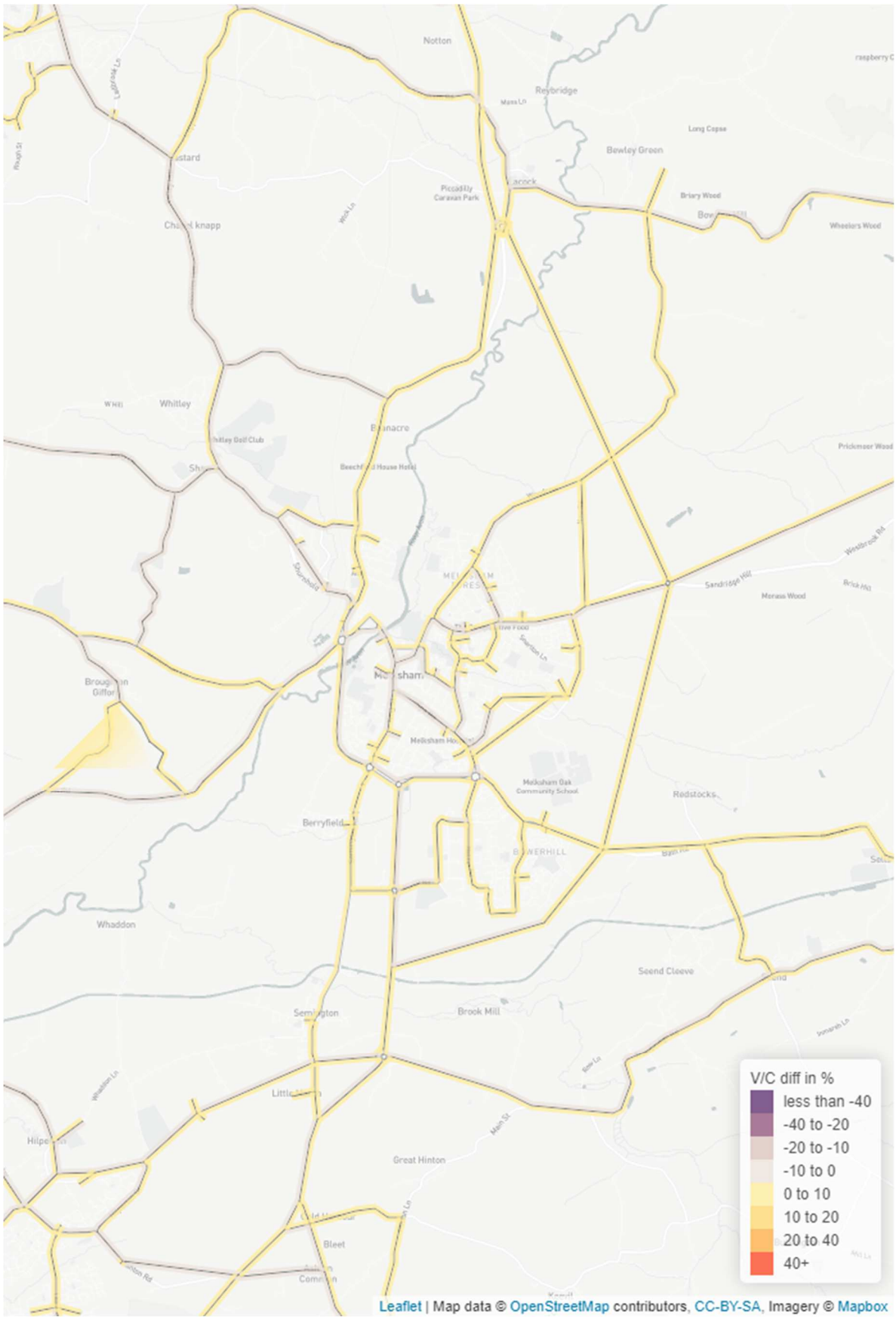


Figure G.13 - Difference in V/C%: Alt LP DS - Core DS (2036 AM peak)

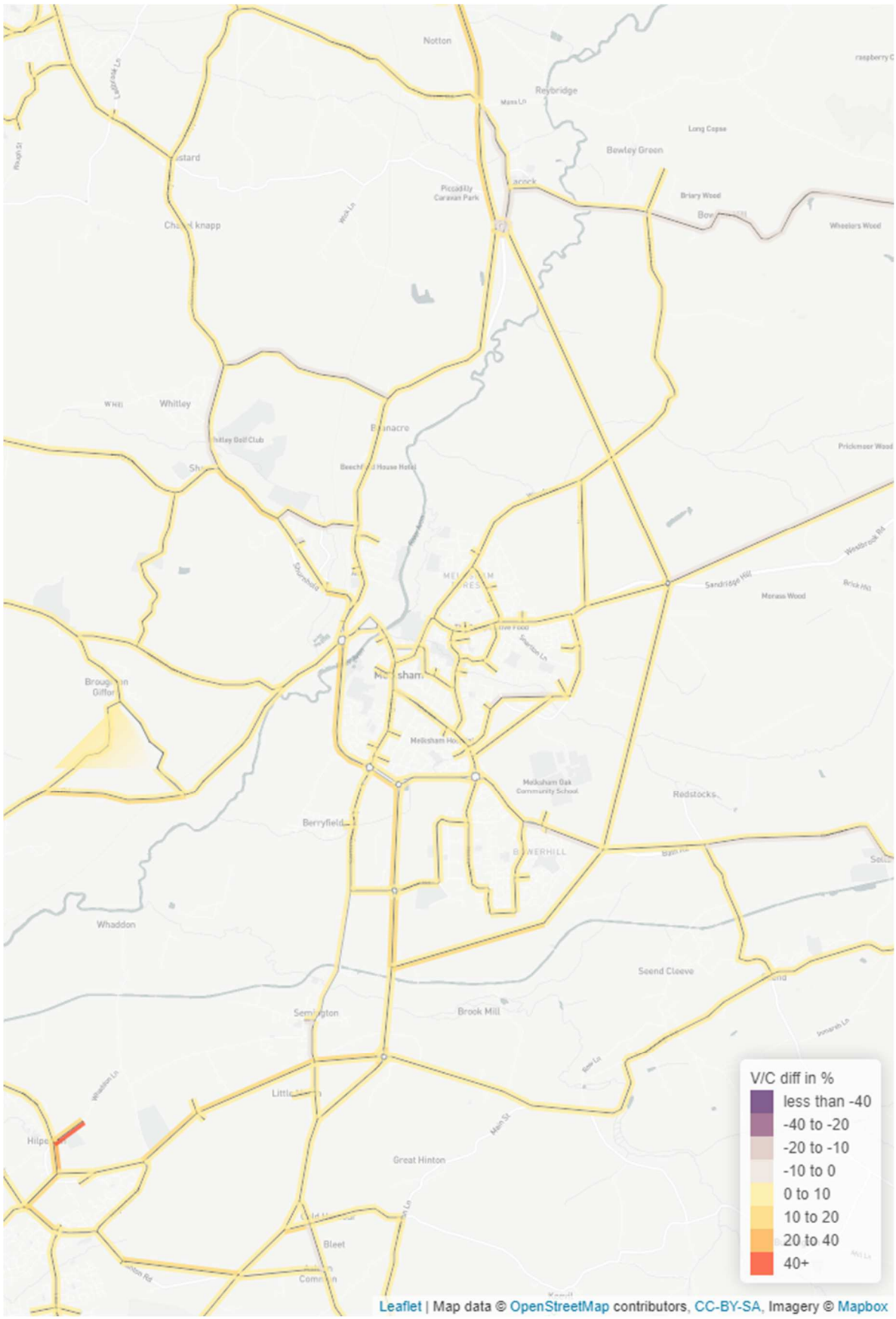


Figure G.14 - Difference in V/C%: Alt LP + Mitigation DS - Core DS (2036 AM peak)

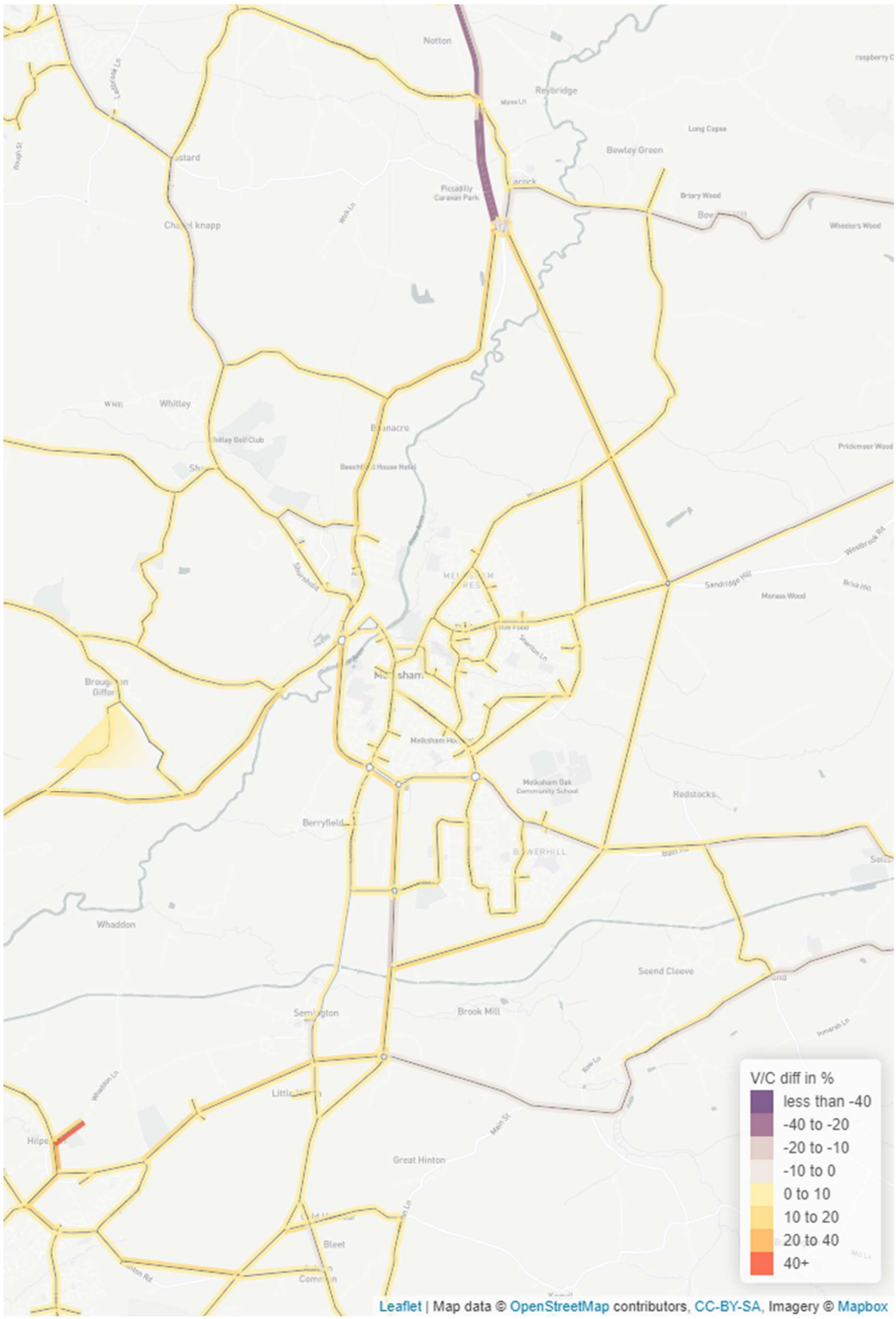


Figure G.15 - Difference in V/C%: High Growth DS - Core DS (2036 AM peak)

