

COVID-19

Local authority travel and transport data

Weekly digest



*ITS UK Project of the Year
Award 2020 Winner*

Week Commencing

8th March 2021

Introduction

Since the imposition of travel restrictions designed to help dramatically reduce the spread of Covid-19, the Transport Technology Forum has led the collation of transport data from local authorities into information used to understand changes in travel behaviour.

Authorities from cities, towns and counties across England are sharing urban traffic control and automated traffic counter data from the roadside, as well as information on cycling and car parks. Industry has also supplied video analytics and floating vehicle data patterns. This sits alongside data the Department receives about rail and air, public transport, freight and maritime to summarise how, where and when people and goods are moving around the country.

The Transport Technology Forum can publish outcomes from this data set for interested parties, not least those bodies who went above and beyond the call to share their data with us.

About the Forum

This document has been prepared by the Transport Technology Forum (TTF) as part of its remit to drive more effective and efficient management of existing and new road networks, as a key national opportunity before, during and after the current Covid-19 emergency.

Road transport will remain a key pillar of how people and goods move across the nation, not just on strategic roads. Improving road travel through technology is a core aim of the Forum.

The Forum promotes a collaborative culture to open-up the opportunity and address the caution which has historically impeded efficiency and innovation.

About this Report

The report provides an ongoing snapshot of travel, summarising weekly, daily, and hourly changes based on information shared by:

- Traffic – 29 data providers, geographically covering approximately 107 local authority districts.
- Cycling – 16 data providers, geographically covering approximately 84 local authority districts including nationwide canal and river paths.

This provides an overview of how public behaviour is changing and what new patterns are being experienced. Local Authorities can benefit by being able to compare what is happening in their areas with the national picture, allowing local and national comparisons to be drawn.

Weekly highlights summary

Traffic Flow

- For the week commencing 1st March 2021, overall daily traffic flows remained relatively constant at 26% below baseline levels (Figures 1 and 3). Monday 1st March saw levels at a week high of 25% below baseline levels, while Sunday saw a week low of 31% below baseline.
- Figure 4.1 shows a comparison of traffic profiles between the previous three weeks, and a week during the first national lockdown, the second national lockdown, and the pre-pandemic baseline. It is worth noting that Figure 4.1 should not be used to compare volumes, but only trends in the peaks because it makes use of the average hourly traffic count, which is sensitive to sensor numbers in each location. The week commencing 1st March has similar AM peak, interpeak and PM peak periods as those seen during the previous two weeks. The AM peak, while more pronounced than during the first national lockdown, is still not as significant as during the second lockdown and the pre-pandemic baseline.
- For the week commencing 1st March, weekday car volumes were consistent throughout the week between 29% below baseline levels on Monday, and 23% below baseline levels on Wednesday. Weekend car volumes were constant at approximately 25% below the baseline levels. HGV/LGV volumes varied between a week high of 17% above baseline levels on Monday 1st March to 5% above baseline levels towards the end of the week. The detailed data on weekday and weekend variations can be investigated in Figures 5.1 and 5.2 respectively.
- Figure 7 presents the change in hourly average weekday traffic flows for the Local Highway Authorities of Birmingham, Derbyshire, Hampshire, Leicestershire, Suffolk, and York. Traffic weekday AM peaks across local authorities seem to be becoming more pronounced. The traffic profiles and the levels seen in Leicestershire closely resemble the second national lockdown. This shows an increase compared to the previous weeks, while remaining significantly below the pre-pandemic baseline.
- Figure 10 shows a direct comparison of the three national lockdowns over time. The DfT National Average percentage change from baseline has been lower than the TTF Local Authority percentage change against the baseline since 8 February. This is possibly due to higher local area travel during lockdown 3 as opposed to fewer journeys on the national strategic highway network where freight / business travel is more prevalent.
- Figure 11 shows that median traffic levels during lockdown 3 are between those seen during the first and second national lockdown. This may be due to higher levels of business travel on weekdays, and a lower inclination to travel on weekends due to lockdown restrictions. The traffic levels seen during lockdown 3 are slowly approaching lockdown 2 levels.
- Figure 12 shows that lockdown 3 has more pronounced AM and PM peaks, with lower traffic levels during the interpeak period compared to lockdown 1, which is neutral to traditional peaks with more uniform traffic levels during the expected AM peak, interpeak and PM peak period.

Cycling

- Figures 2 and 8 show that cycling levels have remained relatively constant at 12.5% above baseline levels. The levels reached 49% above baseline on Saturday 6th March and 110.5% above baseline levels on Sunday 8th March. This is most likely due to the sunny and warm weather seen on the weekend across England. Cycling was at a week low of 25% below baseline levels on Wednesday 3rd March.
- Interpeak cycling on weekdays for the week commencing 1st March (Figure 9.1) continues to be significantly higher than the baseline. During the AM and PM peaks the levels are slowly approaching baseline levels. (Figure 9.2).

Figure 1 – Overall daily traffic flow change compared to baseline (1-7 Feb 2020)

Week Starting	1. Monday	2. Tuesday	3. Wednesday	4. Thursday	5. Friday	6. Saturday	7. Sunday	Total
01/03/2021	📉 -24.77%	📉 -25.21%	📉 -25.43%	📉 -26.17%	📉 -25.02%	📉 -29.73%	📉 -30.59%	-25.87%
22/02/2021	📉 -27.41%	📉 -28.81%	📉 -25.75%	📉 -27.65%	📉 -22.39%	📉 -29.28%	📉 -32.74%	-26.96%
15/02/2021	📉 -28.27%	📉 -31.28%	📉 -30.07%	📉 -31.31%	📉 -31.01%	📉 -35.06%	📉 -38.80%	-31.49%
08/02/2021	📉 -36.49%	📉 -33.08%	📉 -30.05%	📉 -30.64%	📉 -25.13%	📉 -33.62%	📉 -42.68%	-32.86%
01/02/2021	📉 -33.33%	📉 -42.15%	📉 -35.88%	📉 -36.92%	📉 -35.09%	📉 -41.07%	📉 -52.72%	-40.95%
25/01/2021	📉 -36.30%	📉 -33.64%	📉 -33.96%	📉 -36.55%	📉 -30.90%	📉 -38.91%	📉 -44.03%	-36.95%
18/01/2021	📉 -37.56%	📉 -38.64%	📉 -39.34%	📉 -37.00%	📉 -36.30%	📉 -42.50%	📉 -59.05%	-41.90%

Figure 1: Key dashboard figures showing change in average daily traffic volumes compared to the baseline (the first week of February 2020)

The lowest levels were seen during the w/c 6th April, which saw levels 65% below baseline overall and a record 76% below baseline on Sunday, 12th April.

Figure 2 – Overall daily cycling change compared to baseline (1-7 Feb 2020)

Week Starting	1. Monday	2. Tuesday	3. Wednesday	4. Thursday	5. Friday	6. Saturday	7. Sunday	Total
01/03/2021	📈 7.41%	📈 10.11%	📉 -24.22%	📉 -9.89%	📈 5.53%	📈 48.52%	📈 110.60%	12.50%
22/02/2021	📉 -12.61%	📉 -6.35%	📉 -17.52%	📈 11.16%	📈 25.86%	📈 90.00%	📈 125.00%	13.00%
15/02/2021	📉 -16.12%	📉 -32.47%	📉 -47.24%	📉 -17.73%	📉 -31.74%	📈 37.50%	📈 81.25%	-18.54%
08/02/2021	📉 -45.10%	📉 -49.02%	📉 -44.60%	📉 -40.33%	📉 -34.18%	📉 -12.41%	📉 -25.00%	-38.46%
01/02/2021	📉 -27.45%	📉 -44.67%	📉 -43.18%	📉 -32.40%	📉 -24.53%	📈 20.87%	📈 0.00%	-27.45%
25/01/2021	📉 -46.41%	📉 -56.49%	📉 -47.85%	📉 -46.39%	📉 -37.87%	📉 -41.78%	📈 32.07%	-41.65%
18/01/2021	📉 -31.04%	📉 -54.31%	📉 -66.73%	📉 -28.48%	📉 -24.65%	📉 -4.26%	📉 -31.03%	-38.49%

Figure 2: Key dashboard figures showing change in average daily cycle volumes compared to the baseline (the first week of February 2020)

The highest levels were seen during the w/c 25th May, which saw levels 94% above baseline overall and a record 220% above baseline on Sunday, 31st May.

