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Prepared by:	<b>Lucy Cooper (Principal Consultant)</b>	Date:	<b>23/06/2025</b>
Checked by:	<b>Chris Carter (Regional Director)</b>	Date:	<b>25/06/2025</b>
Approved by:	<b>Chris Carter (Regional Director)</b>	Date:	<b>29/06/2025</b>

## 1. Introduction

This Technical Note (TN) has been prepared as an update to the Stage 7 Modelling Briefing Note (dated November 2023, v5.0) that informed the transport modelling for the previous Regulation 19 submission. It has been further reviewed and updated through discussions with National Highways.

Regulation 18 took place in 2022, and a Regulation 19 Pre-Submission Plan was presented at the Council's Executive Committee on 18<sup>th</sup> October 2023 and consultation on the Pre-submission Plan was undertaken between November 2023 and January 2024.

Although the next stage of plan-making would normally be to submit the plan for examination following Regulation 19 consultation, a decision was made by NSC not to proceed on the basis of this version of the Plan. This decision was influenced by the release of an updated National Planning Policy Framework (NPPF), which included that plans which had reached pre-submission consultation stage before 19 March 2024 would be assessed against the previous version of the NPPF. The decision to re-run Regulation 19 was also in order to respond to issues arising from the consultation and to amend the plan period to 2026-2041.

In December 2024, a further update to the NPPF was released and a significant increase in housing delivery targets was published, with North Somerset seeing its housing requirement increase by a minimum of 8,620 homes. Following this, an additional sites consultation was undertaken in March 2025, and the schedule of proposed additional sites was approved by NSCs Executive Committee in June 2025. A Transport Assessment is now being prepared to inform the Regulation 19 consultation, due to be undertaken in October/November 2025, with an aim to submit the NSC Local Plan to the Secretary of State in December 2025/January 2026.

The purpose of this TN is to provide a brief to inform the various modelling runs required for this stage of the Local Plan development.

Overall as part of the Local Plan, the following strategic Growth Areas are being assessed:

- Womershill (east of Weston-super-Mare);
- Nailsea and Backwell;
- Edge of Bristo, also known as Woodspring; and
- Pill / Easton-in-Gordano.

In addition to the strategic Growth Areas, there are multiple smaller allocations across the District, proposed in line with the Spatial Strategy. The strategic traffic model will directly model sites with 100 or more dwellings by loading them onto the network. Development sites smaller than that level will be accounted for in growth factor parameters.

The modelling runs to inform the Regulation 19 / Examination submission will be:

- **Do Minimum (DM):** this includes any site allocations that have been carried forward from the previous Local Plan, as well as any committed sites and windfall developments. These developments, whilst part of the total development required to be delivered during the plan period, would occur in the absence of the Plan itself. A series of committed transport schemes are included within the DM scenario including the M5 J21 merge scheme, Banwell bypass, N-S link road at

Locking Parkland, Bus Service Improvement Plan (BSIP) schemes, MetroWest, and the A38 junction improvement schemes (MRN);

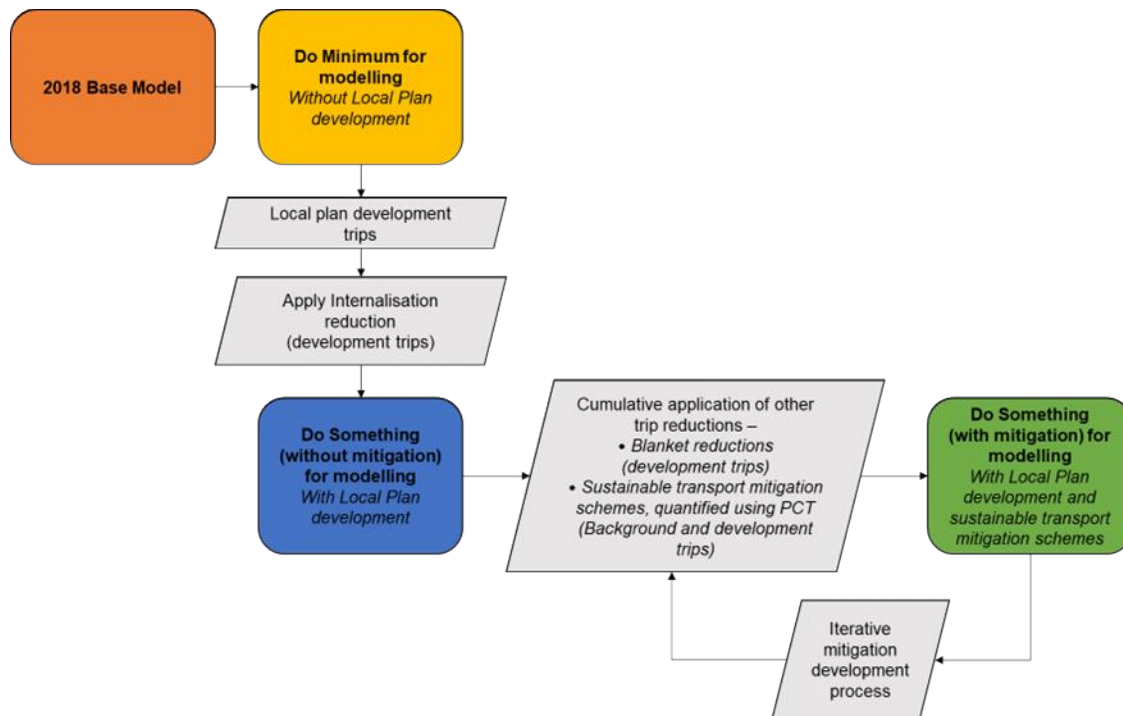
- **Do Something (DS) without Mitigation:** this includes new site allocations to deliver the growth required to meet Local Plan targets. Trip rates for development sites will account for the location of the site and internalisation due to co-location of land uses, notably employment and education. This scenario will not include additional mitigation measures.
- **Do Something (DS) with Mitigation:** this includes new site allocations to deliver the growth required to meet Local Plan targets. This scenario includes mitigation measures identified to help facilitate this growth, most notably a suite of sustainable transport mitigation measures.

It is noted that as part of this process, the PT model will be updated with relevant schemes including BSIP. Timetable benefits resulting from journey time savings directly accrued by BSIP infrastructure will be included in the Do Minimum scenario. The Do Something mitigation will include additional bus service improvements which are not specifically to be delivered as part of the BSIP project, but will, in part, be enabled by BSIP infrastructure and pump priming from development sites as they come forwards.

This TN sets out the pedestrian and cycle schemes identified at this time, and a resulting mode shift associated with them for modelling purposes. As the modelling progresses, additional pedestrian and cycle schemes are likely to be included within the mitigation package and a reasonable mode shift will subsequently be included within the Do Something scenario accordingly.

This TN sets out the modelling parameters for local plan allocations greater than 100 dwellings, including loading points onto the surrounding highway network, number of dwellings to be served by each loading point, and the trip rates to be applied to each growth area. The modelling exercise will review the loading points to ensure that they have sufficient capacity for traffic to enter and exit the wider network. If the strategic modelling process indicates that the loading points set out in this note are insufficient in their current form, additional points will be added or greater capacity afforded to access junctions, with the intention to provide this additional capacity through junction improvements as part of the package of mitigation measures. This may be iterative in some cases.

Trip rates have been calculated for each growth area based on TRICS. This TN subsequently proposes a series of trip rate reductions, resulting from both sustainable transport mitigation measures and internalisation. Trip reductions as a result of public transport mitigation measures will be dealt with by way of the Public Transport model / Variable Demand Model and have therefore not been considered as part of this process. An accompanying spreadsheet sets out the trip reductions per sustainable transport mitigation scheme, and internalisation reductions, on a site-by-site basis and should be referred to in conjunction with this TN. A flow chart demonstrating the order in which different elements of trip reduction calculations will be applied, as well as a brief explanation of the methodology for calculating the scale of these reductions is set out below.



### Do Minimum / Do Something Site Allocations

The proposed site allocations include those which are carried forwards as allocations from the current Local Plan, and sites which are proposed new allocations. Sites have been separated into those which are “committed”, i.e. those which are likely to be delivered in the absence of the Plan, and those which are proposed by the new Local Plan. Committed schemes are allocations that are carried forwards from the previous Local Plan, and sites which are proposed allocations in the new Local Plan, but already benefit from Planning Consent.

The Do Minimum scenario includes those sites that are considered committed, whilst the Do Something scenario includes any new site allocations. Table 1 sets out the residential site allocations of more than 100 dwellings, and whether they are in the DM or DS scenario. Development sites, sites smaller than 100 dwellings are accounted for within growth factor parameters.

**Table 1 Do Minimum (DM) and Do Something (DS) Housing Site Allocations (>100 Dwellings)**

DM Site	DM Capacity	DS Site	DS Capacity
Parklands Village, W-s-M	2,671	Woodspring	3,500
Winterstoke Village, W-s-M	1,229	Wolvershill (north of Banwell)	3,300
Grove Farm	515	Pill Green	600
Youngwood Lane, Nailsea	329	Land east of Backwell Site A, Backwell	500
Locking Road Car Park, W-s-M	230	Land east of Backwell Site B, Backwell	450
North West Nailsea*	150	Former Leisuredome allocation / Parklands Site B (phase E), W-s-M	420
Land west of Winterstoke Road, W-s-M	134	<i>North West Nailsea*</i>	75
Dark Lane, Backwell	125	Wyndham Way Broad Location, Portishead	485
Sunnyside Road, W-s-M	120	Land at Tower Farm	400
Monaghan Mushroom Farm, Stock Lane, Langford	120	Land north of Nailsea	381
		Land north of Banwell Road Locking/Elborough	315
		Land at Barrow Wood A and B	230
		Land north of Colliter's Way, Edge of Bristol	215
		Land east of Gordano Services	200
		Weston Rugby Club, W-s-M	182
		Land at Lodway Farm	160
		Poplar Farm	130
		Dolphin Square	126
		Castlewood, Clevedon	120
		Youngwood Farm, Nailsea	120
		Land at Pill Road	100
		Land off Pound Lane, Nailsea	100
		Black Rock, North of Clevedon Road	100

\*North west Nailsea site is partially consented

Table 2 sets out the employment site allocations, and whether they are in the DM or DS scenario

**Table 2 Do Minimum and Do Something Employment Site Allocations**

Site	Modelling Scenario	Site Area (Ha)
Haywood Village Business Quarter, Weston-Super-Mare	Do Minimum	21.50
West Wick Business Park, Parklands	Do Minimum	12.3
Land to the west of Kenn Road, Clevedon	Do Minimum	9.00
Wolvershill Business Park	Do Something	6.50
Woodspring Business Park	Do Something	4.00
Wyndham Way Development Framework Area (excluding the Gordano Gate allocation)	Do Something	c1.0 (est. 500 jobs, site area TBC)
Summer Lane, North of A370, Weston-Super-Mare	Do Minimum	2.24
Moor Park, A371	Do Minimum	1.23
North Nailsea	Do Something	1.1
Gordano Gate, Portishead	Do Minimum	1.10

Land off Cruikshank Grove, Parklands Village	Do Minimum	0.57
Grumblepill Employment Site, Parklands Village	Do Minimum	0.37
Land off McCrae Road, Parklands Village	Do Minimum	0.12

## Internalisation Reductions:

Secondary School and Employment are the only land uses for which a specific reduction to residential trips is proposed to result in internalisation. To avoid double counting, internalisation factors are applied to residential trips only.

For employment land uses, a threshold of 5 Ha is proposed as a level with the potential to result in a meaningful level of internalisation. A 10% reduction has been used as a standard assumption applied to strategic sites in the planning process.

For secondary education establishments, NTS (National Travel Survey) data relating to the dataset '*Trip start time by trip purpose (Monday to Friday only)*' (NTS Table NTS0502, 2021) shows that 26% of adult trips made are for escort education in the AM Peak, and 3% in the PM peak.

Based on total compulsory education years from Reception to Yr 11, c.42% of children are in secondary rather than primary education. This would mean that c.11% of escort (excluding linked trips) education trips are for secondary children. There is likely to be a higher proportion of trips made for primary education as secondary age children are more likely to travel on their own. Some escort education trips are likely to be by modes other than private car. A robust assumption is therefore that an internalisation factor of 8% can be applied to AM peak trips to reflect the provision of a secondary school on site.

In preparing Transport Assessments, each site will need a more in depth analysis of the site-specific internalisation potential. This will need to be supported by a masterplan which makes internal trips attractive. No PM internalisation factor is applied.

In summary, trip reductions for internalisation have been applied to sites benefiting from the following:

- Employment allocation greater than 5 Ha, considered to be a level with the potential to result in a meaningful level of internalisation. A 10% internalisation reduction has been applied to the AM and PM peak trips; and
- Provision of a, or an adjacent, secondary school, which has been assumed to result in an 8% trip reduction through internalisation in the AM peak. No reduction is proposed for the PM peak period as school trips mostly occur prior to the PM peak.