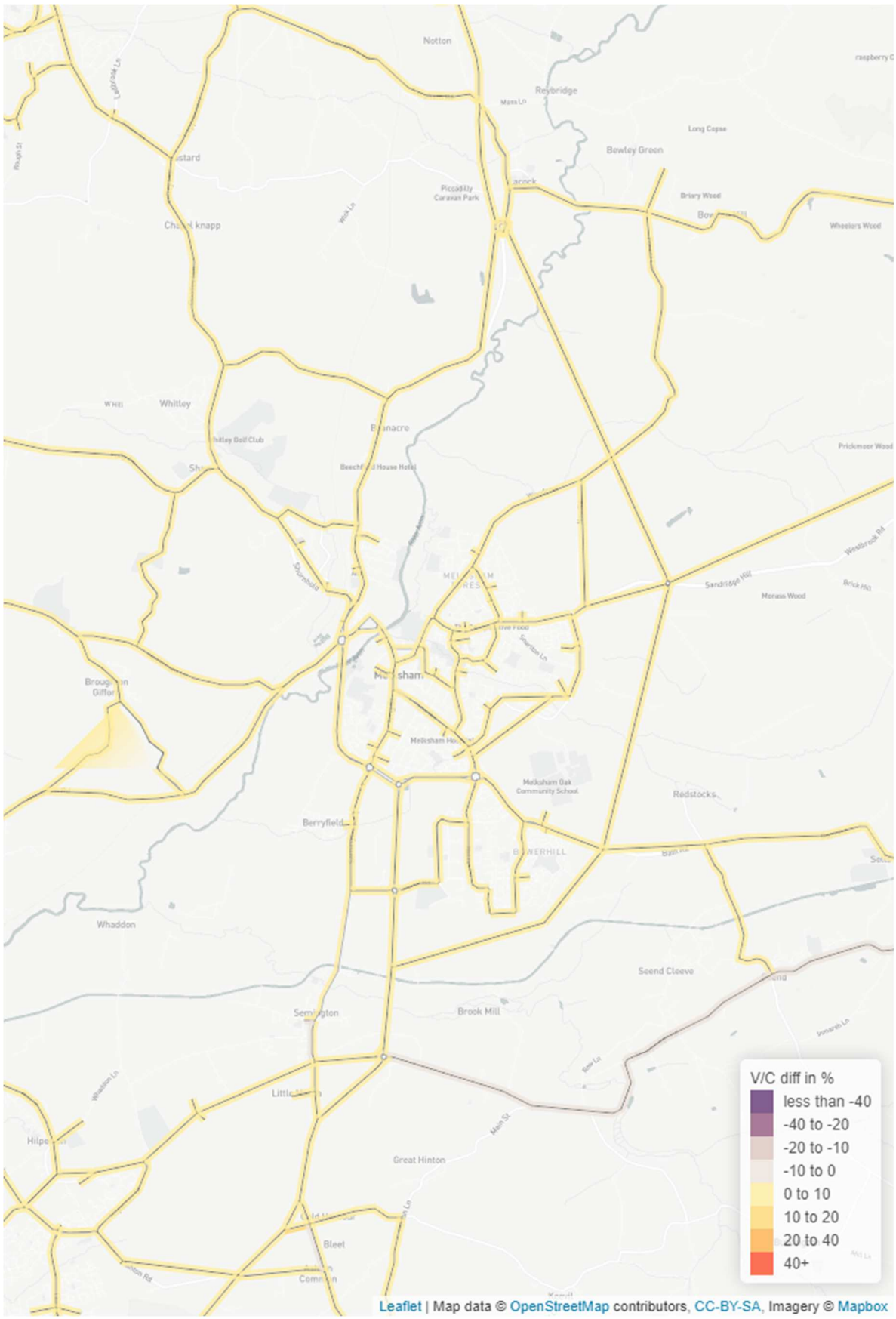
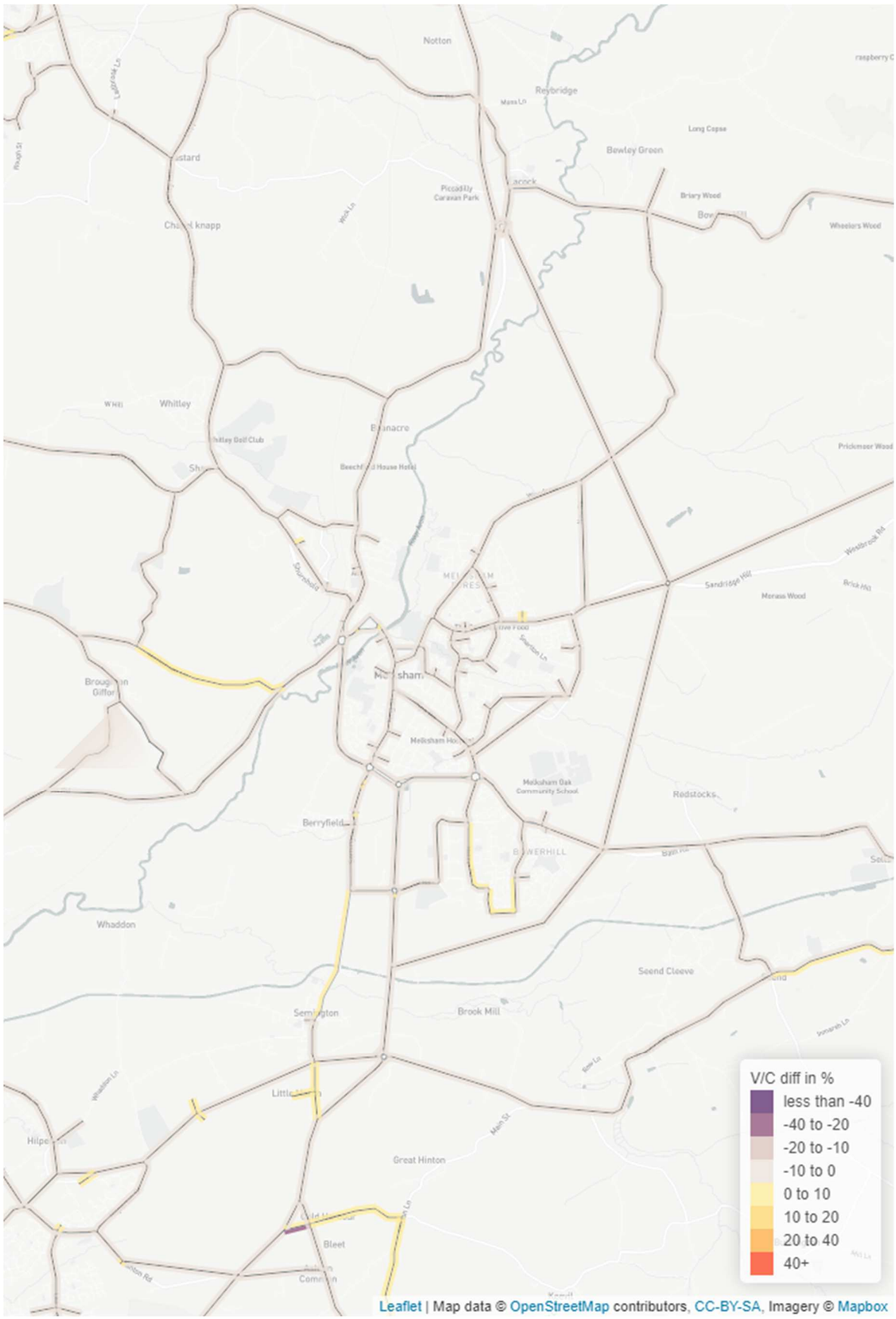


Figure G.16 - Difference in V/C%: Low Growth - Core DS (2036 AM peak)



Appendix H. Traffic flow changes

H.1. Traffic flow change in Core DM vs DS

Figure H.1 - Difference in actual flow (PCUs): Core DS - Core DM (2026 AM peak)

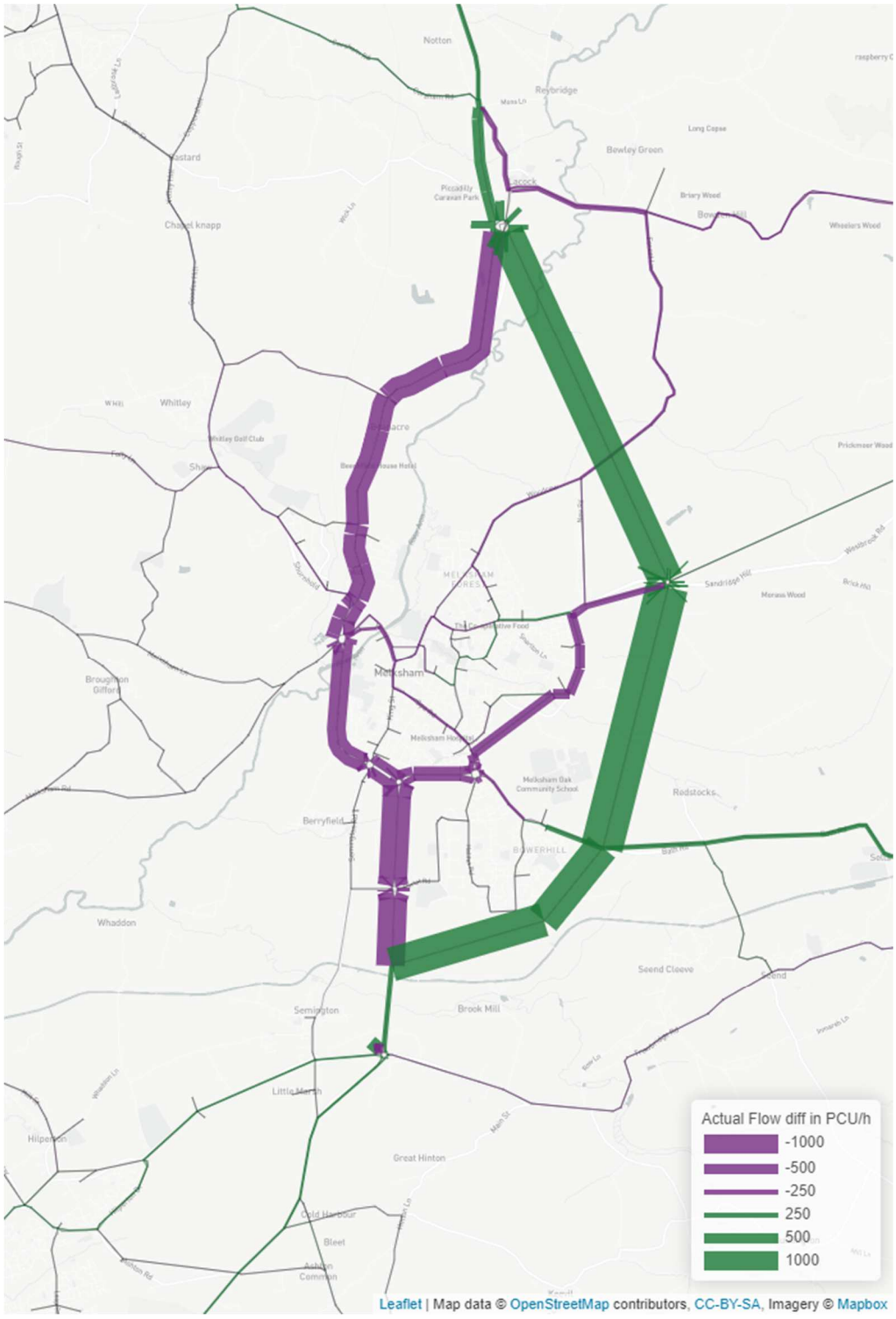


Figure H.2 - Difference in actual flow (PCUs): Core DS - Core DM (2026 IP)

