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COVID-19: Scotland's transport and travel trends during the first year of the pandemic

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Key findings

This report highlights the key trends in transport and travel in Scotland for the first year of the coronavirus (COVID-19) pandemic. It reports on changes in travel across all main modes of transport (walking, cycling, concessionary bus, rail, road, ferry and aviation) between 9 March 2020 and 7 March 2021.

This period covers Scotland's first lockdown designed to reduce COVID-19 transmission and Scotland's subsequent emergence via the three phases of easing of COVID-19 restrictions originally set out in [Coronavirus \(COVID-19\): Scotland's route map](#). To combat a second wave of COVID-19 transmission, the Scottish Government increased household and social restrictions in the autumn. This was followed by the introduction of a [five level framework](#) in November, with travel restrictions varying by local authority. On 5 January, mainland Scotland entered a [second lockdown](#), with marginally different restrictions from the first lockdown, and remained in lockdown on 7 March.

Throughout this year-long period, a number of activities were proscribed. Non-essential travel was not permitted for the duration of both lockdowns. Use of public transport for non-essential purposes was discouraged even when restrictions were eased, so that physical distancing could be maintained.

- **Walking** levels throughout the year were consistently lower than in June 2019. This can partly be explained by fewer people walking to work and educational establishments, and the location of active travel counters potentially downplaying levels of recreational walking seen during the pandemic.
- **Cycling activity** was higher than in June 2019 between early April and late July and for most of August and September. Increased cycling can be explained by a number of factors including people having more leisure time and feeling safer due to reduced road traffic, and better weather conditions.
- Within the first week of the first lockdown, **commercial bus patronage** had declined to around 15 per cent of its pre-pandemic level. By the fifth week of the first lockdown, only 40 per cent of pre-pandemic services were running. However, by September, service levels had increased to 90 per cent of pre-pandemic levels to allow for sufficient physical distancing. These levels were largely maintained during the second lockdown in which patronage was almost double its first lockdown level.
- **Concessionary bus travel** declined rapidly at the start of the pandemic, particularly among people over 70, averaging just 13 per cent of its equivalent 2019 level in April. It recovered to average over 50 per cent of its equivalent 2019 level in September as the publicly perceived risk of COVID-19 transmission fell and a wider range of leisure activities became available. It fell to average around 25 per cent of equivalent 2020 level in the first month of the second lockdown.
- The first lockdown saw a sharp decline in **rail patronage**, with passenger numbers falling to eight per cent of levels seen on equivalent weekdays in 2019, and three per cent at weekends. Patronage rose to a high of a third of the previous year's levels in late August before falling back below 10 per cent of early 2020 levels in January.

- There was a sharp decline in **ferry use** early in the first lockdown with CalMac and Northlink passenger numbers both falling to less than four per cent of equivalent 2019 levels, and remaining below five per cent until easing began. However, as tourism reopened, the number of cars carried increased rapidly with CalMac carrying nearly as many cars as in 2019 and Northlink just below 80 per cent of the previous year's levels. Ferries were carrying more than twice as many passengers early in the second lockdown as they were early in the first lockdown.
- **Flight numbers** fell rapidly at the start of the first lockdown to around 10 per cent of their equivalent 2019 level, but with only two per cent of 2019 passenger numbers being carried. By August, flights had increased to 40 per cent of their equivalent 2019 level with over 20 per cent of 2019 passenger numbers despite the requirement to quarantine upon returning from many popular tourist destinations. Flights fell to 20 per cent of their equivalent 2020 level in February with less than five per cent of 2020 passenger numbers being carried.
- **Car traffic** on trunk roads dropped to below a quarter of its 2019 equivalent level in April, but had recovered to 85 per cent of its 2019 equivalent level by September. It fell to around 55 per cent of its 2020 equivalent level during the second lockdown. Car traffic on tourist routes fell to a lower minimum level during the first lockdown, but recovered more than on non-tourist routes once tourism reopened and remained slightly more resilient during the second lockdown.
- In the first lockdown, the number of **Heavy Goods Vehicles (HGVs)** on Scottish roads did not fall as much as cars because HGVs were more likely to be involved in essential activity. HGV traffic returned to close to normal levels in August and has been broadly unchanged since then.
- Partly as a result of changing work patterns, the **morning peak** for road traffic became less pronounced during the first lockdown and subsequent easing with heavier traffic in early afternoon than at the morning peak. However, the morning peak has become more pronounced during the second lockdown.
- Glasgow **Subway** patronage followed a similar pattern to national rail patronage. **Tram** travel in Edinburgh rebounded more slowly than either rail or subway use and remained markedly lower than both during the second lockdown.
- Local authorities moving into and out of **level 4 restrictions** appear to have experienced changes in travel levels, but there is no clear indication that movement between levels 1, 2 and 3 had a significant impact on travel levels.
- Both **lockdowns** featured an upward drift in travel after their first month. Travel by every mode except active travel was considerably more popular during the second lockdown than the first. This was likely due to differences in restrictions, workplace adaptations and public attitudes.

I: Introduction

This report has been compiled using data collated for a trends report produced by Transport Scotland on a weekly basis to inform the Scottish Government's COVID-19 response and assess its attendant economic impact. Unless stated otherwise, the data covers the period from 9 March 2020 to 7 March 2021. An earlier report covered the first half of this period.

Section 2 outlines the timing of measures directed by the Scottish Government which have affected transport use during the COVID-19 pandemic. These are also outlined in greater detail in Annex A. Section 3 briefly describes the methodology used with associated detail including data sources found in Annex B. Section 4 compares the impact of COVID-19 and related restrictions on common travel modes over the 52 week period noted above and section 5 forms the main body of the report, taking a more detailed look at usage trends for individual modes over the same period.

Section 6 considers changes in peak travel times since COVID-19 restrictions have affected daily travel patterns. Sub-national trends are the focus of section 7 which covers subway and tram travel, cross border road traffic and regionalised mobility.

Section 8 investigates key events. It considers the impact of local restrictions in Aberdeen, the return of pupils to school, household restrictions in the West of Scotland, wider restrictions in the Central Belt, the movement of local authorities between levels of restrictions introduced in November and restrictions over the atypical festive period. It also compares the respective impact of the first and second lockdowns on travel. The final section briefly looks at relevant results from a survey of public attitudes to the use of transport in Scotland.

2: Timeline of key dates

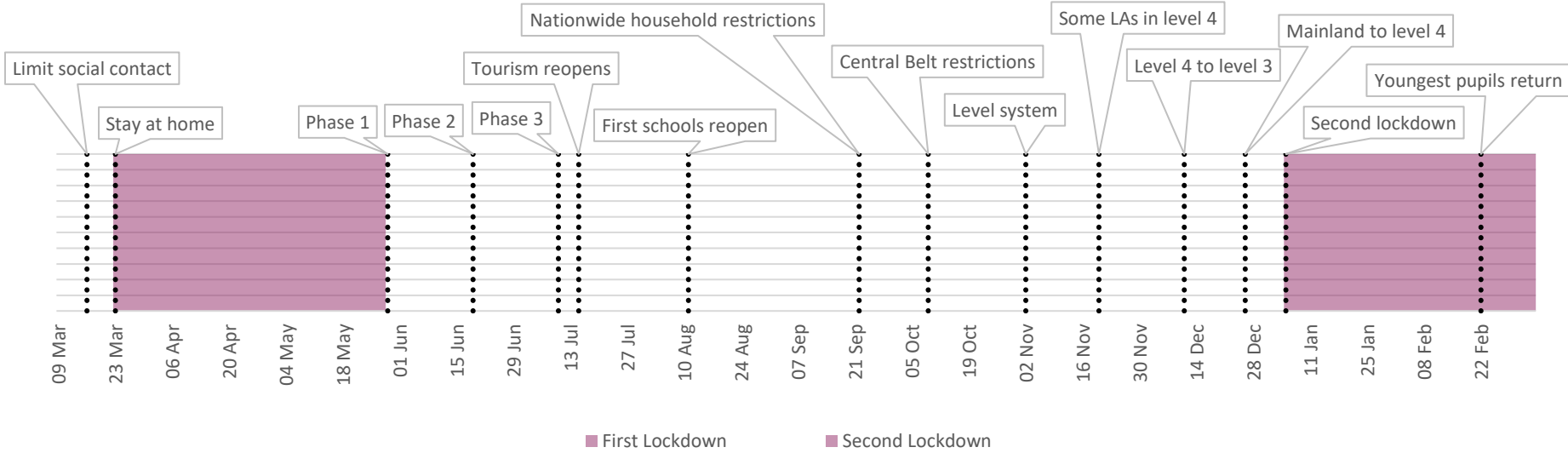


Figure 1 Timeline

A more detailed overview of key dates is given in Annex A.

3: Methodology and caveats

Where available, trends data is collected for each mode of transport on a daily basis and compared with the equivalent day in 2019-20, such that a day with an identical level of travel to its counterpart the year before would score 100. This resulting index provides a baseline which highlights how travel patterns have diverged from pre-pandemic expectations.

In order to construct such indices it is necessary to have access to data from the same sources going back to March 2019. Patchy data availability for many active travel counters in 2019 rendered such an approach impractical for measuring levels of walking and cycling. Instead an average of the daily levels of walking and cycling between 3 and 30 June 2019 was used as a baseline for each of the days in the six month period. This had the additional advantage of eliminating short term weather effects from the 2019 data. However, this approach means there is a greater likelihood that seasonal effects will have impacted the active travel indices than the other indices presented in this report.

Similarly, commercial bus travel is indexed to the equivalent day of the week beginning 2 March 2020, shortly before the pandemic started to have a significant impact on travel choices, because of a lack of comparable 2019 data.

Where stated, indices are presented using equivalent weekly averages. The equivalent weekly average for a given day is the average of its daily index and those of the three days both before and after it. This smooths trend lines, reducing the volatility associated with factors such as weather or in-week effects (where a mode is more or less popular on particular days of the week).

Ferry data is presented on a weekly basis and indexed to the equivalent week in 2019-20 since Transport Scotland does not have access to suitable daily data. Similarly, air passenger data is presented on a monthly basis.

Although the methodology is largely similar to that used in the previous six month report, there are differences in the sets of counters used for active travel and road traffic largely driven by data availability. Also equivalent days have been altered to counter the effect of public holidays falling on different weeks or on different days of the week from the previous year. These equivalent day alterations are detailed in Annex C.

4: Summary of national trends

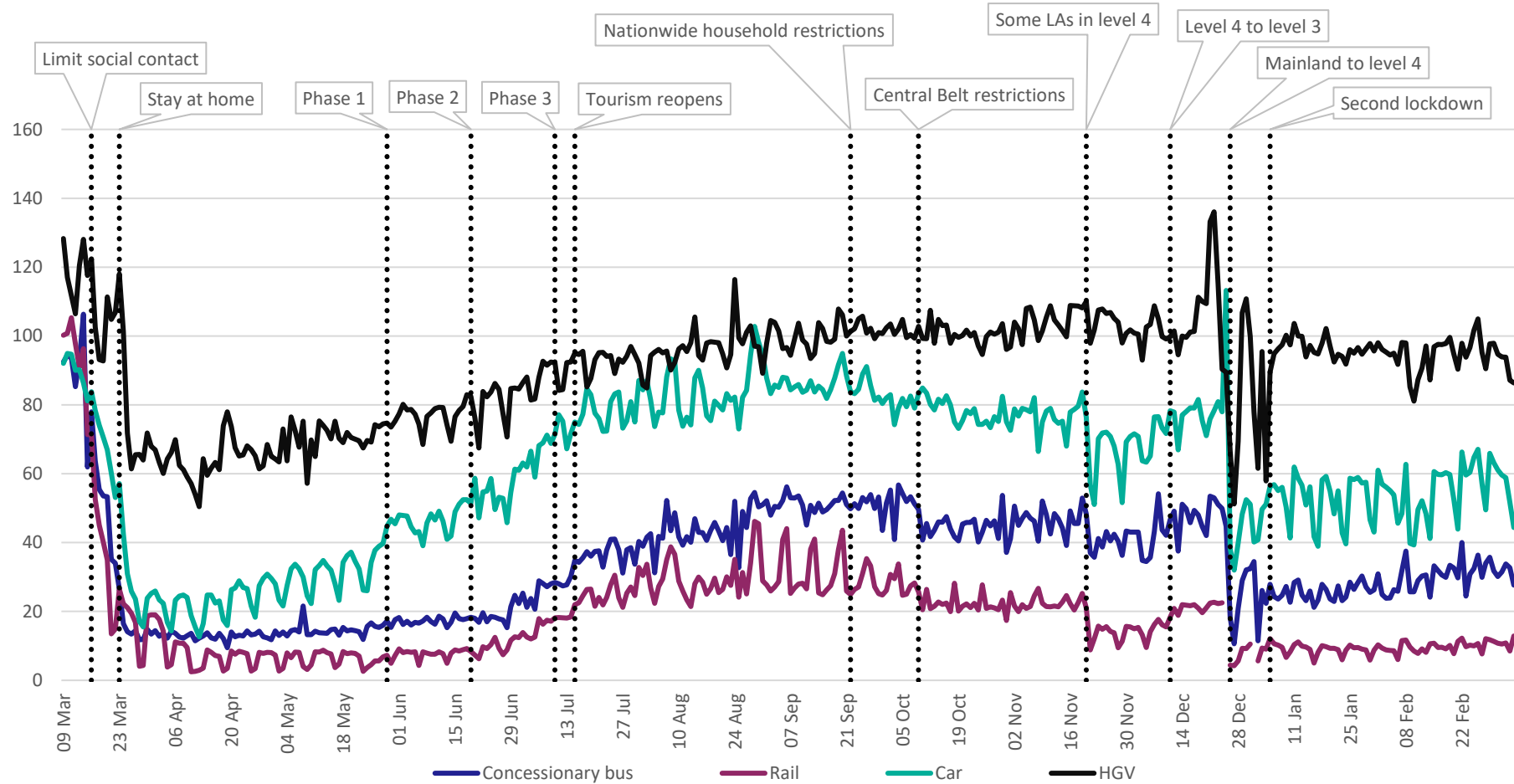


Figure 2 Daily trends by mode (equivalent day in 2019-20 = 100)

Figure 2 shows trends in daily car and HGV use, and in rail and concessionary bus patronage compared to equivalent days in 2019. As noted in the previous section, it has not been possible to construct directly comparable indices for transport modes where Transport Scotland does not have access to equivalent 2019 data. Air passenger data does not appear in figure 2 or figure 3 as Transport Scotland only has access to monthly data.

The comparison in figure 2 shows that the decline in HGV traffic at the outset of the first lockdown was more modest than the decline in other modes of travel. Public transport patronage fell earlier than car use because both the fear of COVID-19 transmission and advice to limit social contact were more applicable to public transport in advance of the stay at home order. It also fell further, was slower to rebound and was proportionally somewhat more affected by the second lockdown for the same reasons.

All four modes display patterns of weekly fluctuations which change considerably over the timespan under consideration. These are smoothed using weekly averaging in figure 3. This chart also includes ferry passenger traffic where data is collected on a weekly basis. Ferry patronage fell to an even lower level than bus and rail travel because of strict restrictions on who was permitted to travel on ferries during the first lockdown period. However, indexed to equivalent 2019 patronage, it rose much more rapidly than bus and rail patronage in July and August as restrictions on leisure activities eased and Scotland reopened for tourism. During the second lockdown, in contrast to the first, ferry patronage was nearer to its 2020 equivalent level than rail or concessionary bus travel. This difference between lockdowns likely stems from a considerable difference in restrictions on ferry use.

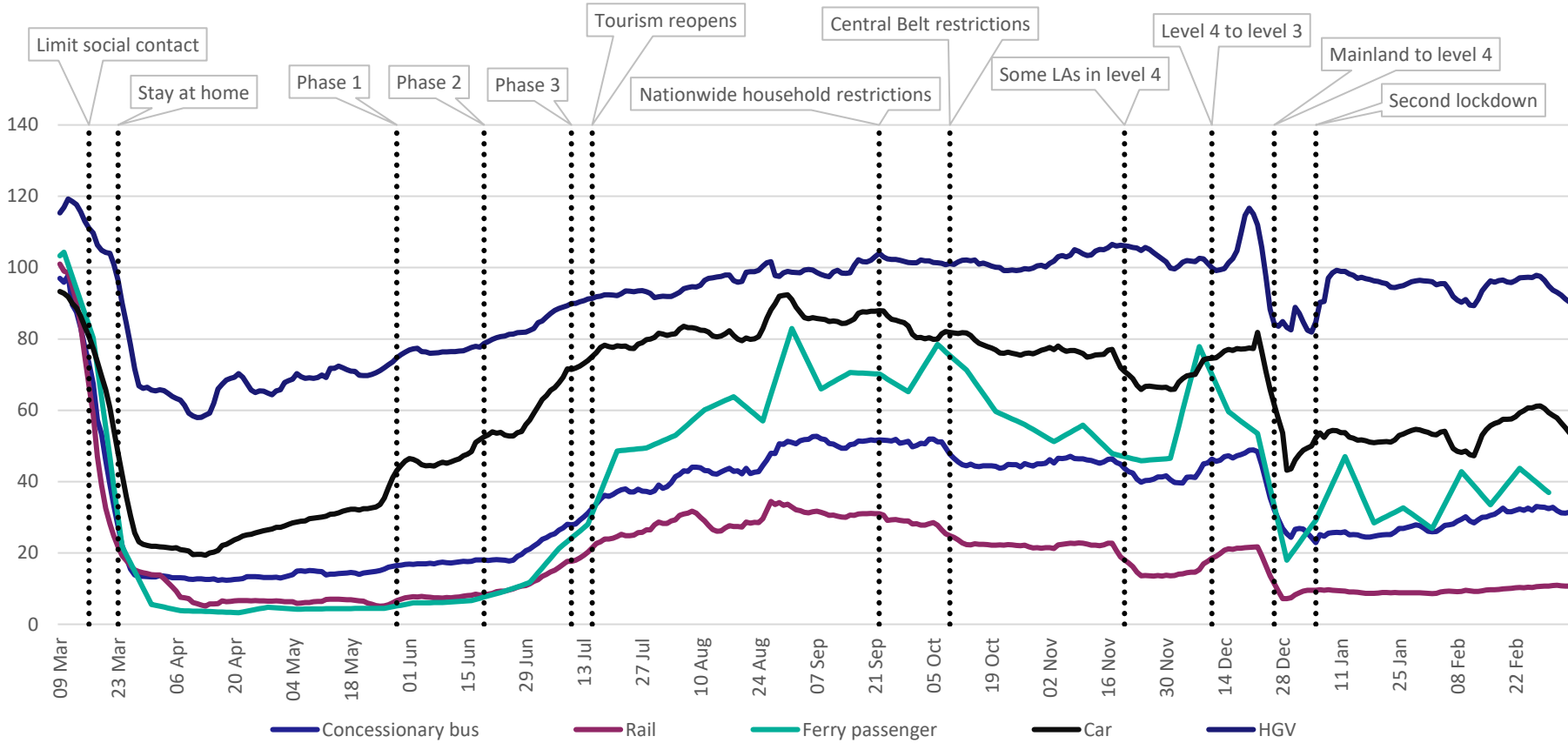


Figure 3 Seven day average trends by mode (equivalent weekly average in 2019-20 = 100)

Figure 15 shows air passenger travel in similar terms to those used in figure 3, albeit monthly rather than weekly. Air patronage was lower relative to the previous year than use of all five modes of transport shown in figure 3 for every month from April onwards.

5: National trends by mode

Walking

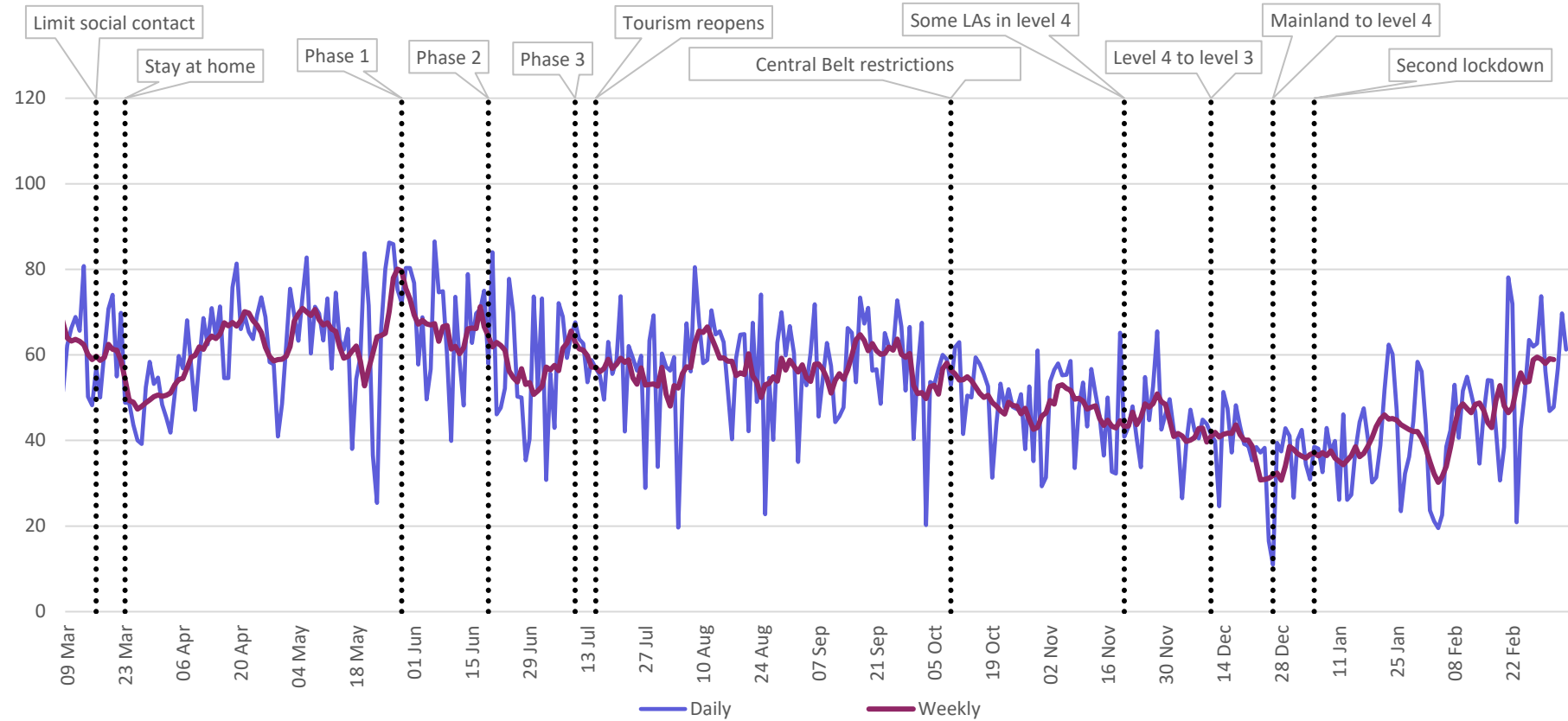


Figure 4 Walking index (June 2019 = 100)

Active travel data is collected by counters monitoring pedestrian and cycling traffic across Scotland. However, the number of active travel counters is limited, with variability between counters due to a number of factors outlined below. The set of counters used has changed from that used in the previous six monthly report as some of the counters used for that report lacked reliable comparable data from the second half of 2019-20 or have malfunctioned since September.

As noted in section 3, walking and cycling activity are both indexed against their respective June 2019 average levels rather than their levels on the equivalent day in 2019.

Weekly averaging smooths daily fluctuations in walking levels due to changing weather, but long spells of dry or wet weather will still have affected weekly averages.

Outlying days of particularly low walking activity clearly coincide with inclement weather. For example, the daily index fell to 25 per cent of its baseline level on 23 May 2020 when Scotland was struck by the remnants of Tropical Storm Arthur, dropped to 20 per cent of its baseline level when persistent rain affected the Central Belt on 4 August and fell to 23 per cent of its baseline level when Storm Francis struck Scotland on 25 August as shown in figure 4.

Some seasonal impact on walking numbers may be anticipated. Since the index is based on June 2019 activity, it is plausible that a seasonal effect is partly responsible for the difference in walking between June 2019 and both the early and most recent stages of the pandemic. However, the index remaining consistently below the activity level of June 2019 suggests behavioural changes including an increase in working from home during the pandemic must also have had a considerable impact on the propensity to walk.

