

# GBATS4M MetroWest Do Minimum Forecasting Report

*Prepared for*

**West of England Authorities**

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# Document History

## GBATS4M MetroWest Do Minimum Forecasting Report

West of England Authorities

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# Introduction

## 1.1 Background

This report has been prepared by CH2M as part of their commission to update the Greater Bristol Area Transport Study (GBATS) modelling suite for Bristol City Council (BCC), on behalf of the West of England authorities.

The updated GBATS model has been specified to be suitable for assessing the MetroWest major scheme Phases 1 and 2. Figure 1.1 shows the extent of the main model area. The model documented in this report is the MetroWest Do Minimum model.

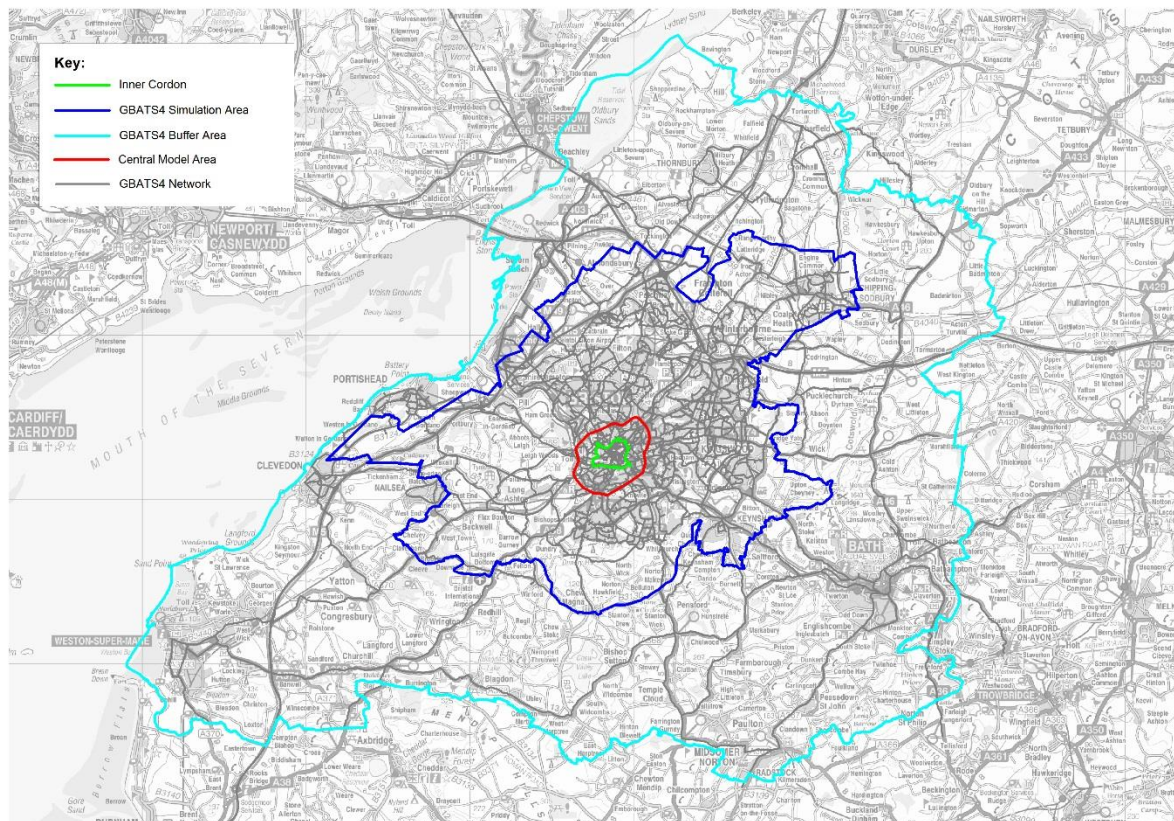


Figure 1.1 GBATS4M Model Coverage

## 1.2 Model Overview

The updated model is called the GBATS4 Metro Model (GBATS4M). The GBATS4M model consists of:

- A Highway Assignment Model representing vehicle based movements across the Greater Bristol area for a 2013 autumn weekday morning peak hour (08:00-09:00), an average inter-peak hour (10:00-16:00) and an evening peak hour (17:00-18:00);
- A Public Transport (PT) Assignment Model representing bus and rail based movements across the same area and time periods; and
- A five-stage multi-modal incremental Variable Demand Model (VDM) that forecasts changes in trip frequency and choice of main mode, time period of travel, destination, and sub-mode choice, in response to changes in generalised costs across the 12-hour period (07:00 – 19:00).

The GBATS4M highway model is closely integrated with the GBATS4M PT model. The two models use different software packages (SATURN and EMME, respectively) but are identical in terms of road network structure, and zone system. The bus routes and frequencies in the PT model are used in the highway model.

The GBATS4M highway model is fully integrated within the GBATS4M VDM. The GBATS4M highway model provides highway transport costs to the GBATS4M VDM which, in turn, provides trip matrices for the GBATS4M highway model. The relationship between the elements of the modelling system is shown in Figure 1.2.

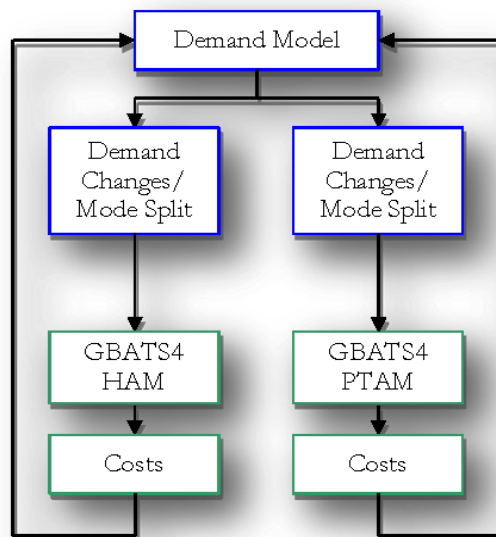


Figure 1.2 GBATS4M Modelling Overview

Further information regarding the data collection and individual sub-models of the GBATS4M can be found in the following reports:

- Report of Surveys and Existing Data Review
- METROWEST Highway Model Local Model Validation Report;
- METROWEST Public Transport Local Model Validation Report;
- Demand Model Report

## 1.3 Model Usage

The GBATS4M modelling suite provides a tool with which to test the ability of future transport proposals to support forecast travel demand. At a general level this includes:

- Investigation of new development proposals; and
- Longer-term strategic planning of the transport network.

The specific purpose of the model is for assessing the MetroWest major scheme Phases 1 and 2.

## 1.4 Potential Alternative Uses

The GBATS4M modelling suite could (with further validation if necessary) also be used to forecast and assess a range of alternative potential interventions. While not a definitive list, the following future year schemes could potentially be assessed:

- Bristol Arena
- Temple Circus Roundabout / Redcliffe Way;

- Temple Quarter Enterprise Zone;
- Central Area Action Plan;
- Changes to bus operations;
- Park and Ride schemes;
- M4 Link;
- North Fringe VISSIM interface;
- Strategic wider area schemes; and
- Major development proposals in the wider urban area.





# Modelling Suite

## 2.1 Overview

The 'front-end' Excel spreadsheet has been developed to hold calibrated parameters and allow the user to define certain run-specific inputs. This Excel file contains a number of macros written in Visual Basic, which perform file manipulations and call the EMME macros and SATURN assignments / network skim functions, to provide a fully automated and integrated interface between the G-BATS4M highway, PT and Demand models.

The Demand Model has been implemented using the EMME modelling software platform through a series of macros, containing the required executable commands and matrix calculations. The Demand Model macros interface with the Saturn highway and EMME PT model.

## 2.2 Forecasting Approach

The VDM employs a pivot structure with demand response changes applied to future year Reference matrices through consideration of changes in travel costs relative to the base year.

Reference matrices are developed to represent future demand assuming base year travel costs. The reference matrices are assigned to the network models and generalised costs are subsequently calculated using future year travel cost parameters.

VDM demand responses are calculated (to identify changes to the Reference matrices) and network model assignments are undertaken iteratively, with updated travel costs calculated and applied, until suitable convergence levels are achieved.

In order to achieve suitable VDM convergence, averaging of forecast changes in demand (in relation to the Reference case matrices) has been applied using the Method of Successive Averaging (MSA). This has been implemented as follows in relation to successive VDM loops:

- loop 1: apply the forecast change in travel demand to the Reference case matrices
- loop 2: apply the average forecast change from loop 1 and loop 2 combined
- loop 3: apply the average change over the first three loops
- etc.

## 2.3 Years and Time Period

The base year for the model is 2013 with assignment models having been developed for the AM peak hour, an average inter-peak hour and the PM peak hour. All models are for an average weekday in a neutral month. Forecast years were designated to be 2021 and 2036.



# Forecast Year Matrix Development

## 3.1 Overview

This chapter details the procedures used to determine the travel demand growth to be experienced in the West of England region. Forecast year travel demand is identified through the use of a growth model which takes as inputs the housing and employment projections as supplied by the four local authorities. Overall growth within the model is controlled to TEMPRO to produce Reference matrices, which are then adjusted by the VDM.

## 3.2 Development Assumptions

In line with WebTAG guidance (Unit M4: Forecasting and Uncertainty), development assumptions have been categorised to identify sites which are near certain, more than likely, reasonably foreseeable and hypothetical. The WebTAG uncertainty classifications are shown in Table 3.1.

Table 3.1 Uncertainty Classifications

Uncertainty Classification	Status
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
More than likely: The outcome is likely to happen but there is some uncertainty.	Submission of planning or consent application imminent Development application within consent process
Reasonably foreseeable: The outcome may happen, but there is significant uncertainty.	Identification within a development plan No directly associated with the transport strategy, but may occur if the strategy/scheme is implemented Development conditional upon the transport strategy/scheme proceeding A committed policy goal, subject to tests (e.g. of deliverability) whose outcomes are subject to significant uncertainty
Hypothetical: There is considerable uncertainty whether the outcome will ever happen.	Conjecture based upon currently available information Discussed on a conceptual basis One of a number of possible inputs in an initial consultation process A policy aspiration

The GBATS4M model includes two forecast years (2021 and 2036). These include the modelling of all housing and employment development within the main study area that is categorised as either “Near Certain” or “More than likely”. Since the forecasts are controlled to Tempro, smaller scale developments (i.e. less than 1 hectare for employment sites, less than 50 homes for housing) were not explicitly included as they are implicitly included in the growth factors.

Table 1 details the total additional homes/jobs explicitly assumed in the two future year Do Minimum models. Note, this excludes smaller sites, as above.

**Table 3.2 Additional Planned Development included in Do Minimum**

Year	Additional New Homes	Additional New Jobs
2013-2021	27,719	34,621
2021-2036	7,656	16,937
2013- 2036	35,375	51,559

Employment land uses have been classified as either office, industry, retail, school and other. Trip rates have been identified and applied per job. Factors have been derived for each employment type to identify number of jobs from floorspace (where number of jobs not provided). For schools, the number of jobs has been estimated as one job per 15 students.

Appendix A contains the full development Uncertainty Log which has been derived in accordance with WebTAG procedures.

### 3.3 Goods Vehicle Forecasts

Goods vehicle growth is based upon forecasts produced by the National Transport Model (NTM) as advised by WebTAG. The resultant growth rates for the Light Goods Vehicles (LGV) and Heavy Goods Vehicles (HGV) matrices are shown in Table 3.3

**Table 3.3 LGV and HGV Growth Rates**

Year	LGV	HGV
2013 – 2021	1.212	1.050
2013 - 2036	1.610	1.144

### 3.4 Trip Rates

Trip rates were derived through regression analysis of National Trip End Model (NTEM) data to yield Production and Attraction (PA) trip rates by time period. Since Temprow allocates PA trips to the time of the from-home trip, to obtain accurate rates by time period the sum of the PA trip rates were controlled to match the sum of the equivalent Origin and Destination trip rates. Table 3.4 provides the resulting trip rates used in the model.

**Table 3.4 Model Trip Rate**

PT & HW Trip Rate	AM Peak (1-hr)		IP Peak (1-hr)		PM Peak (1-hr)	
	Prod	Attr	Prod	Attr	Prod	Attr
Households	0.343	0.025	0.211	0.029	0.330	0.047
Jobs	0.032	0.318	0.087	0.239	0.116	0.340

## 3.5 Tempro Growth Rates

Future year growth rates were controlled to Tempro growth rates for the West of England region. These are listed in Appendix B for trip purpose, time period and mode. Table 3.5 summarises these growth rates.

Table 3.5 Tempro Growth Rate by GBATS4M demand segment

Mode	TEMPRO Growth Rate 2013 -2021			TEMPRO Growth Rate 2013-2036		
	AM	IP	PM	AM	IP	PM
Car	8%	9%	8%	21%	23%	20%
Bus	3%	2%	2%	7%	9%	6%
Rail	3%	4%	4%	10%	13%	12%
Total Demand(excl LGV/HGV)	7%	8%	7%	18%	21%	18%

## 3.6 Growth Model

This section describes the growth model process used to create highway and PT future year demand matrices. These matrices are used as Reference matrices that are incrementally adjusted by the VDM.