**Blanket Reductions:** A 10% blanket reduction is proposed in reference to each development. Each development would need to consider how best to achieve this on a site specific basis, but would include masterplanning, LTNs, travel planning, reduced parking levels, car clubs etc. This introduces a strong policy hook for all development to demonstrate additional sustainable transport credentials.

National Highways has requested that this reduction is not applied to trips which would otherwise use the Motorway Network. Trips with an origin or destination outside the modelled area or greater than six miles will not be subject to a blanket reduction. Six miles has been chosen as the shortest distance between motorway junctions in the modelled area, i.e. M5 J20 to M5 J21. Thus these trips are those with the potential to use the Strategic Road Network (SRN).

**Trip Reductions:** these are proposed to represent mode shift away from private car use as a result of sustainable transport mitigation measures to be delivered as part of individual site allocations through the Local Plan. They will be applied to specific journeys to which they benefit, i.e. reductions for a cycle route will be applied to journeys which would benefit from that route. The modelling process enables mode shift from public transport to car, and vice versa, to be modelled. Therefore public transport mitigation is accounted for, and active travel mitigation needs to be input into the model directly.

Within the modelling process, the discounting of trips will be applied within the Highway Assignment Model, to ensure that the mode shift is from car drivers only. In contrast, if trips were to be discounted within the Variable Demand Model, it would include some mode shift from public transport which would be less desirable.

There is no definitive guide to how much mode shift can be achieved by particular schemes, given every scheme and context will inherently be different. Trip rate reductions such as this are based on professional judgment and for discussion and agreement between parties. Extensive engagement has taken place with National Highways and its consultants through this process. To inform this exercise, percentage trip reduction has been calculated for each sustainable transport measure based on the Propensity to Cycle tool (PCT) <sup>1</sup>.

The PCT is a web-based tool applicable to England and Wales for estimating cycling potential down to street level, as well as corresponding health and CO2 benefits. The tool covers both commuting and travel to school behaviours, however for the purpose of its applicability to this TN, only commuting data has been considered, and used as a proxy for all trips in the absence of alternative data sources.

Presented within the PCT are both baseline data and how cycling would change under various scenarios. The scenarios are calculated using a function based on trip distance and hilliness. The “Go Dutch” and “Ebikes” scenarios represent visions of what cycling as a travel mode could look like. Guidance on the parameters surrounding each scenario are provided below:

*“The Go Dutch scenario represents what would happen if English and Welsh people were as likely as Dutch people to cycle a trip of a given distance and level of hilliness. This scenario thereby captures the proportion of commuters that would be expected to cycle if all areas of England and Wales had the same infrastructure and cycling culture as the Netherlands (but retained their hilliness and commute distance patterns). The scenario was generated by taking the route-based baseline propensity to cycle and applying Dutch scaling factors calculated through analysis of the English/Welsh and Dutch National Travel Surveys. The Go Dutch scaling factors comprised two parameters which boost the rate of cycling for each OD pair above the baseline model, with one fixed and one distant dependent term - the latter takes into account the fact that the “Dutch multiplier” is greater for shorter trips compared to longer trips”*

*“The Ebikes scenario models the additional increase in cycling that would be achieved through the widespread uptake of electric cycles (‘ebikes’). This scenario is built as an extension of the Go Dutch scenario, making the further assumption that all cyclists in the Go Dutch scenario own an ebike. It builds on the Go Dutch scenario by applying three additional Ebikes scaling factors to account for the increased willingness of ebike users to cycle long distance, hilly and simultaneously long distance and hilly routes. These scaling factors were generated by analysing the impact of ebike ownership based on the Swiss National Household Travel Survey and the Dutch National Travel Survey, weighted to be representative of English and Welsh commuters”.*

The trip reductions for site allocations within the Local Plan assume that the mitigation measure achieves up to 50% of the difference between the Census 2011 baseline cycling mode share and the ambitious “Go Dutch” scenario for the relevant ward for each local plan allocation. The exception to this is calculations for multi-modal transport hubs, which assumes 50% of the difference between the “Go Dutch” and more ambitious “e-Bikes” scenario will be achieved. The delivery of a multi-modal transport hub will go hand-in-hand with active travel measures (which will in themselves result in a trip reduction); however the multi-modal transport hub will go a stage further in trip reduction. The data used is presented in Table 3 below.

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<sup>1</sup> <https://www.pct.bike>

Trip reductions are presented for both development trips, and also background traffic. Not all sustainable transport mitigation measures will be applicable to background traffic mode shift; however where they are likely to result in a mode shift, the applicable trip types are highlighted.

**Table 3 Propensity To Cycle Tool Cyclist Mode Share Data**

Middle Super Output Area	Area	% Cyclists		
		Census 2011 Baseline	Go Dutch	E-Bikes
North Somerset 001 (E02003065)	Portishead	2%	10%	17%
North Somerset 003 (E02003067)	Portishead	3%	16%	21%
North Somerset 005 (E02003069)	Castlewood	3%	10%	16%
North Somerset 006 (E02003070)	Yanley Lane	5%	12%	18%
North Somerset 006 (E02003070)	North Nailsea	5%	12%	18%
North Somerset 008 (E02003072)	Nailsea West	3%	16%	22%
North Somerset 009 (E02003073)	Nailsea East	3%	14%	20%
North Somerset 011 (E02003075)	Backwell	3%	12%	18%
North Somerset 012 (E02003076)	Yatton	3%	15%	19%
North Somerset 013 (E02003077)	East of Colliter's Way	2%	9%	15%
North Somerset 021 (E02003085)	WsM	6%	35%	37%
North Somerset 022 (E02003086)	WsM	4%	30%	32%
North Somerset 023 (E02003087)	East of Weston	2%	17%	23%
North Somerset 023E (E01014771)	Hutton	2%	22%	28%
North Somerset 026 (E02006845)	East of Weston	2%	21%	25%
North Somerset 027 (E02006846)	Winterstoke Road area	4%	23%	26%

Internalisation reductions will be valid within the Do Something with no mitigation scenario, as well as the with mitigation scenario.

Engagement has been undertaken with National Highways and NSC Highways Development Management (HDM) as part of this preparation for Regulation 19 modelling, to agree these modelling parameters for assessing the Local Plan. This process will seek to reassure stakeholders that the agreed trip reductions are justified and proportionate.

## 2. Covid-19 Assessment

For the North Somerset Local Plan study, the base year of the model is 2018 which is pre-COVID. As indicated in TAG unit M4, there is a need to understand the impact of COVID on traffic flows at a local level compared with TEMPRO forecasted growth and undertake a proportionate forecasting approach if deemed necessary to bring the forecast in line with post-COVID traffic levels before using NTEM.

For this, we have looked at seven permanent ATC sites across North Somerset as well as some locations along the M5 for three months in 2018 (base year) and 2023 (present day), to be compared against each other and against the estimated growth outlined in NTEM. TEMPRO growth for the North Somerset is around 4% over this period (and between 4% and 6% across Somerset, South West England and Great Britain as a whole).

The results show that there is a variable difference in growth between 2018 and 2023 compared with TEMPRO.

Looking at observed traffic flows during this period comparing 2018 and 2023 12-hr flows over a three month period (March to May), on the SRN, observed flows show varying changes between -1% to 4%

over the period comparing annual traffic. Across other routes in North Somerset, change in flow is much more varied. For example with one location (Colliter's Way, SBL) seeing a 5-day increase of around 15% from 2018, whereas the A370 Main Road in Flax Bourton sees a 7-day decrease of around 18% from 2018. A spreadsheet showing these calculations is included at Appendix A.

The data shows that there is no compelling evidence that there is a change in flows due to COVID. Given this, and that economic appraisal is not part of this study, we are recommending that a proportionate response is to undertake no change to the current forecasting process. The data shows that forecasting using NTEM growth factors from 2018 to 2039 without rebasing/reforecasting will not under represent traffic levels on the network and hence will not systematically underestimate the impacts of developments.

### **3. Do Something Assessments**

The following sections set out the modelling requirements for Local Plan allocations to be included within the Do Something modelling runs, including loading points onto the surrounding highway network, level of development to be served by each loading point, and the residential & employment trip rates to be applied to each growth area. The relevant trip reductions through sustainable transport mitigation measures and internalisation are also detailed.

Trip rates have been reviewed since the submission of v5 of this Technical Note in November 2023. This has been done for a number of reasons, including to reflect the passage of time and potential changes to the TRICS database, the age of planning consents that had been used to benchmark, and updates to the NPPF in 2024. The key principles remain the same, in that the TRICS assessments are intended to reflect the accessibility of the development areas, and that trip rates for each area represent the relative accessibility of that area compared with others.

#### **Wolvershill**

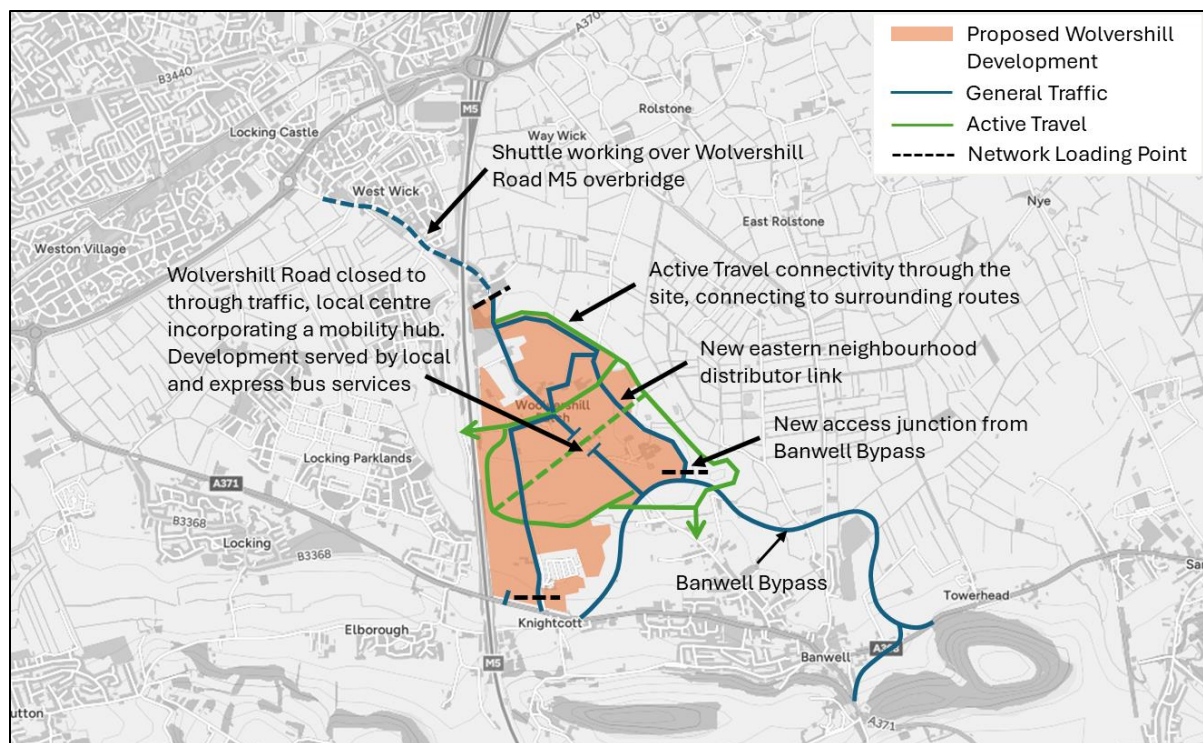
The Wolvershill strategic growth allocation (Local Plan policy LP1) is for 3,300 dwellings and 6.5 Ha employment allocation. The employment allocation is anticipated to comprise 50% office use, 25% general industrial land use, and 25% storage or distribution land use.

The network loading points will be Wolvershill Road, Summer Lane, and Banwell Bypass east of Wolvershill.

For the purposes of this assessment, the quantum of development using each of the network loading points will be assumed to be evenly split between Summer Lane and Banwell Bypass east at this stage (c. 1100 dwellings per loading point).



**Figure 1 Highway Network Loading Points – East of Weston-super**



### **Trip Rates**

The residential trip rates associated with the Wolverhampton strategic growth area are presented below in Table 4. Multi-modal trip rates have been extracted from the TRICS database for weekday mixed private/affordable housing sites based on location type 'Neighbourhood Centre (PPS6 Local Centre)'.

**Table 4 Residential Trip Rates – Wolverhampton**

Time Period	Trip Rate Per Dwelling								
	People			Vehicles			Public Transport Users		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
AM Peak (08:00-09:00)	0.224	0.879	1.103	0.125	0.335	0.460	0.000	0.034	0.034
Interpeak (AVG 10:00-16:00)	0.293	0.248	0.541	0.150	0.151	0.301	0.007	0.004	0.010
PM Peak (17:00-18:00)	0.606	0.279	0.885	0.341	0.151	0.492	0.022	0.012	0.034

The employment multi-modal trip rates for the Wolverhampton growth area have been established based on data available in the TRICS national database. Trip rates have been derived for B1 (Employment, Office), B2 (Employment, Industrial Estate) and B8 (Employment, Warehousing) based on location types 'Suburban Area (PPS6 Out of Centre)', 'Edge of Town' and 'Neighbourhood Centre'.