Walking fell sharply in the early stages of the pandemic with the weekly index hitting a low on 26 March. It rose during the strictest lockdown period, perhaps as many people became accustomed to exercising outdoors daily as permitted by the lockdown rules. On 28 May, the day before lockdown easing began, the weekly index reached 80 per cent of its baseline level, its highest all year. A reduction in walking to attend work and educational facilities may be partly responsible for the index remaining below its 2019 benchmark.

The weekly index fell sharply during phase one and the first half of phase two of easing, declining to 51 per cent of its baseline level at the end of June. This may have been driven by the increasing availability of other leisure options beyond the home. It recovered slightly before the beginning of phase three of easing and then remained largely unchanged until late September.

In the remainder of the first year of the pandemic, changes appear to have been driven primarily by weather conditions and available daylight rather than coronavirus restrictions. The weekly index fell to lows of 31 per cent of the baseline level during the

Christmas period and 30 per cent during a cold spell in early February. By early March 2021, walking had risen to a similar level as in early March 2020 before the first lockdown.

Averages by day of the week vary relatively little suggesting that volatility in the daily figures during the pandemic is largely caused by changes in weather rather than a greater tendency for people to walk on particular days of the week, although the daily index averages two points higher at weekends than on weekdays across the year.

Cycling

In stark contrast to walking, levels of cycling were higher than during the June 2019 baseline period for much of the first six months of the pandemic. Weekly levels of cycling stayed above June 2019 levels between 7 April and 25 July as shown in figure 5.

The only extended period when weekly cycling levels were lower than in June 2019 was before 7 April when the weather was generally less conducive to cycling than it had been in June 2019. Hence it appears reasonable to conclude that cycling increased as a result of behavioural changes due to the pandemic.

Weekly cycling levels peaked on 28 May, when they were slightly more than double the June 2019 average, almost coinciding with the peak in walking. Weekly cycling levels fell during the first two phases of easing, again possibly reflecting a widening variety of leisure opportunities.

In the period from mid-July to late September when COVID-19 restrictions were loosest, cycling was around or slightly above June 2019 levels. Cycling activity then declined, mirroring the decrease in popularity of walking, as colder weather and shorter days had an impact. The rapid rise from weekly index lows of 26 per cent of June 2019 levels on 1 January and 20 per cent on 11 February to over 90 per cent in the first week of March, somewhat higher the pre-pandemic restricted level of activity found in early March 2020, again suggests that weather rather than changes in restrictions was responsible for the winter lows. If COVID-19 restrictions were having any impact on cycling activity in March 2021, then they appear to have been increasing it.

The data shows little variation in activity on different days of the week across the year. However, in the shorter period from early May to mid-July, the popularity of cycling during weekdays peaked even more clearly than the popularity of cycling at weekends. This may be due to daylight having a greater impact on opportunities to cycle on weekdays – when many more people work – than at the weekend. Also it may be because more people were working from home or furloughed between early May and early

July than in later months and because there were fewer alternative weekend leisure options than after restrictions were further eased.

As with walking, cycling is clearly affected by daily weather fluctuations with the three weather events mentioned above also having a deleterious impact on cycling numbers. There is a strong correlation ($r = 0.87$) between the daily walking and cycling indices over the period under examination.

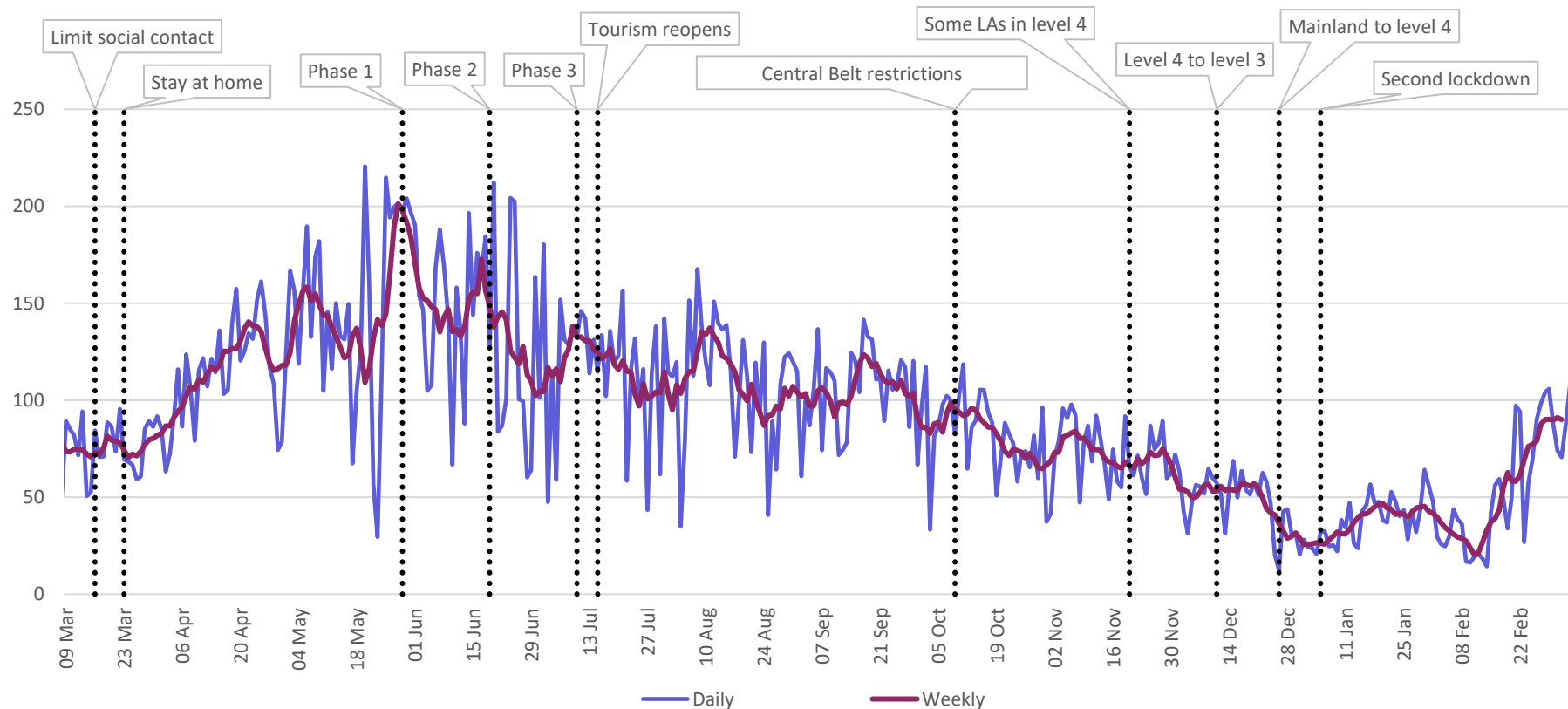


Figure 5 Cycling index (June 2019 = 100)

Bus

Commercial bus travel

Figure 6 tracks both bus service levels and passenger demand. Here each day is indexed to the equivalent day in the week beginning 2 March 2020 as noted in section 3. Ticketer provides data from most major bus operators in Scotland, but not Stagecoach and Lothian Buses, so their services are not taken into account.

In the week before the spring 2020 lockdown, bus demand fell precipitously as advice to limit social contact and avoid public transport as much as possible was rapidly adopted. Demand was already down to a third of its normal level as Scotland entered lockdown and within a week had settled at around 15 per cent of its normal level.

In contrast, the number of services in operation did not decline until the day Scotland entered lockdown. Within five weeks, they had settled at around 40 per cent of the pre-pandemic level from Monday to Saturday. The weekly peaks in service during the lockdown reflect a higher relative level of service on Sundays. Sunday service levels settled at 53 per cent of their pre-pandemic level. This difference may be because there was less scope for reducing the less frequent Sunday timetable while maintaining a service which would meet the needs of key workers.

The number of passengers stayed below 20 per cent of its early March level until easing began, with the sole exception of the VE Day bank holiday. The rise in the number of passengers per service before easing began was caused largely by a reduction in services rather than an increase in demand.

The first phase of easing saw a very modest increase in both demand and services. There was a step change in bus provision on 28 June with the number of services in operation increasing to 68 per cent of its early March level, while the number of passengers steadily increased to reach 30 per cent of its early March level by the start of phase three.

After tourism reopened in phase three, the passenger index peaked each weekend, suggesting the growth in use was primarily associated with leisure activities rather than commuting. However, there was very little weekly variation in the service index after the late June step change, so passenger loads on buses rose to nearer their early March level at weekends.

There was a second step change in service provision on 3 August with the number of services in operation reaching 86 per cent of the pre-pandemic level. This rose to around 90 per cent of that level in September, with bus use only rising above 60 per cent of its pre-pandemic level at weekends.

While service levels varied little before Christmas, the passenger index was more volatile. The introduction of greater restrictions on social activities in October appears to have reduced bus use by around a fifth over a week, but after a month this effect had largely dissipated and the introduction of the levels system appeared to have no effect on passenger numbers. However, moving local authorities accounting for more than two-fifths of Scotland's population from level 3 to level 4 on 20 November appears to have had an even greater immediate impact with bus use falling by around a third across the country as a whole. Within a month the passenger index had returned to its summer high level, with those local authorities having returned to level 3 from 11 December.

Although the index is missing data on Christmas Day, Boxing Day and the New Year holidays, it is clear that all mainland local authorities moving to level 4 from 26 December compounded by the country re-entering lockdown on 5 January approximately halved bus use. The passenger index fell from nearly 60 per cent of its pre-pandemic level before Christmas to an average of 27 per cent in January, although this was almost double the April average of 14 per cent at the height of the first lockdown. Passenger numbers began to increase again from mid-February despite the continuing lockdown.

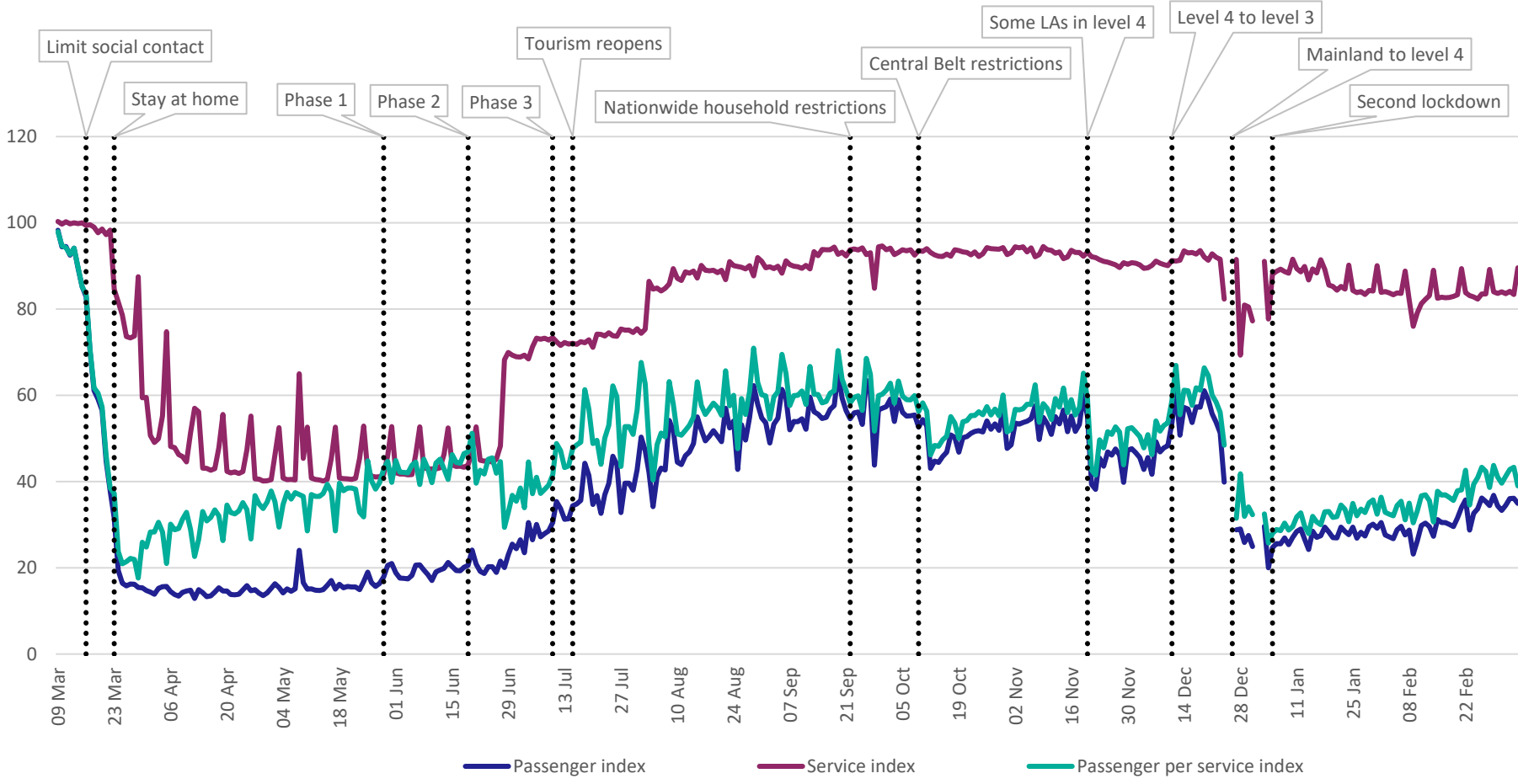


Figure 6 Bus indices (equivalent day in week beginning 2 Mar 2020 = 100)

Concessionary bus travel

Scottish residents who are either over 60 or have a disability can obtain a National Entitlement Card to access free bus travel in Scotland. Their concessionary bus use is indexed to the equivalent day in 2019-20 in figure 7 below.

The concessionary bus travel trajectory shown in figure 7 is remarkably similar to that for fare paying passengers outlined in the previous section, with a rapid decline in concessionary bus travel at the onset of the first lockdown. This settled below 15 per cent of its 2019 baseline level shortly after the start of the lockdown. There was only a minor increase in concessionary bus travel before phase two of easing.

Both the step change in bus services mentioned in the previous section and the advent of phase three seem to have led to more significant increases in concessionary bus travel. Concessionary bus travel rose to above 50 per cent of its 2019 baseline for most of September, the highest level since before the first lockdown began.

Unsurprisingly bus travel among older cohorts dropped more precipitously than for younger concessionary users, with the over 70 index falling to around half the level of the 60-64 index for the strictest period of lockdown and remaining lower than the 60-64 index since easing began. Bus travel in September, the month with the highest concessionary passenger numbers since the first lockdown, averaged 48 per cent of the 2019 baseline for those over 70, whereas bus travel among those aged 60-64 averaged 54 per cent of its baseline.

This greater reduction in use by older consumers presumably reflects both the greater risk associated with contracting COVID-19 as people age and a greater likelihood of people in older age groups being advised to shield due to underlying health conditions.

Concessionary bus travel fell following the introduction of greater restrictions on social activities in early October. As with commercial bus travel, the introduction of the levels system had little impact on concessionary bus travel, but the move to level 4 restrictions for multiple local authorities reduced concessionary bus use, with the index falling to around 40 per cent of the 2019 baseline before increasing again three weeks later when those authorities returned to level 3.

Placing all authorities in level 4 after Christmas and subsequently announcing a second lockdown roughly halved concessionary bus travel, with the index falling to an average of 25 per cent of the 2020 baseline level in January, still around twice its level during the first lockdown. It then began to rise steadily in February despite the continuing lockdown. This late winter increase in concessionary bus travel was less pronounced than for bus travel in general which suggests that it was not primarily driven by first vaccinees feeling more secure about travelling by public transport given that concessionary travellers were much more likely to have been vaccinated. However, growth in concessionary travel among 60 to 64 year olds was slightly less

pronounced than in those 65 and over between early January and the first week of March, by which point around 40 per cent of the first cohort had received their first vaccine dose compared to in excess of 95 per cent of those 65 or over according to Public Health Scotland's [COVID-19 Daily Dashboard](#).

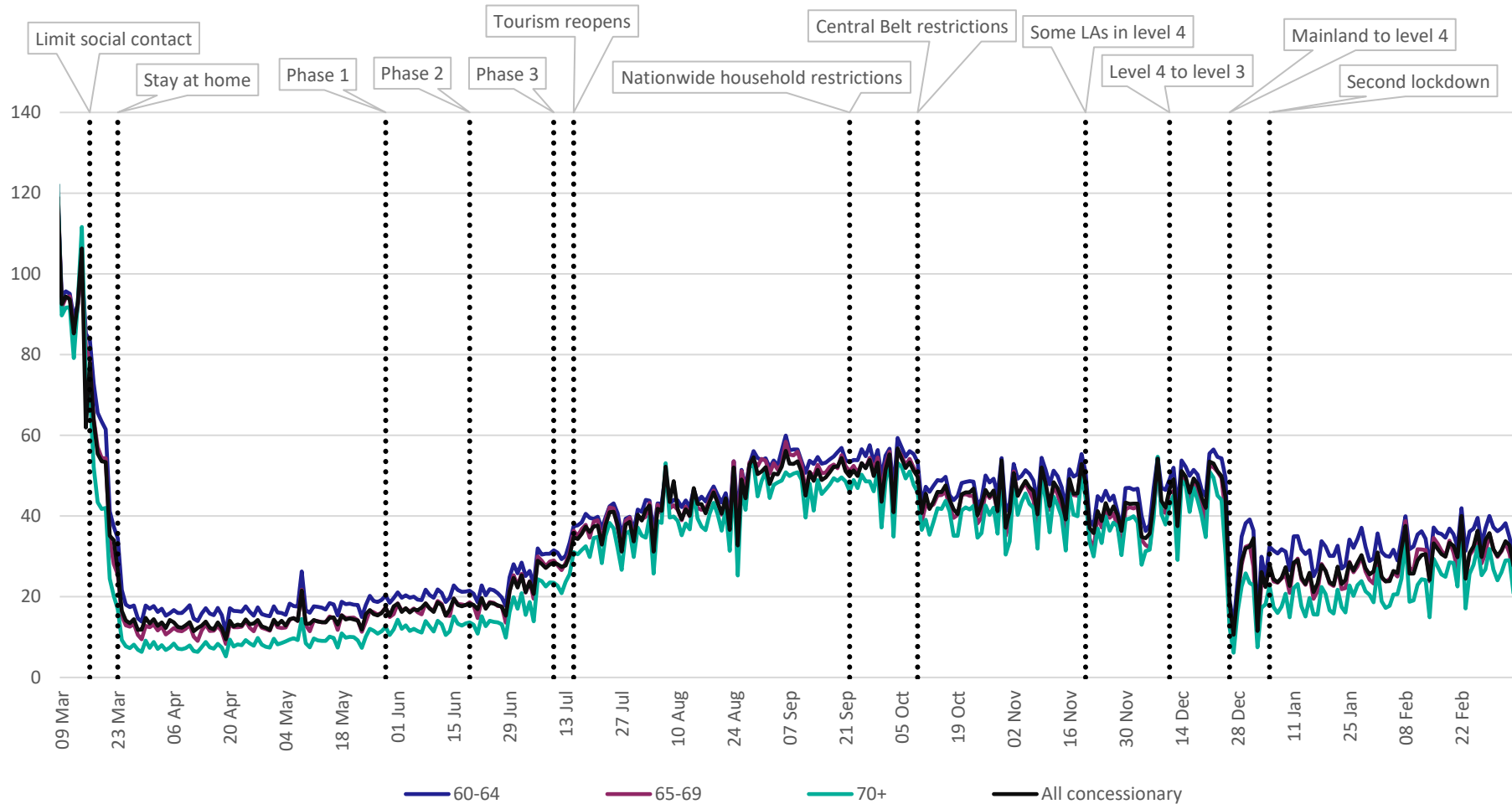


Figure 7 Concessionary bus trips (equivalent day in 2019-20 = 100)

Rail

Rail patronage showed a more marked decline with the advent of lockdown than bus travel. Journeys fell to around eight per cent of the level seen on equivalent weekdays in 2019 and around three per cent of 2019 levels during weekends as shown in figure 8. Patronage began to increase in earnest in phase two of the restriction easing process, with passenger numbers rising to above 20 per cent of their 2019 levels early in phase three.

After tourist businesses were allowed to reopen, the index started to peak at over 40 per cent of 2019 levels during weekends, following a similar pattern to the commercial bus passenger index. It is unclear whether increased tourism was intrinsic to this rise or whether other leisure pursuits newly available in phase three of easing were largely responsible.

The index fell after the introduction of greater social restrictions in a similar fashion to the bus passenger indices outlined above and was similarly unaffected by the introduction of the levels system. Unlike for bus, there was no discernible recovery in the rail index in late October or early November. The rail passenger index did recover in the period after level 4 restrictions were lifted in the Central Belt, but unlike the bus passenger indices it did not return to its summer highs in the pre-Christmas rush.

In the first month of the second lockdown the rail passenger index fell to an average of nine per cent of its 2020 level. This was higher than during the first lockdown, but below half of the level of all of the bus passenger indices.

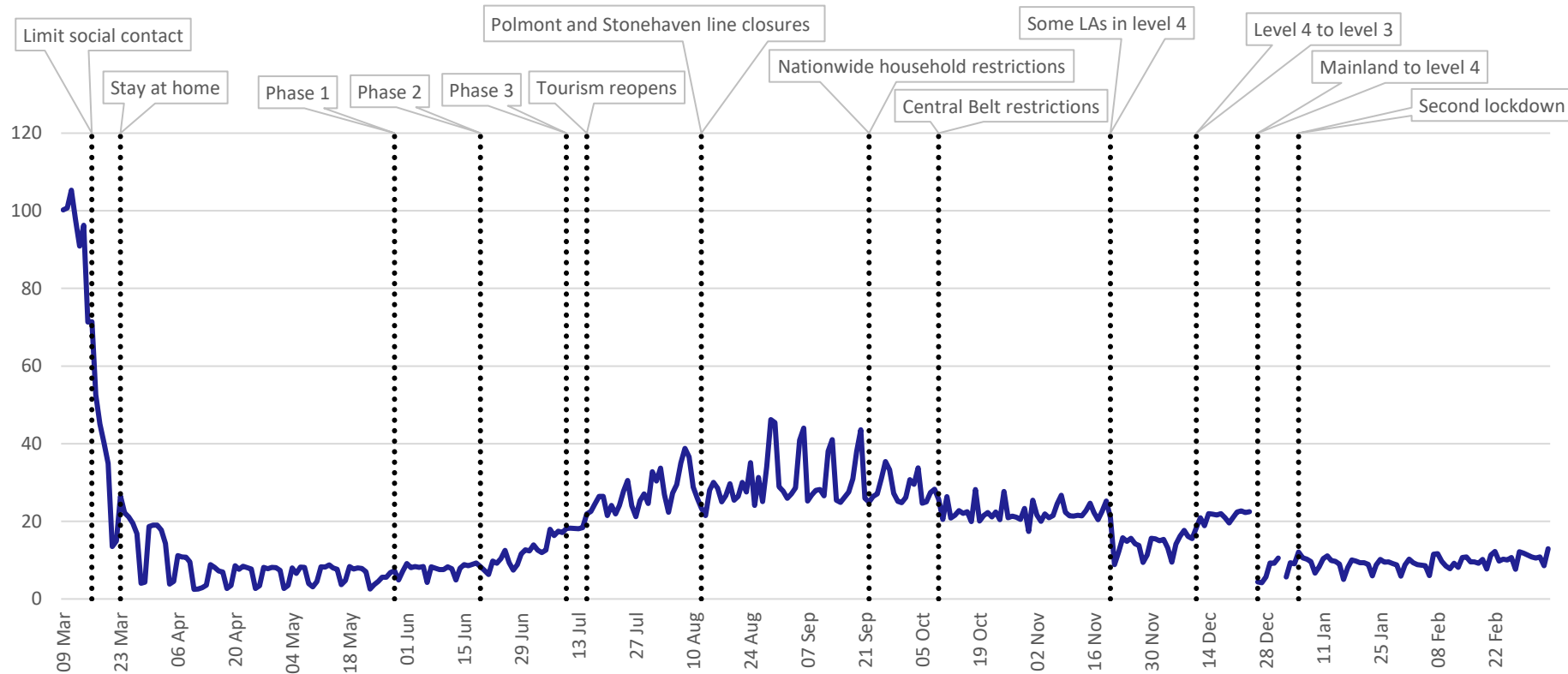


Figure 8 Scotrail daily passenger index (equivalent day in 2019-20 = 100)

Figure 9 below smooths fluctuations in the daily passenger index shown in figure 8 by comparing patronage with that of 2019-20 on a weekly basis. Varying service provision is shown alongside weekly patronage to help give an idea of how full trains were on average compared to in 2019-20. The derived patronage per service index should only be considered a rough guide to passenger spacing since the type of rolling stock and number of carriages will have changed for some services.