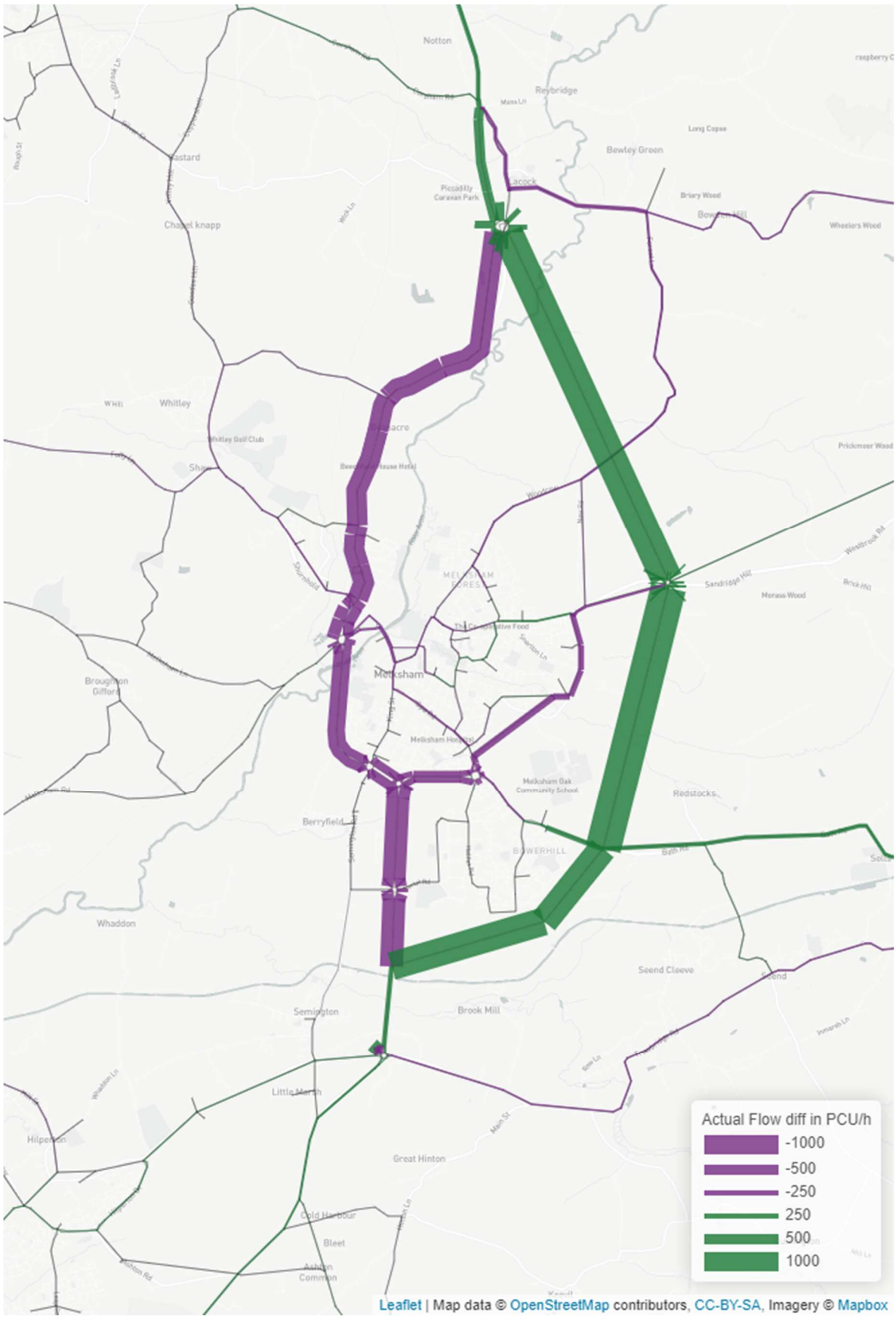


Figure H.3 - Difference in actual flow (PCUs): Core DS - Core DM (2026 PM peak)

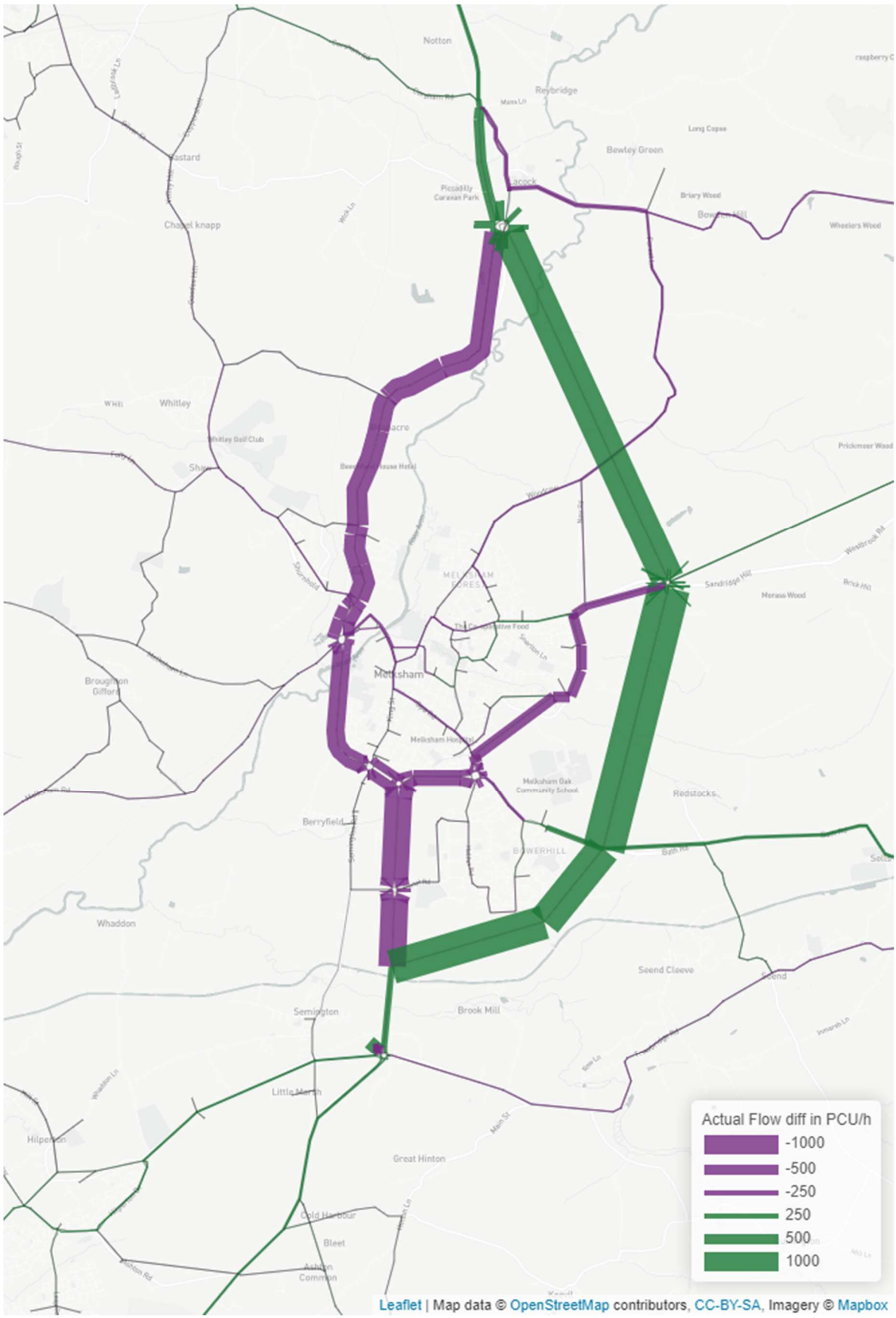


Figure H.4 - Difference in actual flow (PCUs): Core DS - Core DM (2051 AM peak)

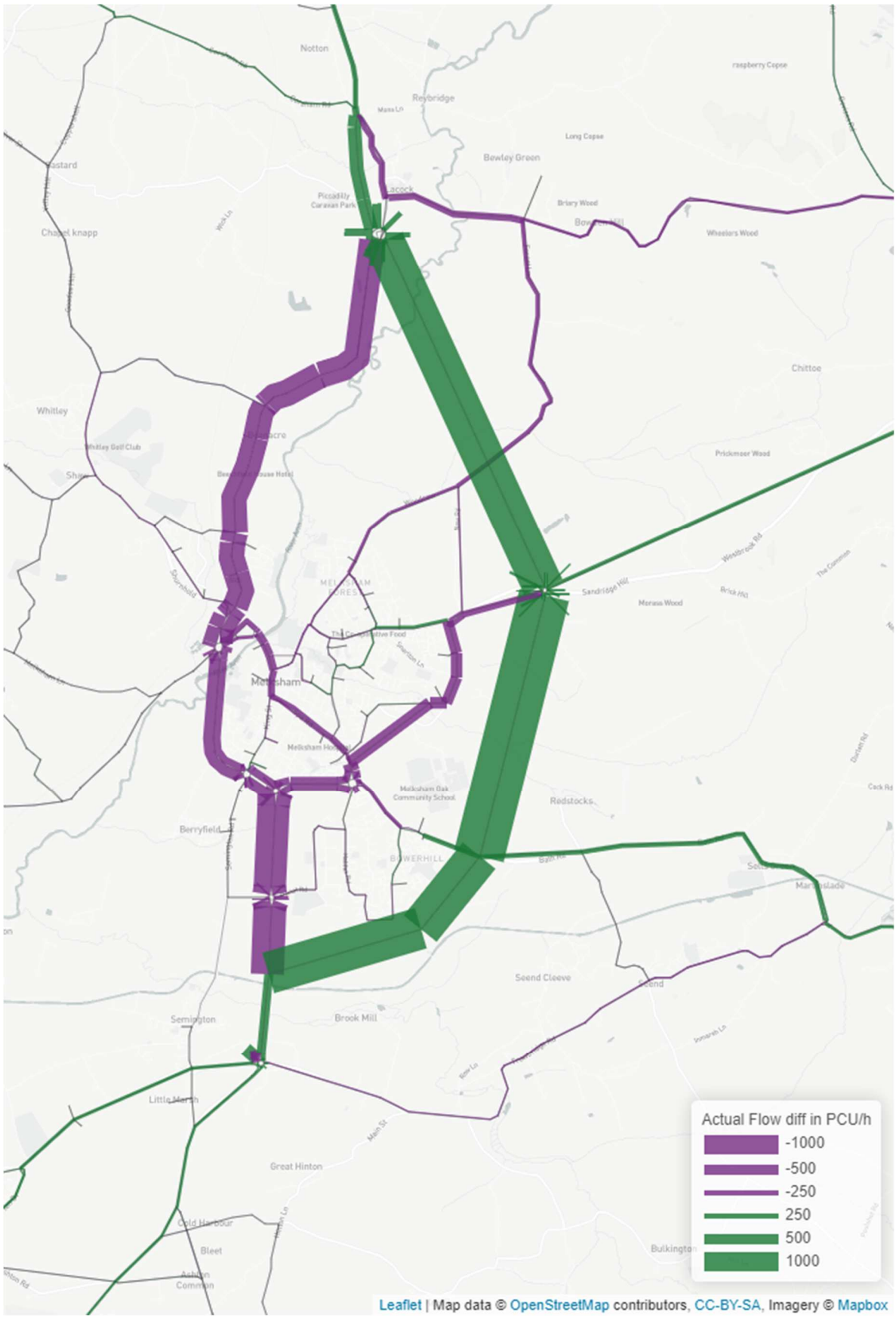


Figure H.5 - Difference in actual flow (PCUs): Core DS - Core DM (2051 IP)

