

Appendix 17A

Carbon and other greenhouse gases supporting data

17.1.1 This appendix provides the supporting data used to calculate greenhouse gas (GHG) emissions as part of the assessment Carbon and other greenhouse gases assessment. It presents tables of the following data:

- 2017 Scope 1 and 2 emissions for Bristol Airport¹ (**Table 17A.1**);
- A list of buildings with energy use per m² and floorspace associated with 10 mppa and 12 mppa operation (**Table 17A.2** and **Table 17A.3**);
- The number of created jobs in the North Somerset, West of England and South West & South Wales region as a result of the construction of the Proposed Development (**Table 17A.4**);
- Embodied carbon associated with the construction materials by building for the Proposed Development (**Table 17A.5**);
- Total vehicle movements required to transport the construction materials (**Table 17A.6**);
- Aviation movements and destination information (**Table 17A.7**); and
- Vehicle movements and origins for employee and passenger access to Bristol Airport (**Tables 17A.8-13**).

Table 17A.1 2017 Scope 1 and 2 emissions for Bristol Airport

Emission Type	Year	tCO ₂ e/yr
Scope 1	2017	1809.022
Scope 2	2017	4624.987
Total		6434.009

Table 17A.2 Energy use of buildings for 10 mppa operation

Description	Floor Areas (m ²)	Building Energy Classification (kWh/m ² /yr)
West walkway coaching gates	1,721	42
East Terminal Extension Phase 2	861	35
2 no. Coaching Gates to existing forward coaching lounge	223	35
New MT facility	1,569	75
Alternative airside MT facility	572	75

¹ Note that this data differs from that stated in the Operations Monitoring Report. The figures were taken from an audit completed during 2018 and reflect the correct values for the emissions.

Description	Floor Areas (m ²)	Building Energy Classification (kWh/m ² /yr)
MSCP & transport interchange & Reception building & bridge link	66,633	42
New modular airline office building	1,725	42
Extension to checkpoint building	90	35
New Bristol Airport administration building	4,652	35
2no. upper level valet parking decks over surface parking	19,958	15
Silver zone staff waiting area	150	42
CRCC Reception building	1,056	35

Table 17A.3 Energy use of buildings for 12 mppa operation

Description	Floor Areas (m ²)	Building Energy Classification (kWh/m ² /yr)
West Terminal extension Phase 2A	11,035	141.25
South Terminal Extension	3,531	141.25
New Arrivals VCC (Bussing)	195	40.00
New Arrivals VCC (Bussing)	214	40.00
New Arrivals VCC (Bussing)	64	40.00
Walkway to East Pier with VCC to 1no. PBZ	2,948	35.00
East pier with VCCs and 5 nos. PBZs	3,815	35.00
Additional multi-storey car park	55,920	15.00
Silver Zone Car Park permanent fixed lighting	51,000	15.00
Eastern Walkway Coaching Gates (4 no.)	2,472	35.00

Table 17A.4 The number of created jobs in the Bristol City region as a result of the construction of the Proposed Development

		2019	2020	2021	2022	2023	2024	2025	2026	Total Job Years
FTEs	Direct	30	85	45	10	10	100	175	75	530

Table 17A.5 Embodied carbon associated with the construction materials by building for the Proposed Development

Building		B1 - New Arrivals VCC	B2 - New Arrivals VCC	B3 - New Arrivals VCC	C1 - South Terminal Extension	D - West Terminal Extension	E - New Service Yard	G & H - Walkway & East Pier	J - New Canopy to Front of Existing Terminal	K - Multi Storey	O - New Gyrratory Road	EE - New East Taxiway	HH - Surface Parking	KK - Proposed Roadworks to A38	LL - Taxiway Widening & Fillets	WW - Aircraft Stands	ZZ - Proposed Year Round Operation
Gross Internal Floor Area (m ²)		116	140	38	4,234	10,181	4,138	9,507	2,750	55,490	11,679	11,200	37,590	17,004	23,086	13,000	70,100
Substructure		13,107	17,884	6,948	590065	404,091		588907	88,379	3,571,311		753,964	291,461		4,767,199	2,692,639	3,738,348
Superstructure	Frame	12,321	14,785	3,988	548233	1,077,678		868,386	460,880	1,691,291							
	Upper Floors	3,083	3566	614	244011	316,344		193,256		1,601,855							
	Roof				109617	335,494		508,746	109,643								
	Stairs and Ramps	1,022	1,481	741		8,146		17,986									
	External Walls	16,918	15,931	8,150	46,861	354,518		679,496		231,004							
	Windows and External Doors	8,570	7,513	18	306,061	519,732		2,459,529									
	Internal Walls and Partitions	1,268	3,205	1,156	170,735	32,742		777,046									

Building		B1 - New Arrivals VCC	B2 - New Arrivals VCC	B3 - New Arrivals VCC	C1 - South Terminal Extension	D - West Terminal Extension	E - New Service Yard	G & H - Walkway & East Pier	J - New Canopy to Front of Existing Terminal	K - Multi Storey	O - New Gyroty Road	EE - New East Taxiway	HH - Surface Parking	KK - Proposed Roadworks to A38	LL - Taxiway Widening & Fillets	WW - Aircraft Stands	ZZ - Proposed Year Round Operation
Internal Finishes	Internal Doors*																
	Wall Finishes	1,755	1,863	1,162	437,422	43,044		94,464									
	Floor Finishes	1,941	2,174	793	106,333	139,195		320,704									
	Ceiling Finishes	963	1,162	315	35,142	84,502		397,256									
Fittings, Furnishings and Equipment**																	
Services***																	
External Works	Roads, paths and pavings				152,161		221,128	645,053	635,774	1,182,493	1,317,719	2,004,629	1,721,647				
	External Drainage				41,258			278,257	72,703								
	External Services							48,544	32,882								
TOTAL		60,948	69,564	23,885	2,787,899	3,315,486	221,128	7,877,630	658,902	7,836,820	1,182,493	2,071,683	2,296,090	1,721,647	4,767,199	2,692,639	3,738,348

* RICS – Not a carbon critical element.