The growth model steps are:

- calculation of production-attraction (PA) trip end totals for new developments by time period and key demand segment (highway commute & other / highway employers business / PT), using base year demand segment splits on a sector basis, including car / PT mode split;
- production of unconstrained production/attraction trip end zone totals by summing base year matrix and new development zone totals by main mode and time period;
- use of a gravity model formulation to distribute all new development trips using trip end totals and base year zone to zone travel costs. This is undertaken in PA format for each key demand segment and time period;
- convert matrices to origin-destination (OD) format and use base year observed factors to disaggregate new development trips to PT sub-mode (bus and rail) and income level (for highway trips). Zone pairs without modelled bus connectivity are allocated to rail. Car occupancy factors applied to convert person trips to vehicle trips for highway matrices;
- add new development matrices to base year model OD matrices; and
- application of three-dimensional matrix balancing to build full reference case matrices retaining the base year trip length distribution and control to NTEM OD growth for WEP and external zones.

The gravity model formulation is as follows:

$$T_{ij} = \frac{P_i A_j}{GC_{ij}^n}$$

$T_{ij}$  = PA trip matrix

$P_i$  = Production trip end, combining trips for both new development sites and base year trips

$A_j$  = Attraction trip end, combining trips for both new development sites and base year trips

$GC_{ij}$  = Generalised costs in PA format

$n$  = calibrated parameter

The gravity model is implemented in PA format, as recommended by WebTAG.

The 3D balancing is used to reproduce base year travel distance by 10 distance bands. The distance band range specified for the 3-D balancing process is as follows:

- PT – 5 km for each band
- Rail – 20km for each band
- Car – 10km for each band

# Network Development

## 4.1 Overview

This chapter specifies the assumptions made with regard to the transport supply provision for the two future years (2021 and 2036).

## 4.2 Major schemes

The main infrastructure schemes included in the future year networks are included in Table 4.1. Further details are contained in Appendix C. The MetroWest schemes are specifically excluded from the model, as the model reported here is the MetroWest Phase 1 Do Minimum. The MetroWest schemes will be included in the GBATS4M later for scheme testing purposes.

Table 4.1 Additional Infrastructure included in MetroWest Future Year Do Minimum

Scheme	Description
20mph speed limits	Roll out of 20mph speed limits across Bristol
CPNN Off-site Works Package	<p>A38 Filton roundabout. Capacity and safety improvements on 3-arms.</p> <p>Widening of M5 J16 motorway off-slips, A38 North and circulatory carriageway.</p> <p>Signing &amp; lining changes on M5 J17 southbound off-slip.</p> <p>Widening of Merlin Road exit from roundabout and Highwood Lane entry to Merlin Road junction.</p> <p>Widening of southbound approach at A38 Aztec West Rbt.</p> <p>A4018 Bus Corridor. Crow Lane, Charlton Road, Greystoke Avenue junction improvements.</p> <p>Local bus service enhancements.</p>
MetroBus	<p>Rapid transit from Ashton Vale to Temple Meads via Bristol city centre.</p> <p>North Fringe to Hengrove Package.</p> <p>New highway link and bus route between A370 and Hengrove Park</p>
Temple Circus Project	Redesign of Temple Circus roundabout. Related changes to the end of Victoria Street, The Friary, Temple Way, Temple Gate, connection with Redcliffe Way, Bath Bridge Roundabout
Managed Motorway Scheme	M4 Junctions 19-20 & M5 Junctions 15-17
Cribbs Patchway MetroBus Extension	Extending the NFHP MetroBus route from The Mall back to Parkway
M5 Junction 19	Replacement of left turn off the south bound exit slip, with a two lanes
London Paddington – South Wales Rail Electrification	Extra services between Bristol Temple Meads and London Paddington via Bristol Parkway included

## 4.3 Future Year Bus Speeds

Travel times in the base PT network were calibrated against published route timetables. For the future year model, a procedure was set-up to use changes in highway model travel time (future year Do Minimum compared to base year) and apply these to the PT model. The procedure allows for several different approaches, depending on the status of the highway/PT model link. These are summarised in Table 4.2

Table 4.2 Derivation of future year bus speeds

Link Type	Existing Network Link	New Link
Mixed Traffic Lane	Change in highway time applied to relevant PT link. An adjusted PT link speed derived. If Highway model suggests a significant decrease in travel time (i.e. >50%), the reduction in PT time capped at 50%.	Based on the future year highway model assignment speed.  Reduced by time period specific factor to reflect relationship between modelled assignment speeds and bus speeds inherent in base year models  AM Factor – 0.53 IP Factor - 0.54 PM Factor – 0.56
Existing Bus lane	Uses the speed calculated in the base year PT model	-
New Bus Lane	Based on the future year highway model free flow speed. Reduced by time period specific factor to reflect relationship between modelled free flow speeds and bus speeds inherent in base year models  AM Factor – 0.324 IP Factor - 0.386 PM Factor – 0.337	
Removal of Bus Lane	Based on the future year highway model assignment speed.  Reduced by time period specific factor to reflect relationship between modelled assignment speeds and bus speeds inherent in base year models  AM Factor – 0.53 IP Factor - 0.54 PM Factor – 0.56	-



# Model Parameters

## 5.1 Overview

This section details the model parameter changes that were implemented in the future year models. In general, these changes were implemented in line with WebTAG advised parameter changes. Further details are provided below.

## 5.2 Car Occupancy

Table 5.1 details the car occupancy levels assumed in the model in line with WebTAG. In general these are seen to decrease over time until 2036.

Table 5.1 Future Year Car Occupancy Levels by demand segment

Demand Segment	2013	2021	2036
Car Occ HBW - AM	1.221	1.209	1.188
Car Occ OTH - AM	1.649	1.614	1.552
Car Occ EMP - AM	1.300	1.289	1.273
Car Occ HBW - IP	1.192	1.182	1.169
Car Occ OTH - IP	1.619	1.587	1.544
Car Occ EMP - IP	1.221	1.214	1.190
Car Occ HBW - PM	1.163	1.156	1.145
Car Occ OTH - PM	1.577	1.553	1.515
Car Occ EMP - PM	1.267	1.254	1.236

## 5.3 Value of Time

Table 5.2 details the value of time assumptions, which are in 2013 prices.

Table 5.2 Future Year Value of Time by demand segment

Demand Segment	2013	2021	2036
VOT HBW (p/min) - Low Inc	6.91	8.09	10.91
VOT HBW (p/min) - Med Inc	10.22	11.96	16.14
VOT HBW (p/min) - High Inc	15.23	17.83	24.05
VOT OTH (p/min) - Low Inc	8.94	10.47	14.12
VOT OTH (p/min) - Med Inc	10.90	12.76	17.21
VOT OTH (p/min) - High Inc	13.18	15.42	20.81
VOT EMP - Car (p/min)	42.81	50.11	67.61
VOT EMP - Bus (p/min)	26.30	30.79	41.54
VOT EMP - Rail (p/min)	50.56	59.18	79.85

Demand Segment	2013	2021	2036
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## 5.4 Parking Charges

The model contains parking charges in Bristol's Central Parking Zone (CPZ) and the Resident Parking Schemes (RPS).

The CPZ parking charges are included in the base and future year modelling. These charges are assumed to increase only in line with inflation; as a result modelled values do not change between base and modelled years.

The RPS parking charges are applied in future year modelling to cover schemes implemented since October 2013. An approximate average 'RPS' charge of £1.50 (based on £1 per hour charge with a stay of 3 hours applicable to 50% of car trips) is applied to model zones falling within the boundaries of these RPS's. As with the CPZ, RPS charges are assumed to increase only in line with inflation; as a result values do not change between 2021 and 2036.

## 5.5 Public Transport Fares

PT fares have been assumed to increase in the two future years modelled.

Bus fares have been assumed to increase by 1.67% per year in real terms, based on the change in average fares between 2005 and 2015 of 18.1%, as reported for England in the Department for Transport (DfT) Local Bus Fares Index.

Rail fares have been assumed to increase by 1.56% per year in real terms, based on the change in average fares across all operators between 2004 and 2015 of 18.6%, as reported in the Office of Rail and Road (ORR) Rail Fares Index (January 2015) Statistical Release.

Table 5.4 gives the modelled PT fares.

Table 5.4 Public Transport Fare Assumptions

Fare	2013	2021	2036
Bus fare (p/km)	26.7	30.5	39.1
Rail fare (p/km)	15	16.9	21.4

# Future Year Do Minimum Assignments

## 6.1 Overview

This chapter details the future year model results. The impacts are first discussed on a matrix level and subsequently by the performance of both the highway and public transport networks.

## 6.2 VDM Convergence

The VDM convergence level of the Future Year Do Minimum Models is shown in Table 6.1. This indicates that the model performance is within the required limits specified by DfT.

Table 6.1 Overall Model Convergence

Year	Gap	No. VDM Iterations
2021	0.1%	5
2036	0.09%	7

## 6.3 Matrix Totals

Tables 6.2 and 6.3 summarise the total demand by mode in 2021 and 2036 respectively, compared to 2013.

Table 6.2 Matrix Totals (2021 compared to 2013 Base)

Mode	Base -2013			Do Min 2021			% Difference (Do Min minus Base)		
	AM	IP	PM	AM	IP	PM	AM	IP	PM
Car	98052	76217	105718	103623	80765	111047	6%	6%	5%
LGV/HGV	27578	30344	19180	31276	34504	22092	13%	14%	15%
<b>Total Highway</b>	<b>125630</b>	<b>106561</b>	<b>124898</b>	<b>134899</b>	<b>115269</b>	<b>133139</b>	<b>7%</b>	<b>8%</b>	<b>7%</b>
Bus	12506	9590	11852	17064	12651	16298	36%	32%	38%
Rail	9138	3219	10359	10568	3792	12112	16%	18%	17%
<b>Total PT</b>	<b>21643</b>	<b>12809</b>	<b>22211</b>	<b>27632</b>	<b>16443</b>	<b>28410</b>	<b>28%</b>	<b>28%</b>	<b>28%</b>
<b>Total Demand</b>	<b>147273</b>	<b>119370</b>	<b>147110</b>	<b>162531</b>	<b>131712</b>	<b>161550</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>

Overall travel demand is seen to increase by around 10% by 2021. Growth is similar throughout all time periods. The car matrices increase is slightly lower than Temprow, whereas public transport matrices are somewhat higher. The rate of increase is greater within the bus matrices, compared to the rail. This reflects the fact that the major PT scheme included in the 2021 network is bus based (i.e. 7 high frequency Metrobus services).

Table 6.3 Matrix Totals (2036 compared to 2013 Base)

Mode	Base -2013			Do Min 2036			% Difference (Do Min minus Base)		
	AM	IP	PM	AM	IP	PM	AM	IP	PM
Car	98052	76217	105718	114456	91946	122680	17%	21%	16%
LGV/HGV	27578	30344	19180	38209	42305	27508	39%	39%	43%
<b>Total Highway</b>	<b>125630</b>	<b>106561</b>	<b>124898</b>	<b>152665</b>	<b>134251</b>	<b>150188</b>	<b>22%</b>	<b>26%</b>	<b>20%</b>
Bus	12506	9590	11852	17690	13530	16741	41%	41%	41%
Rail	9138	3219	10359	12090	4702	13832	32%	46%	34%
<b>Total PT</b>	<b>21643</b>	<b>12809</b>	<b>22211</b>	<b>29780</b>	<b>18231</b>	<b>30572</b>	<b>38%</b>	<b>42%</b>	<b>38%</b>
<b>Total Demand</b>	<b>147273</b>	<b>119370</b>	<b>147110</b>	<b>182445</b>	<b>152482</b>	<b>180761</b>	<b>24%</b>	<b>28%</b>	<b>23%</b>

Overall travel demand is seen to increase by over 23% by 2036. It is noticeable that both car and rail matrices increase significantly compared to 2021 levels whereas bus matrices show only moderate growth. This reflects the fact that no additional PT schemes are assumed between 2021 and 2036, and that increased delay throughout the highway network impacts upon the performance of bus services. In contrast, rail journey times remain constant between 2021 and 2036.

## 6.4 Highway Model

The highway performance for the whole network is summarised with the following indicators:

- Total Delay;
- Total Travel Time
- Travel Distance
- Total Trips Loaded
- Overall Average Travel Time
- Overall Average Distance
- Overall Average Speed

Table 6.3 details the main highway model statistics for the 2021 Do Minimum. The impact of the additional trips being loaded onto the network in 2021 compared to 2013 results in increased travel time and travel distance across all three time periods. Overall average travel speed in the peak periods is seen to decrease by 2-3%. Delays in the AM Peak show a small decrease. This is due to the introduction of the M4 Managed Motorway scheme.

Table 6.4 details the main highway model statistics for the 2036 Do Minimum. The impact of the additional trips being loaded onto the network in 2036 compared to 2013 results in significant increases in travel time and travel distance with overall average travel speed in the peak periods decreasing by 12-14%.