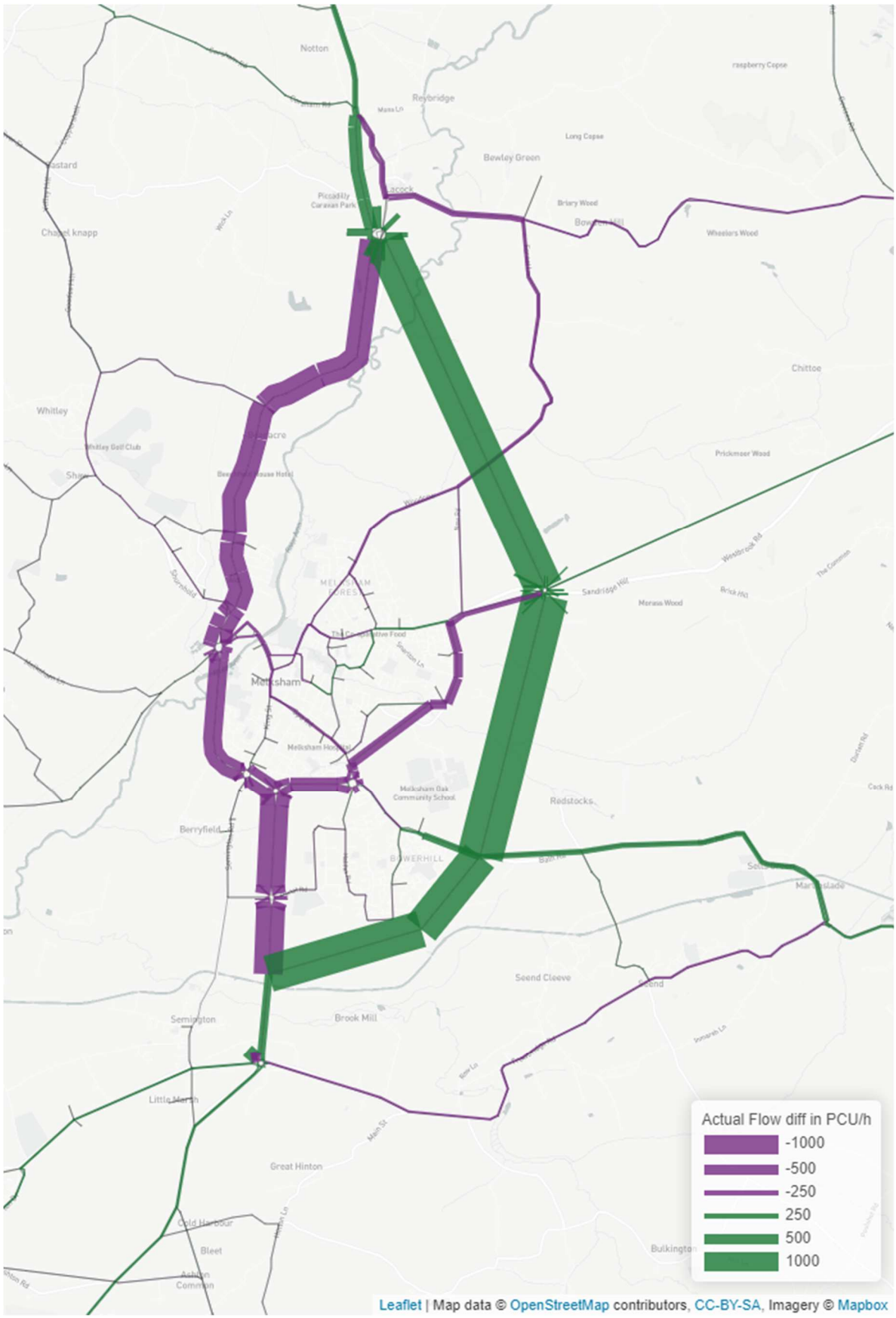
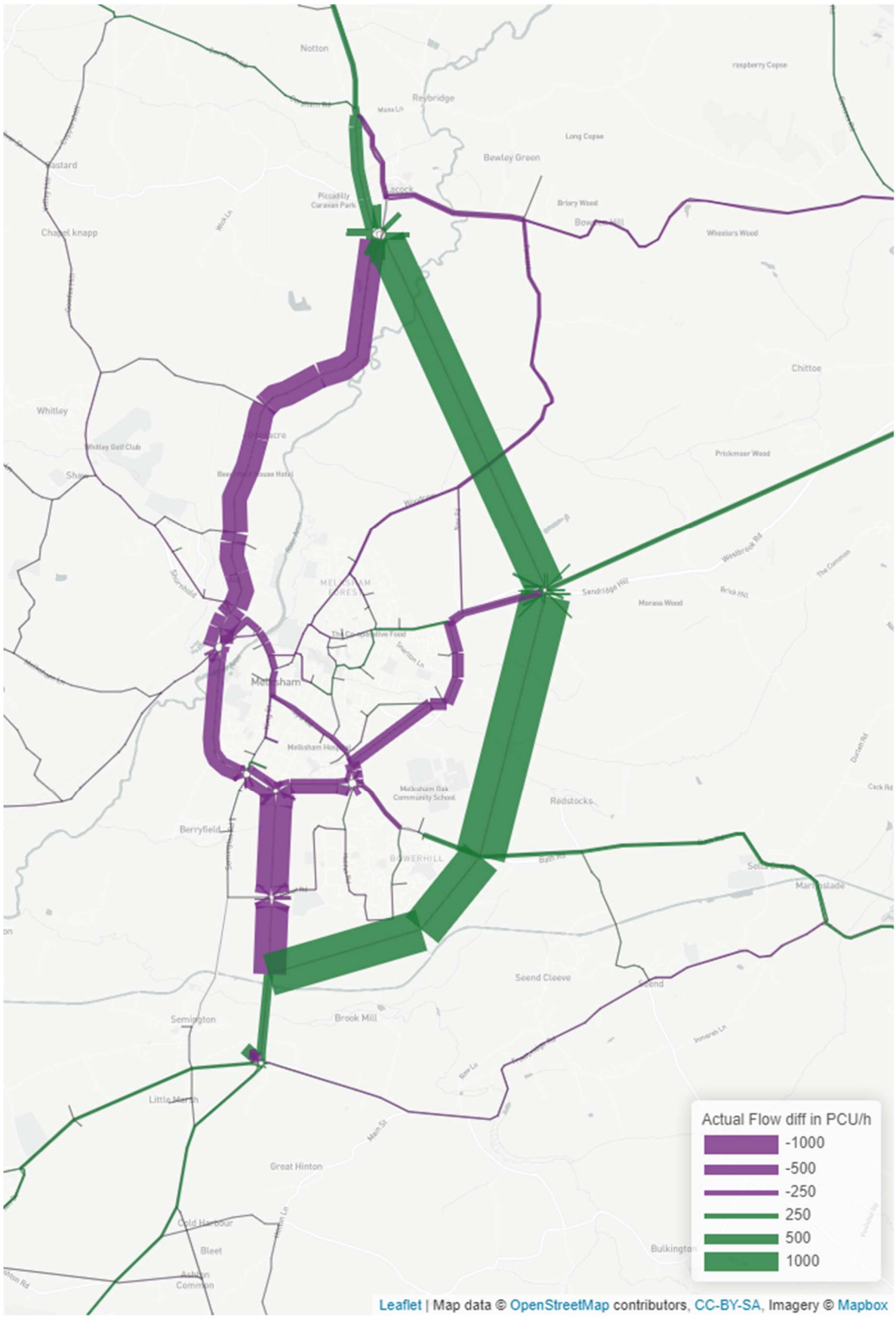


Figure H.6 - Difference in actual flow (PCUs): Core DS - Core DM (2051 PM peak)



H.2. Traffic Flow changes Core vs Alternative Scenarios

Figure H.7 - Difference in actual flow (PCUs): MRN DM - Core DM (2036 AM peak)

Figure H.8 - Difference in actual flow (PCUs): Alt LP DM - Core DM (2036 AM peak)

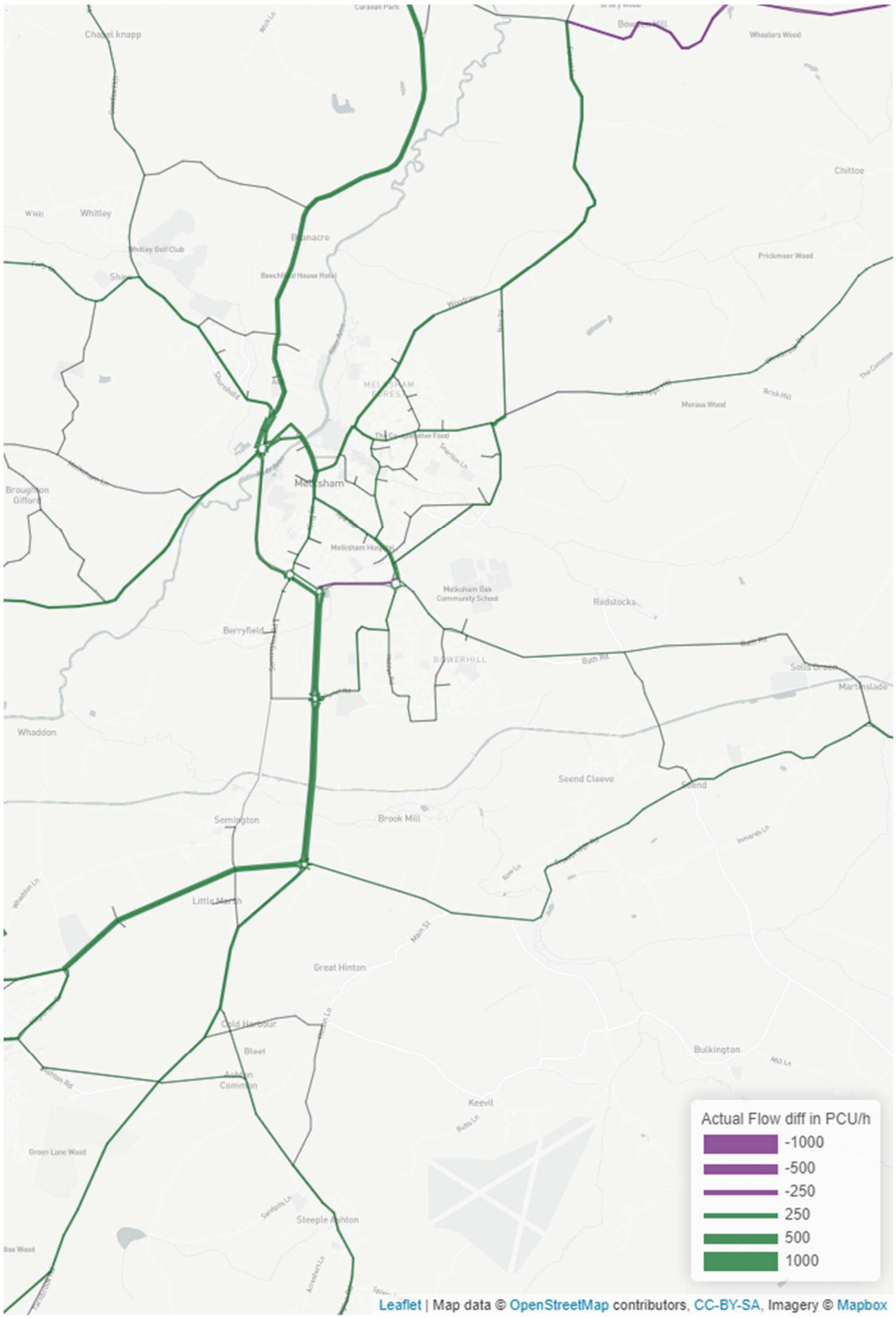


Figure H.9 - Difference in actual flow (PCUs): Alt LP + Mitigation DM - Core DM (2036 AM peak)

