Appendix B – BSIP Supporting Data Note 2023 Update

1. Introduction

Surrey is a county located in the south east of England. It borders East Sussex and West Sussex to the south, Hampshire and Berkshire to the west, Kent to the east and the Greater London area to the north east. The county has three motorway links, the M25, the M23 and the M3, all of which can be found in the north and the east of the county, which provide strategic connectivity to areas such as London, the south east and south west. Additionally, Surrey has a vast railway network, with many stations within Surrey having frequent, direct rail services to London, Southampton, Portsmouth and Exeter. As at mid-2021, the county's population stood at 1,205,616[1], making it the 11th most populous county in England.

2. Current bus network

2.1. Bus routes and frequencies

2.1.1. Pre COVID (January 2020)

Figure 2-1 outlines the bus network in Surrey as of January 2020, considering bus services which operated at least one bus per hour during the Monday morning AM peak. This timetable has been displayed to allow for comparison between the bus network before and after the COVID-19 pandemic.

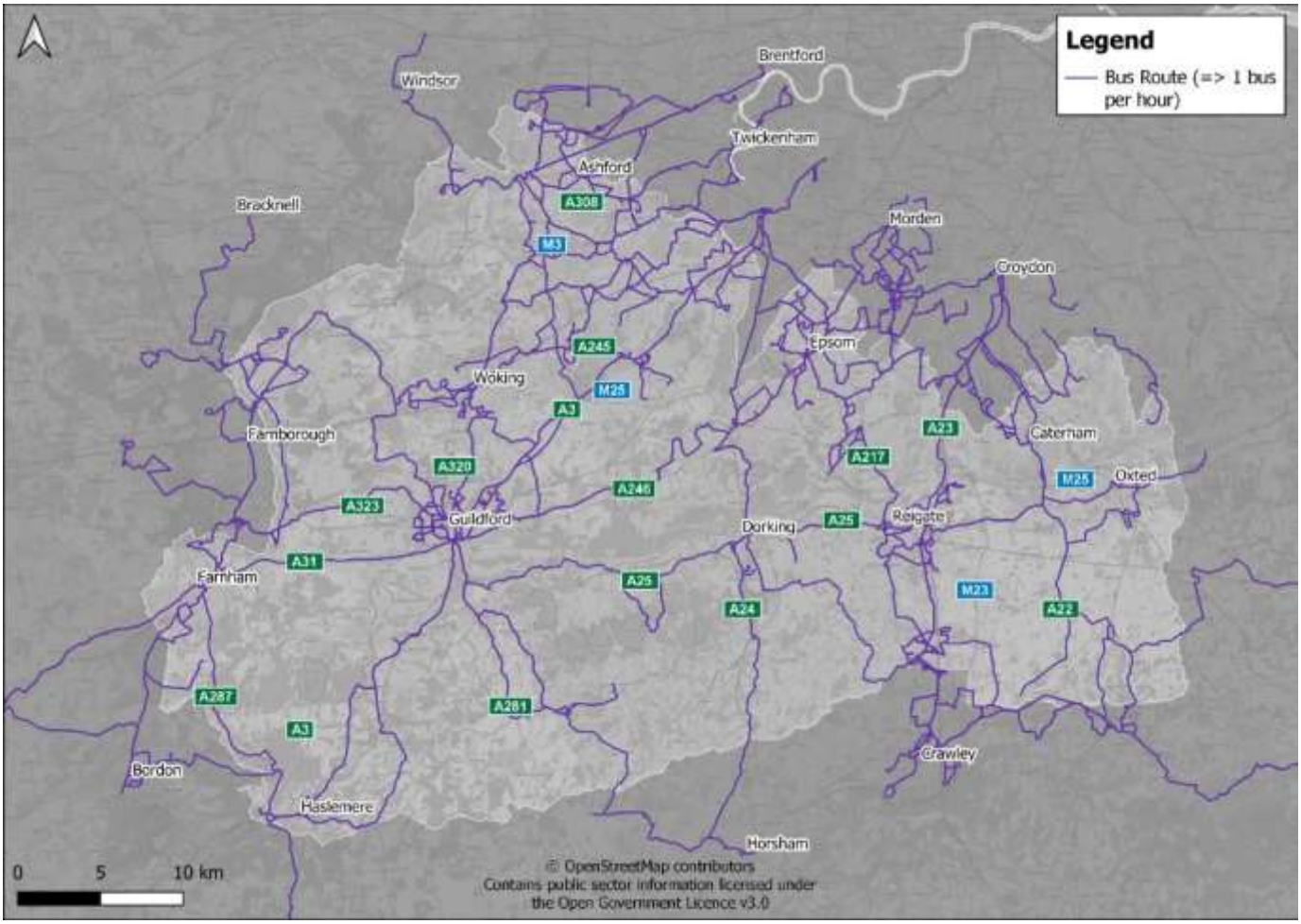
When considering the network within Surrey, there is a dense network of bus routes around the urban areas as outlined in Figure 2-1. This bus network appears to focus around towns such as Guildford, Reigate and Epsom. The north of the county has a particularly dense bus network which is likely a result of the higher population density, as well as the 24 cross-boundary services offered by Transport for London (TfL) which extend into the county.

Although the network does appear dense, most of the inter-urban bus services in Surrey (excluding those TfL services) operate at an hourly frequency with the following higher frequency services also identified:

- 91 – Guildford – Woking
- Kite – Guildford – Aldershot
- 446 – Woking – Staines-upon-Thames
- 53 – Guildford – Ewhurst
- 1 – Aldershot – Camberley
- 3 – Yateley – Aldershot
- 100 – Redhill – Crawley
- 20 – Crawley – Horley
- 410 – Redhill – Oxted
- 430/435 – Merstham – Redhill – Reigate
- 460/480 – Tadworth – Epsom
- 479 – Epsom – Bookham
- 34/35 – Guildford – Woking – Camberley
- 436 – Woking – Weybridge
- 4/5 – Aldershot – Farnham
- 194 – Camberley – Bracknell
- 8 – Slough – Staines – Heathrow
- 461 – Kingston – St. Peter's Hospital
- 441 – Englefield Green – Staines
- 53/63 – Guildford – Cranleigh

[1] ONS (2021), Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland

Figure 2-1 - January 2020 bus network[2]

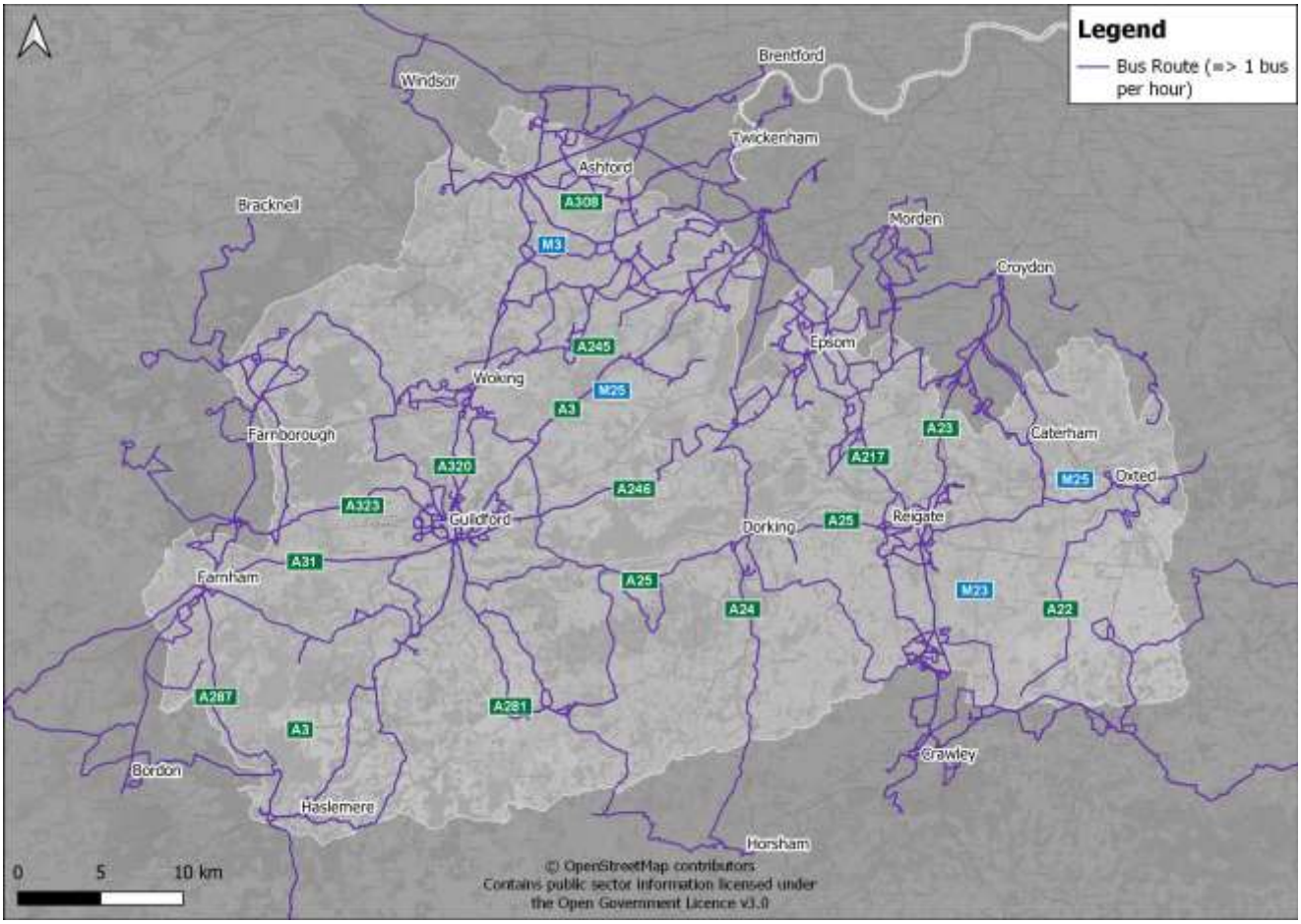


[2] Basemap (2021), Datacutter bus routes for January 2020

2.2. Present bus network (Q4 2022)

Figure 2-2 outlines the bus network within Surrey as of Quarter 4 2022. There have been limited changes to the bus network within Surrey (as represented in the Monday morning AM peak period), however there were some minor service amendments such as improved journey times on the RA2 service to Heathrow Airport from Guildford.

Figure 2-2 – Q4 2022 bus network[3]

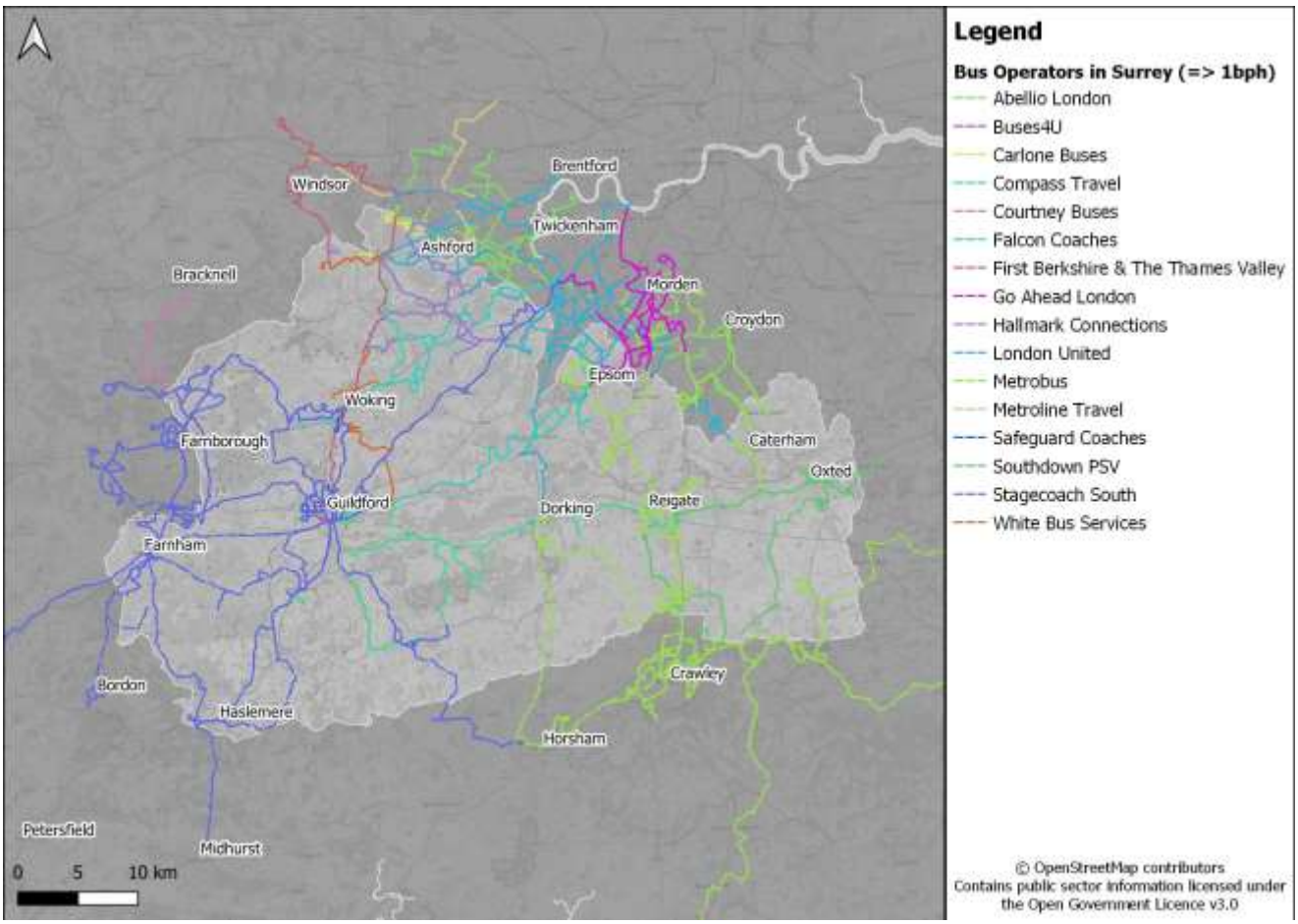


[3] Basemap (2023), Datacutter bus routes for Q4 2022

2.3. Present bus operators

Figure 2-3 displays the spatial distribution of bus operators within Surrey. In January 2023 there are 16 bus operators within Surrey which provide at least one bus service with one bus per hour during the Monday morning peak period. Within the county, Stagecoach and Metrobus are the two largest operators, alongside the agglomeration of operators who operate TfL contracted servicers such as Metroline Travel and Abellio London. It is evident that the mix of operators varies across space, for example to the west of the county covering Woking and Guildford, Stagecoach is the largest operator, however Metrobus is the largest operator to the east. Likewise, as expected with proximity to Greater London, TfL offers a large share of services in areas such as Epsom and Ashford with some services extending into areas such as Redhill and Dorking.

Figure 2-3 - Bus operators within Surrey (January 2023)[4]



[4] Basemap (2023), Datacutter bus routes for January 2023

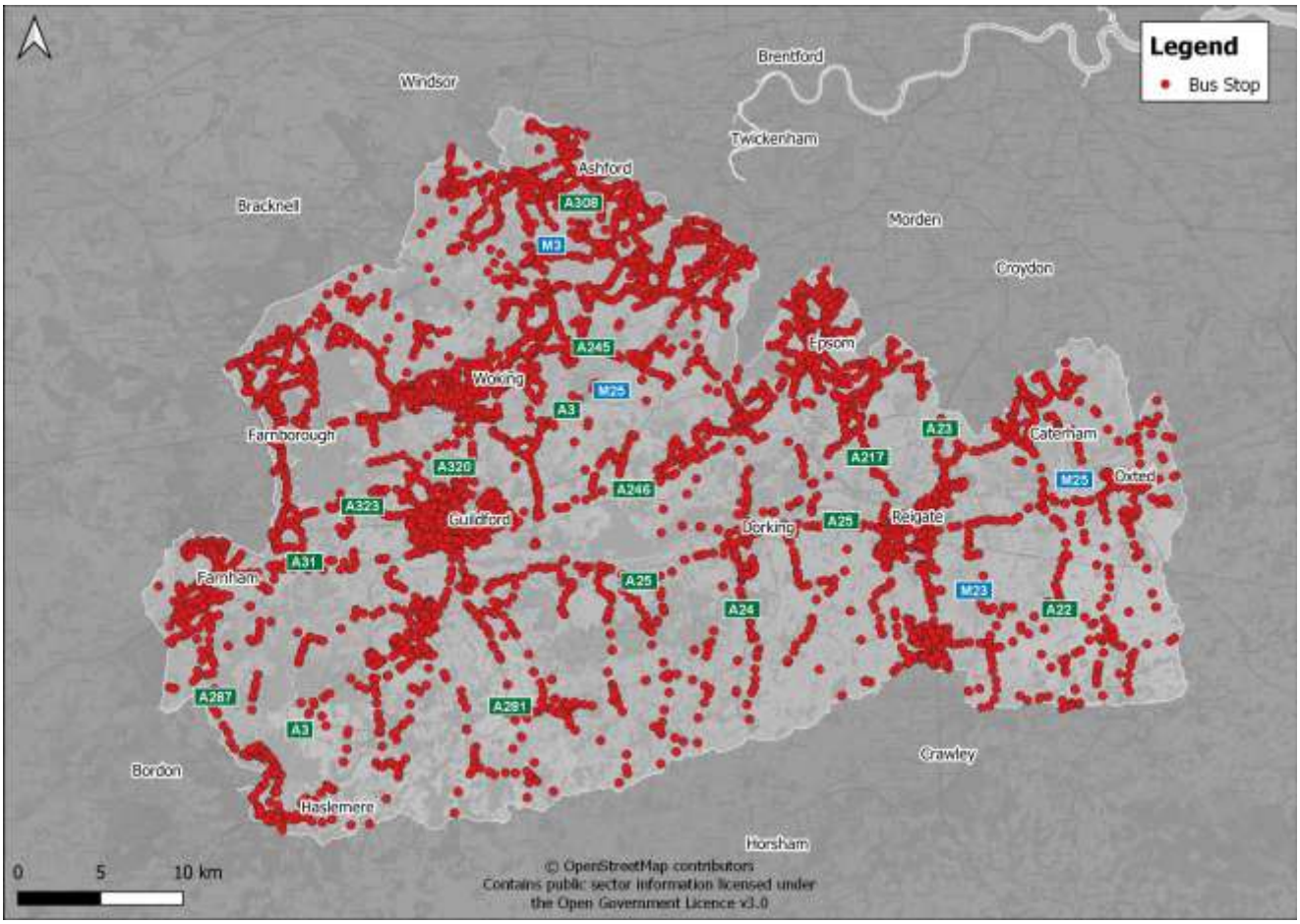
2.4. Location of bus stops

As of January 2023, there are currently 7,059 bus stops in Surrey[5] with most of these located in the larger settlements. Within the larger settlements it appears that almost all of the population can access a bus stop within a 400m walk. This however does not give an indication to the destinations served at the stop, nor the frequency of the buses which call, both of which are significant factors impacting the propensity to travel by bus.

A number of bus stops are also adjacent to railway stations, thus allowing the possibility for interchanging at stations such as Guildford, Epsom and Woking.

Figure 2-4 displays the distribution of bus stops within Surrey.

Figure 2-4 - Bus stops in Surrey



[5] DfT (2023), NaPTAN and NPTG download options [Sourced April 2023]

2.5. Bus fares

As identified within the Bus Service Improvement Plan, Surrey County Council has recognised that residents have regularly communicated that the cost of using public transport can be a barrier to increased usage. In response to this, SCC has worked with operators on introducing a 20 and under fare scheme that would offer half fare journeys to county residents, underwritten by the County Council. It is hoped that this initiative will generate continued public transport usage by residents within this age group, and therefore a reduction in private vehicle trips. The 20 and under fare scheme is planned to commence in July 2023, and run for an initial three-year period, thus providing continued support for bus journey

This section outlines the fares charged by the principal operators in Surrey as of 11th April 2023. The data outlined in Table 2-1 to Table 2-3 outlines the fares for the primary operators within Surrey and has been collected from public sources, thus they are limited to the data published by each operator. Until 31 October 2023, the vast majority of single tickets have been capped at £2 per fare by the DfT and local bus operators; the Adult Single prices shown are therefore based on the previous prices for these tickets prior to the introduction of the temporary cap.

Table 2-1 – Stagecoach Bus Prices[6]

Passenger Type	Ticket Type	Purchasing Method	
		Online (£)	On Bus (£)
Adult*	Single Guildford - Woking	-	4.20
	Return Guildford - Woking	-	6.80
	Single Guildford – Godalming	-	4.50
	Return Guildford – Godalming	-	6.80
	Artington/Merrow P&R DayRider	-	2.70
	Woking DayRider	-	4.90
	Guildford & Godalming DayRider	-	5.30
	Guildford Local DayRider	-	4.00
	Woking Travelwide Day	-	5.80
	Acorn Day	-	7.00
	Gold DayRider	-	9.10
	Gold NightRider	-	2.80
	Discovery Day	-	9.10
	Artington/Merrow P&R Flexi 5	-	10.80
	Guildford Local Flexi 5	-	16.00
	Artington/Merrow P&R Flexi 10	-	18.90
	Woking Flexi 5	-	19.60
	Guildford & Godalming Flexi 5	-	21.20
	Woking Flexi 10	-	34.30
	Gold Flexi 5	-	36.40
	Guildford & Godalming Flexi 10	-	37.10
	Gold Flexi 10	-	63.70

[6] Stagecoach Tickets [Sourced April 2023].

Passenger Type	Ticket Type	Purchasing Method	
		Online (£)	On Bus (£)
	Artington/Merrow P&R 7 Day MegaRider	-	10.00
	Guildford Local 7 Day MegaRider	-	13.00
Adult*	Woking 7 Day MegaRider	-	19.00
	Guildford & Godalming 7 Day MegaRider	-	21.00
	Gold 7 Day MegaRider	-	28.00
	Guildford P&R Xtra	32.00	-
	Guildford P&R 28 Day	35.00	-
	Guildford Local MegaRider Xtra	45.00	-
	Guildford Local 28 Day MegaRider	47.00	-
	Guildford & Godalming MegaRider Xtra	72.00	-
	Woking MegaRider Xtra	70.00	-
	Woking 28 Day MegaRider	77.00	-
	Guildford & Godalming MegaRider Xtra	72.00	-
	Guildford & Godalming 28 Day MegaRider	76.00	-
	Gold 28 Day MegaRider	98.00	-
	Gold MegaRider Xtra	89.00	-
	Gold 13 Week MegaRider	311.50	-
	Guildford Local Annual MegaRider	495.00	-
	Woking Annual MegaRider	700.00	-
	Guildford & Godalming Annual MegaRider	780.00	-
	Gold Annual MegaRider	995.00	-
Concession	Guildford P&R Artington Senior Return	-	1.50
	Guildford P&R Merrow Senior Return	-	1.50
Group^	Guildford Local Group DayRider	-	8.00
	Woking Family DayRider	-	9.80
	Guildford & Godalming Family DayRider	-	10.60
	Gold Family DayRider	-	17.50
	Family Day Discovery	-	17.50
Child (15 and younger)*	Artington/Merrow P&R DayRider	-	1.35
	Woking Travelwide Day	-	2.90
	Guildford Local DayRider	-	3.00
	Woking DayRider	-	3.80
	Guildford & Godalming DayRider	-	4.00
	Acorn Day	-	3.50
	Gold DayRider	-	7.20
	Discovery Day	-	7.20
	Gold NightRider	-	2.80

Passenger Type	Ticket Type	Purchasing Method	
		Online (£)	On Bus (£)
	Woking 7 Day MegaRider	-	15.50
	Woking 28 Day MegaRider	55.00	-
	Guildford & Godalming 7 Day MegaRider	-	16.00
	Gold 7 Day MegaRider	-	21.50
	Gold 28 Day MegaRider	76.00	-
	Woking Summer TermRider	160.00	-
	Guildford & Godalming Summer TermRider	173.00	-
	South Gold Summer TermRider	227.00	-
Student	Student Guildford & Godalming Summer StudentRider	191.00	-
	Student Woking Summer StudentRider	191.00	-
	Student South Gold Summer StudentRider	250.00	-
	Student Guildford & Godalming Annual StudentRider	645.00	-
	Student South Gold Annual StudentRider	819.00	-

* Gold - travel in Hampshire, Surrey, West Sussex & Brighton, on Stagecoach buses

* Woking - travel in Woking

* Guildford & Godalming - travel in Godalming

* Acorn – travel in North Surrey on buses in the Acorn Scheme

* Discovery – travel in South East

* Xtra – Unlimited travel

^Gold DayRider 1 day of travel in Hampshire, Surrey, West Sussex and Brighton on Stagecoach buses – Tickets are valid for up to four people with a maximum of two adults travelling together.

^Family Day Discovery a day of travel in the South East on most buses. Tickets are valid for up to five people with a maximum of two adults.

Table 2-2 - Metrobus ticket prices[7]

Passenger Type	Ticket Type	Purchasing Method	
		Online (£)	On Bus (£)
Adult	60 Minutes Crawley / Horsham / Redhill & Reigate Metrorider	2.60	-
	1 day/24 hour Crawley / Horsham / Redhill & Reigate Metrorider	4.95	5.40
	2 day Crawley / Horsham / Redhill & Reigate Metrorider	9.30	-
	3 day Crawley / Horsham / Redhill & Reigate Metrorider	13.75	-
	4 day Crawley / Horsham / Redhill & Reigate Metrorider	18.30	-
	1 week Crawley / Horsham / Redhill & Reigate Metrorider	21.00	23.30
	4 week Crawley / Horsham / Redhill & Reigate Metrorider	69.00	-
	1 day / 24 hour Metrovoyager	7.60	8.20
	2 day Metrovoyager	14.60	-
	3 day Metrovoyager	21.60	-
	4 day Metrovoyager	25.00	-
	1 week Metrovoyager	28.00	30.00
	4 week Metrovoyager	98.50	-
	1 day / 24 hour Epsom Metrorider	4.70	5.00
	1 week Epsom Metrorider	21.00	-
	4 week Epsom Metrorider	78.00	-
	Adult Horsham P&R 1 Day	1.90	-
	Adult Horsham P&R 1 Week	12.50	-
	Adult Horsham P&R 4 Week	42.00	-
	Adult East Sussex Day Ticket	5.00	
	Adult Crawley 1 Evening	4.30	-
Group	Duo 24 hour Metrorider	8.20	-
	Duo 24 hour Metrovoyager	10.00	-
	Quattro (4 adults)	5.50	-
	Family Day Metrorider (5 people)	9.00	10.00
	Family Day Metrovoyager (5 people)	12.50	12.50
	Discover Family Day Ticket (5 people)	17.50	17.50
Child (15 and younger)	60 Minutes Crawley / Horsham / Redhill & Reigate	1.30	-
	1 day/24 hour Crawley / Horsham / Redhill & Reigate Metrorider	2.55	2.90
	2 day Crawley / Horsham / Redhill & Reigate Metrorider	4.95	-
	3 day Crawley / Horsham / Redhill & Reigate Metrorider	7.15	-
	4 day Crawley / Horsham / Redhill & Reigate Metrorider	9.55	-
	1 week Crawley / Horsham / Redhill & Reigate Metrorider	11.10	12.50
	4 week Crawley / Horsham / Redhill & Reigate Metrorider	37.25	-
	1 day / 24 hour Metrovoyager	4.15	4.40
	2 day Metrovoyager	7.50	-
	3 day Metrovoyager	11.00	-
	4 day Metrovoyager	14.85	-
	1 week Metrovoyager	17.70	18.40

[7] Metrobus (2023), Fares and Tickets [Sourced April 2023]

Passenger Type	Ticket Type	Purchasing Method	
		Online (£)	On Bus (£)
Child (15 and younger)	4 week Metrovoyager	60.00	-
	24 hour Epsom Metrorider	2.50	2.50
	1 week Epsom Metrorider	11.00	-
	4 week Epsom Metrorider	39.00	-
	East Sussex Day Ticket	3.20	-

Table 2-3 - Transport for London Ticket Prices[8]

Passenger Type	Ticket Type	Purchasing Method	
		Pre-Purchased Oyster Card^ (£)	On Bus (£)
Adult	Single fare (bus only)	-	1.75
	Daily cap (bus only)	-	5.25
	Weekly cap (bus only)	-	24.70
	1-day bus and tram pass	6.00	-
	7-day bus and tram pass	24.70	-
	Monthly bus and tram pass	94.90	-
	Annual bus and tram pass	988.00	-
Adult (Jobcentre Plus)	Single fare (bus only)	-	0.75
	Daily cap (bus only)	-	2.25
	7-day bus and tram pass	10.90	-
	Monthly bus and tram pass	41.90	-
Adult (Bus and tram discount)	Single fare (bus only)	-	0.85
	Daily cap (bus only)	-	2.55
	7-day bus and tram pass	12.30	-
	Monthly bus and tram pass	47.30	-
Apprentice / Student (18+)	Single fare (bus only)	-	1.75
	Daily cap (bus only)	-	5.25
	7-day bus and tram pass	17.30	
	Monthly bus and tram pass	66.50	
	Annual bus and tram pass	692.00	
Child (16 - 17)	16+ Zip Oyster (London residents)	Free (£15 admin fee)	-
	Single fare (bus only)	-	0.85
	Daily cap (bus only)	-	2.55
	7 day bus and tram pass	12.30	-
	Monthly bus and tram pass	47.30	-
	Annual bus and tram pass	492.00	-
Child (11 - 15)	Zip Oyster*	Free (£15 admin fee)	-
Child (5 - 10)	1-15 Zip Oyster*	Free (£15 admin fee)	-

**Visitors from outside of London who have not applied for a Zip Oyster pay 50% of the relevant adult fare*

^*This includes newsagents and most TfL owned stations*

Regarding adult fares, each operator offers differing ticket types applicable to differing ticketing zones. For example, Stagecoach offers tickets specific to Guildford and Woking only and Metrobus offer similar zones in Crawley, Horsham and Redhill & Reigate. TfL do not offer a zonal system on their bus services, instead charging £1.75 per journey until reaching a daily cap, which is equitably priced when compared to the local zone products offered by Metrobus and Stagecoach, but much cheaper than the more comparable Surrey-wide tickets offered by each operator. Although TfL's daily cap is cheaper than the comparative Surrey wide fare, the

[8] TfL (2023), Bus and tram fares [Sourced April 2023]

monthly ticket price is not as heavily discounted as Stagecoach's 4-week tickets, nor Metrobus local zone 4-week tickets.