It suggests that physical distancing on busier services was becoming increasingly difficult as passenger numbers rose from 10 per cent of comparable 2019 levels in the week ending 28 June to 30 per cent in the week ending 9 August. However, a big

increase in the number of train services operating from 60 per cent to 90 per cent of the pre-pandemic baseline due to the introduction of a new timetable on 3 August stemmed the rise in passengers per service.

The increase in the patronage index slowed in August although this was partly because of line closures due to the tragic derailment near Stonehaven and flooding damage to the Edinburgh-Glasgow via Falkirk line near Polmont. The impact of these incidents on the patronage per service index renders it temporarily less representative of the passenger experience on unaffected lines and particularly on alternative lines between Glasgow and Edinburgh.

Although there were reductions in service levels in December and again in early February, these were outweighed by the decrease in the patronage index due to the tightening of restrictions in the autumn of 2020 and the subsequent lockdown. Thus, in early March the patronage per service index was at well below half its early August level, suggesting that physical distancing was less problematic.

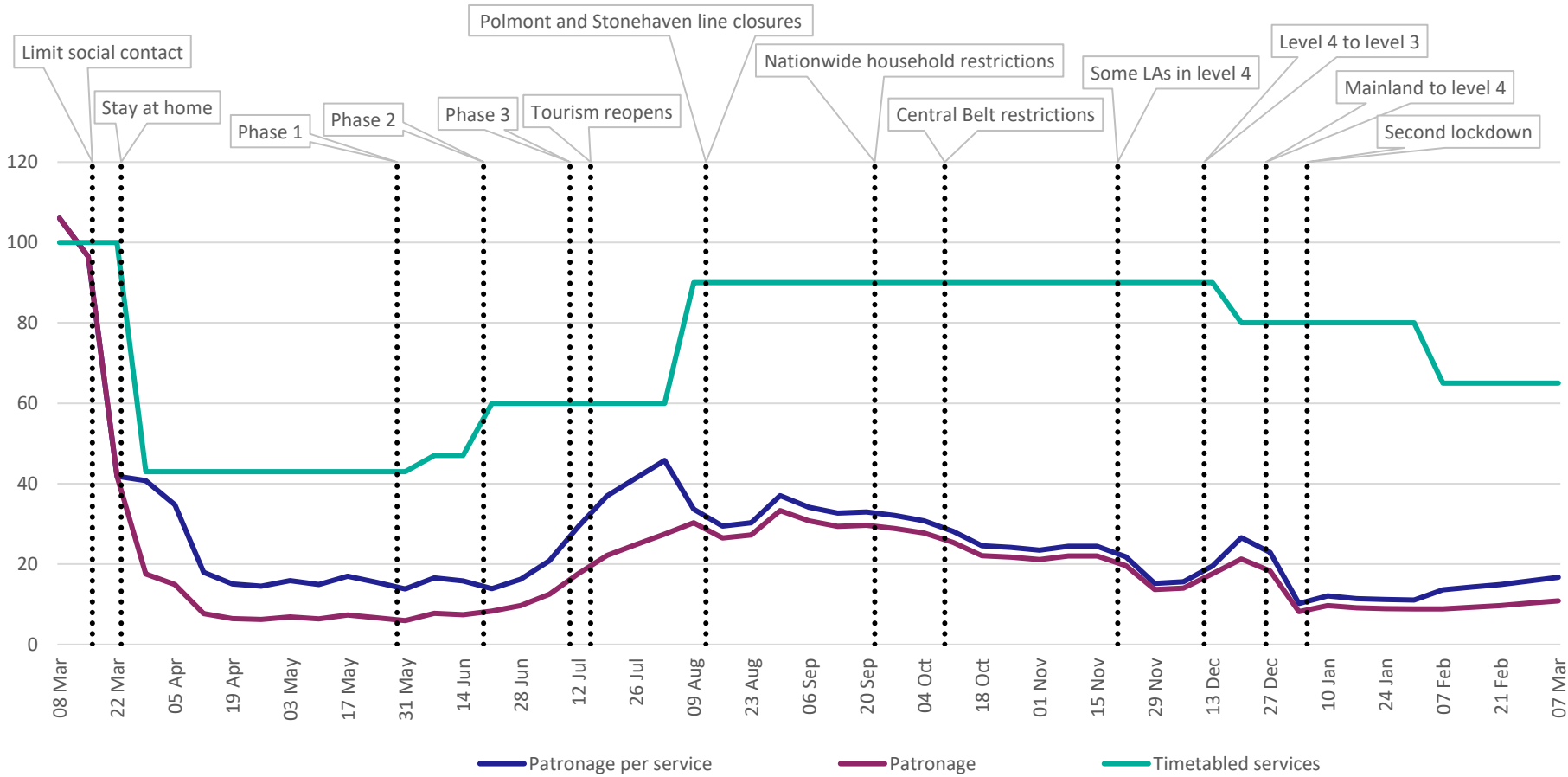


Figure 9 Scotrail weekly patronage and timetabled service (patronage: equivalent week in 2019-20 = 100; services: pre-pandemic timetable = 100)

Ferry

Ferry data presented below covers CalMac and NorthLink services only. Figure 10 shows the number of passengers travelling on ferries per week indexed to the equivalent week in 2019-20.

Passenger numbers on both CalMac and NorthLink services fell to below four per cent of their respective 2019 baselines early in the lockdown and generally remained below five per cent until easing began. The subsequent increase in patronage over the summer months was significantly greater for CalMac than for NorthLink. Both CalMac and NorthLink saw strong recoveries after tourism reopened and Scotland entered phase three, with passenger numbers increasing from around 20 per cent of 2019 levels to peaks of around 85 per cent and 66 per cent respectively. The lifting of restrictions on non-essential ferry travel and the reopening of the tourist industry clearly played significant roles in this increase. The sharp rise shown in the CalMac index between the weeks ending 28 August and 4 September resulted largely from a week of bad weather with vessels out of service for necessary repair work in 2019 rather than any week on week increase in 2020 passenger numbers.

Passenger numbers declined relative to 2019 levels through much of the autumn in the face of tightening restrictions. There is no clear indication that ferry services were affected by the movement of Central Belt local authorities into and then out of level 4 restrictions. This is likely because there were already strict restrictions on travel in and out of level 3 areas. The increase in both CalMac and NorthLink indices between the weeks ending 4 December and 11 December was driven by decreased travel in the corresponding week in 2019 when ferry services were affected by Storm Atiyah.

Both the CalMac and NorthLink indices fell to around half of their summer level during the second lockdown in January. Combining patronage across both ferry operators, passenger travel during the second lockdown was around nine times as high relative to the equivalent period in 2019-20 in January 2021 as it was in April 2020. This wider discrepancy than for other modes is presumably explained by the much stricter restrictions on ferry travel which were in place during the first lockdown.

By combining the passenger numbers for the two companies, figure 11 shows that weekly patronage fell from around 56,000 passengers in early March to a low of below 4,900 during April, but exceeded 125,000 in the second week of August. Similarly, actual passenger numbers in January 2021 were only around three times those in April 2020. This suggests that the impact of the closure of early season tourism was also driving the wider disparity between the two lockdowns in the indices described above.

Changes in the number of cars being conveyed by ferry were slightly less extreme, with a fall from 18,500 to 2,700 cars per week followed by an August peak of over 36,500. It fell to a second low of 4,300 in the week after Christmas. Additionally, the number of passengers in each car fell from an average of 3.1 in early March to a low of 1.8 during lockdown and rose as high as 3.4

during August before falling back to 2.0 during the second lockdown. This difference in trend between the number of passengers and the number of cars being conveyed may reflect a number of factors, including changes in the mix of journey purposes, increased reluctance to use buses or trains for ongoing travel due to the risk of COVID-19 transmission and passengers being happier to travel on ferries when they are permitted to remain within the relative safety of their own cars.

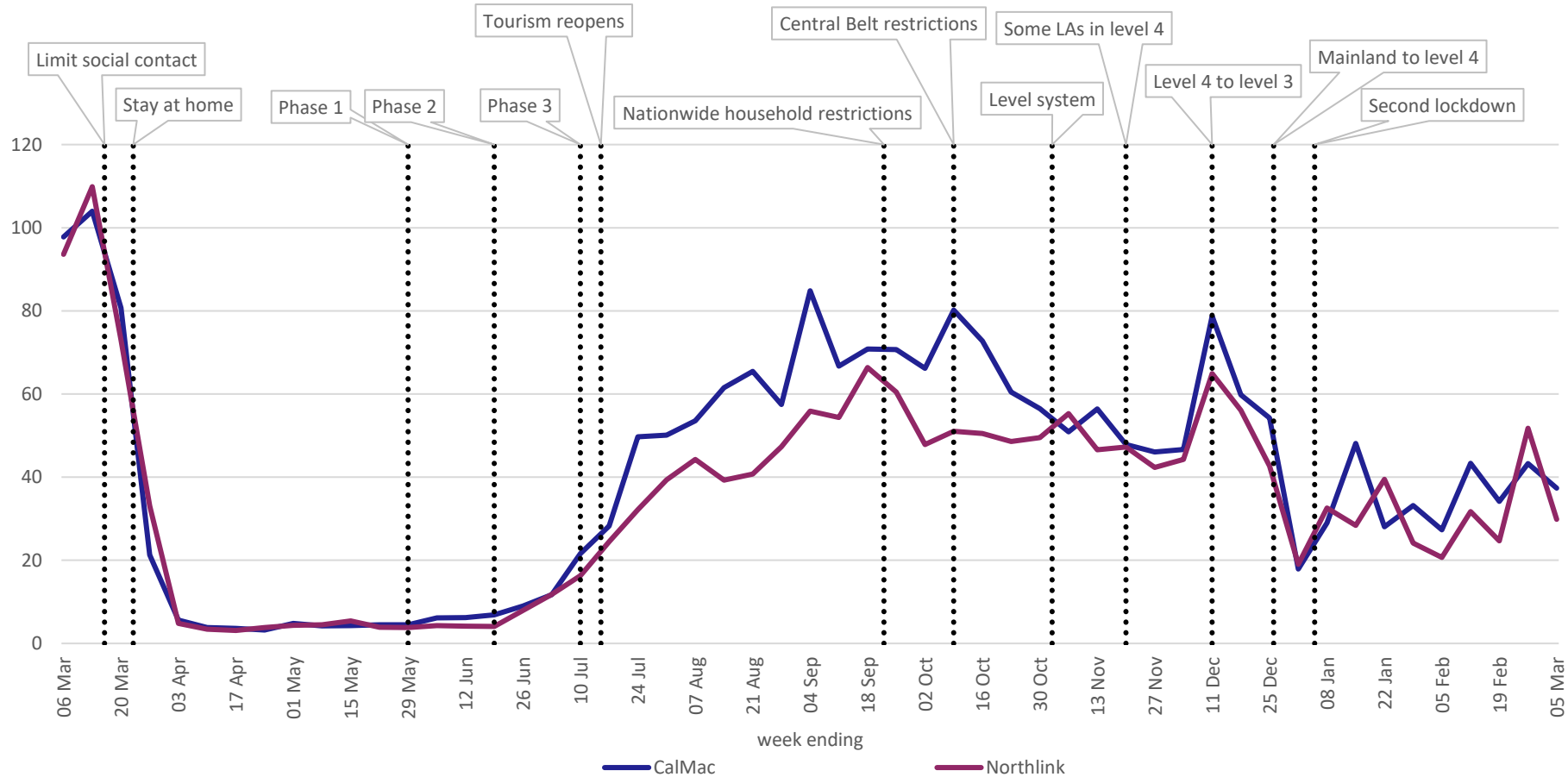


Figure 10 Ferry passengers carried weekly (equivalent week in 2019-20 = 100)

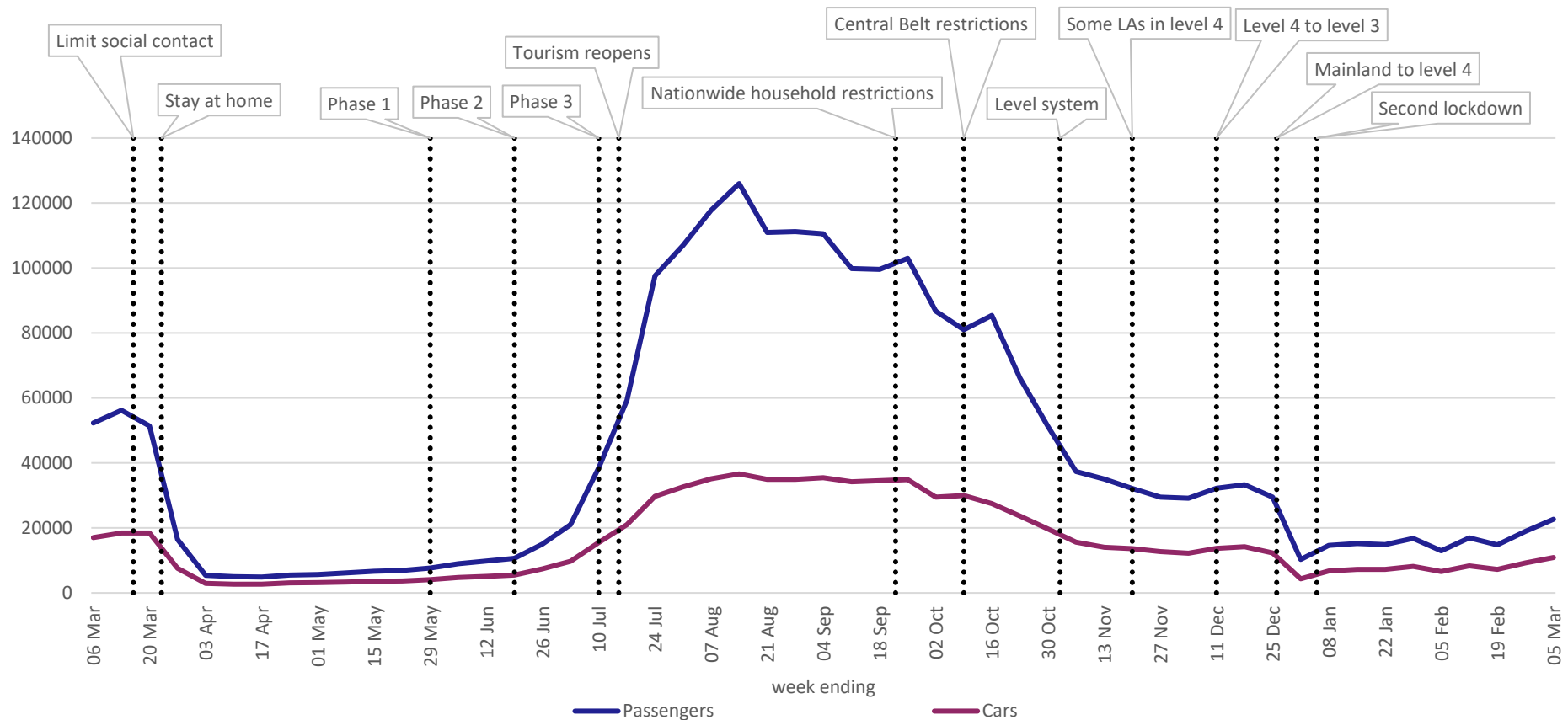


Figure 1 Actual ferry passengers and cars carried weekly

Figure 12 shows that NorthLink experienced a sharper fall than CalMac in the number of cars conveyed aboard their ferries compared to in 2019. NorthLink has also recovered more slowly, carrying a weekly peak of 89 per cent of its 2019 car numbers in mid-September, whereas CalMac was carried as many cars in the weeks ending 4 September and 9 October as in the equivalent weeks in 2019. This less marked increase reflected NorthLink's slower recovery in passenger numbers compared to 2019. Although NorthLink experienced a lower level of car conveyance compared to 2019 than CalMac during the first lockdown, this was not reflected in a similar difference in passenger travel trends.

The second lockdown had a less dramatic impact on car conveyance than the first lockdown. Both car conveyance indices fell by around a third between November and January. Volatility in the car and commercial vehicle conveyance indices during January and February 2021 appears to have been largely driven by the impact of Storm Brendan, Storm Ciara and Storm Dennis in early 2020. This was compounded by Storm Christoph and Storm Darcy affecting Scotland in early 2021.

Both figures 12 and 13 show that the number of commercial vehicles conveyed by ferry during the year was much less affected by the pandemic. This is because of the role of commercial vehicles in providing essential supplies, particularly to island communities.

The combined number of commercial vehicles conveyed by the two ferry companies fell by around 40 per cent during the first lockdown. It returned to its pre-pandemic level in August. In the six months to early March 2021, NorthLink carried around 10 per cent more commercial vehicles than the previous year, whereas CalMac carried marginally fewer vehicles.

This difference between operators was more consistent during the summer when there was a reduction in coaches being carried which has a bigger impact on CalMac. Coach conveyance was down by 89 per cent across both operators over the whole year, whereas conveyance of other commercial vehicles was only down by 11 per cent on the previous year. However, the clear disparity between the two companies' respective indices during the first lockdown was largely driven by a greater proportional fall in goods vehicles being carried by CalMac rather than by the coach number changes because goods vehicles vastly outnumber coaches on ferries. This disparity was less marked during the second lockdown.

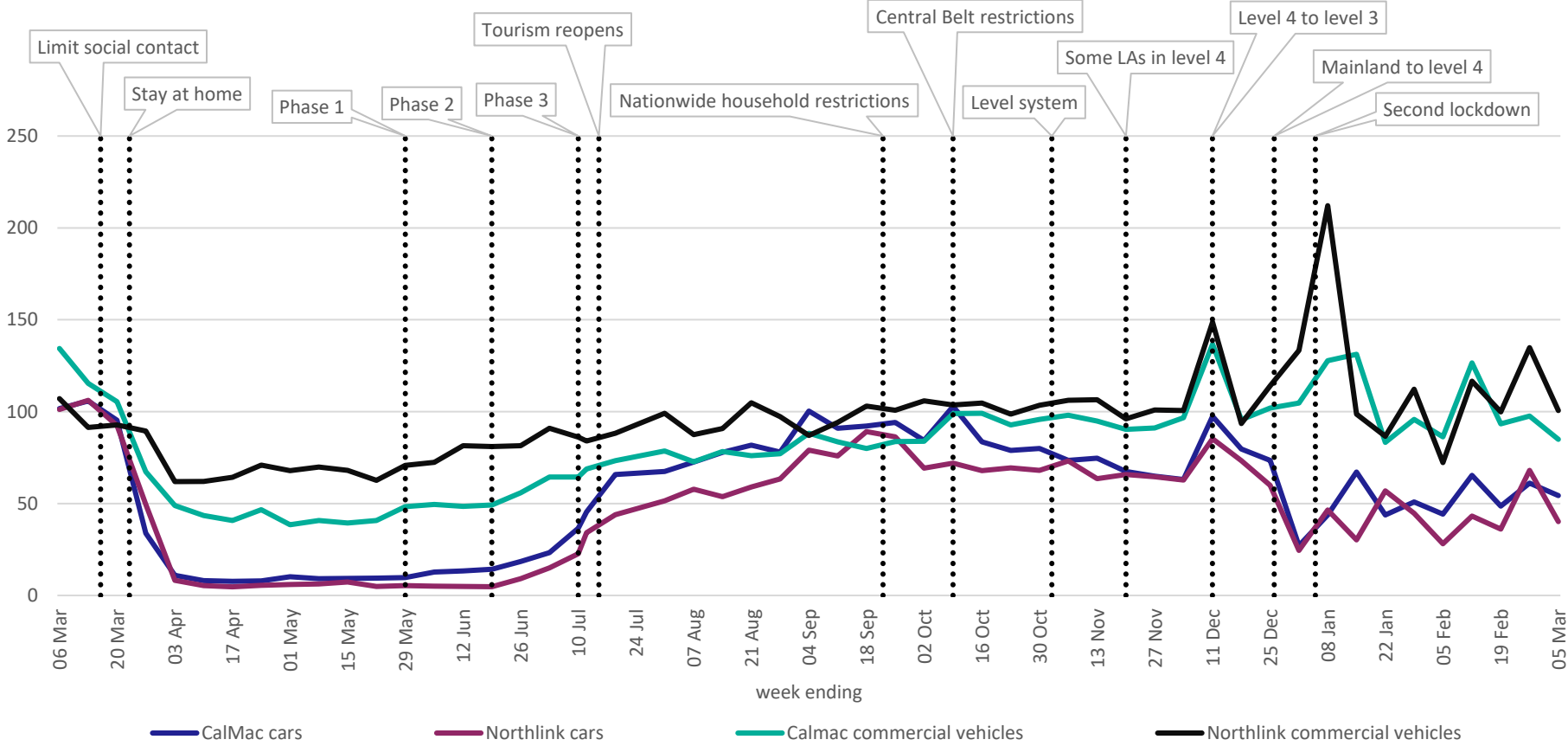


Figure 12 Cars and commercial vehicles carried by ferry weekly (equivalent week in 2019-20 = 100; commercial vehicles includes coaches)

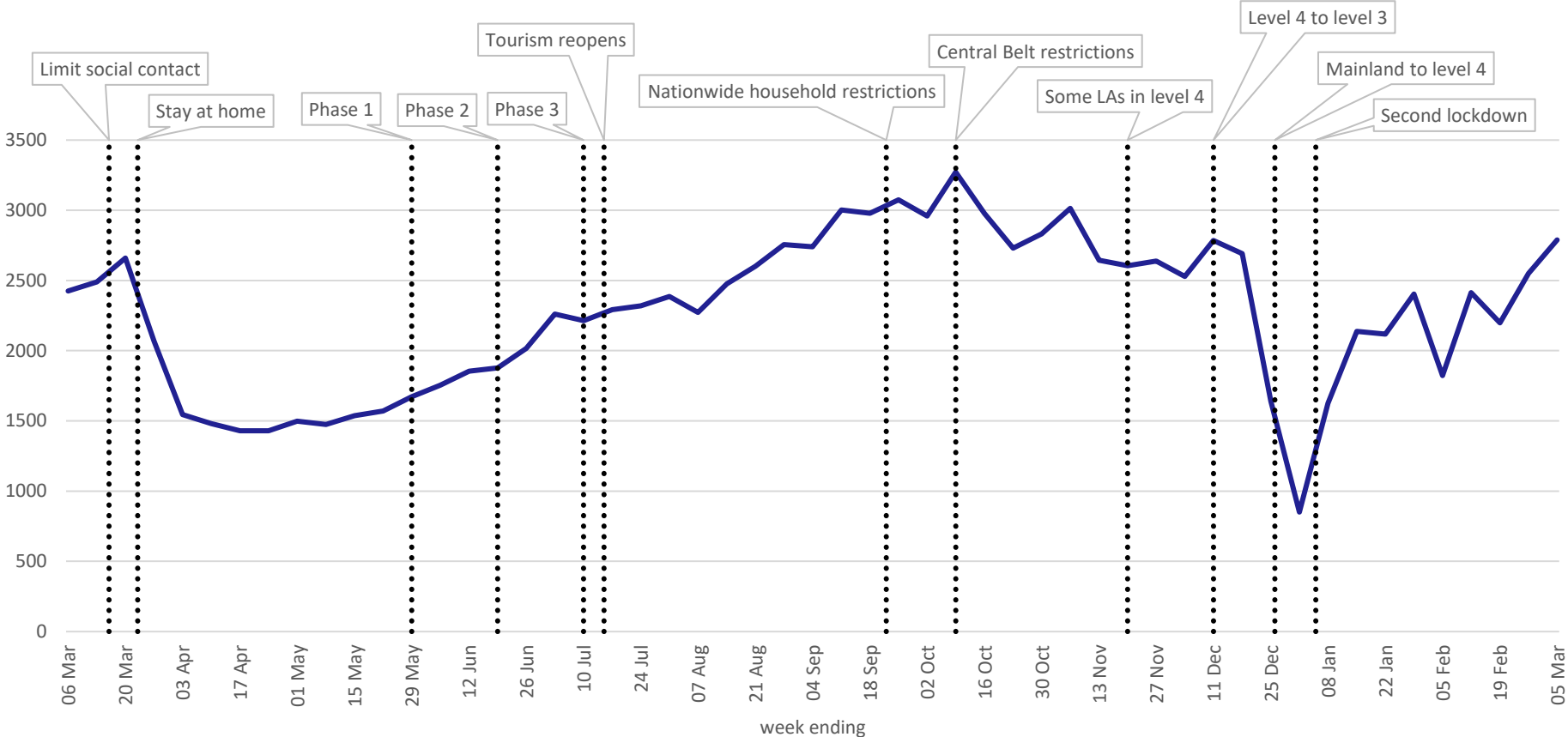


Figure 2 Actual commercial vehicles carried by ferry weekly (commercial vehicles includes coaches)

Air

Scottish Area Control flight data covers flights arriving in, leaving from or passing through the airspace monitored by Scottish Area Control. This covers maritime areas and part of Northern England as well as Scotland, but should provide a more accurate proxy

for landings and departures at Scottish airports than wider UK data. It does not offer any indication of how many passengers are being carried on these flights and is therefore not strictly comparable with most of the other indices tracked in this report.