** RICS – Not a carbon critical element.

*** Although detailed studies have shown that services can contribute up to 26% of the overall embodied carbon footprint, they are complex to assess at early design stages and the mitigation potential may be limited

*Table 17A.6 Total vehicle movements required to transport the construction materials

Building		B1 - New Arrivals VCC	B2 - New Arrivals VCC	B3 - New Arrivals VCC	C1 - South Terminal Extension	D - West Terminal Extension	E - New Service Yard	G & H - Walkway & East Pier	J - New Canopy to Front of Existing Terminal	K - Multi Storey	O - New Gyratory Road	EE - New East Taxiway	HH - Surface Parking	KK - Proposed Roadworks to A18	LL - Taxiway Widening & Fillet	WW - Aircraft Stands	ZZ - Proposed Year Round Operation
Substructure		6	8	4	211	173		270	45	174		811	136		2,531	1,566	2,275
Superstructure	Frame	1	1	1	34	29		23	12	345							
	Upper Floors	3	3	2	94	128		57		348							
	Roof				12	46		33	4								
	Stairs and Ramps	1	1	1		4		9									
	External Walls	5	5	3	7	33		269		7							
	Windows and External Doors	2	2	1	1	4		30									
	Internal Walls and Partitions	3	3	1	39	35		29									
	Internal Doors*																
Internal Finishes	Wall Finishes	2	2	1	14	4		13									

Building		B1 - New Arrivals VCC	B2 - New Arrivals VCC	B3 - New Arrivals VCC	C1 - South Terminal Extension	D - West Terminal Extension	E - New Service Yard	G & H - Walkway & East Pier	J - New Canopy to Front of Existing Terminal	K - Multi Storey	O - New Gyrotray Road	EE - New East Taxiway	HH - Surface Parking	KK - Proposed Roadworks to A28	LL - Taxiway Widening & Fillet	WW - Aircraft Stands	ZZ - Proposed Year Round Operation
	Floor Finishes	1	2	2	31	83		55									
	Ceiling Finishes	1	1	1	1	3		23									
Fittings, Furnishings and Equipment**																	
Services***																	
External Works	Roads, paths and pavings				130		106	268		451	1,142	815	1,221	1,663			
	External Drainage				13			185		286							
	External Services							25		1							
TOTAL		25	28	17	587	542	106	1,289	61	1,612	1,142	1,626	1,357	1,663	2,531	1,566	2,275

* RICS – Not a carbon critical element.

** RICS – Not a carbon critical element.

*** Although detailed studies have shown that services can contribute up to 26% of the overall embodied carbon footprint, they are complex to assess at early design stages and the mitigation potential may be limited.

Table 17A.7 Aviation movements and destination information

Aircraft Type	Destination	10 mppa Departures per year	12 mppa Departures per year
ER3, ER4	Dyce	318.77	306.46
32B, 738, 73H, 7M8, A20N	Lanzarote	392.33	377.18
320, 73H	Adnan Menderes	98.08	94.29
32A, 738, 73H, 7M8, A20N, E90	Pablo Ruiz Picasso	1275.08	1461.56
20N, 738, 7M8, A20N, E90	Alicante El Altet	1299.61	1485.13
32A, 73H, A20N	Schiphol	1961.67	1885.88
A20N	Arlanda	98.08	94.29
A20N	Eleftherios Venizelos	98.08	94.29
320, 32B, 73H	Antalya	343.29	330.03
32A, A20N	El Prat De Llobregat	686.58	660.06
A20N	Papola Casale	24.52	23.57
A20N	Aldergrove International Airport	833.71	801.50
738	Orio al Serio	147.13	141.44
DH4	George Best Belfast City	0.00	660.06
ER4	Birmingham International Airport	49.04	47.15
A20N	Sondica	147.13	141.44
320, 73N, A20N	Milas	269.73	259.31
738, 7M8	Guglielmo Marconi	98.08	94.29
A20N	Mérignac	294.25	282.88
320, 7M8	Bourgas	196.17	188.59
E70	Brussels Airport	833.71	801.50
A20N	Euroairport Basel Mulhouse Freiburg	196.17	188.59
738, 7M8	Liszt Ferenc International	147.13	141.44
73H	Rabil	49.04	47.15
BE2	Walney Island	490.42	471.47
738, 7M8	Beziers Vias	147.13	141.44
A21N	Elmas	0.00	330.03