Most operators within Surrey clearly define a child's fare applying to those under the age of 16 on their website. Child fares beyond the Stagecoach fare zone covering Woking and Guildford and Godalming are expensive, costing up to £7.20 for a day ticket covering Surrey. Although this ticket covers a wide geographical area compared to the Woking and Guilford and Godalming tickets, these tickets could be seen as expensive for travel within these areas – particularly if a journey just crosses a fare zone boundary. Although single tickets are likely to be cheaper for such journeys, there may be a proportion of passengers who are unaware of this and pay for the more expensive day ticket. Metrobus children's ticket offer in the east of the county are cheaper than those offered by Stagecoach. This said, all of the aforementioned tickets are expensive when considering children can travel for free on all TfL bus services over similar distances.

All of the main operators within Surrey have an intermediate fare stage for students, however, these are generally weekly/monthly/annual tickets that require a higher upfront cost, making them unaffordable for some younger people and not applicable to infrequent travellers. The exception to this is TfL who offer 50% discounts to 16-17 year olds.

Stagecoach have begun to offer flexible tickets in the form of the 10 single trip product or a 7-day tickets product. MetroBus also have a similar scheme offering a range of discounts on products ranging from one day through to 4 days.

Within Surrey, the Council also provides concessionary travel for the following groups:

- The English National Concessionary Travel Scheme for elderly and disabled passengers (statutory minimum scheme); and
- Student Fare Cards (for those 16+) which allow students to travel at a discounted rate on buses and trains.

First Bus, Metrobus and Stagecoach both offer group tickets to incentivise group travel and make this more competitive against using private modes. For a group day ticket, Stagecoach charges approximately £17.50 whereas Metrobus charges £12.50. Stagecoach group tickets allow for 2 adults and up to 3 children depending on the area. Each operator offers slightly differing group tickets which have differing zone boundaries, with Stagecoach and Metrobus having the greatest variety in group tickets.

When comparing bus fares to the price of a taxi within Surrey, the bus fare for a single traveller appears to be competitively priced both within the smaller fare zones and when considering countywide ticketing. This is particularly true if the individual uses a more restrictive return fare as opposed to the equivalent day ticket product. For example, for a passenger travelling between Milford and Godalming an Uber would cost £8.00 opposed to a £6.80 return with Stagecoach - although the day product, the Gold DayRider, would cost £9.10.

As the cost of a taxi is variable based on the number of passengers, taking the bus becomes less competitive when considering a group scenario. At present, each of the operators offer varying degrees of discounted group tickets, however most of these products are targeted at families and do not offer significant savings for groups of adults. This said, the bus group ticketing offer is competitive with taxis over a longer distance, for example, a group journey from Guildford to West Sussex (~32 miles) would cost £17.50 on a Stagecoach bus with a Group Gold DayRider whereas an Uber would cost around £36.00 each way (£72.00 in total)[9], however, the time this journey would take and the number of bus changes required to do this journey should also be taken into consideration.

[9] Uber (2021), Uber App [Sourced September 2021]

Overall, in Surrey, there is a complicated fare structure due to the range of ticketing zones in use by the differing operators, as well as the varying ticketing products on offer. There is also a lack of clarity on the best value tickets for travel, eligibility criteria and their prices before a passenger boards the bus which could act as a barrier to use of the services. The fare zones operated by Stagecoach and Metrobus could be seen as confusing, particularly for those travelling near the zone boundaries. When considering group ticketing, this can be competitive in terms of cost over longer distances, but this benefit is lost on shorter more localised journeys where taxis are often cheaper than the equivalent bus offering.

2.5.1. Multi-operator ticketing

A multi-operator product, the Acorn Ticket, is available within the north Surrey area. This ticket is valid on services provided by the following bus operators:

- Carlone
- Chatterbus
- Diamond South East
- Falcon Buses
- First Berkshire
- London United
- Reptons
- Runnymede CT
- Stagecoach
- White Bus

The Acorn Ticket offers unlimited travel for a day or week across many services in North Surrey. The ticket covers most services in the Boroughs of Elmbridge, Runnymede and Spelthorne as well as parts of Woking Borough, it can also be use on some services to Kingston and Heathrow Airport. Users can change buses as much as is needed to complete the journey irrespective of which company runs the service.

Acorn tickets are purchased from the driver on the first bus boarded. Buses covered by the Acorn ticket will display the Acorn logo. The cost of Acorn tickets is outlined in Table 2-4.

Table 2-4 – Acorn Ticket Prices[10]

Passenger Type	Ticket	Price (£)
Adult	1 day	£7.00
	1 week	£30.00
Child	1 day	£3.50
	1 week	£15.00

2.6. Bus service reliability

Reliability of bus services in Surrey has been reviewed using DfT bus statistics[11] for the percentage of non-frequent bus services running on time between 2012-2022 (Figure 2-5). Between 2012/13 and 2016/17, punctuality generally declined, decreasing from 78% on time in 2012/13 to 69% in 2016/17. Punctuality improved slightly to 73% by 2018/19; beyond this

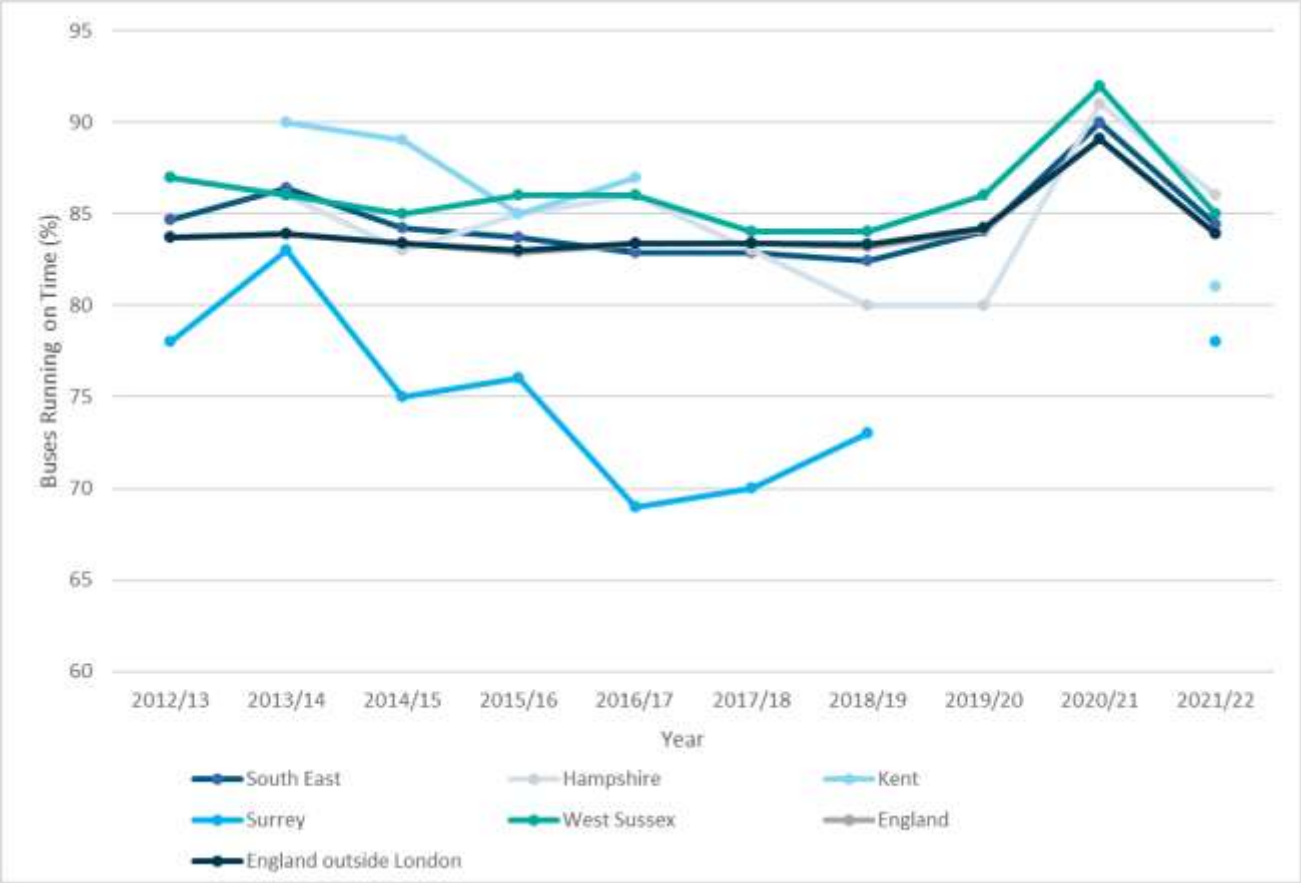
[10] Acorn Ticket Information [Sourced April 2023].
[11] DfT (2023), Bus Statistics (Bus09a)

there is a data gap during the COVID-19 pandemic until 2021/22. The punctuality was next recorded in 2021/22, as 78%, indicating an improvement through this period.

Reviewing the regional and national picture, the South East bus networks performance has been relatively consistent between 2012/13 and 2021/22, recording 84% in both years. Punctuality data in 2020/21 during the pandemic was higher at 90%, but has returned to a typical level in the year following. There is a similar trend within England and England Outside London where punctuality over this period is also consistent with punctuality hovering around 85% for much of the period, with a spike during the pandemic.. As such, the trend of decreasing punctuality within Surrey seen between 2012/13 and 2018/19 was not in line with these wider datasets.

However, there is a concern with punctuality, that local transport authorities may use different sampling and measurement methodologies leading to inconsistencies with the results.

Figure 2-5 - Bus service reliability[11]



3. Bus network performance

3.1. Bus passenger journeys

This section outlines the number of bus passenger journeys indexed to 2009/10 values in Surrey alongside comparable local authorities, the South East region and the national data for England[12]. This is intended to show the trend in patronage. It is evident that since 2009/10 the number of bus passengers within Surrey has decreased overall (Figure 3-1). Between 2009/10 and 2011/12 Surrey experienced an increase of 3%; however, this reduced by 5% in 2012/13. Surrey experienced a further 1% decrease in patronage in 2013/14, followed by an increase of 2% in 2014/15 and a decrease of 3% in 2015/16. In 2016/17 bus passenger journeys rose 2% but decreased 8% between 2016/17 and 2019/20. In 2019/20 Surrey bus patronage was approximately 10% lower than the indexed value at 2009/10.

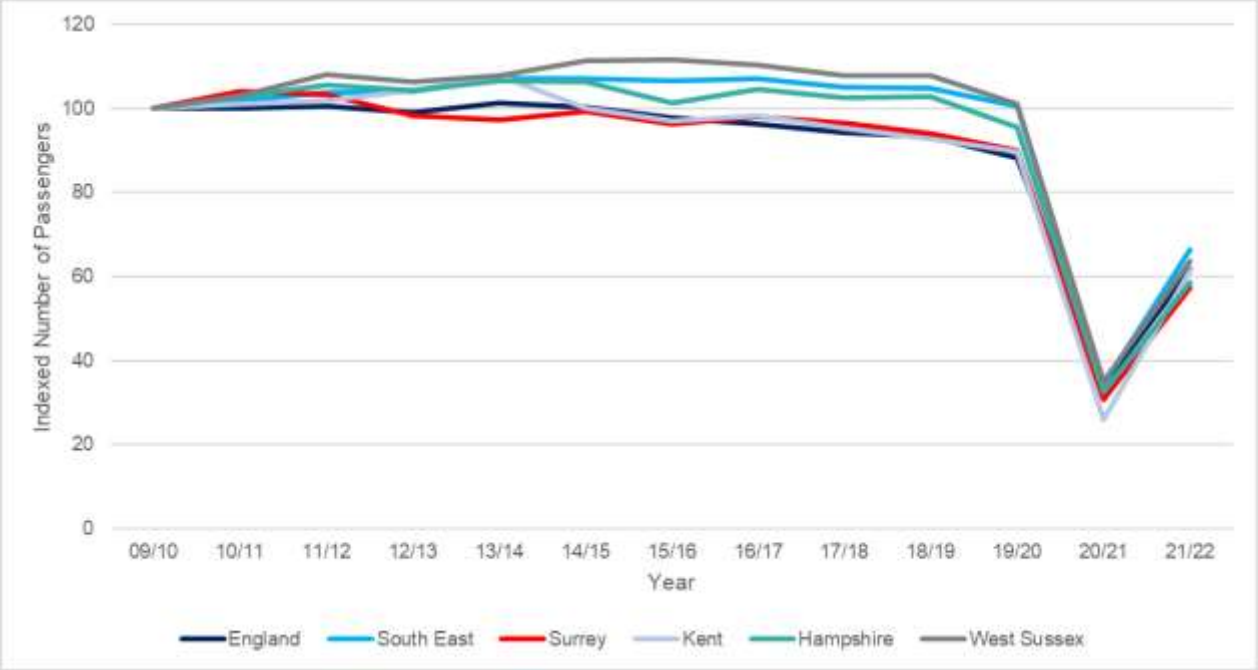
When comparing the trend in bus passengers in Surrey with other local authorities, a similar trend emerges within some of the comparative authorities such as Kent, whereby there is a general incline in bus passenger journeys between 2009/10 and 2014/15 and a decrease between 2015/16 to 2019/20. Kent also experienced the largest reduction in bus passenger journeys having 89% of bus patronage compared to the indexed value at 2009/10. Hampshire and West Sussex both experienced increases in bus passenger journeys over the time period that were above the indexed value, except for 2019/20 where they both saw significant decreases. This is likely to be as a result of the Covid-19 Pandemic. West Sussex experienced the largest patronage increases having nearly 12% above the indexed level in 2015/16, West Sussex was also the only authority to have patronage above that of the 2009/10 indexed value in 2019/20.

Comparing the number of bus passengers in Surrey against both the regional and national average indicates that Surrey has performed below the regional average but above than the national average. Patronage in England remained steady until 2014/15 but started to steadily decline from 2015/16 to 2019/20, whereas the regional average was generally increasing between 2009/10 and 2016/17 and then declined between 2017/18 and 2019/20.

The data shown for 2020/21 and 2022/23 are significantly affected by the COVID-19 pandemic and associated travel restrictions. This is reflected in the reduction to only 31% of the journeys within Surrey, compared to that of the indexed value in 2009/10. By comparison, both the regional and national average data represented 34% of the 2009/10 journeys.

[12] DfT (2023), Local bus passenger journeys (Bus01e)

Figure 3-1 - Passenger journeys on local bus services by local authority indexed to 2009/10 values[12]



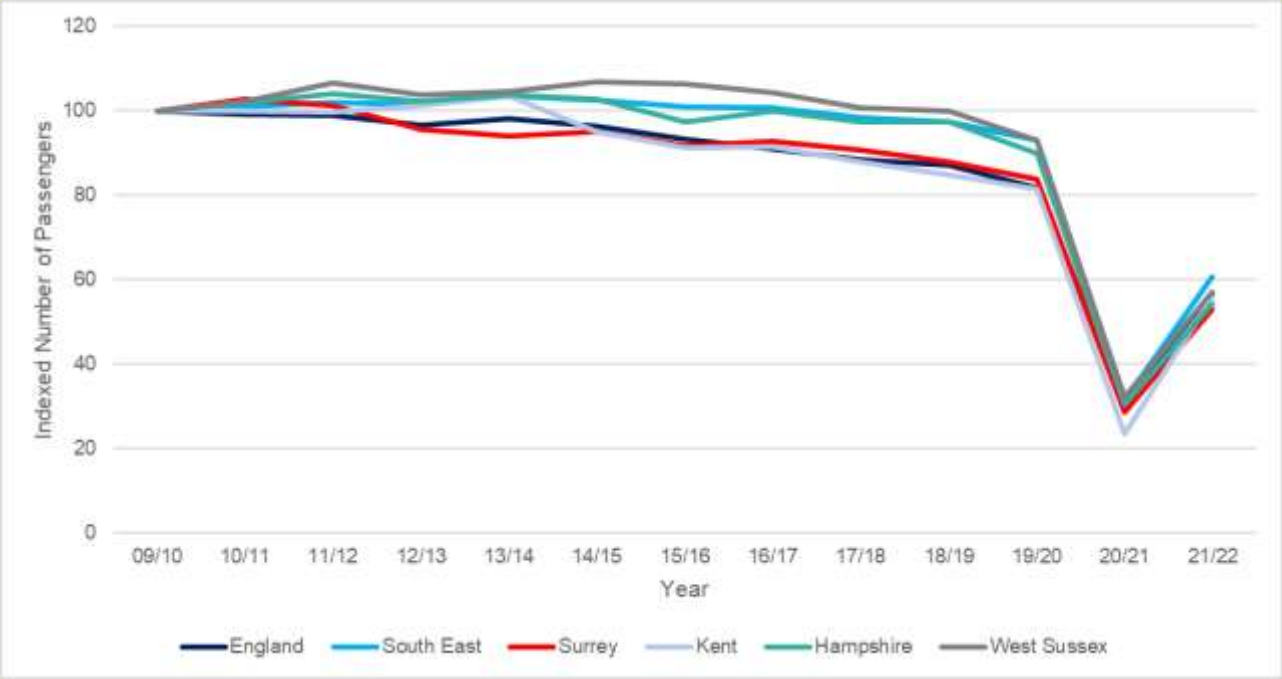
When considering the trend in passenger journeys per head by local authorities (Figure 3-2), Surrey performs similarly to all other equivalent local authorities considered.

Comparing passenger journeys per head in Surrey to the regional and national level (Figure 3-2), the South East and England demonstrate a similar overall trend to Surrey, in that population growth over the reporting period has masked the extent to which the propensity to travel by bus has reduced. However, as with the number of passengers, the South East as a region has performed better at retaining bus passengers than Surrey, which follows a similar reduced propensity to travel by bus as the English national average.

Overall, when considering passenger numbers, the general picture from 2009/10 indicates a decline in bus patronage across most of the local authorities considered in this analysis, suggesting that the attractiveness of bus services is decreasing. When considering the present, indexed bus passenger numbers within Surrey are similar to all comparative local authorities, alongside the regional and national values. It should be noted that the values for 2019/20 will have been affected by the beginning of the COVID-19 pandemic in early 2020. Data for 2020/21 shows a significant decrease in indexed passenger numbers, with the start of a recovery in 2021/22, albeit with passenger numbers of less than 60% of 2009/10 numbers.

When considering passenger journeys per head of population, it is evident that the decreases seen across the time period are to some extent masked by population growth within the respective areas. Again, Surrey performs similarly in terms of retaining bus patronage to comparative authorities and the regional and national scale.

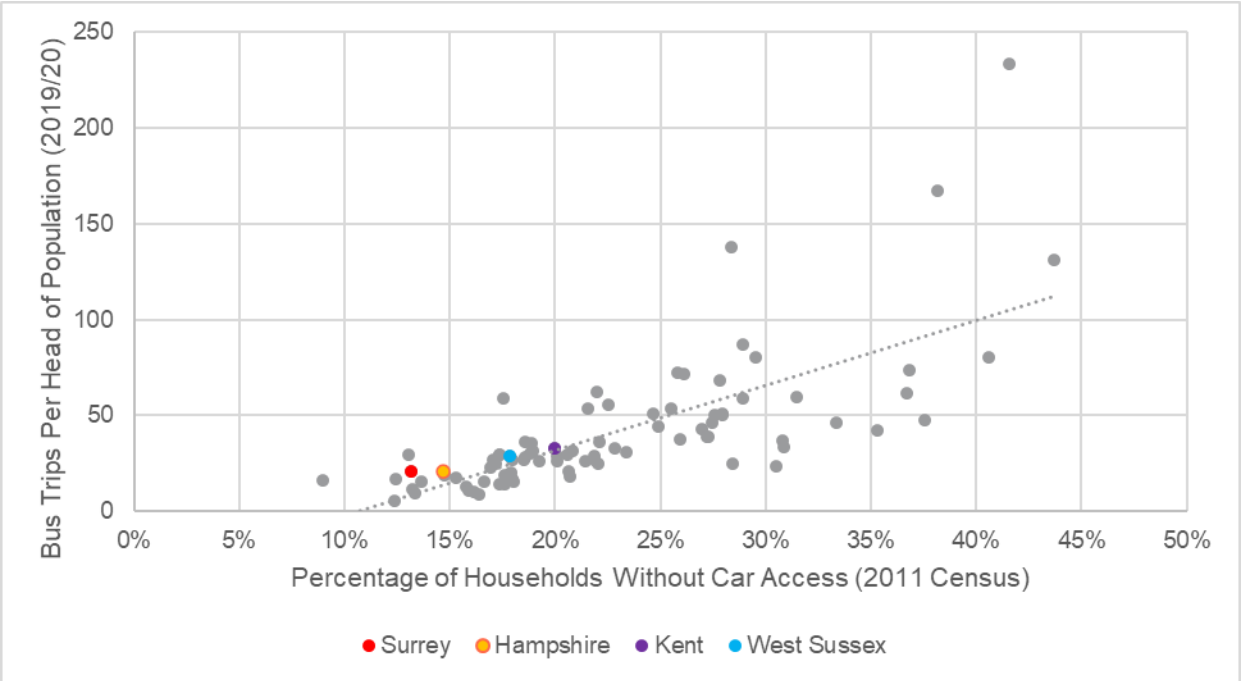
Figure 3-2 - Passenger journeys on local bus services per head by local authority indexed to 2009/10 values[13]



[13] DfT (2023), Local bus passenger journeys (Bus01f)

The correlation between bus ridership[14] and a household's lack of access to a car[15] is displayed in Figure 3-3. It is evident that out of the comparative local authorities, Surrey has the highest level of car ownership, alongside a bus trip rate which is higher than expected given the proportion of no car households within the authority. Surrey's bus trip rate is a similar value to Hampshire, whereas it is lower than that seen in West Sussex and Kent – albeit these are both areas of lower car ownership. As such, for a local authority with such a high level of car ownership, Surrey performs well in terms of the bus trips per head of population when accounting for households with access to a car.

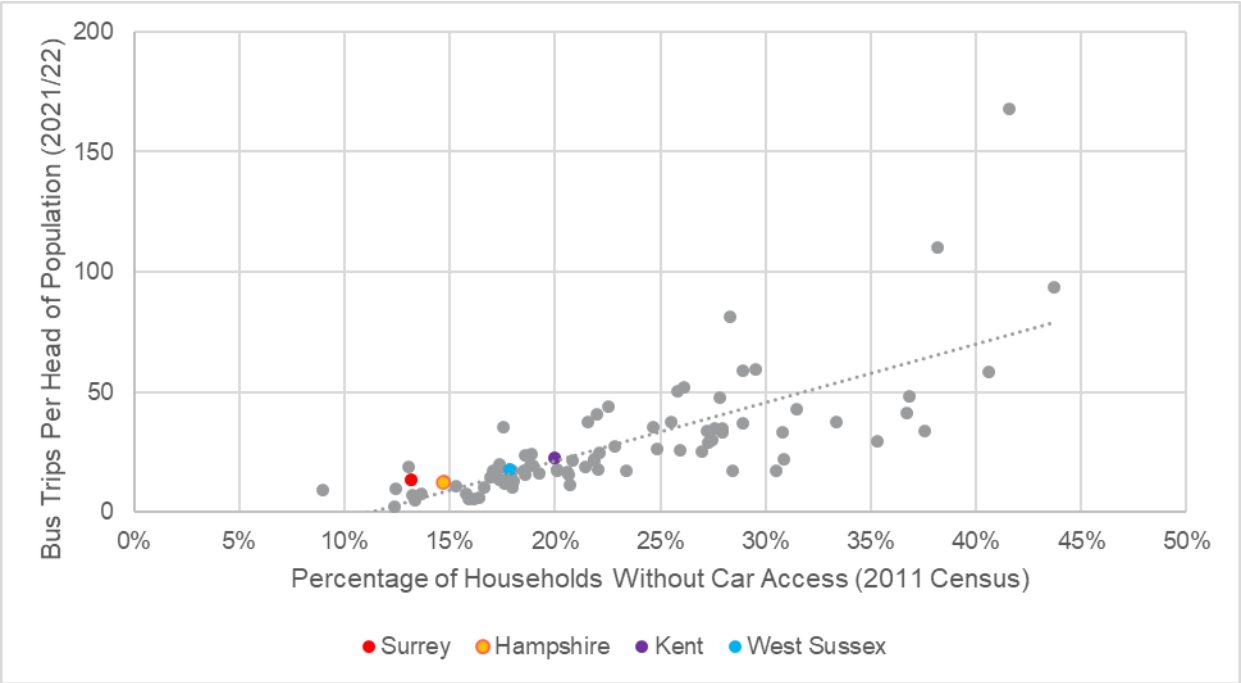
Figure 3-3 - Correlation between bus ridership (2019/20) and no household access to a car (2011)



[14] DfT (2020), Local bus passenger journeys (Bus0110)
[15] ONS (2013), Car or van availability (QS416EW)

Analysis of comparable data for 2021/22 bus trips per head of population has been provided in Figure 3-4. Whilst the number of bus trips has reduced as a whole, similar trends and conclusions can be observed. Despite the overall reduction, Surrey and Hampshire can be seen to have similar levels of bus trips whilst West Sussex and Kent have higher levels which align with the lower levels of car ownership. As a result, Surrey is still considered to be performing comparatively well.

Figure 3-4 - Correlation between bus ridership (2021/22) and no household access to a car (2011)



3.2. Bus kilometres (KM)

3.2.1. Overall bus KM

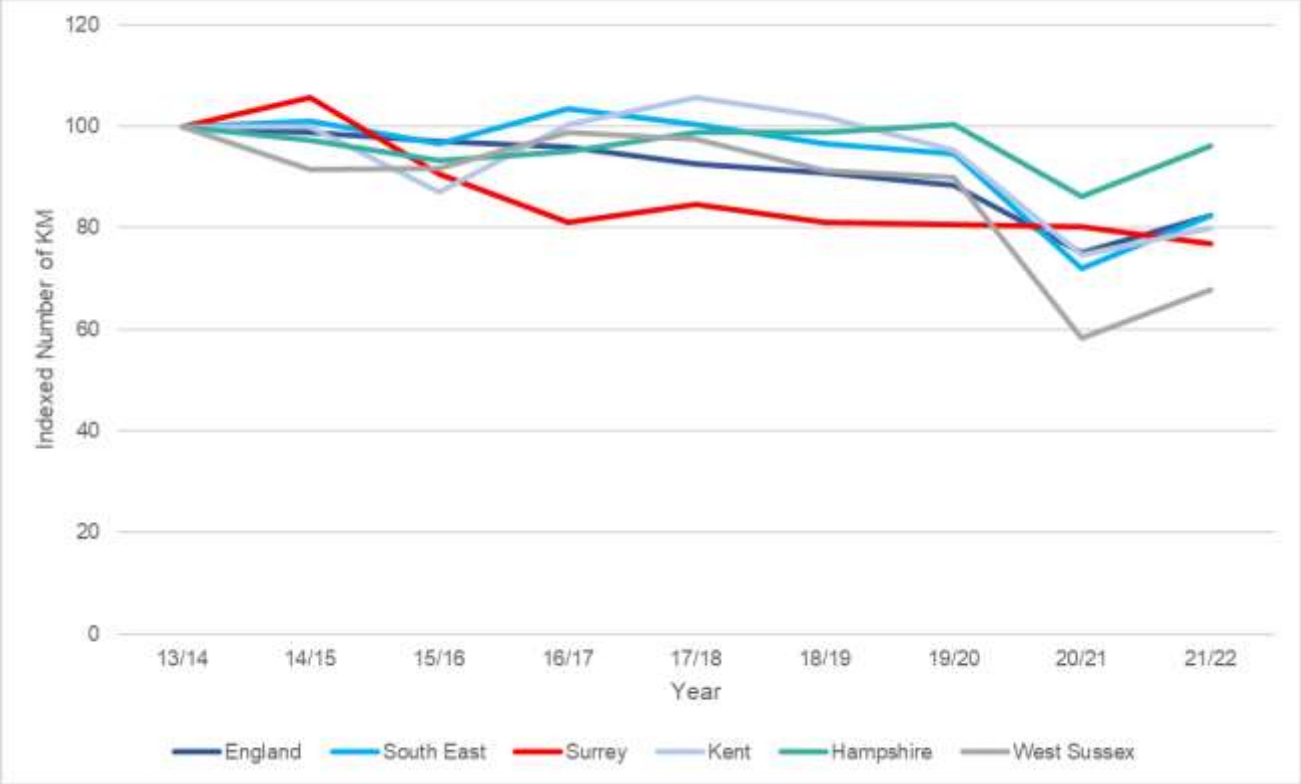
Figure 3-5 displays the bus service KM[16] per year indexed to 2013/14 for Surrey, adjacent local authorities, alongside the South East and England as a whole. Surrey has experienced a decrease in bus KM operated from 2013/14 to 2014/15 and then an increase in 2015/16. In 2016/17 bus KM operated declined by 23%, this increased by 2% in 2017/18 and remained at this level in 2018/19 however it then declined a further 7% in 2019/20. By 2019/20 then bus KM operated were 29% lower than the 2013/14 indexed amount.