Figure 3 – Overall daily average traffic flow change from baseline



Figure 3: Change in overall daily average traffic volumes since the 1st of March across all sources compared to the baseline (the first week of February 2020)

Figure 4.1 – Overall comparison of average hourly weekday traffic by week

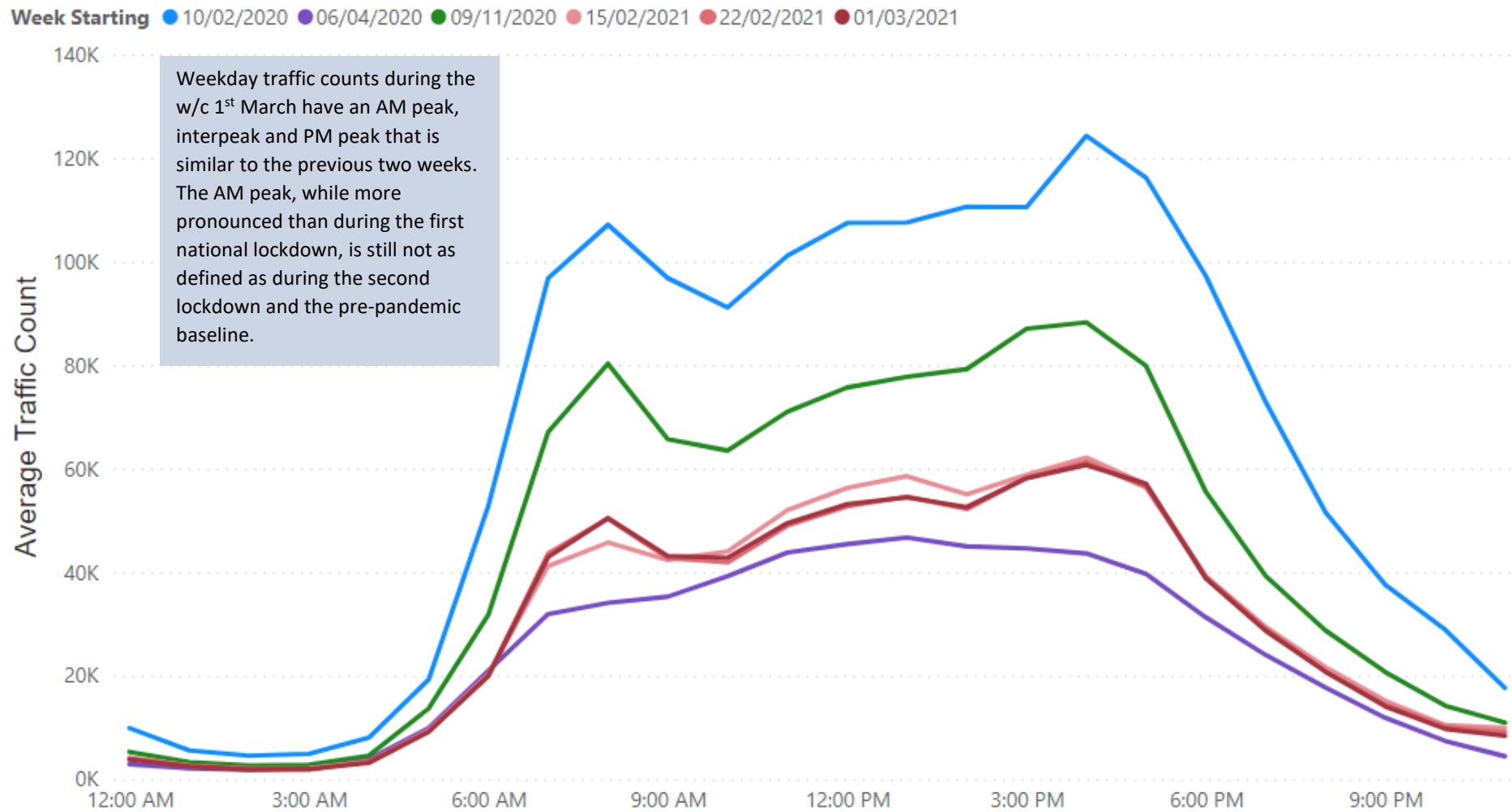


Figure 4.1: Weekday traffic volumes compared to pre-lockdown (10/02/20) and early lockdown (06/04/20) across all datasets. Note- this may not reflect the patterns observed in Figures 1 and 3 as the hourly average is calculated at sensor level, not Local Highway Authority (LHA) level.

Figure 4.2 – Overall comparison of average hourly weekend traffic by week

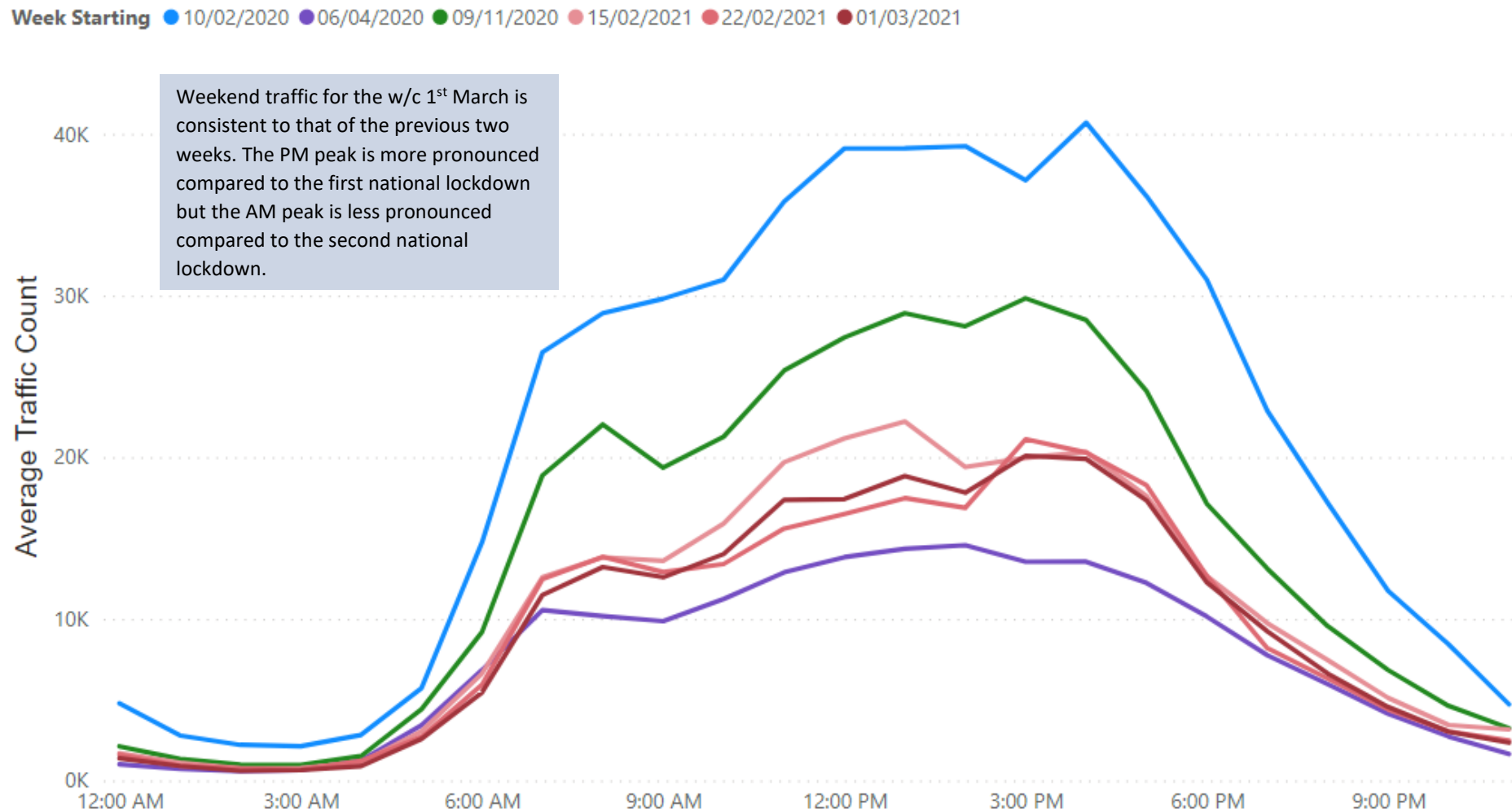
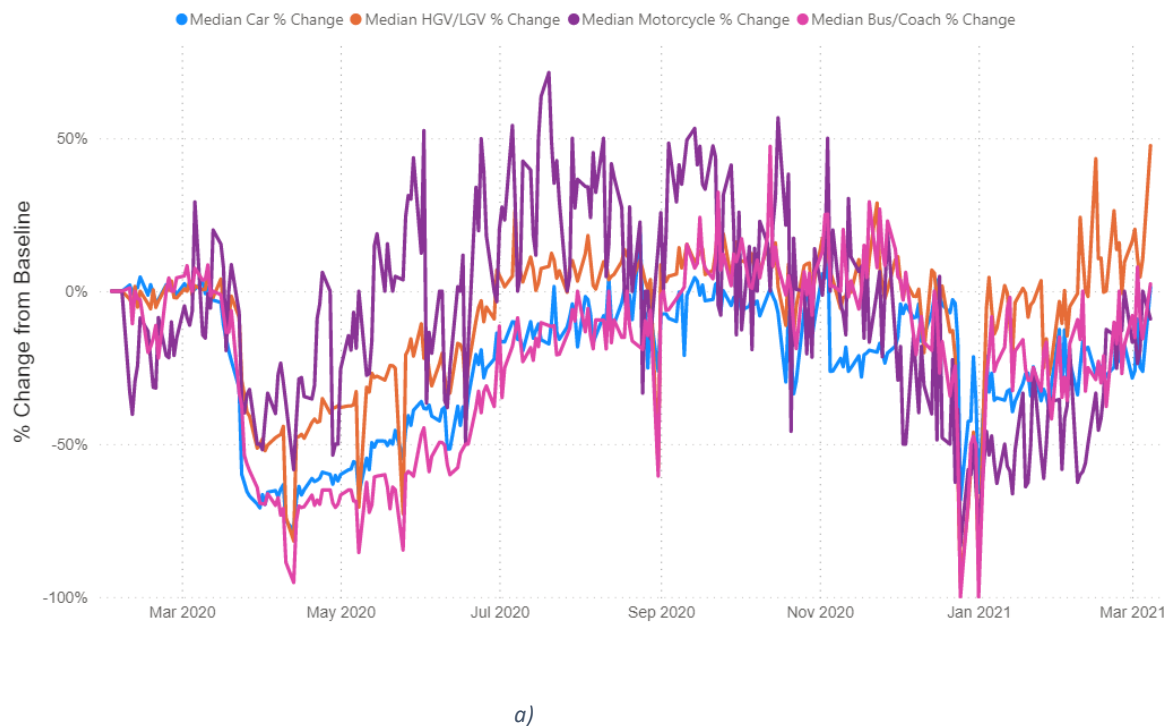