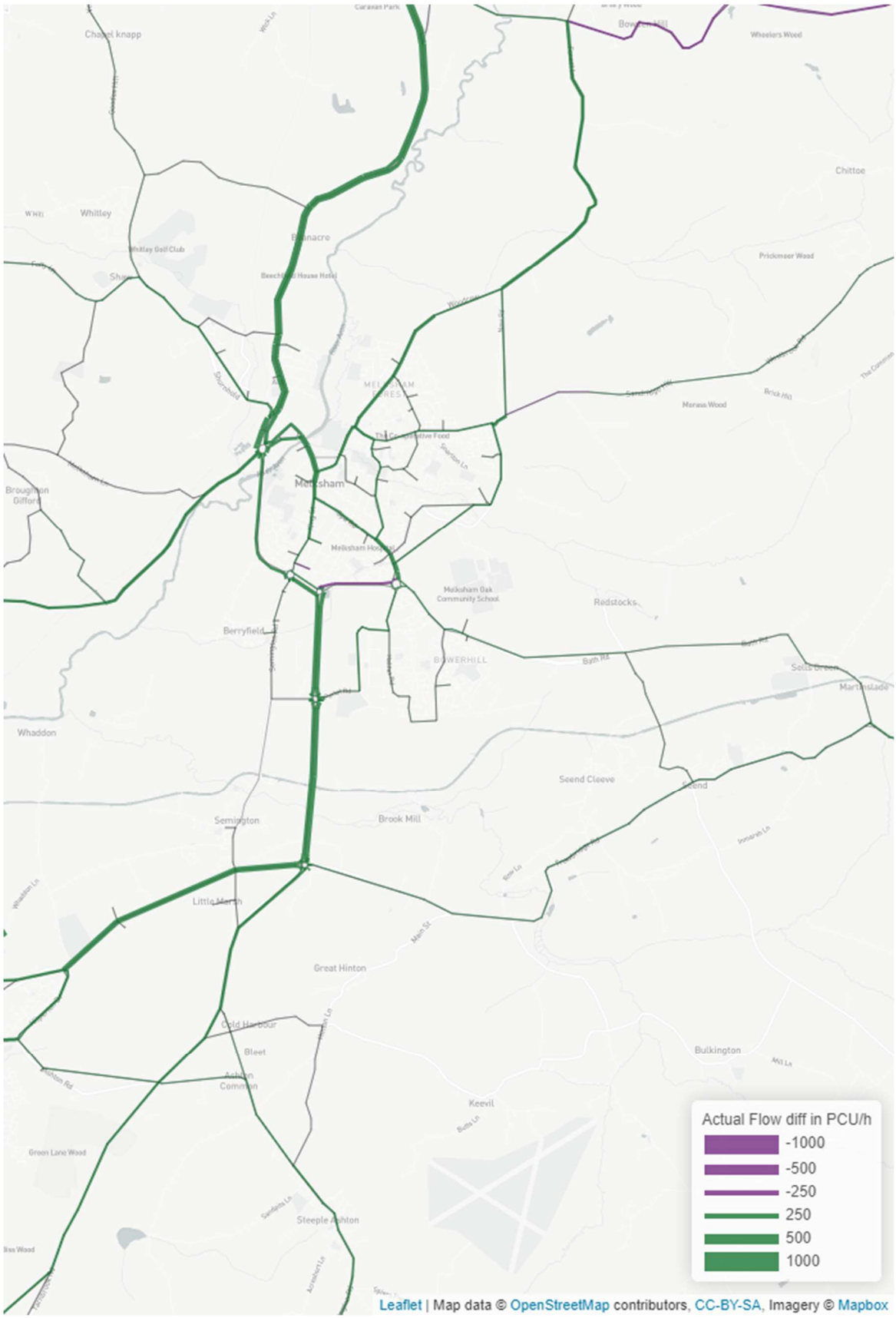


Figure H.10 - Difference in actual flow (PCUs): High Growth DM - Core DM (2036 AM peak)

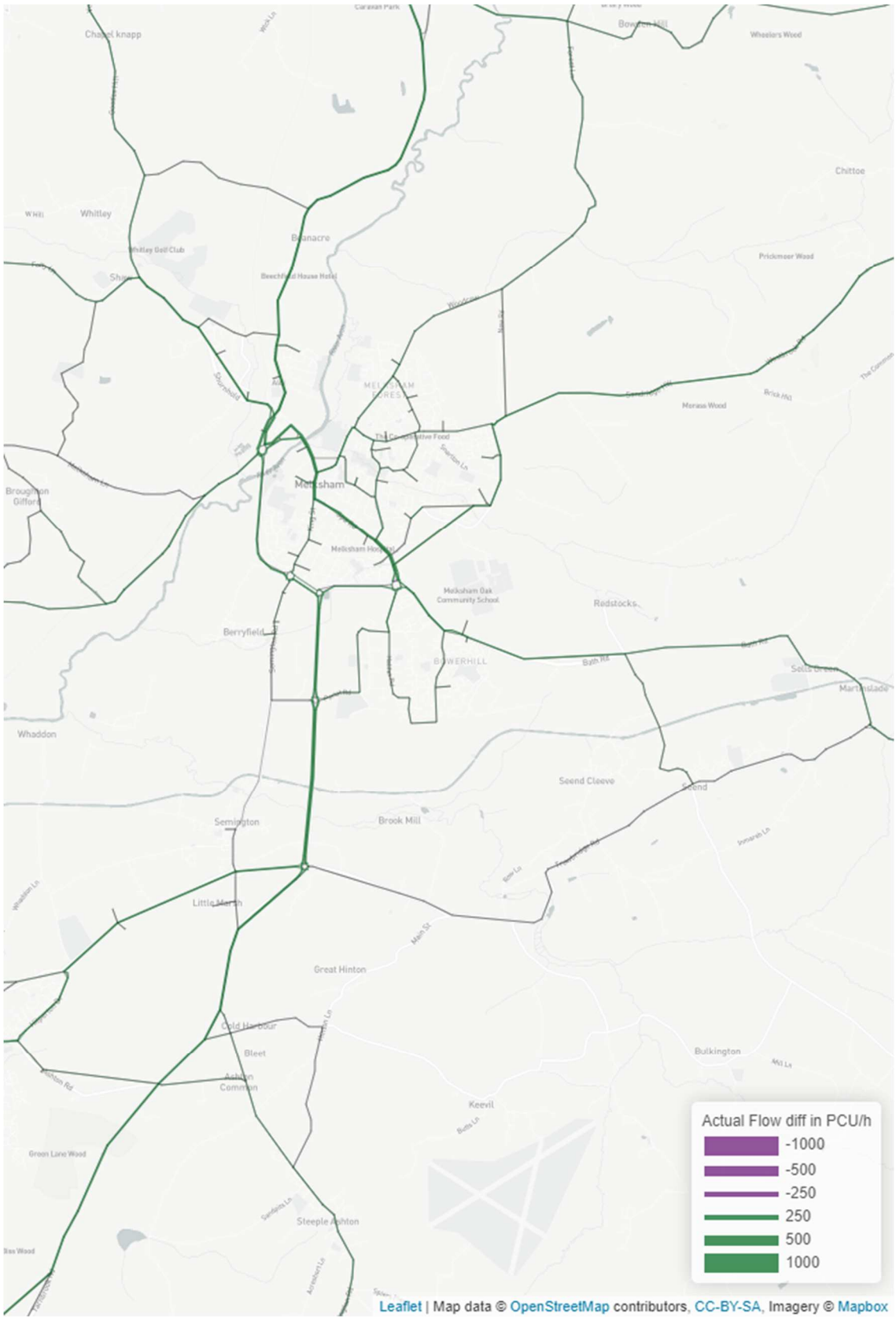


Figure H.11 - Difference in actual flow (PCUs): Low Growth DM - Core DM (2036 AM peak)

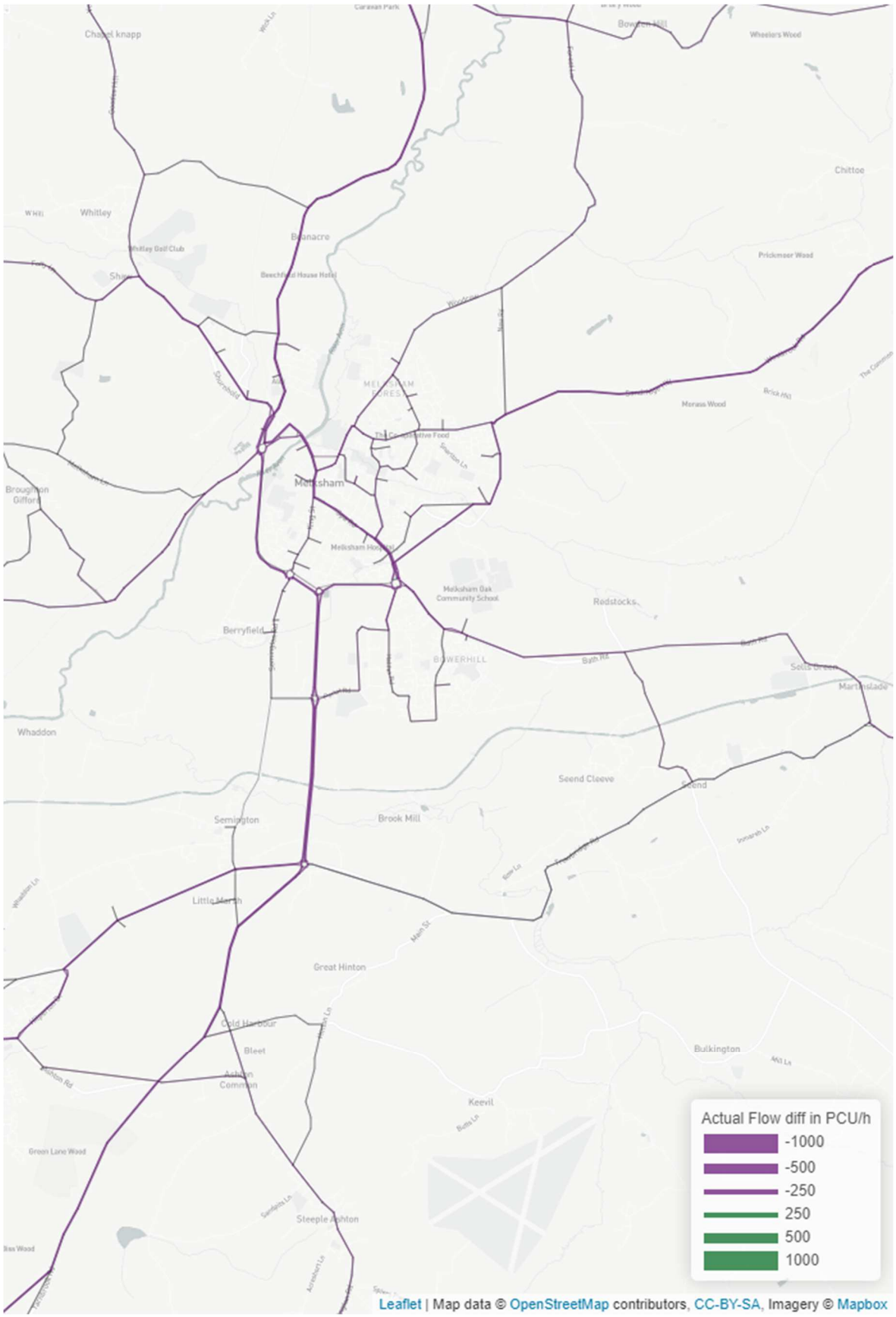


Figure H.12 - Difference in actual flow (PCUs): MRN DS - Core DS (2036 AM peak)

Figure H.13 - Difference in actual flow (PCUs): Alt LP DS - Core DS (2036 AM peak)

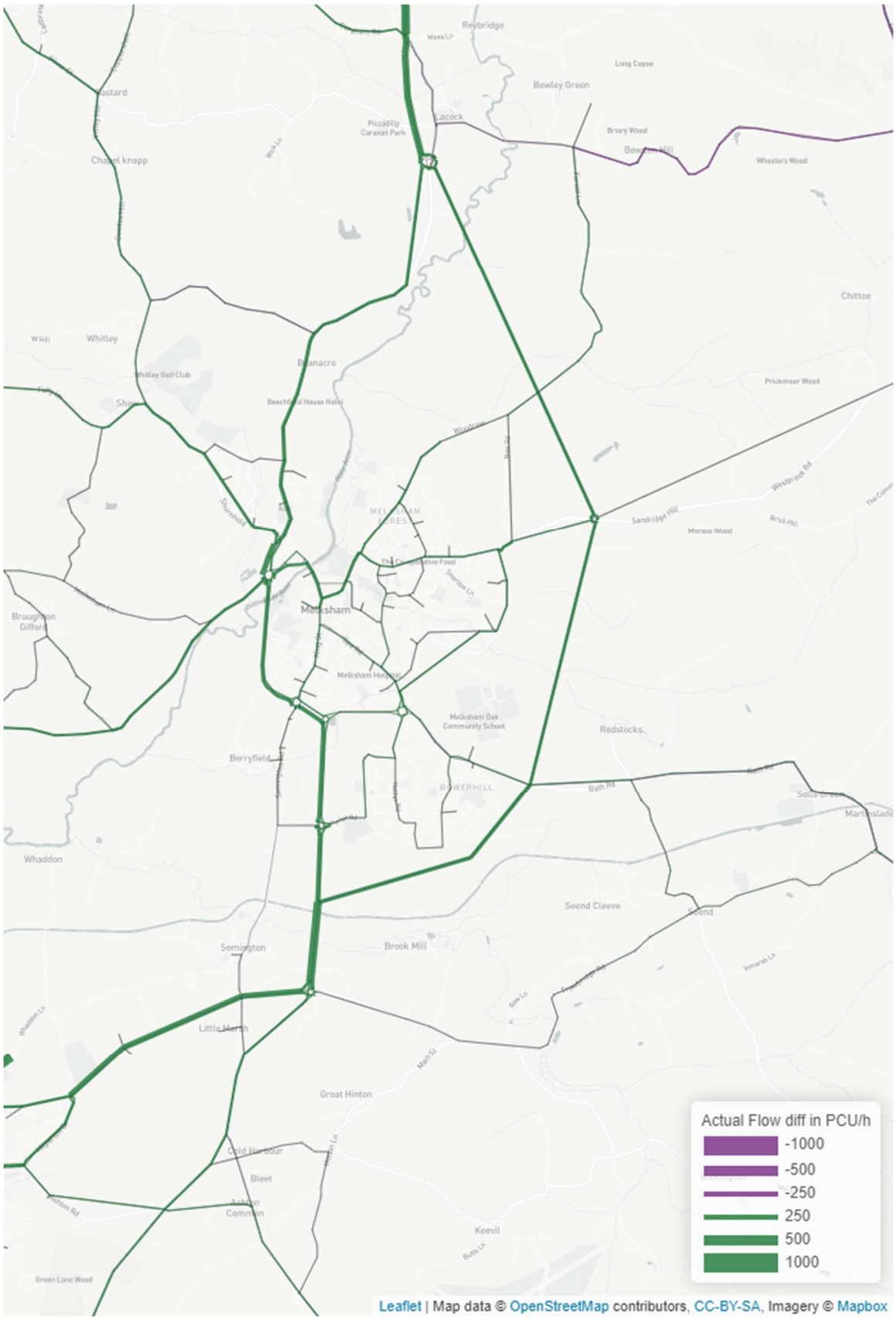


Figure H.14 - Difference in actual flow (PCUs): Alt LP + Mitigation DS - Core DS (2036 AM peak)