Flight numbers fell rapidly as Scotland entered lockdown in March, settling in April at around 10 per cent of their 2019 level as shown in figure 14. The number of flights into and out of the Scottish Area control airspace were consistently lower at weekends during lockdown, perhaps suggesting that leisure travel was even more negatively affected by lockdown than business travel.

After a slow increase, flight numbers began to rise more rapidly at the end of June and had reached around a quarter of 2019 levels as Scotland entered phase three of easing. By late summer, the number of flights had risen to 40 per cent of its 2019 level as Scotland reopened for tourism and some residents took the opportunity to holiday abroad. In late July and August, the weekly pattern seen during lockdown was inverted with the index peaking each weekend, replicating the pattern seen above in bus and train patronage. This suggests a bigger rebound in leisure travel.

The index fell steadily in the autumn with flights briefly below a quarter of their 2019 level early in the period of Central Belt level 4 restrictions. It then recovered briefly, almost matching its summer high on the weekend before Christmas. Flight numbers settled at around a fifth of their early 2020 levels during the second lockdown. Unlike for bus and rail travel, there was no sign of a recovery in the flight index at the end of the first year of the pandemic.

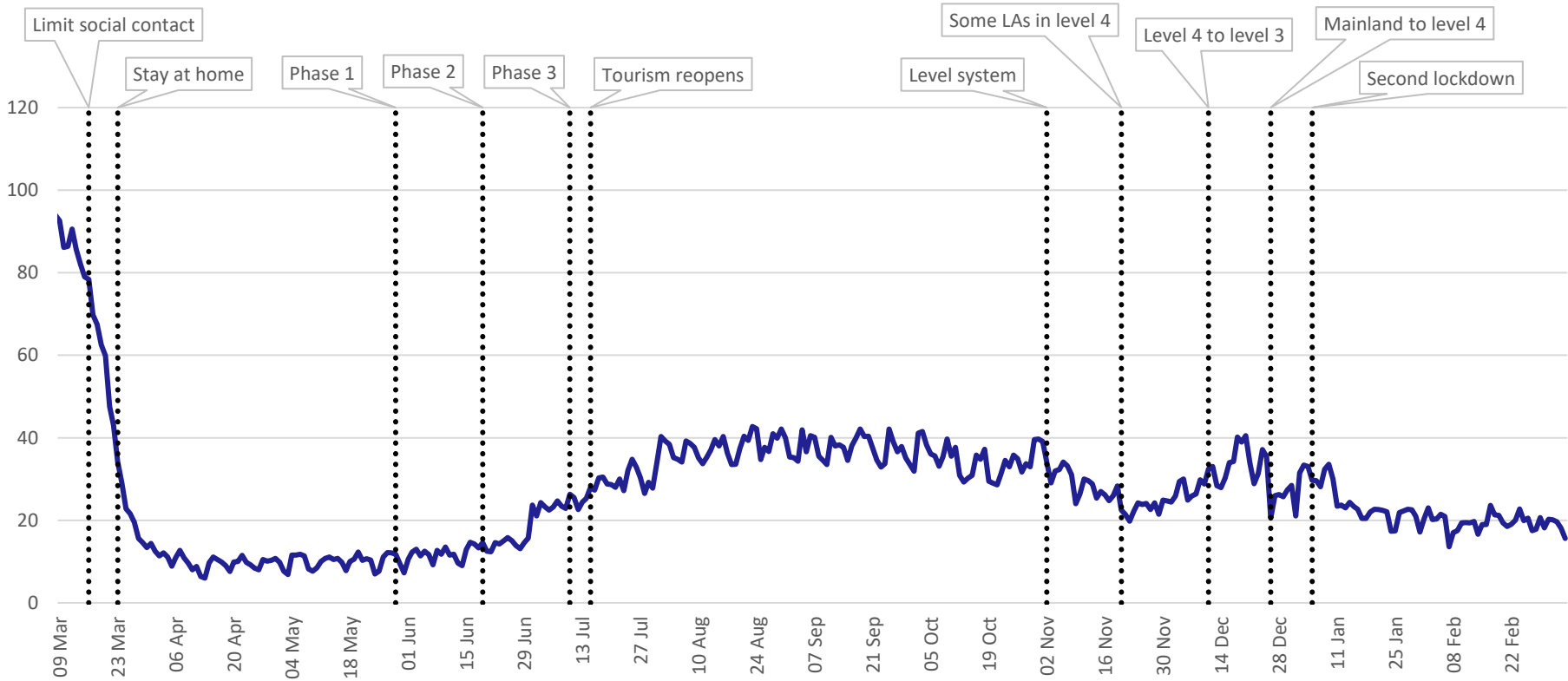


Figure 3 Scottish Area Control flight index (equivalent day in 2019-20 = 100)

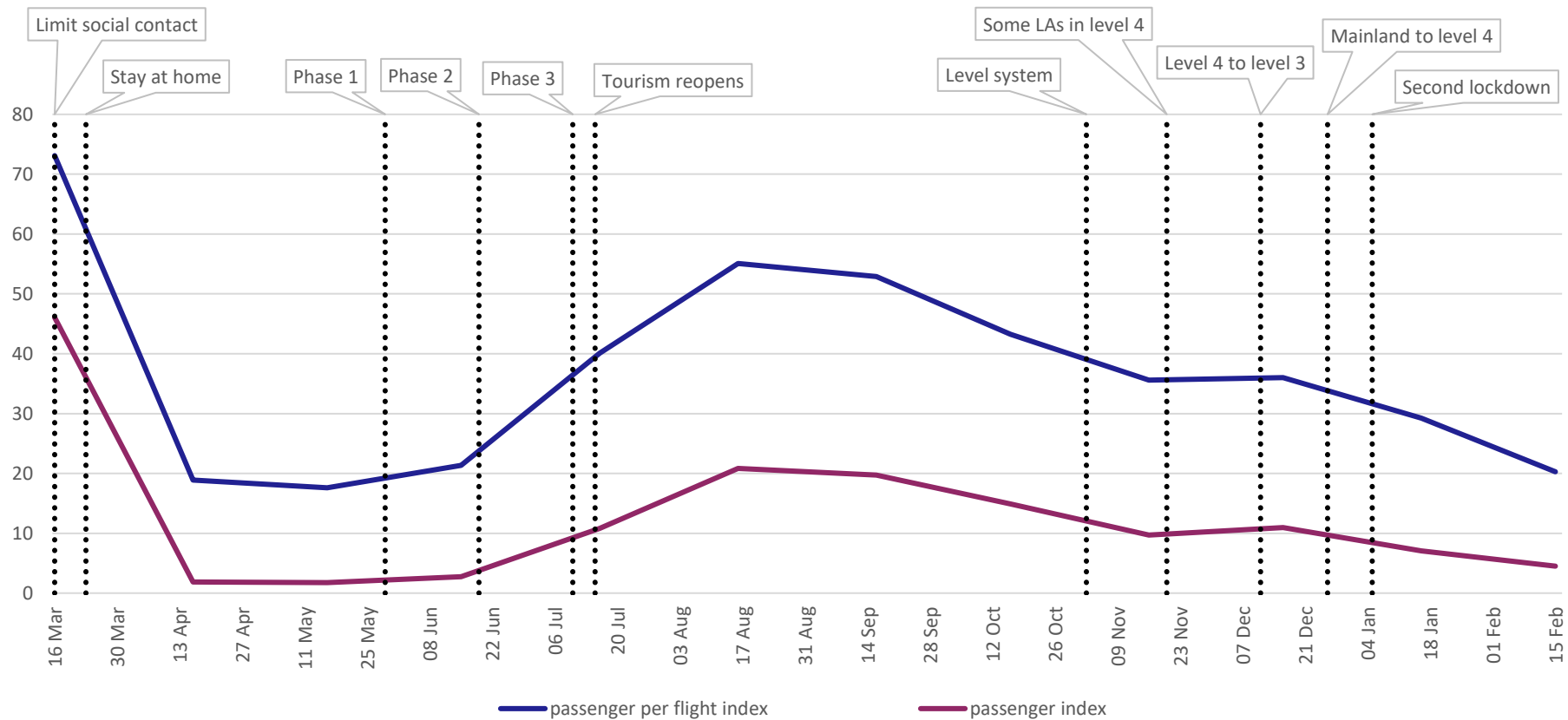


Figure 4 Civil Aviation Authority passenger index (equivalent month in 2019-20 = 100)

Monthly data from the Civil Aviation Authority covering passengers arriving at and departing from Edinburgh, Glasgow, Aberdeen and Inverness airports was used to create the indices shown in figure 15 above. The air passenger index fell considerably lower during the first lockdown than the indices for other modes shown in figures 1 and 2. Passenger numbers in April and May 2020 were below 2 per cent of equivalent numbers a year earlier.

Passenger numbers rebounded to 21 per cent in August after some restrictions on foreign travel were eased. That month rail passenger numbers averaged around 30 per cent of their 2019 level and concessionary bus and car travel were around 44 per

cent and 84 per cent of their respective 2019 levels. By February 2021, with strict restrictions placed on long distance and overseas travel during the second lockdown, the air passenger index had fallen back to 4.5 per cent of its February 2020 level, compared to 10 per cent for rail journeys, 30 per cent for concessionary bus journeys and 55 per cent for car travel.

By combining the flight and passenger data discussed above, it is possible to construct an index which serves as a proxy for the number of passengers on each flight as shown in figure 15. This provides a tentative guide to how full planes were during the first 12 months of the pandemic. Since passenger numbers fell even more drastically than flight numbers during both lockdowns and rebounded more quickly in the interim, planes were likely to have been fuller during the August peak than when there were greater restrictions on air travel. In August and September, planes were likely more than half as full as they had been a year earlier, making attempts to maintain physical distancing challenging, whereas they were around a fifth as full as a year earlier during April, May and June 2020 and again in February 2021.

Road traffic

The number of vehicles travelling on Scotland's roads is estimated using a selection of traffic counters on trunk roads around Scotland and indexed to the equivalent day in 2019-20. The set of counters used has changed from that used in the previous six monthly report as some of the counters used for that report lacked reliable comparable data from the second half of 2019-20 or have malfunctioned since September. This approach tracks vehicles rather than the number of passengers in those vehicles. Although this is different from the criteria used for public transport, the index should still be broadly comparable with the public transport indices presented above.

Car travel became much less prevalent as Scotland entered lockdown. The number of cars on Scotland's roads fell to slightly below a quarter of its 2019 level on weekdays in early April as shown in figure 16, and around 15 per cent of its 2019 level during weekends, with the car index showing weekly lows on Sundays. The car index did not fall as low as public transport indices, indicating some degree of adherence to the official advice to avoid non-essential public transport journeys.

The car index rose before public transport indices. It first exceeded a third of 2019 levels in early May, and has been above that level since 25 May. From its lowest level during lockdown, the car index doubled before any significant rebound in bus or rail use. It rose rapidly during the first two phases of easing, beginning phase three at around 70 per cent of the previous year's level, while concessionary bus usage and train patronage remained subdued below 30 per cent and 20 per cent of their respective 2019 levels.

The weekly pattern of lower car numbers compared to 2019 at weekends than on weekdays persisted through the first two phases of easing. This pattern was inverted following the reopening of tourism, with weekend peaks from the second weekend in July until the last weekend of September. This additional weekend traffic may have been due to wider changes in leisure opportunities during phase three of easing as well as the unlocking of tourist traffic. It dissipated as restrictions increased during the autumn and the initial pattern of weekend lows soon reasserted itself. Weekend car travel was consistently more subdued than weekday travel during the second lockdown.

The car travel index peaked in August and September, averaging around 85 per cent of its 2019 level over that period. It then declined slowly as restrictions became stricter during the autumn. The period in which a large swathe of the Central Belt was placed into level 4 saw big drops in weekend travel. The index increased in through much of December as some restrictions were unwound. It reached an annual high on Christmas Day when traffic was heavier than on Christmas Day 2019. This presumably reflects the lifting of some restrictions to allow a single day of celebration before a new tightening of restrictions.

The index fell on Boxing Day to its lowest level since May, but did not fall further with the introduction of the second lockdown. It was around two thirds higher during the second lockdown than it had been during the first and had begun to edge upwards by early March.

Since a large proportion of HGV traffic is concerned with the supply of essential goods, HGV numbers on Scotland's roads did not fall as significantly as car numbers as Scotland entered lockdown. HGV activity rarely fell below 60 per cent of its 2019 level and rose above 80 per cent by the start of easing.

The number of HGV movements rose further during phase two of easing, reflecting the reopening of shops specialising in non-essential items as well as a wider increase in business activity. The HGV index entered phase three at around 20 points higher than the car index. This difference contracted slightly during the summer months. The earlier six month report found the HGV index was much higher in midweek than at weekends during the summer, but it appears that while the index did tend to experience weekend lows, the pattern was greatly magnified by a data flaw.

The weekly car traffic index peaked at 92 per cent of equivalent 2019 levels at the end of August. It then fell back as the abridged tourist season came to a close and greater travel restrictions were imposed once again as shown in figure 3. The weekly HGV index spent much of the autumn above the equivalent 2019 level, averaging more than six per cent higher than in 2019 over a week in mid-November.

HGV data was volatile over the Christmas period although this may reflect a lack of suitable equivalent days due to Christmas falling on a different day of the week. The second lockdown had a minor impact at most on HGV traffic. It averaged 95 per cent of 2020 equivalent levels between the start of the second lockdown and the end of the first year of the pandemic.

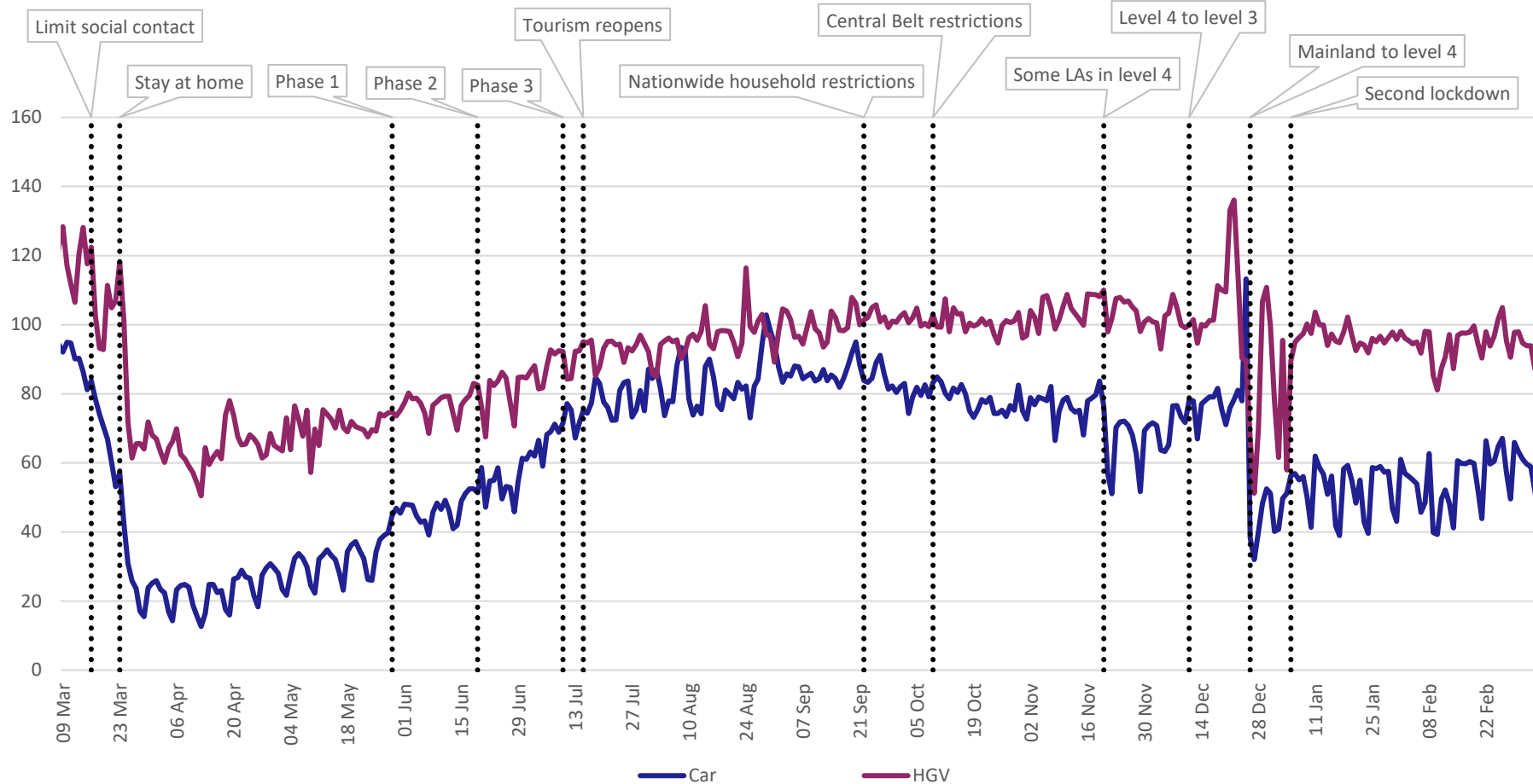


Figure 16 Trunk road traffic (equivalent day in 2019-20 = 100)

Car traffic on tourist routes

A further selection of counters on trunk roads were used to create a car traffic index for rural areas that are particularly popular with tourists. Although they are popular with tourists, these roads are also used for other purposes, so this measure is not a proxy for levels of tourism, but it gives some indication of how measures impacting tourism affected road traffic.

Figure 17 shows car traffic across the whole 12 month period indexed to the average day in the week beginning 2 March 2020. Therefore, figure 17 reflects large changes in the actual number of cars using these routes which are partly caused by seasonal effects that would be anticipated to have an unusually large impact on routes popular with tourists.

It shows the familiar pattern of a steep decline into the first lockdown, then a gradual increase during the latter part of that lockdown, more rapid increases during easing, a late summer peak, an autumn decline coinciding with restrictions becoming stricter, a small increase before Christmas, then a further decline before the second lockdown and a further moderate recovery during the second lockdown.

The weekly average index in figure 17 fell to lows of 24 per cent and 38 per cent of early March car traffic levels on these tourist routes in April and shortly after Christmas respectively. Car traffic peaked in August at a level 39 per cent above that of early March.

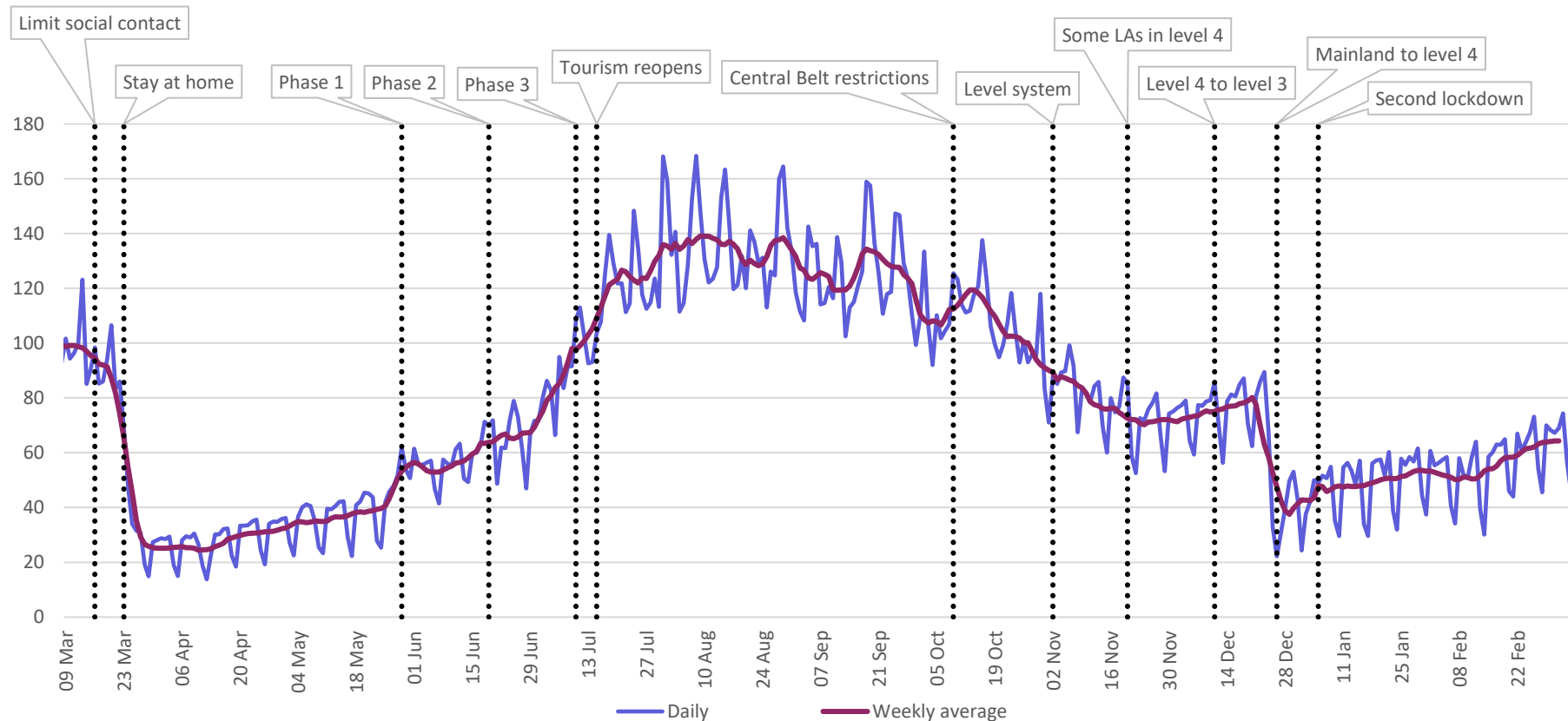


Figure 5 Tourist route car traffic (average in week beginning 2 March 2020 = 100)

Once tourism resumed, travel on these routes clearly peaked each weekend, whereas beforehand the daily index had dipped each Sunday. This suggests these roads are used more for tourism and local leisure activities than for commuting during the summer months. Weekend lows reappeared in the autumn as poorer weather and travel restrictions once again discouraged tourism. These continued during the second lockdown.

Figure 18 indexes traffic against the equivalent day in 2019-20 for both the same set of tourist routes and the trunk routes in the previous subsection. The in-week variation described above is more marked for tourist routes than for all trunk roads, particularly during the tourist season.

Car traffic on tourist routes fell to a low of 18 per cent of its 2019 level in April. In August and again in mid-September it was slightly above 2019 level, suggesting that traffic for tourist purposes was probably exceeding normal levels. This may reflect an extension of the tourist season after a later than usual start, but it could also reflect better weather than in the equivalent periods in 2019.

Figure 18 also shows how traffic on tourist roads has recovered compared to traffic on the busier roads used to compute the trunk road car traffic index also shown in Figure 16. The tourist route index consistently lagged the equivalent trunk roads index between early May and the reopening of tourist businesses in mid-July. Since then tourist roads have been more popular than trunk roads relative to the previous year.