Table 6.3 Summary Highway Statistics (2021 compared to 2013 Base)

Network Statistics	Units	2013 Base			Do Min 2021			% Difference (Do Min minus Base)		
		AM	IP	PM	AM	IP	PM	AM	IP	PM
Total Delay	pcu. hrs/hr	704	347	535	652	360	606	-7%	4%	13%
Total Travel Time	pcu. hrs/hr	26992	18877	26894	30059	20640	29909	11%	9%	11%
Travel Distance	pcu. kms/hr	1140962	917543	1171511	1243034	992675	1259609	9%	8%	8%
Total Trips Loaded	pcus/hr	125630	106561	124898	134898	115269	133139	7%	8%	7%
Average Travel Time	mins	12.9	10.6	12.9	13.4	10.7	13.5	4%	1%	4%
Average Distance	kms	9.1	8.6	9.4	9.2	8.6	9.5	1%	0%	1%
Average Speed	kph	42.3	48.6	43.6	41.4	48.1	42.1	-2%	-1%	-3%

Table 6.4 Summary Highway Statistics (2036 compared to 2013 Base)

Network Statistics	Units	2013 Base			Do Min 2036			% Difference (Do Min minus Base)		
		AM	IP	PM	AM	IP	PM	AM	IP	PM
Total Delay	pcu. hrs/hr	704	347	535	925	582	948	31%	68%	77%
Total Travel Time	pcu. hrs/hr	26992	18877	26894	37599	24710	37576	39%	31%	40%
Travel Distance	pcu. kms/hr	1140962	917543	1171511	1393517	1154403	1418295	22%	26%	21%
Total Trips Loaded	pcus/hr	125630	106561	124898	152665	134251	150188	22%	26%	20%
Average Travel Time	mins	12.9	10.6	12.9	14.8	11.0	15.0	15%	4%	16%
Average Distance	kms	9.1	8.6	9.4	9.1	8.6	9.4	1%	0%	1%
Average Speed	kph	42.3	48.6	43.6	37.1	46.7	37.7	-12%	-4%	-14%

## 6.5 Public Transport Model

The public transport performance for the whole network is summarised with the following indicators:

- Total Passenger Boardings;
- Total Passenger Distance
- Total Passenger Hours
- Average Passenger Travel Distance (km)
- Average Passenger Travel Time (hours)
- Average Operating Speed of Buses

Table 6.4 summarises the main public transport model results from the 2021 Do Minimum. This is sub-divided into All Modes, Rail and Bus. Rail and Bus mode boardings are seen to rise broadly in line with the matrix totals previously presented. The results suggest that PT patronage will experience substantial growth, attracting demand that, in the absence of the Do Minimum PT schemes, might have been car-based. The results indicate a slight decrease in average distance travelled by PT which is due to the higher increase in bus trips relative to rail trips compared to 2013.

Table 6.5 summarises the main public transport model results from the 2036 Do Minimum. Rail and Bus mode boardings rise in line with the matrix totals previously presented in Section 6.3. Bus boardings show little growth compared to 2021 levels, whereas rail service boardings increase significantly. This is unsurprising; with no new transport schemes included between 2021 and 2036, bus services become increasingly delayed due to general highway congestion. In contrast rail services, operating on their protected infrastructure, have no deterioration in travel time.

Table 6.6 summarises the average operating speed of buses by time period. It can be seen that increased highway delay impacts upon the performance of services, with decreases in peak hour service speed of 3-4% expected by 2021 and 9% by 2036.

## SECTION 6

Table 6.4 Summary Public Transport Statistics (2021 compared to 2013 Base)

		Base			Do Min - 2021			% Change		
		AM	IP	PM	AM	IP	PM	AM	IP	PM
All Modes	Total Boardings	26586	15553	27327	34339	20598	35710	29%	32%	31%
	Total Distance	677549	340920	769715	836282	450877	965510	23%	32%	25%
	Total Passenger Hours	12497	6687	13008	16981	9533	17396	36%	43%	34%
	Average Pax Travel Distance (km)	25.49	21.92	28.17	24.35	21.89	27.04	-4%	0%	-4%
	Average Pax Travel Time (hours)	0.47	0.43	0.48	0.49	0.46	0.49	5%	8%	2%
Rail	Total Boardings	11257	4103	12717	12762	4728	14553	13%	15%	14%
	Total Distance	586170	268464	677414	690271	332314	813525	18%	24%	20%
	Total Passenger Hours	6783	2767	7310	7759	3325	8576	14%	20%	17%
	Average Pax Travel Distance (km)	52.07	65.43	53.27	54.09	70.29	55.90	4%	7%	5%
	Average Pax Travel Time (hours)	0.60	0.67	0.57	0.61	0.70	0.59	1%	4%	3%
All Bus	Total Boardings	15329	11450	14610	21577	15870	21157	41%	39%	45%
	Total Distance	91379.30	72456	92301	146011	118563	151985	60%	64%	65%
	Total Passenger Hours	5714.10	3920	5699	9222	6208	8821	61%	58%	55%
	Average Pax Travel Distance (km)	5.96	6.33	6.32	6.77	7.47	7.18	14%	18%	14%
	Average Pax Travel Time (hours)	0.37	0.34	0.39	0.43	0.39	0.42	15%	14%	7%

Table 6.5 Summary Public Transport Statistics (2036 compared to 2013 Base)

		Base			Do Min - 2036			% Change		
		AM	IP	PM	AM	IP	PM	AM	IP	PM
All Modes	Total Boardings	26586	15553	27327	37401	23139	38569	41%	49%	41%
	Total Distance	677549	340920	769715	977834	570289	1128505	44%	67%	47%
	Total Passenger Hours	12497	6687	13008	19722	11334	20221	58%	69%	55%
	Average Pax Travel Distance (km)	25.49	21.92	28.17	26.14	24.65	29.26	3%	12%	4%
	Average Pax Travel Time (hours)	0.47	0.43	0.48	0.53	0.49	0.52	12%	14%	10%
Rail	Total Boardings	11257	4103	12717	14750	5889	16932	31%	44%	33%
	Total Distance	586170	268464	677414	824127	440703	973069	41%	64%	44%
	Total Passenger Hours	6783	2767	7310	9271	4384	10398	37%	58%	42%
	Average Pax Travel Distance (km)	52.07	65.43	53.27	55.87	74.83	57.47	7%	14%	8%
	Average Pax Travel Time (hours)	0.60	0.67	0.57	0.63	0.74	0.61	4%	10%	7%
All Bus	Total Boardings	15329	10611	14610	22541	15445	21524	47%	46%	47%
	Total Distance	91379	61824	92301	152608	108434	153925	67%	75%	67%
	Total Passenger Hours	5714	3507	5699	10388	6016	9756	82%	72%	71%
	Average Pax Travel Distance (km)	5.96	5.83	6.32	6.77	7.02	7.15	14%	20%	13%
	Average Pax Travel Time (hours)	0.37	0.33	0.39	0.46	0.39	0.45	24%	18%	16%



## SECTION 6

Table 6.6 Average Operating Speed of Buses by year

Time Period	2013 Base	Do Min - 2021	Do Min - 2036	% Change (Base – 2021)	% Change (Base – 2036)
AM Peak	17.1	16.4	15.5	-4%	-9%
Inter Peak	18.9	18.6	18.0	-2%	-5%
PM Peak	17.7	17.2	16.1	-3%	-9%



# Conclusions

The GBATS4M modelling suite provides a tool with which to test the ability of future transport proposals to support forecast travel demand. At a general level this includes:

1. Investigation of new development proposals; and
2. Longer-term strategic planning of the transport network

This report provides background on how the GBATS4M modelling suite operates to produce future year forecasts, and key future year assumptions. Details are provided regarding the development of the future year Do Minimum models.

The GBATS4M Future Year Do Minimum model incorporates a level of development resulting in an additional 35,000 homes and over 52,000 additional employment opportunities by 2036. The highway and PT networks are assumed to change with a number of significant investments including the Metrobus network and M4 & M5 managed motorways. These supply side changes are assumed to be completed by 2021.

The GBATS4M Future Year Do Minimum model suggests that highway users are likely to experience increased travel time, decreased travel speed, and increasing levels of congestion in the future. The changes in public transport provision envisaged by 2021 result in significant increases in bus patronage, but that this will see limited further growth over the period 2021 to 2036 without further improvement schemes. Rail patronage is seen to increase over the period 2021 to 2036, as increasing highway delays impact both on car and bus travel times.

The GBATS4M model is a strategic model covering a relatively wide area across Bristol, South Gloucestershire, North Somerset and B&NES. Due to the strategic nature of the model, further localised validation may be necessary if the model is to be used to forecast and assess a range of alternative potential interventions.



# Appendix A

## Development Assumptions

UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
B&NES		Manvers Street, Bath	Bath	Abbey	Future Allocation	None	RF		9000	750	0	0	0	0	0	0	0	0
B&NES		Avon Street, Bath	Bath	Abbey	Future Allocation	None	RF		18000	1500	0	0	0	0	0	0	0	0
B&NES		South Quays, Bath	Bath	Widcombe	Future Allocation	None	RF		16000	1333	0	0	0	0	0	0	0	0
B&NES		South Quays II, Bath	Bath	Widcombe	Future Allocation	None	RF		17500	1458	0	0	0	0	0	0	0	0
B&NES		Green Park, Bath	Bath	Widcombe	Future Allocation	None	RF		15000	1667	0	0	20000	1000	0	0	0	0
B&NES		Bath City Centre	Bath	Abbey	Future Allocation	None	H		0	0	0	0	0	0	0	0	0	0
B&NES		Bath Press, Bath	Bath	Westmoreland	Future Allocation	None	RF		3000	250	0	0	0	0	0	0	0	0
B&NES		Roseberry Place, Bath	Bath	Westmoreland	Planning Application	None	RF		5000	417	0	0	0	0	0	0	0	0
B&NES		Former MoD Foxhill	Bath	Odd Down	Pre-Planning Application	None	ML		0	0	0	0	0	0	0	200	0	0
B&NES		Somerdale, Keynsham	Keynsham	Keynsham North	Planning Status	Partly under construction	ML		10000	833	0	0	0	0	0	0	0	0
BCC	Extensions to the existing regional Distribution Centre (Use Class B8)	Accolade Park Kings Weston Lane Avonmouth Bristol BS11 9FG	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	15.00	0	0	9092	123	0	0	0	0	0	0
BCC		Accolade Park Kings Weston Lane Avonmouth Bristol BS11 9FG	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	15.00	0	0	-702	-10	0	0	0	0	0	0
BCC	New industrial buildings associated with outline planning application for redevelopment to provide new office campus, research, development and manufacturing building, new staff facilities	Airbus UK Golf Course Lane Bristol BS99 7AR	Northern Arc	Southmead	Permitted	Not Started	NC	10.66	0	0	6388	160	0	0	0	0	0	0
BCC	Redevelopment to provide new office campus, research, development and manufacturing building, new staff facilities revised parking and access to A38.	Airbus UK Golf Course Lane Bristol BS99 7AR	Northern Arc	Southmead	Permitted	Not Started	NC	10.66	0	0	0	0	0	0	0	0	0	0
BCC	Residential development of up to 80 dwellings, including the demolition of Lewis House and change of use of Phoenix House to 3 no. 2-bed and 3 no. 1-bed flats. (Major application)	Anderson And Leese Building Brentry Hospital Brentry Lane Bristol BS10 6NB	Northern Arc	Henbury	Permitted	Not Started	NC	2.07	0	0	0	0	0	0	0	0	-900	-9
BCC	Ground floor and 1st floor classroom block extension to existing school,	Ashley Down Primary School Arthur Milton Street Bristol BS7 9JT	Rest of Bristol	Bishopston	Permitted	Under Construction	NC	1.08	0	0	0	0	0	0	2307	210	0	0
BCC	Proposed change of use of the existing hangar from Use Class B2 (General Industrial) to Use Class B8 (Storage or Distribution),	BAE Systems West Way Bristol BS99 7AR	Northern Arc	Southmead	Permitted	Not Started	NC	3.36	0	0	35585	483	0	0	0	0	0	0
BCC		BAE Systems West Way Bristol BS99 7AR	Northern Arc	Southmead	Permitted	Not Started	NC	-3.36	0	0	-35585	-483	0	0	0	0	0	0

UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Alterations to Unit A including its partial demolition, insertion of mezzanine floor and re-cladding together with the erection of unit for class D2 (gym)	Bath Road Retail Park Bath Road Brislington Bristol BS4 3LP	South Bristol	Brislington West	Permitted	Not Started	NC	1.35	0	0	0	0	1742	78	0	0	1958	18
BCC		Bath Road Retail Park Bath Road Brislington Bristol BS4 3LP	South Bristol	Brislington West	Permitted	Not Started	NC	-1.35	0	0	0	0	-2831	-127	0	0	0	0
BCC	Proposed new teaching block, reception extension	Begbrook Primary School Begbrook Drive Bristol BS16 1HG	Rest of Bristol	Frome Vale	Permitted	Not Started	NC	2.17	0	0	0	0	0	0	804	210	0	0
BCC	Housing with mixed-uses. A proportion of mixed-use development including business use	Blackberry Hill Hospital, Manor Road, Fishponds	Rest of Bristol	Frome Vale	Allocated	Not started	RF	9.11	0	0	0	0	500	22	0	0	0	0
BCC	New pool hall extension to include: 25m pool; learner pool; changing area and ancillary spaces to the rear of the existing academy and a proposed extension of the existing fitness gym.	Bristol Brunel Academy Speedwell Road Bristol BS15 1NU	Rest of Bristol	Hillfields	Permitted	Not Started	NC	1.36	0	0	0	0	0	0	1441	0	0	0
BCC	Demolition of the laundry building, former nurses accommodation, physiotherapy and William Lloyd unit, along with modern accretions to other listed buildings on the site and erection of a range of buildings from two to seven storeys and conversion of the remaining buildings to provide 190 residential units and 2,442 metres square commercial floorspace comprising A1, A2, A3, A4, B1 and D2	Bristol General Hospital Guinea Street Bristol BS1 6SY	Bristol City Centre	Cabot	Permitted	Not Started	NC	1.54	0	0	0	0	1628	73	0	0	814	8
BCC		Bristol General Hospital Guinea Street Bristol BS1 6SY	Bristol City Centre	Cabot	Permitted	Not Started	NC	1.54	0	0	0	0	0	0	0	0	-17911	-169
BCC	Industrial development within Use Classes B2 and B8.	Cabot Park Plots P1, P7B and P8 Poplar Way East Lawrence Weston Bristol	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	4.04	0	0	14552	197	0	0	0	0	0	0
BCC	Extension to rear of main hospital building; extension to curtilage former stable block;	Cossham Hospital Lodge Road Bristol BS15 1LF	Rest of Bristol	Hillfields	Permitted	Under Construction	NC	1.62	0	0	0	0	0	0	0	0	1144	11
BCC		Cossham Hospital Lodge Road Bristol BS15 1LF	Rest of Bristol	Hillfields	Permitted	Under Construction	NC	-1.62	0	0	0	0	0	0	0	0	-1509	-14
BCC	Outline application for the demolition of the existing building and redevelopment of the site for 7380 square metres of B1 office use	Diamonite Industrial Park Goodneston Road Bristol BS16 3JX	Rest of Bristol	Hillfields	Permitted	Not Started	NC	1.08	7380	523	0	0	0	0	0	0	0	0

UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC		Diamonite Industrial Park Goodneston Road Bristol BS16 3JX	Rest of Bristol	Hillfields	Permitted	Not Started	NC	-1.08	-1800	-128	-5900	-148	0	0	0	0	0	0
BCC	Outline planning application for a 10 year masterplan of the campus for the future development of the faculty buildings, amenities and environs.	Faculty Of Art Media And Design University Of The West Of England Bristol Kennel Lodge Road Bristol BS3 2JT	South Bristol	Southville	Permitted	Not Started	NC	2.94	0	0	0	0	0	0	0	0	8453	80
BCC		Faculty Of Art Media And Design University Of The West Of England Bristol Kennel Lodge Road Bristol BS3 2JT	South Bristol	Southville	Permitted	Not Started	NC	-2.94	0	0	0	0	0	0	0	0	-6534	-62
BCC	Reserved Matters for 5,601 sqm employment space	Filwood Park Hengrove Way Bristol	South Bristol	Filwood	Permitted	Not Started	NC	1.97	5601	397	0	0	0	0	0	0	0	0
BCC	Mixed use development, including the creation of a new park, erection of up to 150 no. residential units, 8000 sqm of employment floorspace (Use Class B1/B2)	Filwood Park Hengrove Way Bristol	South Bristol	Filwood	Permitted	Not Started	NC	5.10	1200	85	1200	30	0	0	0	0	0	0
BCC	Re-development to provide a mixed use scheme comprising business (B1), 398 no. residential apartments (C3), retail units (A1), professional services (A2), food and drink uses (A3, A4 & A5), creche (D1), health and leisure club (D2) and a micro brewery (Sui Generis)	Finzel's Reach (former Bristol Brewery) Counterslip Bristol BS1 6BX	Bristol City Centre	Lawrence Hill	Permitted	Not Started	NC	1.79	25963	1839	1587	40	3750	168	0	0	2760	26
BCC	Construction of a transit store of approximately 8500sq.m.	Former BP Site Avonmouth Docks St Andrews Road Avonmouth Bristol BS11 9DQ	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	5.40	0	0	8500	101	0	0	0	0	0	0
BCC	Construction of a transit store of approximately 10,130 sq.m.	Former Coal Yard Royal Edward Dock Bristol BS11 9BT	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	1.74	0	0	10130	120	0	0	0	0	0	0
BCC	Redevelopment of part of existing industrial site for a Bio-fuel, renewable energy plant	Former Columbian Chemicals (Sevalco) Severn Road Avonmouth Bristol BS11 0YU	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	4.30	0	0	2807	70	0	0	0	0	0	0
BCC	Housing, Commercial, Other	Former Diesel Depot / Arena site, Bath Road	Bristol City Centre	Windmill Hill	Allocated	Not started	RF	4.05	6100	432	0	0	4000	179	0	0	26400	249



UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Redevelopment of the site to provide a building comprising 2,650 sq m (gross) of employment floorspace (class B1/B2/B8) and/or class D1 floorspace with associated parking, 41 no. senior living units with ancillary accommodation (Class C2) with associated parking, a 45 bed care home with associated parking, 13 no. houses and 29 no. one and two bedroom flats	Former Parnalls Works corner of Filwood Road and Goodneston Road Fishponds Bristol BS16 3JX	Rest of Bristol	Hillfields	Permitted	Not Started	NC	1.80	1325	94	1325	33	0	0	0	0	380	4
BCC	mixed use development within two buildings (A and B) comprising ground floor commercial use (A1, A2, A3, A4, A5, B1, D1 or D2) with residential units (total 107) and office/studio space (B1) above.	Former Post Office Sorting Depot Cattle Market Road Bristol BS1 1BX	Bristol City Centre	Lawrence Hill	Permitted	Not Started	NC	1.12	12198	864	0	0	1594	71	0	0	797	8
BCC	The construction and operation of a Resource Recovery Centre, including a Material Recycling facility, an Energy-from-Waste and Bottom Ash facility, associated Office Visitor Centre	Former Sevalco Site (North) Severn Road Avonmouth Bristol BS11 0YU	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	8.54	0	0	26383	660	0	0	0	0	0	0
BCC	The modernisation of the County Cricket ground to include demolition of existing Mound & Jessop stands & associated toilet blocks, provision of 7500 permanent seats incorporating bar, toilet block facilities & 351 surface car parking spaces, a 147 dwelling apartment building incorporating 111 basement car parking spaces, a 217msq club shop, 150msq of office space	Gloucestershire County Cricket Club Nevil Road Bristol BS7 9EJ	Rest of Bristol	Bishopston	Permitted	Under Construction	NC	4.73	150	11	0	0	467	21	0	0	2000	19
BCC	Removal of four temporary classrooms and replacement with four permanent classrooms and ancillary accommodation.	Henleaze Junior School Park Grove Bristol BS9 4LG	Rest of Bristol	Henleaze	Permitted	Not Started	NC	4.39	0	0	0	0	0	0	0	0	630	6
BCC		Henleaze Junior School Park Grove Bristol BS9 4LG	Rest of Bristol	Henleaze	Permitted	Not Started	NC	-4.39	0	0	0	0	0	0	0	0	-272	-3
BCC	New office development associated with: Demolition of existing factory buildings (use class B1 and B2) and erection of new office building (use class B1)	Imperial Tobacco Ltd Winterstoke Road Bristol BS3 2LJ	South Bristol	Bedminster	Permitted	Under Construction	NC	1.93	9717	688	0	0	0	0	0	0	0	0
BCC		Imperial Tobacco Ltd Winterstoke Road Bristol BS3 2LJ	South Bristol	Bedminster	Permitted	Under Construction	NC	-1.93	0	0	-13670	-342	0	0	0	0	0	0

UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Change of use of part of the building to a nursery; erection of new, rear elevation; construction of an all-weather sports pitch;	Imperial Tobacco Ltd Winterstoke Road Bristol BS3 2LJ	South Bristol	Bedminster	Permitted	Not Started	NC	-1.26	-2785	-197	0	0	0	0	0	0	0	0
BCC	Change of use from a business and conference centre, including a restaurant, function room facilities	Kings Weston House Kings Weston Lane Lawrence Weston Bristol BS11 0UR	Northern Arc	Kingsweston	Permitted	Not Started	NC	1.33	0	0	0	0	0	0	0	0	425	4
BCC	Change of use from a business and conference centre, including a restaurant, function room facilities	Kings Weston House Kings Weston Lane Lawrence Weston Bristol BS11 0UR	Northern Arc	Kingsweston	Permitted	Not Started	NC	-1.33	-425	-30	0	0	0	0	0	0	0	0
BCC	a mixed use development totaling 406 residential apartments, 17 live/work units,	"Lakeshore" (Former Office Block To Wills Factory) Hengrove Way Bristol BS14 0HR	South Bristol	Hartcliffe	Permitted	Not Started	NC	4.67	1611	114	0	0	0	0	0	0	0	0
BCC	Mixed use development comprising residential units, offices, leisure, retail and food and drink uses, education, cultural and crèche facilities.	Land At Canons Marsh (incl. car park & Brandons Yard) Anchor Road City Centre Bristol	Bristol City Centre	Cabot	Permitted	Under Construction	NC	1.39	8632	611	0	0	436	20	0	0	0	0
BCC	Subdivision of existing industrial unit and construction of 3 no. industrial buildings (flexible B1(c), B2 and B8 Use Classes).	Land At Chittening Industrial Estate Bristol BS11 0YB	Avonmouth and Bristol Port	Avonmouth	Permitted	Under Construction	NC	3.75	0	0	14524	363	0	0	0	0	0	0
BCC		Land At Chittening Industrial Estate Bristol BS11 0YB	Avonmouth and Bristol Port	Avonmouth	Permitted	Under Construction	NC	-3.75	0	0	-16722	-418	0	0	0	0	0	0
BCC	Housing, community use and retail	Land at former Lawrence Weston Campus of City of Bristol College, Lawrence Weston	Northern Arc	Kingsweston	Allocated	Not started	RF	2.45	0	0	0	0	1800	81	0	0	1200	11
BCC	industrial redevelopment, comprising B1(b), B1(c) and B8 uses. (Major application)	Land At Rockingham Park Smoke Lane Bristol	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	5.99	5945	421	8918	121	0	0	0	0	0	0
BCC	mixed use scheme including residential, retail, office, community workspace, hotel and leisure uses (Classes C1, C2, C3, A1, A2, A3, B1, D1, D2)	Land At Wapping Wharf Wapping Road Bristol	Bristol City Centre	Cabot	Permitted	Not Started	NC	2.68	1350	96	0	0	2096	94	0	0	3048	29
BCC	Outline application for an employment development within Use Classes B1 (Light Industrial), B2 (General Industrial) and B8 (Storage and Distribution)	Land North Of SCA Factory South Side Of Deep Pit Road Bristol	Rest of Bristol	Hillfields	Permitted	Not Started	NC	1.24	3729	264	0	0	0	0	0	0	0	0

UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Outline application for mixed use redevelopment of land to comprise a maximum of 32,442 sq m of floorspace; up to 21,892 sq m residential floorspace (a maximum of 250 separate units); up to 8,400sq m of commercial floorspace (B1 Class); up to 2,000sq m of commercial floorspace (A1, A2, A3, A4 or A5); a doctors surgery of up to 150 sq m (D1);	Land Surrounding Dove Lane St Pauls Bristol	Bristol City Centre	Ashley	Permitted	Not Started	NC	1.72	8400	595	0	0	2000	89	0	0	150	1
BCC	Community use (including school) and housing with business. The site should provide 2,000 to 3,000m² of business and / or community facilities.	Marksbury Road College Site	South Bristol	Windmill Hill	Allocated	Not started	RF	2.34	900	64	0	0	150	7	2900	480	1100	10
BCC	New build and classroom extension	May Park Primary School Coombe Road Bristol BS5 6LE	Rest of Bristol	Eastville	Permitted	Under Construction	NC	2.93	0	0	0	0	0	0	4288	60	0	0
BCC		May Park Primary School Coombe Road Bristol BS5 6LE	Rest of Bristol	Eastville	Permitted	Under Construction	NC	-2.93	0	0	0	0	0	0	-400	0	0	0
BCC	Proposed extension and refurbishment	Millpond Primary School Baptist Street Bristol BS5 0YR	Inner East	Lawrence Hill	Permitted	Under Construction	NC	1.61	0	0	0	0	0	0	103	0	0	0
BCC	Extension to the western elevation of the store	Morrisons 692-716 Fishponds Road Fishponds Bristol BS16 3UE	Rest of Bristol	Frome Vale	Permitted	Not Started	NC	2.57	0	0	0	0	728	33	0	0	0	0
BCC	Refurbishment of wing of secondary school and new build extension to create primary school	Orchard School Filton Road Bristol BS7 0XZ	Northern Arc	Horfield	Permitted	Under Construction	NC	10.98	0	0	0	0	0	0	0	210	240	2
BCC	Outline application for the retention of Endemol buildings, demolition of other existing buildings and erection of new buildings of 2-7 storeys built on top of new undercroft car park to provide employment floor space (B1); Retail floor space (A1, A3 & A4); up to 11 live/work units; and up to 210 residential units (C3); with revised vehicular access off Bath Road. (Major application)	Paintworks Phase III site, Bath Road	South Bristol	Brislington West	Permitted	Not Started	NC	2.40	11060	783	0	0	1280	57	0	0	6674	63
BCC		Paintworks Phase III site, Bath Road	South Bristol	Brislington West	Permitted	Not Started	NC	-2.40	0	0	-10200	-255	0	0	0	0	0	0
BCC	Outline planning application - Erection of Public House.	Plot 1 - Phase 6 Imperial Park South Side Of Main Access Wills Way Bristol	South Bristol	Hartcliffe	Permitted	Not Started	NC	1.08	0	0	0	0	1200	54	0	0	0	0