Aircraft Type	Destination	10 mppa Departures per year	12 mppa Departures per year
32A, A20N, E70, E90, ER4	Charles De Gaulle	1275.08	1791.59
738, 7M8	CDT	24.52	23.57
ER4	Chester	294.25	282.88
32B, 7M8, A20N	Ioannis Kapodistrias	392.33	377.18
938, 7M8	Cologne/bonn	196.17	188.59
738, 7M8	Souda	196.17	188.59
A20N, CR9	Kastrup	147.13	471.47
A20N	Fontanarossa	98.08	94.29
788	Cancún International	49.04	47.15
7M8, A20N	Dubrovnik	196.17	188.59
320, 32B, 738, 73H, A30N	Dalaman	490.42	471.47
738, 7M8, AT7	Dublin International	2059.75	1980.17
ER3, ER4	Düsseldorf International Airport (rhein-ruhr)	294.25	282.88
32A, A20N	Edinburgh	1250.56	1202.25
320, 32B, 73H, A20N	Kefalonia Island International Airport	294.25	282.88
738, 7M8	Roumanieres	49.04	47.15
32A, 738, 73H, 7M8, A20N	Faro	1201.52	1155.10
32A, A20N	Leonardo da Vinci International (Fiumicino)	343.29	330.03
32A, A21N, E70	Peretola	49.04	377.18
73H, A20N	Madeira	147.13	141.44
E90, ER4	Frankfurt International Airport (rhein-main)	882.75	848.65
320, 83H, A20N	Fuerteventura	196.17	188.59
AT7	Guernsey	343.29	330.03
738, 7M8	Lech Walesa	98.08	94.29
A20N	North Front	147.13	141.44
A20N	Glasgow International	980.83	942.94
A20N	Cristoforo Colombo	98.08	94.29

Aircraft Type	Destination	10 mppa Departures per year	12 mppa Departures per year
ER4	Landvetter	98.08	94.29
320, 738, 73H, 7M8	Girona-Costa Brava	343.29	330.03
A20N	Geneve-cointrin	465.90	447.90
ER3, ER4	Hamburg Airport	343.29	330.03
320, 73H, M8, A20N	Nikos Kazantzakis Airport	245.21	235.74
320, 32B, 73H	Hurghada	147.13	141.44
73H, 32A, 32B, 738, 73H, 7M8, A20N, E90	Ibiza	956.31	919.37
E75	Innsbruck-kranebitten	0.00	47.15
A20N	Inverness	343.29	330.03
A20N	Ronaldsway	98.08	94.29
7M8	Ataturk	343.29	330.03
AT7	Jersey	392.33	377.18
A21N	John F Kennedy International	343.29	330.03
32B, 73H	Skiathos	98.08	94.29
7M8	Santorini (Thira)	49.04	47.15
320, 32B, 7M8	Kos Island International Airport	196.17	188.59
738, 7M8, A20N	John Paul II Balice International	343.29	330.03
A21N	Pyrzowice	147.13	141.44
738, 7M8	Kaunas	147.13	141.44
320, 32B, 73H, 7M8	Larnaca	269.73	259.31
32B	Almeria	49.04	47.15
738, 7M8	Bellegarde	98.08	94.29
A20N	Portela	245.21	235.74
32B, 738, 73H, 7M8	Gran Canaria	294.25	282.88
A20N	Laleu	98.08	94.29
A20N A21N	Barajas	343.29	660.06

Aircraft Type	Destination	10 mppa Departures per year	12 mppa Departures per year
320, 32B, 73H, 7M8, A2, A20N	Mahon	441.38	424.32
788	Ringway International Airport	24.52	23.57
788	Sangster International	49.04	47.15
A20N	San Javier	343.29	330.03
320, 738, 7M8	Malta International	245.21	235.74
32A, A20N	Marseille Provence Airport	147.13	471.47
E90, ER4	Franz Josef Strauss	637.54	612.91
32A, ER4, 73H A20N	Malpensa	245.21	565.76
73H, A20N	Capodichino	245.21	235.74
320, 73H, 7M8	Zine El Abidine Ben Ali International Airport	196.17	188.59
A20N	Cote D'azur International Airport	441.38	424.32
73H, 788, A20N, A21N	Newcastle Airport	760.15	1060.81
738, 7M8	Ireland West Airport Knock	147.13	141.44
A20N	Nantes Atlantique	147.13	141.44
320, A20N, ER4	Costa Smeralda	220.69	212.16
A20N	Francisco Sá Carneiro	147.13	141.44
AT7	Cork	343.29	330.03
738, 7M8	Henri Coanda	98.08	94.29
320, 73H, 7M8, A20N	International	343.29	330.03
320, 32A, 32B, 738, 73H, 7M8, A20N, E90	Son Sant Joan Airport	1790.02	1956.60
788	La Union	49.04	47.15
738, 7M8	Lawica	98.08	94.29
A20N	Prague - Ruzyně International	294.25	282.88
A20N	Galileo Galilei	343.29	330.03
788	Punta Cana International	49.04	47.15
7M8, A20N	Pula	196.17	188.59
320, 73N	Aktion	98.08	94.29