When considering the comparable authorities alongside Surrey, Kent showed a similar trend; however, the decrease from 2013/14 to 2019/20 was lower with bus KM operated being 9% less than the 2013/14 indexed amount.

West Sussex and Hampshire contrast the trend in Surrey as they have both experienced a general increase in bus KM operated, apart from a brief decline in 2014/15. West Sussex had the largest increase with bus service KM operated being 15% over the indexed value in 2019/20.

In comparison to regional and national data Surrey is generally below the South East average with the exception of 2015/16 when bus KM operated was 2% higher. Surrey is also lower than the National average with the most up-to-date information suggesting that Surrey is 17% lower than the national average for bus operated KM.

Figure 3-5 - Bus service KM per year indexed to 2013/14



[16] DfT (2023), Local bus vehicle distance travelled (Bus02b and Bus02d)

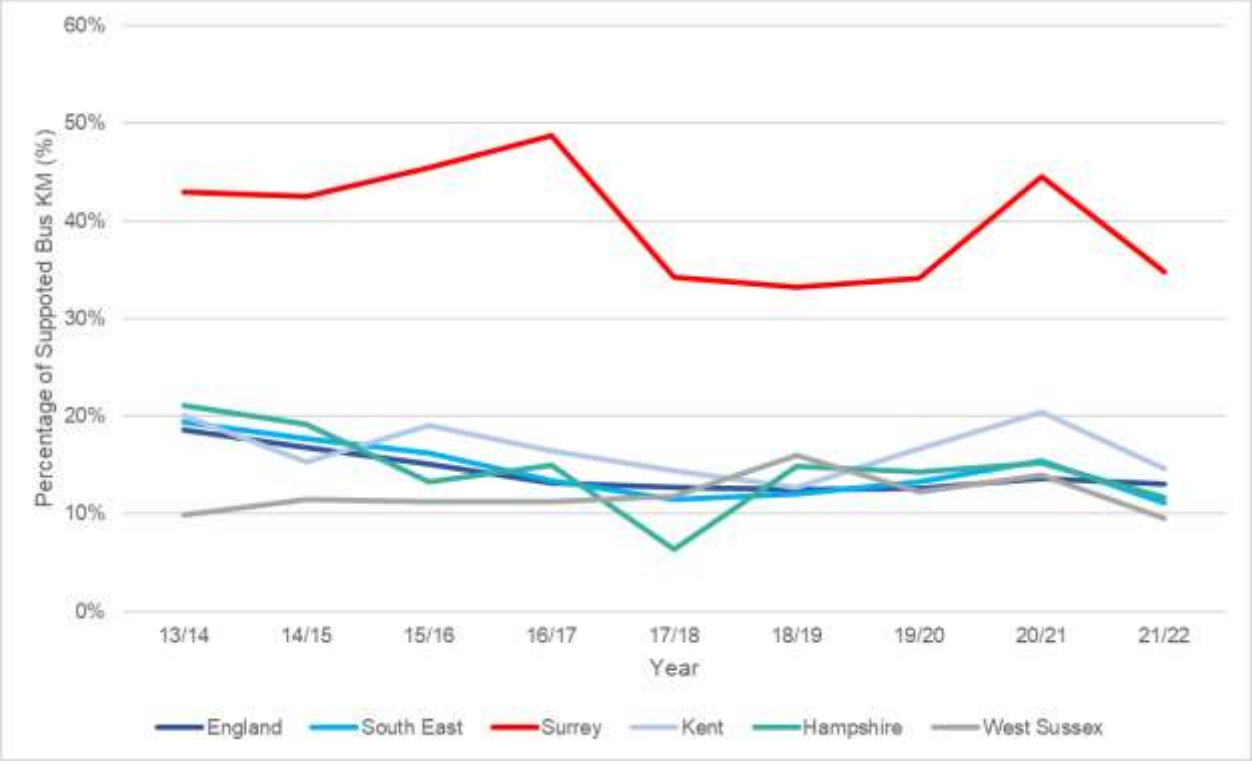
3.2.2. Supported bus service kilometres

When considering supported kilometres (KM) operated in the local authority areas[17] (Figure 3-6), the proportion of supported bus services within Surrey is consistently higher than comparative authorities and the national average. Within the period of 2009/10 to 2021/22, the supported kilometres peaked at 49% in 2016/17. The following three-year period from 2017/18 to 2019/20 then saw a generally consistent level of 33-34% support. The initial fall in the proportion of supported bus KM was a result of a decrease in local authority supported services KM, which decreased from 7.3 million in 2016/17 to 5.4 million in 2017/18 whilst at the same time there was an increase in commercial services of 2.6 million. A significant increase in the proportion of supported KMs was observed in 2020/21, a year significantly affected by the COVID-19 pandemic. In 2020/21, whilst the total KMs remained consistent with 2019/20 at 14.9 million, the supported KMs increased from 5.1 million to 6.6 million. Data for 2021/22 shows the proportion has decreased to 35%, which is in line with the 2017/18 to 2019/20 levels.

Considering the comparative local authorities, the proportion of supported bus KM has generally decreased for most of the authorities. The greatest decrease in supported services in the period to 2019/20, other than Surrey, was seen in Hampshire where the proportion of supported bus services reduced from 21% in 2013/14 to only 6% in 2017/18 before increasing to 14% in 2019/20. Similarly, Kent experienced a decrease of 3% from 2014/14 to 2019/20 and West Sussex was the only local authority to see an increase (2%). Overall, Surrey has significantly higher number of bus KM being supported than other local authorities, but similarly to other authorities has seen a reduction in supported services over the time period.

Surrey follows a similar trend to that of the national or regional trend for supported bus services which show a decrease. When considering the national trend and South East regional trends, both have shown a 6% reduction in supported KMs for the period up to 2019/20.

Figure 3-6 - Supported bus service KM as a proportion of total bus service KM



[17] DfT (2023), Local bus vehicle distance travelled (Bus02d)

3.3. Concessionary passenger journeys

Figure 3-7 displays the percentage of passenger journeys within each area which were concessionary journeys[18]. In 2018/19 Surrey had 21.8% concessionary journeys. This was the lowest proportion of journeys completed using the concessionary travel scheme. West Sussex had the highest with 35.9% of concessionary passengers.

This suggests that approximately a fifth of bus passengers in Surrey were using a concessionary pass, with 80% of passengers paying the relevant fare.

The data for 2020/21 shows that the proportion of concessionary journeys dropped in Surrey, as it also did in West Sussex and Hampshire, with a 4% reduction to 18% of journeys.

Figure 3-7 - Concessionary passenger journeys as a percentage of all passenger journeys (2018/19)

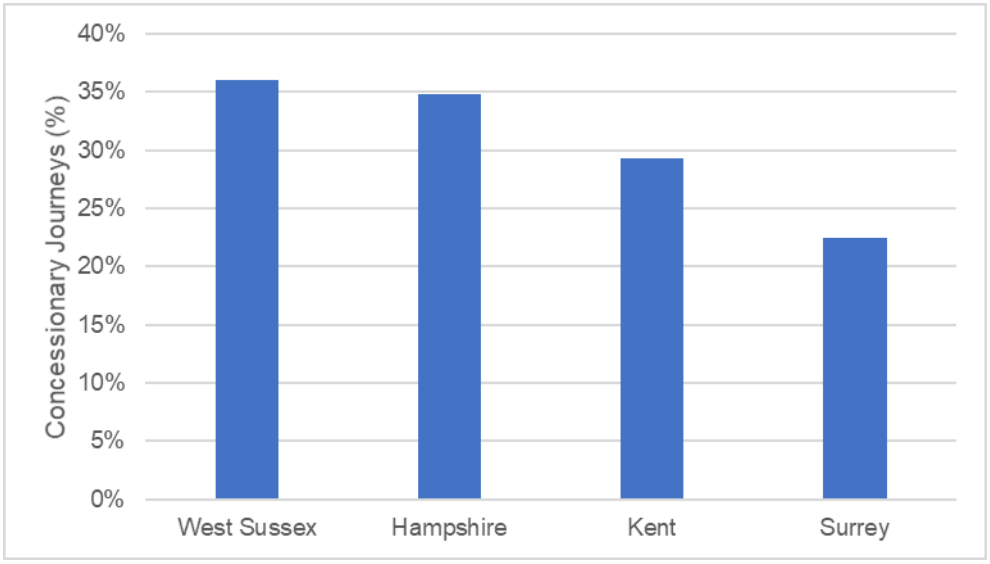
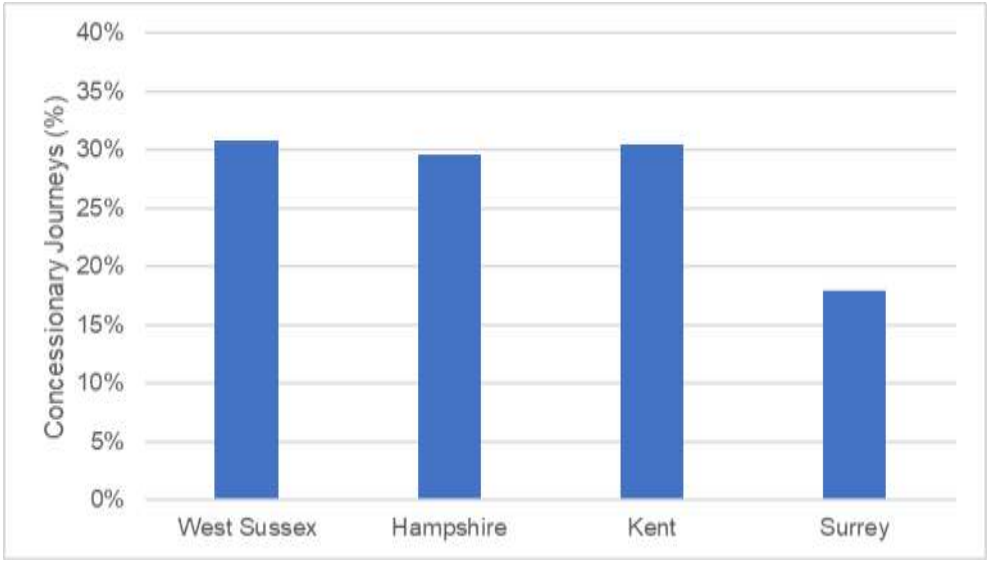


Figure 3-8 - Concessionary passenger journeys as a percentage of all passenger journeys (2020/21)



[18] DfT (2022), Bus Statistics (Bus0823)

3.4. Bus service density

TRACC accessibility software has been used to calculate the average number of buses per hour calling at bus stops during the AM peak for the January 2020 and April 2023 bus timetables as per the data recorded in the National Public Transport Data Repository[19].

3.4.1. Pre-COVID (January 2020)

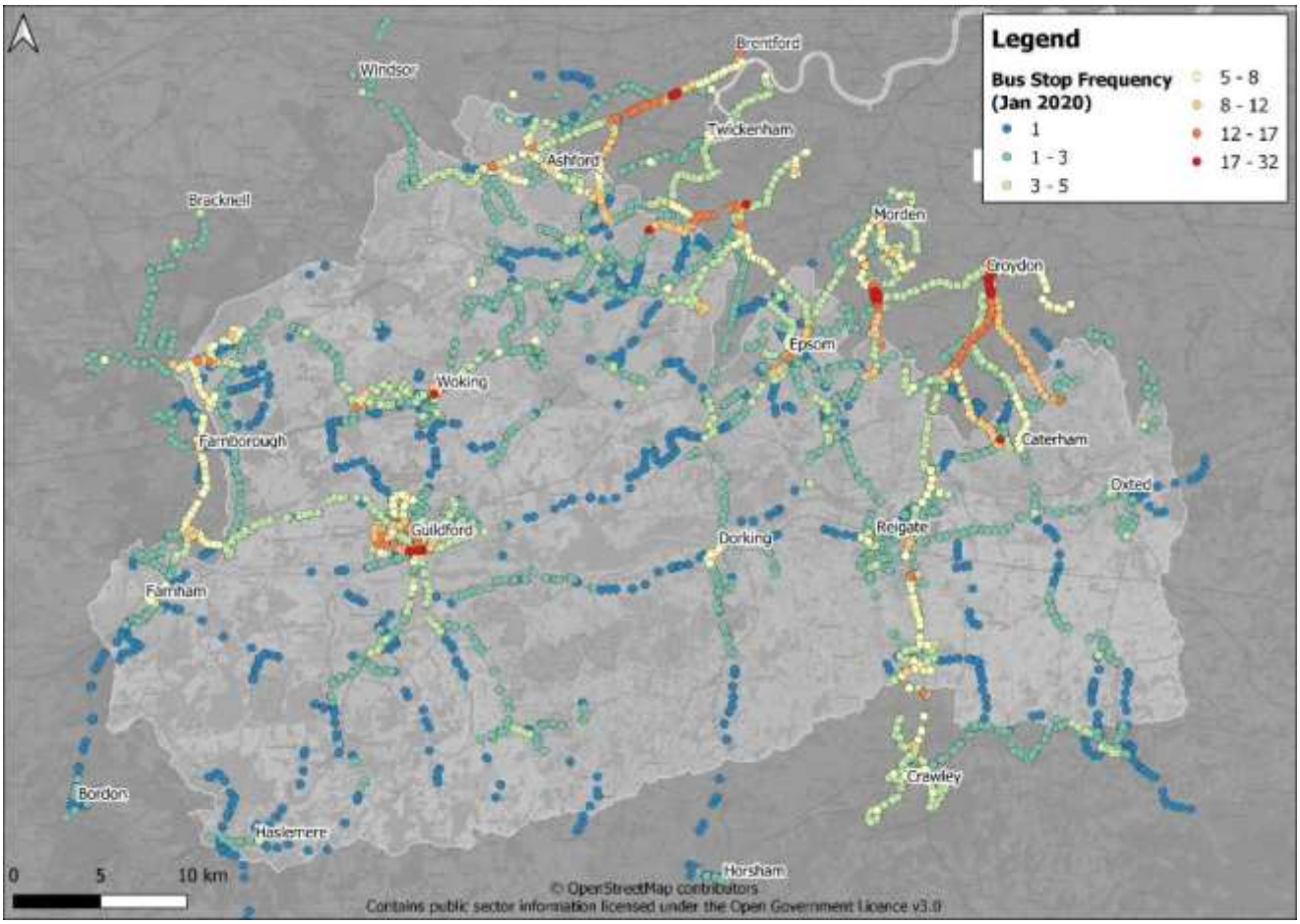
Figure 3-9 displays the average number of buses calling at bus stops within Surrey during the January 2020 timetable. The highest frequency buses are seen at the Friary Bus Station in Guildford where 32 buses call at one stand in an hour, North Street in Guildford where 20 buses call per hour and on Woking High Street which is also served by 20 buses per hour.

From Figure 3-9 it is clear that north of the county has higher bus frequencies than those central and southern parts, with many stops in the Ashford, Epsom and Caterham areas having at least 3 buses per hour during the study period. This said there are similar high frequencies in and around the built-up area of Guildford and Woking, but these frequencies do not extend out beyond these areas, with most rural stops in central Surrey having between 1-3 buses per hour.

There are however clear higher frequency inter-urban routes within the county, for example between Crawley, Reigate and Croydon where most stops are served by 5-8 buses per hour, or between Farnborough and Guildford where there are between 3-5 buses per hour. There is also the corridor between Dorking and Surbiton which for the most part is served by 1-3 buses per hour.

[19] Basemap (2021), National Public Transport Data Repository

Figure 3-9 - Average bus stop frequency (AM Peak - January 2020)



3.4.2. Current bus service density (April 2023)

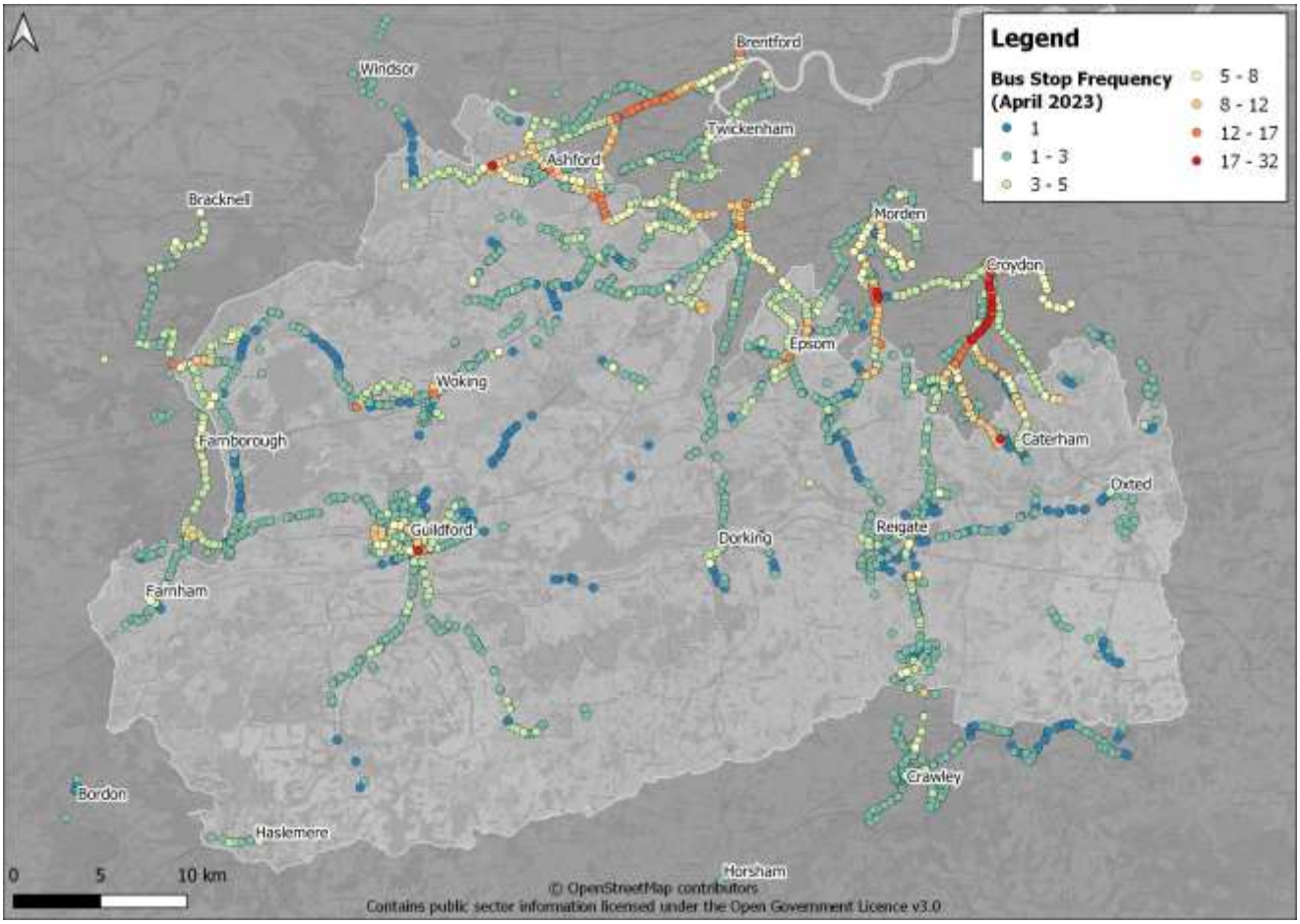
Figure 3-10 outlines the bus network within Surrey in April 2023.

When considering the countywide level there were limited changes to the frequencies of inter urban buses, this is likely a result of the already low frequencies of around a bus per hour for most services, meaning that it would not be possible to further reduce operations without withdrawing a service.

Within towns such as Guilford and Woking, the bus services were reduced in April 2023 when compared to the January 2020 timetable. This is a result of local services such as the service number 2 in Guildford being scaled back during the pandemic to match customer demand.

Overall, bus services within Surrey did decrease as a result of the COVID-19 Pandemic, however this was not equal across the county, with decreases in frequencies seen mostly within the urban areas, due to the ability to scale back the higher density services offered in these areas.

Figure 3-10 - Average bus stop frequency (AM Peak - April 2023)



3.5. Bus service support

Surrey County Council support around 70% of bus services to varying degrees, with a projected gross expenditure of just over £12 million in 2023/24.

3.6. Bus priority measures

Surrey County Council have implemented many bus prioritisation measures across the county, and have recently agreed £9 million funding for further priority schemes. SCC will review additional options as the BSIP is developed, recognising the need to coordinate carefully with plans for walking and cycling priority.

In February 2020 a revised Bus Lane and Bus Lane Enforcement Policy was presented to the County Council's Cabinet for approval. This covered both a change to the decision-making process for implementing and changing to bus lanes to make it simpler and to enter into new bus lane enforcement agency agreements or external contracts.

There are currently 13 bus lanes in Surrey. Camera enforcement is operational on the High Street in Woking with two further bus lanes in Guildford scheduled for camera enforcement during 2021. An expansion of camera enforcement, alongside an expansion of bus lanes in the county will contribute to improving journey times and reliability.

3.7. Car journey times and speeds

Within Surrey the average kilometres travelled on locally managed roads has been increasingly steadily since 2016[20]. There was however a significant reduction in vehicle KM on locally managed A roads in 2020 as a result of changing travel behaviours during the COVID-19 pandemic: during this period, the number of vehicle KM fell by 22% from 14.6 billion km to 11.4 billion km.

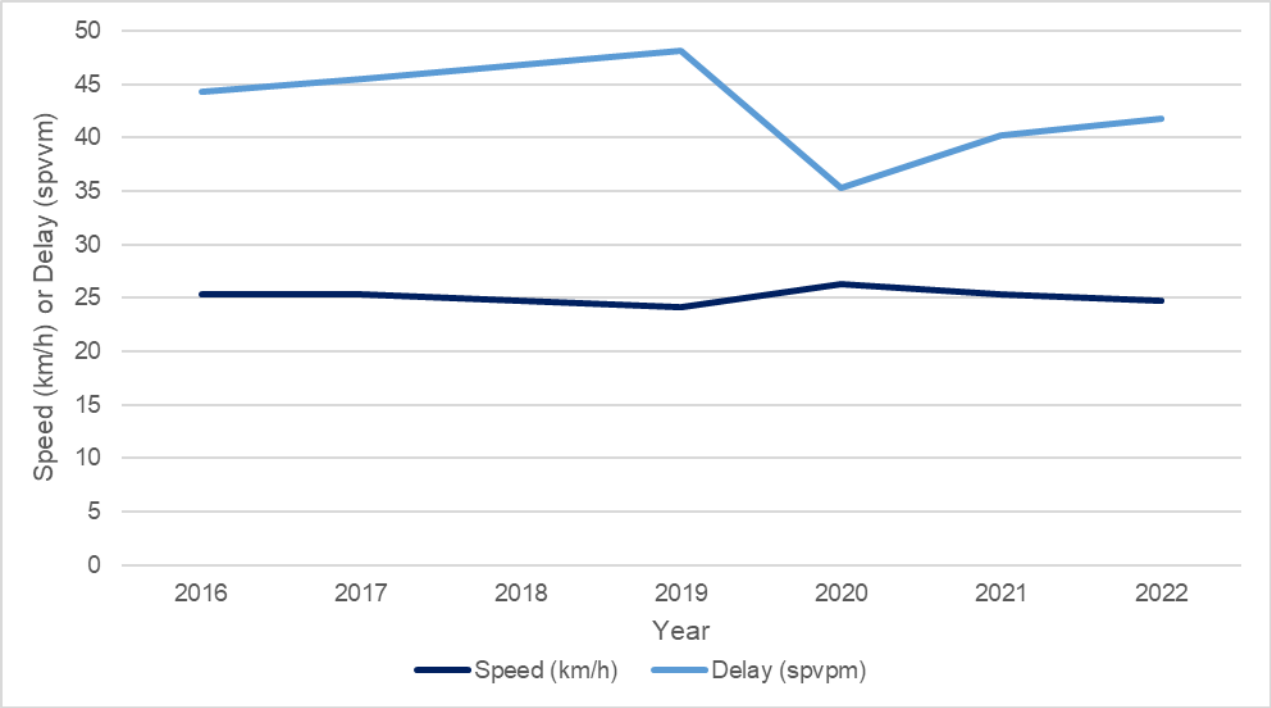
When reviewing the relationship between average vehicle speed[21] and delay[22] on locally managed A roads (Figure 3-11) the average delay within Surrey was 44.3 seconds per vehicle per mile (spvpm) in 2016 increasing by 2.6 seconds to reach 46.9 spvpm in 2018. This was followed by a reduction to a value of 44 spvpm which was slightly below the baseline value in 2016, a larger decrease in delay occurred in 2020, whereby delay fell to 31.9 spvpm. Following the pandemic, the delay has increased again up to 41.8 spvpm but remains below pre-pandemic values.

Average speed in km/h on the locally managed A roads has been broadly constant over the study period, with a value of around 25km/h displayed across the period of 2016-19. This was followed by an increase in vehicle speed in 2020 to 28km/h which correlates well with the reduced delay seen on locally managed A roads. Post-pandemic, average speeds have decreased to 24.7km/h, lower than the pre-pandemic average.

Overall, when excluding 2020 which reflects the significant changes in travel habits as a result of the COVID-19 Pandemic, average speeds on locally managed A roads have been relatively static in Surrey since 2016. This is despite an increase in traffic using the highway. Delay is still below the pre-pandemic level but has been increasing in recent years.

[20] DfT (2022), Road traffic statistics (Table TRA8905)
[21] DfT (2023), Average speed, delay and reliability of travel times (Table CGN0503)
[22] DfT (2023), Average speed, delay and reliability of travel times (Table CGN0504)

Figure 3-11 - Speed and delay on locally managed 'A' roads

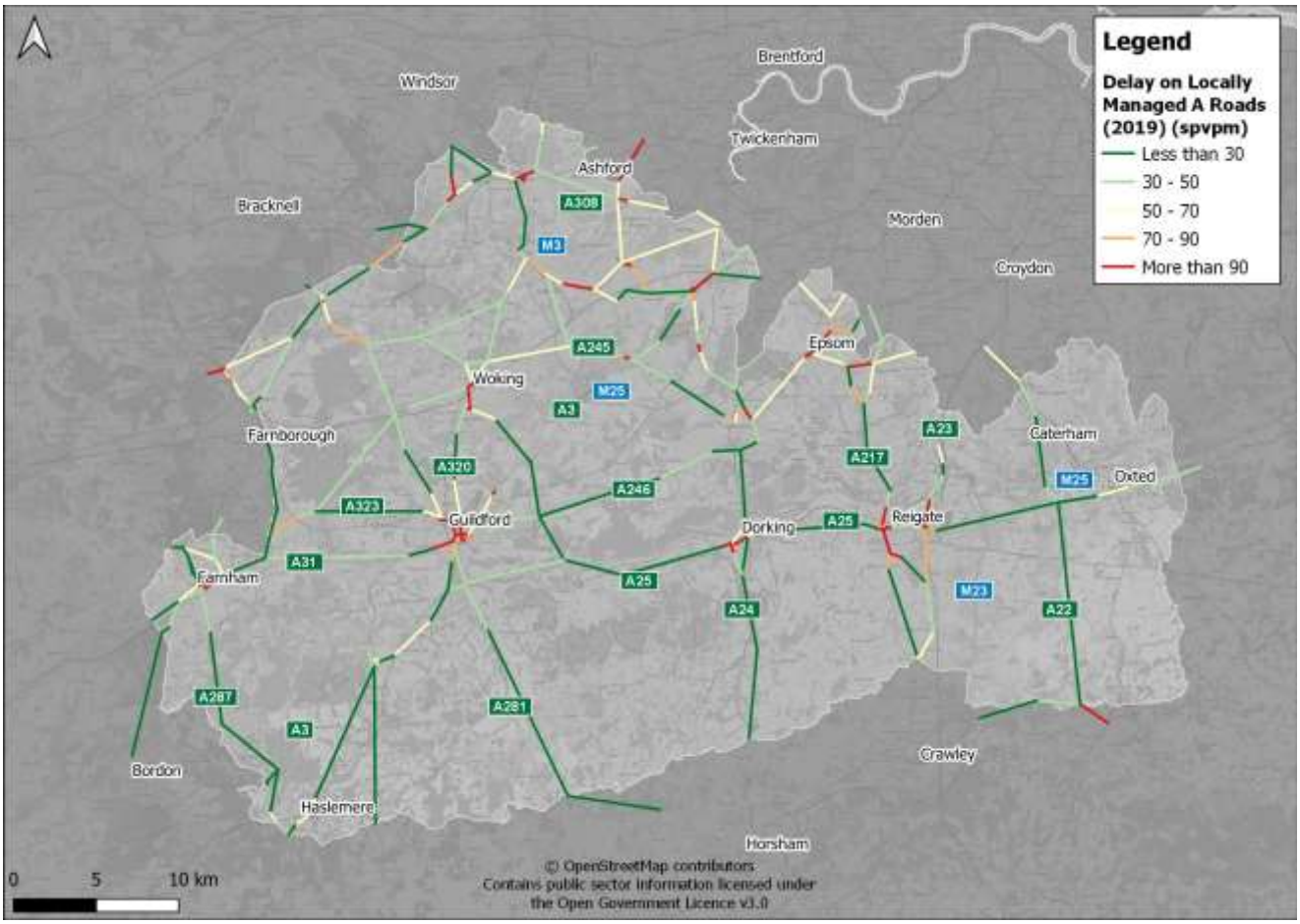


3.8. Highway congestion

Delay on local A Road links (spvpm) has been collected from the DfT[23] for 2019 and is illustrated in Figure 3-12. For the most part, the more rural A roads in Surrey have low levels of delay in the Less than 30 spvpm category, with this increasing as expected as these A roads pass through more densely populated urban areas, with most seeing delays over 50 spvpm on the local A road network. The exception is Reigate where delays of more than 90 spvpm appear to be more common. Delays above 261 spvpm, are seen on 6 links within Surrey with the location of these and the delay values outlined in Table 3-1.