**Table 5 Employment Trip Rates – Wolverhill**

Land Use	Time Period	Trip Rate Per 100sqm								
		People			Vehicles			Public Transport Users		
		Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
B1 (Employment - Office)	AM Peak (08:00-09:00)	1.364	0.199	1.563	0.899	0.199	1.088	0.184	0.000	0.184
	Interpeak (AVG 10:00-16:00)	0.434	0.464	0.898	0.305	0.305	0.610	0.004	0.015	0.019
	PM Peak (17:00-18:00)	0.230	1.241	1.471	0.245	0.996	1.241	0.000	0.123	0.123
B2 (Employment – Industrial Estate)	AM Peak (08:00-09:00)	0.559	0.115	0.674	0.382	0.097	0.479	0.031	0.000	0.031
	Interpeak (AVG 10:00-16:00)	0.222	0.255	0.477	0.160	0.178	0.338	0.222	0.255	0.477
	PM Peak (17:00-18:00)	0.121	0.584	0.705	0.088	0.389	0.477	0.001	0.019	0.020
B8 (Employment - Warehousing)	AM Peak (08:00-09:00)	0.051	0.017	0.068	0.038	0.017	0.055	0.002	0.000	0.002
	Interpeak (AVG 10:00-16:00)	0.019	0.023	0.042	0.015	0.020	0.036	0.001	0.001	0.002
	PM Peak (17:00-18:00)	0.015	0.035	0.050	0.014	0.025	0.039	0.000	0.002	0.002

Table 6, Table 7 and Table 8 present the proposed trip reductions for the Wolverhill strategic growth allocation in terms of internalisation, background trips, and sustainable transport mitigation measures for development trips. Full details of the trip reductions can be seen at Appendix B (full spreadsheet).

**Table 6 Wolverhill Trip Reductions – Residential Trip Internalisation**

Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Internalisation Factor	Trip Reduction – AM Peak (%)	Trip Reduction – PM Peak (%)
Wolverhill	3,300	6.5	Employment > 5 Ha	10%	10%
			Education (Winterstoke Hundred)	8%	0%

**Table 7 Wolverhill Trip Reductions – Background Mode Shift**

Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Sustainable Transport Mitigation Measure	Trip O-D	Trip Reduction – (%)
Wolverhill	3,300	6.5	Walking and Cycling improvements - Closure of WR.	Trips between Worle and Banwell.	8%
			Walking and Cycling improvements to station.	Trips within 2km radius of any Worle line station.	8%

**Table 8 Wolverhill Trip Reductions – Development Trips**

Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Sustainable Transport Mitigation Measure	Trip O-D	Trip Reduction – (%)
Wolverhill	3,300	6.5	Walking and Cycling improvements - Closure of WR.	Trips between Worle and Banwell.	8%
			Walking and Cycling improvements to station.	Trips within 2km radius of any Worle line station.	8%

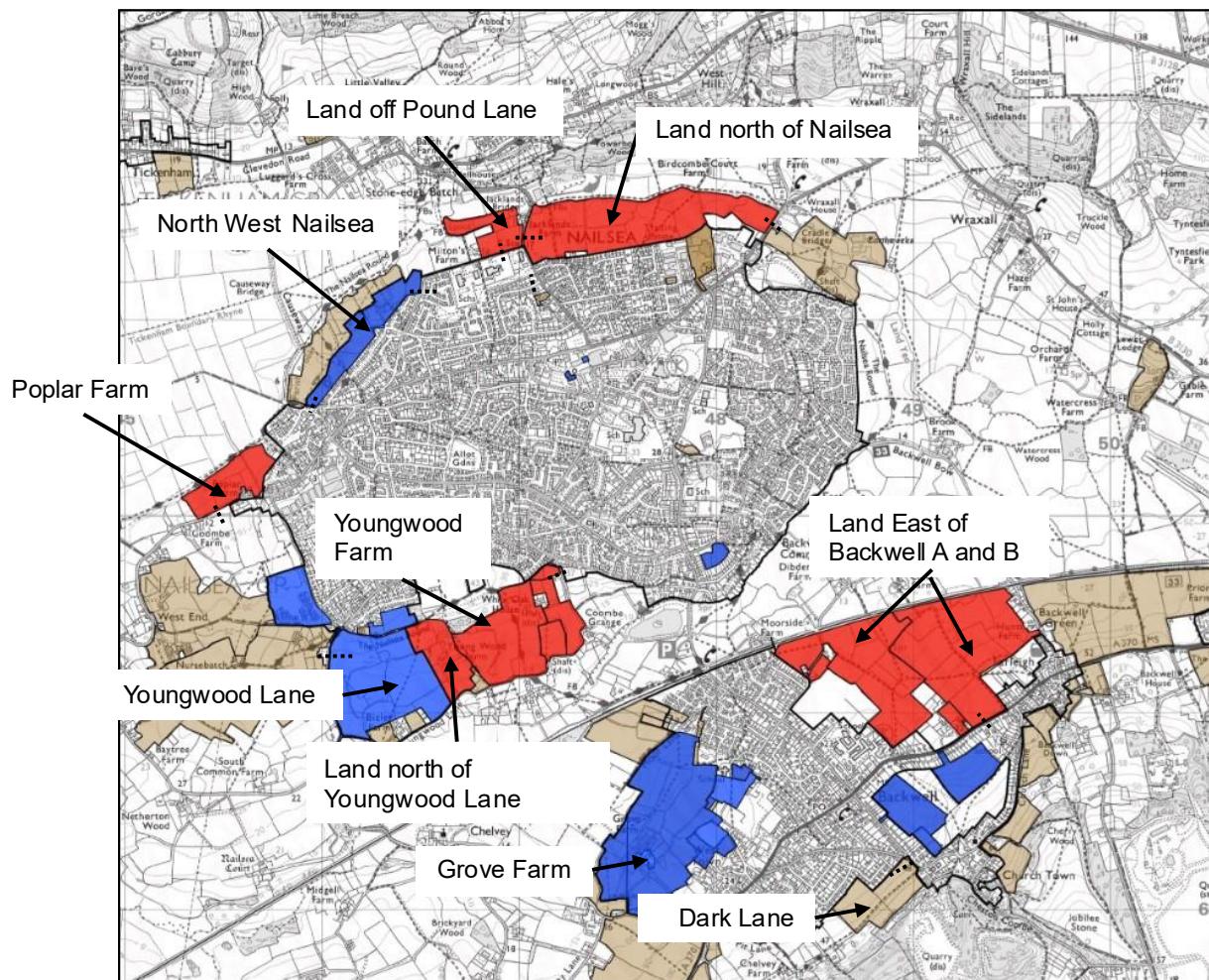
## **Nailsea and Backwell**

The development quantum and loading points onto the highway network for Nailsea and Backwell sites are detailed in Table 9.

**Table 9 Loading Points and No. Dwellings – Nailsea & Backwell**

Site	Network Loading Point	No. Dwellings	Employment Allocation (Ha)
Land north of Nailsea	B3130 Clevedon Road	381	0
Land off Pound Lane, Nailsea	Pound Lane	100	0
Poplar Farm, Nailsea	West End Lane	130	0
Youngwood Farm, Nailsea	The Perrings	120	0
Land north of Youngwood Lane, Nailsea	The Perrings	316	0
Land east of Backwell Site A, Backwell	A370	500	5.0
Land east of Backwell Site B, Backwell	A370	450	0
Youngwood Lane	Netherton Wood Lane	329	0
North West Nailsea	Pound Lane	225	1.1
Grove Farm	A370	515	0
Dark Lane, Backwell	Dark Lane	125	0

**Figure 2 Highway Network Loading Points – Nailsea & Backwell (sites >100 dwellings)**



### Trip Rate

The residential trip rates associated with the 'Nailsea and Backwell' area are presented below in Table 10. Trip rates have been derived from the TRICS database for 'Edge of Town/Suburban' sites.

**Table 10 Trip Rates – Nailsea & Backwell**

Time Period	Trip Rate Per Dwelling								
	People			Vehicles			Public Transport Users		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
AM Peak (08:00-09:00)	0.243	0.890	1.133	0.135	0.346	0.481	0.010	0.018	0.028
Interpeak (AVG 10:00-16:00)	0.366	0.316	0.681	0.175	0.180	0.354	0.012	0.013	0.026
PM Peak (17:00-18:00)	0.634	0.311	0.945	0.338	0.153	0.491	0.015	0.008	0.023

The employment multi-modal trip rates for the Nailsea and Backwell growth area have been established based on data available in the TRICS national database. Trip rates have been derived for B1

(Employment, Office), B2 (Employment, Industrial Estate) and B8 (Employment, Warehousing) based on location types 'Suburban Area (PPS6 Out of Centre)', 'Edge of Town' and 'Neighbourhood Centre'.

**Table 11 Employment Trip Rates – Nailsea & Backwell**

Land Use	Time Period	Trip Rate Per 100sqm								
		People			Vehicles			Public Transport Users		
		Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
B1 (Employment - Office)	AM Peak (08:00-09:00)	1.364	0.199	1.563	0.899	0.199	1.088	0.184	0.000	0.184
	Interpeak (AVG 10:00-16:00)	0.434	0.464	0.898	0.305	0.305	0.610	0.004	0.015	0.019
	PM Peak (17:00-18:00)	0.230	1.241	1.471	0.245	0.996	1.241	0.000	0.123	0.123
B2 (Employment – Industrial Estate)	AM Peak (08:00-09:00)	0.559	0.115	0.674	0.382	0.097	0.479	0.031	0.000	0.031
	Interpeak (AVG 10:00-16:00)	0.222	0.255	0.477	0.160	0.178	0.338	0.222	0.255	0.477
	PM Peak (17:00-18:00)	0.121	0.584	0.705	0.088	0.389	0.477	0.001	0.019	0.020
B8 (Employment - Warehousing)	AM Peak (08:00-09:00)	0.051	0.017	0.068	0.038	0.017	0.055	0.002	0.000	0.002
	Interpeak (AVG 10:00-16:00)	0.019	0.023	0.042	0.015	0.020	0.036	0.001	0.001	0.002
	PM Peak (17:00-18:00)	0.015	0.035	0.050	0.014	0.025	0.039	0.000	0.002	0.002

For the purposes of this assessment, no internalisation has been applied to Nailsea and Backwell sites. This provides a robust assessment; however it is noted that the Land east of Backwell site provides employment provision which falls just under the threshold for internalisation, and that the Land east of Backwell A and B sites are located within close proximity of Backwell School (secondary) and as such an element of internalisation would likely be realised.

Table 12 and Table 13 present the proposed trip reductions for Nailsea and Backwell sites in terms of internalisation, background trips, and sustainable transport mitigation measures for development trips. Due to the schemes being located across multiple LSOAs, background mode shift has been set to the lowest trip reduction values across the Nailsea and Backwell LSOAs to ensure a robust assessment. Full details of the trip reductions can be seen at Appendix B (full spreadsheet).

Table 12 Nailsea and Backwell Trip Reductions – Background Mode Shift

Sustainable Transport Mitigation Measure	Trip O-D	Trip Reduction – (%)
Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	4%
Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	2%

Table 13 Nailsea and Backwell Trip Reductions – Development Trips

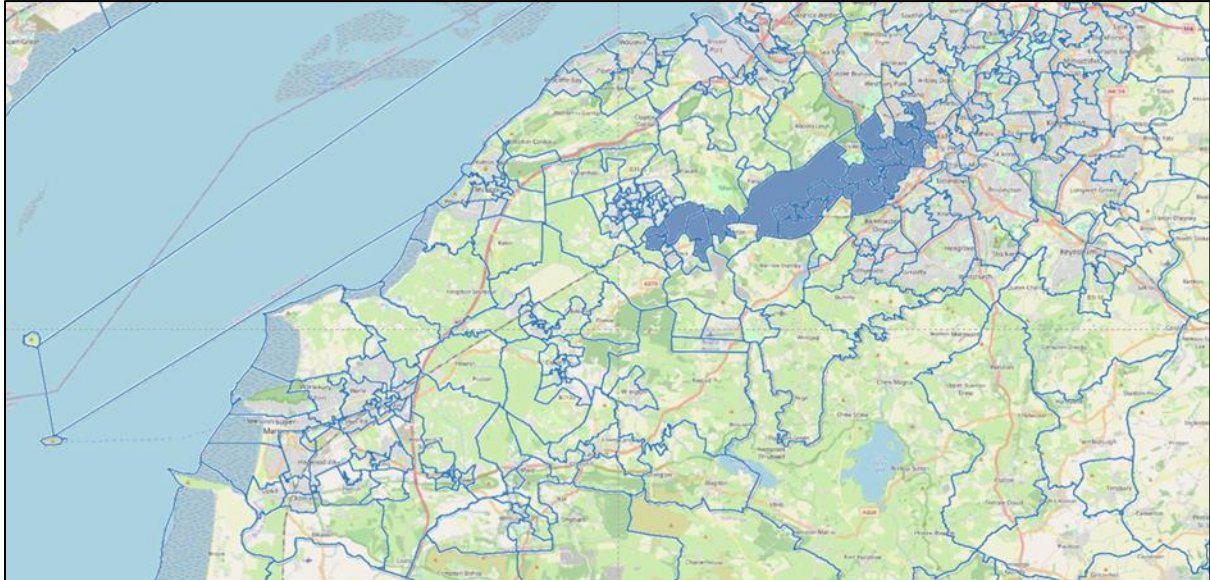
Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Trip Type	Trip O-D	Trip Reduction – (%)
Land north of Nailsea	381	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	4%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	2%
Land off Pound Lane, Nailsea	100	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	7%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	4%
Poplar Farm, Nailsea	130	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	7%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	4%
Youngwood Farm, Nailsea	120	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	6%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	4%
Land north of Youngwood Lane, Nailsea	316	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	6%
			Delivery of walking and cycling measures	Trips within 2km radius site, and trips	4%



			within N&B Transport Strategy	within 2km radius of any N&B line station.	
Land east of Backwell Site A, Backwell	500	5	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	5%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	3%
Land east of Backwell Site B, Backwell	450	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	5%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	3%
Youngwood Lane	329	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	7%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	4%
North West Nailsea	225	1.1	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	7%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	4%
Grove Farm	515	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	5%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	3%
Dark Lane, Backwell	381	0	Improvements to public transport along A370 corridor	N/A	N/A
			Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.	5%
			Delivery of walking and cycling measures within N&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.	3%

**Figure 3** shows the zones, highlighted in blue, within which a trip reduction will be applied as set out in Table 12 and Table 13. Development trips with a destination within the zones identified will benefit from a trip reduction. This includes trips along Festival Way between Nailsea & Backwell, Long Ashton and Bristol, and the adjoining zones on the south western area of Bristol.