Figure 4.2: Weekend traffic volumes compared to pre-lockdown (10/02/20), lockdown 1 (06/04/20) and lockdown 2 (09/11/20) across all datasets. Note- this may not reflect the patterns observed in Figures 1 and 3 as the hourly average is calculated at sensor level, not Local Highway Authority (LHA) level.

Figure 5.1 – Overall weekday change in traffic flows by vehicle class



For the w/c 1st March, weekday car volumes were consistent during the week, varying between 28.5% below baseline levels on Monday 1st March and 23% below baseline on Wednesday 3rd March, as shown in Figure 5.1. b).

Weekday HGV/LGV volumes varied from 16.5% above baseline levels on Monday 1st February to 4.5% above baseline on Thursday 4th March, as shown in Figure 5.1. b).

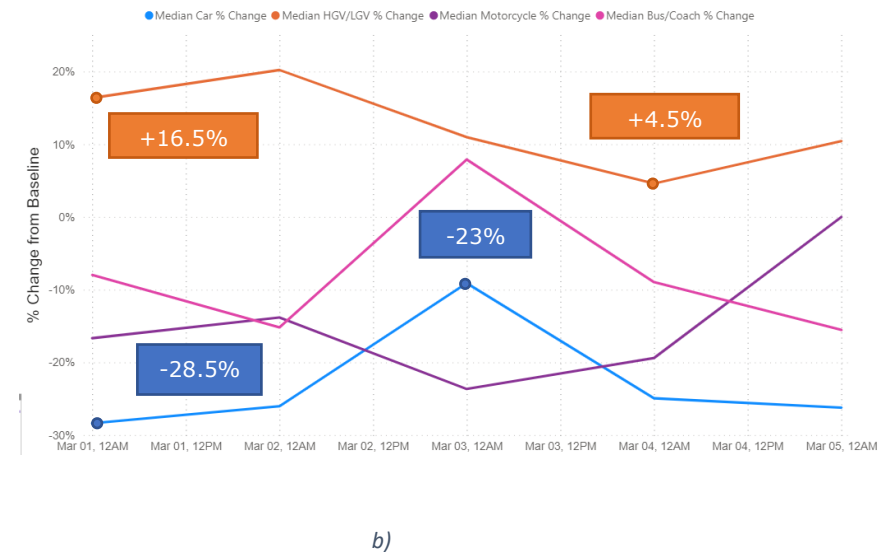
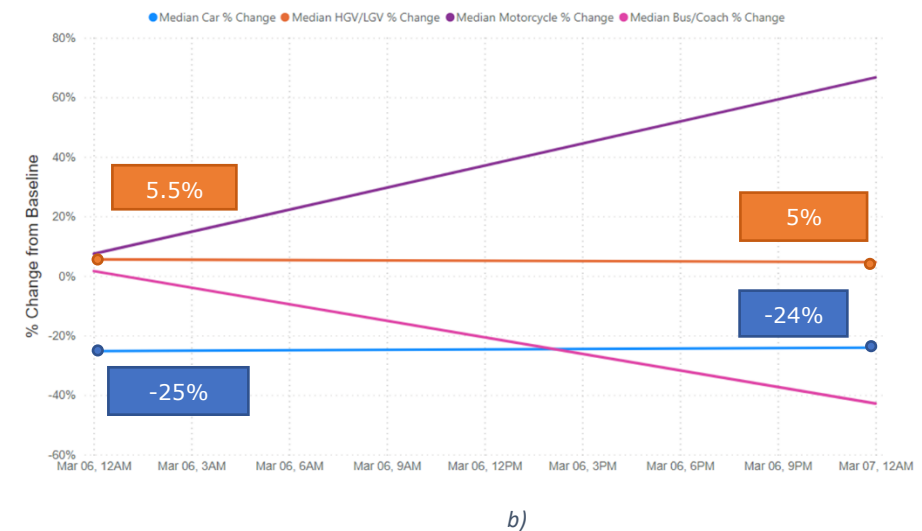
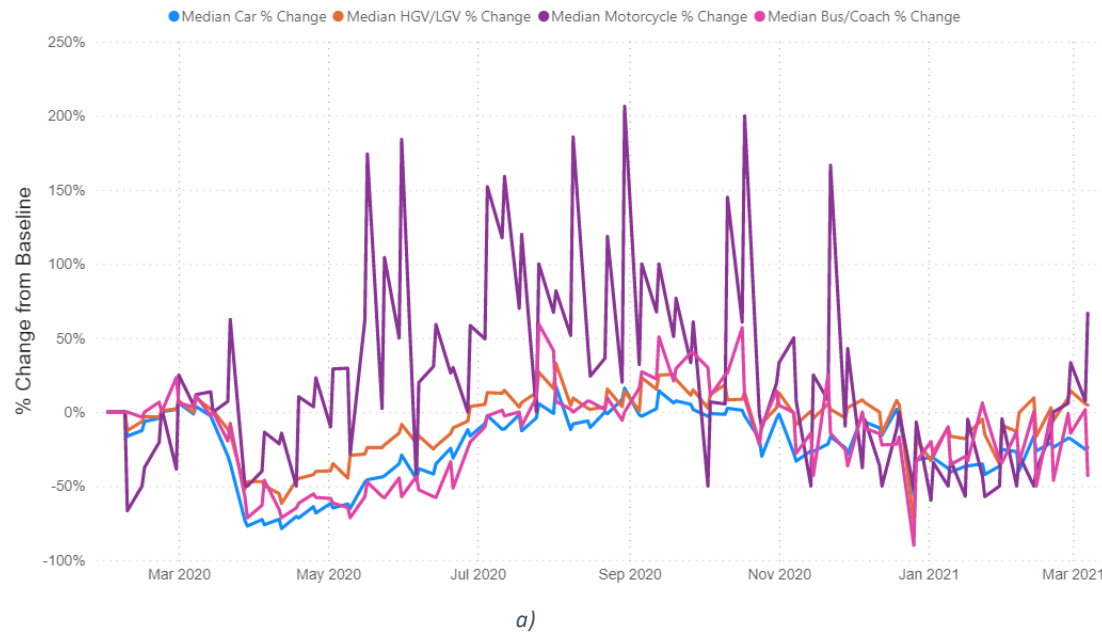


Figure 5.1: Change in average vehicle trips by vehicles class where available in the source dataset (note this data is measured at sensor level so sources with large numbers of sensors will have a greater contribution to the average) a) Yearly variation starting April 2020 b) Weekly variation starting on 15th February 2021

Figure 5.2 – Overall weekend change in traffic flows by vehicle class



Weekend car volumes were 25% below baseline levels on Saturday the 6th of March, as shown in Figure 5.2 b). They increased to 24% below baseline levels on Sunday the 7th of March. This is paired with an increase in median HGV/LGV traffic from 5.5% above the baseline on the Saturday to 5% above baseline on Sunday.