Delays on local A roads can impact the reliability of bus services or necessitate additional time to be inserted into timetables to reflect slower operating speeds – as such improving the flow on links on which bus services operate could unlock journey time benefits.

Figure 3-12 - Delay on local 'A' roads in Surrey[23]



[23] DfT 2022, Delay Local A Roads England 2019

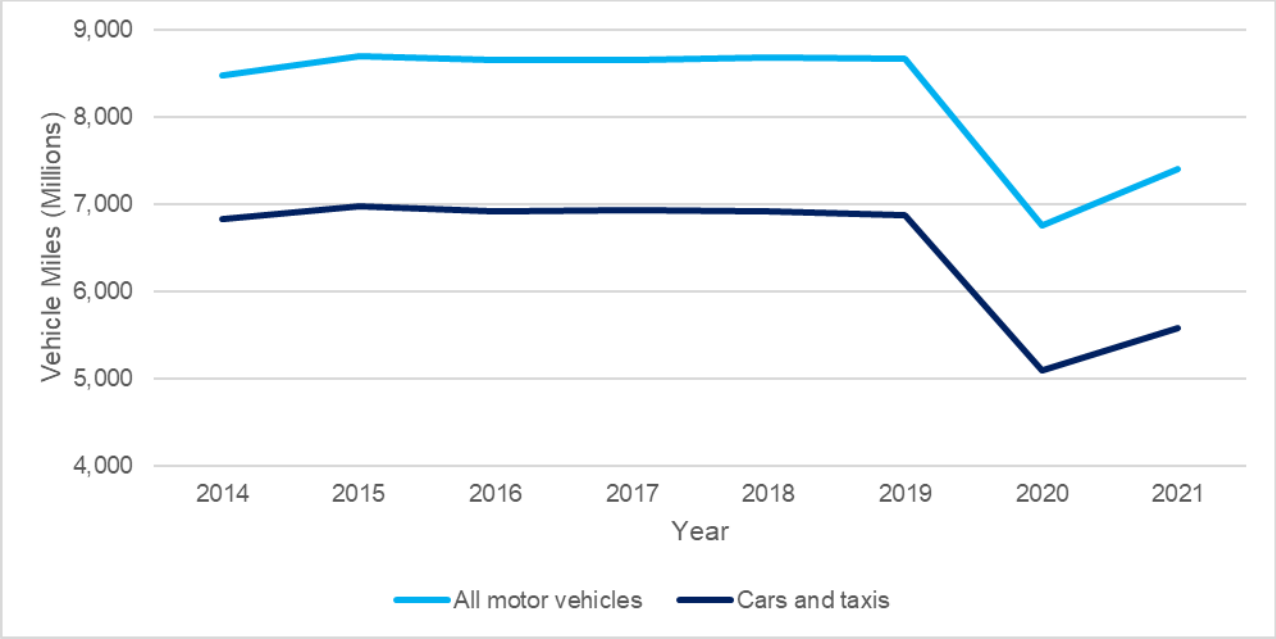
Table 3-1 - Local A road links with the longest delays (spvpm) in Surrey

Location	Road	Delay (spvpm)
Woking	A320 Victoria Way	338
Epsom	A24 High Street	409
Reigate	A217 Bancroft Road	284
Farnham	A278 Castle Street	302
Esher	A3009	319
Guildford	A320 Woking Road	529

3.9. Car journeys

Data collected from the DfT highlights the trend in vehicle miles within Surrey since 2014[24] (Figure 3-13). Overall, the number of vehicle miles within the local authority area has increased by 4% between 2014 and 2019, with this being driven mostly by vehicles which are not classified as cars and taxis. Since 2014 there has been a general trend of increasing vehicles miles within the local authority, with the steepest increase seen between 2014 and 2015 when the number of miles increased by 2.7%. After this period growth slowed and was relatively continuous until peaking in 2019. This was followed by a 22% reduction in vehicle miles in 2020 caused by the COVID-19 pandemic, which resulted in a significant reduction in vehicle mileage, especially for cars and taxis where the mileage reduced by 26%. Data from 2021 shows an approximately 10% increase compared to the year before, which evidences vehicle mileage increasing as the impact of COVID-19 lockdowns and reduced travel behaviours began to ease. This increase is expected to follow through into 2022 data and beyond.

Figure 3-13 - Annual vehicle miles by vehicle type in Surrey

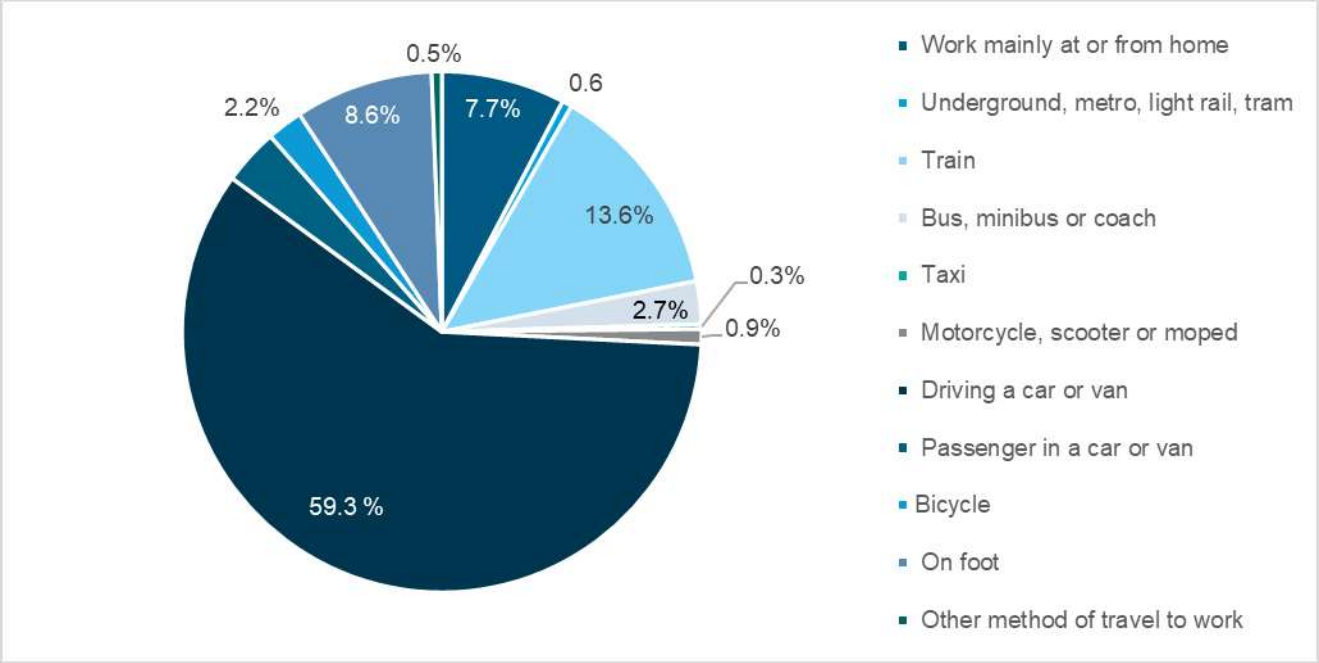


[24] DfT (2022), Local authority Surrey

3.10. Mode share

Census data for the method of travel to work data has been utilised to understand mode share within Surrey (Figure 3-14)[25]. From this data it is evident that the majority of trips to work are taken by driving a private car (60%), followed by 14% of workers travelling by train. 3% of commuters travel to work by bus and 2% using a bicycle. These figures suggest that public transport currently has a relatively high share of journeys to work within Surrey, however this is mainly accounted for by the dense railway network, with the bus network currently having a very limited share of commuters. As such, there may be scope to encourage modal shift towards the bus from private modes for some trips within Surrey.

Figure 3-14 - Method of travel to work[25]



[25] ONS (2013), Method of travel to work (QS701EW)

3.11. Transport network investments

Surrey County Council has several major transport projects[26] that aim to improve bus services in the area. The transport schemes are set out below:

- A30 and Camberley Town Centre – assist bus turning movements on Frimley Road and bus lane review including trialling an extension of bus lane operating hours to 24 hours a day, 7 days a week and improvements to bus shelters on the A30, adjacent to Victoria Avenue, The Avenue and Park Street;
- A320 North of Woking improvements – improved access to public transport;
- Brooklands Business Park Accessibility – provide better bus facilities such as shelters, real-time passenger information, raising kerbs and provision of clearway markings;
- Epsom and Banstead Sustainable Transport Package – changes to make bus services more reliable, real-time information in bus shelters and extending frequency and hours of some bus services so they run later into the evening and at weekends;
- Spelthorne major transport schemes, Wider Staines Sustainable Transport Package – Stanwell walking and bus corridor improvements including new shelters seating and real-time passenger information and improved accessibility through raised kerbs; and
- Woking major transport schemes - Upgrades along the 34, 35 and 91 bus routes towards Kingfield, Westfield and Mayford in the south and St John's, Goldsworth Park and Knaphill in the west to create 'Quality Bus Corridors'. Improvements include measures to reduce delays at congestion 'hotspots', live 'countdowns' to the arrival of the next bus at bus stops, making bus stops more comfortable and easier to walk to, and making buses and bus stops more accessible to everyone and upgrades to Broadway bus stop.
- One of the major bus improvements will be the Guildford Quality Bus Corridors[27] which aims to:
- Improve highways, redesigning roads at locations where buses currently get held up;
- Introduce intelligent traffic lights that detect late-running buses and change signal timings in their favour;
- Improve bus stops, including better waiting areas, new shelters, more live bus departure screens and accessibility improvements; and
- Introduce new electric buses on Park and Ride services.

The project seeks to enhance all the principal bus corridors in Guildford, identified as:

- Epsom Road corridor - Epsom Road heading east out of Guildford towards Merrow;
- London Road corridor - London Road heading northeast out of Guildford towards Burpham;
- Woking Road corridor - Stoke Road and Woking Road heading north out of Guildford towards Bellfields and Jacobs Well;
- Woodbridge Road corridor - Woodbridge Road heading northwest out of Guildford towards Woodbridge Hill and Stoughton; and
- southwest corridor - buses entering and exiting Guildford via the gyratory, towards Egerton Road and the hospital, Farnham Road, Artington or Shalford.

Bus stop improvements and intelligent traffic lights are proposed across all corridors, whilst highway improvements are planned on the Epsom Road and Woodbridge Road corridors. New electric buses are now operational and serve existing Park and Ride sites, as well as two

[26] Major transport projects - Surrey County Council (surreycc.gov.uk)
[27] Guildford major transport schemes - Surrey County Council (surreycc.gov.uk)

electric mini-buses providing Digital Demand Responsive Transport (DDRT) across Mole Valley.

3.12. Customer satisfaction

3.12.1. NHT 2022 survey

Surrey County Council are part of the National Highways & Transport Network (NHT) who conduct research into customer satisfaction with the transport network within Surrey. The key findings for the 2022 surveys are outlined in Table 3-2.

Overall, the NHT survey highlights that satisfaction with the overall provision of local bus services is 55%% with ranging individual score depending on the metric considered. The overall satisfaction of 55% matches the average satisfaction level for all areas included in the survey.

Of the survey results, people are most satisfied with their personal safety, quality and cleanliness of buses and quality of the bus stops. Contrastingly, those surveyed are least satisfied with the quality of public transport information, including journey planning information as well as the frequency of buses.

Table 3-2 - Summary of NHT findings for Surrey in 2022

Metric	Satisfaction (%, 2022)	Trend, compared to 2021 (%)	Above or Below National Average (2022)
Quality of local bus services	55	-2	Equal
Public transport information	30	-2	Below
Frequency of buses	50	-5	Below
State of bus stops	59	-2	Above
Bus punctuality	55	-3	Above
Bus fares	50	-5	Below
Quality and cleanliness of buses	65	0	Above
Personal safety on the bus	67	-3	Above
Personal safety at bus stop	61	-4	Above
Accuracy of public transport information	53	-2	Above
Journey planning information	51	-2	Below

3.12.2. National Bus Strategy engagement survey

As part of the BSIP process Surrey County Council ran a consultation from 30/07/2021 to 10/09/2021 to understand the community's views on the current bus network in Surrey. There were 544 responses to the survey.

The survey asked people to rank the importance of various elements that would encourage or enable them to use a bus. The results against each of the questions is presented in Table 3-3 to Table 3-5.

Table 3-3 - How often do you use buses in a typical week?

Option	Total	Percent (%)
I don't typically use buses	240	44
1-2 journeys	141	25
3-5 journeys	81	15

Option	Total	Percent (%)
6-8 journeys	48	9
9+ journeys	34	6
Not Answered	0	0

Table 3-4 - Importance of factors influencing bus use:

Factor	% people stating factor is Important or Very Important (%)
The bus arrives at my stop on time and gets me to my destination when it is supposed to	98
Information about bus services, where they go, frequency, etc, is easily available through a range of channels	94
Buses run when I need them, e.g. weekends and evenings	93
Buses are frequent enough meaning I don't need to be concerned about long waiting times	92
Bus fares and ticketing options are simple and easy for me to understand, with the information readily available through different means	85
I can easily find out how much my journey will cost, and I can pay in a variety of ways, e.g. on the bus, on-line, on my smart phone, etc	81
Connections between buses to trains and trains to buses	78
The bus is well presented and clean	76
When waiting for a bus, it is safe and comfortable to so, as bus shelters and seats are provided	74
Buses are driven by friendly staff, with modern vehicles offering good on-board facilities, such as wi-fi, mobile phone charging points, etc.	58
The bus is operated using 'green fuels', e.g. electric or hydrogen fuel cell buses	54

Table 3-5 - What do you want to see from investment in the Surrey bus network:

Option	Percent (%)
More services operating in my area in the evenings and at the weekends	76
Existing services in my area operating more frequently	76
Enhanced safe waiting areas with shelters seating and lighting being available	39
Simple easy to understand fares and ticketing options	36
Bus priority measures, such as bus lanes on the road and traffic management systems being introduced to promote quicker journey times	26
More demand responsive transport, that I can book in advance of travel, rather than conventional standard timetabled services	22
Not Answered	1

From the survey, it is clear that reliability (the bus turns up on time and gets me to my destination on time), better information, more evening and weekend services, simpler fares and ticketing structures, along with better service frequencies (so residents don't have to be concerned about long waiting times) are key factors in shaping the decisions of residents to

use buses. This accords closely with data from previous Surrey and national surveys. By listening to residents and addressing these issues through the BSIP Surrey County Council have an opportunity to grow bus patronage and deliver on the ambition set out in the National Bus Strategy.

3.12.3. Future Bus Network Review – consultation

A public consultation was undertaken between 07 November 2022 and 06 January 2023 to obtain views from the public and stakeholders in relation to:

- Investment into bus routes and supporting infrastructure
- Maintaining or changing bus services where relevant to increase patronage or better reflect existing patronage
- Expanding the number of Digital Demand Responsive Transport (DDRT) services for a more flexible transport offer to residents

Analysis of the consultation feedback has identified there is very positive support for investment in buses. Over 70% of respondents stated they Agreed or Strongly Agreed with the proposals for investment. With over 60% then stating they would use buses more frequently.

It should be noted that many respondents did not suggest new bus priority infrastructure in their local area but rather that there be more frequent bus routes than currently available.

Most of those suggestions for new or extended bus timetables were focused on more rural parts of the county. It is likely that people responding from more rural areas asking for more investment were also responding to the proposals on service reductions in those same areas.

Residents and stakeholders wanted a focus on Real Time Passenger Information. Stakeholders particularly want prioritised investment in the React System. This is in place in Brighton and allows people with visual impairments to activate a sensor at bus stops that can announce the information displayed on the real time information board. This can be activated using a key fob or mobile phone app.

Another suggestion was to make more information available online for people to use prior to and during their travel. Bus data is already Open Source and is available over the Bus Open Data Service (BODS).

4. Sources of demand

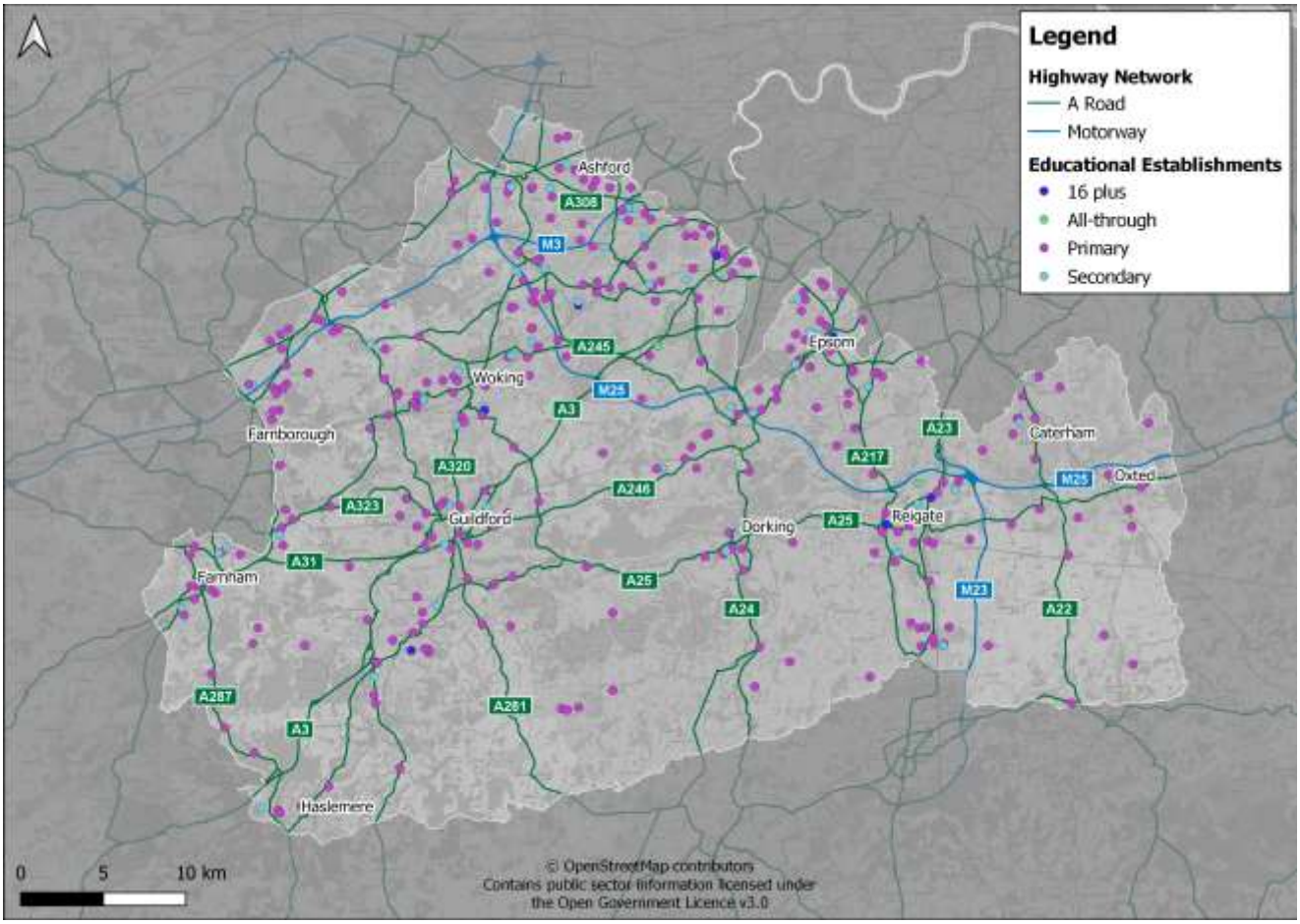
4.1. Education establishments

Data for educational establishments has been collected from the Department of Education (DoE) for active establishments in June 2021[28]. From this data, there are currently 300 primary schools, 58 secondary schools, 7 post-16 and 2 schools which provide all-though education within Surrey. The distribution of these establishments is outlined in Figure 4-1.

Within Surrey the distribution of primary schools appears to be relatively even across the authority, albeit with a more regular occurrence of these facilities in more urban areas. When considering secondary schools, the distribution of these facilities is concentrated within the urban areas, particularly in the north of the county. This trend becomes more pronounced with further education facilities due to the number focused within or near the larger settlements such as Epsom and Reigate.

Educational establishments are likely to be significant trip generators. This is particularly true for the sparser network of high schools and further education colleges. The latter is likely to attract students from the widest geographical areas due to the range of specialist courses which may not be offered at the closest post-16 school.

Figure 4-1 - Location of educational establishments in Surrey[28]



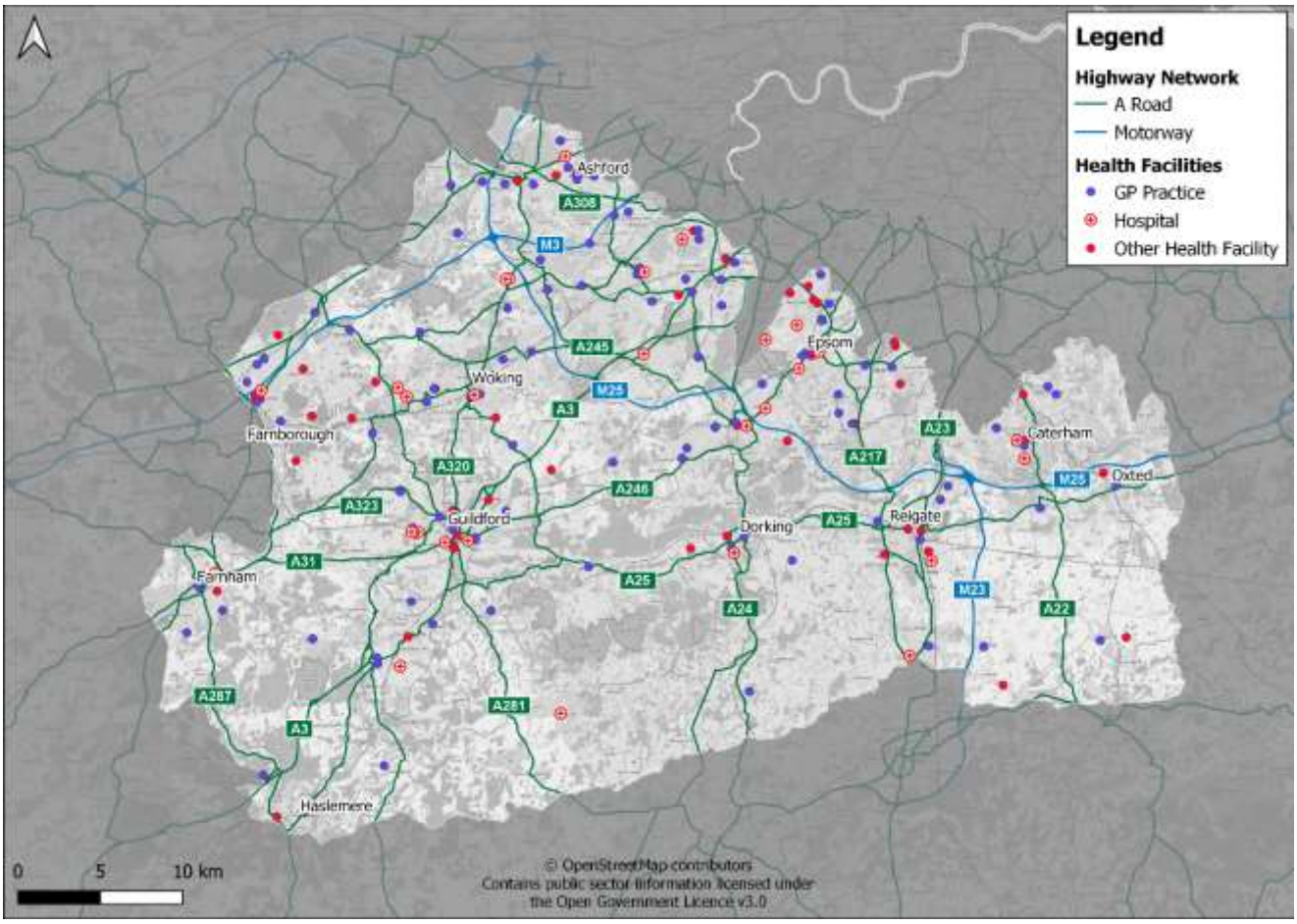
[28] Department of Education (2023), Get information about schools [Sourced April 2023]

4.2. Health facilities

According to NHS Choices data[29] Surrey currently has 12 NHS and 18 private hospitals. Several of these hospitals, such as Royal Surrey County Hospital, East Surrey Hospital and Frimley Park Hospital are large hospitals which offer a range of services to patients including accident and emergency facilities. As such these larger hospitals will attract trips from a wide area – many of these trips could be served by a bus service.

Within the local authority, there are 115 GP surgeries[30]. The distribution of these hospitals and GP surgeries is outlined in Figure 4-2.