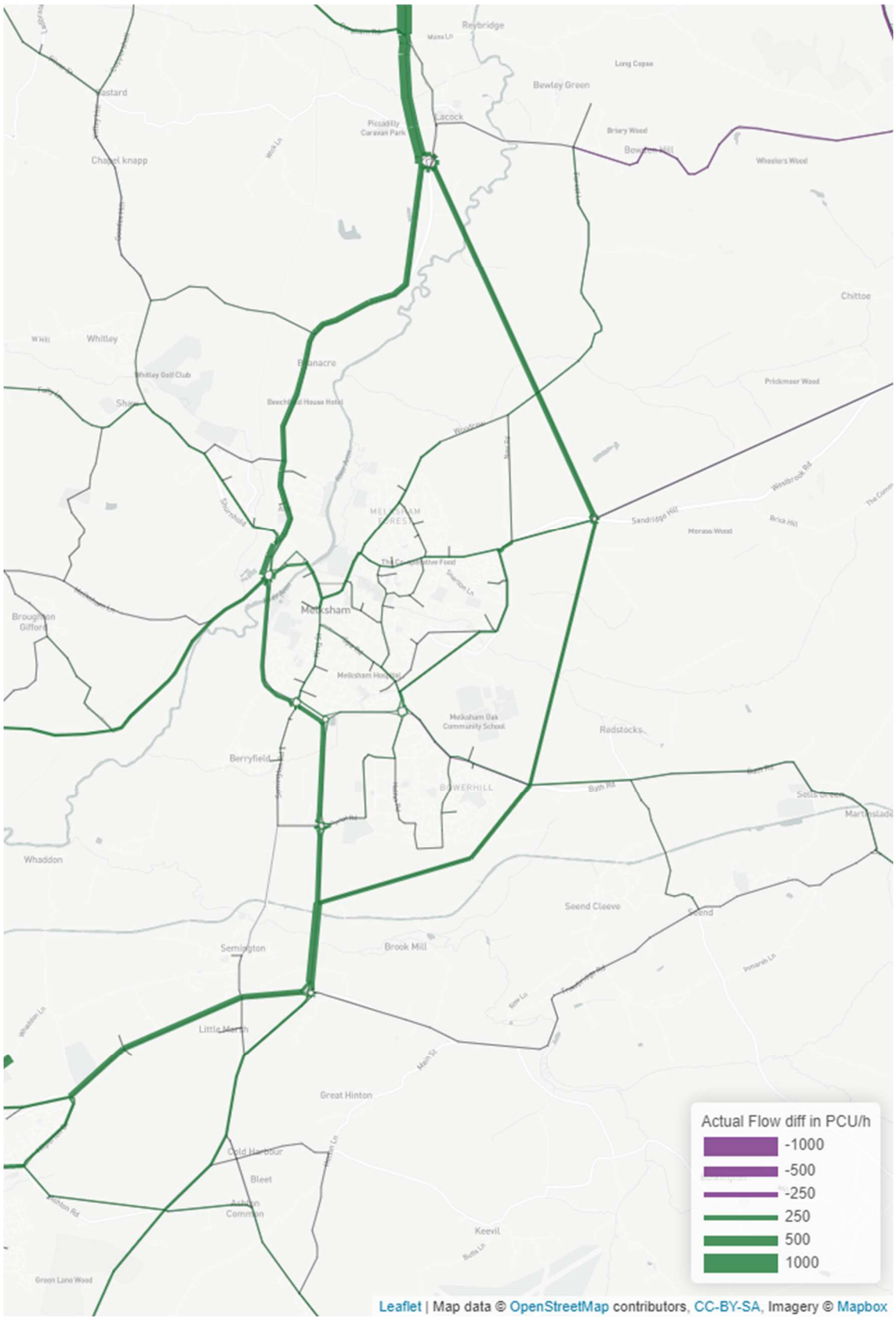


Figure H.15 - Difference in actual flow (PCUs): High Growth DS - Core DS (2036 AM peak)

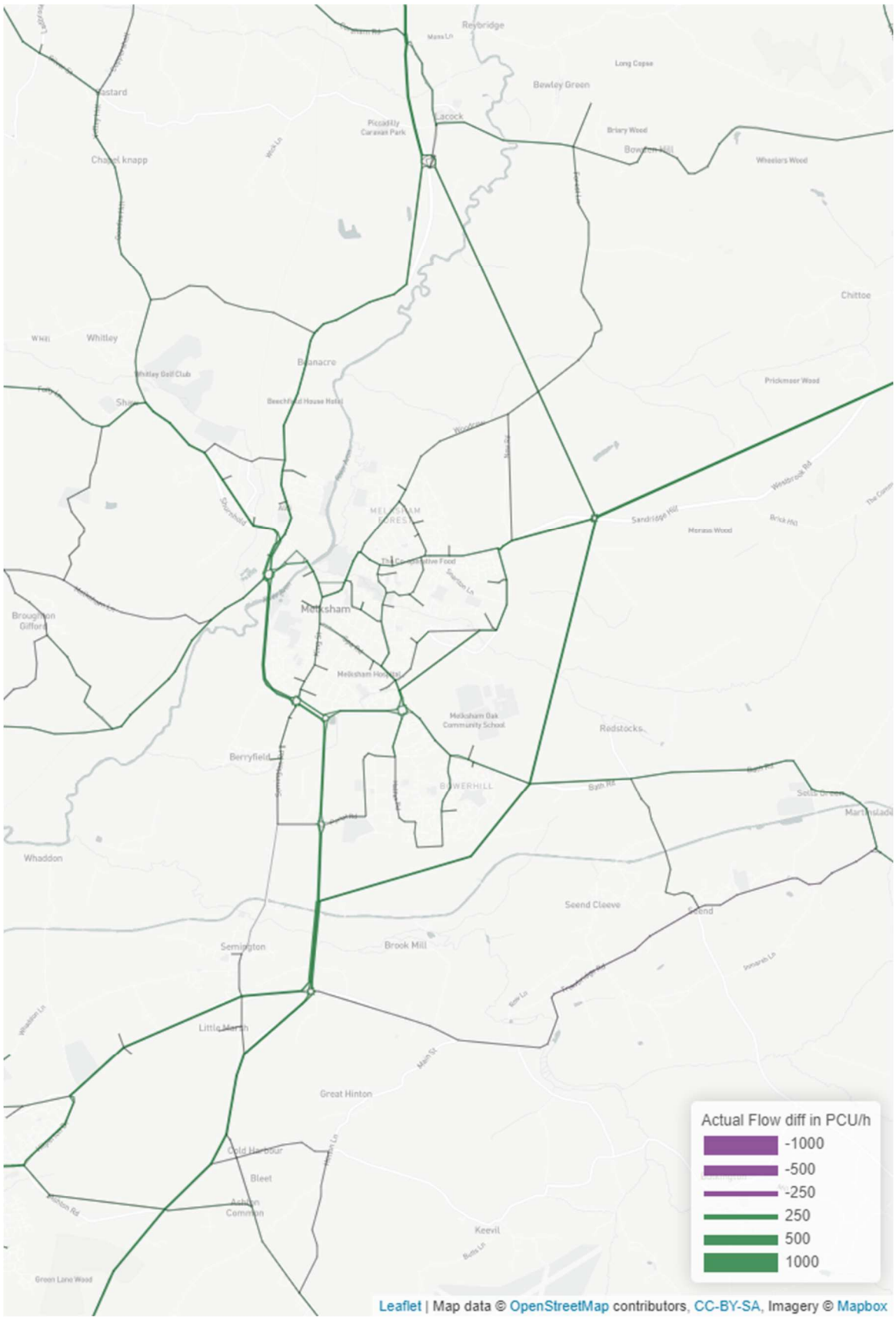
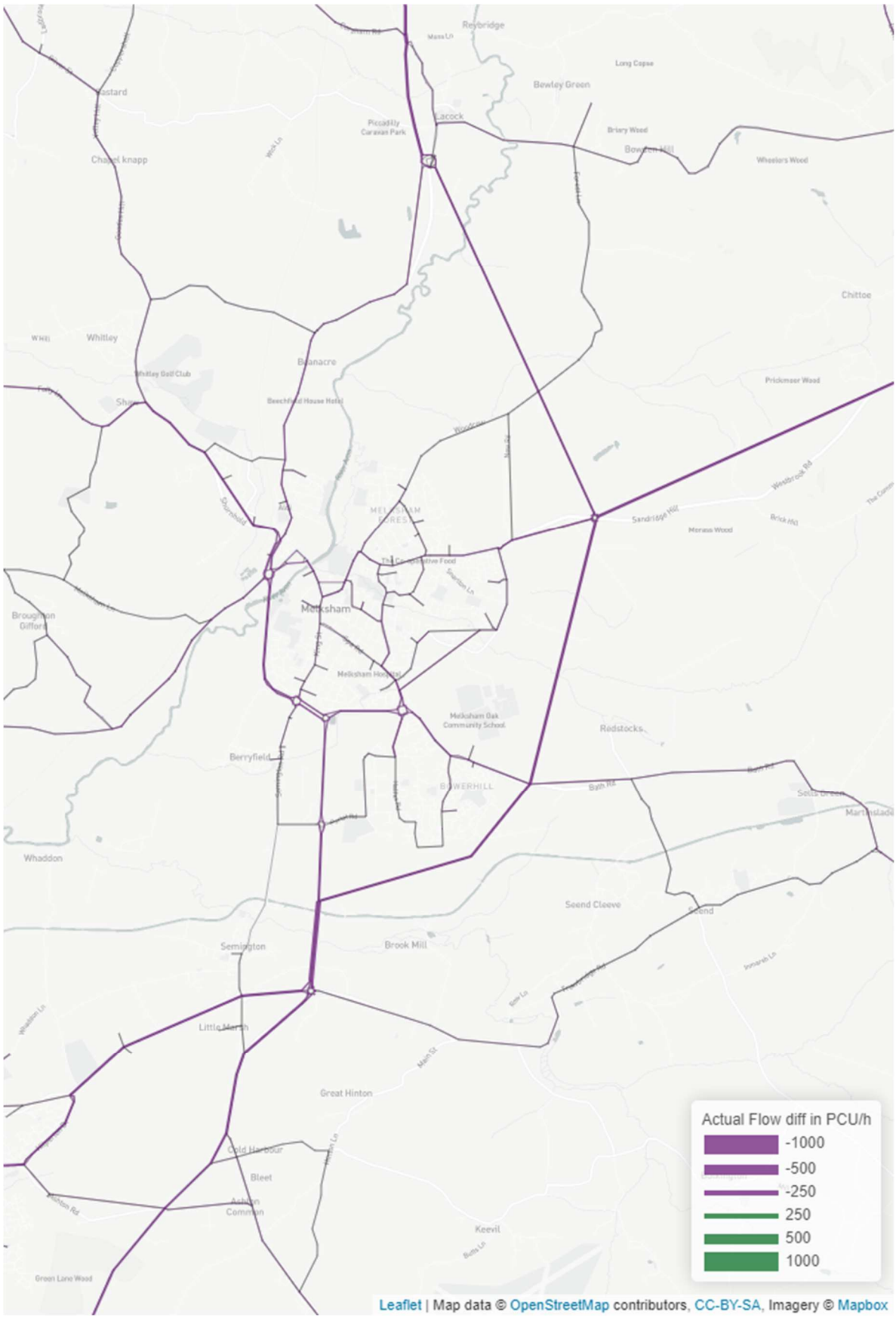