UA	Site Description	Address	Policy Area	Ward	Planning Status	Development Status	Certainty	Hectares	2014 - 2036									
									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Outline planning application - Erection of business units (Use Class B1)	Plot 3 - Phase 6 Imperial Park South Side Wills Way Bristol	South Bristol	Hartcliffe	Permitted	Not Started	NC	1.44	2400	170	0	0	0	0	0	0	0	0
BCC	Proposed Bristol Resource Recovery Centre	Plot M2 (Merebank) Kings Weston Lane Avonmouth Bristol BS11 8AQ	Avonmouth and Bristol Port	Avonmouth	Permitted	Under Construction	NC	7.32	0	0	27524	374	0	0	0	0	0	0
BCC	Redevelopment of the former Rhodia chemical works to provide a chilled distribution unit (Use Class B8) and an ancillary service centre (Use Class B2)	Portside (Former Rhodia Works) St Andrews Road Avonmouth Bristol BS11 9YF	Avonmouth and Bristol Port	Avonmouth	Permitted	Under Construction	NC	17.15	0	0	57195	1430	0	0	0	0	0	0
BCC	Mixed use development comprising 4 hectares of residential development to be built at a minimum density of 30 dwellings per hectare and 0.3 hectares of employment land for class B1 (business) use.	Riverwood International Packaging Ltd Filwood Road Bristol BS16 3SB	Rest of Bristol	Hillfields	Permitted	Not Started	NC	4.36	1500	106	0	0	0	0	0	0	0	0
BCC		Riverwood International Packaging Ltd Filwood Road Bristol BS16 3SB	Rest of Bristol	Hillfields	Permitted	Not Started	NC	-4.36	0	0	-26577	-361	0	0	0	0	0	0
BCC	mixed use comprising around 145 residential units (Use Class C3), around 5000sqm of employment floorspace (Use Classes B1(b) (c), B8) and around 600 sqm of retail floorspace (Use Classes A1/A2/A3).	Sainsburys Winterstoke Road Bristol BS3 2NS	South Bristol	Bedminster	Permitted	Not Started	NC	4.05	2500	177	2500	48	8367	374	0	0	0	0
BCC		Sainsburys Winterstoke Road Bristol BS3 2NS	South Bristol	Bedminster	Permitted	Not Started	NC	-4.05	0	0	0	0	-8367	-374	0	0	0	0
BCC	Erection of a steel clad portal framed building.	Sims Metal Royal Edward Dock Bristol BS11 9BT	Avonmouth and Bristol Port	Avonmouth	Permitted	Not Started	NC	1.30	0	0	945	13	0	0	0	0	0	0
BCC	Construct a single storey social centre.	Southmead Community Sport Pen Park Sports Pavilion Jarratts Road Bristol BS10 6WF	Northern Arc	Southmead	Permitted	Not Started	NC	5.91	0	0	0	0	0	0	0	0	360	3
BCC	construct the new acute North Bristol and Community hospital	Southmead Hospital Southmead Road Bristol BS10 5NB	Northern Arc	Horfield	Permitted	Under Construction	NC	18.40	0	0	0	0	0	0	0	0	145515	1374
BCC		Southmead Hospital Southmead Road Bristol BS10 5NB	Northern Arc	Horfield	Permitted	Under Construction	NC	-18.40	0	0	0	0	0	0	0	0	-70452	-665
BCC	Housing with mixed-uses	St Matthias Campus, College Road, Fishponds.	Rest of Bristol	Frome Vale	Allocated	Not started	RF	5.62	0	0	0	0	0	0	0	0	927	9
BCC		St Matthias Campus, College Road, Fishponds.	Rest of Bristol	Frome Vale	Allocated	Not started	RF	-5.62	0	0	0	0	0	0	0	0	-5469	-52
BCC	Proposed single storey extension.	Stax Trade Centre Passage Road Henbury Bristol BS10 7JB	Northern Arc	Henbury	Permitted	Not Started	NC	1.38	0	0	653	16	0	0	0	0	0	0

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									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Provide a new 18,000 seated (18,500 Capacity) stadium and ancillary accommodation, hotel (84 rooms), 99 student flats (546 rooms), restaurant, convenience store, offices	The Memorial Stadium Filton Avenue Bristol BS7 0AQ	Rest of Bristol	Bishopston	Permitted	Not Started	NC	3.90	1548	110	0	0	370	17	0	0	12633	119
BCC		The Memorial Stadium Filton Avenue Bristol BS7 0AQ	Rest of Bristol	Bishopston	Permitted	Not Started	NC	-3.90	0	0	0	0	0	0	0	0	-3500	-33
BCC	Redevelopment of land fronting St. Michaels Hill and Tyndalls Avenue to provide academic/educational facilities (Use Class D1)	University Of Bristol Site St Michaels Hill & Tyndall Avenue Bristol BS2 8BH	Bristol City Centre	Cabot	Permitted		NC	1.26	0	0	0	0	0	0	0	0	21163	200
BCC		University Of Bristol Site St Michaels Hill & Tyndall Avenue Bristol BS2 8BH	Bristol City Centre	Cabot	Permitted		NC	-1.26	0	0	0	0	0	0	0	0	-9200	-87
BCC	Employment & Other (hotel)	Bristol and Exeter Yard (TCN) site	Bristol City Centre	Lawrence Hill	Allocated	Not started	RF	1.11	1000	71	0	0	0	0	0	0	3000	71
BCC	Potential Future Development site Avonmouth (Industrial)	Former GKN Aerospace, Atlantic Road	Avonmouth and Bristol Port	Avonmouth	Allocated	Not started	RF	4.86	0	0	29000	394	0	0	0	0	0	0
BCC	Potential Future Development site Avonmouth (Industrial)	Former Texaco Oil Depot	Avonmouth and Bristol Port	Avonmouth	Allocated	Not started	RF	3.73	0	0	22300	303	0	0	0	0	0	0
BCC	Housing with mixed-uses.	Glenside Campus, Blackberry Hill, Fishponds	Rest of Bristol	Frome Vale	Allocated	Not started	RF	6.83	0	0	0	0	500	22	0	0	0	0
BCC	Housing, offices and open space in the form of a large high quality park	Hengrove Park	South Bristol	Hengrove	Allocated	Not started	RF	49.84	30000	2125	0	0	0	0	0	0	0	0
BCC	Community use, open space, business and housing.	Knowle West Health Park, Downton Road	South Bristol	Filwood	Allocated	Not started	RF	4.48	0	0	5200	130	0	0	0	0	0	0
BCC	Housing, Offices	Land and buildings south of Brunel Lock Road, including A-Bond Warehouse	Bristol City Centre	Cabot	Allocated	Not started	RF	3.15	9600	680	0	0	0	0	0	0	0	0
BCC		Land and buildings south of Brunel Lock Road, including A-Bond Warehouse	Bristol City Centre	Cabot	Allocated	Not started	RF	3.15	0	0	-17100	-192	0	0	0	0	0	0
BCC	Housing and light industry	Land at and adjacent to Malago House, Bedminster Road, Bedminster	South Bristol	Bedminster	Allocated	Not started	RF	2.84	0	0	6000	150	0	0	0	0	0	0
BCC	Housing, business, community use and small-scale retail	Land at former Elizabeth Shaw Factory, Greenbank Road, Easton	Inner East	Easton	Allocated	Not started	RF	1.96	0	0	0	0	800	36	700	0	0	0
BCC	Housing and business	Land at Novers Hill, adjacent to industrial units	South Bristol	Filwood	Allocated	Not started	RF	2.18	7200	510	0	0	0	0	0	0	0	0
BCC	Housing and light industry	Morley / Ashley / Southey Street Works, St Werburgh's	Inner East	Ashley	Allocated	Not started	RF	1.61	0	0	4600	115	0	0	0	0	0	0
BCC	Community use (school)	Open Space to rear of Abingdon Road and Honiton Road, Mayfield Park, nr Fishponds	Rest of Bristol	Hillfields	Allocated	Not started	RF	1.59	0	0	0	0	0	0	2900	450	0	0

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									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
BCC	Housing - Business uses	Part of Henacre Open Space, Lawrence Weston	Northern Arc	Avonmouth	Allocated	Not started	RF	3.69	2100	149	0	0	0	0	0	0	0	0
BCC	Employment, residential, other	Plot 6 Temple Quay, The Friary	Bristol City Centre	Lawrence Hill	Allocated	Not started	RF	1.47	4800	340	0	0	1200	54	0	0	600	14
BCC	Housing and business	Site of former City of Bristol College (Hartcliffe Campus), Hawkfield Road, Hartcliffe	South Bristol	Whitchurch Park	Allocated	Not started	RF	8.48	10800	765	0	0	0	0	0	0	0	0
NSC	Erection of 4no two storey office buildings with associated car parking and landscaping.	Plot 6, Servert Road, Gordano Gate, Portishead	Town	Portishead East	Full	Part built - only one block complete, rest not started	NC	1.09	4,400	367	0	0	0	0	0	0	0	0
NSC	Application to extend time limit for 08/P/1914/O (Outline planning application for the erection of an employment development comprising of a B1 office use including demolition of existing premises)	A.P. Burt Paper Mill site, Portishead	Town	Portishead East	Outline	Not Started	NC	1.7	0	0	-9,300	-70	0	0	0	0	0	0
NSC	Application to extend time limit for 08/P/1914/O (Outline planning application for the erection of an employment development comprising of a B1 office use including demolition of existing premises)	A.P. Burt Paper Mill site, Portishead	Town	Portishead East	Outline	Not Started	NC	1.7	8,000	400	0	0	0	0	0	0	0	0
NSC	Outline planning permission for the erection of a new furniture store, petrol filling station and associated parking.	Land off Wyndham Way, Gordano Gate, Portishead	Town	Portishead East	Outline	Not Started	NC	1.43	0	0	0	0	5,190	38	0	0	0	0
NSC	Reserved matters for external appearance, siting, design, means of access and landscaping for the erection of 3 commercial office blocks (B1)	Long Ashton Research Station, Weston Road, Long Ashton	Service Village	Wraxall and Long Ashton	Reserved Matters	Two office blocks complete, one not started	NC	1.16	2,494	208	0	0	0	0	0	0	0	0
NSC	Reserved matters for 66no dwellings with live/work units.	Oxford Plasma Technology, North End Road, Yatton	Service Village	Yatton	Reserved Matters	Not Started	ML	1.46	0	0	-18,288	-270	0	0	0	0	0	0
NSC	Erection of an extension to existing building to create additional warehouse space.	Unit A, Kenn Business Park, Barns Ground, Kenn	Countryside	Yatton	Full	Not Started	NC	1.03	0	0	635	8	0	0	0	0	0	0
NSC	Outline application for B1, B2, B8, C1, A1, A2, A3, A4, A5 development with associated works with all matters reserved for subsequent approval apart from access.	Land north of Somerset Avenue and land off West Wick Roundabout, South Worle, Weston-super-Mare	Town	Weston-super-Mare South Worle	Outline	Two reserved matters application received and building work has commenced.	NC	6.4	6800	360	4200	120	0	0	0	0	850	20
NSC	Erection of (B1) office comprising central core, office floor space, parking and landscaping.	Former Weston Gateway Caravan Park, Land off Somerset Avenue, West Wick, Weston-super-Mare	Town	Weston-super-Mare South Worle	Reserved Matters	Under Construction	NC	0.55	3,719	300	0	0	0	0	0	0	0	0