Aircraft Type	Destination	10 mppa Departures per year	12 mppa Departures per year
73N	Menara	49.04	47.15
73H	Reus	49.04	47.15
32B, 73H, 7M8	Diagoras	196.17	188.59
738, 7M8	Jasionka	98.08	94.29
788	Orlando Sanford Intl	98.08	94.29
788	Amilcar Cabral Intl	49.04	47.15
32A	Macedonia International	343.29	330.03
73H	Samos	49.04	47.15
E70, ER4	Shannon	343.29	330.03
A20N	Split	269.73	259.31
320	Sharm El Sheikh International	49.04	47.15
A20N	San Pablo	24.52	23.57
32A, A20N, A21N	Berlin-Schoenefeld	318.77	636.48
320, 32B, 738, 73H, 7M8, A20N	Sur Reina Sofia	539.46	518.62
32A, A20N, ER4	Blagnac	735.63	707.21
329	Varna	49.04	47.15
738, 7M8, A20N	Marco Polo	514.94	495.04
A20N	Schwechat International	98.08	94.29
738, 7M8	Valencia	98.08	94.29
7S8	Valerio Catullo	49.04	47.15
A21N	Frederic Chopin	49.04	47.15
738, 7M8	WMI	196.17	188.59
738, 7M8	Copernicus Airport	98.08	94.29
32A, E70, ER3, ER4	Zürich-Kloten	784.67	1084.38
320, 32B, 73H, 7M8, A20N	Zakinthos International Airport	392.33	377.18
738, 73H, 7M8, B73H	ZZF	1029.88	2970.26

Table 17A.8 Current Baseline Vehicle movements and origins for employees access to Bristol Airport

Local Authority	Percentage of employees	Number of employees in 2017
North Somerset	33%	1141
City of Bristol	26%	883
South Gloucestershire	11%	368
Bath & North East Somerset	7%	258
Sedgemoor District	7%	258
Mendip District	4%	147
Wiltshire	2%	74
South Somerset District	1%	37
Caerdydd - Cardiff	1%	37
Casnewydd - Newport	1%	37
Stroud District	1%	37
Taunton Deane District	1%	37
Sir Fynwy - Monmouthshire	1%	37
Bro Morgannwg - the Vale of Glamorgan	1%	37
Caerffili - Caerphilly	1%	37
Swindon	1%	37
Total	100%	3459

Local Authority	Percentage of employees travelling by bus	Number of employees travelling by bus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	9%	103	Weston Super Mare	24	119.09
City of Bristol	13%	115	Bristol	14	133.18
South Gloucestershire	9%	33	Yate	32	38.42
Bath and North East Somerset	13%	33	Bath	32	38.84
Sedgemoor District	2%	5	Bridgwater	40	5.98
Mendip District	3%	4	Frome	48	5.12

Local Authority	Percentage of employees travelling by bus	Number of employees travelling by bus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
Wiltshire	12%	9	Chippenham	64	10.24
South Somerset district	0%	0	Yeovil	72	0.00
Wales	5%	2	Cardiff	80	2.13
Taunton Dean District	0%	0	Taunton	64	0.00

Local Authority	Percentage of employees travelling by car (alone)	Percentage of employees travelling by car share (driver)	Percentage of employees travelling by car share (passenger)	Total number of employees travelling by car	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	83%	4%	0%	992	Weston Super Mare	24	1151.23
City of Bristol	80%	2%	2%	742	Bristol	14	860.54
South Gloucestershire	86%	1%	0%	320	Yate	32	371.36
Bath and North East Somerset	83%	0%	2%	219	Bath	32	253.98
Sedgemoor District	89%	4%	2%	245	Bridgwater	40	283.86
Mendip District	88%	3%	3%	138	Frome	48	160.50
Wiltshire	76%	6%	0%	60	Chippenham	64	70.00
South Somerset district	100%	0%	0%	37	Yeovil	72	42.69
Wales	83%	3%	0%	32	Cardiff	80	36.71
Taunton Dean District	100%	0%	0%	37	Taunton	64	42.69
Sir Fynwy - Monmouthshire	100%	0%	0%	37	Raglan	72	42.69
Bro Morgannwg - the Vale of Glamorgan	100%	0%	0%	37	Southerndown	113	42.69
Caerffili - Caerphilly	100%	0%	0%	37	Caerphilly	80	42.69
Swindon	100%	0%	0%	37	Swindon	80	42.69

Local Authority	Percentage of employees travelling by motorbike	Number of employees travelling by motorbike	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
City of Bristol	2%	23	Weston Super Mare	24	26.47
City of Bristol	1%	9	Bristol	14	10.24
South Gloucestershire	1%	4	Yate	32	4.27
Bath and North East Somerset	0%	0	Bath	32	0.00
Sedgemoor District	4%	10	Bridgwater	40	11.95
Mendip District	3%	4	Frome	48	5.12
Wiltshire	6%	4	Chippenham	64	5.12
South Somerset district	0%	0	Yeovil	72	0.00
Wales	3%	1	Cardiff	80	1.28
Taunton Dean District	0%	0	Taunton	64	0.00

Local Authority	Percentage of employees travelling by staff minibus	Number of employees travelling by staff minibus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	0%	0	Weston Super Mare	24	0.00
City of Bristol	0%	0	Bristol	14	0.00
South Gloucestershire	3%	11	Yate	32	12.81
Bath and North East Somerset	0%	0	Bath	32	0.00
Sedgemoor District	0%	0	Bridgwater	40	0.00
Mendip District	0%	0	Frome	48	0.00
Wiltshire	0%	0	Chippenham	64	0.00
South Somerset district	0%	0	Yeovil	72	0.00
Wales	5%	2	Cardiff	80	2.13