**Figure 3 Festival Way Trip Reduction Destination Zones**



## Edge of Bristol

Within the Edge of Bristol area, Woodspring and Land at Barrow Wood (A and B) are presented as local plan allocations. The loading points for these sites are detailed in Table 14. There is a proposed employment allocation as part of the Woodspring allocation.

**Table 14 Loading Points and No. Dwellings – Edge of Bristol**

Site	Network Loading Point	No. Dwellings	Employment Allocation (Ha)
Woodspring	A4174 S Bristol Link Road / Colliters Way / A38 Bridgwater Road (even split)	3,500	4.0
Land at Barrow Wood A and B	A4174 S Bristol Link Road / Colliters Way / A38 Bridgwater Road (even split)	A: 85 B: 145	0



The trip rates associated with the Edge of Bristol sites are presented below in Table 15. This is for weekday mixed private/affordable housing sites based on location type 'Neighbourhood Centre (PPS6 Local Centre)'.

Time Period	Trip Rate Per Dwelling								
	People			Vehicles			Public Transport Users		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
AM Peak (08:00-09:00)	0.224	0.879	1.103	0.125	0.335	0.460	0.000	0.034	0.034
Interpeak (AVG 10:00-16:00)	0.293	0.248	0.541	0.150	0.151	0.301	0.007	0.004	0.010
PM Peak (17:00-18:00)	0.606	0.279	0.885	0.341	0.151	0.492	0.022	0.012	0.034

The employment multi-modal trip rates for the Edge of Bristol growth area have been established based on data available in the TRICS national database, and are shown in Table 16. Trip rates have been derived for B1 (Employment, Office), B2 (Employment, Industrial Estate) and B8 (Employment, Warehousing) based on location types 'Suburban Area (PPS6 Out of Centre)', 'Edge of Town' and 'Neighbourhood Centre'.

**Table 16 Employment Trip Rates – Edge of Bristol**

Land Use	Time Period	Trip Rate Per 100sqm								
		People			Vehicles			Public Transport Users		
		Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
B1 (Employment - Office)	AM Peak (08:00-09:00)	1.364	0.199	1.563	0.899	0.199	1.088	0.184	0.000	0.184
	Interpeak (AVG 10:00-16:00)	0.434	0.464	0.898	0.305	0.305	0.610	0.004	0.015	0.019
	PM Peak (17:00-18:00)	0.230	1.241	1.471	0.245	0.996	1.241	0.000	0.123	0.123
B2 (Employment – Industrial Estate)	AM Peak (08:00-09:00)	0.559	0.115	0.674	0.382	0.097	0.479	0.031	0.000	0.031
	Interpeak (AVG 10:00-16:00)	0.222	0.255	0.477	0.160	0.178	0.338	0.222	0.255	0.477
	PM Peak (17:00-18:00)	0.121	0.584	0.705	0.088	0.389	0.477	0.001	0.019	0.020
B8 (Employment - Warehousing)	AM Peak (08:00-09:00)	0.051	0.017	0.068	0.038	0.017	0.055	0.002	0.000	0.002
	Interpeak (AVG 10:00-16:00)	0.019	0.023	0.042	0.015	0.020	0.036	0.001	0.001	0.002
	PM Peak (17:00-18:00)	0.015	0.035	0.050	0.014	0.025	0.039	0.000	0.002	0.002

There are no specific trip reductions to be applied for the Edge of Bristol site allocations.

A potential park & ride is included within JLTP4 which would provide benefits to all Edge of Bristol sites; however it is understood that this is not being actively progressed and therefore has not been included in terms of trip reductions.

### **Pill / Easton-in-Gordano**

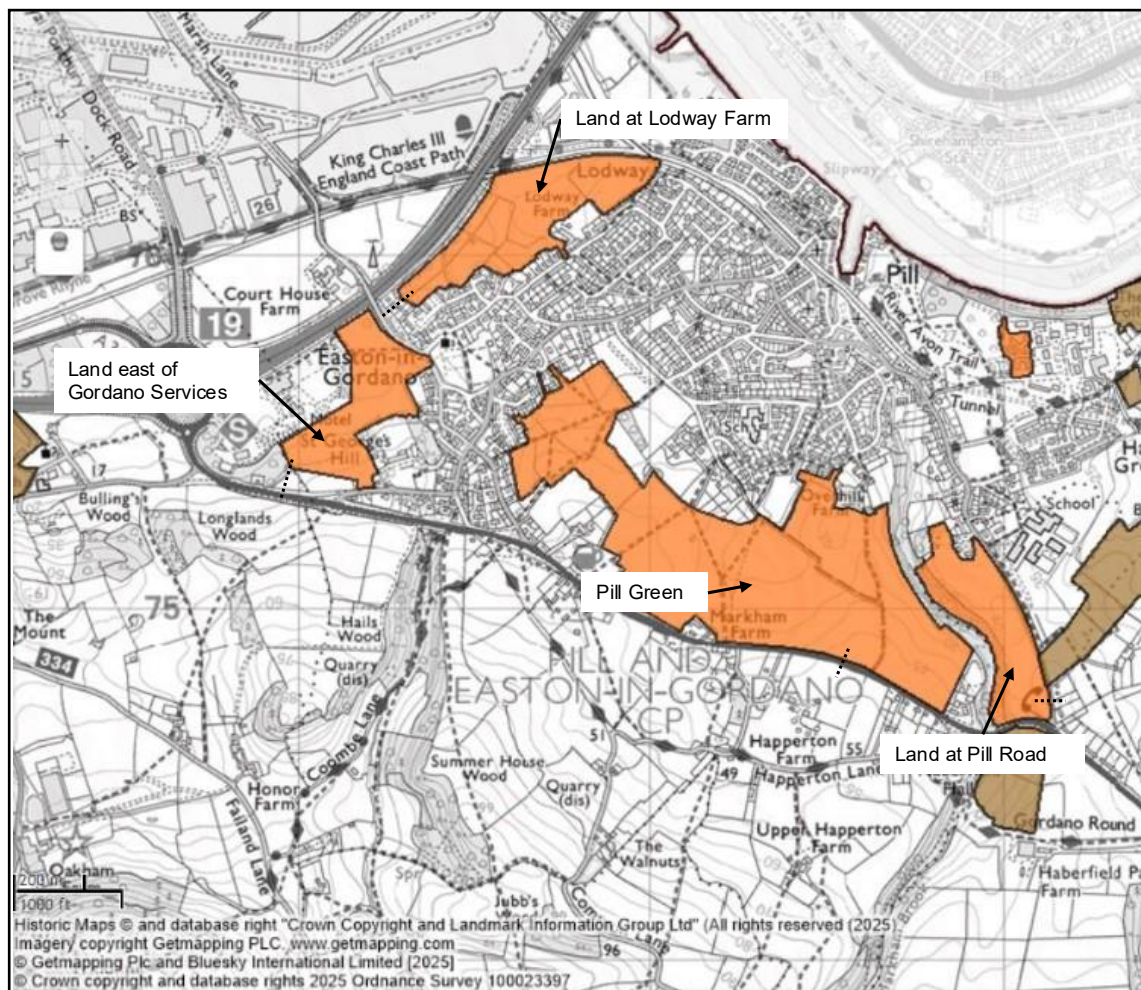
The Pill / Easton-in-Gordano strategic growth allocation is for 1,100 dwellings across five local plan site allocations, four of which are greater than 100 dwellings.

The development quantum and loading point of sites >100 dwellings onto the highway network are detailed in Table 17.

**Table 17 Loading Points and No. Dwellings – Pill / Easton-in-Gordano**

Site	Network Loading Point	No. Dwellings	Employment Allocation (Ha)
Land at Lodway Farm	Marsh Lane	160	0
Land east of Gordano Services	A4369 Martcombe Road	200	0
Pill Green	A4369 Martcombe Road	600	0
Land at Pill Road	Pill Road	100	0

**Figure 5 Highway Network Loading Points – Pill / Easton-in-Gordano (sites >100 dwellings)**



### **Trip Rates**

The residential trip rates associated with the Pill / Easton-in-Gordano strategic growth area are presented below in Table 4. Multi-modal trip rates have been extracted from the TRICS database for weekday mixed private/affordable housing sites based on location type 'Neighbourhood Centre (PPS6 Local Centre)'.

**Table 18 Residential Trip Rates – Pill / Easton-in-Gordano**

Time Period	Trip Rate Per Dwelling								
	People			Vehicles			Public Transport Users		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
AM Peak (08:00-09:00)	0.243	0.890	1.133	0.135	0.346	0.481	0.010	0.018	0.028
Interpeak (AVG 10:00-16:00)	0.366	0.316	0.681	0.175	0.180	0.354	0.012	0.013	0.026
PM Peak (17:00-18:00)	0.634	0.311	0.945	0.338	0.153	0.491	0.015	0.008	0.023

There are no specific trip reductions to be applied for the Pill / Easton-in-Gordano site allocations, albeit proximity to St Catherine's Secondary School and employment areas such as Royal Portbury Docks and Ham Green Business Park, will be a benefit.

### **Other Sites**

Local Plan allocations of 100 dwellings or more will use the trip rates set out below, and will be loaded onto specific points. The sites have been divided based on their location in relation to their surroundings.

Table 19 lists the Do Something scenario site allocations, development quantum and network loading point for those in location type town centre / edge of town centre. The associated trip rates are presented below in Table 20. This is for weekday mixed private/affordable housing.

**Table 19 Dwelling Location Information – Other Sites - Town Centre / Edge of Town Centre**

Area	Dwelling Location (i.e. existing / new zone)	Network Loading Point	No. Dwellings
Portishead	Land at Tower Farm	St Mary's Road	400
Portishead	Wyndham Way Broad Location	Old Mill Road	485
WsM	Weston Rugby Club	Sunnyside Road North	182
WsM	Dolphin Square	A370 Beach Road	126
Portishead	Black Rock, North of Clevedon Road	B3124 Clevedon Road	100

**Table 20 Residential Trip Rates - Town Centre / Edge of Town Centre**

Time Period	Trip Rate Per Dwelling								
	People			Vehicles			Public Transport Users		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
AM Peak (08:00-09:00)	0.153	0.828	0.981	0.098	0.330	0.428	0.008	0.067	0.075
Interpeak (AVG 10:00-16:00)	0.272	0.229	0.501	0.125	0.113	0.238	0.014	0.012	0.026
PM Peak (17:00-18:00)	0.538	0.261	0.799	0.271	0.135	0.406	0.048	0.006	0.054

Table 21 lists the Do Something scenario site allocations, development quantum and network loading point for those in location type edge of town / suburban. The associated trip rates associated are presented below in Table 22. This is for weekday mixed private/affordable housing.

**Table 21 Dwelling Location Information – Other Sites – Edge of Town / Suburban**

Area	Dwelling Location (i.e. existing / new zone)	Network Loading Point	No. Dwellings
Clevedon	Castlewood	Tickenham Road	120
WsM	Former Leisuredome Allocation / Parklands B Site	A371	420
WsM	Land north of Banwell Road Locking/Elborough	Banwell Road	315
Langford	Monaghan Mushroom Farm	B3133 Stock Lane	120

**Table 22 Residential Trip Rates – Edge of Town / Suburban**

Time Period	Trip Rate Per Dwelling								
	People			Vehicles			Public Transport Users		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
AM Peak (08:00-09:00)	0.243	0.890	1.133	0.135	0.346	0.481	0.010	0.018	0.028
Interpeak (AVG 10:00-16:00)	0.366	0.316	0.681	0.175	0.180	0.354	0.012	0.013	0.026
PM Peak (17:00-18:00)	0.634	0.311	0.945	0.338	0.153	0.491	0.015	0.008	0.023

Table 23, Table 24 and Table 25 present the proposed trip reductions for other site allocations greater than 100 dwellings in terms of sustainable transport mitigation measures for development trips and background trips, and internalisation. Full details of the trip reductions can be seen at Appendix B (full spreadsheet).