Figure 5.2: Change in average vehicle trips by vehicles class where available in the source dataset (note this data is measured at sensor level so sources with large numbers of sensors will have a greater contribution to the average) a) Yearly variation starting April 2020 b) Weekly variation starting 15th February 2021

Figure 6 – Map of focus areas in England

In this section of the report, we examine 5 local areas: Birmingham, Derbyshire, Hampshire, Leicestershire, Suffolk and York. They provide a good geographic spread of areas for comparison.

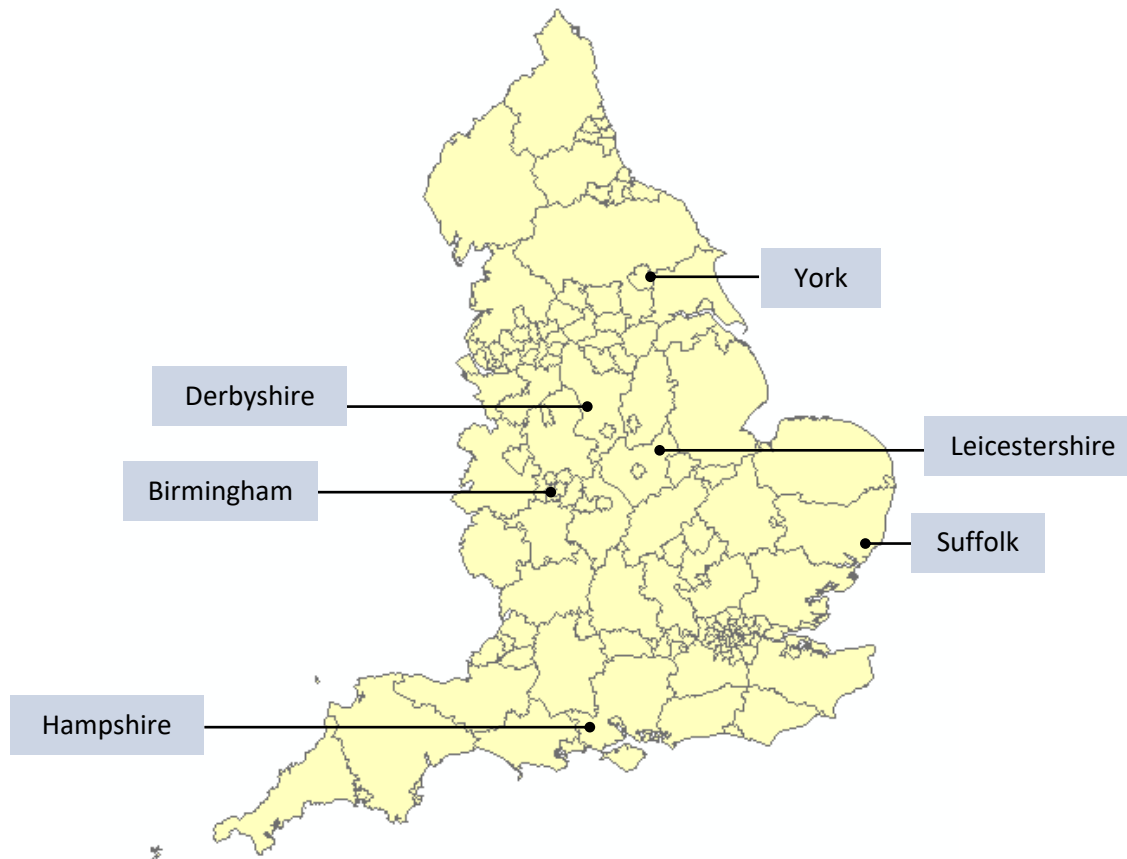


Figure 6: Data has been provided by:

- Birmingham City Council
- City of York Council
- Suffolk County Council
- Hampshire County Council
- Derbyshire County Council
- Leicestershire County Council (excludes city of Leicester)

<https://www.gov.uk/guidance/local-covid-alert-levels-what-you-need-to-know/>

Figure 7 – Weekday traffic volumes for a selection of local authorities

Comparing pre-lockdown (10/02/20), with lockdown 1 (06/04/20), lockdown 2 (09/11/20) and recent weeks

Week Starting ● 10/02/2020 ● 06/04/2020 ● 09/11/2020 ● 15/02/2021 ● 22/02/2021 ● 01/03/2021