Local Authority	Percentage of employees travelling by staff minibus	Number of employees travelling by staff minibus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
Taunton Dean District	0%	0	Taunton	64	0.00

Table 17A.9 Current Baseline Vehicle movements and origins for passenger access to Bristol Airport

Region	Sub region	Sub Region	Sub Region	Passengers per Annum	Passenger Percentage
East Midlands				11,000	0.10%
East of England				11,917	0.10%
North East				1,833	0.00%
North West				13,750	0.20%
Scotland				17,417	0.20%
South East				105,417	1.30%
Wales				1,544,592	18.80%
West Midlands				162,251	2.00%
Yorkshire				5,500	0.10%
Yorkshire				5,500	0.10
South West					
	City of Bristol			1,997,428	31.4%
	Cornwall			355,669	5.6%
	Devon			1,080,756	17.0%
	Dorset			174,168	2.7%
	Gloucestershire			568,336	8.9%
	Wiltshire			508,753	8.0%
	Somerset				
		Bath & North East Somerset		446,276	26.7%
		Mendip District		208,922	12.5%
		Sedgemoor District		183,011	10.9%
		South Somerset		201,504	12.0%
		Taunton Deane		169,362	10.1%
		West Somerset		7,7830	4.6%

Region	Sub region	Sub Region	Sub Region	Passengers per Annum	Passenger Percentage
North Somerset					
			Weston-super-Mare	177,991	46%
			Portishead	8,1257	21%
			Clevedon	61,910	16%
			Nailsea	65,779	17%
Total				8,232,628	100%

Region	Sub region	Sub Region	Sub Region	Number of passengers using public transport (based on 12.5%)	Origin	Distance (km)
East Midlands				1375	Nottingham	240
East of England				1490	Norwich	400
North East				229	Newcastle	490
North West				1719	Carlisle	470
Scotland				2177	Glasgow	620
South East				13177	London	205
South West						
	City of Bristol			249678	Bristol	15
	Cornwall			44459	Cornwall	240
	Devon			135094	Devon	120
	Dorset			21771	Dorset	100
	Gloucestershire			71042	Gloucestershire	70
	Wiltshire			63594	Wiltshire	60
	Somerset					
		Bath & NE Somerset		55785	Bath	30
		Mendip District		26115	Mendip	35
		Sedgemoor District		22876	Sedgemoor	40
		South Somerset		25188	South Somerset	50
		Taunton Deane		21170	Taunton Deane	80

Region	Sub region	Sub Region	Sub Region	Number of passengers using public transport (based on 12.5%)	Origin	Distance (km)
		West Somerset		9729	West Somerset	90
		North Somerset				
			Weston-super-Mare	22249	Weston-super-Mare	30
			Portishead	10157	Portishead	20
			Clevedon	7739	Clevedon	20
			Nailsea	8222	Nailsea	10
Wales				193074	Cardiff	50
West Midlands				20281	Birmingham	160
Yorkshire				688	Leeds	350

Region	Sub region	Sub Region	Sub Region	Number of private vehicles (based on 87.5% of passengers and average vehicle occupancy)	Origin	Distance (km)
East Midlands				9625	Nottingham	240
East of England				10427	Norwich	400
North East				1604	Newcastle	490
North West				12031	Carlisle	470
Scotland				15240	Glasgow	620
South East				92240	London	205
South West						
			City of Bristol	1747749	Bristol	15
			Cornwall	311210	Cornwall	240
			Devon	945661	Devon	120
			Dorset	152397	Dorset	100
			Gloucestershire	497294	Gloucestershire	70
			Wiltshire	445159	Wiltshire	60

Region	Sub region	Sub Region	Sub Region	Number of private vehicles (based on 87.5% of passengers and average vehicle occupancy)	Origin	Distance (km)
Somerset						
		Bath & NE Somerset		390492	Bath	30
		Mendip District		182806	Mendip	35
		Sedgemoor District		160135	Sedgemoor	40
		South Somerset		176316	South Somerset	50
		Taunton Deane		148192	Taunton Deane	80
		West Somerset		68101	West Somerset	90
North Somerset						
			Weston-super-Mare	155742	Weston-super-Mare	30
			Portishead	71100	Portishead	20
			Clevedon	54171	Clevedon	20
			Nailsea	57557	Nailsea	10
Wales				844699	Cardiff	50
West Midlands				88731	Birmingham	160
Yorkshire				3008	Leeds	350

Table 17A.10 Future Baseline Vehicle movements and origins for employees access to Bristol Airport

Local Authority	Percentage of employees	Number of employees in 2017
North Somerset	33%	1,201
City of Bristol	26%	930
South Gloucestershire	11%	388
Bath & North East Somerset	7%	271
Sedgemoor District	7%	271
Mendip District	4%	155

Local Authority	Percentage of employees	Number of employees in 2017
Wiltshire	2%	78
South Somerset District	1%	39
Caerdydd - Cardiff	1%	39
Casnewydd - Newport	1%	39
Stroud District	1%	39
Taunton Deane District	1%	39
Sir Fynwy - Monmouthshire	1%	39
Bro Morgannwg - the Vale of Glamorgan	1%	39
Caerffili - Caerphilly	1%	39
Swindon	1%	39
Total	100%	3,875