**Table 23 Other Site Trip Reductions – Development Trips**

Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Sustainable Transport Mitigation Measure	Trip O-D	Trip Reduction – (%)
Weston Rugby Club	182	0	Active travel improvements - primarily internal and between adjacent sites	Trips within 5km radius of site.	15%
Castlewood	120	0			
Wyndham Way Broad Location	485	0	New linkages to contribute to wider active travel network between Wyndham Way and the marina, Old Mill Road and The Precinct, between new rail station, Harbour Road and Old Mill Road, and between North Bridge and Brampton Way.	Trips within 5km radius of site.	5%

**Table 24 Other Site Trip Reductions – Background Mode Shift**

Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Sustainable Transport Mitigation Measure	Trip O-D	Trip Reduction – (%)
Land West of Winterstoke Road	134	0	Improvements to Winterstoke Road cyclepath, widening and priority.	Trips within 5km radius of site.	15%
			Contribution to Broadway roundabout improvements, including active travel provision.	Trips within 5km radius of site.	15%
Wyndham Way Broad Location	485	0	New linkages to contribute to wider active travel network between Wyndham Way and the marina, Old Mill Road and The Precinct, between new rail station, Harbour Road and Old Mill Road, and between North Bridge and Brampton Way.	Trips within 5km radius of site.	5%

**Table 25 Other Site Trip Reductions – Internalisation**

Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)	Internalisation Trigger	Trip Reduction – AM Peak (%)	Trip Reduction – AM Peak (%)
None triggered					

#### 4. Summary

This TN has set out key information required to progress the Regulation 19 phase of the strategic SATURN models to understand the potential impact of local plan allocations. This takes into account trip reductions resulting from proposed sustainable transport mitigation measures, applicable to both development trips and background mode shift, as well as trip reductions as a result of internalisation through employment land and secondary school provision as part of the local plan allocations.

This TN presents a starting point, and will evolve with more sustainable transport schemes if required through an iterative modelling and re-assessment process.

## **Appendix A**

Worksheet	Comments
<a href="#">M5 Analysis &gt; &gt;</a>	
<a href="#">WebTris Analysis</a>	Analysis of Webtris counts on the M5 in North Somerset. 24hr average daily traffic per month for the years 2018 and 2023 for five separate count locations.
<a href="#">North Somerset Analysis &gt; &gt;</a>	
<a href="#">12hr Daily Trips Analysis</a>	12hr (0700-1900) daily trips for each site between 26th February to 3rd June 2018, and 27th February to 4th June 2023 where data were available. Included is expected Temprow growth from 2018 to 2023.
<a href="#">Neutral Day Hourly Avg Graphs</a>	Graphs of the neutral day average hourly traffic for the seven ATC sites for 2018 and 2023, with the expected Temprow growth from 2018 to 2023.
<a href="#">12Hr Daily Trips Graphs</a>	Graphs of 12hr (0700-1900) daily trips for each site between 26th February to 3rd June 2018, and 27th February to 4th June 2023 where data were available. Included is expected Temprow growth from 2018 to 2023.
<a href="#">Temprow Factors &gt; &gt;</a>	
<a href="#">TemprowV8 Growth Factors</a>	Temprow Growth Factors for each time period for North Somerset, Somerset, South West and Great Britain.

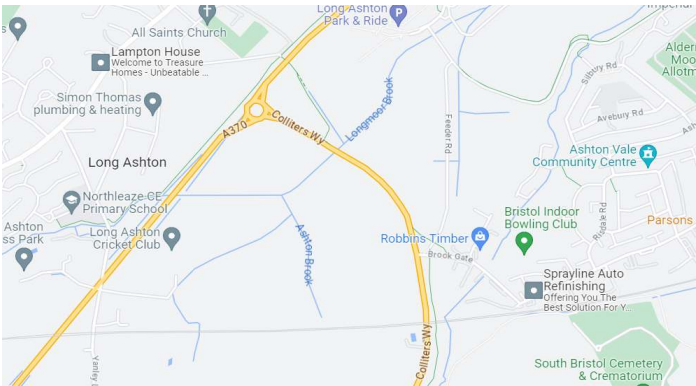
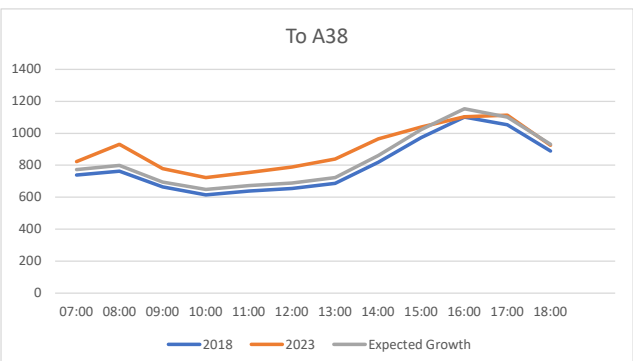
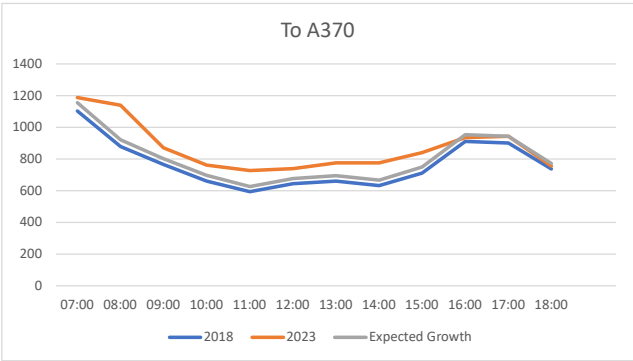


	M5 Southbound J19 to J20		M5 Northbound J21 Exit		M5 Northbound J21 Thru Junction		M5 Southbound J20 Thru Junction		M5 Northbound J19 Thru Junction		
	24hr ADT		24hr ADT		24hr ADT		24hr ADT		24hr ADT		
Year	2018	2023	2018	2023	2018	2023	2018	2023	2018	2023	
Month											
Jan	42123	41284	4223	4148	27358	26601	37817	34922	36614	35645	
Feb	46858	45989	4428	4562	30818	30158	40158	40018	40058	39665	
Mar	45621	48794	4269	4618	29475	30791	39532	40832	38047	39293	
Apr	50398	50561	4625	4563	36044	34850	43633	44944	45271	43696	
May	53164	52694	4696	4794	36722	35643	46715	47783	46351	46653	
Jun	55052	55035	4750	4991	38686	39794	47536	48490	48280	50686	
Jul	57463	55752	4771	4839	40384	38897	50183	47661	49831	48643	
Aug	58912		4671	4811	44488	42626	52558	52224	53484	51580	
Sep	52609		4686	4830	38480	37907	45992	46672	47449	48054	
Oct	51353		4670		35407		44514		44900		
Nov	40140		4511		32542		41085		42212		
Dec	0		4004		29558		36036		38346		
Avg	50335.72727	50015.57143	4525.333333	4684	34996	35251	43813	44838	44236	44879	
Obs Growth	-1%		4%		1%		2%		1%		
TEMPRO (GB)						4.4%					
TEMPRO (SW)						5.0%					
TEMPRO (Somerset)						5.1%					
TEMPRO (North Somerset)						4.9%					

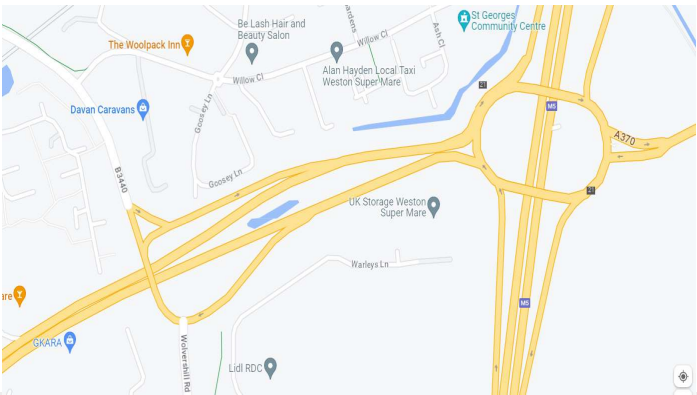
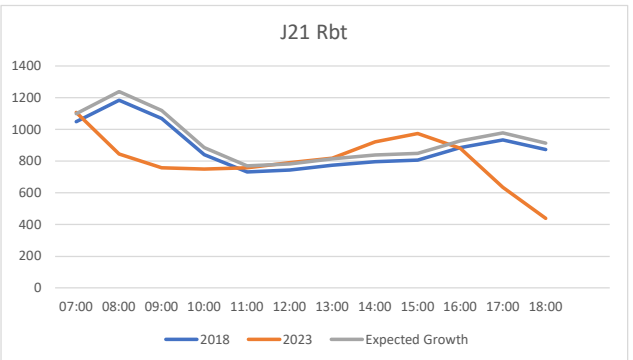
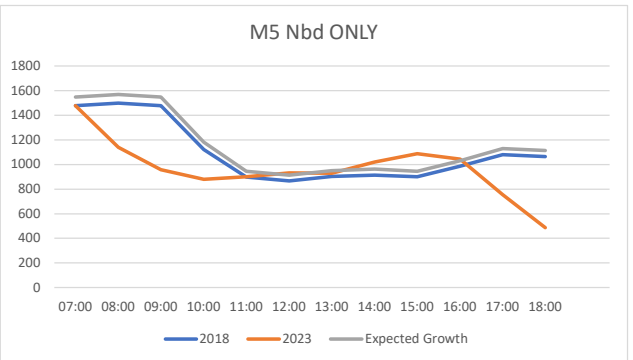


Neutral Day Hourly Average Trips

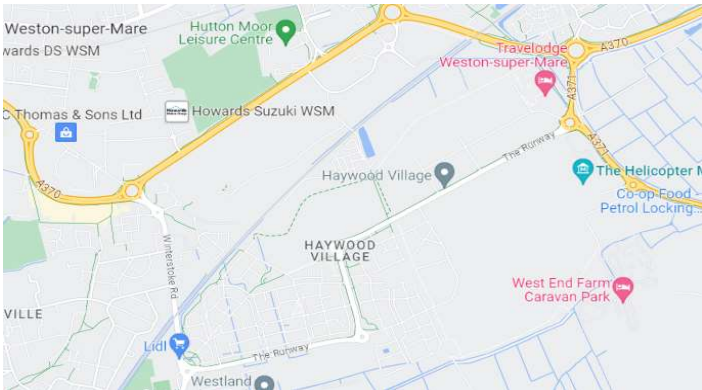
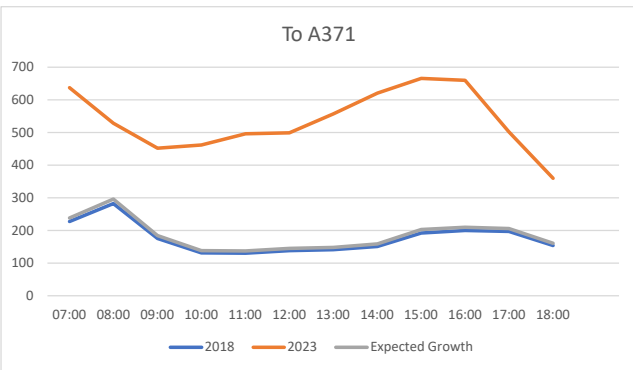
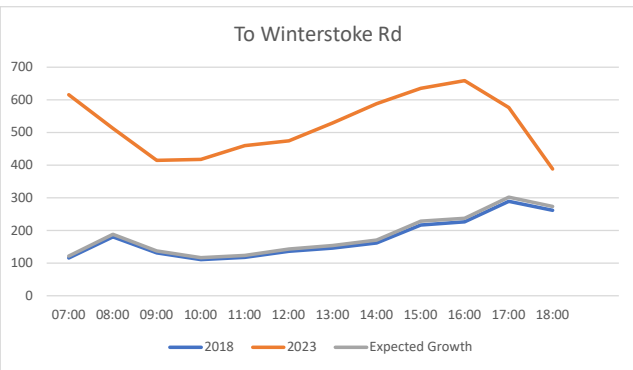
A4174 - South of Gurney Roundabout