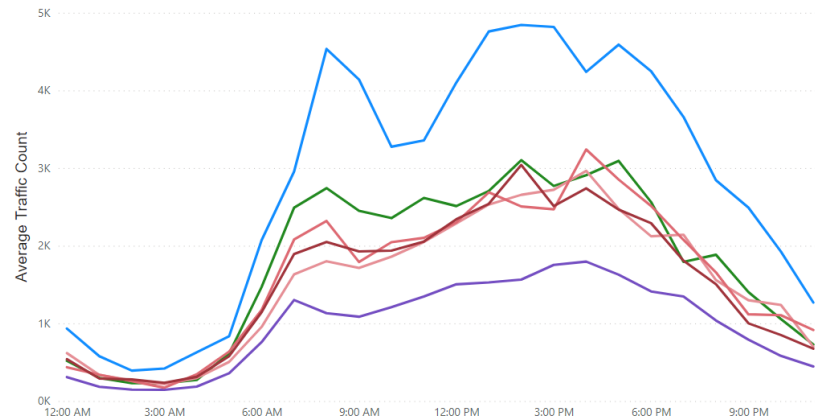


Figure 7a: Birmingham

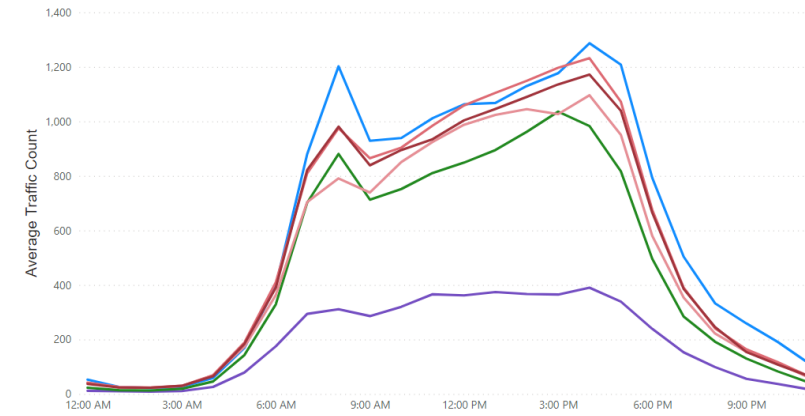


Figure 7b Derbyshire

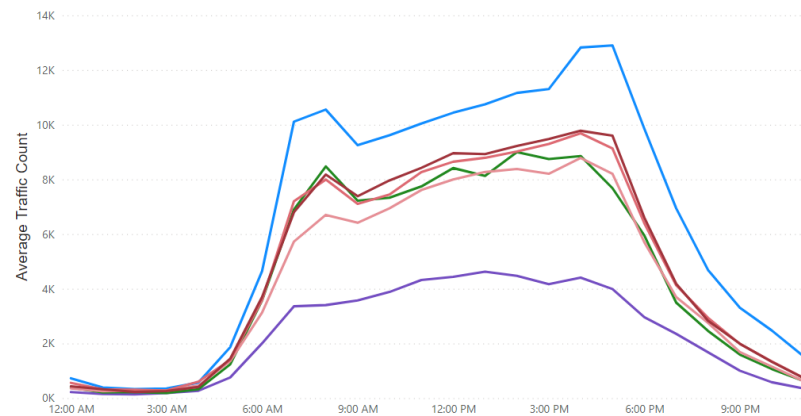


Figure 7c: Hampshire

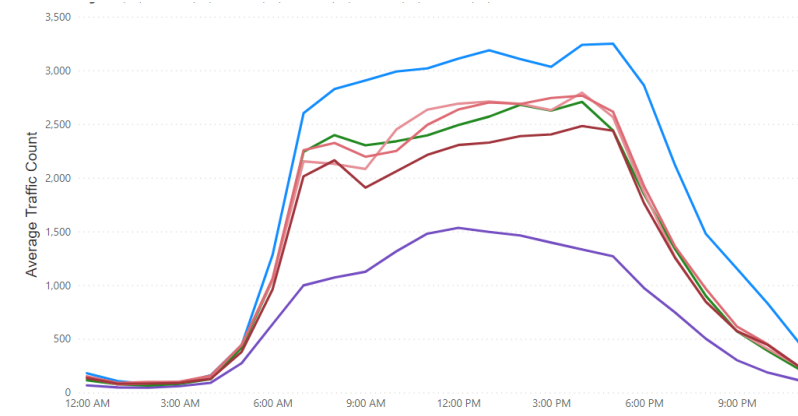


Figure 7d – Suffolk

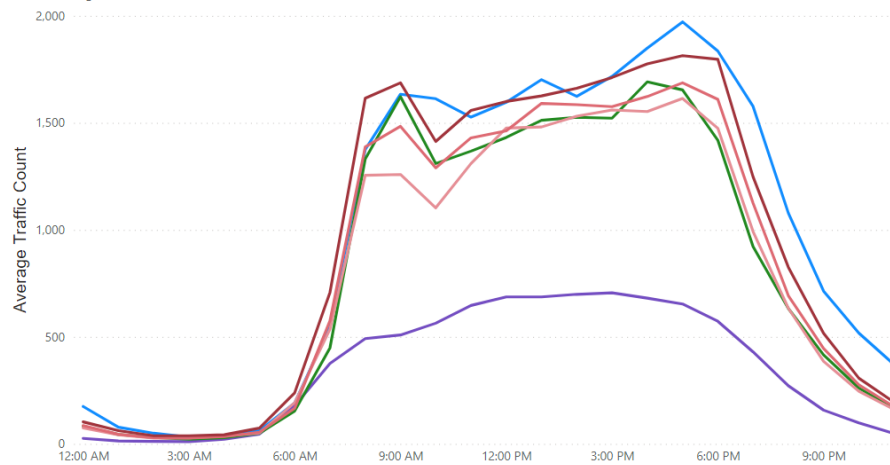


Figure 7e: City of York

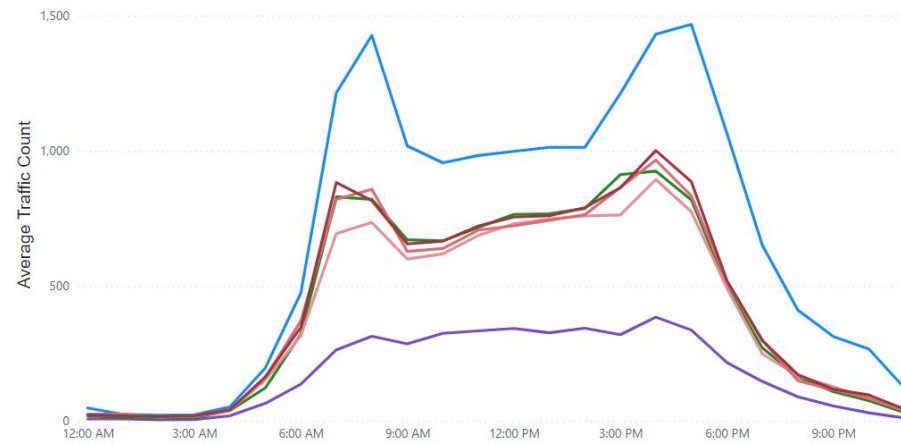


Figure 7f: Leicestershire (except Leicester City)

Week Starting ● 10/02/2020 ● 06/04/2020 ● 09/11/2020 ● 15/02/2021 ● 22/02/2021 ● 01/03/2021

Local Highway Authority analysis shows the differences between emerging traffic patterns across the country.

- In Birmingham (7a), AM peak traffic levels have been more attenuated on the w/c 1st of March, situated between those seen during the first and the second national lockdown.
- In Derbyshire (7b), the traffic levels are similar to the previous week. The AM peak is more pronounced compared to the PM peak.
- In Hampshire (7c), the AM peak has a trend similar to that seen during the second national lockdown. The levels closely follow those seen over the course of the previous week and are slightly above those seen during the second national lockdown.
- In Suffolk (7d), weekday traffic levels show a slight decrease compared to the previous week, slightly below the levels seen during the second national lockdown.
- In the City of York (7e), the traffic levels have increased compared to the previous week to levels that are close to the baseline. The AM peak is more pronounced compared to the first national lockdown.
- In Leicestershire (7f) weekday traffic levels have increased marginally compared to the previous week. The levels seen during both the AM and the PM peaks closely follow those seen during the second national lockdown.

Figure 8 – Overall average daily cycling change from baseline

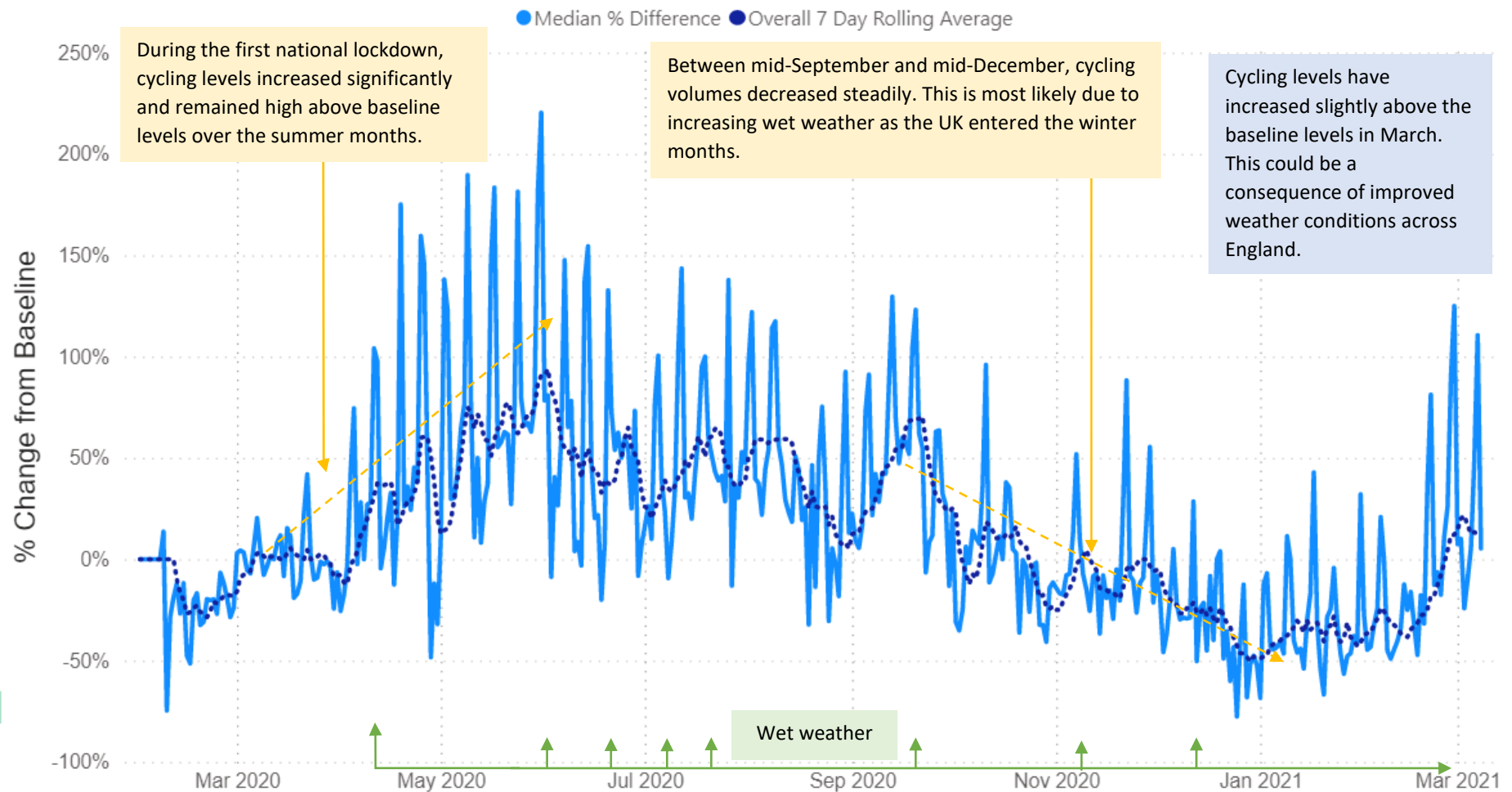


Figure 8: Change in average daily cycling volumes since 01st March (start of lockdown) across all sources compared to the baseline (the first week of February 2020)