Local Authority	Percentage of employees travelling by bus	Number of employees travelling by bus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	9%	108	Weston Super Mare	24	125.38
City of Bristol	13%	121	Bristol	14	140.24
South Gloucestershire	9%	35	Yate	32	40.51
Bath and North East Somerset	13%	35	Bath	32	40.87
Sedgemoor District	2%	5	Bridgwater	40	6.29
Mendip District	3%	5	Frome	48	5.39
Wiltshire	12%	9	Chippenham	64	10.86
South Somerset district	0%	0	Yeovil	72	0.00
Wales	5%	2	Cardiff	80	2.26
Taunton Dean District	0%	0	Taunton	64	0.00

Local Authority	Percentage of employees travelling by car (alone)	Percentage of employees travelling by car share (driver)	Percentage of employees travelling by car share (passenger)	Total number of employees travelling by car	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	83%	4%	0%	1045	Weston Super Mare	24	1212.05
City of Bristol	80%	2%	2%	781	Bristol	14	906.19
South Gloucestershire	86%	1%	0%	338	Yate	32	391.57
Bath and North East Somerset	83%	0%	2%	230	Bath	32	267.21
Sedgemoor District	89%	4%	2%	257	Bridgwater	40	298.64
Mendip District	88%	3%	3%	146	Frome	48	169.01
Wiltshire	76%	6%	0%	64	Chippenham	64	74.19
South Somerset district	100%	0%	0%	39	Yeovil	72	45.24
Wales	83%	3%	0%	34	Cardiff	80	38.91
Taunton Dean District	100%	0%	0%	39	Taunton	64	45.24
Sir Fynwy - Monmouthshire	100%	0%	0%	39	Raglan	72	45.24
Bro Morgannwg - the Vale of Glamorgan	100%	0%	0%	39	Southerndown	113	45.24
Caerffili - Caerphilly	100%	0%	0%	39	Caerphilly	80	45.24
Swindon	100%	0%	0%	39	Swindon	80	45.24

Local Authority	Percentage of employees travelling by motorbike	Number of employees travelling by motorbike	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
City of Bristol	2%	24	Weston Super Mare	24	27.86
City of Bristol	1%	9	Bristol	14	10.79
South Gloucestershire	1%	4	Yate	32	4.50

Local Authority	Percentage of employees travelling by motorbike	Number of employees travelling by motorbike	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
Bath and North East Somerset	0%	0	Bath	32	0.00
Sedgemoor District	4%	11	Bridgwater	40	12.57
Mendip District	3%	5	Frome	48	5.39
Wiltshire	6%	5	Chippenham	64	5.43
South Somerset district	0%	0	Yeovil	72	0.00
Wales	3%	1	Cardiff	80	1.36
Taunton Dean District	0%	0	Taunton	64	0.00

Local Authority	Percentage of employees travelling by staff minibus	Number of employees travelling by staff minibus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	0%	0	Weston Super Mare	24	0.00
City of Bristol	0%	0	Bristol	14	0.00
South Gloucestershire	3%	12	Yate	32	13.50
Bath and North East Somerset	0%	0	Bath	32	0.00
Sedgemoor District	0%	0	Bridgwater	40	0.00
Mendip District	0%	0	Frome	48	0.00
Wiltshire	0%	0	Chippenham	64	0.00
South Somerset district	0%	0	Yeovil	72	0.00
Wales	5%	2	Cardiff	80	2.26
Taunton Dean District	0%	0	Taunton	64	0.00

Table 17A.11 Future Baseline Vehicle movements and origins for passenger access to Bristol Airport

Region	Sub region	Sub Region	Sub Region	Passengers per Annum	Passenger Percentage
East Midlands				13,362	0.13%
East of England				14,475	0.14%
North East				2,227	0.02%
North West				16,702	0.17%
Scotland				21,156	0.21%
South East				128,048	1.28%
Wales				1,876,183	18.76%
West Midlands				197,083	1.97%
Yorkshire				6,681	0.07%
South West					
	City of Bristol			2426233	31.4%
	Cornwall			432023	5.6%
	Devon			1312771	17.0%
	Dorset			211558	2.7%
	Gloucestershire			690346	8.9%
	Wiltshire			617971	8.0%
	Somerset				
		Bath & North East Somerset		164762	26.7%
		Mendip District		77132	12.5%
		Sedgemoor District		67566	10.9%
		South Somerset		74394	12.0%
		Taunton Deane		62527	10.1%
		West Somerset		28734	4.6%
		North Somerset			
		Weston-super-Mare		935263	46%
		Portishead		426968	21%
		Clevedon		325309	16%
		Nailsea		345641	17%

Region	Sub region	Sub Region	Sub Region	Passengers per Annum	Passenger Percentage
Total				10,000,000	100%

Region	Sub region	Sub Region	Sub Region	Number of passengers using public transport (based on 15%)	Origin	Distance (km)
East Midlands				2004	Nottingham	240
East of England				2171	Norwich	400
North East				334	Newcastle	490
North West				2505	Carlisle	470
Scotland				3173	Glasgow	620
South East				19207	London	205
South West						
	City of Bristol			363935	Bristol	15
	Cornwall			64803	Cornwall	240
	Devon			196916	Devon	120
	Dorset			31734	Dorset	100
	Gloucestershire			103552	Gloucestershire	70
	Wiltshire			92696	Wiltshire	60
	Somerset					
		Bath & NE Somerset		24714	Bath	30
		Mendip District		11570	Mendip	35
		Sedgemoor District		10135	Sedgemoor	40
		South Somerset		11159	South Somerset	50
		Taunton Deane		9379	Taunton Deane	80
		West Somerset		4310	West Somerset	90
		North Somerset				
			Weston-super-Mare	140290	Weston-super-Mare	30
			Portishead	64045	Portishead	20