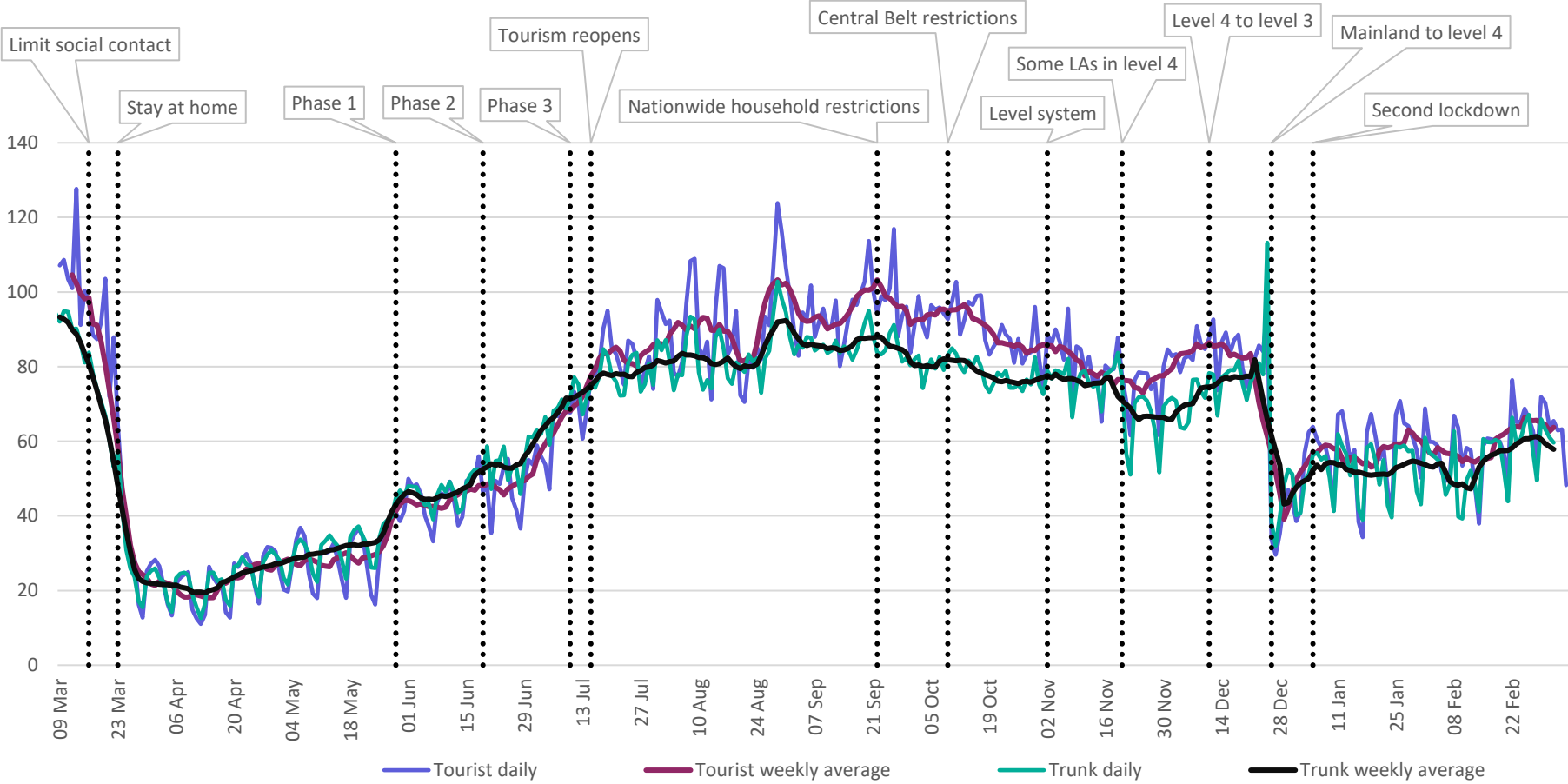


Figure 6 Tourist route and trunk road car traffic (equivalent day in 2019-20 = 100)

6: Changes in peak travel times

Data from trunk road traffic counters has been analysed to assess changes in the distribution of road traffic across the day. Weekday changes are shown in figures 19 and 20 for cars and HGV respectively while figures 21 and 22 cover weekend distributions.

These charts cover daily averages taken from six periods: 2 – 15 March (pre-lockdown), 30 March – 12 April (first lockdown), 13 – 26 July (phase three of easing), 24 August – 6 September (after schools had reopened), 4 – 17 January (second lockdown) and 1 – 7 March (year end).

Figure 19 shows that pre-lockdown there was a distinctive commuting pattern with peaks between 7 am and 9 am and between 3 pm and 6 pm. These peaks largely disappeared during the first lockdown with traffic levels changing little during the middle of the day. After restrictions were eased considerably the late afternoon peak returned, but travel in the middle of the day was higher than during the erstwhile morning peak. Something of a morning peak was again present during the second lockdown, although the late afternoon peak became less marked.

It appears likely that reductions in peak travel are driven by the increased propensity to work from home since the first lockdown began. Higher traffic during the middle of the day may reflect those working from home taking advantage of greater flexibility to undertake trips during a workday no longer bookended by commuting, furloughed staff being able to travel during the middle of the day and also seasonal effects with the weather affecting the attractiveness of leisure activities.

Although it is difficult to isolate the effect of the return to school on the morning and evening peaks, this data tentatively suggests school travel is likely to have had a relatively minor impact on them, perhaps because pupils used other modes to travel to school.

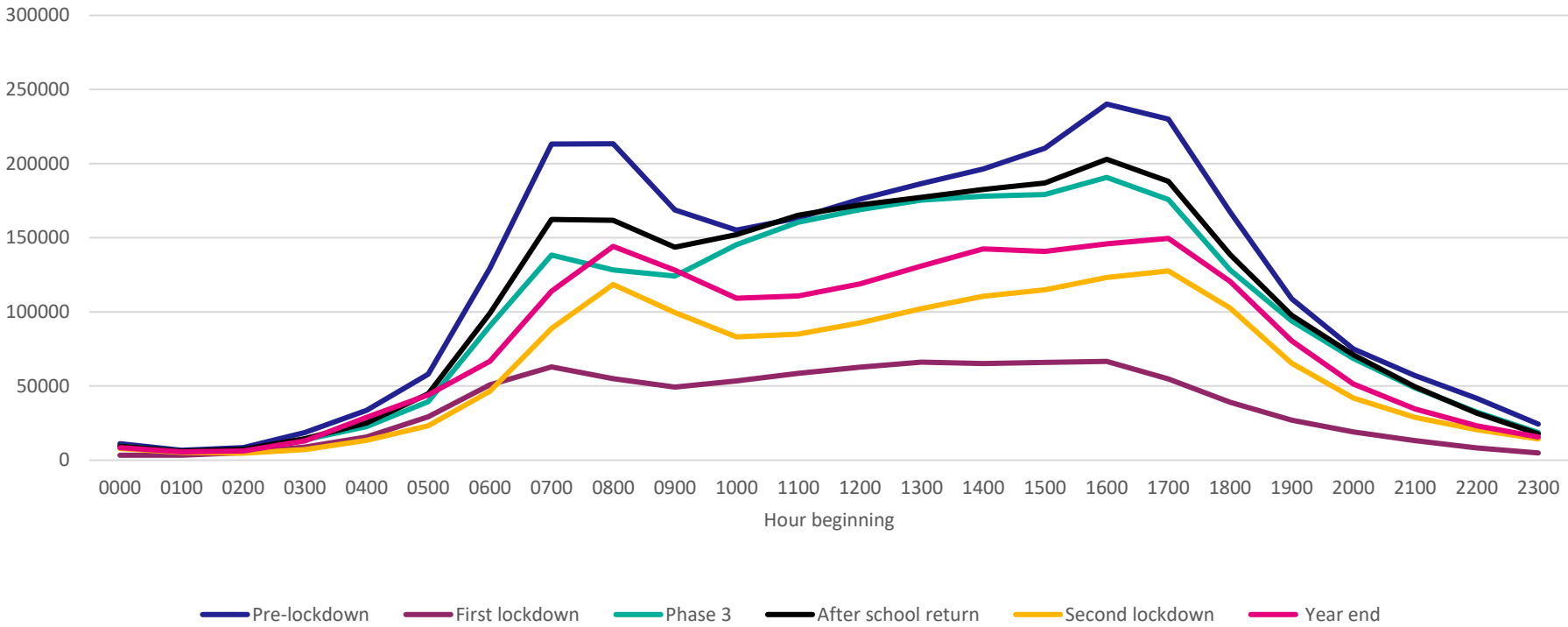


Figure 7 Average number of cars passing selected counters on weekdays

Figure 20 shows clearly that a single less pronounced peak remains the car travel pattern at the weekend, although the peak occurs an hour later during the second lockdown.

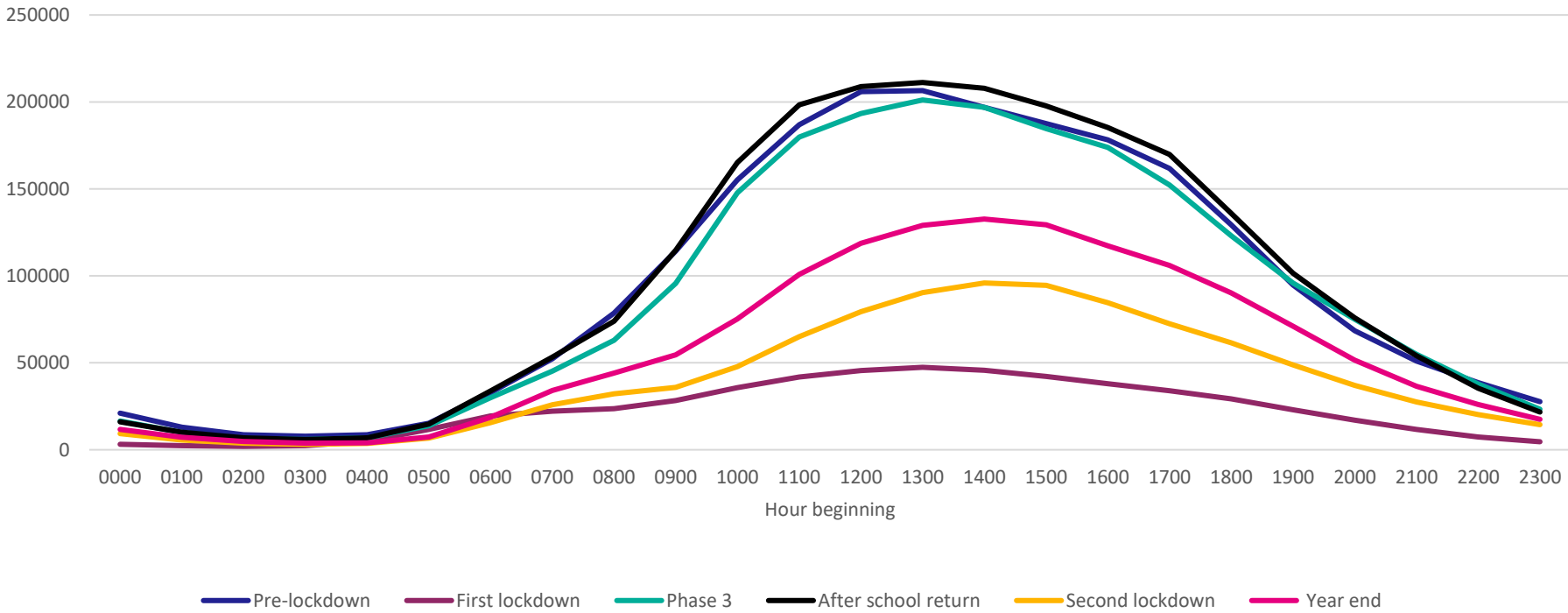


Figure 20 Average number of cars passing selected counters on weekend days

Figures 21 and 22 show much less variation in the distribution of HGV use across the day. The significant drop in HGV use early in the first lockdown seems to have had relatively little impact early in the day. This may be because with less work to complete, a higher proportion of it was performed earlier in the day.

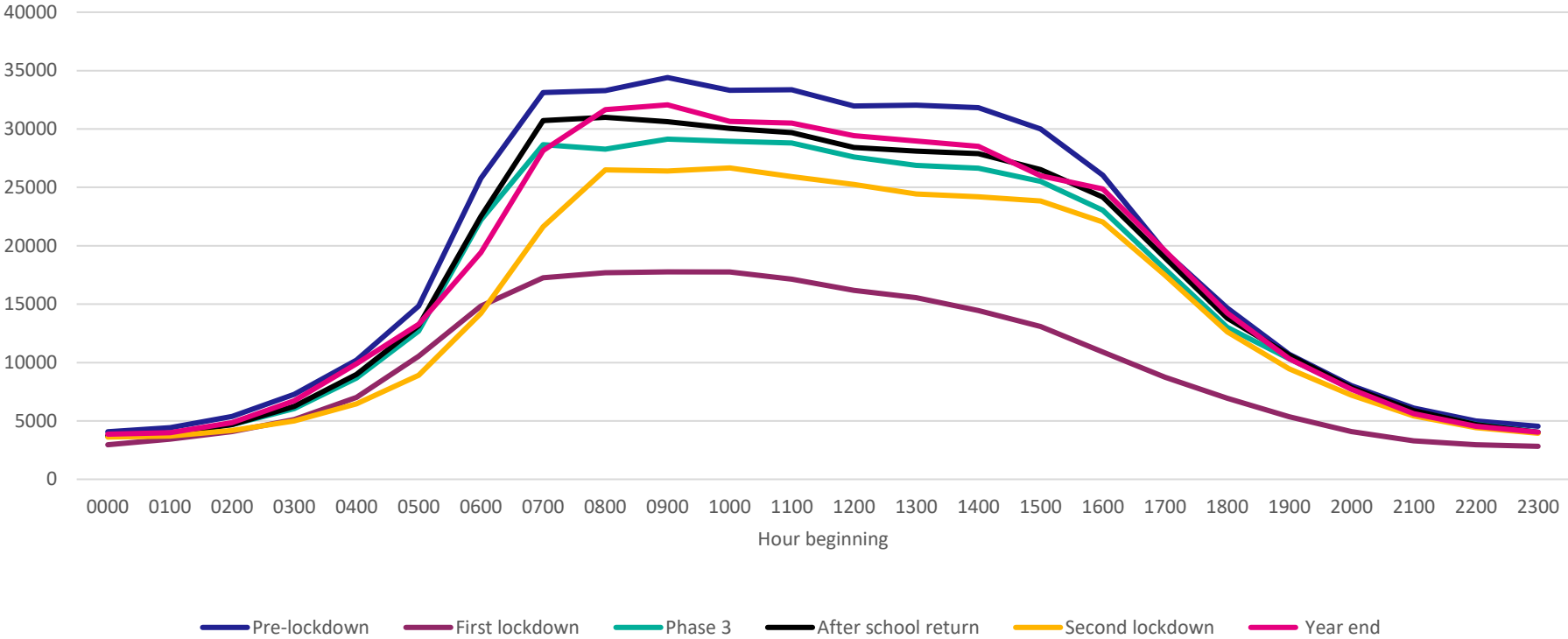


Figure 21 Average number of HGVs passing selected counters on weekdays

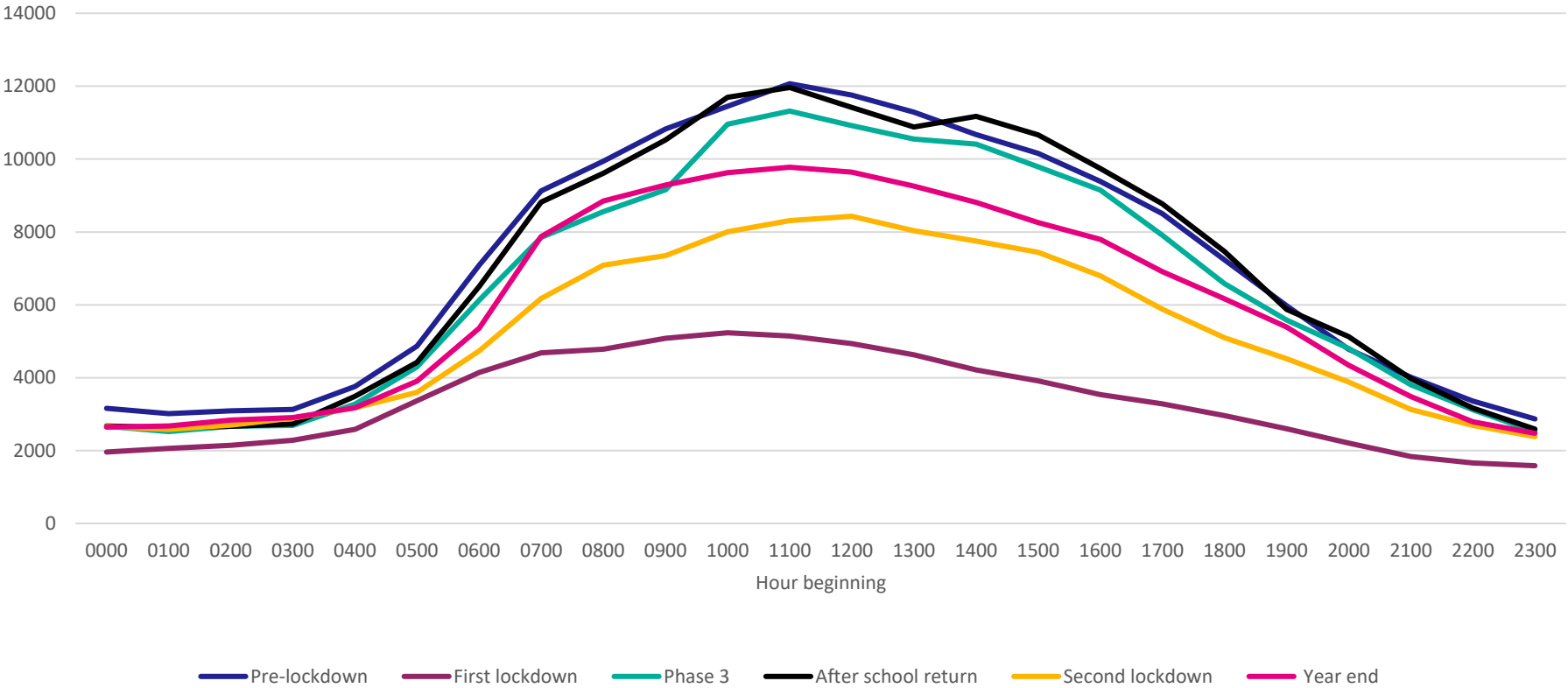


Figure 8 Average number of HGVs passing selected counters on weekend days

7: Sub-national trends

Glasgow Subway

Figure 23 shows Glasgow subway patronage indexed to the equivalent day in 2019-20. The number of people travelling on the subway followed a similar pattern to bus and rail passenger numbers early in the pandemic with patronage below 20 per cent of its 2019 level by the time strict measures came into force in late March, and weekly average patronage briefly falling to a low of 3 per cent in April. The daily index also fell to 0 on 4 and 5 July because the subway was closed for essential network maintenance operations. Patronage rose slowly during the first phase of easing and more rapidly in phase two. Subway patronage entered phase three of easing at 18 per cent of its 2019 level. This rose to 39 per cent in early September before falling slowly as restrictions were tightened in the autumn.

Glasgow moved from level 3 to level 4 on 20 November. This precipitated a fall in weekday subway travel of around two-fifths the next week and a fall of more than two-thirds in weekend travel, suggesting a greater impact on leisure pursuits than workplace attendance. Subway travel recovered these losses in the run up to Christmas, but then fell rapidly to average 13 per cent of its early 2020 patronage level during the first two months of the second lockdown. This was over three times the average level of the index during the first two months of the first lockdown.

Edinburgh Trams

Figure 23 also shows Edinburgh tram patronage indexed to the equivalent week in 2019-20. Edinburgh tram patronage followed a similar trajectory to Glasgow subway patronage until the easing of restrictions began. It subsequently recovered significantly more slowly, rising to 26 per cent of its 2019 level by late August. Possible explanations for this difference include a higher proportion of Edinburgh commuters working in occupations allowing working from home, fewer residents wanting to access the airport to travel further afield and Edinburgh's greater reliance on international tourism coupled with the cancellation of its summer festival season.

Since the City of Edinburgh was not among the local authorities placed into level 4, its index was less volatile in November. Tram travel in the first two months of the second lockdown was only 6 per cent of that a year earlier and in contrast to the Glasgow subway this was less than twice the average level of the tram index in the first two months of the first lockdown.

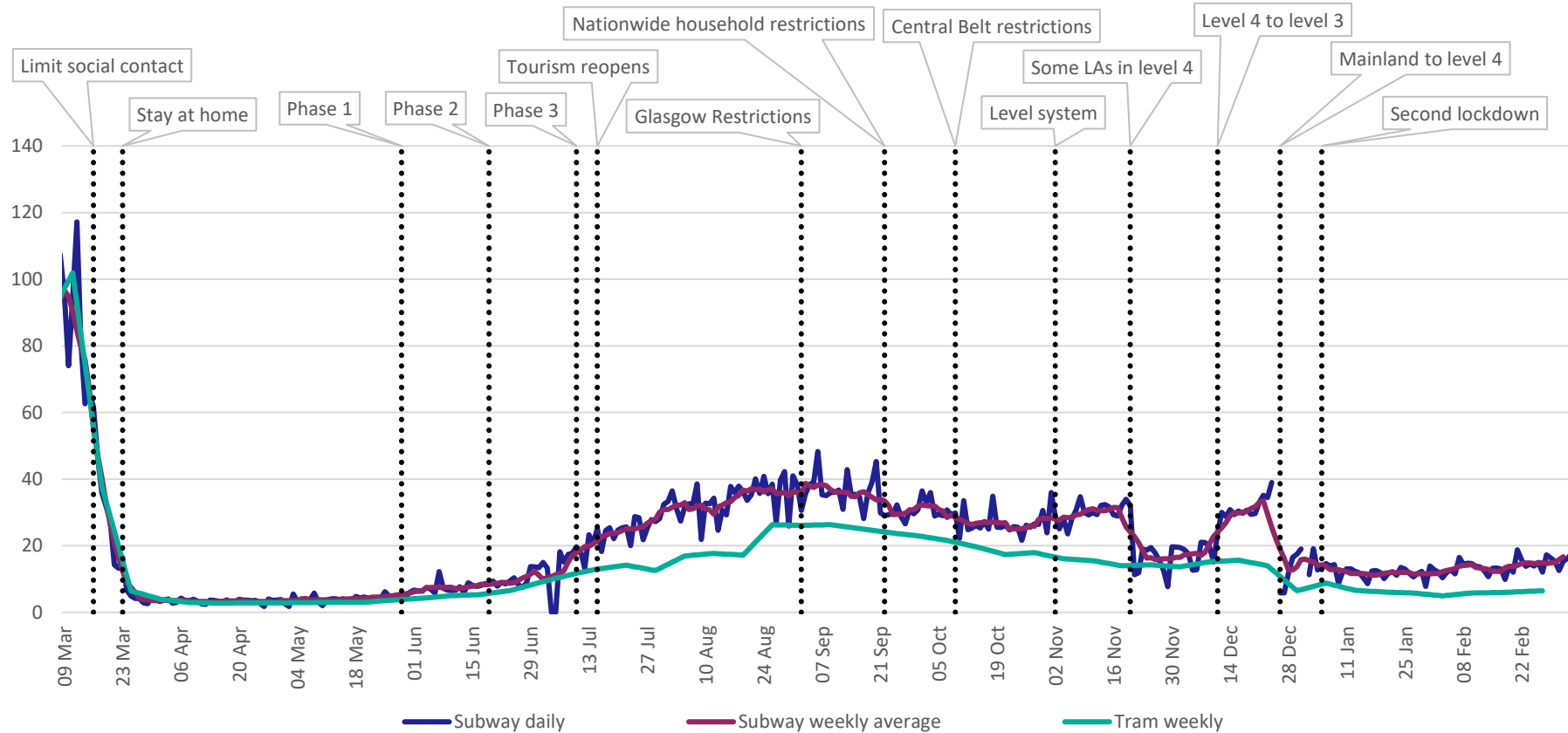


Figure 9 Glasgow Subway and Edinburgh Tram patronage (2019-20 equivalent = 100)

Cross border road traffic

The indices in figure 24 show how often cars and HGVs passed a small selection of traffic counters near the most frequently used road crossings on the border with England. Weekly averages are used to smooth the daily lines on this chart because daily freight trends are particularly affected by bank holidays falling at different times.

The trends in figure 24 are very similar to those for trunk road traffic in figure 16, with a steeper decline for car travel than for HGV travel during the first lockdown. Cross border car traffic was slightly more affected by lockdown than trunk road traffic across Scotland as a whole. The weekly number of cars fell to a low of 14 per cent of equivalent 2019 levels on 13 April, the same day the weekly HGV index hit a low of 55 per cent. Cross border HGV traffic levels were similar to HGV traffic levels across Scotland during the first lockdown.

Both car and HGV cross border indices rose considerably before easing began and climbed steadily through the first three phases of easing before returning to their 2019 levels by late August. Apparent volatility in cross border indices in late August was likely caused by the Summer Bank Holiday in England falling a week later in 2020 than in 2019.