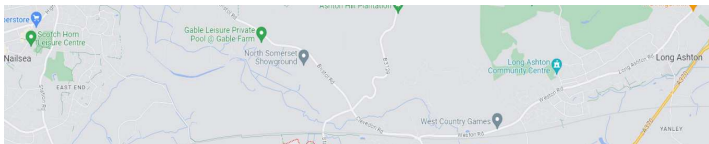
A370 Somerset Ave e/o B3440 Merge

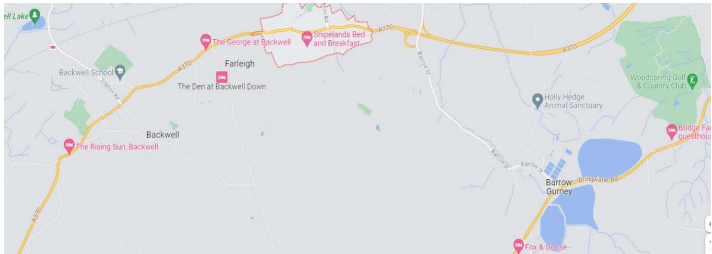
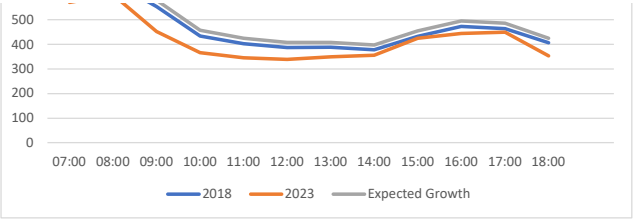
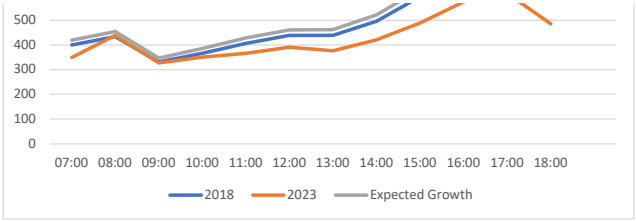


The Runway, west of A371 Locking Moor

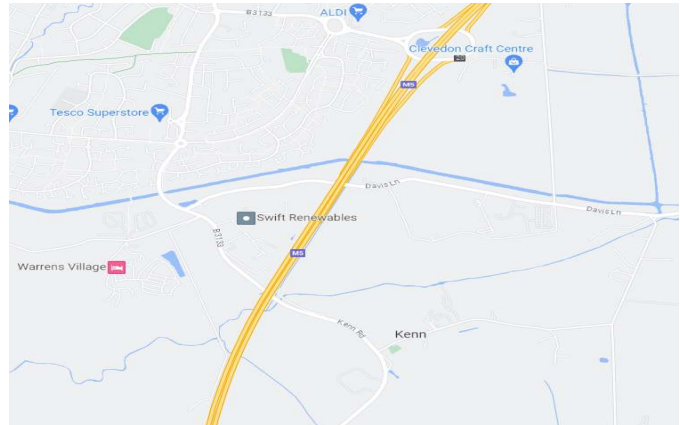
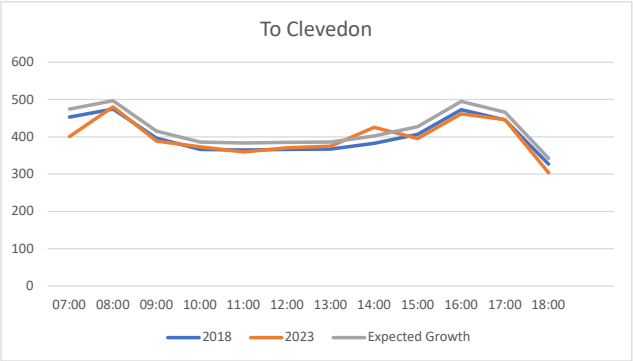
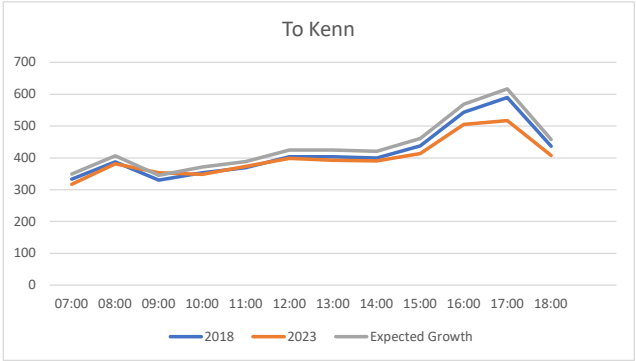


A370 Main Road e/o B3129 Station Road Flax Bourton

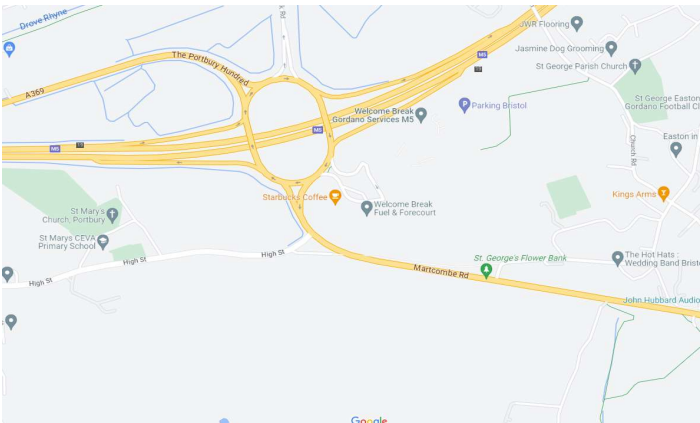
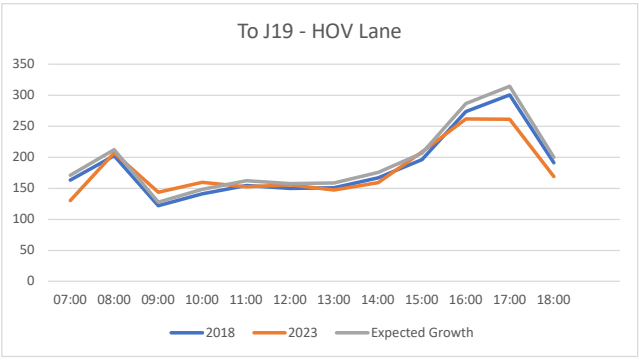
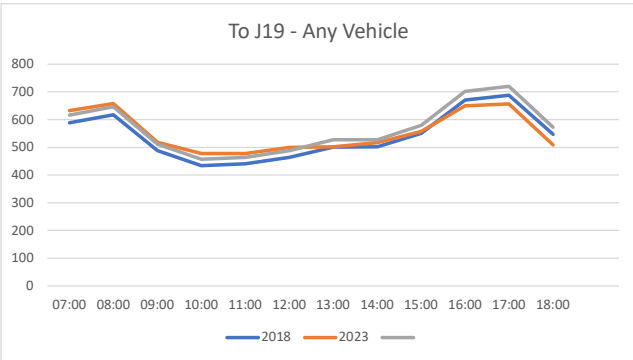
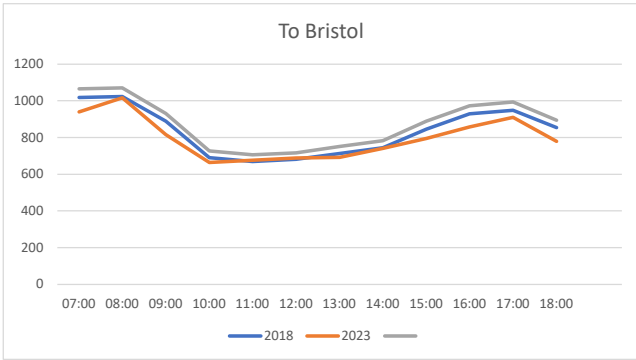
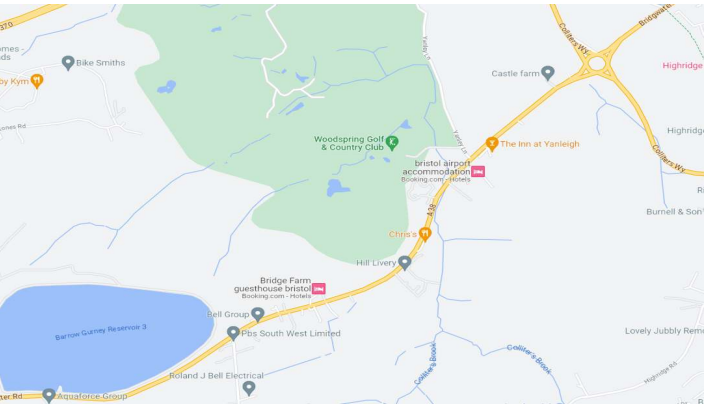
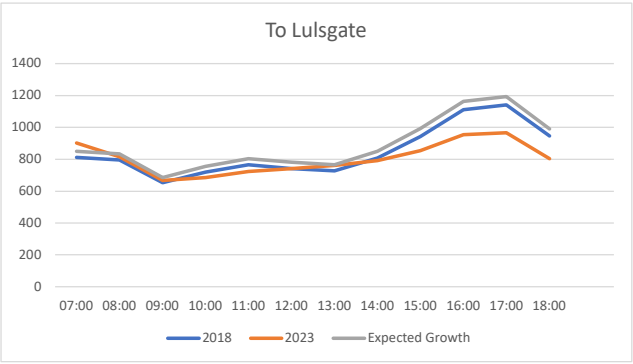
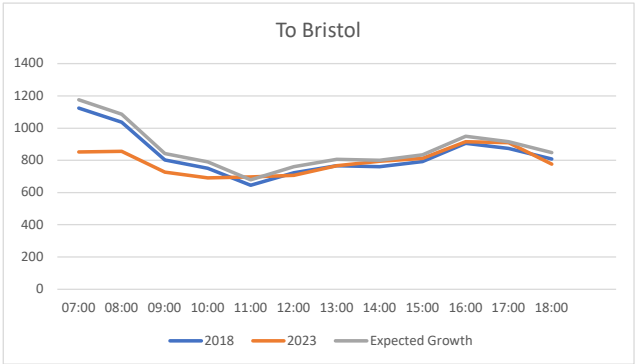




B3133 Kenn Road south of M5 Overbridge Kenn



A38 Bridgwater Road east of Yanley Lane Dundry





12hr, 7-19 Daily Trips

Date Range on x axis

2023 Monday 27th February to Sunday 4th June  
2018 Monday 26th February to Sunday 3rd June

Easter

2023 Friday 7th April to Monday 10th april  
2018 Friday 30th March to Monday 2nd April

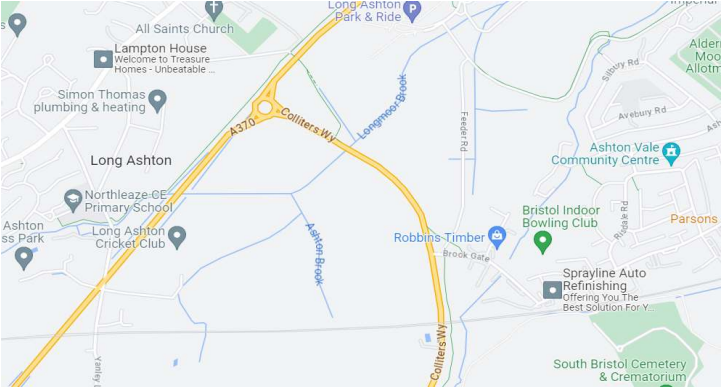
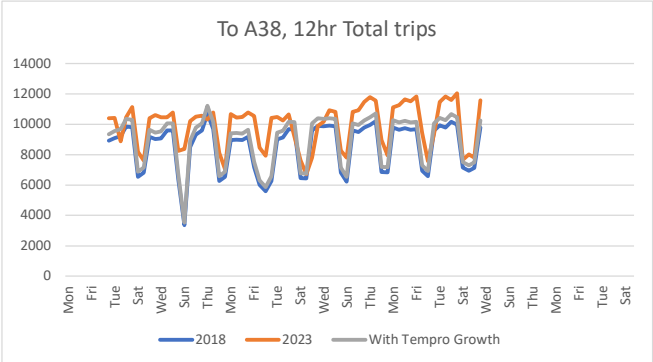
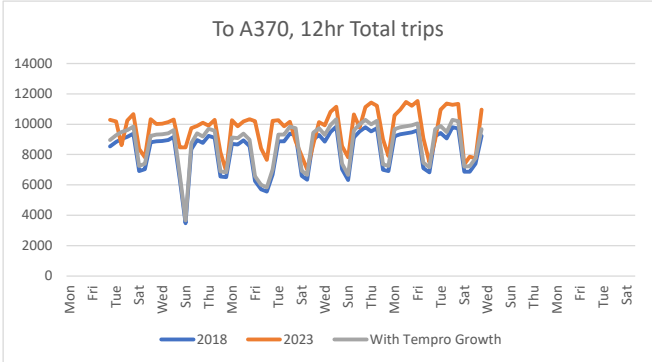
Bank Holidays