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									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
NSC	Reserved matters application pursuant to outline application 11/P/0672/O for erection of public house/restaurant	Plot G, Weston Gateway Business Park, Somerset Avenue, Weston-super-Mare	Town	Weston-super-Mare South Worle	Reserved Matters	Not Started	NC	0.5	0	0	0	0	0	0	0	0	796	40
NSC	Erection of 13no. B1(a) and B1(b) office buildings	Land off Wolverhill Road, Summer Lane, West Wick, Weston super Mare	Town	Weston-super-Mare South Worle, Banwell and Winscombe, Kewstoke	Reserved Matters	Not Started	NC	3.48	17,158	1430	0	0	0	0	0	0	0	0
NSC	Application to extend time limit for implementation of planning permission 07/P/2156/F (Erection of two storey office (Class B1))	Land off Scot Elm Drive, West Wick Business Park, Weston super Mare	Town	Weston-super-Mare South Worle	Full	Not Started	NC	0.5	676	56	0	0	0	0	0	0	0	0
NSC	Proposed new office development, associated car parking and landscaping	Land at Scot Elm Drive, West Wick, Weston-super-Mare	Town	Weston-super-Mare South Worle	Full	Not Started	NC	2.17	10,951	913	0	0	0	0	0	0	0	0
NSC	Change of use from boarding kennels and cattery to B1/B8 mixed use.	Land at Chelvey Boarding Kennels, Brockley Lane, Brockley	Countryside	Backwell	Full	Not Started	NC	2.2	100	8	630	8	0	0	0	0	0	0
NSC	Outline application the formation of a Business Park and an Industrial Quarter.	Weston Park, Weston Airfield, Winterstoke Road, Weston-super-Mare	Town	Weston-super-Mare East, Hutton and Locking	Outline	Two reserved matters application received and building work has commenced.	NC	29.5	49322	4,110	27500	578	0	0	0	0	9975	250
NSC	Erection of an office building pursuant of Outline Permission 07/P/1950/O	Plot A3, Weston Park, Weston Airfield, Winterstoke Road, Weston-super-Mare	Town	Hutton and Locking, Weston-super-Mare East, Weston-super-Mare South	Full	Under Construction	NC	0.58	2,180	182	0	0	0	0	0	0	0	0
NSC	Reserved Matters for the erection of a public house/restaurant and hotel.	Weston Park, Land at Former Weston Airfield, Off Locking Moor Road, Weston-super-Mare	Town	Weston-super-Mare East	Reserved Matters	Not Started	NC	0.7	0	0	0	0	0	0	0	0	3532	72
NSC	Outline application for the development of a business park comprising B1, B2 and B8	Land to the west of Kenn Road, bound by former railway, the M5 and Colehouse Lane, Kenn	Countryside	Yatton	Outline	Not Started	ML	9.48	Unknown	Unknown	Unknown	Unknown	0	0	0	0	0	0
NSC	Variation of condition 50 of outline permission 05/P/1198/O to read: The new builds B1/Office space shall be limited to a total floorspace of 24,000sqm over a footprint area of 11,000sqm.	Barrow Hospital, Barrow Gurney, Somerset	Countryside	Backwell	Full	Not Started	H	38.3	24,000	2000	0	0	0	0	0	0	0	0
NSC	Erection of foodstore, customer parking, service access and associated development	Land off Serbert Way, Portishead	Town	Portishead East	Full	Under Construction	NC	1.9	0	0	0	0	4,568	270	0	0	0	0

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									Office Floor space (sq m)	Office no. jobs	Industry Floor Space (sq m)	Industry no. jobs	Retail Floor space (sq m)	Retail no. jobs	Schools Floor space (sq m)	Schools no. students	Other Floor space (sq m)	Other no. jobs
SGC	Plot 1700 Aztec West	Plot 1700 Aztec West, Almondsbury	North Fringe of Bristol	Patchway	Planning permission	Approved development proposals	NC	-2.17	0	0	-6565	-200	0	0	0	0	0	0
SGC	Plot 1700 Aztec West	Plot 1700 Aztec West, Almondsbury	North Fringe of Bristol	Patchway	Planning permission	Approved development proposals	NC	2.17	15060	610	0	0	0	0	0	0	0	0
SGC	Former Mushroom Farm, Cribbs Causeway	Former Mushroom Farm, Cribbs Causeway, Almondsbury	North Fringe of Bristol	Patchway	Planning permission	Approved development proposals	NC	1.85	0	0	2714	0	0	0	0	0	0	0
SGC	Filton Triangle	Filton Triangle, Stoke Gifford	North Fringe of Bristol	Stoke Gifford	Planning permission	Under construction	NC	17.48	0	0	11216	170	0	0	0	0	0	0
SGC	Abbeywood Retail Park	Abbeywood Retail Park, Station Road, Filton	North Fringe of Bristol	Frenchay and Stoke Park	Planning permission	Under construction	NC	3.63	0	0	0	0	8209	400	0	0	0	0
SGC	CPNN	Cribbs Patchway New Neighbourhood, Filton	North Fringe of Bristol	Filton	Site allocated	Identified within development plan	ML	50	0	0	Not known	6500	0	0	0	0	0	0
SGC	Wallscourt Primary School	Wallscourt Primary School, Longdown Avenue, Filton	North Fringe of Bristol	Frenchay and Stoke Park	Planning permission	Under construction	NC	2.03	0	0	0	0	0	0	2755	410	0	0
SGC	BTE Academy	BTE Academy, New Road, Stoke Gifford	North Fringe of Bristol	Frenchay and Stoke Park	Planning permission	Under construction	NC	1.11	0	0	0	0	0	0	4358	440	0	0
SGC	Land off Longdown Ave, Stoke Gifford	Land off Longdown Ave, Stoke Gifford	North Fringe of Bristol	Frenchay and Stoke Park	Planning permission	Approved development proposals	NC	8.32	0	0	0	0	0	0	0	0	6347	212
SGC	Harlequin Office Park	Harlequin Office Park, Folly Brook Road, Emersons Green	East Fringe of Bristol	Emersons Green	Planning permission	Approved development proposals	NC	1.76	9150	915	0	0	0	0	0	0	0	0
SGC	Emersons Green East, "SPark"	Science Park, Emersons Green	East Fringe of Bristol	Emersons Green/Boyd Valley	Planning permission	Approved development proposals	NC	16.87	0	0	38491	2200	0	0	0	0	0	0
SGC	National Composites Centre, Emersons Green	National Composites Centre, Feynman Way Central, Emersons Green	East Fringe of Bristol	Emersons Green	Planning permission	Approved development proposals	NC	3.92	0	0	9972	100	0	0	0	0	0	0
SGC	Emersons Green Development Area C	Emersons Green East, Emersons Green	East Fringe of Bristol	Emersons Green/Boyd Valley	Site allocated	Identified within development plan	RF	20	0	0	85000	2500	0	0	0	0	0	0
SGC	Emersons Green Safeguarded land	Emersons Green East, Emersons Green	East Fringe of Bristol	Emersons Green/Boyd Valley	Site allocated	Identified within development plan	RF	5	0	0	20400	600	0	0	0	0	0	0
SGC	Bristol Water Depot, Soundwell	Bristol Water Depot, Soundwell Road, Soundwell	East Fringe of Bristol	Kings Chase	Planning permission	Approved development proposals	NC	-1.83	0	0	0	0	0	0	0	0	Not known	-40
SGC	Land between Avon Ring Road and Folly Brook Road, Emersons Green	Land between Avon Ring Road and Folly Brook Road, Emersons Green	East Fringe of Bristol	Emersons Green	Planning permission	Approved development proposals	NC	2.34	0	0	0	0	0	0	0	0	8346	130
SGC	Ansteys Road	Land at Ansteys Road, Hanham	East Fringe of Bristol	Hanham	Planning permission awaiting signing of S106 Agreement	Not started	NC	-3.23	0	0	Not known	Not known	0	0	0	0	0	0
SGC	Ansteys Road	Land at Ansteys Road, Hanham	East Fringe of Bristol	Hanham	Planning permission awaiting signing of S106 Agreement	Not started	NC	3.23	0	0	0	0	2918	200	0	0	0	0

UA	Area	Policy Area	Ward	Planning Status	Dev't Status	Certainty	Dwelling Totals 2013-2036	Dwelling Totals 2013-2021	Dwelling Totals 2022-2026	Dwelling Totals 2027-2031	Dwelling Totals 2032-2036
BCC	Former Courage Brewery Counterslip Redcliff Bristol	City Centre	Lawrence Hill	Permitted	Under Construction	NC	203	203	0	0	0
BCC	Hewlett Packard (Land Adjacent To Romney House) Romney Avenue Bristol BS7 9ST (6B)	Northern Arc	Lockleaze	Permitted	Under Construction	NC	141	141	0	0	0
BCC	Former Imperial Tobacco Office Building Hengrove Way Bristol BS14 0HR	South Bristol	Hartcliffe	Permitted	Under Construction	NC	152	152	0	0	0
BCC	ND10 The Zone Anvil Street Bristol BS2 0LT	City Centre	Lawrence Hill	Permitted	Under construction	NC	109	109	0	0	0
BCC	Land Bounded By Redcliff Street, St Thomas Street And Three Queens Lane, Redcliffe Bristol	City Centre	Lawrence Hill	Permitted	Not started	NC	568	568	0	0	0
BCC	Globe House Eugene Street St Pauls Bristol BS5 0TN	Inner East	Lawrence Hill	Permitted	Not started	NC	51	51	0	0	0
BCC	Pring & St Hill Ltd Malago Road Bristol BS3 4JH	South Bristol	Southville	Permitted	Not started	NC	183	183	0	0	0
BCC	80 Stokes Croft Bristol BS1 3QY	City Centre	Ashley	Permitted	Not started	NC	79	79	0	0	0
BCC	Ashton Vale And Former Alderman Moore Allotments Off Ashton Road (B3128) Bristol	South Bristol	Bedminster	Permitted	Not started	NC	137	137	0	0	0
BCC	Paintworks Bristol BS4 3EH	South Bristol	Brislington West	Permitted	Not started	NC	221	221	0	0	0
BCC	Sainsburys Winterstoke Road Bristol BS3 2NS	South Bristol	Bedminster	Permitted	Not started	NC	145	145	0	0	0
BCC	Former Parnalls Works Filwood Road Bristol BS16 3JX	Rest of Bristol	Hillfields	Permitted	Not started	NC	83	83	0	0	0
BCC	Former Post Office Sorting Depot Cattle Market Road Bristol BS1 1BX	City Centre	Lawrence Hill	Permitted	Not started	NC	107	107	0	0	0
BCC	Plot ND9 Temple Quay 2 Avon Street Bristol	City Centre	Lawrence Hill	Permitted	Not started	NC	173	173	0	0	0
BCC	Huller House/South Warehouse, Redcliff Backs.	City Centre	Lawrence Hill	Permitted	Not started	NC	55	55	0	0	0
BCC	Warehouse Adjacent To Trewlawney House, Surrey Street And Including 31-32 Portland Square St Pauls Bristol	City Centre	Ashley	Permitted	Not started	NC	59	59	0	0	0
BCC	Plot ND6 Temple Quay North Temple Gate Bristol	City Centre	Lawrence Hill	Permitted	Not started	NC	60	60	0	0	0
BCC	Graphic Packaging Ltd Filwood Road Bristol BS16 3SB	Rest of Bristol	Hillfields	Permitted	Not started	NC	208	208	0	0	0
BCC	Playing Field Brook Road Speedwell Bristol	Rest of Bristol	Eastville	Permitted	Not started	NC	80	80	0	0	0
BCC	Riverview House 171 - 178 Coronation Road Bristol BS3 1RF	South Bristol	Southville	Permitted	Not started	NC	78	78	0	0	0
BCC	Land At Canons Marsh Anchor Road Bristol	City Centre	Cabot	Permitted	Under construction	NC	170	170	0	0	0
BCC	Land Surrounding Dove Lane St Pauls Bristol	City Centre	Ashley	Permitted	Not started	NC	250	250	0	0	0
BCC	Anderson And Leese Building Brentry Hospital Brentry Lane Bristol BS10 6NB	Northern Arc	Henbury	Permitted	Not started	NC	80	80	0	0	0
BCC	Gloucestershire County Cricket Club Nevil Road Bristol BS7 9EJ	Rest of Bristol	Bishopston	Permitted	Under construction	NC	147	147	0	0	0
BCC	Wapping Wharf/Princes Wharf, City Docks. (Other Phases)	City Centre	Cabot	Permitted	Not started	NC	431	431	0	0	0
BCC	Land At Wapping Wharf Wapping Road Bristol	City Centre	Cabot	Permitted	Not started	NC	194	194	0	0	0
BCC	Filwood Park Hengrove Way Bristol	South Bristol	Filwood	Permitted	Not started	NC	150	150	0	0	0
BCC	Diamonite Industrial Park Goodneston Road Bristol BS16 3JX	Rest of Bristol	Hillfields	Permitted	Not started	NC	50	50	0	0	0
BCC	Bristol General Hospital Guinea Street Bristol BS1 6SY	City Centre	Cabot	Permitted	Not started	NC	190	190	0	0	0
BCC	The Memorial Stadium Filton Avenue Bristol	Rest of Bristol	Bishopston	Permitted	Not Started	NC	65	65	0	0	0
BCC	8-10 Colston Avenue Bristol BS1 4ST	City Centre	Cabot	Permitted	Not Started	NC	56	56	0	0	0
BCC	Former Bristol Magistrates' Court Nelson Street City Centre Bristol BS1 2PY	City Centre	Cabot	Permitted	Not Started	NC	81	81	0	0	0
BCC	St Stephens House Colston Avenue Bristol	City Centre	Cabot	Permitted	Under Construction	NC	52	52	0	0	0
BCC	13-21 Baldwin Street Bristol BS1 1NA	City Centre	Cabot	Permitted	Not Started	NC	87	87	0	0	0
BCC	10 Anchor Road Bristol BS1 5TT	City Centre	Cabot	Permitted	Not Started	NC	68	68	0	0	0