Figure H.16 - Difference in actual flow (PCUs): Low Growth DS - Core DS (2036 AM peak)



Appendix I. Journey Times

Figure I.1 - JT Routes

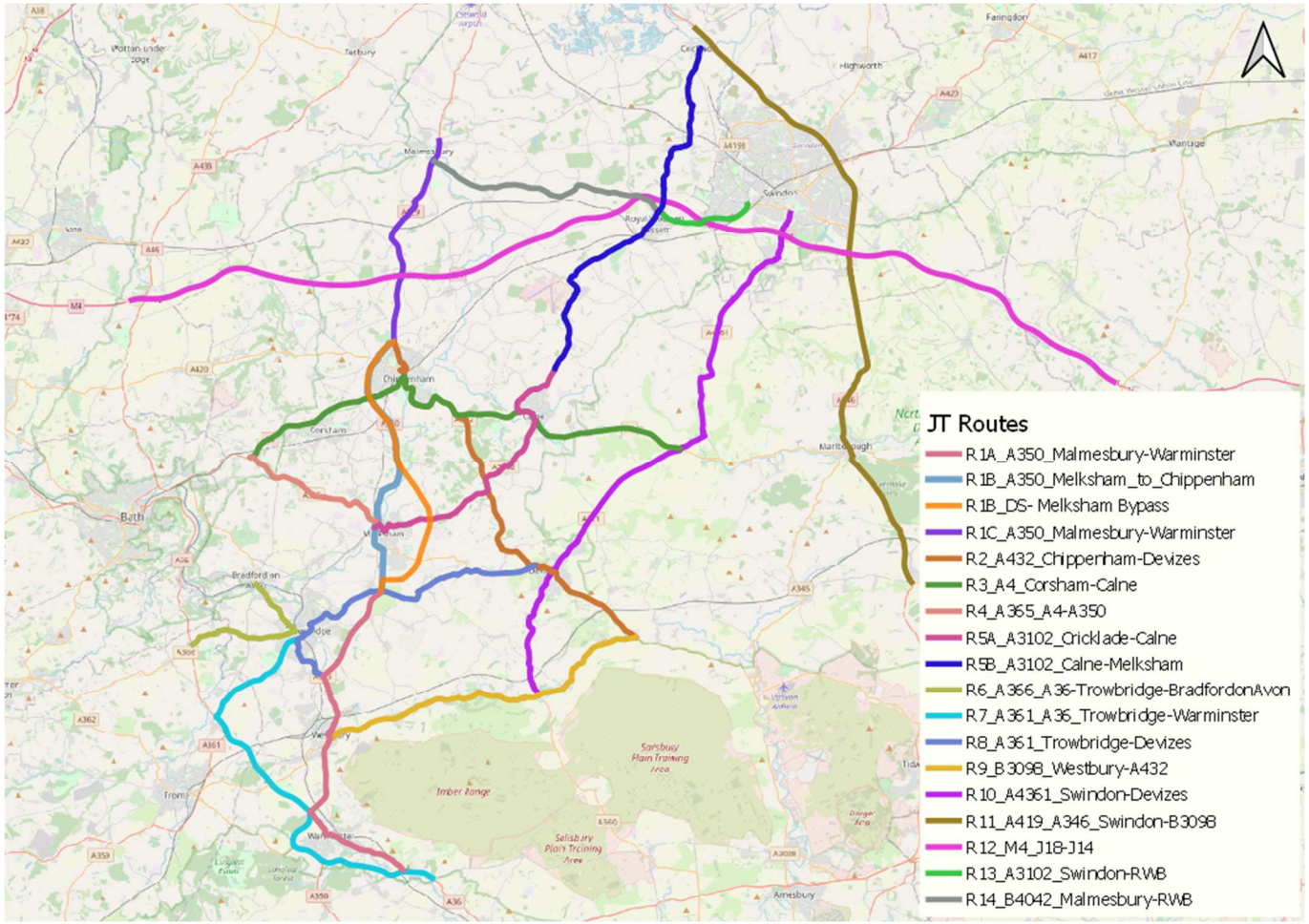


Table I-1 - JT validation routes: 2026

JT route	Direction	AM					IP					PM				
		JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM
		Base	DM	DS			Base	DM	DS			Base	DM	DS		
R1(A) - Warminster to Melksham (A350)	NB	26:54	27:43	27:51	3%	0%	26:41	27:34	27:42	3%	0%	27:12	28:05	28:18	3%	1%
	SB	28:17	28:09	28:19	-1%	1%	27:27	27:29	27:36	0%	0%	27:50	27:54	28:03	0%	1%
R1(B) - Melksham to Chippenham (A350)	NB	20:53	21:33	20:31	3%	-5%	19:46	20:29	19:43	4%	-4%	20:30	21:09	20:04	3%	-5%
	SB	20:52	21:50	21:17	5%	-3%	20:12	21:03	21:01	4%	0%	20:39	21:58	21:25	6%	-2%
R1(C) - Chippenham to Malmesbury (A350)	NB	14:02	13:59	14:02	0%	0%	13:18	13:19	13:19	0%	0%	13:29	13:41	13:42	1%	0%
	SB	13:59	14:35	14:38	4%	0%	13:22	13:40	13:39	2%	0%	14:00	14:22	14:24	3%	0%
R2 - Chippenham to Devizes (A432)	NB	35:36	37:31	36:39	5%	-2%	33:43	34:50	34:56	3%	0%	34:28	35:46	35:47	4%	0%
	SB	33:32	34:44	34:24	4%	-1%	32:55	34:01	33:55	3%	0%	33:39	35:01	34:46	4%	-1%
R3 - Corsham to Calne (A4)	EB	38:09	38:37	38:32	1%	0%	36:40	37:18	37:15	2%	0%	38:23	39:06	39:00	2%	0%
	WB	37:29	39:02	38:54	4%	0%	36:06	37:30	37:25	4%	0%	37:14	38:38	38:30	4%	0%
R4 - A4 to A350 (A365)	EB	10:07	10:09	10:06	0%	0%	09:57	10:01	09:57	1%	-1%	10:19	10:21	10:17	0%	-1%
	WB	10:49	10:58	10:47	1%	-2%	10:15	10:20	10:15	1%	-1%	10:24	10:30	10:24	1%	-1%
R5(A) - Cricklade to Calne (A3102)	NB	21:10	21:27	21:18	1%	-1%	20:47	20:58	20:50	1%	-1%	21:13	21:24	21:12	1%	-1%
	SB	21:24	21:51	21:46	2%	0%	21:06	21:29	21:26	2%	0%	21:38	22:19	22:07	3%	-1%
R5(B) - Calne to Melksham (A3102)	NB	29:47	29:45	29:49	0%	0%	28:26	28:36	28:41	1%	0%	28:58	29:12	29:16	1%	0%
	SB	28:37	28:47	28:48	1%	0%	28:13	28:28	28:29	1%	0%	29:34	29:45	29:46	1%	0%
R6 - A36 to Bradford-on-Avon via Trowbridge (A366)	NEB	12:50	12:56	12:56	1%	0%	12:52	13:05	13:04	2%	0%	13:03	13:22	13:22	2%	0%
	SWB	14:02	14:09	14:09	1%	0%	13:53	14:08	14:07	2%	0%	14:05	14:13	14:14	1%	0%
R7 - Trowbridge to Warminster (A361 / A36)	NB	25:07	26:06	26:08	4%	0%	25:00	26:06	26:07	4%	0%	25:29	26:39	26:42	5%	0%
	SB	25:35	26:05	26:05	2%	0%	24:55	25:49	25:50	4%	0%	25:01	26:08	26:11	4%	0%
R8 - Trowbridge to Devizes (A361)	EB	25:00	25:51	26:03	3%	1%	25:06	26:09	26:17	4%	0%	25:40	26:50	27:00	5%	1%
	WB	24:12	25:18	25:38	5%	1%	24:12	25:30	25:40	5%	1%	24:50	26:08	26:25	5%	1%

JT route	Direction	AM					IP					PM				
		JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM
		Base	DM	DS			Base	DM	DS			Base	DM	DS		
R9 - Westbury to A432 (B3098)	EB	25:50	25:58	26:01	1%	0%	25:19	25:30	25:31	1%	0%	25:35	25:48	25:49	1%	0%
	WB	26:03	26:18	26:14	1%	0%	25:44	25:57	25:58	1%	0%	26:20	26:32	26:32	1%	0%
R10 - Swindon to Devizes (A4361)	NB	40:20	39:46	39:42	-1%	0%	38:49	38:48	38:43	0%	0%	40:02	39:57	39:51	0%	0%
	SB	38:34	38:42	38:38	0%	0%	38:38	38:49	38:43	0%	0%	40:47	40:24	40:18	-1%	0%
R11 - Cricklade to B3098 (A419 / A346)	NB	29:51	30:31	30:31	2%	0%	29:52	30:35	30:35	2%	0%	30:46	31:46	31:46	3%	0%
	SB	29:10	30:06	30:05	3%	0%	28:35	29:16	29:16	2%	0%	30:12	30:44	30:43	2%	0%
R12 - J14 to J18 (M4)	EB	37:34	38:17	38:17	2%	0%	36:26	36:58	36:58	1%	0%	36:30	37:05	37:05	2%	0%
	WB	36:07	36:36	36:36	1%	0%	36:42	37:26	37:27	2%	0%	37:18	38:09	38:10	2%	0%
R13 - Swindon to Royal Wootton Bassett (A3102)	EB	07:17	06:45	06:46	-7%	0%	06:56	06:31	06:31	-6%	0%	07:06	06:43	06:43	-5%	0%
	WB	07:27	07:31	07:31	1%	0%	07:16	07:18	07:18	0%	0%	07:31	07:41	07:41	2%	0%
R14 - Malmesbruy to Royal Wootton Bassett (B4042)	EB	14:22	14:37	14:37	2%	0%	14:20	14:29	14:29	1%	0%	14:30	14:42	14:42	1%	0%
	WB	14:52	15:15	15:15	3%	0%	14:12	14:35	14:34	3%	0%	14:25	14:53	14:53	3%	0%
R1(B) - Melksham to Chippenham (A350) (DS)	NB	20:53	21:33	19:23	3%	-10%	19:46	20:29	18:07	4%	-12%	20:30	21:09	18:39	3%	-12%
	SB	20:52	21:50	19:05	5%	-13%	20:12	21:03	18:41	4%	-11%	20:39	21:58	19:22	6%	-12%