Figure 4-2 - Location of health facilities in Surrey[29]



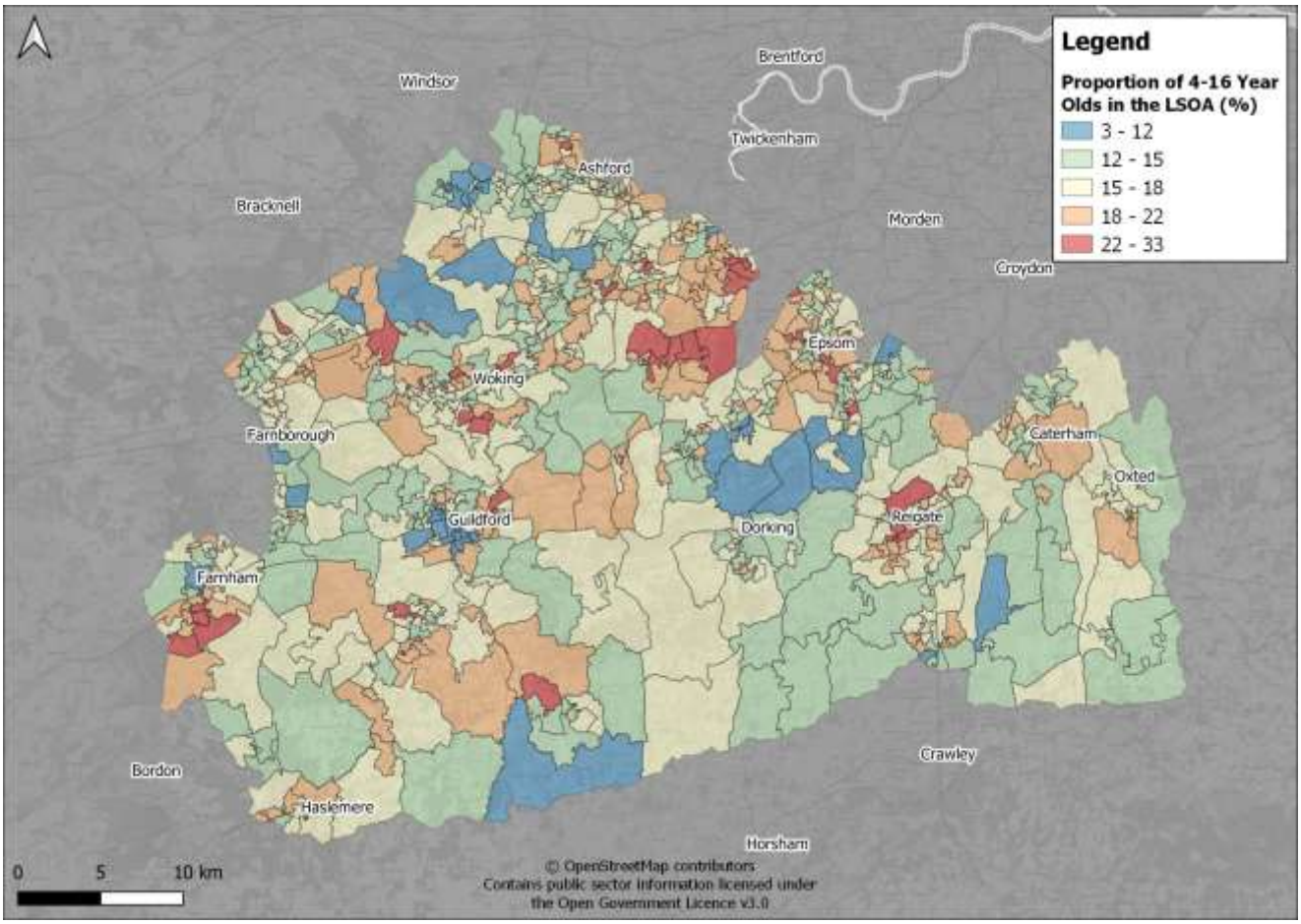
[29] NHS Choices (2015), Hospital Locations
[30] NHS Digital (2023), GP Surgeries (epraccur) [Sourced April 2023]

4.3. Trip generation by student location

To highlight areas where it would be expected a large number of trips for educational purposes would be generated, 2020 mid-year population estimates have been used to display LSOAs with the highest proportion of young people (ages 4-16 years old)[31]. Figure 4-3 displays that the highest proportions of young people are found to the north of the county in areas such as Epsom Claygate and Cobham. There are also high densities of young people to the south of Farnham and north of Reigate. Beyond these areas the densities of young people tend to be within the 12-15% of the population range.

The dispersed patterns of children across the local authority without any significant clustering within more southern and central parts of Surrey areas, highlights the difficult nature in providing effective public transport across such a wide area.

Figure 4-3 - Proportion of children within LSOAs in Surrey[31]



[31] ONS (2020), Lower layer Super Output Area population estimates

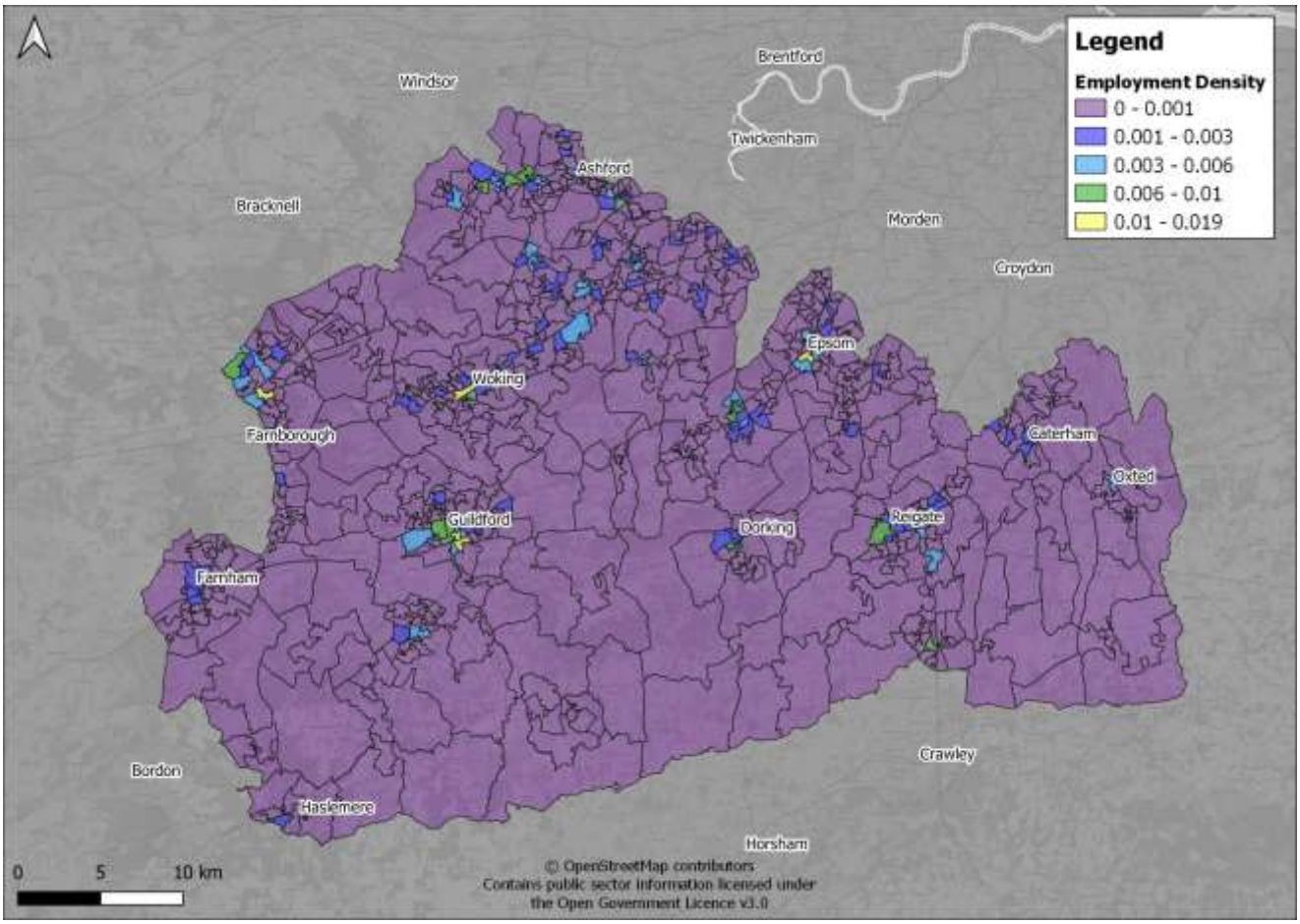
4.4. Major employment centres

As a proxy for major employment centres, employment density within LSOAs has been utilised to highlight areas of high concentrations of employment. This has been derived from the Business Register and Employment Survey 2021[32] divided by the area of the respective LSOA.

For the most part within Surrey there are low employment densities seen beyond the more populous areas. The highest employment density is seen to the north east of the authority near Farnborough, this LSOA covers Frimley Park Hospital. Other areas with the highest classification of employment density include central Woking and Guildford, this is likely a result of the retail and leisure opportunities within these areas such as the Peacocks Centre in Woking and Guildford High Street. A similar trend is seen within Epsom and Reigate, again with this likely being a result of the retail opportunities in the centre of each town.

Overall, employment density, as expected, is highest in the more populated parts of Surrey, particularly Guildford and to the north of Farnborough. As with population density (See Section 9.3), employment density appears to be higher in the north of the authority.

Figure 4-4 - Employment density within Surrey at the LSOA scale[32]



[32] ONS (2023), Business Register and Employment Survey: open access

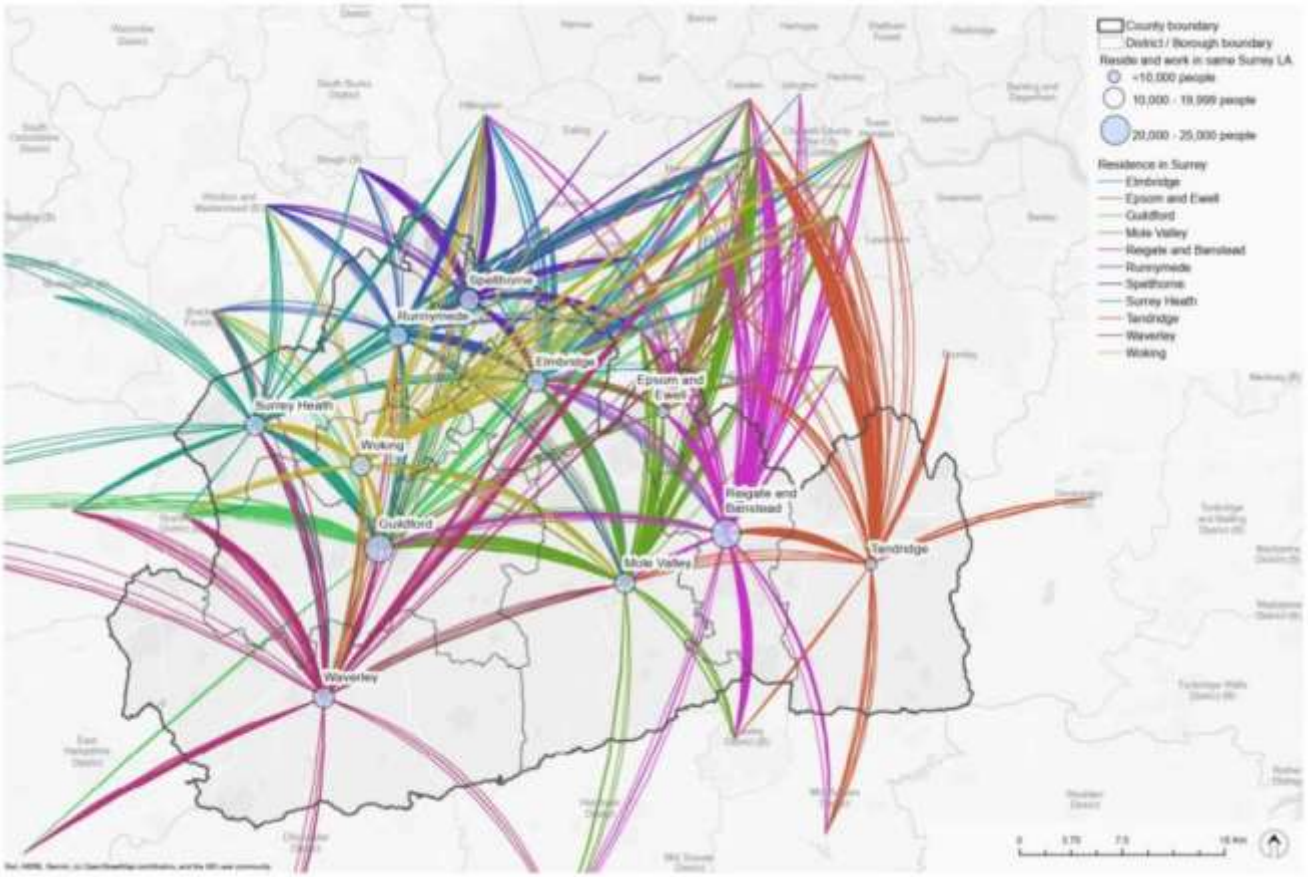
4.5. Origin destination for journeys to work

Census data has been used to gain an insight into the origins and destinations of workers within Surrey, with specific Middle Layer Super Output Area (MSOA) analysis conducted for the two larger settlements of Guildford and Woking.

Figure 4-5 and Figure 4-6 display the journeys of people who reside in Surrey (against place of work) and work in Surrey (against place of residence). The Census data shows that a significant proportion of Surrey's residents live and work within the same district or borough, perhaps highlighting a scope for increased bus patronage.

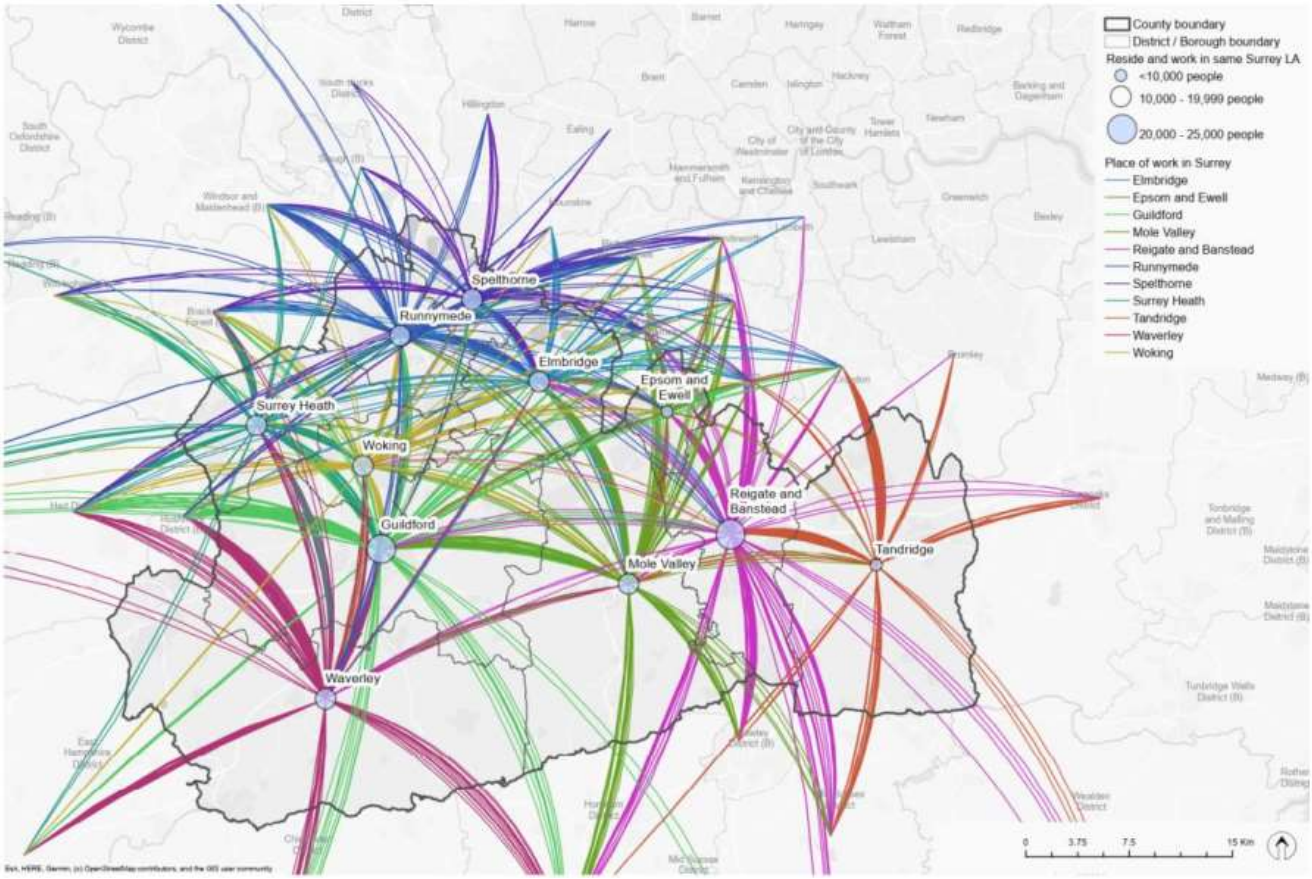
It is important to note that as the 2021 Census Origin-Destination data is not yet available, this data is based on the 2011 Census and does not reflect the disruptions to commuting patterns caused by the COVID-19 Pandemic. This provides uncertainty on how these patterns will re-emerge.

Figure 4-5 - Out commuting from Surrey



Source: Surrey Infrastructure Plan, Baseline Report 2020.

Figure 4-6 - In commuting to Surrey



Source: Surrey Infrastructure Plan, Baseline Report 2020.

4.5.1. Journeys to and from Woking

Figure 4-7 displays travel to work census data for those workers leaving Woking for employment using all modes of transport. There are 16,314 people who leave Woking for work. Of these workers, 3,560 travel to the MSOAs adjacent to those selected for Woking, with 2,687 travelling to Guildford. There are also 544 workers travelling to the MSOAs covering Addlestone and 559 to Ottershaw. When considering greater distances, 3,244 workers travel into central London, with 924 of these working in the City of London MSOA.

Figure 4-7 - Workers leaving Woking (all modes)

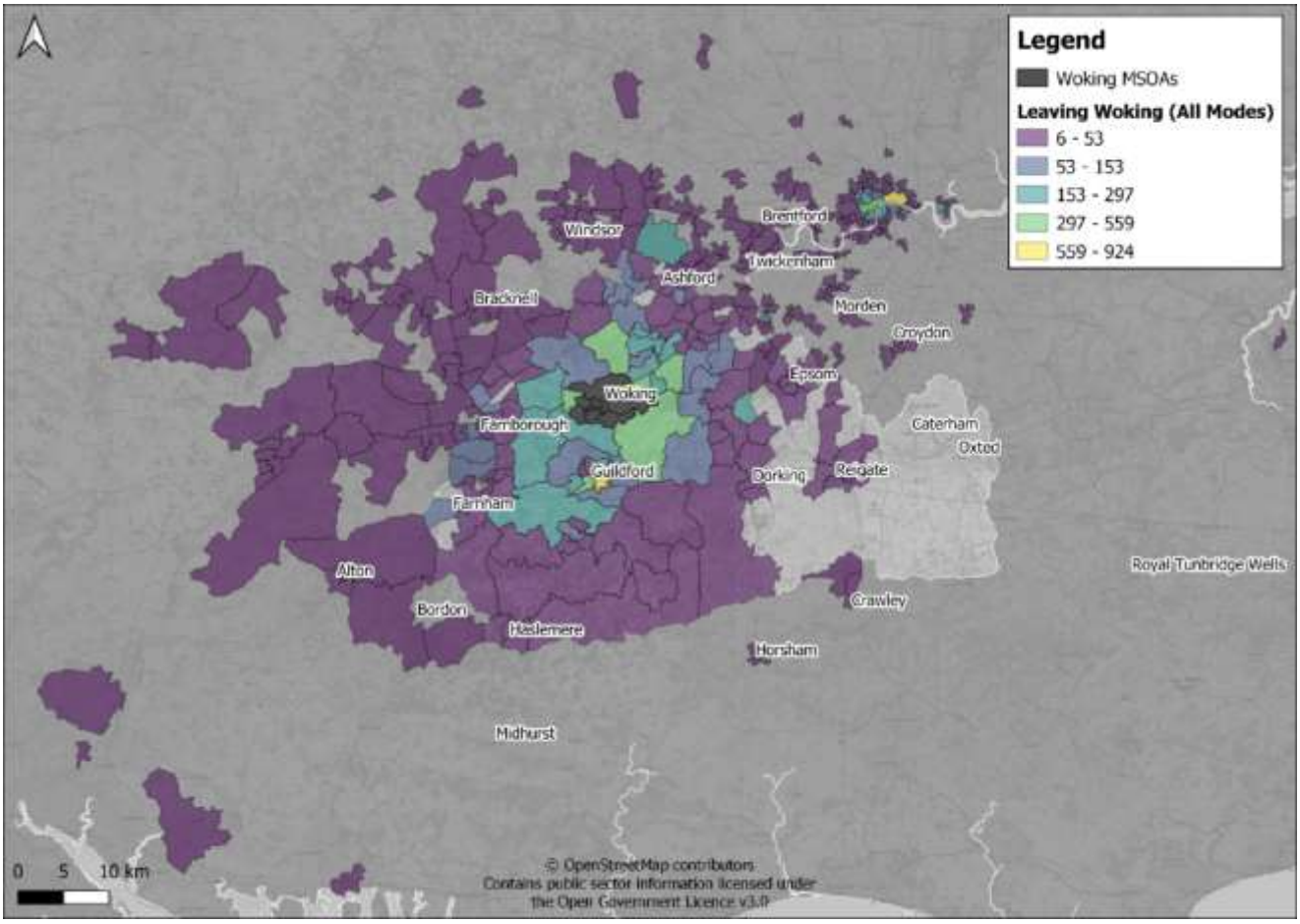


Figure 4-8 displays those workers arriving in Woking using all modes of transport; there are 13,545 people arriving within the town from outside of the selected MSOAs. Of these, 973 workers arriving from Guildford, 318 from Addlestone and 336 workers arriving from the MSOAs representing Farnborough.

Figure 4-8 - Workers arriving in Woking (all modes)

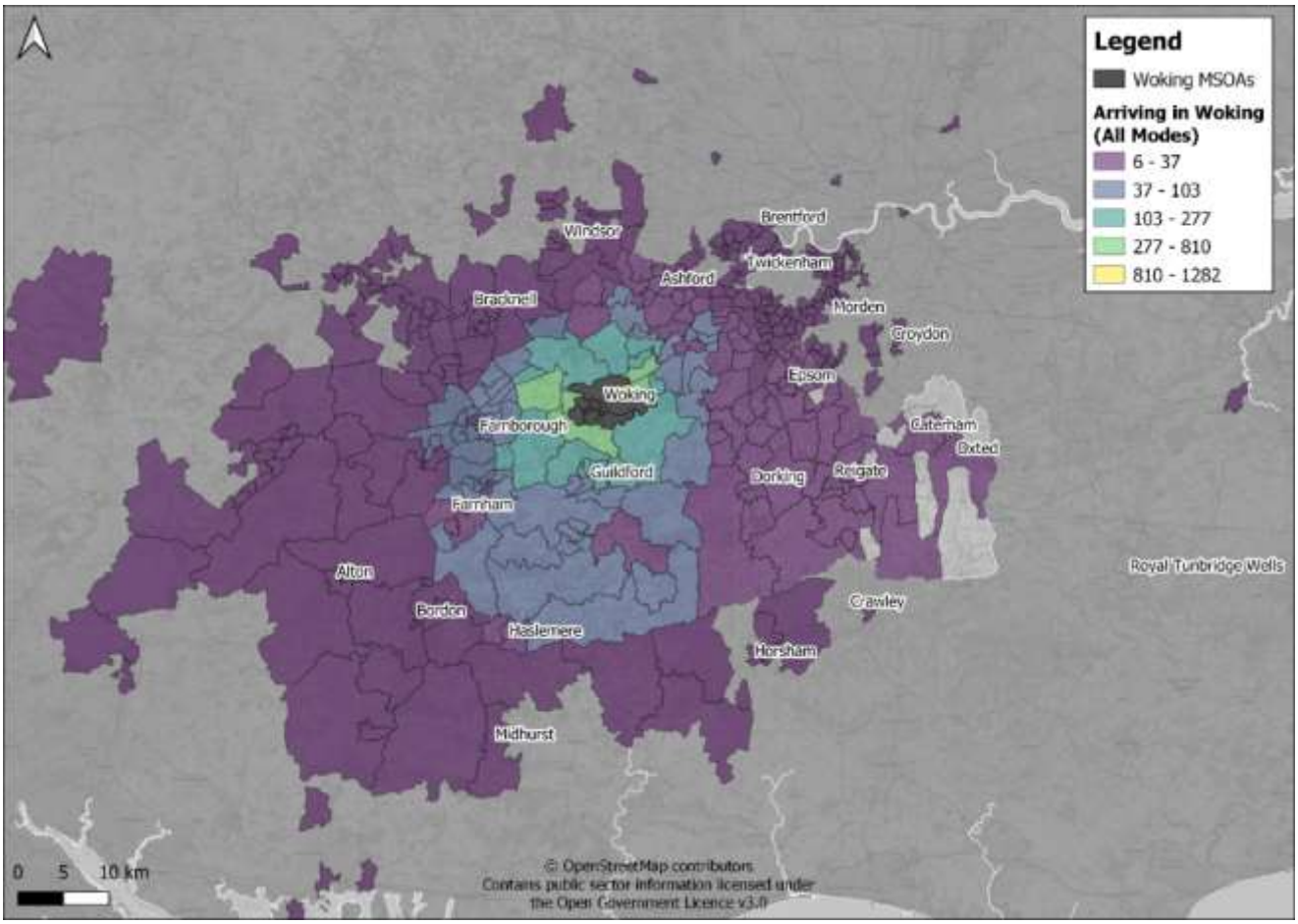
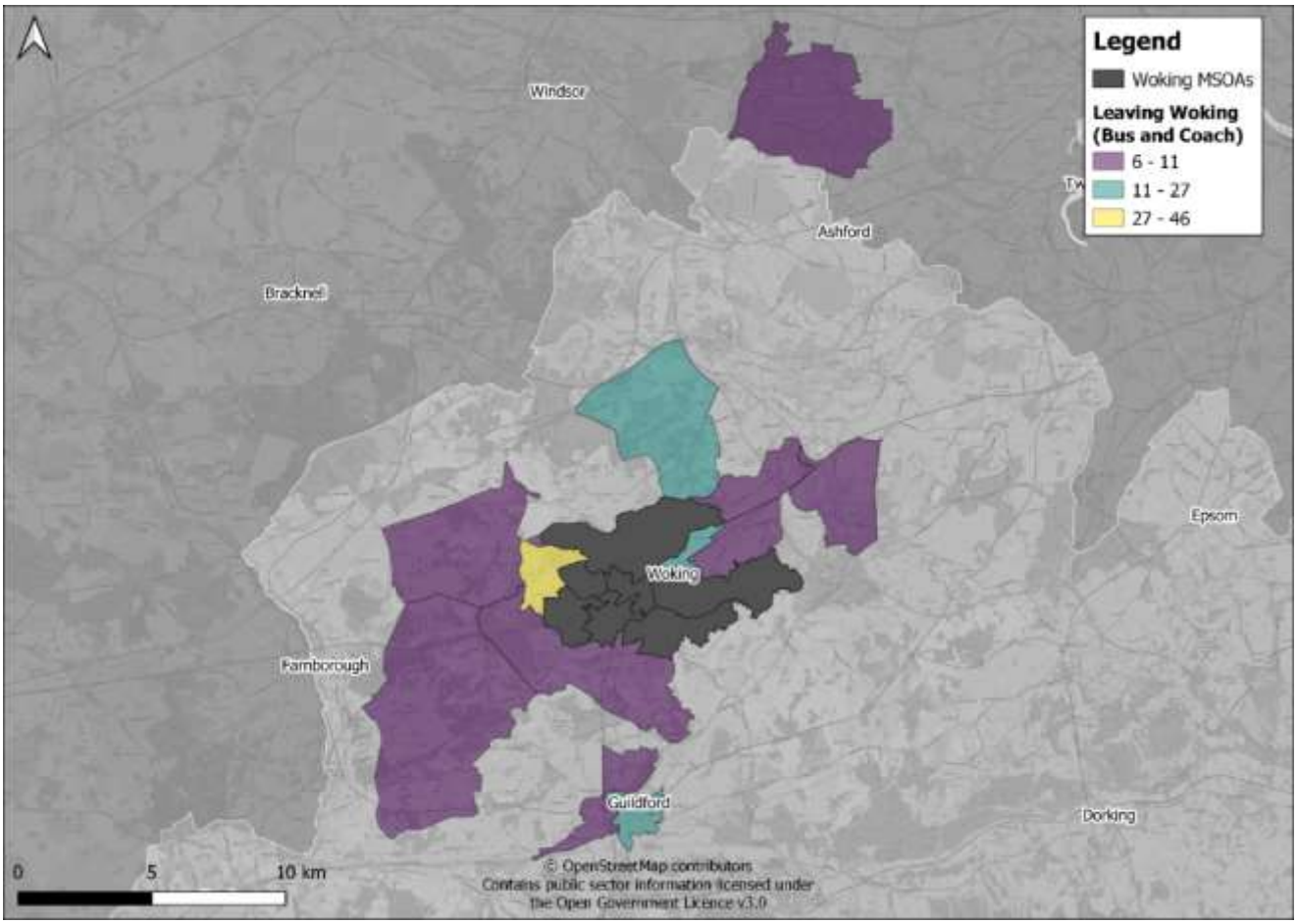


Figure 4-9 and Figure 4-10 show commuting behaviours for workers who use bus and coach services to and from Woking. It is immediately evident from both figures that the physical extent of journeys is much more limited with the exclusion of rail and private vehicles, which is to be expected due to the more limited and local geography of the bus network alongside the presence of an extensive railway network within Surrey.