Cross border car traffic fell more quickly than wider trunk road car traffic during the autumn. Level 3 and 4 restrictions discouraged most Scottish residents from reaching the border and meant that most visitors from England would have been discouraged from entering Scotland to travel to destinations beyond Dumfries and Galloway or Borders. More generally cross border traffic is perhaps less likely to have been essential in nature than general trunk road travel and therefore declined more rapidly in the face of concern over a second wave of COVID-19.

The legal ban on cross border travel (excluding exemptions) from 20 November may have been responsible for a four point fall in the weekly cross border car index in the week after the ban was introduced, but by the first week of December the index was higher than before the ban had been introduced. It appears likely that the ban had little effect because most people were already avoiding unnecessary cross border travel.

In contrast, the cross border HGV traffic remained at or just above its 2019 level through the autumn in line with wider trunk road HGV data. After a period of volatility around the festive season, the cross border HGV index settled at slightly below its early 2020 level in the first month of the second lockdown before returning to its early March 2020 level by the end of the 12 month period.

Cross border car traffic settled at around 45 per cent of its early 2020 level during the first six weeks of the second lockdown, lower than in the week after the cross border travel ban was introduced. It recovered to above 50 per cent of the equivalent 2020 level in late February.

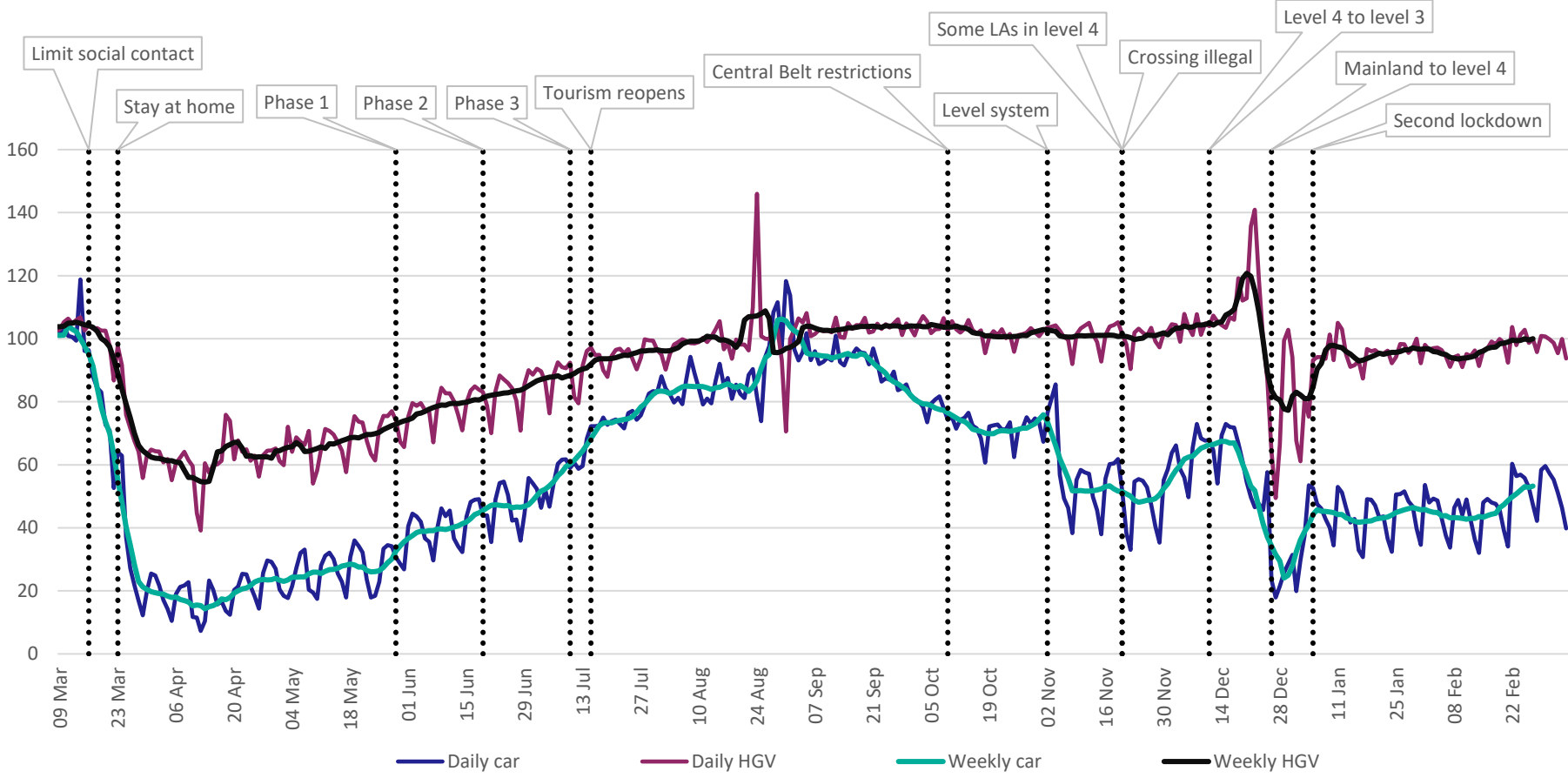


Figure 10 Cross border road traffic indices (2019-20 equivalent =100)

Mobility

This subsection is based on data collected by Google which monitors the movements of mobile phone users at certain locations. Aggregate movements are indexed by Google to the median of equivalent days between 3 January and 6 February this year.

Local authority level data has been aggregated into five regional areas based loosely on the domains of regional transport partnerships. Strathclyde covers the SPT travel area excluding Helensburgh and Lomond and also includes Dumfries and Galloway. South-East comprises the SEStran local authority areas, North-East comprises Aberdeen and Aberdeenshire, and Tayside and Central comprises Angus, Perth and Kinross, Dundee and Stirling. Highlands covers Argyll and Bute, Highland and Moray, but excludes Na h-Eileanan Siar, Orkney and Shetland.

There are some gaps in the data where Google has not reported for a constituent local authority, so some lines in figures 25, 26, 27 and 28 are discontinuous. Most notably there is very little data currently available for the period between 17 August and 10 September. A previously available data set included data from this period for workplaces only, enabling estimation of data covering this period for workplaces. Data for the three island local authorities is too sparse to allow for their inclusion.

In figure 25, the regional workplace mobility indices exhibit a consistent pattern of peaking each weekend, presumably because a higher proportion of those working at the weekend are key workers and a lower proportion of those who normally work at the weekend are able to work from home.

This difference became more marked after tourism reopened which unsurprisingly appears to have had a particularly strong impact on the Highlands workplace mobility index. Regional variation is clearer in the weekly averaged data in figure 26. Although lower than the Highlands until the second lockdown, Strathclyde and Tayside and Central workplace mobility indices were generally higher than their North-East and South-East counterparts. This was particularly the case on weekdays from late spring onwards perhaps due to lesser scope for working from home.

Weekday workplace mobility across Scotland fell to around 30 per cent of its pre-lockdown level early in the lockdown before gradually rising to over 60 per cent in August and generally remaining above that level through the autumn except during the school half term holiday period. In contrast, weekend workplace activity fell to a low of well above 40 per cent its pre-lockdown level and had returned to around 90 per cent of its pre-lockdown level by August. This fell back slightly in October, but remained well above 80 per cent.

After a period of volatility over the festive season, workplace activity settled at between 45 and 50 per cent of its pre-first lockdown level on weekdays. Although this was considerably higher than during the first lockdown, the difference is considerably

smaller than that seen between lockdowns in the wider travel indices above. Presumably this is because essential workplace activity was less affected by the first lockdown than travel for non-work purposes. Weekend workplace activity settled at above 60 per cent of its pre-first lockdown level.

Since Christmas, Strathclyde has consistently seen higher workplace activity than the other regions relative to the period before the first lockdown. This recent phenomenon has been particularly marked during weekends.

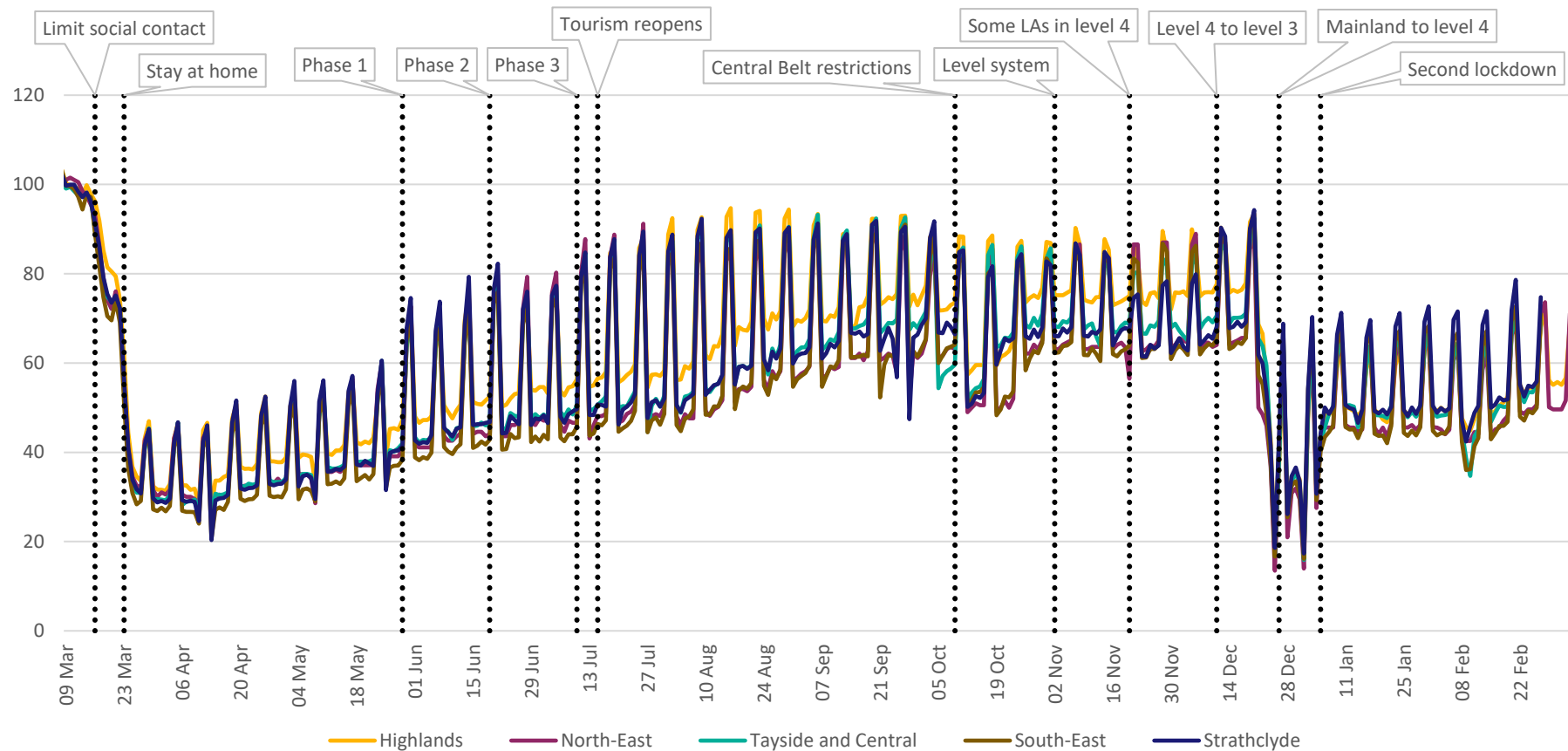


Figure 115 Workplace movements (Median of equivalent days between 3 Jan 2020 - 6 Feb 2020 = 100; 17 Aug - 10 Sep largely estimated using earlier version of data set)

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Transport Scotland

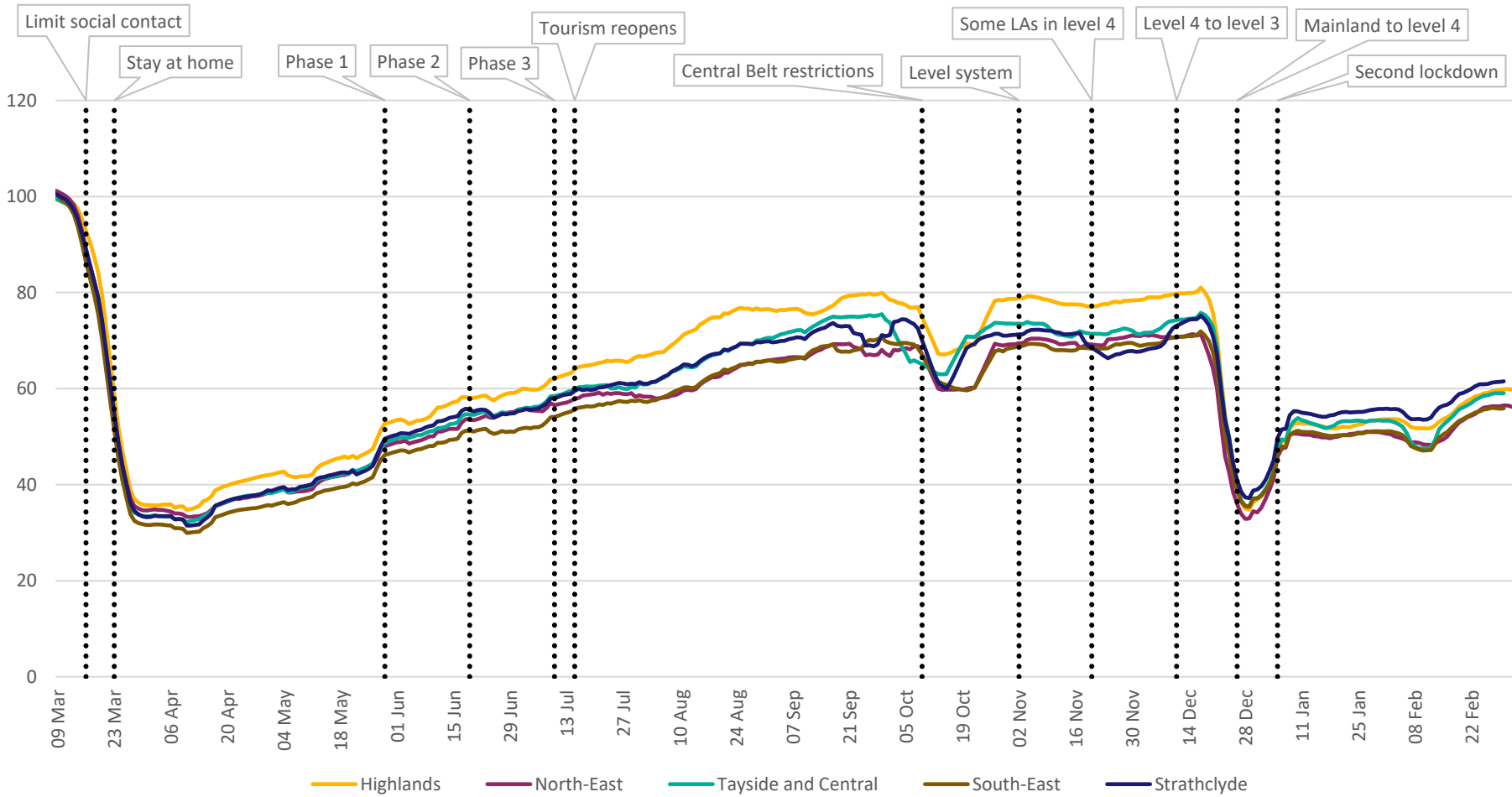


Figure 12 Weekly averaged workplace movements (Median of equivalent day 3 Jan 2020 - 6 Feb 2020 = 100; 11 Aug - 16 Sep largely estimated using earlier version of data set)

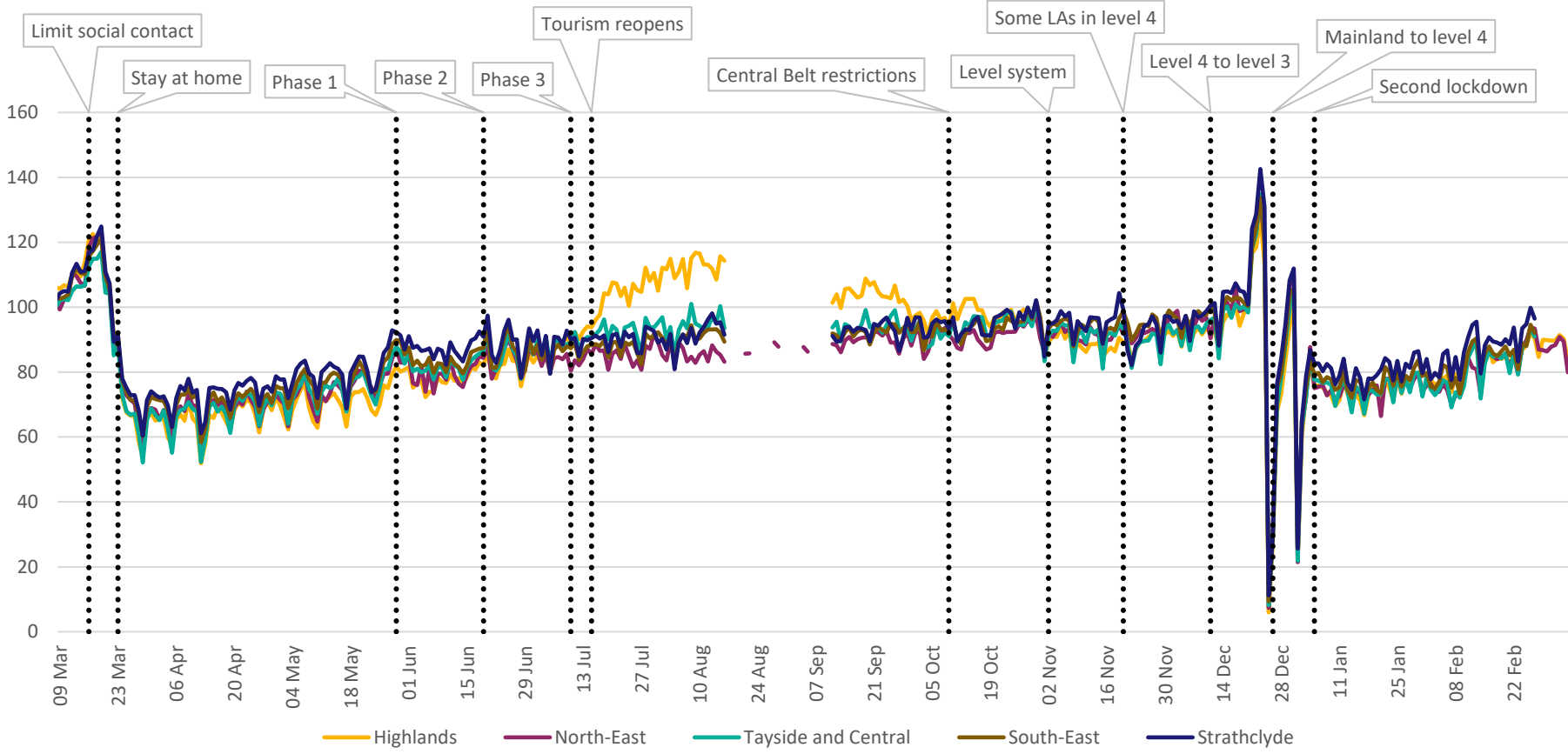


Figure 13 Grocery and pharmacy movements (Median of equivalent day 3 Jan 2020 - 6 Feb 2020 = 100; Google did not report data for the period from 17 August to 10 September)

Figure 27 shows that grocery and pharmacy mobility fell to around 70 per cent of its pre-lockdown level across Scotland on weekdays early in the lockdown period and around 60 per cent on Sundays. This followed an initial flurry of activity as shoppers stockpiled before lockdown, driving the regional grocery and pharmacy mobility indices to around 120 per cent of their winter baseline levels.

Grocery mobility rose steadily until settling at between 85 and 90 per cent of its pre-lockdown level during phase three of easing. There was little regional variation in grocery mobility until tourism reopened, although Strathclyde consistently saw the highest level of activity before then. After tourist businesses reopened, the mobility figure for the Highlands rose to well above its pre-lockdown level, presumably indicating a temporarily higher population shopping for groceries during the tourist season. The Tayside and Central region appears to have experienced a much more modest increase in shopping mobility for the same reason. This relative boost for the Highlands lasted until October.

Increasing travel restrictions seem to have had very little impact on grocery and pharmacy movements with no significant reduction during the autumn outside the Highlands. After a rapid increase in the run up to Christmas and subsequent volatility due to the associated bank holidays, the first five weeks of the second lockdown saw grocery and pharmacy movements at around 75 to 80 per cent of their level a year earlier. They had begun to return to their autumn level by the end of the 12 month period.

With non-essential retail closed during both lockdowns and mobility for recreation limited to daily exercise, the regional retail and recreation mobility indices, which include mobility within restaurants, cafes, shopping centres, theme parks, museums, libraries and cinemas, fell even lower than the workplace mobility indices during both lockdowns as shown in figure 28. Across Scotland, the indices fell to around 20 per cent of baseline levels during early lockdown weekends and below 30 per cent on weekdays. The incomplete data for Strathclyde appears to indicate retail and recreation mobility was higher relative to the pre-lockdown period than in the other regions during the first lockdown. This pattern was repeated in the second lockdown.

The regional retail and recreation indices continued to show weekly lows at weekends as the lockdown was eased and tourism reopened, perhaps reflecting some continuing limitations on leisure activities and wariness of unnecessary social interaction affecting recreational choices.

By the beginning of phase three the regional retail and recreation indices were generally above 60 per cent of their winter baseline levels on weekdays. After the reopening of tourism, the regional indices diverged with the Highlands index eventually exceeding its pre-lockdown level while the North-East was affected by the Aberdeen local lockdown in early August and does not appear to have taken until October to recover. The latter also appears to have negatively affected the North-East grocery and pharmacy regional index. Similarly, retail and recreation movements in Strathclyde appear to have been reduced by the level 4 restrictions in late November and early December. Elsewhere tightening restrictions during the autumn seems to have had a very limited impact at most on retail and recreation movements.

Retail and recreation movements briefly rose in all regions in the run up to Christmas before falling to around 40 per cent in the first five weeks of the second lockdown before beginning to increase at the end of the 12 month period.

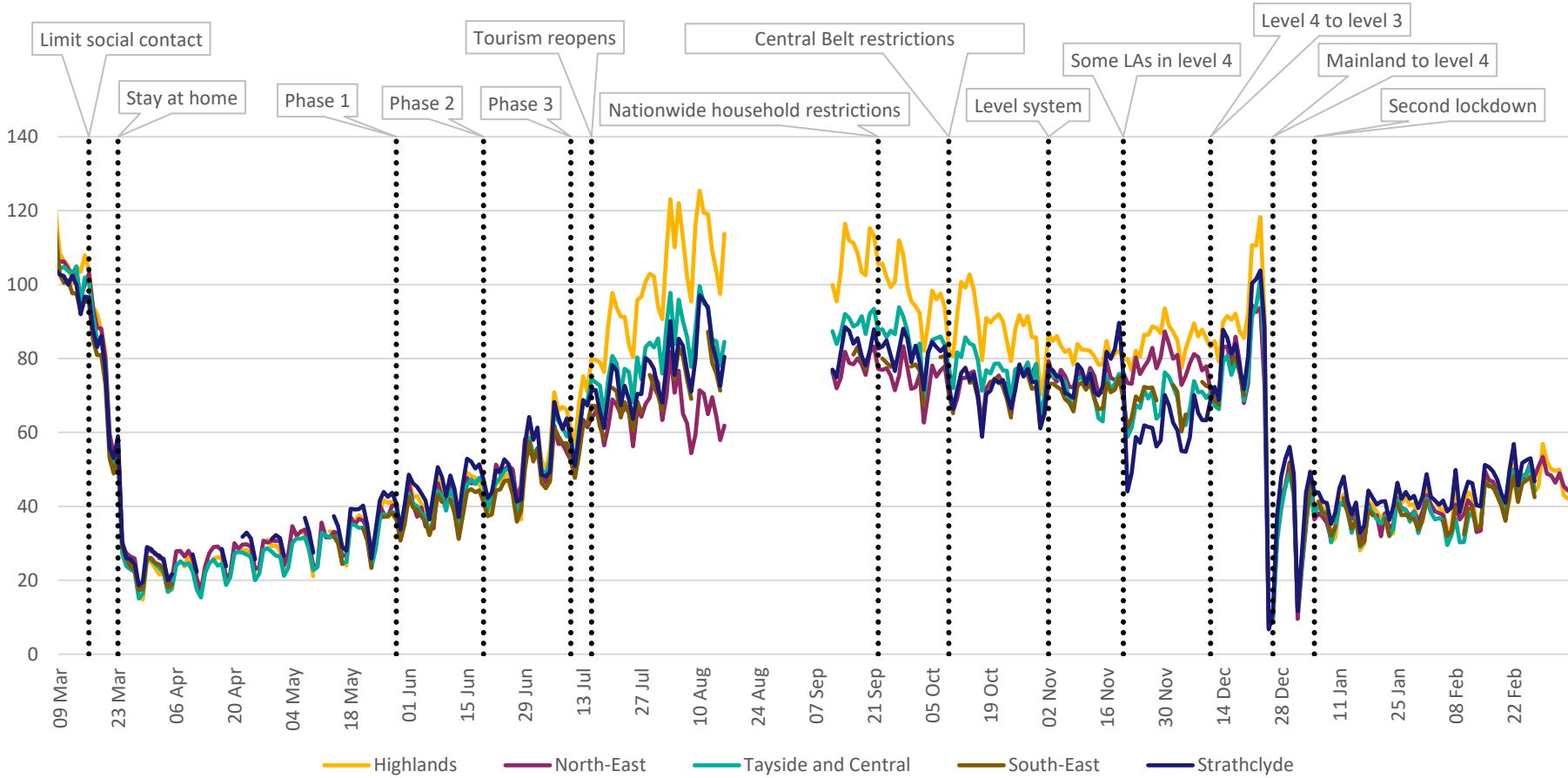


Figure 14 Retail and recreation movements (Median of equivalent day 3 Jan 2020 - 6 Feb 2020 = 100; Google did not report data for the period from 17 August to 10 September)

8: Key events

Aberdeen local restrictions

Additional restrictions came into force in Aberdeen on 5 August. These included a number of restrictions which affected travel both within the city and to and from it. People in Aberdeen were asked not to meet other households indoors or travel more than five miles for leisure or recreational purposes. These travel restrictions remained in place until 24 August, while the city's hospitality sector did not reopen until 26 August.