2023 Monday 1st May, Monday 8th May, Monday 29th May  
2018 Monday 7th May, Monday 28th May

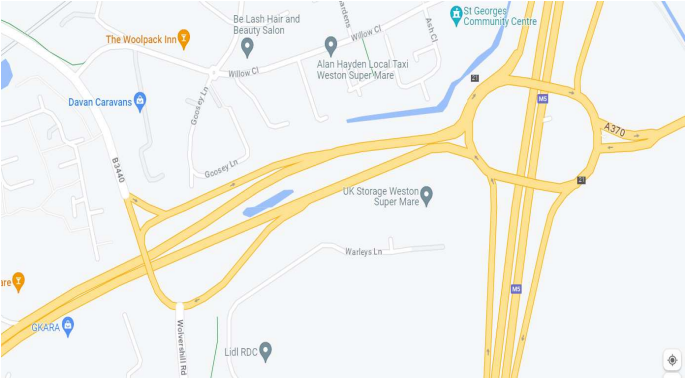
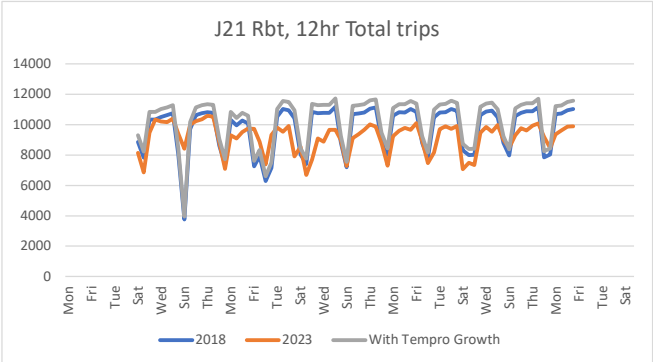
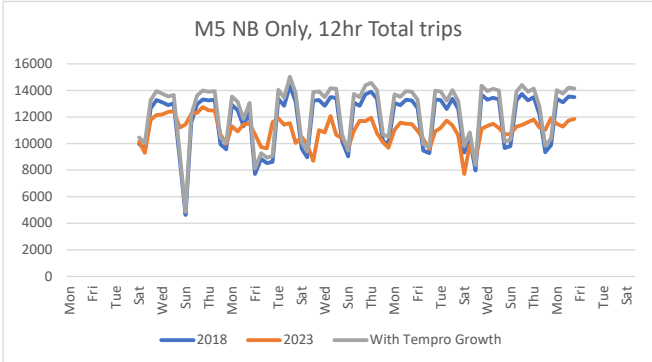
Outliers: Sunday 18th March 2018, low at all count sites.

A370 Main Road, Tuesday 18th april 2023, higher than normal.

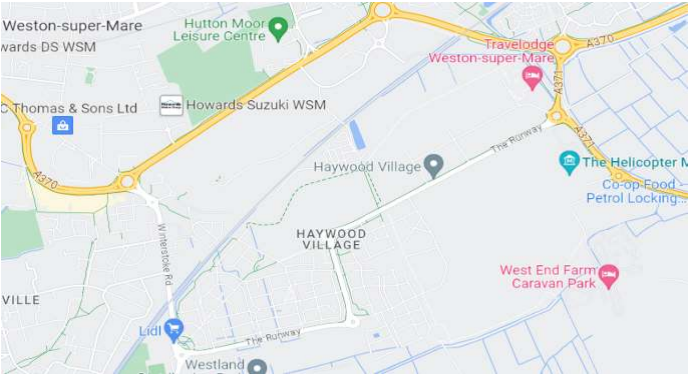
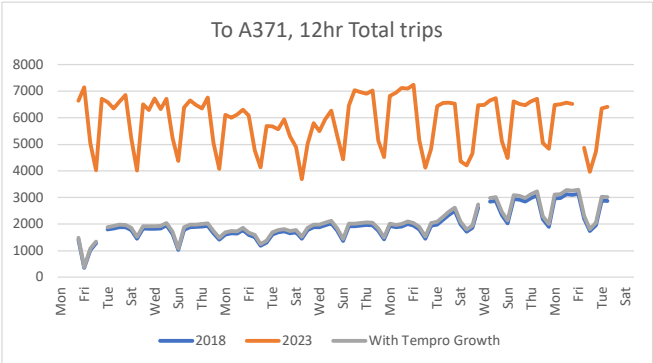
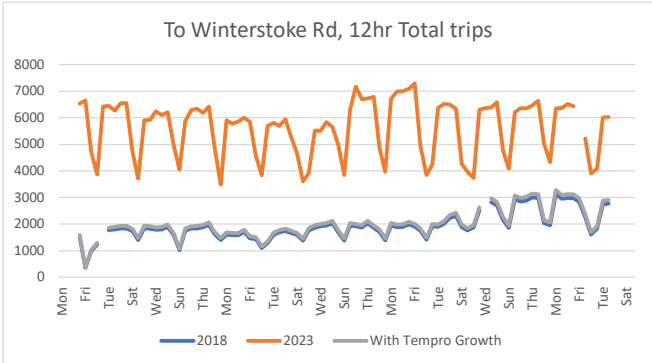
A4174 - South of Gurney Roundabout



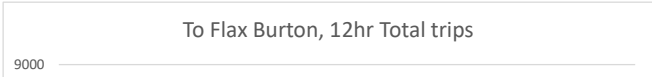
A370 Somerset Ave e/o B3440 Merge

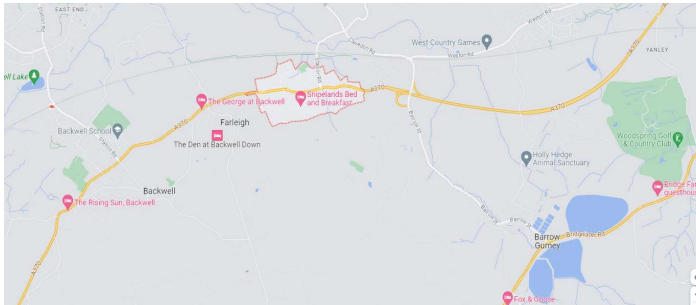
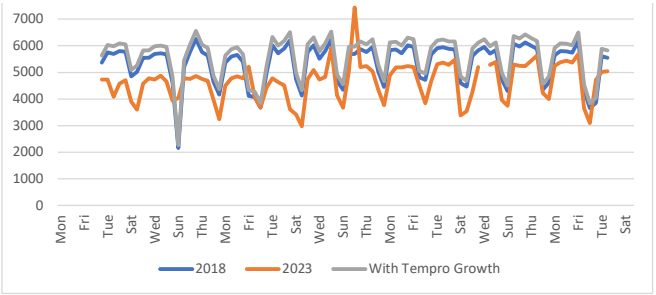
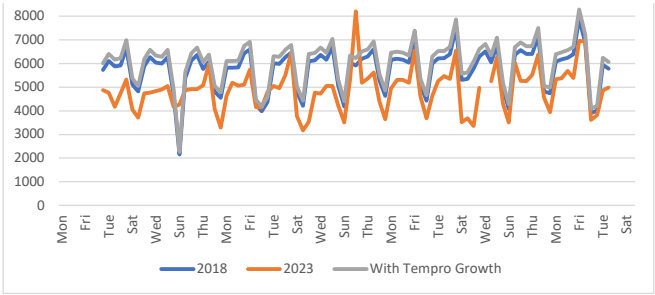


The Runway, west of A371 Locking Moor

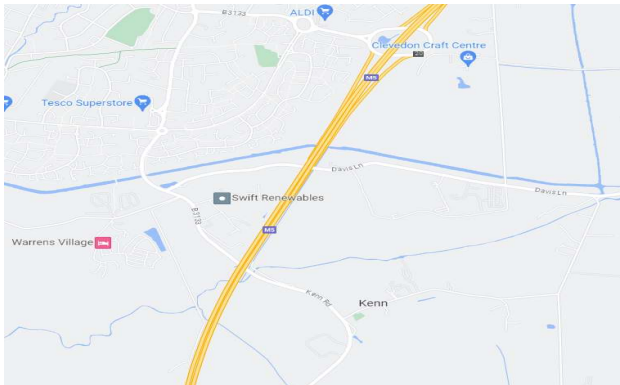
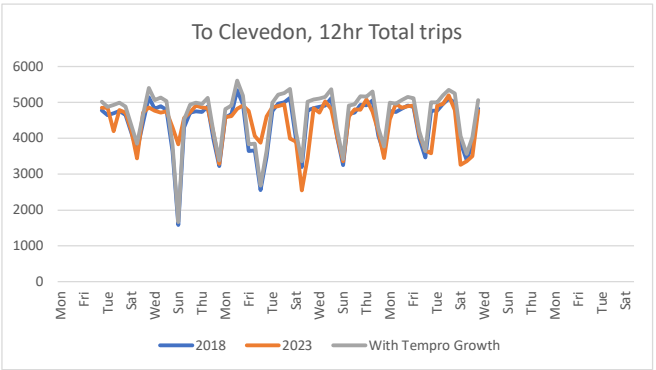
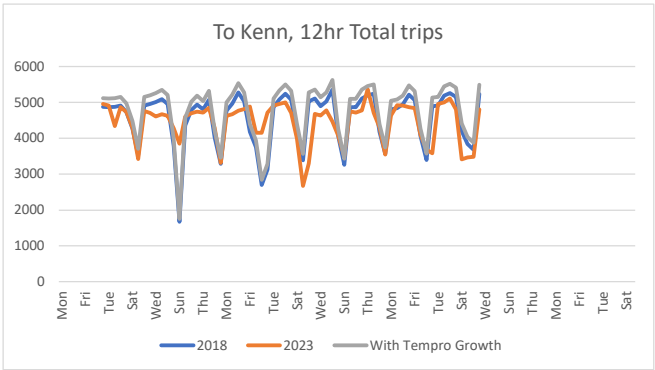


A370 Main Road e/o B3129 Station Road Flax Bourton

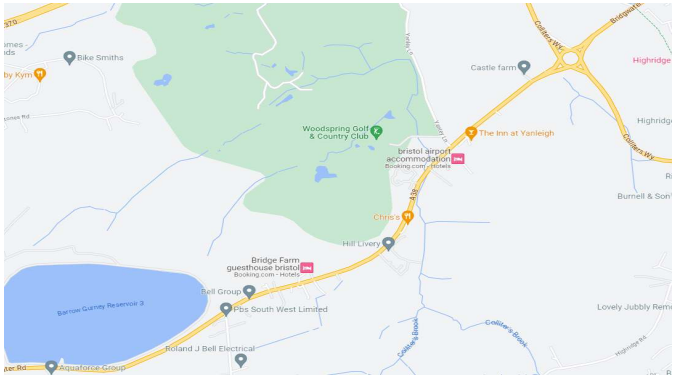
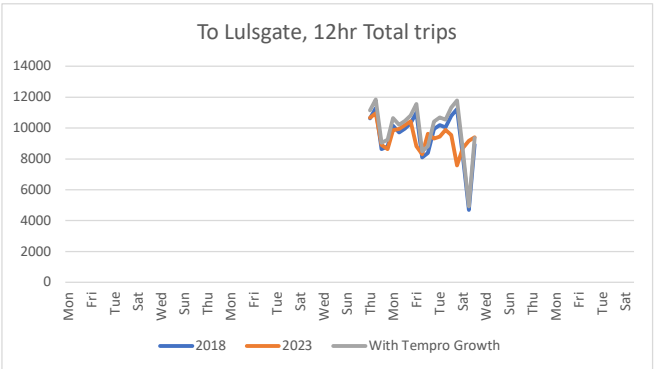
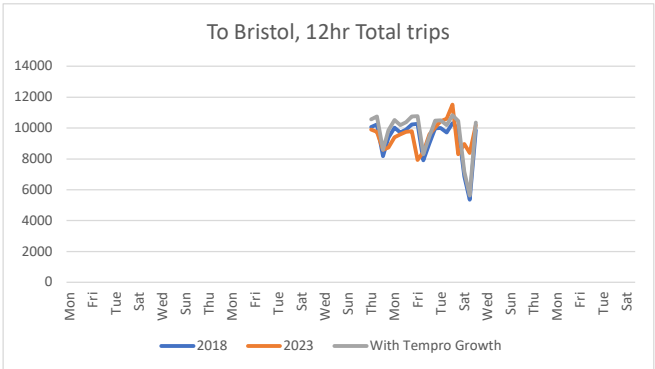