Table I-2 - JT validation routes: 2036

JT route	Direction	AM					IP					PM				
		JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM
		Base	DM	DS			Base	DM	DS			Base	DM	DS		
R1(A) - Warminster to Melksham (A350)	NB	26:54	28:43	28:55	7%	1%	26:41	28:55	29:08	8%	1%	27:12	29:45	30:00	9%	1%
	SB	28:17	28:53	29:08	2%	1%	27:27	28:17	28:27	3%	1%	27:50	28:46	29:02	3%	1%
R1(B) - Melksham to Chippenham (A350)	NB	20:53	22:19	21:04	7%	-6%	19:46	21:14	20:16	7%	-5%	20:30	22:05	20:49	8%	-6%
	SB	20:52	22:51	21:53	10%	-4%	20:12	21:50	21:29	8%	-2%	20:39	22:48	21:56	10%	-4%
R1(C) - Chippenham to Malmesbury (A350)	NB	14:02	14:12	14:15	1%	0%	13:18	13:32	13:35	2%	0%	13:29	14:01	14:03	4%	0%
	SB	13:59	16:08	16:20	15%	1%	13:22	13:55	13:58	4%	0%	14:00	14:44	14:51	5%	1%
R2 - Chippenham to Devizes (A432)	NB	35:36	38:19	37:35	8%	-2%	33:43	35:46	35:34	6%	-1%	34:28	37:30	36:35	9%	-2%
	SB	33:32	35:31	34:55	6%	-2%	32:55	34:34	34:24	5%	0%	33:39	36:14	35:19	8%	-3%
R3 - Corsham to Calne (A4)	EB	38:09	39:11	39:06	3%	0%	36:40	37:51	37:46	3%	0%	38:23	39:38	39:34	3%	0%
	WB	37:29	39:38	39:23	6%	-1%	36:06	38:01	37:54	5%	0%	37:14	39:17	39:02	5%	-1%
R4 - A4 to A350 (A365)	EB	10:07	10:06	10:07	0%	0%	09:57	10:02	10:01	1%	0%	10:19	10:22	10:19	1%	-1%
	WB	10:49	11:03	10:53	2%	-2%	10:15	10:23	10:17	1%	-1%	10:24	10:33	10:28	1%	-1%
R5(A) - Cricklade to Calne (A3102)	NB	21:10	22:00	21:28	4%	-2%	20:47	21:08	20:59	2%	-1%	21:13	21:40	21:24	2%	-1%
	SB	21:24	22:05	22:02	3%	0%	21:06	21:40	21:38	3%	0%	21:38	23:17	22:27	8%	-4%
R5(B) - Calne to Melksham (A3102)	NB	29:47	29:57	29:58	1%	0%	28:26	28:59	29:01	2%	0%	28:58	29:44	29:44	3%	0%
	SB	28:37	29:17	29:20	2%	0%	28:13	28:52	28:53	2%	0%	29:34	30:08	30:10	2%	0%
R6 - A36 to Bradford-on-Avon via Trowbridge (A366)	NEB	12:50	13:02	13:03	2%	0%	12:52	13:20	13:20	4%	0%	13:03	13:29	13:30	3%	0%
	SWB	14:02	14:20	14:19	2%	0%	13:53	14:20	14:18	3%	0%	14:05	14:22	14:25	2%	0%
R7 - Trowbridge to Warminster (A361 / A36)	NB	25:07	26:50	26:52	7%	0%	25:00	26:54	26:56	8%	0%	25:29	27:34	27:38	8%	0%
	SB	25:35	27:03	27:03	6%	0%	24:55	26:45	26:48	7%	0%	25:01	26:59	27:05	8%	0%
R8 - Trowbridge to Devizes (A361)	EB	25:00	26:21	26:30	5%	1%	25:06	26:38	26:46	6%	0%	25:40	27:19	27:27	6%	0%
	WB	24:12	25:39	26:05	6%	2%	24:12	26:06	26:20	8%	1%	24:50	26:35	27:06	7%	2%

JT route	Direction	AM					IP					PM				
		JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM
		Base	DM	DS			Base	DM	DS			Base	DM	DS		
R9 - Westbury to A432 (B3098)	EB	25:50	26:21	26:26	2%	0%	25:19	25:44	25:44	2%	0%	25:35	26:00	26:01	2%	0%
	WB	26:03	26:39	26:34	2%	0%	25:44	26:16	26:15	2%	0%	26:20	27:03	26:57	3%	0%
R10 - Swindon to Devizes (A4361)	NB	40:20	40:02	39:55	-1%	0%	38:49	39:03	38:57	1%	0%	40:02	40:27	40:20	1%	0%
	SB	38:34	39:06	38:58	1%	0%	38:38	39:10	39:04	1%	0%	40:47	40:42	40:34	0%	0%
R11 - Cricklade to B3098 (A419 / A346)	NB	29:51	31:22	31:21	5%	0%	29:52	31:48	31:47	6%	0%	30:46	34:16	34:16	11%	0%
	SB	29:10	31:19	31:18	7%	0%	28:35	30:14	30:13	6%	0%	30:12	32:02	32:00	6%	0%
R12 - J14 to J18 (M4)	EB	37:34	39:50	39:50	6%	0%	36:26	38:17	38:18	5%	0%	36:30	38:19	38:20	5%	0%
	WB	36:07	37:39	37:40	4%	0%	36:42	39:05	39:07	7%	0%	37:18	40:02	40:02	7%	0%
R13 - Swindon to Royal Wootton Bassett (A3102)	EB	07:17	06:56	06:56	-5%	0%	06:56	06:42	06:42	-3%	0%	07:06	06:58	06:59	-2%	0%
	WB	07:27	07:45	07:45	4%	0%	07:16	07:31	07:31	3%	0%	07:31	07:56	07:56	6%	0%
R14 - Malmesbruy to Royal Wootton Bassett (B4042)	EB	14:22	14:42	14:42	2%	0%	14:20	14:33	14:32	2%	0%	14:30	14:53	14:53	3%	0%
	WB	14:52	15:22	15:22	3%	0%	14:12	14:43	14:43	4%	0%	14:25	15:04	15:04	5%	0%
R1(B) - Melksham to Chippenham (A350) (DS)	NB	20:53	22:19	20:12	7%	-10%	19:46	21:14	18:55	7%	-11%	20:30	22:05	19:41	8%	-11%
	SB	20:52	22:51	19:59	10%	-13%	20:12	21:50	19:24	8%	-11%	20:39	22:48	20:08	10%	-12%

Table I-3 - JT validation routes: 2051

JT route	Direction	AM					IP					PM				
		JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM
		Base	DM	DS			Base	DM	DS			Base	DM	DS		
R1(A) - Warminster to Melksham (A350)	NB	26:54	29:30	29:46	10%	1%	26:41	30:07	30:22	13%	1%	27:12	31:02	31:17	14%	1%
	SB	28:17	29:33	29:54	4%	1%	27:27	28:48	29:05	5%	1%	27:50	29:23	29:39	6%	1%
R1(B) - Melksham to Chippenham (A350)	NB	20:53	23:28	21:59	12%	-6%	19:46	22:08	20:56	12%	-5%	20:30	23:35	22:04	15%	-6%
	SB	20:52	23:41	22:36	13%	-5%	20:12	22:45	21:56	13%	-4%	20:39	23:41	23:04	15%	-3%
R1(C) - Chippenham to Malmesbury (A350)	NB	14:02	14:41	14:45	5%	0%	13:18	13:47	13:50	4%	0%	13:29	14:36	14:40	8%	0%
	SB	13:59	18:01	18:07	29%	1%	13:22	14:14	14:18	6%	1%	14:00	15:33	15:52	11%	2%
R2 - Chippenham to Devizes (A432)	NB	35:36	39:58	38:55	12%	-3%	33:43	37:28	36:42	11%	-2%	34:28	39:09	38:15	14%	-2%
	SB	33:32	36:52	35:58	10%	-2%	32:55	35:21	35:03	7%	-1%	33:39	37:33	36:20	12%	-3%
R3 - Corsham to Calne (A4)	EB	38:09	40:16	40:12	6%	0%	36:40	38:46	38:44	6%	0%	38:23	40:53	40:52	6%	0%
	WB	37:29	40:44	40:29	9%	-1%	36:06	38:54	38:47	8%	0%	37:14	40:19	40:13	8%	0%
R4 - A4 to A350 (A365)	EB	10:07	10:11	10:11	1%	0%	09:57	10:05	10:04	1%	0%	10:19	10:29	10:26	2%	-1%
	WB	10:49	11:19	11:08	5%	-2%	10:15	10:30	10:25	2%	-1%	10:24	10:42	10:38	3%	-1%
R5(A) - Cricklade to Calne (A3102)	NB	21:10	23:03	21:57	9%	-5%	20:47	21:27	21:18	3%	-1%	21:13	22:37	21:54	7%	-3%
	SB	21:24	22:34	22:34	5%	0%	21:06	22:02	22:02	4%	0%	21:38	24:18	23:24	12%	-4%
R5(B) - Calne to Melksham (A3102)	NB	29:47	30:41	30:42	3%	0%	28:26	29:23	29:25	3%	0%	28:58	30:23	30:25	5%	0%
	SB	28:37	29:56	29:57	5%	0%	28:13	29:21	29:23	4%	0%	29:34	30:36	30:38	3%	0%
R6 - A36 to Bradford-on-Avon via Trowbridge (A366)	NEB	12:50	13:07	13:08	2%	0%	12:52	13:25	13:28	4%	0%	13:03	13:35	13:36	4%	0%
	SWB	14:02	14:30	14:28	3%	0%	13:53	14:29	14:30	4%	0%	14:05	14:24	14:27	2%	0%
R7 - Trowbridge to Warminster (A361 / A36)	NB	25:07	27:44	27:49	10%	0%	25:00	27:35	27:38	10%	0%	25:29	28:36	28:40	12%	0%
	SB	25:35	27:58	28:02	9%	0%	24:55	27:33	27:32	11%	0%	25:01	27:57	28:04	12%	0%
R8 - Trowbridge to Devizes (A361)	EB	25:00	26:49	26:57	7%	1%	25:06	27:12	27:19	8%	0%	25:40	28:03	28:03	9%	0%
	WB	24:12	26:00	26:33	7%	2%	24:12	26:31	26:54	10%	1%	24:50	26:58	27:40	9%	3%

JT route	Direction	AM					IP					PM				
		JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM	JT (mm:ss)			DM-Base	DS-DM
		Base	DM	DS			Base	DM	DS			Base	DM	DS		
R9 - Westbury to A432 (B3098)	EB	25:50	26:58	27:06	4%	0%	25:19	25:58	25:59	3%	0%	25:35	26:17	26:18	3%	0%
	WB	26:03	27:01	26:56	4%	0%	25:44	26:42	26:37	4%	0%	26:20	27:40	27:34	5%	0%
R10 - Swindon to Devizes (A4361)	NB	40:20	40:47	40:27	1%	-1%	38:49	39:29	39:22	2%	0%	40:02	41:18	41:04	3%	-1%
	SB	38:34	39:43	39:33	3%	0%	38:38	39:46	39:34	3%	-1%	40:47	42:07	41:52	3%	-1%
R11 - Cricklade to B3098 (A419 / A346)	NB	29:51	32:32	32:30	9%	0%	29:52	33:19	33:19	12%	0%	30:46	36:14	36:13	18%	0%
	SB	29:10	32:53	32:50	13%	0%	28:35	31:30	31:29	10%	0%	30:12	33:56	33:55	12%	0%
R12 - J14 to J18 (M4)	EB	37:34	41:41	41:42	11%	0%	36:26	39:48	39:49	9%	0%	36:30	39:42	39:43	9%	0%
	WB	36:07	38:57	38:57	8%	0%	36:42	41:12	41:14	12%	0%	37:18	42:20	42:18	13%	0%
R13 - Swindon to Royal Wootton Bassett (A3102)	EB	07:17	07:12	07:12	-1%	0%	06:56	06:51	06:51	-1%	0%	07:06	07:13	07:13	2%	0%
	WB	07:27	08:08	08:08	9%	0%	07:16	07:42	07:41	6%	0%	07:31	08:28	08:28	13%	0%
R14 - Malmesbruy to Royal Wootton Bassett (B4042)	EB	14:22	14:55	14:55	4%	0%	14:20	14:39	14:39	2%	0%	14:30	15:08	15:08	4%	0%
	WB	14:52	15:39	15:39	5%	0%	14:12	14:49	14:49	4%	0%	14:25	15:14	15:14	6%	0%
R1(B) - Melksham to Chippenham (A350) (DS)	NB	20:53	23:28	21:16	12%	-9%	19:46	22:08	19:51	12%	-10%	20:30	23:35	21:07	15%	-10%
	SB	20:52	23:41	20:49	13%	-12%	20:12	22:45	20:04	13%	-12%	20:39	23:41	21:28	15%	-9%

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