Figure 29 compares changes in road traffic levels and in both rail and concessionary bus travel patronage in the Aberdeen area. It also plots changes in Scotland as a whole over the period affected by the local restrictions.

All the data in figure 29 is indexed to the daily average from the working week starting 27 July. This means weekend lows are experienced for all modes.

Road traffic levels in Aberdeen were estimated using a selection of traffic counters within and in close proximity to Aberdeen. The resulting Aberdeen road traffic index stayed below the Scotland road traffic index for the duration of the local restrictions, averaging 18 per cent lower than the national index, but immediately recovered to track the national index very closely once travel restrictions were lifted.

The Aberdeen rail patronage index was based on journeys where the origin or final destination was Aberdeen. The Aberdeen rail patronage index was affected by the tragic derailment near Stonehaven on 12 August, but it was an average of 54 per cent lower than the national rail patronage index prior to the resulting line closure, suggesting the travel restrictions had a greater impact on rail travel than road travel.

After the line closure, the Aberdeen rail patronage index was an average of 57 per cent lower than the national index before local travel restrictions were lifted and 32 per cent lower for the remainder of the period to 5 September. Much of the latter shortfall is presumably explained by the loss of a direct rail link to the Central Belt (a replacement bus service to Dundee was available allowing for onward travel).

Concessionary bus travel data for Aberdeen and Aberdeenshire (where many services run to or from Aberdeen) was used to allow a comparison with concessionary bus use in Scotland as a whole. The Aberdeen concessionary bus index was lower than its national equivalent for the duration of the local restrictions and remained below it for the rest of the period covered by this

report. It was an average of 31 per cent lower than the national index during the local restrictions and 16 per cent lower than the national index in the following fortnight, suggesting wariness of COVID-19 transmission among elderly bus users remained elevated after the restrictions were lifted.

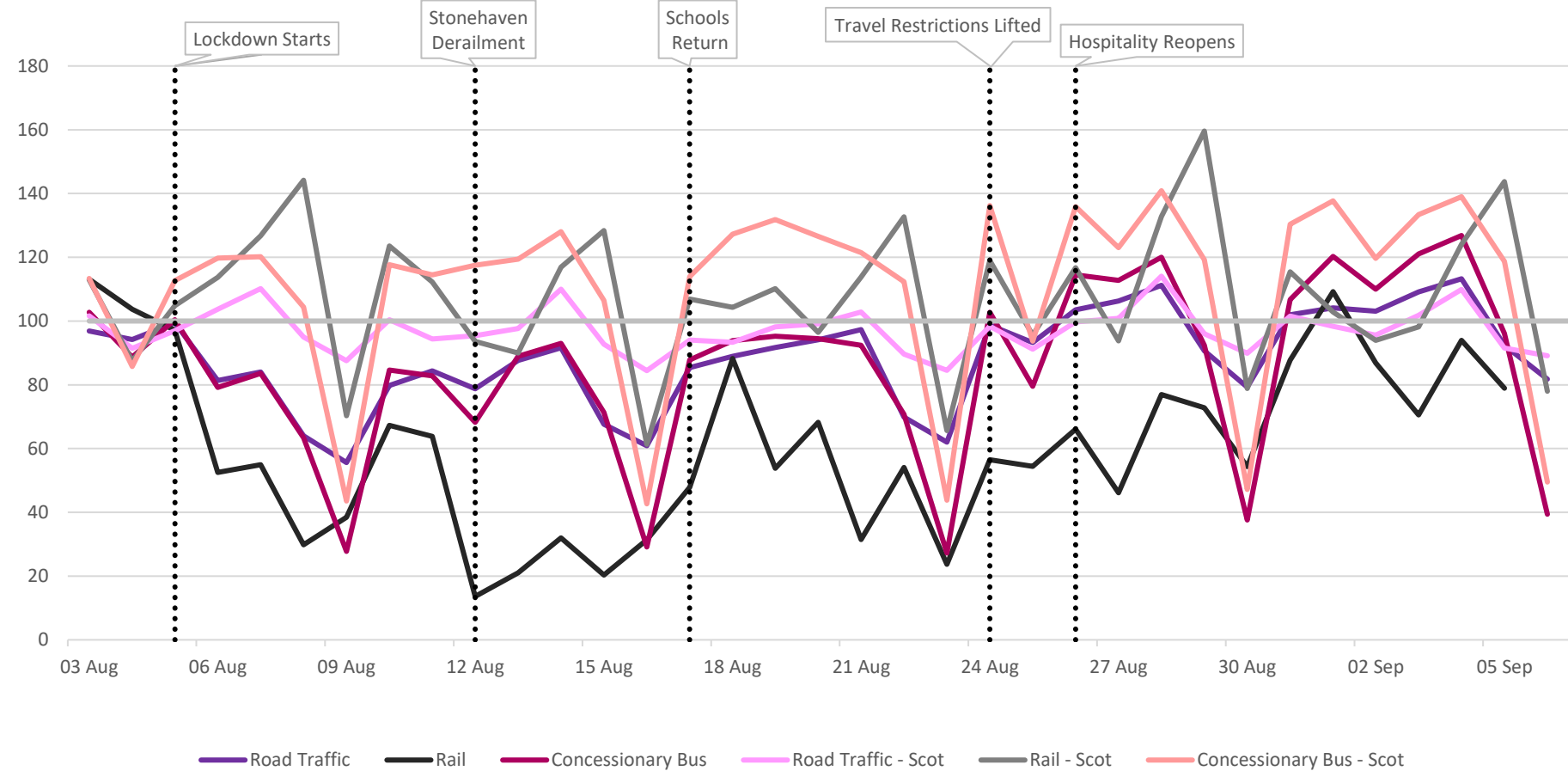


Figure 29 Aberdeen restrictions (27-31 July average =100)

Return to school

Attempts have been made to isolate the impact of the nationwide reopening of schools in August on transport use through close examination of the data behind the trends discussed earlier in this report. This effort was complicated by multiple issues: schools did not all reopen at the same time and had not all returned at the same time in 2019; schools adopted a variety of protocols in order to safely reopen, which included phased returns by year group or phased pick-up and drop-off times; and the return to school coincided with a period in which non-school related transport use patterns were also changing as people increasingly embraced the opportunities provided by the third phase of easing of COVID-19 restrictions. Insufficient data granularity makes isolating changes in school travel from these wider changes very challenging.

These issues make it impossible to draw firm conclusions about the changing nature of school travel. There was no apparent change in the school travel share of rail compared to a year earlier. There appears to have been a small shift from bus travel to private car use for school attendance, particularly in rural areas where alternatives are scarcer, but even this modest conclusion should be treated as tentative.

A second return to school was phased with younger pupils returning from 22 February. Since only a minority of pupils returned on that day and it was within two weeks of the end of the 12 month period, it is similarly impossible to draw any conclusions from the available data.

West of Scotland household restrictions

Restrictions on meeting with people from other households in indoor household settings and on visiting care homes and hospitals were tightened in Glasgow, East Renfrewshire and West Dunbartonshire on 2 September. These restrictions were extended to Renfrewshire and East Dunbartonshire on 8 September and to North Lanarkshire and South Lanarkshire on 12 September.

Figure 30 suggests these changes had very little impact on the weekly average level of concessionary bus travel. There is little difference between the concessionary bus trends of the three sets of areas above and the rest of Scotland before wider restrictions were introduced across the Central Belt. The only indication that these household restrictions may have had any effect on concessionary bus travel is the temporary reduction of the Renfrewshire and East Dunbartonshire index by around two points relative to the other indices in the week after restrictions were introduced in those local authorities.

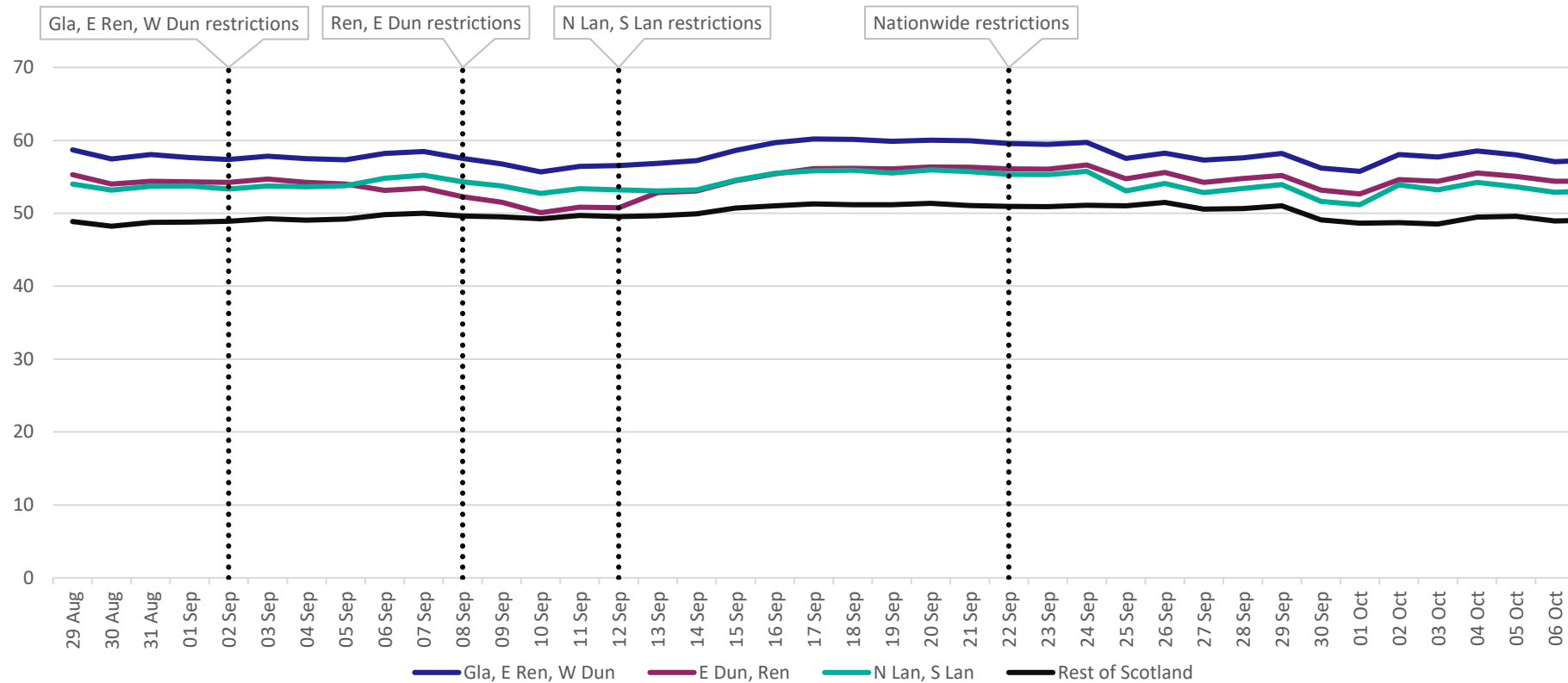


Figure 30 Concessionary bus travel during West of Scotland restrictions (week beginning 2 March 2020 = 100)

There was no reliable traffic counter data for East Dunbartonshire trunk roads across this period so Renfrewshire appears alone in Figure 31 which shows a small reduction in trunk road use in each of the three sets of local authorities in the week when they first experienced the new household restrictions. However, a similar trend is seen in the areas where no measures were introduced, so these declines were likely due to other factors.

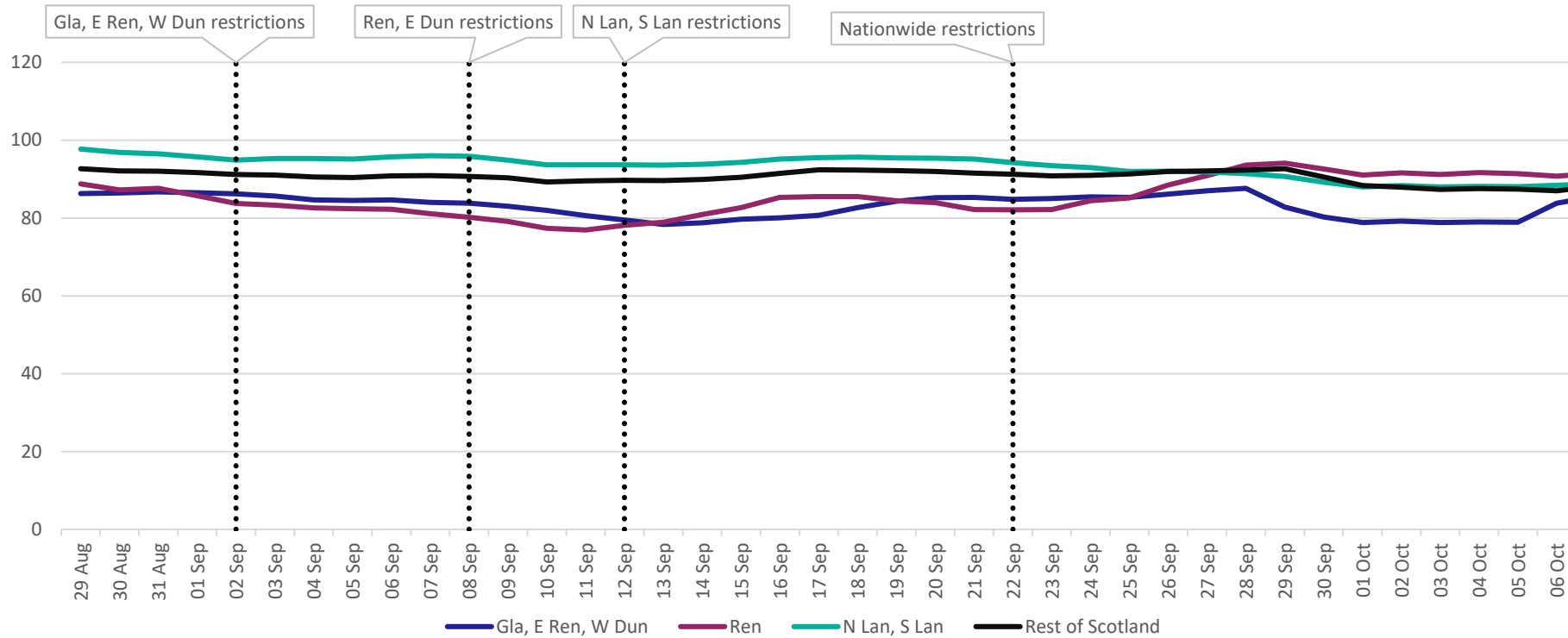


Figure 31: Trunk road traffic during West of Scotland restrictions (week beginning 2 March 2020 = 100)

Central Belt restrictions

As the West of Scotland restrictions had proved insufficient to halt the rise in COVID-19 cases during the second wave of the pandemic, additional measures were introduced on 9 and 10 October. These included nationwide restrictions on hospitality and additional restrictions on hospitality, travel (advisory rather than legally binding), sports, exercise and leisure in North Ayrshire, East Ayrshire, South Ayrshire, Inverclyde, Renfrewshire, East Renfrewshire, West Dunbartonshire, East Dunbartonshire, Glasgow, Clackmannanshire, Falkirk, Stirling, North Lanarkshire, South Lanarkshire, West Lothian, Midlothian, East Lothian and Edinburgh.

Figures 32 and 33 show a narrowing in the gap between Central Belt and Rest of Scotland travel relative to that in the first week of March by concessionary bus and on trunk roads respectively. Before the new restrictions took effect the Central Belt concessionary bus index was over five points higher than the Rest of Scotland. This rapidly narrowed to a single point in the week after the restrictions were introduced and had disappeared completely towards the end of October.

Central Belt trunk road travel similarly saw its two point gap over the Rest of Scotland relative to the first week of March disappear after the new restrictions were introduced. It is unclear to what extent these changes in travel patterns in the Central Belt were driven by behaviour changes due to the restrictions rather than general concerns about COVID-19 transmission and other non COVID-19 factors, but unlike with the earlier West of Scotland household restrictions, it appears likely that the Central Belt restrictions had some material impact on travel patterns.

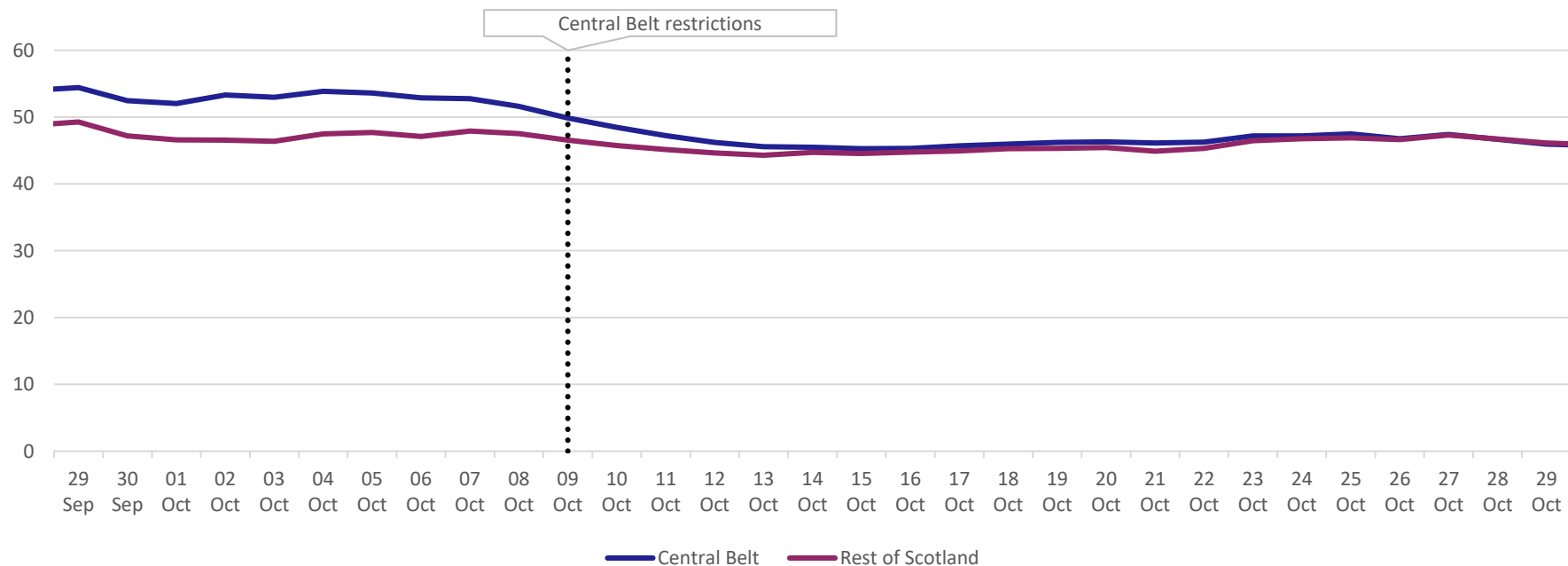


Figure 32: Concessionary bus travel during Central Belt restrictions (week beginning 2 March 2020 = 100)

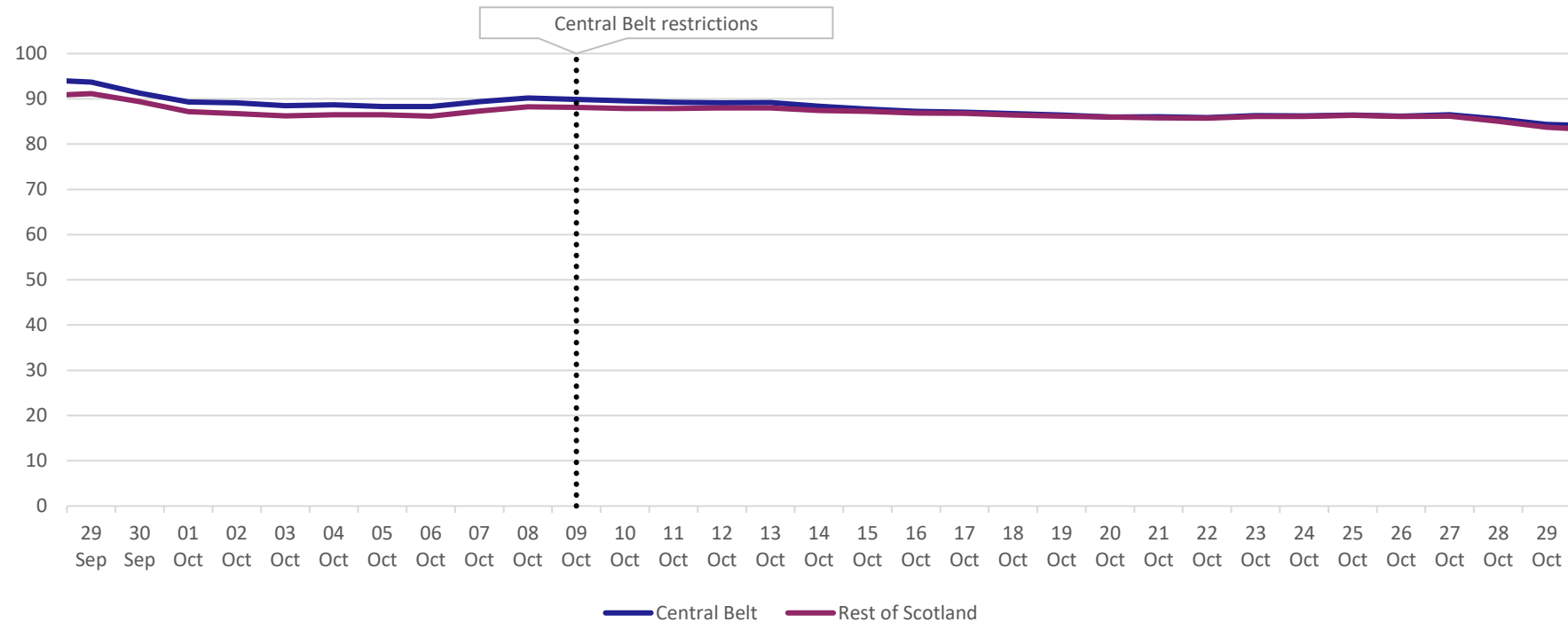


Figure 33: Trunk road traffic during Central Belt restrictions (week beginning 2 March 2020 = 100)

Local authority level changes

After the Central Belt restrictions similarly failed to stall a rapid increase in COVID-19 infections, the Scottish Government introduced a system on 2 November under which local authorities were moved between restriction levels on a weekly basis, with travel into and out of level three and four local authorities restricted. Contravening some of these restrictions was made illegal from 20 November.