Figure 9.1 – Overall weekday hourly cycling comparison by week

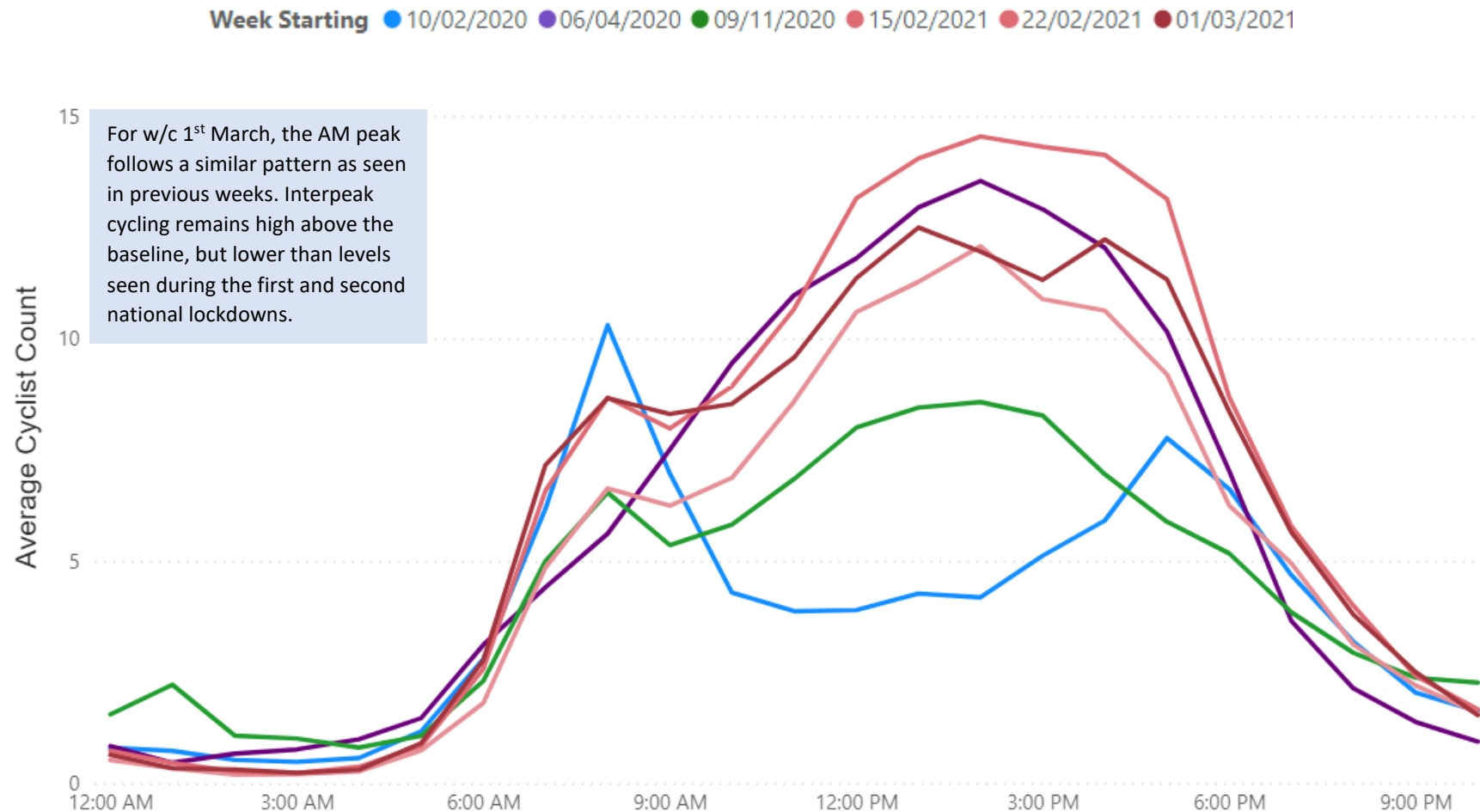


Figure 9.1: Change in average weekday (mean) hourly cycling volumes comparing pre-lockdown (10/02/20) with lockdown 1 (06/04/20), lockdown 2 (09/11/20), and the latest three weeks

Figure 9.2 – Overall weekend hourly cycling comparison by week

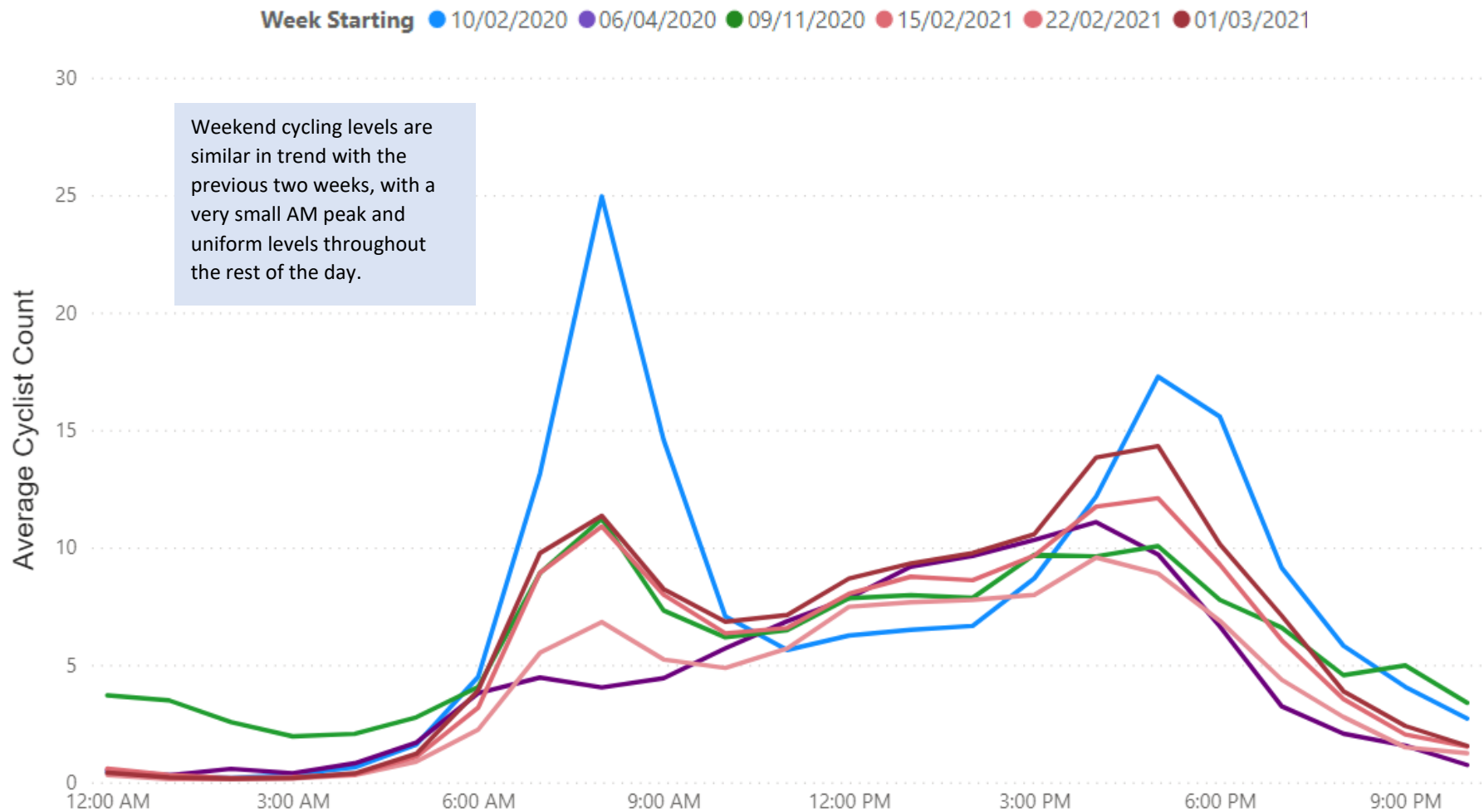


Figure 9.2: Change in average weekend (mean) hourly cycling volumes comparing pre-lockdown (10/02/20) with lockdown 1 (06/04/20), lockdown 2 (09/11/20), and the latest three weeks