Region	Sub region	Sub Region	Sub Region	Number of passengers using public transport (based on 15%)	Origin	Distance (km)
			Clevedon	48796	Clevedon	20
			Nailsea	51846	Nailsea	10
Wales				281427	Cardiff	50
West Midlands				29562	Birmingham	160
Yorkshire				1002	Leeds	350

Region	Sub region	Sub Region	Sub Region	Number of private vehicles (based on 85% of passengers and average vehicle occupancy)	Origin	Distance (km)
East Midlands				11357	Nottingham	240
East of England				12304	Norwich	400
North East				1893	Newcastle	490
North West				14197	Carlisle	470
Scotland				17982	Glasgow	620
South East				108841	London	205
South West						
	City of Bristol			2062298	Bristol	15
	Cornwall			367220	Cornwall	240
	Devon			1115856	Devon	120
	Dorset			179824	Dorset	100
	Gloucestershire			586794	Gloucestershire	70
	Wiltshire			525276	Wiltshire	60
	Somerset					
		Bath & NE Somerset		140048	Bath	30
		Mendip District		65563	Mendip	35
		Sedgemoor District		57431	Sedgemoor	40

Region	Sub region	Sub Region	Sub Region	Number of private vehicles (based on 85% of passengers and average vehicle occupancy)	Origin	Distance (km)
		South Somerset		63235	South Somerset	50
		Taunton Deane		53148	Taunton Deane	80
		West Somerset		24424	West Somerset	90
		North Somerset				
			Weston-super-Mare	794974	Weston-super-Mare	30
			Portishead	362923	Portishead	20
			Clevedon	276513	Clevedon	20
			Nailsea	293795	Nailsea	10
Wales				1594756	Cardiff	50
West Midlands				167520	Birmingham	160
Yorkshire				5679	Leeds	350

Table 17A.12 Proposed Development (12 mppa) Vehicle movements and origins for employees access to Bristol Airport

Local Authority	Percentage of employees	Number of employees in 2017
North Somerset	33%	1,509
City of Bristol	26%	1,168
South Gloucestershire	11%	487
Bath & North East Somerset	7%	341
Sedgemoor District	7%	341
Mendip District	4%	195
Wiltshire	2%	97
South Somerset District	1%	49
Caerdydd - Cardiff	1%	49
Casnewydd - Newport	1%	49
Stroud District	1%	49

Local Authority	Percentage of employees	Number of employees in 2017
Taunton Deane District	1%	49
Sir Fynwy - Monmouthshire	1%	49
Bro Morgannwg - the Vale of Glamorgan	1%	49
Caerffili - Caerphilly	1%	49
Swindon	1%	49
Total	100%	3,875

Local Authority	Percentage of employees travelling by bus	Number of employees travelling by bus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	9%	136	Weston Super Mare	24	157.52
City of Bristol	13%	152	Bristol	14	176.15
South Gloucestershire	9%	44	Yate	32	50.81
Bath and North East Somerset	13%	44	Bath	32	51.38
Sedgemoor District	2%	7	Bridgwater	40	7.90
Mendip District	3%	6	Frome	48	6.77
Wiltshire	12%	12	Chippenham	64	13.55
South Somerset district	0%	0	Yeovil	72	0.00
Wales	5%	2	Cardiff	80	2.82
Taunton Dean District	0%	0	Taunton	64	0.00

Local Authority	Percentage of employees travelling by car (alone)	Percentage of employees travelling by car share (driver)	Percentage of employees travelling by car share (passenger)	Total number of employees travelling by car	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	83%	4%	0%	1313	Weston Super Mare	24	1522.66
City of Bristol	80%	2%	2%	981	Bristol	14	1138.18

Local Authority	Percentage of employees travelling by car (alone)	Percentage of employees travelling by car share (driver)	Percentage of employees travelling by car share (passenger)	Total number of employees travelling by car	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
South Gloucestershire	86%	1%	0%	423	Yate	32	491.18
Bath and North East Somerset	83%	0%	2%	290	Bath	32	335.92
Sedgemoor District	89%	4%	2%	324	Bridgwater	40	375.44
Mendip District	88%	3%	3%	183	Frome	48	212.28
Wiltshire	76%	6%	0%	80	Chippenham	64	92.59
South Somerset district	100%	0%	0%	49	Yeovil	72	56.46
Wales	83%	3%	0%	42	Cardiff	80	48.55
Taunton Dean District	100%	0%	0%	49	Taunton	64	56.46
Sir Fynwy - Monmouthshire	100%	0%	0%	49	Raglan	72	56.46
Bro Morgannwg - the Vale of Glamorgan	100%	0%	0%	49	Southerndown	113	56.46
Caerffili - Caerphilly	100%	0%	0%	49	Caerphilly	80	56.46
Swindon	100%	0%	0%	49	Swindon	80	56.46