UA	Area	Policy Area	Ward	Planning Status	Dev't Status	Certainty	Dwelling Totals 2013-2036	Dwelling Totals 2013-2021	Dwelling Totals 2022-2026	Dwelling Totals 2027-2031	Dwelling Totals 2032-2036
BCC	Pro-Cathedral Park Place Clifton Bristol BS8 1JR	City Centre	Clifton East	Permitted	Under Construction	NC	117	117	0	0	0
BCC	Bristol Entertainment Centre Frogmore Street Bristol BS1 5NA	City Centre	Cabot	Permitted	Not Started	NC	84	84	0	0	0
BCC	Henacre Open Space, Lawrence Weston	Northern Arc	Avonmouth	Allocated	Not started	RF	150	0	150	0	0
BCC	Land at Lawrence Weston Campus of City of Bristol College, Lawrence Weston	Northern Arc	Kingsweston	Allocated	Not started	RF	80	80	0	0	0
BCC	Former Dunmail Primary School, Southmead	Northern Arc	Southmead	Allocated	Not started	RF	140	140	0	0	0
BCC	Bonnington Walk former allotments site, Lockleaze	Northern Arc	Lockleaze	Allocated	Not started	RF	170	170	0	0	0
BCC	Romney House and Lockleaze School, Lockleaze	Northern Arc	Lockleaze	Allocated	Not started	RF	250	0	250	0	0
BCC	BT Depot, Filton Road, Horfield	Northern Arc	Horfield	Allocated	Not started	RF	60	0	60	0	0
BCC	Blackberry Hill Hospital, Manor Road, Fishponds	Rest of Bristol	Frome Vale	Allocated	Not started	RF	300	300	0	0	0
BCC	Glenside Campus, Blackberry Hill, Fishponds	Rest of Bristol	Frome Vale	Allocated	Not started	RF	300	0	300	0	0
BCC	St Matthias Campus, College Road, Fishponds	Rest of Bristol	Frome Vale	Allocated	Not started	RF	300	300	0	0	0
BCC	Morley / Ashley / Southey Street Works, St Werburgh's	Inner East	Ashley	Allocated	Not started	RF	100	0	100	0	0
BCC	Former Elizabeth Shaw chocolate factory, Greenbank	Inner East	Easton	Allocated	Not started	RF	236	0	236	0	0
BCC	Land at and adjacent to Malago House Bedminster Road, Bedminster	South Bristol	Bedminster	Allocated	Not started	RF	90	0	90	0	0
BCC	Land at Novers Hill, east of Hartcliffe Way and west of Novers Lane / Novers Hill	South Bristol	Filwood	Allocated	Not started	RF	440	0	440	0	0
BCC	Land adjoining Hartcliffe Way and Hengrove Way, Inn's Court.	South Bristol	Filwood	Allocated	Not started	RF	430	0	430	0	0
BCC	Marksbury Road College Site	South Bristol	Windmill Hill	Allocated	Not started	RF	85	85	0	0	0
BCC	Land adjoining Airport Road between Creswicke Road and to the east of Ilminster Avenue.	South Bristol	Filwood	Allocated	Not started	RF	100	0	100	0	0
BCC	Land at Novers Hill, adjacent to industrial units.	South Bristol	Filwood	Allocated	Not started	RF	50	0	50	0	0
BCC	Former Florence Brown school, west of Leinster Avenue	South Bristol	Filwood	Allocated	Not started	RF	85	0	85	0	0
BCC	Open spaces either side of Inns Court Drive	South Bristol	Filwood	Allocated	Not started	RF	70	0	70	0	0
BCC	Land adjoining Airport Road between Creswicke Road and to the east of Ilminster Avenue.	South Bristol	Knowle	Allocated	Not started	RF	50	0	50	0	0
BCC	Broad Plain House and associated land, Broadbury Road	South Bristol	Filwood	Allocated	Not started	RF	50	0	50	0	0
BCC	Kingswear and Torpoint	South Bristol	Windmill Hill	Allocated	Not started	RF	119	0	119	0	0
BCC	Land at Broom Hill, Brislington	South Bristol	Brislington East	Allocated	Not started	RF	300	300	0	0	0
BCC	Government Offices, Flowers Hill, Brislington	South Bristol	Brislington West	Allocated	Not started	RF	100	0	100	0	0
BCC	493-499 Bath Road, Kensington Park, nr Arno's Vale	South Bristol	Brislington West	Allocated	Not started	RF	85	0	85	0	0
BCC	Site of former City of Bristol College (Hartcliffe Campus), Hawkfield Road, Hartcliffe	South Bristol	Whitchurch Park	Allocated	Not started	RF	300	0	300	0	0
BCC	Hengrove Park	South Bristol	Hengrove	Allocated	Not started	RF	1000	0	1000	0	0
BCC	Former New Fosseway School, Hengrove	South Bristol	Hengrove	Allocated	Not started	RF	175	175	0	0	0
BCC	Newfoundland Way	City Centre	Lawrence Hill	Allocated	Not started	RF	100	0	100	0	0
BCC	Redcliffe Way	City Centre	Lawrence Hill	Allocated	Not started	RF	140	0	140	0	0
BCC	Central Ambulance Station	City Centre	Cabot	Allocated	Not started	RF	100	100	0	0	0
BCC	The Horsefair / Callowhill Court	City Centre	Cabot	Allocated	Not started	RF	200	200	0	0	0
BCC	McArthur's Warehouse, Gasferry Road	City Centre	Cabot	Allocated	Not started	RF	80	0	80	0	0
BCC	Purifier House West, Anchor Road	City Centre	Cabot	Allocated	Not started	RF	50	0	50	0	0
BCC	Land and buildings south of Brunel Lock Road, including A-Bond Warehouse	City Centre	Cabot	Allocated	Not started	RF	100	0	100	0	0
BCC	Fire Station, Temple Back	City Centre	Lawrence Hill	Allocated	Not started	RF	140	0	140	0	0
BCC	Lakota Nightclub / Former Coroner's Court, Upper York Street / Backfields	City Centre	Ashley	Allocated	Not started	RF	60	0	60	0	0

UA	Area	Policy Area	Ward	Planning Status	Dev't Status	Certainty	Dwelling Totals 2013-2036	Dwelling Totals 2013-2021	Dwelling Totals 2022-2026	Dwelling Totals 2027-2031	Dwelling Totals 2032-2036
BCC	The Carriage Works & Westmoreland House	City Centre	Ashley	Allocated	Not started	RF	100	0	100	0	0
BCC	Plot 3 Temple Quay	City Centre	Lawrence Hill	Allocated	Not started	RF	50	50	0	0	0
BCC	Plot ND5 Temple Quay North	City Centre	Lawrence Hill	Allocated	Not started	RF	147	0	147	0	0
BCC	Temple Circus, Temple Street	City Centre	Lawrence Hill	Allocated	Not started	RF	50	0	50	0	0
BCC	Templegate Peugeot	City Centre	Lawrence Hill	Allocated	Not started	RF	60	60	0	0	0
BCC	Plot 6 Temple Quay	City Centre	Lawrence Hill	Allocated	Not started	RF	80	0	80	0	0
BCC	Former Diesel Depot Site	City Centre	Windmill Hill	Allocated	Not started	RF	70	70	0	0	0
BCC	Silverthorne Lane	City Centre	Lawrence Hill	Allocated	Not started	RF	1200	0	1200	0	0
B&NES	BWR: B3, B4, B10, B10a, B10b, B7, B8	Bath	Kingsmead	Full Permission	Under Construction	UC	93	93			
B&NES	BWR: B17	Bath	Westmoreland	Full Permission	Under Construction	NC	55	55			
B&NES	BWR: B1 & B2	Bath	Westmoreland	Full Permission	Under Construction	NC	26	26			
B&NES	BWR: B6, B12	Bath	Westmoreland	Full Permission	Under Construction	NC	38	38			
B&NES	BWR: B11, B13,B15a, B15b	Bath	Westmoreland	Full Permission	Under Construction	NC	259	259			
B&NES	BWR: B10c	Bath	Westmoreland	Full Permission	Under Construction	NC	11	11			
B&NES	BWR: B5	Bath	Westmoreland	Outline Permission	Not Started	NC	45	45			
B&NES	BWR: B16	Bath	Westmoreland	Outline Permission	Not Started	NC	53	53			
B&NES	BWR: OPA.1 Unsecured Land	Bath	Westmoreland	Outline Permission	Not Started	ML	1460	492	605	363	
B&NES	BWR: North Bank	Bath	Kingsmead	Allocated Site	Not Started	RF	286		286		
B&NES	BWR:East	Bath	Kingsmead	Allocated Site	Not Started	RF	300		300		
B&NES	MoD Ensleigh 1	Bath	Lansdown	Full Permission	Not Started	NC	40		40		
B&NES	MoD Ensleigh 2	Bath	Lansdown	Full Permission	Not Started	NC	240	157	83		
B&NES	MoD Ensleigh 3	Bath	Lansdown	Allocated Site	Not Started	RF	120		120		
B&NES	MoD Foxhill	Bath	Combe Down	Full Application Submitted	Not Started	NC	700	380	320		
B&NES	MoD Warminster Road	Bath	Bathwick	Full Application Submitted	Not Started	NC	150	150			
B&NES	Lambridge Harvester	Bath	Lambridge	Full Permission	Not Started	ML	50	50			
B&NES	R/O 89-123 Englishcombe Lane	Bath	Odd Down	Allocated Site	Not Started	NC	50	50			
B&NES	Hope House	Bath	Lansdown	Full Application Submitted	Not Started	NC	50	50			
B&NES	Brougham Hayes	Bath	Widcombe	Full Permission	Not Started	NC	50	50			
B&NES	Hartwells Garage	Bath	Newbridge	Application Imminent	Not Started	RF	80	80			
B&NES	Roseberry Place	Bath	Twerton	Application Imminent	Not Started	NC	170	170			
B&NES	Avon Street Car and Coach Park	Bath	Abbey	None	Not Started	RF	120		120		
B&NES	Cattlemarket	Bath	Abbey	None	Not Started	RF	50		50		
B&NES	Manvers Street	Bath	Abbey	None	Not Started	RF	100		100		
B&NES	Royal United Hospital	Bath	Newbridge	None	Not Started	RF	100		100		
B&NES	Bath Press	Bath	Westmoreland	Application Imminent	Not Started	ML	200	200			
B&NES	Twerton Park	Bath	Twerton	None	Not Started	H	150			150	
B&NES	Odd Down/Southstoke	Bath	Bathavon South	Allocated Site	Not Started	NC	300	300			

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B&NES	SW Keynsham 1	Keynsham	Keynsham South	Full Permission	Under Construction	NC	285	285			
B&NES	SW Keynsham 2	Keynsham	Keynsham South	Full Application Submitted	Not Started	NC	266	266			
B&NES	Somerdale	Keynsham	Keynsham North	Part Outline/Part Full Permission	Not Started	NC	700	350	350		
B&NES	Riverside	Keynsham	Keynsham South	None	Not Started	ML	90	90			
B&NES	East of Keynsham	Keynsham	Keynsham East	Allocated Site	Not Started	NC	250	250			
B&NES	East of Keynsham (Safeguarded Green Belt)	Keynsham	Keynsham East	Safeguarded Land	Not Started	RF	250		250		
B&NES	SW Keynsham 3	Keynsham	Keynsham South	Allocated Site	Not Started	NC	150	150			
B&NES	Cautletts Close	Somer Valley	MSN Redfield	Full Permission	Under Construction	NC	109	109			
B&NES	Alcan	Somer Valley	Westfield	Full Permission	Under Construction	NC	169	169			
B&NES	Radstock Railway Land	Somer Valley	Radstock	Part Outline/Part Full Permission	Not Started	NC	190	190			
B&NES	Fosseway South	Somer Valley	MSN Redfield	Outline Permission	Not Started	NC	165	165			
B&NES	Monger Lane	Somer Valley	MSN North	Outline Permission	Not Started	NC	135	135			
B&NES	Knobsury Lane	Somer Valley	Radstock	Outline Permission	Not Started	NC	53	53			
B&NES	Paulton House	Somer Valley	Paulton	Prior Approval Change of Use	Not Started	NC	58	58			
B&NES	R/O St Peters Factory	Somer Valley	Westfield	Pre app Submitted	Not Started	NC	90	90			
B&NES	Welton Bibby Baron	Somer Valley	MSN North	Allocated Site	Not Started	RF	150	150			
B&NES	Polestar	Somer Valley	Paulton	Part Outline/Part Full Permission	Under Construction	NC	528	528			
B&NES	Wellow Lane	Somer Valley	Peasedown	Full Permission	Complete	NC	89	89			
B&NES	Greenlands Road	Somer Valley	Peasedown	Outline Permission	Not Started	NC	89	89			
B&NES	Temple Inn Lane	Rural	Temple Cloud	Outline Application Submitted	Not Started	ML	70	70			
SGC	Charlton Hayes, Patchway	North Fringe of Bristol	Patchway	Planning Permission	Site under construction	NC	2067	2067	0	0	0
SGC	Wallscourt Farm, Filton	North Fringe of Bristol	Frenchay and Stoke Park	Planning Permission	Site under construction	NC	283	283	0	0	0
SGC	Sea Stores, Kennedy Way, Yate	Yate/Chipping Sodbury	Yate Central	Planning Permission	Site under construction	NC	53	53	0	0	0
SGC	Coopers Site, Westerleigh Road, Yate	Yate/Chipping Sodbury	Yate Central	Planning Permission	Site under construction	NC	53	53	0	0	0
SGC	Land at Harry Stoke, Stoke Gifford	North Fringe of Bristol	Frenchay and Stoke Park/Stoke Gifford/Winterbourne	Planning Permission	Site under construction	NC	1200	1116	84	0	0
SGC	Hanham Hall Hospital, Whittucks Road, Hanham	East Fringe of Bristol	Hanham	Planning Permission	Site under construction	NC	158	158	0	0	0