Figure 10 – Comparing the median percentage change from the baseline for the first, second and third national lockdowns over time

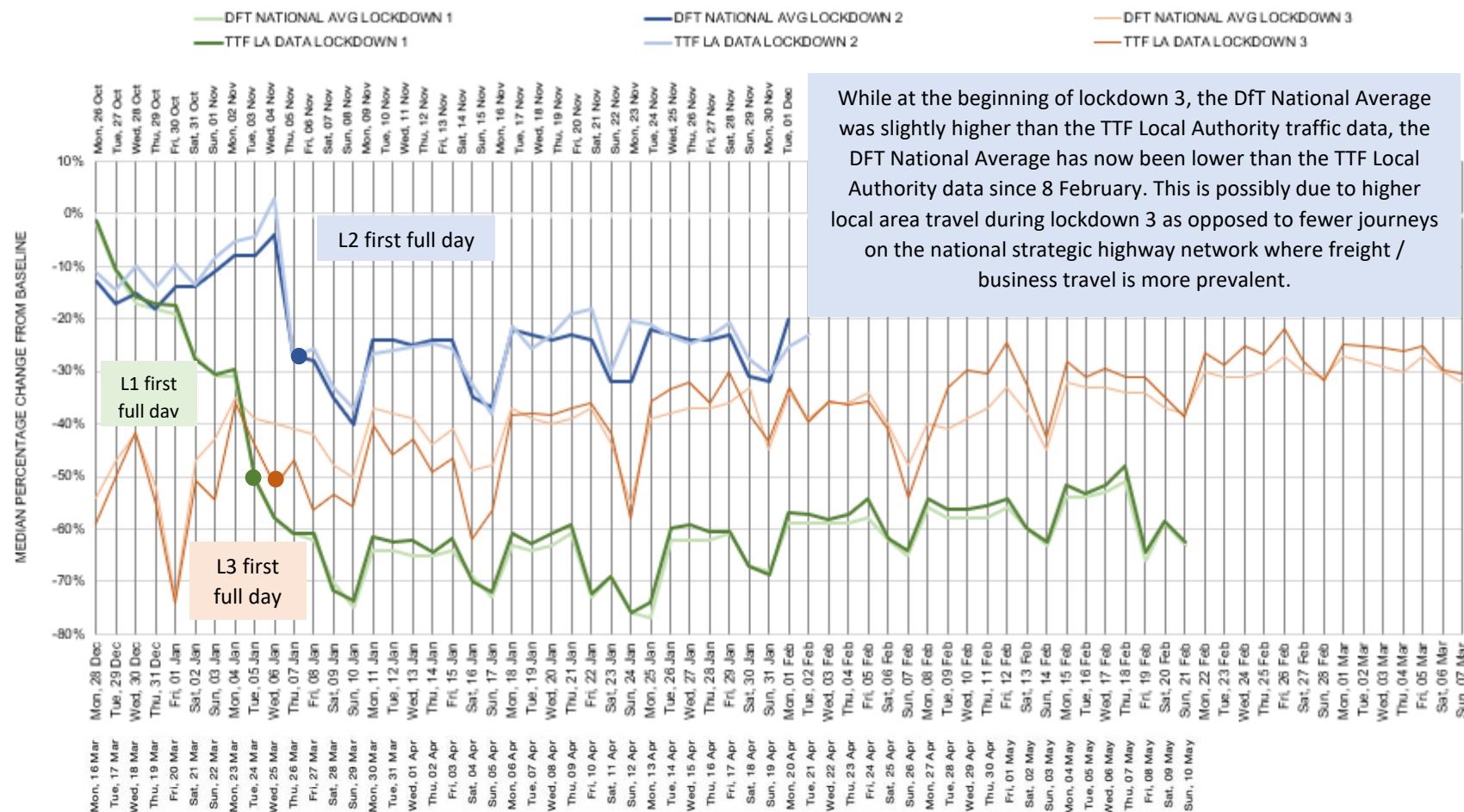


Figure 10: Comparing the average percentage change from the baseline for the first, second and third national lockdowns over time. [DfT data](#) is based on 275 automatic traffic counters around Great Britain, including the SRN, whereas LA data refers to local authority data collected by the TTF for this report.

Figure 11 – Comparing the average day per week median percentage change from the baseline for the first, second and third national lockdowns

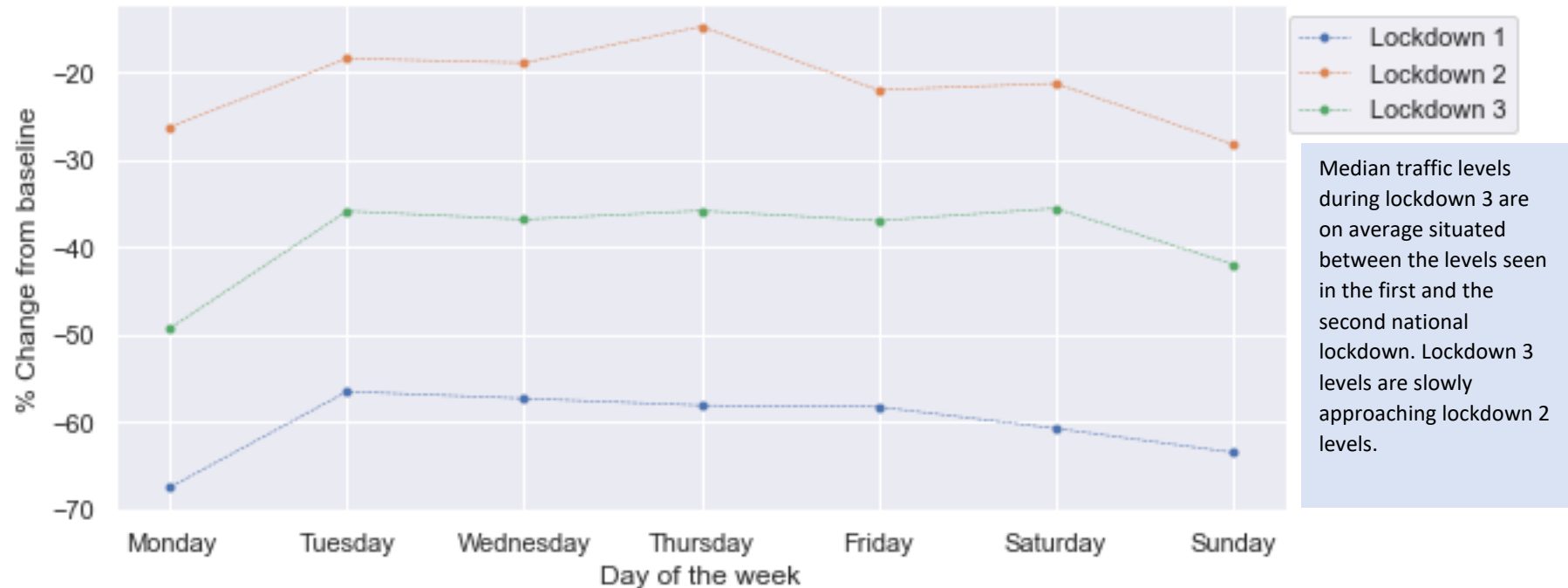


Figure 11: Comparing the average weekday median percentage change from the baseline for the first, second and third national lockdowns. It should be noted that at the time of writing, the third national lockdown was still ongoing and therefore only data between 05/01/21 and 24/01/21 has been included for lockdown 3.