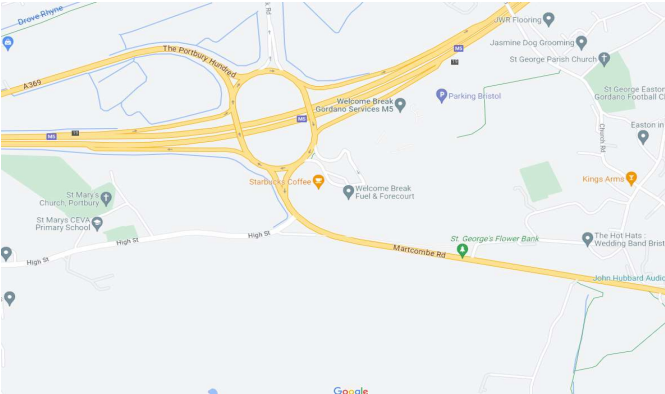
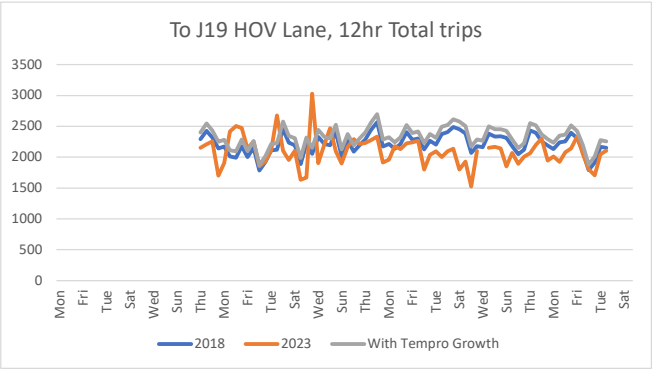
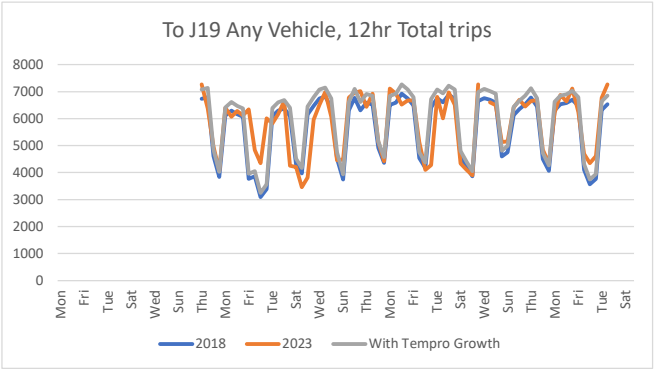
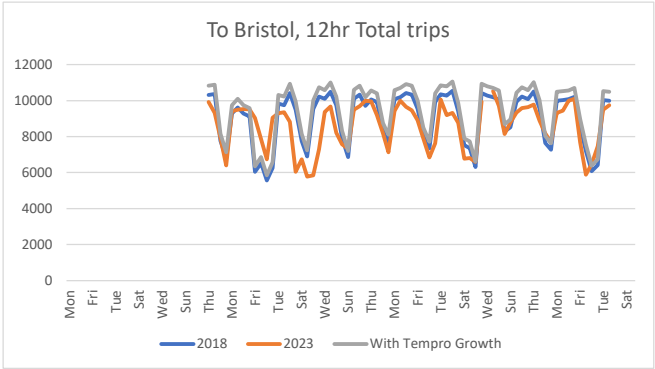
**B3133 Kenn Road south of M5 Overbridge Kenn**



**A38 Bridgwater Road east of Yanley Lane Dundry**



**A369 Martcombe Road south of High Street Portbury**



2018 - 2023, OD by time period (North Somerset only, car driver)  
NTEM V8 (Core)

Weekday AM Period (7-10)		All purposes		
Level	Name	Origin	Destination	Average
GB	GB	1.0437	1.0437	4.4%
Region	SW	1.0482	1.0482	4.8%
County	Somerset	1.0485	1.0500	4.9%
Authority	North Som	1.0459	1.0486	4.7%

Weekday IP Period (10-4)		All purposes		
Level	Name	Origin	Destination	Average
GB	GB	1.0458	1.0458	4.6%
Region	SW	1.0539	1.0539	5.4%
County	Somerset	1.0532	1.0532	5.3%
Authority	North Som	1.0525	1.0523	5.2%

Weekday PM Period (7-10)		All purposes		
Level	Name	Origin	Destination	Average
GB	GB	1.0430	1.0430	4.3%
Region	SW	1.0481	1.0481	4.8%
County	Somerset	1.0496	1.0485	4.9%
Authority	North Som	1.0479	1.0457	4.7%

## **Appendix B**



Location	Residential Allocation (Total Homes)	Employment Allocation (Ha)			
			Internalisation		
				AM %	PM %
Wolvershill (north of Banwell)	2800	11.3	Employment >5Ha	10%	10%
			Secondary School - Winterstoke Hundred	8%	0%
Land east of Backwell	500	5.5	Employment >5Ha	10%	10%
			Secondary School - Backwell School	8%	0%
Land east of Backwell					
Site B, Backwell	450		Secondary School - Backwell School	8%	0%

				Sustainable Transport Measure Trip Reductions												
Residential Allocation (Total Homes)		Employment Allocation (Ha)	IDP Reference		Development Trips						Background Trips					
Location				ST notes	Trips Affected	MSOA		% Trip Reduction	% Notes	Trips Affected		% Trip Reduction	% Notes			
				Blanket 10% reduction for all developments - each development would need to consider how best to do it, but would include masterplanning, LTNs, travel planning, reduced parking levels, car clubs etc. makes the scenario more meaningful, and introduces a strong policy hook for all development to demonstrate additional sustainable transport credentials.					10%							
All Developments					All development trips				10%							
Grove Farm	515	0	N/A	Improvements to public transport along A370 corridor	N/A	Portishead: North Somerset 003 (E02003067)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Portishead: North Somerset 003 (E02003067)	7%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Portishead: North Somerset 003 (E02003067)		PCT 'Go Dutch' increase / 3 (local 4% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Winterstoke Road area: North Somerset 027 (E02006846)	N/A		Included within PT Model / VDM							
Land north of Nailsea	381	0	TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Winterstoke Road area: North Somerset 027 (E02006846)	10%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Winterstoke Road area: North Somerset 027 (E02006846)		PCT 'Go Dutch' increase / 3 (local 6% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Castlewood: North Somerset 005 (E02003069)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Castlewood: North Somerset 005 (E02003069)	4%	PCT 'Go Dutch' increase / 2					
Land off Pound Lane, Nailsea	100	0	TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Castlewood: North Somerset 005 (E02003069)		PCT 'Go Dutch' increase / 3 (local 2% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Castlewood: North Somerset 005 (E02003069)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Castlewood: North Somerset 005 (E02003069)	4%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Castlewood: North Somerset 005 (E02003069)		PCT 'Go Dutch' increase / 3 (local 2% connectivity)					
Poplar Farm, Nailsea	130	0	N/A	Improvements to public transport along A370 corridor	N/A	Castlewood: North Somerset 005 (E02003069)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Castlewood: North Somerset 005 (E02003069)	4%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Castlewood: North Somerset 005 (E02003069)		PCT 'Go Dutch' increase / 3 (local 2% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	East of Weston: North Somerset 026 (E02006845)	N/A		Included within PT Model / VDM							
Youngwood Farm, Nailsea	120	0	TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				East of Weston: North Somerset 026 (E02006845)	10%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				East of Weston: North Somerset 026 (E02006845)		PCT 'Go Dutch' increase / 3 (local 6% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	East of Weston: North Somerset 026 (E02006845)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				East of Weston: North Somerset 026 (E02006845)	10%	PCT 'Go Dutch' increase / 2					
Land north of Youngwood Lane, Nailsea	316	0	TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				East of Weston: North Somerset 026 (E02006845)		PCT 'Go Dutch' increase / 3 (local 6% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Portishead: North Somerset 003 (E02003067)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Portishead: North Somerset 003 (E02003067)	7%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Portishead: North Somerset 003 (E02003067)		PCT 'Go Dutch' increase / 3 (local 4% connectivity)					
Land east of Backwell Site A, Backwell	500	5	N/A	Improvements to public transport along A370 corridor	N/A	Portishead: North Somerset 003 (E02003067)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Portishead: North Somerset 003 (E02003067)	7%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Portishead: North Somerset 003 (E02003067)		PCT 'Go Dutch' increase / 3 (local 4% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Castlewood: North Somerset 005 (E02003069)	N/A		Included within PT Model / VDM							
Land east of Backwell Site B, Backwell	450	0	TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Castlewood: North Somerset 005 (E02003069)	4%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Castlewood: North Somerset 005 (E02003069)		PCT 'Go Dutch' increase / 3 (local 2% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Castlewood: North Somerset 005 (E02003069)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Castlewood: North Somerset 005 (E02003069)	4%	PCT 'Go Dutch' increase / 2					
Youngwood Lane	329	0	TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Castlewood: North Somerset 005 (E02003069)		PCT 'Go Dutch' increase / 3 (local 2% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Castlewood: North Somerset 005 (E02003069)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Castlewood: North Somerset 005 (E02003069)	4%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Castlewood: North Somerset 005 (E02003069)		PCT 'Go Dutch' increase / 3 (local 2% connectivity)					
North West Nailsea	225	1.1	N/A	Improvements to public transport along A370 corridor	N/A	Portishead: North Somerset 003 (E02003067)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Portishead: North Somerset 003 (E02003067)	7%	PCT 'Go Dutch' increase / 2					
			TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Portishead: North Somerset 003 (E02003067)		PCT 'Go Dutch' increase / 3 (local 4% connectivity)					
			N/A	Improvements to public transport along A370 corridor	N/A	Portishead: North Somerset 003 (E02003067)	N/A		Included within PT Model / VDM							
Grove Farm	515	0	TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Portishead: North Somerset 003 (E02003067)		PCT 'Go Dutch' increase / 3 (local 4% connectivity)					
			All N&B Trips				Trips along Festival Way - Long Ashton and Bristol.						4%	PCT 'Go Dutch' increase / 2		
			N/A	Improvements to public transport along A370 corridor	N/A	Portishead: North Somerset 003 (E02003067)	N/A		Included within PT Model / VDM							
			TR31	Improvements to Festival Way	Trips along Festival Way - Long Ashton and Bristol.				Portishead: North Somerset 003 (E02003067)	7%	PCT 'Go Dutch' increase / 2					
Dark Lane, Backwell	125	0	TR30	Delivery of walking and cycling measures withinN&B Transport Strategy	Trips within 2km radius site, and trips within 2km radius of any N&B line station.				Portishead: North Somerset 003 (E02003067)		PCT 'Go Dutch' increase / 3 (local 4% connectivity)					
			TR14 TR8	Walking and Cycling improvements - Closure of WR.	Trips between Worle and Banwell.				0	0%	PCT 'Go Dutch' increase / 2	Trips between Worle and Banwell.		0%	PCT 'Go Dutch' increase / 2	
			TR14	Walking and Cycling improvements to station.	Trips within 2km radius of any Worle line station.				0	0%	PCT 'Go Dutch' increase / 2	Trips within 2km radius of any Worle line station.		0%	PCT 'Go Dutch' increase / 2	
			TR25	New linkages to contribute to wider active travel network between Wyndham Way and the marina, Old Mill Road and The Precinct, between new rail station, Harbour Road and Old Mill Road, and between North Bridge and Brampton Way.	Trips within 5km radius of site.				Av. (E02003067) + (E02003065)	0%		Trips within 5km radius of site.		0%		
Wyndham Way Broad Location	485	0			None								None	0%		
Former Leisuredome Allocation	420	0	Determined at planning application stage	Active travel improvements - primarily internal and between adjacent sites	Trips within 5km radius of site.				0	0%		None				
Weston Rugby Club	182	0														

Propensity to Cycle - J2W

			% Cyclists		
			Census 2011 Baseline	Go Dutch	E-Bikes
Portishead	North Somerset 001 (E02003065)	Portishead: North Somerset 001 (E02003065)	2%	10%	17%
Portishead	North Somerset 003 (E02003067)	Portishead: North Somerset 003 (E02003067)	3%	16%	21%
Castlewood	North Somerset 005 (E02003069)	Castlewood: North Somerset 005 (E02003069)	3%	10%	16%
Yanley Lane	North Somerset 006 (E02003070)	Yanley Lane: North Somerset 006 (E02003070)	5%	12%	18%
North Nailsea	North Somerset 006 (E02003070)	North Nailsea: North Somerset 006 (E02003070)	5%	12%	18%
Nailsea West	North Somerset 008 (E02003072)	Nailsea West: North Somerset 008 (E02003072)	3%	16%	22%
Nailsea East	North Somerset 009 (E02003073)	Nailsea East: North Somerset 009 (E02003073)	3%	14%	20%
Backwell	North Somerset 011 (E02003075)	Backwell: North Somerset 011 (E02003075)	3%	12%	18%
Yatton	North Somerset 012 (E02003076)	Yatton: North Somerset 012 (E02003076)	3%	15%	19%
East of Colliter's Way	North Somerset 013 (E02003077)	East of Colliter's Way: North Somerset 013 (E02003077)	2%	9%	15%
WsM	North Somerset 021 (E02003085)	WsM: North Somerset 021 (E02003085)	6%	35%	37%
WsM	North Somerset 022 (E02003086)	WsM: North Somerset 022 (E02003086)	4%	30%	32%
East of Weston	North Somerset 023 (E02003087)	East of Weston: North Somerset 023 (E02003087)	2%	17%	23%
Hutton	North Somerset 023E (E01014771)	Hutton: North Somerset 023E (E01014771)	2%	22%	28%
East of Weston	North Somerset 026 (E02006845)	East of Weston: North Somerset 026 (E02006845)	2%	21%	25%
Winterstoke Road area	North Somerset 027 (E02006846)	Winterstoke Road area: North Somerset 027 (E02006846)	4%	23%	26%