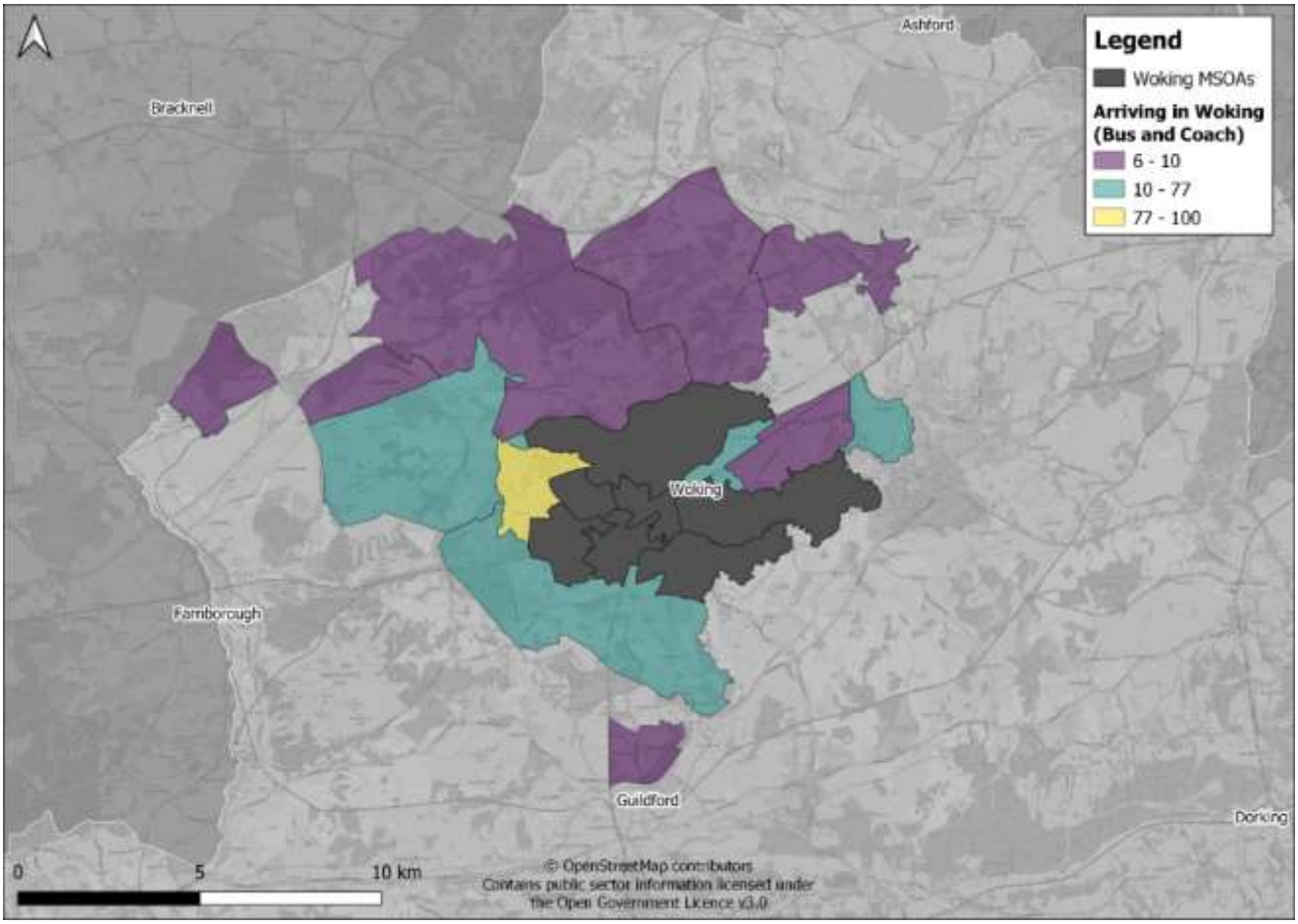
Figure 4-9 outlines those leaving Woking using the bus and coach network. There are 203 workers leaving Woking with the greatest concentration of these travelling to the MSOA covering Knaphill, where 46 workers travel by bus. There are also 41 workers travelling to Guildford by bus, highlighting there is also scope for bus connectivity, in addition to the presence of a strong railway link.

Figure 4-9 - Workers leaving Woking (bus and coach only)



There are a greater number of individuals travelling into Woking on the bus than those leaving, although these workers travelling into Woking originate from a more compact geographical area. According to the census data 286 workers use the bus to travel to work (Figure 4-10). The greatest concentration of workers originates from the Knaphill area, where 100 workers use bus and coach services to travel into Woking. There are also other limited numbers of workers arriving in Woking from Byfleet, Lightwater, Bisley and Guildford.

Figure 4-10 - Workers arriving in Woking (bus and coach only)



4.5.2. Journeys to and from Guildford

Figure 4-11 outlines workers leaving Guildford according to the 2011 census data. There are 14,501 workers leaving the town for work. Of these workers, 1,772 travel to adjacent MSOAs covering areas such as Compton and Ockham. Within Surrey 1,286 workers travel to Woking, 322 to Farnham and 161 to Dorking. When considering more distant destinations, around 2,600 workers travel to central parts of London.

Figure 4-11 - Workers leaving Guildford (all modes)

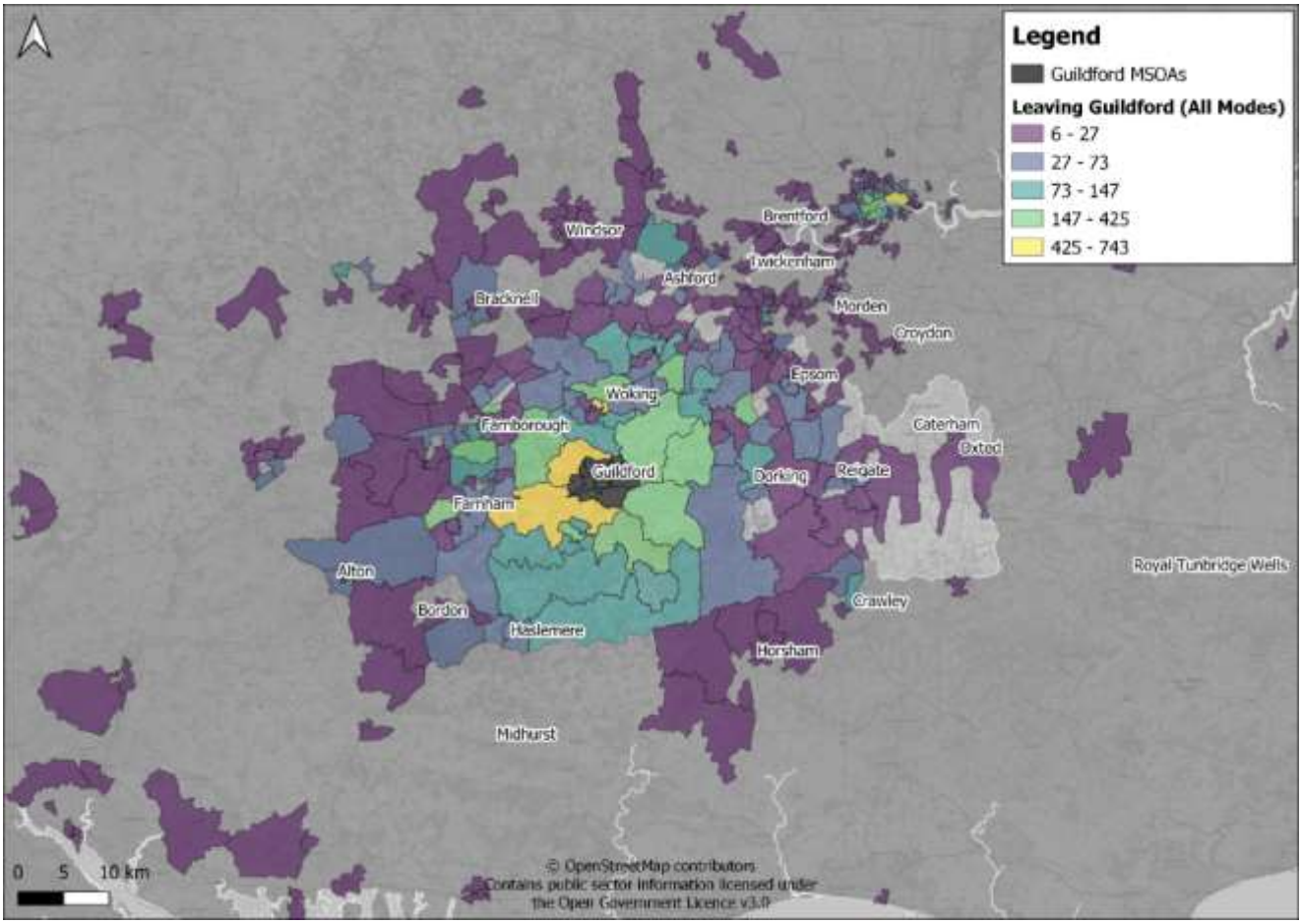


Figure 4-12 outlines the distribution of workers who travel into Guildford for work. There are 26,935 workers travelling into Guildford according to the census data – almost double those which leave the town for work. There appears to be relatively even distribution of workers from each cardinal point, with a decay in the number of workers travelling into the town as distance increases. This said, there is a slightly wider geographical extent of workers arriving in Guildford from the south west of the town. Of those workers arriving in Guildford, 3,092 travel from the MSOAs immediately adjacent with 1,046 and 2,131 workers traveling from Farnham and Woking respectively.

Figure 4-12 - Workers arriving in Guildford (all modes)

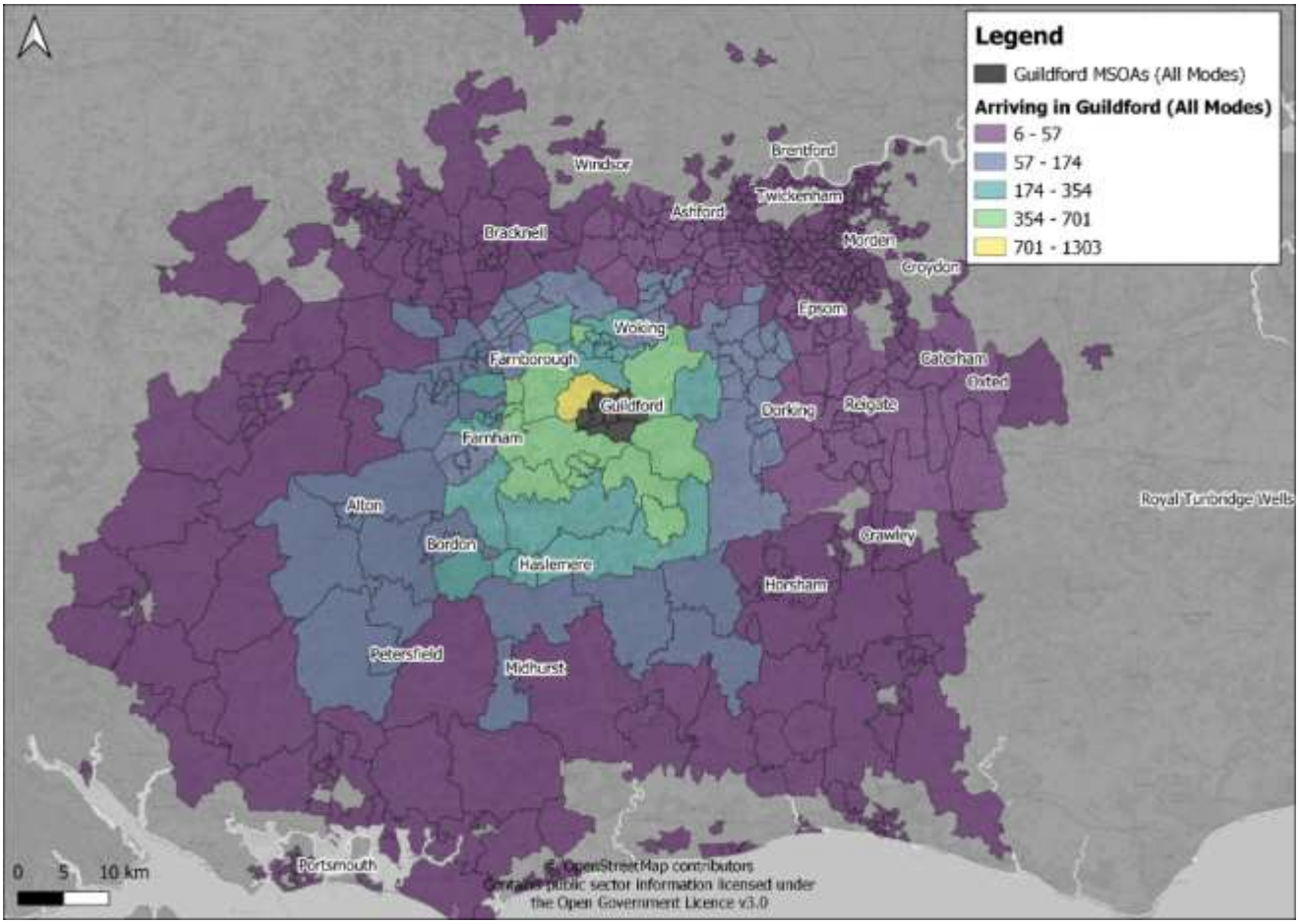
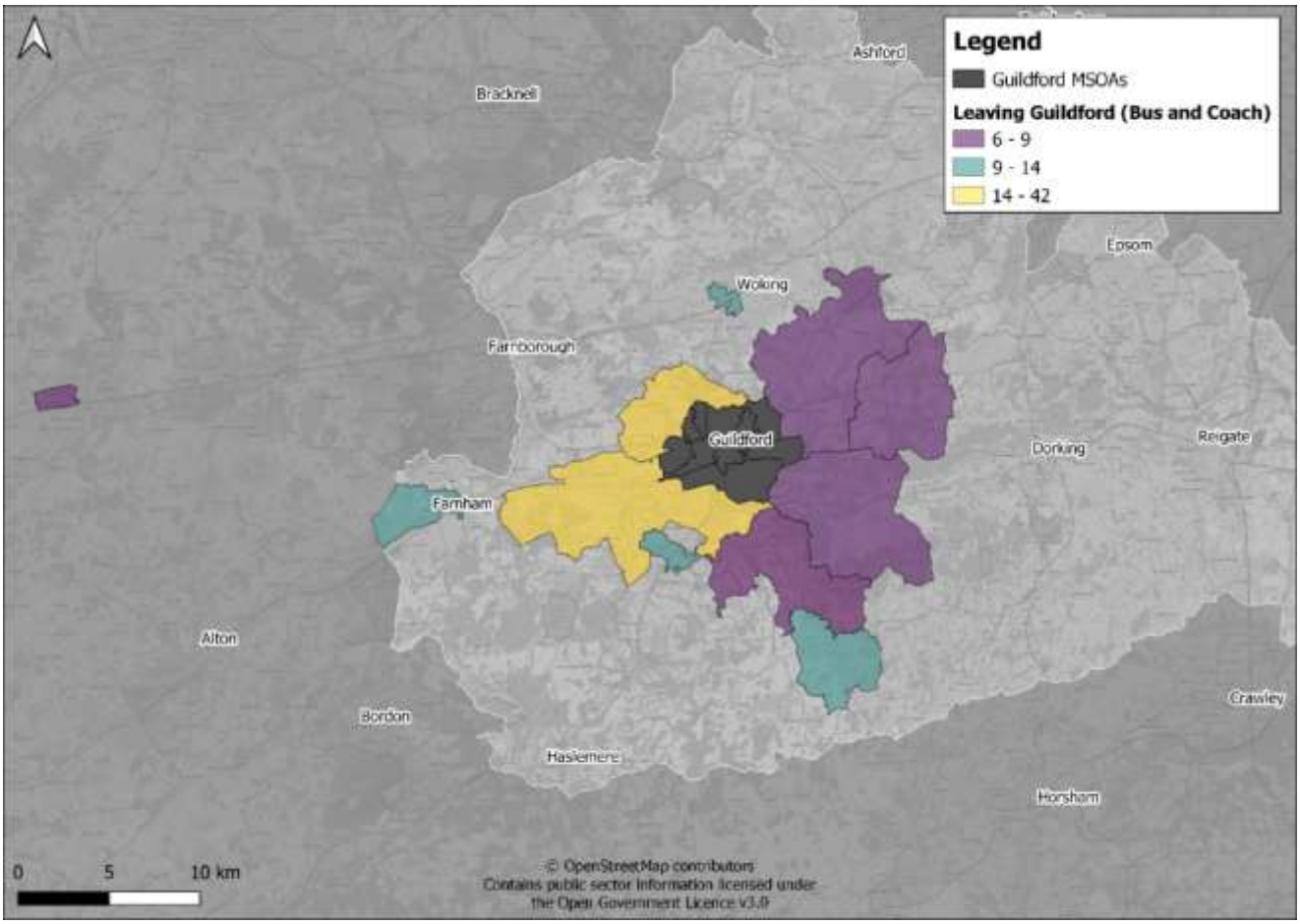


Figure 4-13 and Figure 4-14 outline the distribution of workers travelling to or from Guildford using bus and coach services only. Similarly to Woking, the number of workers who use this mode, alongside the geographical distribution of workers, is limited.

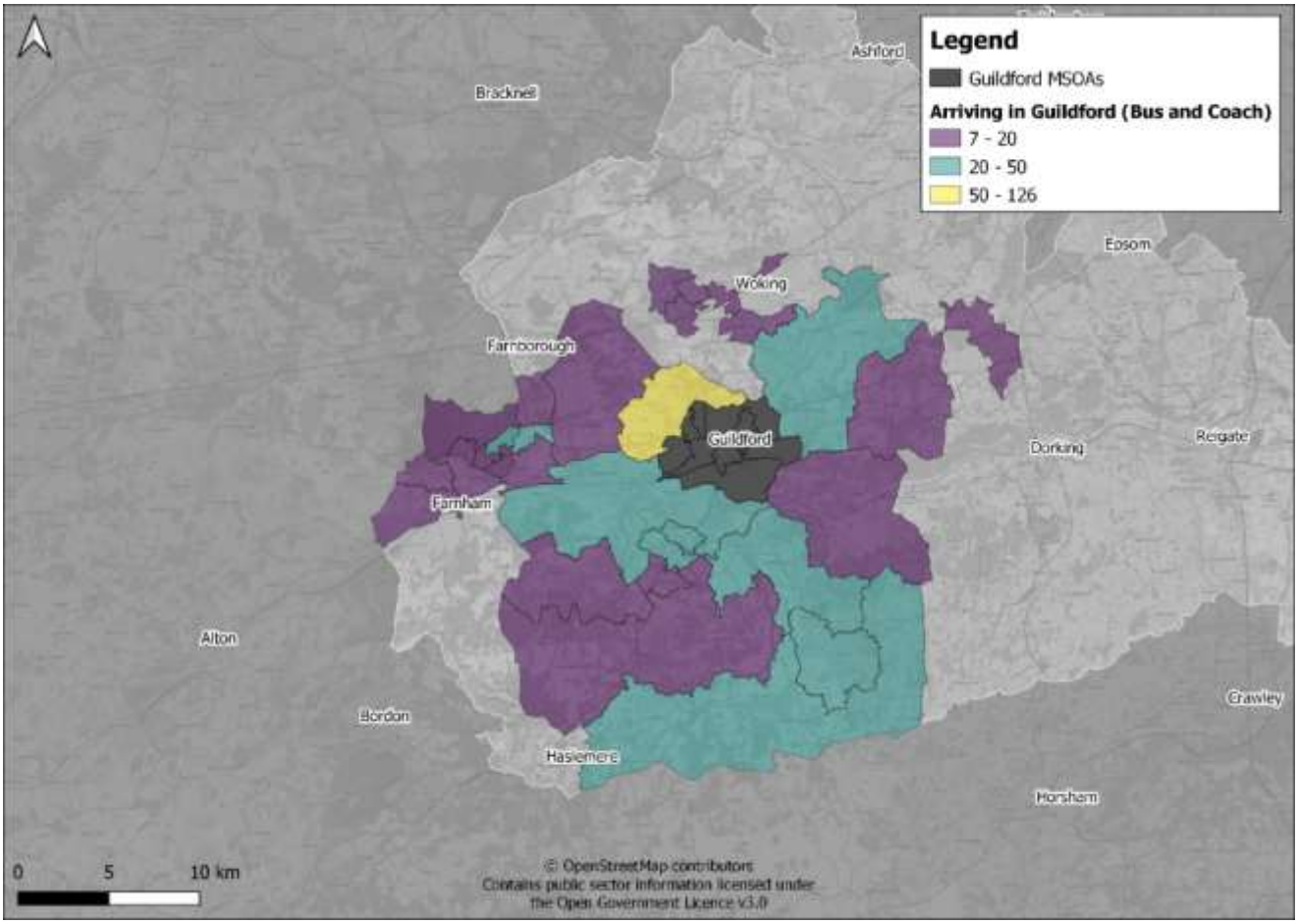
There are currently 166 workers leaving Guildford using bus and coach services. The majority of these workers (95) originate in the MSOAs adjacent to Guildford covering areas such as Compton and Ockham (Figure 4-13). There are also 11 workers who travel from Farnham using a bus or coach service. Unusually, there are 7 workers travelling to Basingstoke despite the lack of a direct bus service. This could be an anomaly within the data, or a result of the users using both bus and train services to complete their journey and selecting bus as their primary method of the commute due to it being the longest leg of the journey.

Figure 4-13 - Workers leaving Guildford (bus and coach only)



According to the census data, there are 679 workers arriving in Guildford using bus and coach services – this is much higher than the number of workers travelling out of the area for work. When considering distribution, the majority (539) of these workers come from the south or west, with a few (42) also coming from the Woking area (Figure 4-14). The MSOA with the highest number of workers travelling into Guildford is to the west of the town covering areas such as Fairlands and Worplesdon.

Figure 4-14 - Workers arriving in Guildford (bus and coach only)



4.5.3. Summary of origin destination for journeys to work

The previous section has outlined the distribution of workers travelling into and out of Surrey alongside a focused insight into movements at the MSOA level within Woking and Guildford. From the data it is clear that a significant proportion of Surrey's residents live and work within the same district or borough, perhaps highlighting a scope for increased bus patronage. There are also many longer distance journeys in and across the county which are accounted for by rail or use of a private vehicle.

When considering more localised movements as highlighted in the MSOA mapping, the bus service captures only a small proportion of workers travelling in and out of Woking and Guildford– perhaps highlighting a scope for bus services to cater for some of the localised movements, such as those to adjacent MSOAs which are not captured by the railway network.

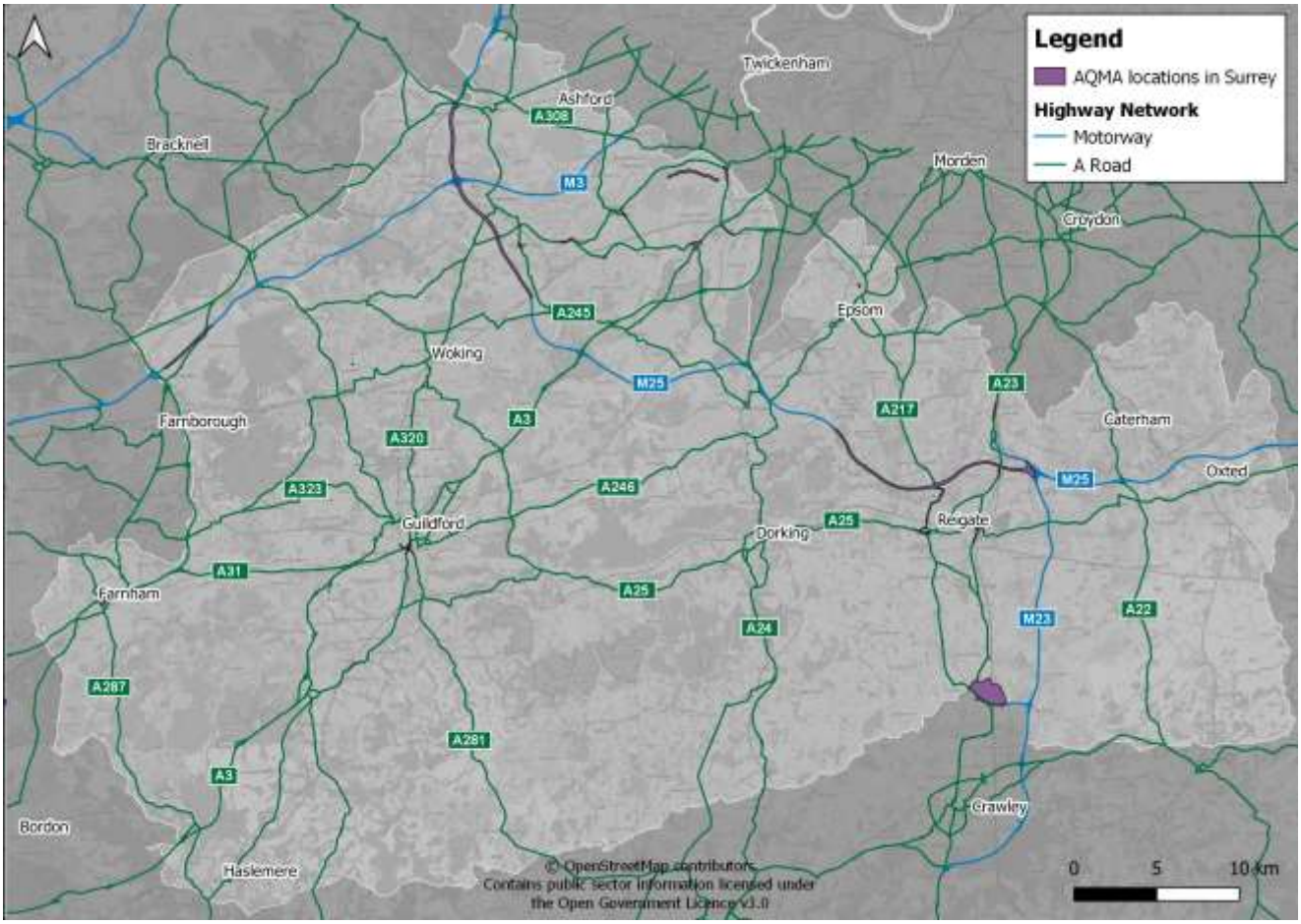
4.6. Work shift and end times requirements

As part of improving bus services in Surrey, a possibility exists to work collaboratively with employers to cater the bus services to meet the needs of their workers start and end times. There is great potential to connect public transport provisions with working times, and to advertise this, as a way of improving patronage. This is particularly true for shift workers, such as at hospitals or industrial estates where working times may not match the typical peak periods where bus services are often at their most frequent.

5. Air quality

At present there are 27 Air Quality Management Areas (AQMAs)[33] covering the county, the extent of which can be seen below in Figure 5-1. Most of these AQMAs cover sections of Motorways and A roads where air quality issues have been identified. There are some AQMAs which are not directly on the highway network but are located adjacent. The largest AQMA is located in the north of the county near Ashford which covers the whole of Spelthorne borough (not mapped to avoid masking other AQMAs). The name and description of these AQMAs can be found in Table 5-1.

Figure 5-1 - Air Quality Management Areas in Surrey



[33] DEFRA (2023), AQMA Boundaries

Table 5-1 - AQMAs located in Surrey

Location by district	AQMA Name	Area Covered
Elmbridge Borough Council	Esher	Area extending along the High Street, Church Street and parts of Esher Green and Lammas Lane.
	Hampton Court	Encompasses part of Hampton Court Way and Riverbank.
	Hinchley Wood	Contains part of the A309 Kingston Bypass between Littleworth Road and Manor Road North.
	Walton	Encloses part of the High Street between Hepworth Way/Church Street and Ashley Road/Hersham Road.
	Walton Road Molesey	Area extending 50m either side of the centre line on Walton Road between Tonbridge Road and Esher Road/Bridge Road.
	Weybridge	Extends from Balfour Road, Church Street, High Street and Monument Hill.
Epsom & Ewell Borough Council	Ewell	Contains a section of the High street from Spring Street to the roundabout at Cheam Road and continues 30 meters south.
Guildford Borough Council	A281, The Street, Shalford, Guildford, Surrey	Incorporates a section of the A281 near East Shalford Lane and Church Close.
	Guildford Town Centre	Guildford Town Centre including parts of 9No. roads.
	The Street, Compton, Surrey	Incorporates a section of the B3000 between Down Lane and Eastbury Lane.
Reigate and Banstead Borough Council	No.1 (M25)	Extends the length of the M25 between junction 7 and the borough boundary. Includes 30m either side of the carriageway.
	No. 3	An Area of the south-west quadrant of Horley near Gatwick airport.
	No. 6	Encompasses the house “Highlands” near the junction of the A217 Brighton Road and Margery Lane and Blackhorse Lane.
	No. 8	Includes a couple of residential properties immediately to the north of the junction between A240 and A2022.
	No. 9	Contains the High Street and the section of Church Street between the High Street and Bancroft Road. Also encloses the properties with a frontage to Bell Street (between the High Street and the southern end of Bancroft Road) and land and properties within 15m.
	No.10	An area encompassing all properties facing on to the A23 in Merstham.
	No. 11	Properties within the area between the level crossing in Reigate Town and Junction 8 of the M25.
	No. 12	Covers the major road network around the Redhill area.
	Hooley	Located on the properties situated on A23, Star Lane and Church Lane in Hooley.

Location by district	AQMA Name	Area Covered
Runnymede Borough Council	Addlestone	Covers Addlestone town centre.
	M25	Covers 70m either side of the M25 between junction 11 and the southern boundary of the borough at New Haw/Byfleet.
Spelthorne Borough Council	Spelthorne AQMA	Covers the whole of Spelthorne district.
Surrey Heath Borough Council	Surrey Heath AQMA	Covers a strip of land from Frimley Road to Ravenswood Roundabout which embraces the M3 Motorway and the properties on both side of the motorway.
Waverley Borough Council	Waverley AQMA – Farnham	An area encompassing parts of Farnham town centre.
	Waverley AQMA – Godalming	An area encompassing parts of Ockford Road and Flambard Way in Godalming.
Woking Borough Council	Anchor Hill	A small area covering a 4-way junction.
	Order 2	Incorporates a small section of Guildford Road to the south of Constitution Hill junction and to the north of the junction with Ashdown Close.