Figure 12 – Comparing the average weekday traffic count by hour of the day for the first, second and third national lockdown

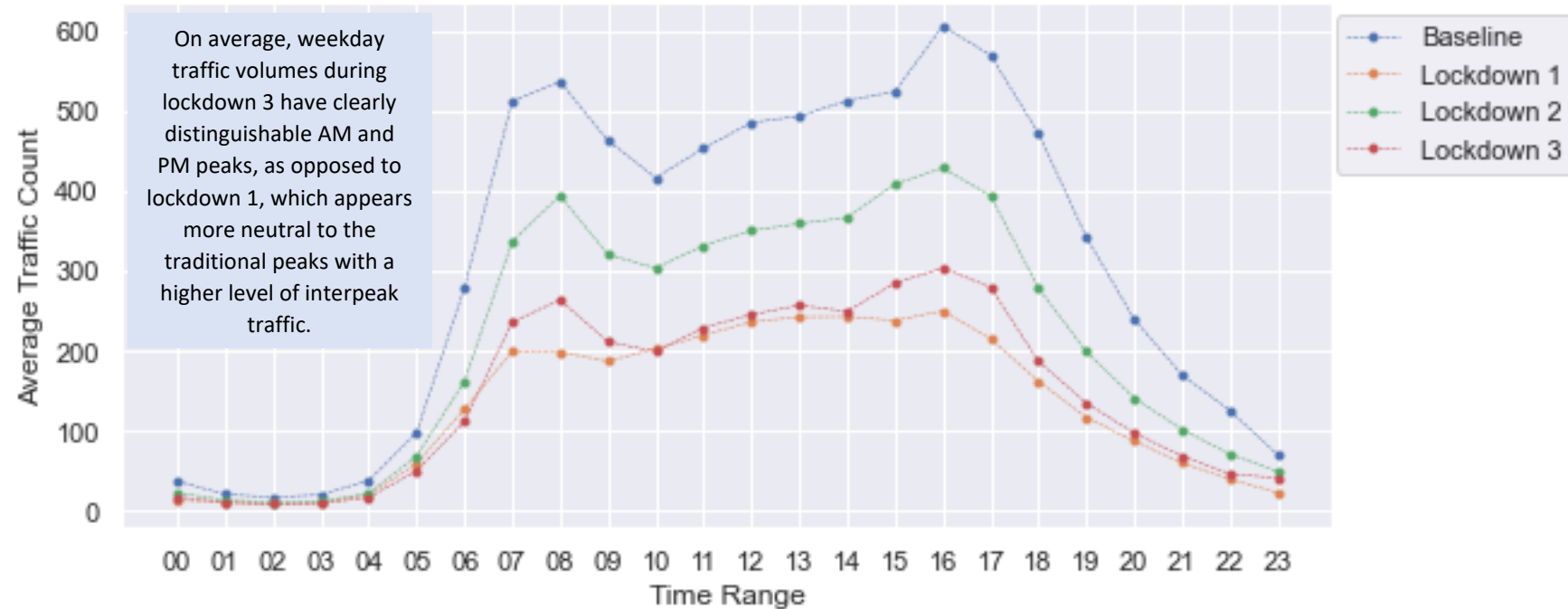


Figure 12: Comparing the average weekday traffic count by hour of the day for the first, second and third national lockdowns. It should be noted that at the time of writing, the third national lockdown was still ongoing and therefore only data between 05/01/21 and 31/01/21 has been included for lockdown 3. Furthermore, this graph should only be used as indicative of trend, rather than volumes, because total traffic counts are sensitive to the weighting of areas which may have more sensors than others.

Data Method

The following provides some detail behind how the data has been analysed:

- The baseline has been defined as the first week of February 2020 (1st February – 7th February) for the following reasons:
 - This is consistent with national reporting.
 - Not all data sources can provide baseline data from previous years.
 - The first week of February is considered a normal working week unaffected by poor weather and half term dates later in February.
- Each day of the week has its own baseline.
- Only those datasets for which data was available for the first week of February have been included in the baseline comparison outputs.
- Baseline comparisons at aggregated Local Highway Authority (LHA) level have only been calculated using traffic/cycling sensors that contributed to the baseline to reduce the impact of new sensors being added to data sources
- Average daily traffic volumes have been used to minimise the impact of individual sensors changing between active and inactive states.
- Averages have been calculated using the median (50th percentile) to reduce the impact of outliers (with the exception of Figures 10.1 & 10.2 which are a mean average)

Please note that each week not all datasets that contribute to our analysis are available when this report is produced. Therefore, as we add new datasets when they become available, enhance validation of those we've received and refine the underlying methodology, the overall values may change, however we expect the trends to remain the same.

COVID-19 Timeline

FEBRUARY 2020	
04/02/2020	China Advice – All UK citizens advised to leave China
MARCH 2020	
10/03/2020	Italy Air Travel – Majority of flights to and from Italy suspended
12/03/2020	7-day Isolation – 7-day self-isolation for individuals presenting symptoms
16/03/2020	Social Distancing – Households to self-isolate for 14-days if symptoms present. Work from home where possible. Avoid pubs, clubs, theatres etc. 12-week isolation for elderly and vulnerable (commencing end of week)
17/03/2020	UK Foreign Travel 1 – Foreign Secretary advises against all non-essential travel overseas
21/03/2020	Schools Closed – Schools to remain closed until further notice (exception for key workers)
23/03/2020	UK Lockdown – Guidance provided for essential travel only. All non-essential businesses required to close. Public events banned
23/03/2020	UK Foreign Travel 2 – Foreign Secretary advises all British travellers to return to the UK
28/03/2020	PM's Letter – Prime Minister issues guidance letter to all UK households
APRIL 2020	
16/04/2020	NPCC Guidance – NPCC issues guidance clarifying reasonable excuses for leaving home
MAY 2020	
10/05/2020	Those who cannot work from home are encouraged to return to work. Avoid public transport where possible and instead walk or cycle.
11/05/2020	Relaxation Document – The UK government publishes a 50-page document setting out further details of the phases for lifting the lockdown restrictions.
13/05/2020	Individuals can undertake unlimited exercise (and can travel to do so). Individuals can meet someone from another household providing it is on a one-to-one basis. All garden centres are allowed to open. House moves and viewings are now permitted.
18/05/2020	Rail Operators – Rail operators begin running more train services.
JUNE 2020	
01/06/2020	Schools re-open for some pupils. Groups of up to six people from different households allowed to meet outside
15/06/2020	All non-essential retailers and zoos in England reopened
19/06/2020	UK's COVID-19 Alert Level is lowered from Level 4 (severe risk, high transmission) to Level 3 (substantial risk, general circulation)

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JULY 2020	
04/07/2020	Further relaxation of social distancing and reopening of pubs, restaurants, hotels and hairdressers on 4 th July
25/07/2020	Gyms and other indoor services reopen in England
AUGUST 2020	
21/08/2020	Driving tests are approved to go ahead
SEPTEMBER 2020	
01/09/2020	Large number of schools across England re-open for the autumn term.
08/09/2020	All schools across England have re-opened
14/09/2020	Rule of six comes into effect to tackle coronavirus, where any social gatherings of more than six people will be against the law
OCTOBER 2020	
14/10/2020	Tiered level restrictions were implemented across different local areas in England. Liverpool placed on highest alert (Tier 3).
NOVEMBER 2020	
05/11/2020	England goes into second National Lockdown
DECEMBER 2020	
02/12/2020	Second national lockdown in England ends and three-tiered local restriction system is re-implemented.
20/12/2020	London and South East England enter Tier 4 restrictions.
JANUARY 2021	
05/01/2021	Third national lockdown in England commences.

Contact us

All authorities are encouraged to share best practice for inclusion in this report. Authorities not yet contributing but who still have data to share are encouraged to do so.

Please contact info@ttf.uk.net

Thank you to...

All local authorities and their consultancies and contractors who have shared data with the Transport Technology Forum to enable this report to be collated, and those in the wider industry who also provided data directly. The TTF, which is sponsored by the Department for Transport and Innovate UK is grateful to ITS (UK) and its members for their swift support in recruiting Local Authorities to participate.

The 'Understanding Travel Patterns during COVID-19' project has been awarded the **ITS UK - Project of the Year Award 2020** which would not have been possible without all of your support. The judges were impressed that this project demonstrated how the industry can come together, and underlined how the TTF can coordinate a collaborative front with Local Authorities and commercial data suppliers to collect, process and visualise over 16 million travel movements during the lockdown period and beyond.

This report provides regularly updated intelligence and findings from the Transport Technology Forum COVID-19 Local Authority Travel Data Project. This project is collecting and analysing traffic and travel data from local highway authorities across England to present a national picture of travel patterns and behaviour, and local authority responses to the COVID-19 crisis.