Local Authority	Percentage of employees travelling by motorbike	Number of employees travelling by motorbike	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
City of Bristol	2%	30	Weston Super Mare	24	35.00
City of Bristol	1%	12	Bristol	14	13.55
South Gloucestershire	1%	5	Yate	32	5.65
Bath and North East Somerset	0%	0	Bath	32	0.00
Sedgemoor District	4%	14	Bridgwater	40	15.81

Local Authority	Percentage of employees travelling by motorbike	Number of employees travelling by motorbike	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
Mendip District	3%	6	Frome	48	6.77
Wiltshire	6%	6	Chippenham	64	6.77
South Somerset district	0%	0	Yeovil	72	0.00
Wales	3%	1	Cardiff	80	1.69
Taunton Dean District	0%	0	Taunton	64	0.00

Local Authority	Percentage of employees travelling by staff minibus	Number of employees travelling by staff minibus	Origin	Distance (km)	Employee trips per day (based on 58% of workforce onsite per day)
North Somerset	0%	0	Weston Super Mare	24	0.00
City of Bristol	0%	0	Bristol	14	0.00
South Gloucestershire	3%	15	Yate	32	16.94
Bath and North East Somerset	0%	0	Bath	32	0.00
Sedgemoor District	0%	0	Bridgwater	40	0.00
Mendip District	0%	0	Frome	48	0.00
Wiltshire	0%	0	Chippenham	64	0.00
South Somerset district	0%	0	Yeovil	72	0.00
Wales	5%	2	Cardiff	80	2.82
Taunton Dean District	0%	0	Taunton	64	0.00

Table 17A.13 Proposed Development (12 mppa) Vehicle movements and origins for passenger access to Bristol Airport

Region	Sub region	Sub Region	Sub Region	Passengers per Annum	Passenger Percentage
East Midlands				13,362	0.11%
East of England				14,475	0.12%
North East				2,227	0.02%

Region	Sub region	Sub Region	Sub Region	Passengers per Annum	Passenger Percentage
North West				16,702	0.14%
Scotland				21,156	0.18%
South East				128,048	1.07%
Wales				2,267,044	18.89%
West Midlands				197,083	1.64%
Yorkshire				6,681	0.06%
South West				9,333,224	77.78%
	City of Bristol			2931684	31.4%
	Cornwall			522025	5.6%
	Devon			1586258	17.0%
	Dorset			255631	2.7%
	Gloucestershire			834164	8.9%
	Wiltshire			746712	8.0%
	Somerset				
		Bath & NE Somerset		655013	26.7%
		Mendip District		306640	12.5%
		Sedgemoor District		268611	10.9%
		South Somerset		295754	12.0%
		Taunton Deane		248578	10.1%
		West Somerset		114233	4.6%
		North Somerset			
			Weston-super-Mare	261243	46%
			Portishead	119263	21%
			Clevedon	90867	16%
			Nailsea	96546	17%
Total				12,000,000	100%

Region	Sub region	Sub Region	Sub Region	Number of passengers using public transport (based on 15%)	Origin	Distance (km)
East Midlands				2004	Nottingham	240
East of England				2171	Norwich	400
North East				334	Newcastle	490
North West				2505	Carlisle	470
Scotland				3173	Glasgow	620
South East				19207	London	205
South West						
	City of Bristol			439753	Bristol	15
	Cornwall			78304		240
	Devon			237939		120
	Dorset			38345		100
	Gloucestershire			125125		70
	Wiltshire			112007		60
	Somerset					
		Bath & NE Somerset		98252		30
		Mendip District		45996		35
		Sedgemoor District		40292		40
		South Somerset		44363		50
		Taunton Deane		37287		80
		West Somerset		17135		90
		North Somerset				
			Weston-super-Mare	39186		46%
			Portishead	17889		21%
			Clevedon	13630		16%
			Nailsea	14482		17%
Wales				340057	Cardiff	50

Region	Sub region	Sub Region	Sub Region	Number of passengers using public transport (based on 15%)	Origin	Distance (km)
West Midlands				29562	Birmingham	160
Yorkshire				1002	Leeds	350

Region	Sub region	Sub Region	Sub Region	Number of private vehicles (based on 85% of passengers and average vehicle occupancy)	Origin	Distance (km)
East Midlands				11357	Nottingham	240
East of England				12304	Norwich	400
North East				1893	Newcastle	490
North West				14197	Carlisle	470
Scotland				17982	Glasgow	620
South East				108841	London	205
South West						
	City of Bristol			2491932	Bristol	15
	Cornwall			443722	Cornwall	240
	Devon			1348319	Devon	120
	Dorset			217286	Dorset	100
	Gloucestershire			709040	Gloucestershire	70
	Wiltshire			634705	Wiltshire	60
	Somerset					
		Bath & NE Somerset		556761	Bath	30
		Mendip District		260644	Mendip	35
		Sedgemoor District		228319	Sedgemoor	40
		South Somerset		251391	South Somerset	50
		Taunton Deane		211292	Taunton Deane	80

Region	Sub region	Sub Region	Sub Region	Number of private vehicles (based on 85% of passengers and average vehicle occupancy)	Origin	Distance (km)
		West Somerset		97098	West Somerset	90
		North Somerset				
			Weston-super-Mare	222057	Weston-super-Mare	30
			Portishead	101374	Portishead	20
			Clevedon	77237	Clevedon	20
			Nailsea	82064	Nailsea	10
Wales				1926987	Cardiff	50
West Midlands				167520	Birmingham	160
Yorkshire				5679	Leeds	350