6. Local authority capabilities

At Surrey County Council, bus service planning, contract administration and operations are delivered by a team of seven, led by a Local Bus Service Manager and a Senior Transport Officer. In addition, there is a Public Transport Projects team, which deals with infrastructure improvements, capital projects, bus priority measures, liaison regarding new developer-related enhancements and Real Time Information, as well as administering ENCTS and other concessionary fare schemes.

7. Transport strategy and policy

7.1. Government strategies

Table 7-1 summarises relevant government strategies.

Table 7-1 - Key Government Strategies

Key policy documents	Key themes
National policies	
Transport Decarbonisation Plan (2021)	• Future local transport funding will transition to a state where it is conditional on local areas being able to demonstrate how they will reduce emissions over a portfolio of transport investments through LTPs • Government will provide a toolkit to help authorities deliver measures to reduce greenhouse gas emissions from transport • Re-iterates National Planning Policy Framework presumption on planning for sustainable transport modes in new developments • Commitment to reform Bus Service Operators Grant and re-states aspirations and commitments set out in National Bus Strategy • Recognises the need to contain traffic volumes in towns and cities but the focus appears to be on achieving mode shift through increasing cycling, walking and ride-sharing. Recognises the need to re-allocated roadspace but offers no insight into how mode shift will be achieved from car, particularly to rail or bus
National Bus Strategy (2021)	• Investment of £3 billion over the course of the next UK parliament in England • Reverse the cycle of decline in the usage and provision of bus services • Roadspace re-allocation in favour of bus priority • Five Bus Rapid Transit towns • Improved uptake of Zero Emission Buses with 4,000 vehicles delivered • Simpler, multi-operator ticketing with flat and capped fares
Williams-Shapps Rail Review (2021)	• Great British Railways to plan, specify and oversee the delivery of rail services • Existing franchising system of passenger rail operations to move a system of managed contracts with the revenue risk borne by Great British Railways • More opportunities for local authorities to work in partnership with Great British Railways to deliver improved rail services
Future of Mobility: Urban Strategy (2019)	• Mass transit must remain fundamental to an efficient transport system • Mobility innovation must help to reduce congestion through more efficient use of limited road space, for example through sharing rides, increasing occupancy or consolidating freight • The marketplace for mobility must be open to stimulate innovation and give the best deal to consumers

Key policy documents	Key themes
	• New mobility services must be designed to operate as part of an integrated transport system combining public, private and multiple modes for transport users • Data from new mobility services must be shared where appropriate to improve choice and the operation of the transport system.
Clean Growth Strategy: Leading the way to a low carbon future (2017)	• Increase uptake of zero-emission buses • Reduce the number of shorter journeys made by car
The Ten Point Plan for a Green Industrial Revolution (2020)	• Green public transport, cycling and walking – including the National Bus Strategy (see above) and 4,000 Zero Emission Buses • £500m to re-open Beeching era rail line closures
Walking and Cycling Investment Strategy (2017)	• Increase walking to 300 stages per person per year (a single public transport trip typically includes at least two walk stages)
DfT Single Department Plan (2019)	• Deliver the Future of Mobility Urban Strategy, to consider new types of vehicle, sharing data to improve services, and making journey planning and payment simpler. • Support cities to develop transport and promote local growth through the £2.5 billion Transforming Cities Fund. Delivering schemes to tackle congestion and drive up productivity, such as measures to speed up bus journeys. • Continue joint working with the Ministry of Housing, Communities and Local Government to integrate decision-making on housing and transport investments and policies and promote better integration of sustainable transport with new housing. • Commence a large-scale regulatory review, looking in to how our regulatory framework will need to adapt due to technological changes in buses and taxis, data, mobility as a service and micromobility.
Decarbonising transport: setting the challenge (2020)	• Help make public transport and active travel the natural first choice for daily activities • Support fewer car trips through a coherent, convenient and cost-effective public network; and explore how we might use cars differently in future • Encourage cycling and walking for short journeys • Explore how to best support the behaviour change required • Address emissions at a local level through local management of transport solutions • Target support for local areas, considering regional diversity and different solutions
Connecting people: a strategic vision for rail (2017)	• Improving the standard and consistency of train service delivery • Expanding commuter capacity in line with expected demand • New routes which can provide strategic transport links or unlock significant housing or economic development regionally • Schemes to meet the biggest capacity challenges • Deliver Smart ticketing and fares reform to introduce single-leg pricing and tailor ticketing products to needs of part-time commuters
National AQ Plan: UK Plan for Tackling Roadside Nitrogen Dioxide	• Good local bus services encourage people to leave the car at home and use public transport to get to work, school, and to access local services. • The latest Euro VI diesel buses can emit less NOx per vehicle than the latest diesel cars.

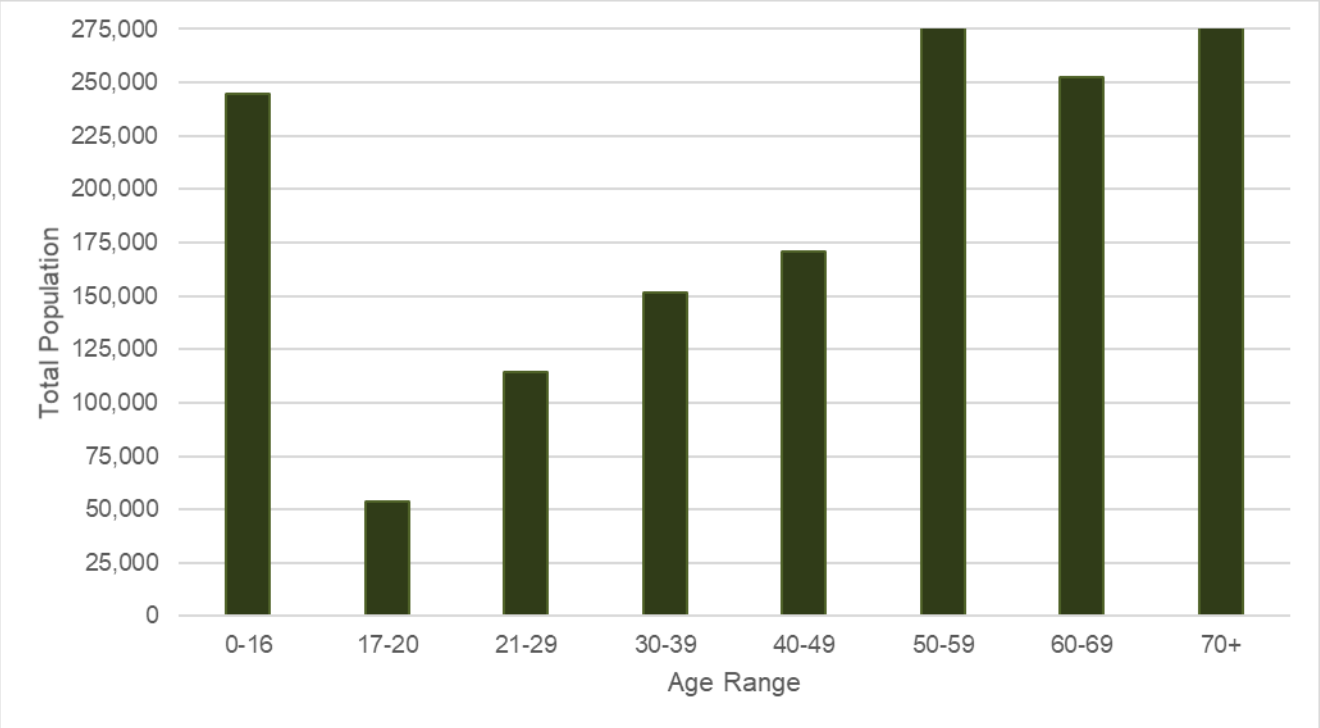
Key policy documents	Key themes
Concentrations (2017)	
Clean Air Strategy (2019)	• Funding to improve bus services
National Planning Policy Framework (NPPF) (2018)	• Applications for development should facilitate access to high quality public transport services…layouts that maximise the catchments for bus…appropriate facilities to that encourage public transport use • Local parking standards should take account of the availability and opportunities for public transport
A connected society - A strategy for tackling loneliness (2018)	• The Department for Transport will build partnerships with transport providers and community groups to develop how transport can be used as a means to help tackle loneliness, and use industry-wide forums to promote these • Requirement to reflect in departmental Single Department Plans from 2019/20
Inclusive Transport Strategy (2018)	• Support the establishment of a Rail Ombudsman to investigate unresolved customer complaints. • Identify a framework to ensure bus operators are implementing mandatory bus driver training. • Ensure that disabled travellers are fully aware of their rights and the obligations of transport operators. • Promote the assistance and financial savings available to disabled travellers. • Require a minimum target for the successful completion of booked assistance through the Passenger Assist scheme. • Support regulators to promote information about the rights of disabled travellers. • Release an online tool to assist disabled people in reporting issues they encounter when travelling by bus. • Ensuring that all public transport bodies understand their obligations under the Public Sector Equality Duty in relation to planning and delivering transport. • Legislation to ensure the provision of on-board audible and visible upcoming stop and route information is installed on local bus services across Great Britain. • Increase the availability of data on accessibility. • Ensure transport providers improve the availability of information particularly in relation to accessibility services such as toilets. • Work with Train Operating Companies to help ensure that all disabled passengers are aware of the Passenger Assist service. • Provide improved information about the accessibility of stations, including the development of an accessibility map by the RDG. • Make up to £300 million available for rail accessibility improvements during the period 2019-2024. • Update the Department's Inclusive Mobility and Tactile Paving guidance. • Announce how to prioritise access to the on-board wheelchair space for wheelchair users and other passengers for whom there is no other suitable accommodation on buses.
Sub-national policies	
Transport Strategy for the South East (TfSE, 2020)	• Strategic goals of improved productivity, improved health and wellbeing and protection of the environment • A network that promotes active travel and active lifestyles to improve our health and well-being. A reduction in the need to travel by car

Key policy documents	Key themes
	• South East is less dependent on London and develops its own economic hubs • Mode shift from car to bus and rail through increasing price of travel by car and lowering the price of bus and rail travel • Support initiatives that maintain the viability of inter-urban bus services • Develop high quality Rapid Transit services in urban corridors • Scenario forecasting summary report (2019) contains a number of scenarios. 'Sustainable Route to Growth' sees an increase in bus and coach trips of 120% and rail trips of 108% against an increase in journeys by all modes of 4%. This is compared to 'business as usual' and is against a 13% increase in employment and 15% increase in Gross Value Added by 2050.
Local policies, strategies, and plans	
Interim Local Strategic Statement for Surrey 2016-2031	• Objective 3 Delivering Infrastructure – modal shift and active travel are encourages by increasing opportunities for sustainable travel through improvements to bus, cycling and pedestrian facilities to tackle congestion.
Surrey Local Transport Plan 4	• Policy area 4 – Public and Shared Transport • Policy statement: For many longer journeys, travel by bus or rail is the most attractive option. Working with operators, opportunities exist to improve end-to-end journeys by public transport, including environments at stations and access to them. The network of bus services will be reviewed to identify ways to improve the coverage of the network, service frequencies, reliability, fares and customer experience. Where demand is lower, such as in rural areas, shared transport and demand responsive transport will play an important role, as will park and ride and car clubs. Making it easy to plan, book and pay for journeys is an important aspect. The development of high-quality 'Mobility as a Service (MaaS)' technology (such as a travel app for smartphones), which simplifies this process, will be critical to making this happen.
Surrey County Council Fourth Local Transport Plan (LTP4) Evidence Base – Drivers for Change August 2020	• Surrey has a well-established bus network although the level of service varies greatly depending on location: - Around 204 services, including approximately 50 'school special' services - TfL operates around 24 cross-boundary bus services to Greater London that run into North Surrey.

8. Demographic profile

Figure 8-1 outlines the population breakdown of those living within Surrey as per the Office for National Statistics (ONS) 2021 mid-year population estimates. The area in general has an older population, with just under 40% of residents over the age of 50. Although there are also a relatively large number of those under the age of 30, accounting for 34% of the population. As such, despite the older demographics of the county, there will be a wide variety of transport needs which the Bus Service Improvement Plan will consider, ensuring the needs of all are sufficiently met across all areas of Surrey.

Figure 8-1 Population breakdown by age in Surrey[34]



[34] ONS (2022), Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland

There are 11 districts which constitute Surrey, all of which have differing geological, highway and demographical features. The needs of each of the districts will be considered as part of the Bus Service Improvement Plan (BSIP).

The Figure 8-2 displays the relative size and distribution of the various districts, as well as the highway network that serves each of these.

Figure 8-2 - Districts in Surrey

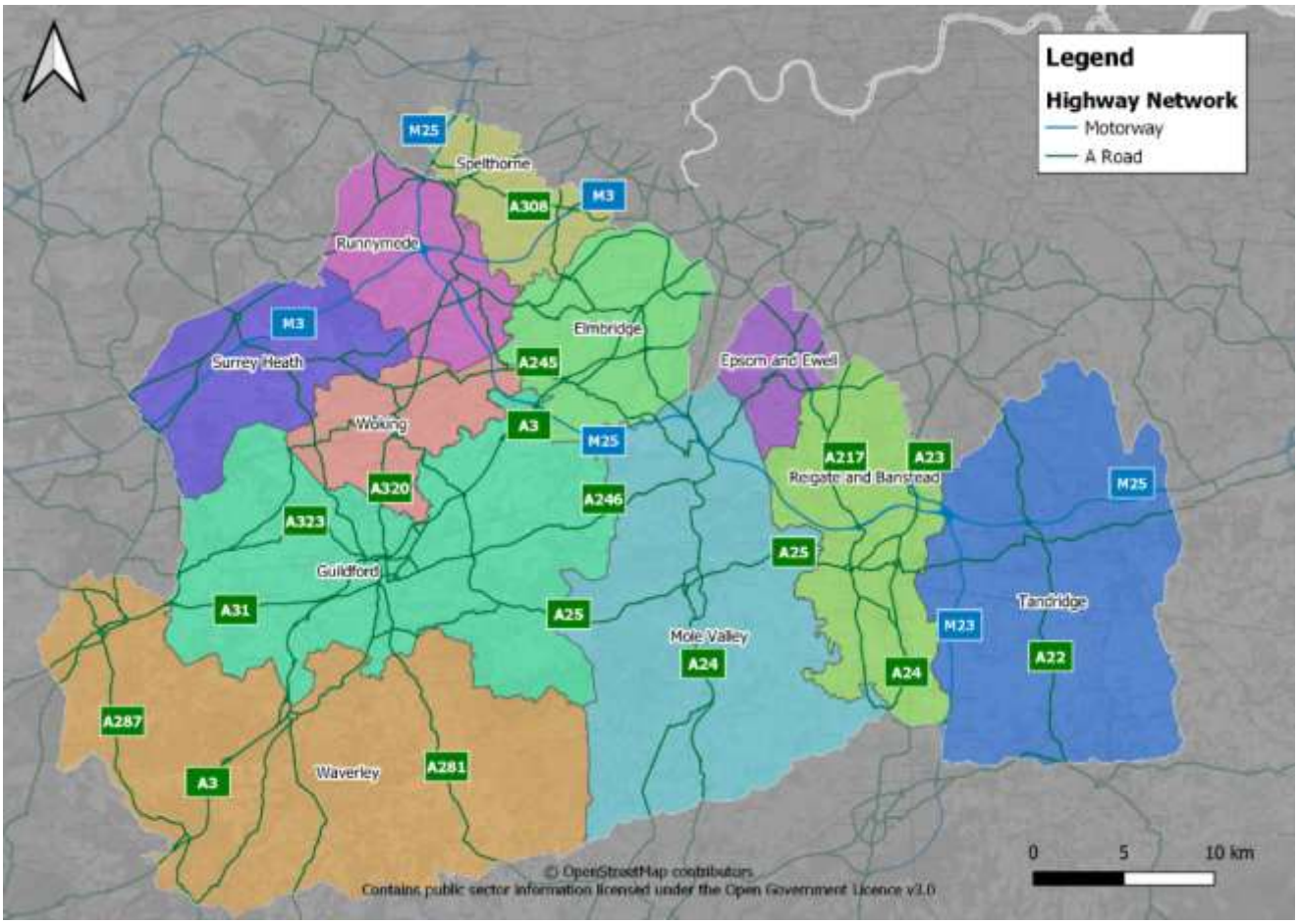


Table 8-1 represents the breakdown of age groups within each of the districts, as well as the total number of people residing in each. Guildford has the highest proportion of 17–29 year olds (20%), as well as being among the lowest proportion of 70+ year olds (13%). Contrastingly, Waverley has the highest proportion of 70+ year olds (17%) and has among the lowest proportion of 17–29 year olds (12%). Elmbridge has the highest percentage of people aged 16 and under at almost 23%, but also the lowest percentage of 17–29 year olds (11%), such facts highlight the diversity of the demographics within Surrey, which the BSIP will look to address.

Table 8-1 - Population breakdown by age per district in Surrey[35]

District	Age Range								Total Population
	0-16	17-20	21-29	30-39	40-49	50-59	60-69	70+	
Elmbridge	31,715	4,899	10,508	16,693	22,445	20,368	14,014	18,727	139,369
Epsom and Ewell	17,321	3,333	7,248	10,328	12,324	11,291	8,099	11,054	80,998
Guildford	25,948	10,404	18,833	17,435	18,810	19,318	14,339	18,842	143,929
Mole Valley	16,041	3,309	7,153	8,922	11,512	13,793	11,133	15,745	87,608
Reigate and Banstead	32,464	5,458	13,933	21,380	21,722	21,043	15,305	20,118	151,423
Runnymede	16,277	6,509	10,227	11,314	11,633	11,808	8,559	11,412	87,739
Spelthorne	20,708	3,794	10,080	14,990	14,326	14,659	10,394	14,044	102,995
Surrey Heath	17,713	3,438	8,481	11,184	12,676	13,723	9,838	13,592	90,645
Tandridge	18,228	3,403	7,384	10,427	11,585	13,131	10,158	13,827	88,143
Waverley	26,351	5,636	10,174	13,922	17,955	18,869	14,359	21,612	128,878
Woking	22,060	3,791	10,477	15,140	15,769	13,873	9,966	12,813	103,889

[35] ONS (2022), Mid-Year Population Estimates, UK, June 2021

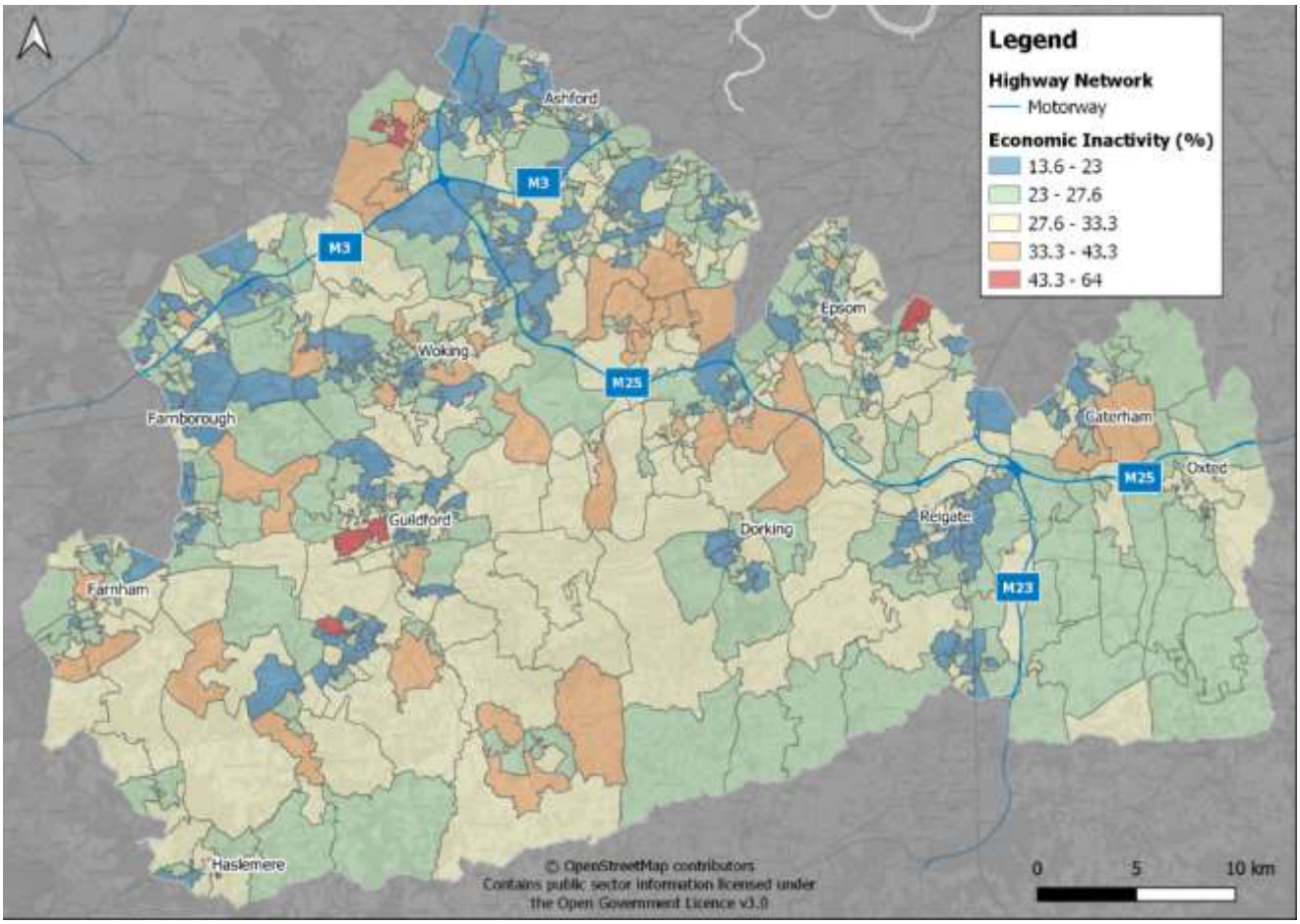
9. Spatial demographics

9.1. Economically inactive

Economically inactive people are defined as those who are retired, students, those who are unable to work and those unemployed. 2011 Census data has been collected to understand the profile of economic inactivity within Surrey[36]. Within Surrey the average economic inactivity is 26%, which is lower than the average level of 30% observed in England and Wales. Economic inactivity is however not equally distributed (Figure 9-1), with lower levels of economic inactivity seen in the north of the authority, particularly around the M25, Ashford and Farnborough. Conversely, the highest levels of economic inactivity are located in the south and the east of the county. This however excludes a small cluster of lower layer super output areas (LSOA) just south of Guildford, which represent the town of Godalming. Generally, lower levels of economic inactivity are observed in the built-up areas and towns within Surrey, with the individual LSOAs with the highest levels of economic inactivity generally on the outskirts of the settlements.

The two LSOAs to the west of Guildford with high levels of economic inactivity may be explained by the presence of the University of Surrey, which suggests a large proportion of students may live in the area. In other areas however, for example the LSOA east of Epsom, there is no clear indicator as to why this may be, especially when considering the surrounding LSOAs have much lower levels of economic inactivity.

Figure 9-1 - Percentage economically inactive at the LSOA level[36]

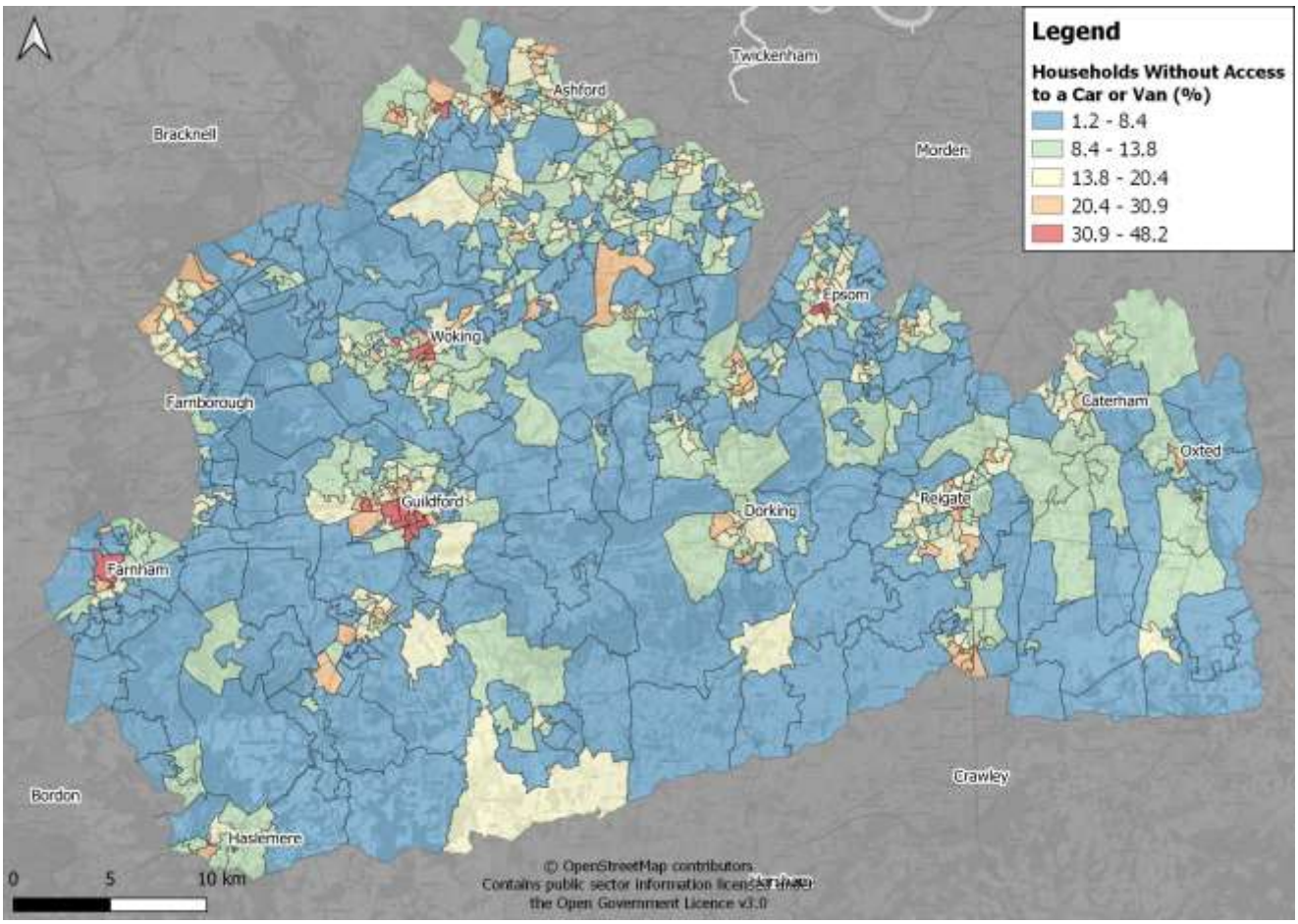


[36] ONS (2013), Economic Activity (QS601EW) from 2011 Census

9.2. No access to a car or van

According to 2021 Census data[37] the percentage of households without access to a car within Surrey is 13%, which is considerably lower than the England and Wales average of 23%. High levels of car ownership are observed throughout the county (Figure 9-2), more specifically in the rural areas removed from the higher density population centres. The areas with the lowest levels of car ownership can be found within the LSOAs located in and around the towns within Surrey, such as Guildford and Dorking. As well as this, there are notably lower levels of car ownership found within the north and the east of the county, near the areas of Ashford, Epsom and Caterham. This may be a result of the proximity to London and the connectivity to TfL services, which may contribute to lower levels of car ownership

Figure 9-2 - Percentage of households without access to a car or van at the LSOA level[37]

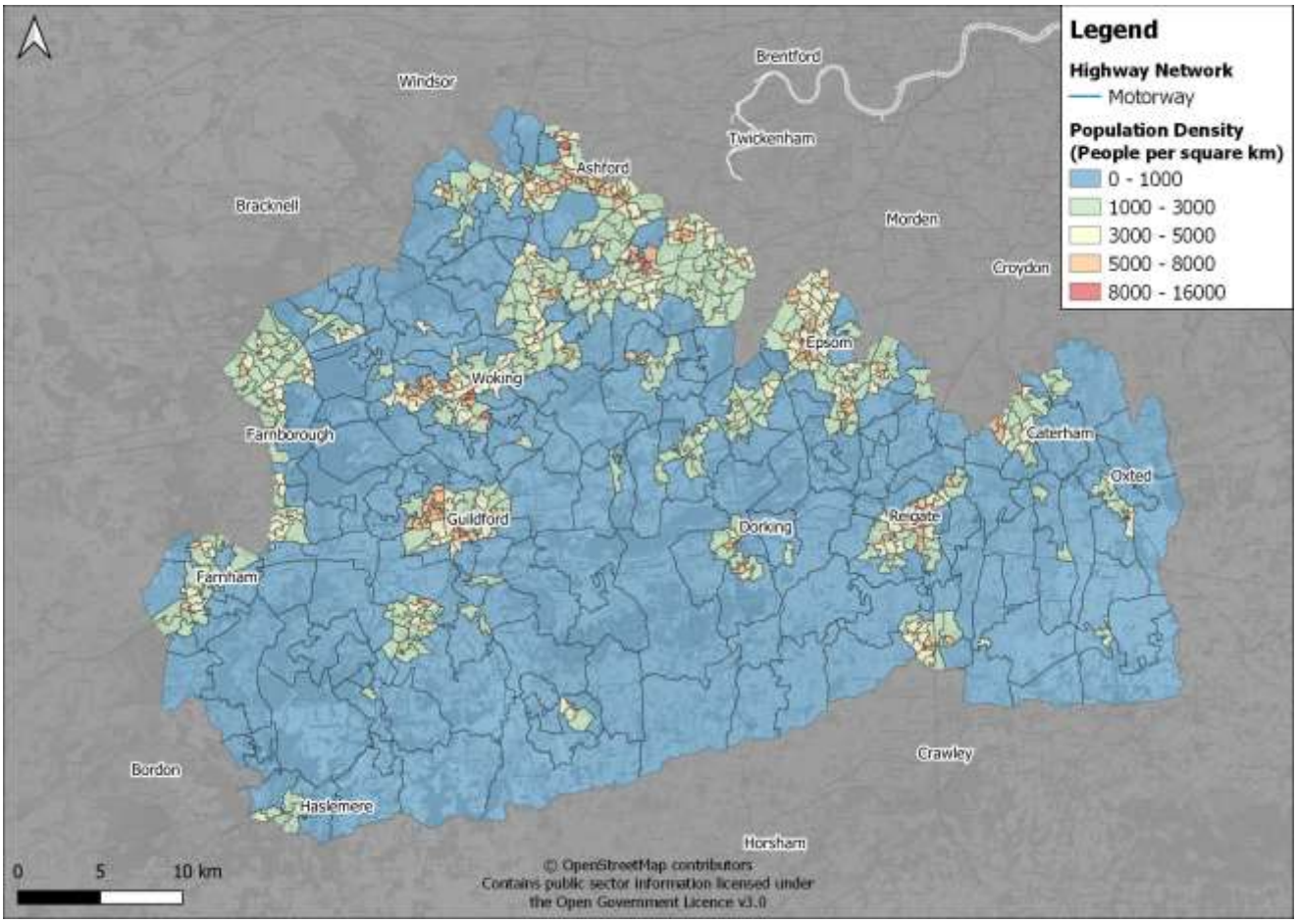


[37] ONS (2021), Car or van availability (RM001) from 2011 Census

9.3. Population density

Figure 9-3 outlines the population density of LSOAs within Surrey based on 2021 Census data[38]. The average population density within the county is 725 people per square kilometre, which is higher than the England and Wales average of 395 people per square kilometre. The highest population densities are seen within the towns which are scattered across the county. Epsom and Woking specifically have the highest population density in the county, with 1,633 and 2,377 people per square kilometre respectively. Generally, the north of the county particularly north of the M25, has a higher population density than the south of the county.