UA	Area	Policy Area	Ward	Planning Status	Dev't Status	Certainty	Dwelling Totals 2013-2036	Dwelling Totals 2013-2021	Dwelling Totals 2022-2026	Dwelling Totals 2027-2031	Dwelling Totals 2032-2036
SGC	Emersons Green	East Fringe of Bristol	Boyd Valley/Emersons Green	Planning Permission	Site not started	NC	2300	2300	0	0	0
SGC	Waterworks Site, Soundwell Road, Kingswood	East Fringe of Bristol	Kingschase	Planning Permission	Site not started	NC	75	50	25	0	0
SGC	Kingswood Trading Estate, Elmtree Way, Kingswood	East Fringe of Bristol	Kingschase	Planning Permission	Site not started	NC	57	57	0	0	0
SGC	The Meadows, Frampton Cotterell	Elsewhere	Frampton Cotterell	Planning Permission	Site under construction	NC	27	27	0	0	0
SGC	Mount Pleasant Farm, Longwell Green	East Fringe of Bristol	Longwell Green	Planning Permission	Site not started	NC	70	70	0	0	0
SGC	Land at Barnhill, Chipping Sodbury	Yate/Chipping Sodbury	Chipping Sodbury	Planning Permission	Site not started	NC	170	170	0	0	0
SGC	Land north of Park Farm, Thornbury	Thornbury	Thornbury North	Planning Permission	Site not started	NC	500	500	0	0	0
SGC	North Yate New Neighbourhood	Yate/Chipping Sodbury	Yate North	Planning Permission	Site not started	NC	3000	1674	1026	300	0
SGC	Former Coopers Works, Westerleigh Road, Yate	Yate/Chipping Sodbury	Yate Central	Planning Permission	Site under construction	NC	92	92	0	0	0
SGC	Morton Way North, Thornbury	Thornbury	Thornbury North	Planning application submitted	Site not started	NC	300	300	0	0	0
SGC	East of Coldharbour Lane, Stoke Gifford	North Fringe of Bristol	Frenchay and Stoke Park	Site allocated in Local Plan and submission of planning application expected	Site not started	NC	650	650	0	0	0
SGC	South of Douglas Road, Kingswood	East Fringe of Bristol	Woodstock	Planning Permission awaiting signing of S106 Agreement	Site not started	NC	334	334	0	0	0
SGC	Emersons Green	East Fringe of Bristol	Boyd Valley	Site Allocated in Local Plan	Site not started	RF	500	450	50	0	0
SGC	Cribbs Patchway New Neighbourhood	North Fringe of Bristol	Patchway	Site allocated in Core Strategy	Site not started	NC	5700	2996	2704	0	0
SGC	New Neighbourhood, Harry Stoke	North Fringe of Bristol	Winterbourne/Stoke Gifford/Frenchay and Stoke Park	Site allocated in Core Strategy	Site not started	NC	2000	1020	980	0	0
SGC	Frenchay Hospital, Park Road, Frenchay	North Fringe of Bristol	Frenchay and Stoke Park	Planning application submitted	Site not started	NC	490	490	0	0	0
SGC	Former Intier Site, Bath Road, Bitton	Elsewhere	Bitton	Submission of planning application imminent	Site not started	ML	140	140	0	0	0
SGC	Rodford Primary School, Yate	Yate/Chipping Sodbury	Dodington	Submission of planning application imminent	Site not started	ML	63	63	0	0	0

UA	Area	Policy Area	Ward	Planning Status	Dev't Status	Certainty	Dwelling Totals 2013-2036	Dwelling Totals 2013-2021	Dwelling Totals 2022-2026	Dwelling Totals 2027-2031	Dwelling Totals 2032-2036
SGC	The Heath/Newton House, Cadbury Heath	Elsewhere	Parkwall	Submission of planning application imminent	Site not started	ML	60	60	0	0	0
NSC	Oxford Plasma Technology, North End Road, yatton	Other (Remaining) areas	Yatton	Full Planning consent	Not started	ML	66	66			
NSC	Barrow Hospital	Other (Remaining) areas	Backwell	Outline planning subject to legal	Not started	ML	215	215			
NSC	Block Q, Newfoundland Way, East Quay, Portishead	Portishead	Portishead Central	Full Planning consent	Not started	NC	94	94			
NSC	Block D, Dockside, Portishead	Portishead	Portishead Central	Full Planning consent	Under construction	NC	124	124			
NSC	Block G Dockside	Portishead	Portishead Central	Full Planning consent	Under construction	NC	110	110			
NSC	East Dock, Dockside	Portishead	Portishead Central	Full Planning consent	Not started	NC	13	13			
NSC	Land at 176 High Street, Portishead	Portishead	Portishead South & North Weston	Full Planning consent	Under construction	NC	58	58			
NSC	Severn Paper Mill, Portishead	Portishead	Portishead East	Outline planning consent	Not started	NC	135	135			
NSC	Weston Gateway Caravan Park, WSM	Weston-super-Mare	Weston-super-Mare South Worle	Full Planning consent	Under construction	NC	193	193			
NSC	Bridge Farm, Bristol Road, WSM	Weston-super-Mare	Weston-super-Mare South Worle	No planning consent - allocated site	Not started	RF	50	50			
NSC	Summer Lane, Locking Castle, WSM	Weston-super-Mare	Weston-super-Mare South Worle	No planning consent - allocated site	Not started	ML	100	100			
NSC	West Wick, Weston-super-Mare	Weston-super-Mare	Weston-super-Mare South Worle	No planning consent - allocated site	Not started	ML	100	100			
NSC	Parts of phases 1&2, areas 1,2,3,4,6,7,8 & 9 Summer Lane Wolvershill Road, West Wick, Locking Castle, Weston super Mare, Somerset	Weston-super-Mare	Weston-super-Mare South Worle	Full Planning consent	Under construction	NC	62	62			
NSC	The Old Sorting Office, Langford Road, Weston-super-Mare	Weston-super-Mare	Weston-super-Mare South	Full Planning consent	Under construction	NC	51	51			
NSC	Former Quadron Depot, Mendip Road, Weston-super-Mare	Weston-super-Mare	Weston-super-Mare East	Full Planning consent	Not started	NC	65	65			
NSC	Parklands Village	Weston-super-Mare	Hutton & Locking / Banwell & Winscombe	Consent for part of site	Under construction	NC	3650	1945	1540	<b>165</b>	
NSC	Winterstoke Village	Weston-super-Mare	Weston-super-Mare East	Consent for part of site	Not started	NC	2550	1150	1200	200	



## Appendix B

### Tempo Growth Rates

Appendix B: TEMPRO Growth Rates

Demand Segment	WEP Origins		WEP Destinations		External Origins		External Destinations	
	2021	2036	2021	2036	2021	2036	2021	2036
AM PT - Bus	1.96%	5.95%	3.26%	8.54%	1.56%	3.70%	1.53%	3.64%
AM PT - Rail	2.63%	8.85%	4.26%	11.99%	2.79%	6.02%	2.77%	5.98%
AM CAR - HBW/OTH Linc	7.51%	19.22%	8.81%	22.07%	6.40%	14.98%	6.38%	14.93%
AM CAR - HBW/OTH Minc	7.51%	19.22%	8.81%	22.07%	6.40%	14.98%	6.38%	14.93%
AM CAR - HBW/OTH Hinc	7.51%	19.22%	8.81%	22.07%	6.40%	14.98%	6.38%	14.93%
AM CAR - EMP	7.51%	19.22%	8.81%	22.07%	6.40%	14.98%	6.38%	14.93%
IP PT - Bus	2.45%	9.05%	2.28%	8.88%	1.78%	6.89%	1.79%	6.90%
IP PT - Rail	4.15%	12.87%	3.99%	12.65%	3.49%	10.18%	3.49%	10.19%
IP CAR - HBW/OTH Linc	8.76%	22.89%	8.73%	22.83%	7.27%	18.51%	7.27%	18.51%
IP CAR - HBW/OTH Minc	8.76%	22.89%	8.73%	22.83%	7.27%	18.51%	7.27%	18.51%
IP CAR - HBW/OTH Hinc	8.76%	22.89%	8.73%	22.83%	7.27%	18.51%	7.27%	18.51%
IP CAR - EMP	8.76%	22.89%	8.73%	22.83%	7.27%	18.51%	7.27%	18.51%
PM PT - Bus	2.25%	7.78%	0.86%	4.89%	0.58%	2.87%	0.60%	2.93%
PM PT - Rail	4.52%	12.96%	3.20%	10.38%	2.95%	7.02%	2.97%	7.06%
PM CAR - HBW/OTH Linc	8.28%	21.28%	7.41%	19.33%	6.27%	15.23%	6.29%	15.27%
PM CAR - HBW/OTH Minc	8.28%	21.28%	7.41%	19.33%	6.27%	15.23%	6.29%	15.27%
PM CAR - HBW/OTH Hinc	8.28%	21.28%	7.41%	19.33%	6.27%	15.23%	6.29%	15.27%
PM CAR - EMP	8.28%	21.28%	7.41%	19.33%	6.27%	15.23%	6.29%	15.27%

## Appendix C

# Future Year Infrastructure and Service Changes

Appendix C: Future Year Infrastructure and Service Changes

Scheme ID	UA(s)	Scheme name	Scheme description	Scheme type	nc/mt/rt/hy - see classification	Opening date
RC-01	BCC	20mph speed limits	Roll out of 20mph speed limits across Bristol	Traffic management	nc	Mar-15
RC-02	SG	CPNN Off-site Works Package	Capacity and safety improvements on Gipsy Patch Lane.	Junction improvement	nc	2015
RC-03	SG	CPNN Off-site Works Package	A38 Filton roundabout. Capacity and safety improvements on 3-arms.	Junction improvement	nc	2015
RC-04	SG	CPNN Off-site Works Package	Widening of M5 J16 motorway off-slips, A38 North and circulatory carriageway.	Junction improvement	nc	2015
RC-05	SG	CPNN Off-site Works Package	SCHEME CHANGE. Signing & lining changes on M5 J17 southbound off-slip. Widening of Merlin Road exit from roundabout and Highwood Lane entry to Merlin Road junction.	Junction improvement	nc	2015
RC-06	SG	CPNN Off-site Works Package	Widening of southbound approach at A38 Aztec West Rbt	Junction improvement	mt	2015
RC-07	BCC	CPNN Off-site Works Package	A4018 Bus Corridor. Crow Lane, Charlton Road, Greystoke Avenue junction improvements	Junction improvement	mt	2015
RC-08	SG	CPNN Off-site Works Package	Local bus service enhancements	Public Transport	mt	2016
RC-09	SG	Cribbs Patchway (Filton Airfield) New Neighbourhood On-site Highways	Network of highway schemes on development site and access junctions onto A4018, A38, Merlin Road, Charlton Rd (bus only).	Highways	mt	Phased 2016-26
RC-10_AVTM	BCC	MetroBus: Ashton Vale to Temple Meads	Rapid transit from Ashton Vale to Temple Meads via Bristol city centre	Major scheme	nc	Jul-15
RC-10_NFTH	BCC/SG	MetroBus: North Fringe to Hengrove Package	North Fringe to Hengrove Package	Major scheme	nc	2017
RC-12	BCC/NSC	MetroBus: South Bristol Link	New highway link and bus route between A370 and Hengrove Park	Major scheme	nc	2016/17
RC-13	BCC	Residents parking	Roll out of residents parking permit scheme across central Bristol		nc	various
RC-14	BCC	Temple Circus Project	Redesign of Temple Circus roundabout		nc	
RC-14	BCC	Temple Circus Project	Related changes to the end of Victoria Street, The Friary, Temple Way, Temple Gate, connection with Redcliffe Way, Bath Bridge Roundabout		nc	
RC-16	BCC	Feeder Road Cycle Route	Creation of a shared use footway and alterations to three junctions: Avon Street (minor) Marsh Lane (minor) Feeder Road (more significant)	Walk & cycle	mt	
RC-18	BCC	New Junction at Cattle Market Road/Feeder Road:	Part of the works to construct a bridge into the Diesel Depot (Arena Site)	Junction improvement	nc	
RC-19	Highways England	Managed Motorway	Sections of M4 (between junctions 19 and 20), and M5 (between junctions 15 and 17) converted to Smart motorway. Smart motorways help relieve congestion Hard shoulder used as a running lane to create additional capacity.	Major scheme	nc	Jan-14
RC-20	SGC	PT for new developments	Addition of additional bus routes serving CPNN.	Public Transport	mt	
RC-21	BCC	PT for new developments		Public Transport	mt	
RC-22	BCC	St James Barton rbt	Improvement works on roundabout		nc	
RC-23	NSC	M5 J21	Outbound scheme and SB off (Weston Package)		nc	
RC-24	SGC	Hambrook Jn scheme	Improvement scheme at junction;		nc	Jun-15
RC-25	SG	Cribbs Patchway Metrobus Extension	Extending the NFHP Metrobus route from The Mall back to Parkway; selective bus priority along route	Major scheme	mt	2018
RC-26	Highways England	M5 Junction 19	Replacement of left turn off the south bound exit slip, with a two lanes		nc	
RC-27	Network Rail	London Paddington – South Wales Rail Electrification	Extra services between Bristol Temple Meads and London Paddington via Bristol Parkway included	Major scheme	nc	2019
RC-28	BCC	Portway P&R Rail Station	Opening of rail station at Portway Park and Ride Site	Public Transport	mt	2019