Figure 9-3 - Population density at the LSOA level[38]



[38] ONS (2022), Population density (TS006) from 2021 Census

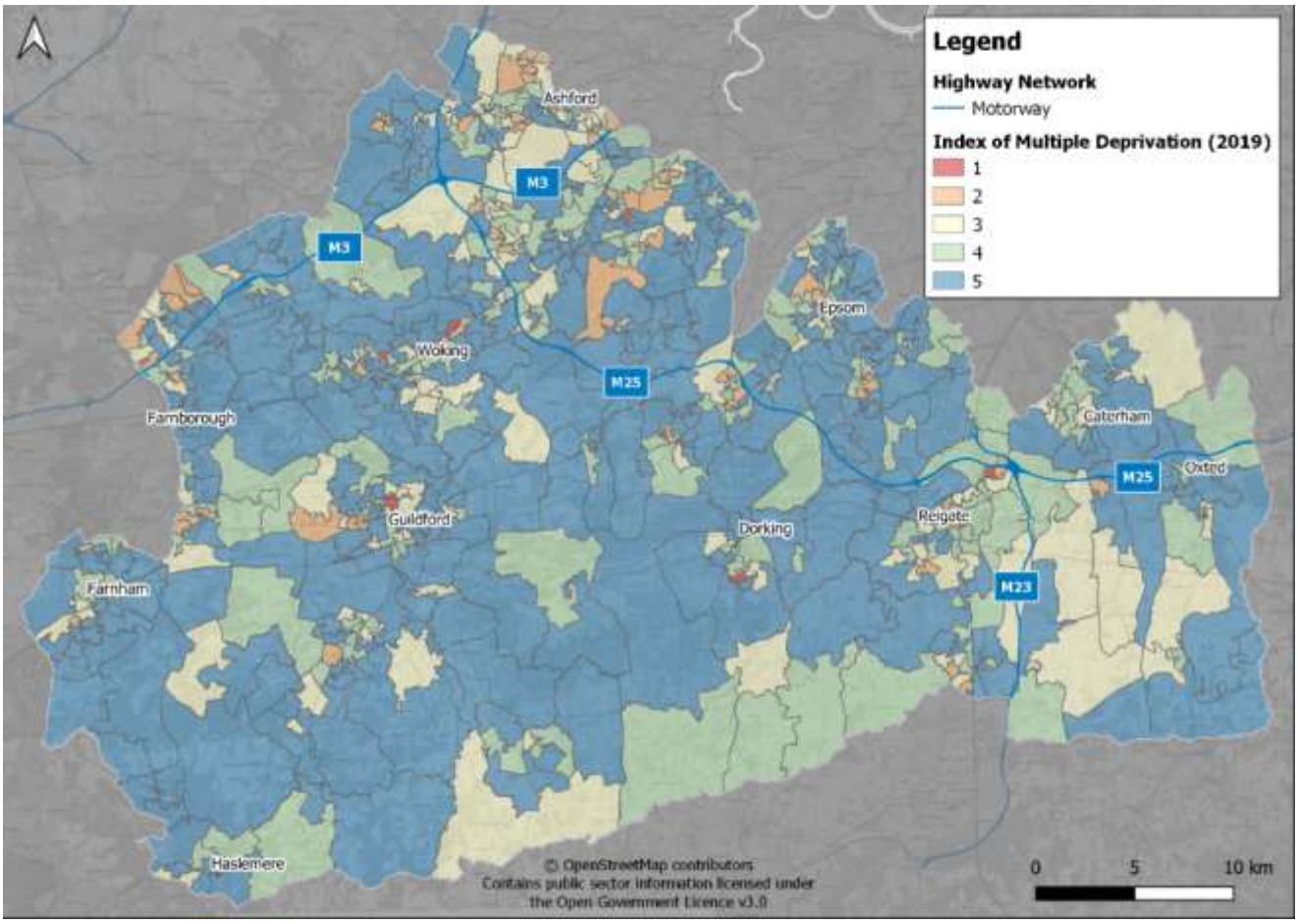
9.4. Index of Multiple Deprivation (IMD)

The IMD income deprivation domain[39] has been used to investigate deprivation within Surrey. Table 9-1 outlines the breakdown of quintiles within the county. Within Surrey, 50% of LSOAs are categorised within the least 20% of income deprived LSOAs in the country, with less than 1% of the LSOAs in the county falling within the most income deprived quintile. When considering the spatial distribution of income deprivation within the area (Figure 9-4) it is evident that there are lower levels of income deprivation found within the more rural areas of the county, away from the population centres. Lower levels of income deprivation appear more frequently in the west of the county. The 6 LSOAs with the highest levels of income deprivation can generally be seen within built-up areas within Surrey, with 2 located in Woking, 1 located in Guildford, 1 in Dorking, 1 just north of Reigate and the final most deprived LSOA situated in the north of the county near Walton-on-Thames.

Table 9-1 - IMD income quintile distribution in Surrey

IMD Income Quintile	Number of LSOAs	Percentage of LSOAs (%)
1 (most deprived)	6	<1%
2	61	9
3	120	17
4	168	24
5 (least deprived)	354	50

Figure 9-4 - IMD income domain classification in Surrey at the LSOA level[39]



9.5. Summary of socio-demographic Indicators

The previous sections have highlighted the diversity of the socio-demographics in Surrey. The county has levels of deprivation which are much lower than the values observed in England and Wales, with less than 1% of the Lower Layer Super Output Areas (LSOAs) in the county falling within the most deprived quintile and half of the LSOAs falling within the least deprived. In addition to this, higher levels of car ownership and economic activity are seen in Surrey when compared to national averages.

In terms of car ownership, just 13% of households do not have access to a car or van, this is far lower than the national average of 26%. Regarding economic inactivity, the observed level in Surrey is 4% lower than that seen nationally. Whilst this is relatively similar, especially when compared with the disparity in car ownership, it is important to appreciate the overall older demographic in the county. For example, upon consulting Figure 9-1 it can be seen that there are higher levels of economic inactivity in the south west of the region in the Waverley district. Although, upon cross-referencing with Table 8-1 this may be expected due to the high proportion of residents of and above retirement age.

Population density and car ownership appear to correlate within the region, with households in the more densely populated areas generally having lower levels of access to vehicles when compared to people living elsewhere. However, from Figure 9-3 it can be seen that Tandridge is sparsely populated outside of the towns of Caterham and Oxted in the north of the county. Despite this, car ownership levels are lower here compared to other areas of the county with

[39] Ministry of Housing, Communities and Local Government (2021), Indices of Multiple Deprivation (IMD) 2019

similar population densities. After cross-referencing with Figure 9-4, it is found that some of these LSOAs within this area have higher levels of income deprivation according to the IMD.

The map illustrated in Section 9.3 outlines that the area to the north east of the M25 has, on average, a higher population density than that seen south west of the M25 in Surrey. This correlates with the fact that car ownership in this area north of the M25 is generally lower. The IMD data does not indicate that these areas are more deprived, with comparable proportions of LSOAs scoring similarly in terms of deprivation both above and below the M25 in Surrey. This therefore suggests that residents living here may not have a need for a private vehicle. It is likely that the higher level of urbanisation within the areas north of the M25 can partially explain this, however it should be noted that car ownership is a complicated metric to utilise when reviewing socio-demographics[40] [41]. This is a result of the many variables which influence an individual's need to own a motor vehicle, including but not limited to, proximity to employment and leisure, journey times and direct public transport services.

Overall, Surrey has a diverse range of socio-demographics which vary across space, as a result of factors such as housing and transport. This initial insight has highlighted that differing parts of the local authority have differing needs and drivers of the metrics outlined in the previous section.

[40] Mattioli, G. (2014), Where Sustainable Transport and Social Exclusion Meet: Households Without Cars and Car Dependence in Great. Journal of Environmental Policy & Planning, 16(3), pp. 379-400
[41] Mattioli, G. & Colleoni, M. (2016),Transport Disadvantage, Car Dependence. In: P. Pucci & M. Colleoni. (eds.) Understanding mobilities for designing contemporary cities. New York: Springer, pp. 171-190.

9.6. Railway stations and annual demand

Within Surrey there are currently 84 railway stations, the majority of which are managed by South Western Railway and Southern. Given Surrey's relatively sparse population density, a large proportion of these stations see very low numbers of patronage. However, Surrey is home to a number of large railway stations that are very well connected to London and the south coast.

According to data from the Office for Road and Rail (ORR)[42] Woking is the most used railway station in Surrey in terms of passenger numbers and currently provides upwards of 14 trains per hour into London. Woking station also provides services to Portsmouth via Guildford, Weymouth via Southampton and Bournemouth and Exeter via Salisbury.

Table 9-2 displays the change in patronage at stations in Surrey since 2016-17. Passenger numbers at the three busiest stations, Woking, Guildford, and Epsom, have experienced a decline between 2016-17 and 2018-19, with a 3%, 8% and 3% decrease observed respectively. Conversely, the fourth and fifth busiest stations, Redhill and Walton-on-Thames, have experienced an increased patronaged of 7% and 2% respectively. Overall, train usage in Surrey experienced only a 0.1% decrease between the years of 2016-17and 2018-19.

Data provided for 2019-20 to 2021-22 provide an overview of the reduction in train usage in recent years, largely influenced by the COVID-19 pandemic and different travel behaviours, such as increased remote working. By comparison, countywide train usage has reduced by about 45% between 2016-17 and 2021-22.

Table 9-2 - Railway station usage within Surrey[42]

Railway Station	Year						Change from 2016-17 and 2018-19 (%)	Change from 2016-17 and 2021-22 (%)
	2016-17	2017-18	2018-19	2019-20*	2020-21*	2021-22*		
Addlestone	429,204	429,944	431,860	391,634	96,206	239,190	0.6%	-44.3%
Ash	279,244	261,276	268,106	245,978	67,150	160,032	-4.0%	-42.7%
Ash Vale	480,854	466,782	459,054	421,022	88,390	227,016	-4.5%	-52.8%
Ashford (Surrey)	1,057,340	1,032,946	1,076,006	986,432	236,906	616,080	1.8%	-41.7%
Ashtead	1,317,284	1,264,878	1,308,084	1,272,990	261,410	696,822	-0.7%	-47.1%
Bagshot	160,076	157,480	143,736	131,110	31,562	85,444	-10.2%	-46.6%
Banstead	142,128	126,378	151,280	151,414	42,692	94,576	6.4%	-33.5%
Betchworth	15,232	14,972	13,974	15,134	5,228	12,152	-8.3%	-20.2%
Bookham	331,782	321,086	322,142	290,572	45,452	133,660	-2.9%	-59.7%
Box Hill & Westhumble	97,854	98,210	102,486	115,152	48,982	93,512	4.7%	-4.4%
Brookwood	967,406	1,016,384	1,035,048	963,736	204,918	551,946	7.0%	-42.9%
Byfleet & New Haw	477,106	447,024	445,004	401,872	163,446	277,930	-6.7%	-41.7%

[42] ORR (2022), Estimates of Station Usage (Table 1415)

Railway Station	Year						Change from 2016-17 and 2018-19 (%)	Change from 2016-17 and 2021-22 (%)
	2016-17	2017-18	2018-19	2019-20*	2020-21*	2021-22*		
Camberley	446,350	414,680	391,680	341,572	83,076	237,332	-12.2%	-46.8%
Caterham	1,007,526	1,011,822	1,027,318	990,992	209,436	479,848	2.0%	-52.4%
Chertsey	706,642	697,204	727,072	665,420	221,558	496,676	2.9%	-29.7%
Chilworth	27,252	24,120	20,114	21,704	5,904	17,202	-26.2%	-36.9%
Chipstead	153,290	160,954	154,918	145,724	22,290	57,976	1.1%	-62.2%
Clandon	222,750	206,156	203,266	185,012	31,444	93,054	-8.7%	-58.2%
Claygate	693,752	651,366	656,558	594,834	91,254	305,144	-5.4%	-56.0%
Cobham & Stoke D'abernon	629,416	592,248	589,700	546,460	86,406	290,962	-6.3%	-53.8%
Dorking (Deepdene)	398,912	442,196	441,182	406,538	90,096	237,070	10.6%	-40.6%
Dorking (Main)	1,161,477	1,287,504	1,284,546	1,183,682	262,326	690,256	10.6%	-40.6%
Dorking West	55,995	62,071	61,928	57,066	12,648	33,278	10.6%	-40.6%
Dormans	111,430	111,060	114,860	112,312	43,080	92,348	3.1%	-17.1%
Earlswood (Surrey)	410,266	440,288	404,288	434,830	80,584	195,526	-1.5%	-52.3%
Effingham Junction	317,090	300,152	292,544	267,442	47,852	150,224	-7.7%	-52.6%
Egham	2,075,204	2,024,930	2,072,838	1,928,992	434,430	1,262,002	-0.1%	-39.2%
Epsom (Surrey)	4,059,314	3,918,524	3,981,152	3,955,930	966,538	2,334,196	-1.9%	-42.5%
Epsom Downs	90,840	87,940	110,374	112,090	29,250	67,982	21.5%	-25.2%
Esher	1,188,796	1,144,232	1,179,918	1,076,888	170,856	544,448	-0.7%	-54.2%
Ewell East	560,400	583,086	604,486	604,380	168,206	389,244	7.9%	-30.5%
Ewell West	1,511,266	1,428,248	1,458,534	1,293,238	254,176	662,816	-3.5%	-56.1%
Farncombe	885,284	862,414	868,654	779,808	137,736	351,174	-1.9%	-60.3%
Farnham	1,621,414	1,562,844	1,562,588	1,547,848	273,658	930,506	-3.6%	-42.6%
Frimley	215,496	202,910	204,340	177,866	63,066	140,544	-5.2%	-34.8%
Godalming	1,435,048	1,381,036	1,385,748	1,386,196	292,486	953,492	-3.4%	-33.6%
Godstone	58,346	66,190	75,704	64,372	20,618	56,166	29.8%	-3.7%
Gomshall	58,228	59,102	55,336	54,150	17,294	44,574	-5.0%	-23.4%
Guildford	8,192,104	7,954,610	7,494,002	6,936,796	1,488,672	4,283,840	-8.5%	-47.7%

Railway Station	Year						Change from 2016-17 and 2018-19 (%)	Change from 2016-17 and 2021-22 (%)
	2016-17	2017-18	2018-19	2019-20*	2020-21*	2021-22*		
Hampton Court	1,690,136	1,621,586	1,616,592	1,542,428	298,524	864,422	-4.4%	-48.9%
Haslemere	1,804,364	1,777,490	1,840,386	1,704,156	356,442	949,600	2.0%	-47.4%
Hersham	848,492	822,040	857,684	809,486	179,794	446,966	1.1%	-47.3%
Hinchley Wood	387,238	358,196	368,546	349,804	48,360	160,514	-4.8%	-58.5%
Holmwood	54,596	57,206	66,400	69,652	15,440	42,672	21.6%	-21.8%
Horley	923,774	971,834	969,592	1,009,654	277,546	799,638	5.0%	-13.4%
Horsley	448,708	434,838	421,010	382,510	54,926	198,608	-6.2%	-55.7%
Hurst Green	634,756	662,178	693,908	682,128	143,558	374,058	9.3%	-41.1%
Kempton Park Racecourse	60,440	55,924	52,822	45,670	6,206	34,240	-12.6%	-43.3%
Kingswood	266,616	227,984	219,092	220,344	39,432	101,240	-17.8%	-62.0%
Leatherhead	2,026,516	1,964,658	2,062,214	1,951,620	382,184	928,998	1.8%	-54.2%
Lingfield	573,218	546,656	503,444	507,852	127,616	318,182	-12.2%	-44.5%
London Road (Guildford)	568,778	540,978	1,021,802	945,828	202,980	584,100	79.6%	2.7%
Longcross	14,990	25,784	23,090	22,948	21,356	68,956	54.0%	360.0%
Merstham	638,636	662,836	765,084	820,316	189,864	462,002	19.8%	-27.7%
Milford (Surrey)	290,792	280,634	294,666	267,350	57,974	141,536	1.3%	-51.3%
North Camp	394,970	378,440	379,940	332,730	59,002	169,476	-3.8%	-57.1%
Nutfield	78,296	84,096	86,034	69,898	20,534	50,248	9.9%	-35.8%
Ockley	32,680	34,738	36,388	37,946	9,746	25,258	11.3%	-22.7%
Oxshott	509,090	489,768	494,946	452,696	88,364	273,760	-2.8%	-46.2%
Oxted	1,533,336	1,571,614	1,642,390	1,656,666	444,936	973,434	7.1%	-36.5%
Redhill	3,705,282	3,553,740	3,787,090	3,661,686	750,734	2,052,974	2.2%	-44.6%
Reigate	1,193,556	1,223,378	1,436,558	1,464,894	368,840	892,884	20.4%	-25.2%
Salfords (Surrey)	125,372	136,576	151,810	155,066	36,046	84,094	21.1%	-32.9%
Shalford (Surrey)	139,414	128,672	122,662	114,284	19,330	54,450	-12.0%	-60.9%
Shepperton	423,718	418,554	392,426	358,762	78,532	219,156	-7.4%	-48.3%
Staines	2,771,474	2,753,452	2,867,034	2,678,088	592,550	1,618,230	3.4%	-41.6%

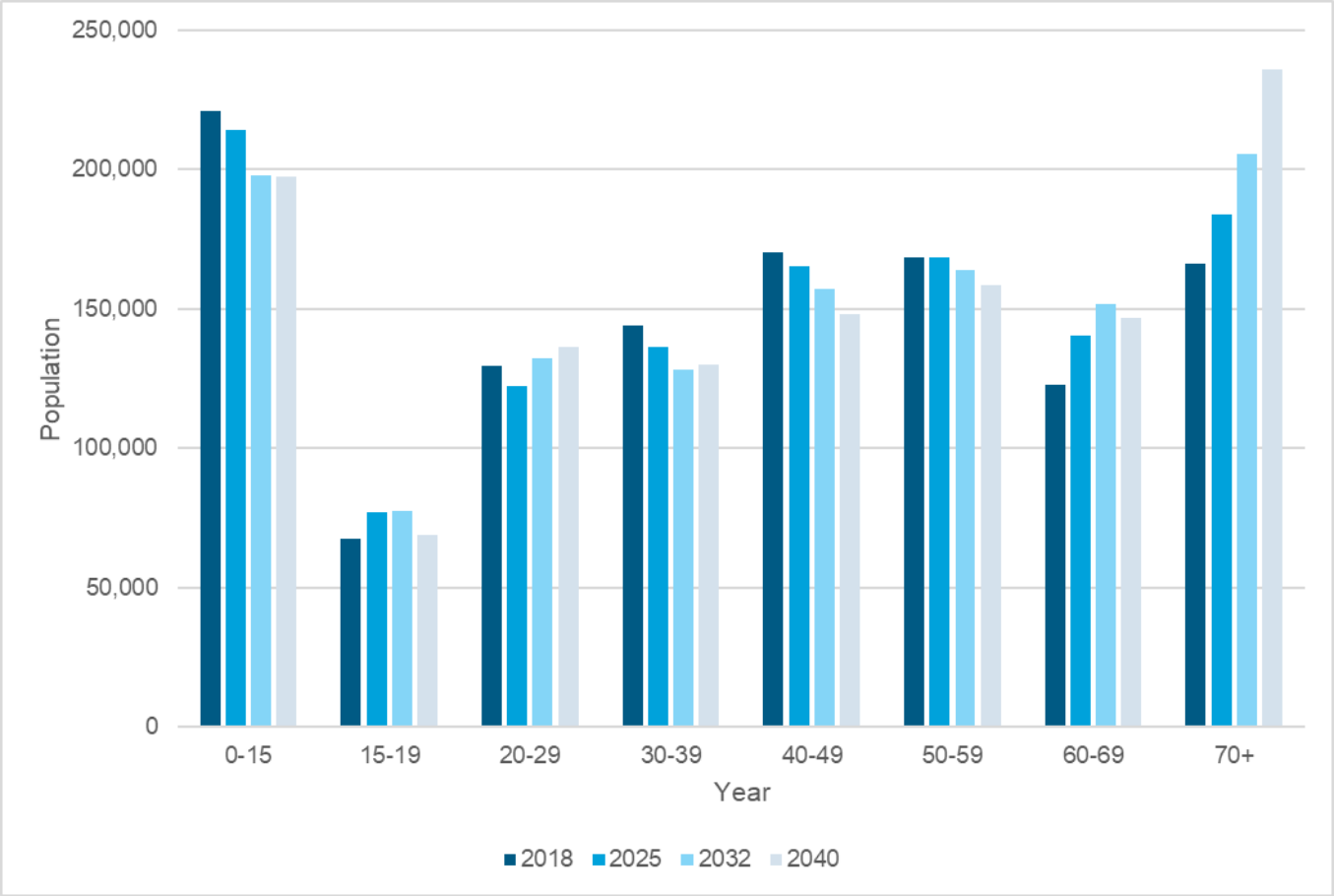
Railway Station	Year						Change from 2016-17 and 2018-19 (%)	Change from 2016-17 and 2021-22 (%)
	2016-17	2017-18	2018-19	2019-20*	2020-21*	2021-22*		
Stoneleigh	1,069,762	1,001,408	1,047,466	994,994	202,490	531,522	-2.1%	-50.3%
Sunbury	434,878	423,614	409,878	381,432	65,682	210,398	-5.7%	-51.6%
Tadworth	253,504	259,686	284,824	282,540	57,286	128,680	12.4%	-49.2%
Tattenham Corner	228,812	232,642	246,770	252,252	41,976	89,690	7.8%	-60.8%
Thames Ditton	867,208	824,330	830,074	769,062	167,058	497,780	-4.3%	-42.6%
Upper Halliford	124,384	125,180	129,378	117,876	24,554	48,714	4.0%	-60.8%
Upper Warlingham	932,070	1,005,766	1,032,050	1,002,104	194,978	500,556	10.7%	-46.3%
Virginia Water	593,092	575,532	604,866	607,814	150,152	396,658	2.0%	-33.1%
Walton-On-Thames	2,916,886	2,856,708	2,932,472	2,722,804	539,752	1,542,430	0.5%	-47.1%
Wanborough	106,690	105,118	107,476	88,364	17,994	47,502	0.7%	-55.5%
West Byfleet	1,420,064	1,384,948	1,384,454	1,279,262	246,264	668,186	-2.5%	-52.9%
Weybridge	2,472,754	2,318,278	2,383,624	2,226,684	420,352	1,233,896	-3.6%	-50.1%
Whyteleafe	286,142	281,268	305,276	297,076	80,418	201,698	6.7%	-29.5%
Whyteleafe South	144,464	138,116	133,772	132,720	35,618	85,152	-7.4%	-41.1%
Witley	289,796	271,772	285,978	265,890	56,576	146,150	-1.3%	-49.6%
Woking	7,997,508	7,642,074	7,729,100	7,352,236	1,517,284	4,070,300	-3.4%	-49.1%
Woldingham	289,336	306,498	324,206	320,792	87,854	222,960	12.1%	-22.9%
Worplesdon	212,282	203,286	210,180	188,300	37,652	100,692	-1.0%	-52.6%

*Data impacted by the COVID-19 Pandemic.

9.7. Population projections

Population projections[43] produced by the ONS have been used to develop an insight into the future age structure of the population within Surrey (Figure 9-5). The data suggests that the total population living within Surrey will increase by 2.7% by 2040 increasing by around 32,000 people. The ONS data suggests that this population change will mostly be driven by increased life expectancy as the proportion of younger people falls in each of the forecast years, suggesting a reduced birth rate. The proportion of over 60s is projected to increase by 24% and 33% by 2025 and 2032 respectively. Conversely the proportion of under 19s will reduce by 5% and 8% by 2025 and 2032 respectively. These changing demographics at each end of the population structure will impact the demand for differing types of bus services, with the network needing to adjust to meet the demands of the changing demographics of the population.

Figure 9-5 - Population projection[43]



[43] ONS (2020), Population projections for local authorities: Table 2

10. Concluding remarks

This technical note has been compiled to develop an understanding of the baseline conditions within Surrey to inform the Bus Service Improvement Plan. The note has aimed to outline the current social demographic composition of Surrey and how differing demand points may influence the need for public transport services, alongside outlining the current bus provision within the local authority.

Analysis of census data has outlined that the highest population densities are seen within the north of the county on the border with Greater London, whereas the lowest densities are in the south or central parts of the county, excluding the larger towns such as Guildford and Dorking. This analysis has also highlighted the relative affluence of Surrey, with half of LSOAs being classified as the least income deprived within the country and levels of economic inactivity which are below the England and Wales average. This said, this affluence is not equal across space and there are varying needs for public transport across the county, for example as a result of an ageing population and diffuse villages where social isolation could occur without access to reliable public transport or a motor vehicle. Car ownership is particularly high within Surrey, although there is a clear cluster of lower car ownership in the areas bordering Greater London. This high car ownership may be a barrier to public transport uptake, however the reasons to own a car are complex.

There are currently several large operators within Surrey, meaning that there are a range of ticketing products on offer which vary greatly both in geographical scope and cost across the county. This is further complicated by the TfL ticketing system which is very different to the products on offer from the commercial operators within the county. The variability in ticketing offers and costs, alongside the lack of a countywide multimodal ticket is likely to be a barrier to the use of the bus within Surrey as passengers may find the ticketing system complicated to understand.

Within Surrey bus patronage has, like elsewhere across the country, declined within the previous 10 years, with a reduction in passenger numbers by 1 million (-3%) between 2009/10 and 2018/19. In 2019/20 and 2020/21 there was a further significant decline in patronage as a result of the COVID-19 pandemic, with the start of a recovery seen in the 2021/22 data. However this is still significantly below 2018/19 levels. This is alongside a continual decline in bus kilometres operated within the county. This said, when considering bus ridership alongside levels of car ownership, the bus trip-rate within Surrey is slightly higher than would be predicted against the national average suggesting the network performs well given the level of car ownership in the county.

Overall, Surrey has a number of challenges and opportunities facing the bus network going forward. These particularly relate to the current wide ticketing offer and falling bus patronage and kilometres operated within the county. The BSIP will look for opportunities to improve the bus offer and increase patronage throughout Surrey.