As the spread of COVID-19 varied across Scotland local authorities were moved between levels often multiple times before Christmas. Figures 34 and 35 group together local authorities which moved in step between levels across the whole period. Local authorities which followed a unique path through the levels system have been excluded from this analysis.

Local authority groups in this analysis were: always level 1 – Na h-Eileanan Siar, Highland, Moray and Orkney Islands; level 2 level 1 from 11 December – Dumfries and Galloway and Borders; level 2 to level 3 from 18 December – Aberdeen and Aberdeenshire; level 2 to level 3 from 13 November – Fife and Perth and Kinross; level 3 to level 2 from 11 December – Falkirk and Inverclyde; always level 3 – Clackmannanshire, Dundee, Edinburgh and North Ayrshire; level 3 to level 4 from 20 November and back to level 3 from 11 December – East Ayrshire, East Dunbartonshire, East Renfrewshire, Glasgow, North Lanarkshire, Renfrewshire, South Ayrshire, South Lanarkshire, Stirling, West Dunbartonshire and West Lothian.

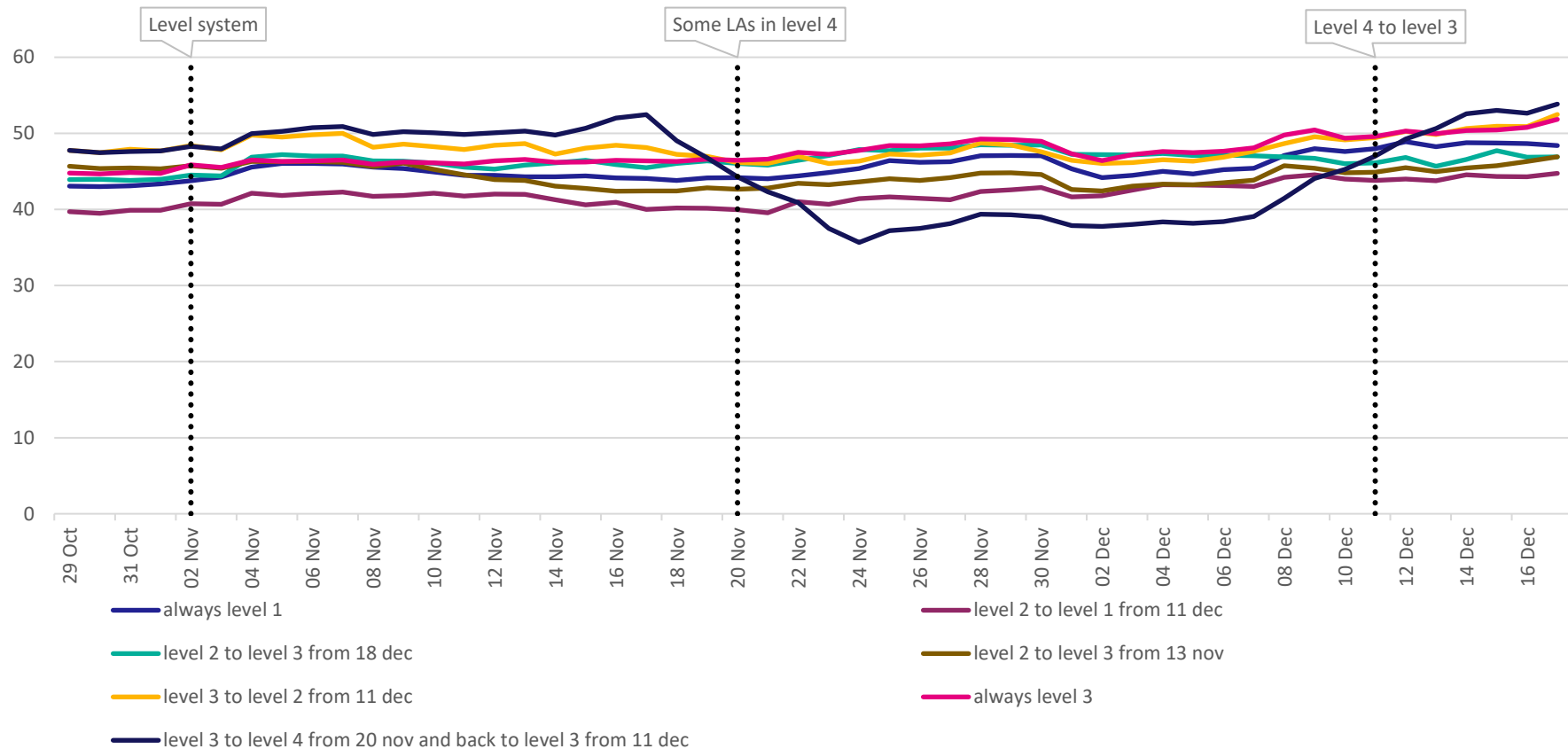


Figure 34 Concessionary bus travel and changes in local authority levels (week beginning 2 March 2020 = 100)

Figure 34 suggests moving from level 3 to level 4 and vice versa had a much bigger impact than any other level changes for concessionary bus travel. The fall and subsequent rise in the index for local authorities moving from level 3 to level 4 and then back to level 3 coincides with the dates of the level changes (these changes are spread across due to the weekly averaging used to smooth the data here). There appears to be a small impact from moving to level 2 to level 3 based on the authorities which did so on 13 November), although this appears small enough for another factor to be responsible.

Although travel restrictions were similar in levels 3 and 4, other restrictions were stricter in level 4 and demand for travel is derived from other activity choices. These were constrained by the stricter restrictions.

The evidence is less clear regarding trunk road travel. Figure 35 suggests moving from level 3 to level 4 had a somewhat bigger negative impact on trunk road travel than any other move between levels, but nowhere near as clearly as with concessionary bus travel. Moreover, the move from level 4 back to level 3 appears to have had considerably less impact on trunk road travel. It is possible that the older cohort of concessionary bus users were more worried by the deteriorating COVID-19 transmission situation than trunk road users and also the perceived transmission risk while travelling by bus was much higher than that of travelling by car at the time.

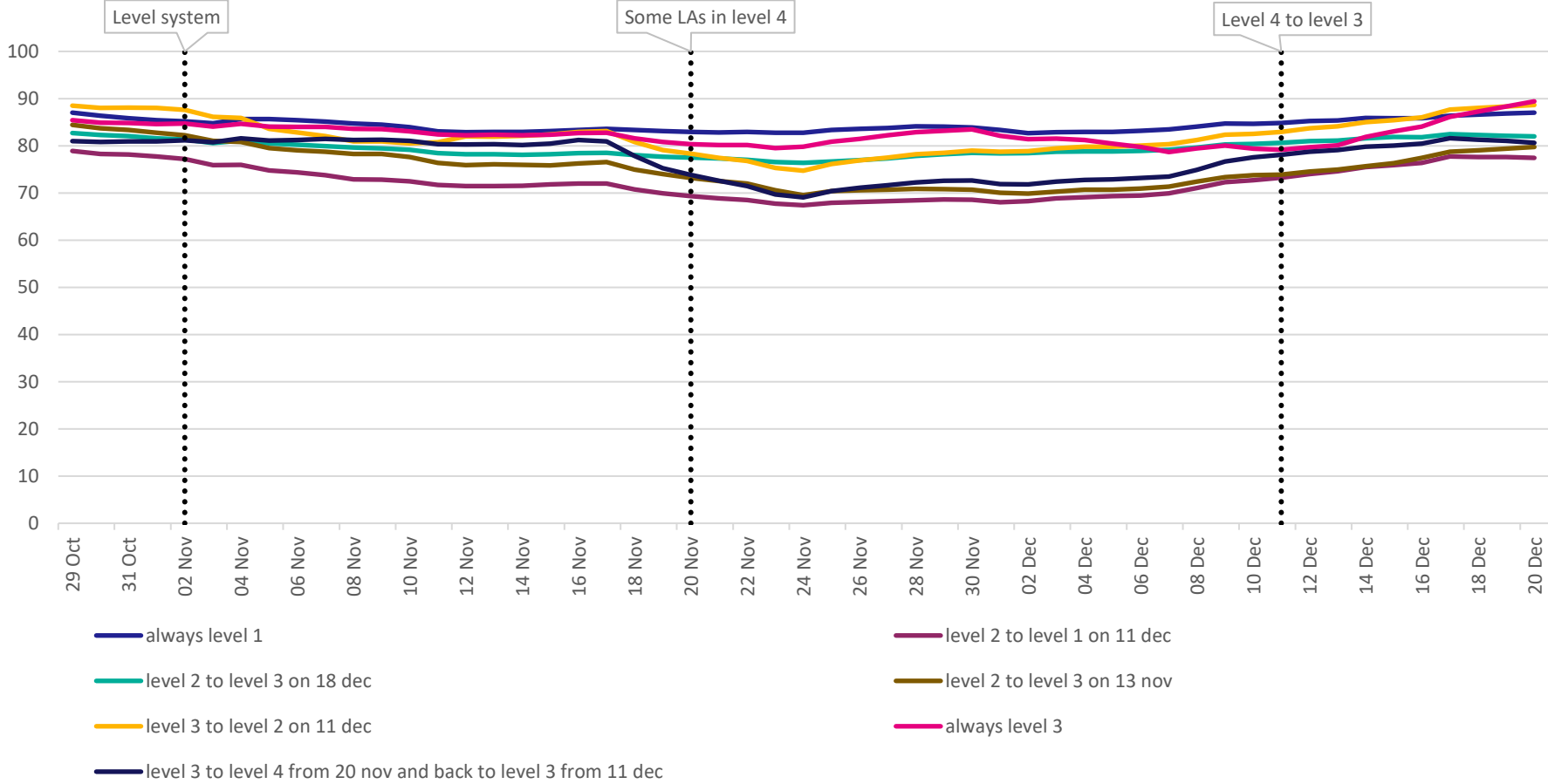


Figure 35: Trunk road traffic and changes in local authority levels (week beginning 2 March 2020 = 100)

Christmas period

The run up to Christmas saw a loosening of restrictions in many local authorities and then Christmas Day featured a one day relaxation of rules to allow multi-household bubbles to meet. However, the entire Scottish mainland was placed in level 4 restrictions on 26 December.

With the same changes to equivalent days deployed elsewhere in this document and weekly averaging, figure 36 smooths the extreme fluctuations seen for all modes across the festive season. Travel by all modes peaks when Christmas Day first enters the weekly average calculation (on 22 December) and then falls as the level 4 restrictions begin to exert an effect on the average.

Trunk road car travel, cross border car travel, concessionary bus patronage and rail patronage all roughly halved relative to the previous year after the stricter restrictions were in effect. The impact on the number of flights through Scottish Area Control airspace was considerably smaller.

Car travel, particularly across the border, began to recover almost immediately with any rebound in the weekly average relative to the previous year for other modes proving very minor in the first two weeks after level 4 restrictions were imposed.

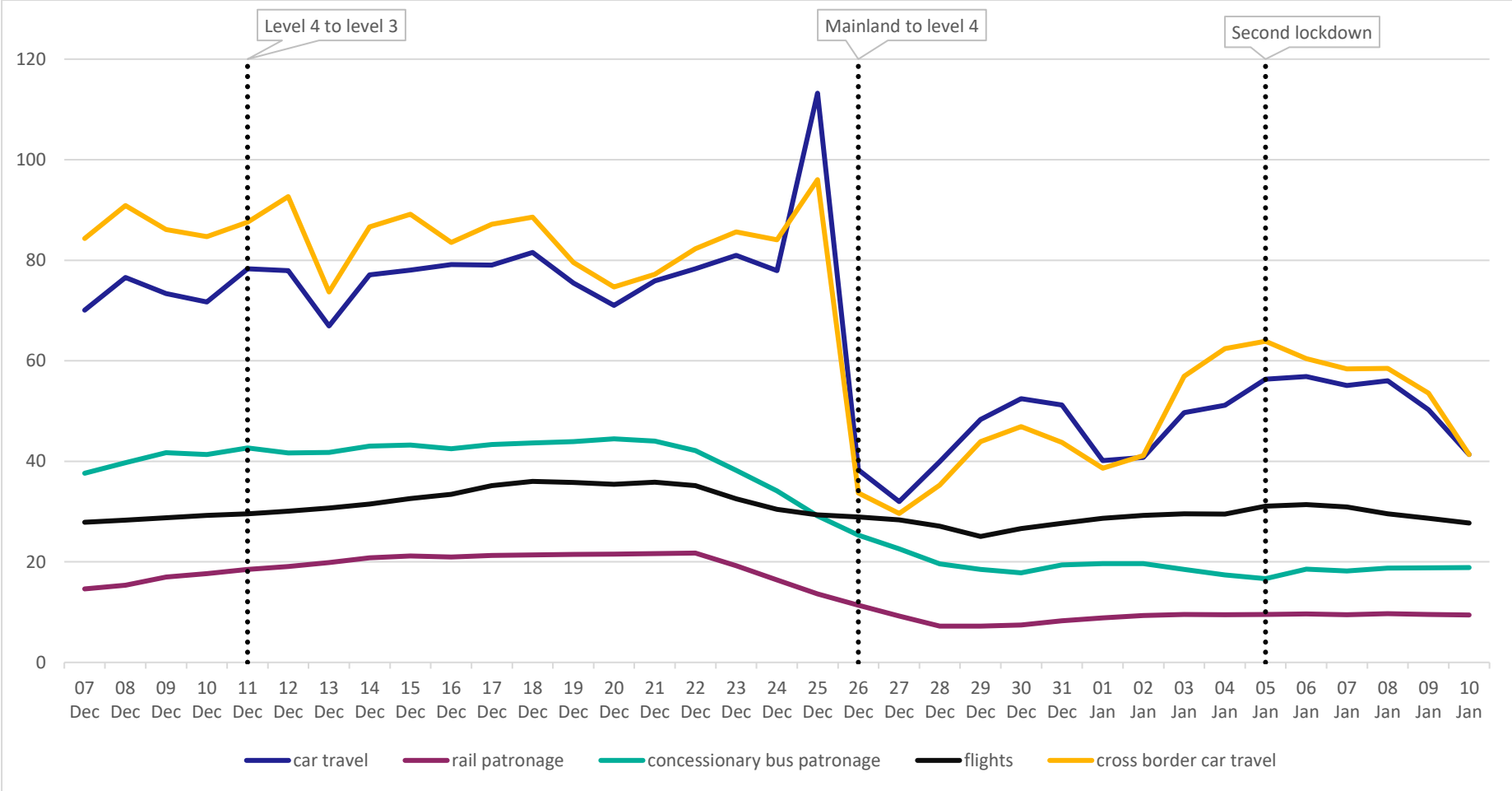


Figure 36: Christmas period (equivalent week in 2019-20 = 100)

Lockdown comparison

Mainland Scotland entered a second lockdown on 5 January. This had little impact on formal travel restrictions, but meant further restrictions on activities enabled by travel. However, restrictions were not identical to those under the first lockdown and the second lockdown began with more people able to work in workplaces adapted to reduce COVID-19 transmission risk.

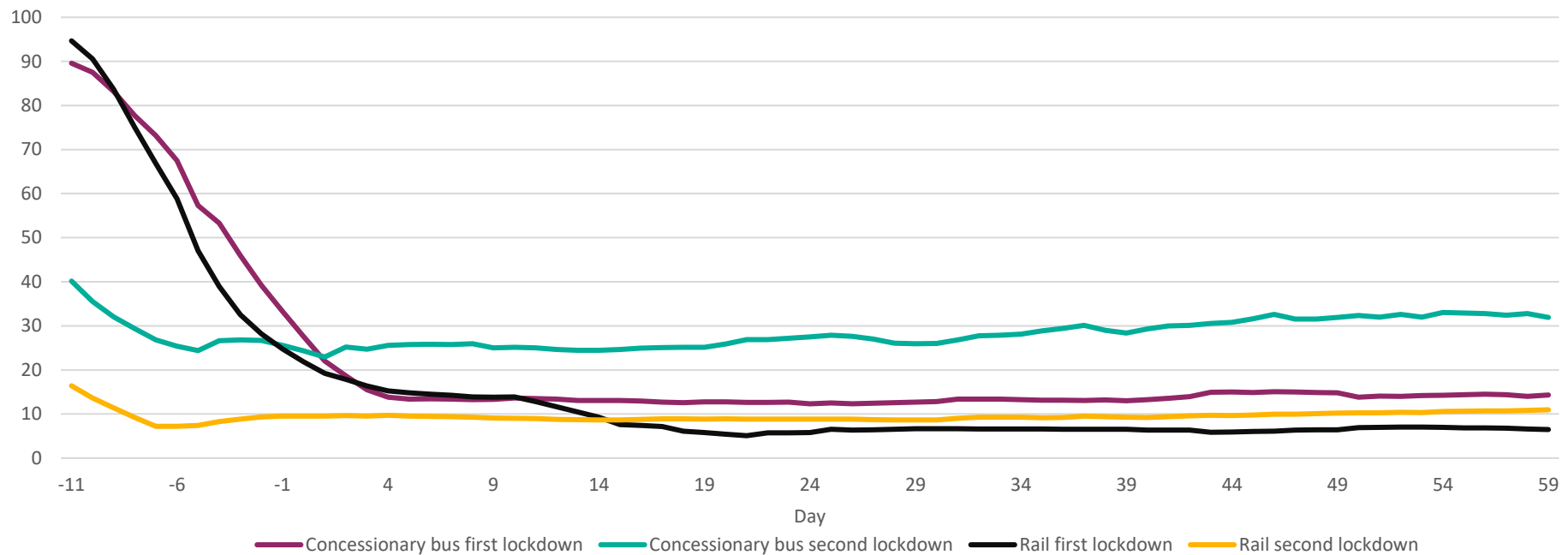


Figure 37 Concessionary bus and rail lockdown comparison (equivalent week in 2019-20 =100)

Figure 37 compares weekly averaged concessionary bus and rail patronage under the first lockdown which was announced on 23 March (designated as day zero) with concessionary bus and rail patronage during the second lockdown which was announced on 4 January (also designated as day zero). The first lockdown was preceded by a rapid decline in public transport use from normal

levels amid the rapid onset of the first wave of COVID-19, whereas the decline before the second lockdown was more modest since Scotland was already under considerable travel and other restrictions in December.

Concessionary bus patronage entered the first lockdown at 28 per cent of its 2019 equivalent level and entered the second lockdown at 24 per cent of its 2020 equivalent level. However, the concessionary bus index took more than three weeks to reach its first lockdown low of 12 per cent of its equivalent 2019 level, whereas it reached a low of 23 per cent on the first full day of the second lockdown. The very gradual increase which was seen after the first lockdown low was replicated in the second lockdown, but began immediately once Scotland entered the second lockdown. Presumably this was because there was no necessity for the public to adjust to the type of restrictions they had experienced in the recent past.

Rail patronage fell more than concessionary bus patronage during the first three weeks of the first lockdown. It entered the first lockdown at 22 per cent of its 2019 equivalent level and fell to a low of five per cent. It then began to increase very slowly in line with the very gradual nature of the return to concessionary bus travel. It entered the second lockdown at 10 per cent of its 2020 equivalent level and only fell very modestly over the next four weeks. Its subsequent increase was also muted. Eight weeks after the beginning of the second lockdown it lay at 11 per cent of its 2020 equivalent level. This was much slower than the increase in concessionary bus travel which had risen to 33 per cent of its 2020 equivalent level after eight weeks of the second lockdown.

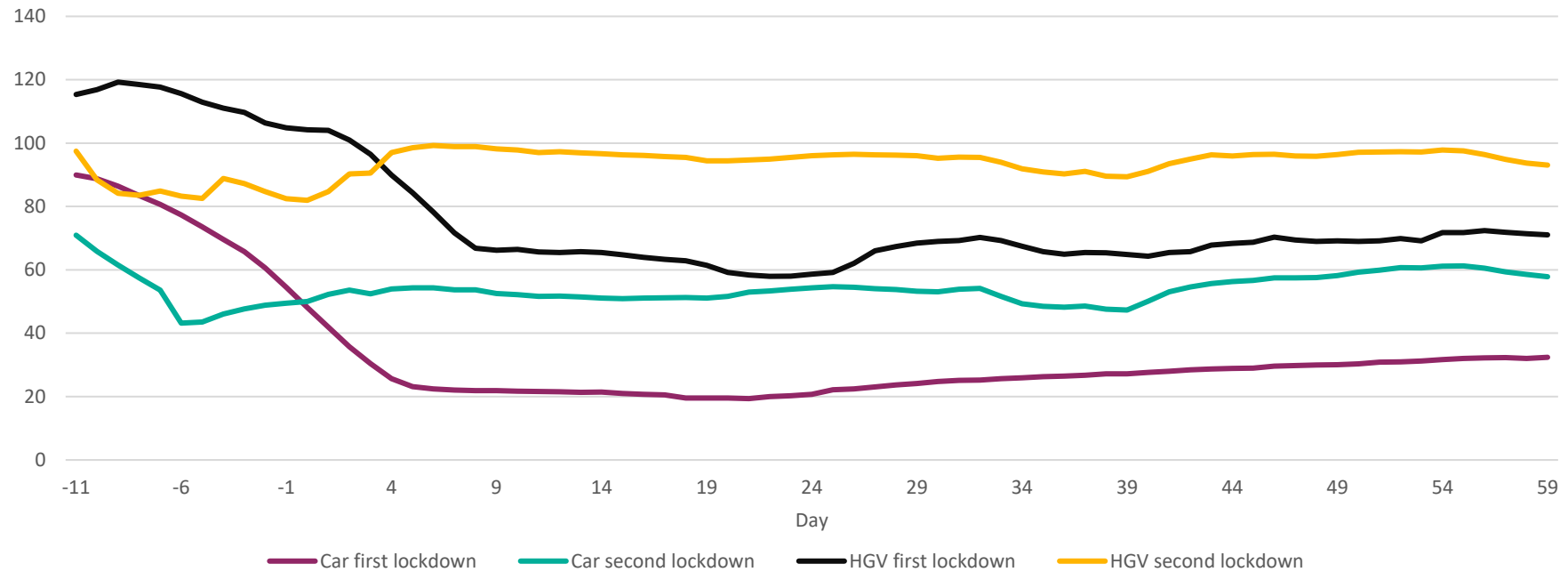


Figure 38: Trunk road traffic lockdown comparison (equivalent week in 2019-20 = 100)

Figure 38 shows trunk road traffic during the two lockdowns. In the first lockdown, car and HGV traffic both took around three weeks to reach their lowest levels before gradually increasing thereafter. The second lockdown had little apparent effect on trunk road traffic with HGV traffic at close to early 2020 levels and car traffic remaining above its post-Christmas low. Indeed road traffic levels seem to have been more affected by a period of inclement weather in mid-February than by the start of the second lockdown. However, as shown in figure 18, trunk road car traffic remained lower in early March than at its November low. There was no reduction in car travel when Scotland entered the second lockdown because of the level 4 restrictions already in place.

9: Public attitudes survey

Transport Scotland commissioned a survey to monitor changes in public attitudes to transport use due to the COVID-19 pandemic. During the period covered by the trends data presented above, fourteen waves of this survey were run, with the first wave in early May.

Comparison of survey results with the pre-pandemic 2019 Scottish Household Survey suggests some modal shift from public transport to car for many journey types during the pandemic. Evidently this shift has been somewhat outweighed by the reduction in the number of trips taken across all modes since that survey was taken, so roads have not become more congested than in 2019.

The public attitudes survey also corroborates findings of increased road traffic in the period after the first lockdown. The proportion of respondents saying they were travelling less by car than prior to the lockdown halved from 62 per cent in late May to 31 per cent in the first week of October.

The survey appears to contradict the trends data finding of reduced walking during the summer months. In late August, 38 per cent of respondents said they were walking or wheeling more than before the lockdown while only 10 per cent said they were walking or wheeling less.

This apparent discrepancy could be due to respondents comparing their summer walking activity with their walking during the immediate pre-lockdown period in the winter months, whereas the trends data compares pandemic walking levels with June 2019 when walking was more popular. It is also possible that survey respondents are less likely to take into account walking which they previously did in the course of wider travel including walking to access public transport, but are more likely to recall walking for recreational purposes which appears to have grown in popularity during the lockdown period.

Another possibility is that the counters used to estimate walking activity for the trends data presented above are biased towards commuter and other city walking and therefore have failed to sufficiently capture a significant increase in recreational walking in rural and residential areas.

The public attitudes survey shows the decline and subsequent muted growth in public transport use has been informed by concerns related to COVID-19. Figure 39 shows 81 per cent of respondents were fairly or very concerned about virus transmission on trains and 75 per cent on buses in early May, falling to 58 per cent and 59 per cent respectively in early October.

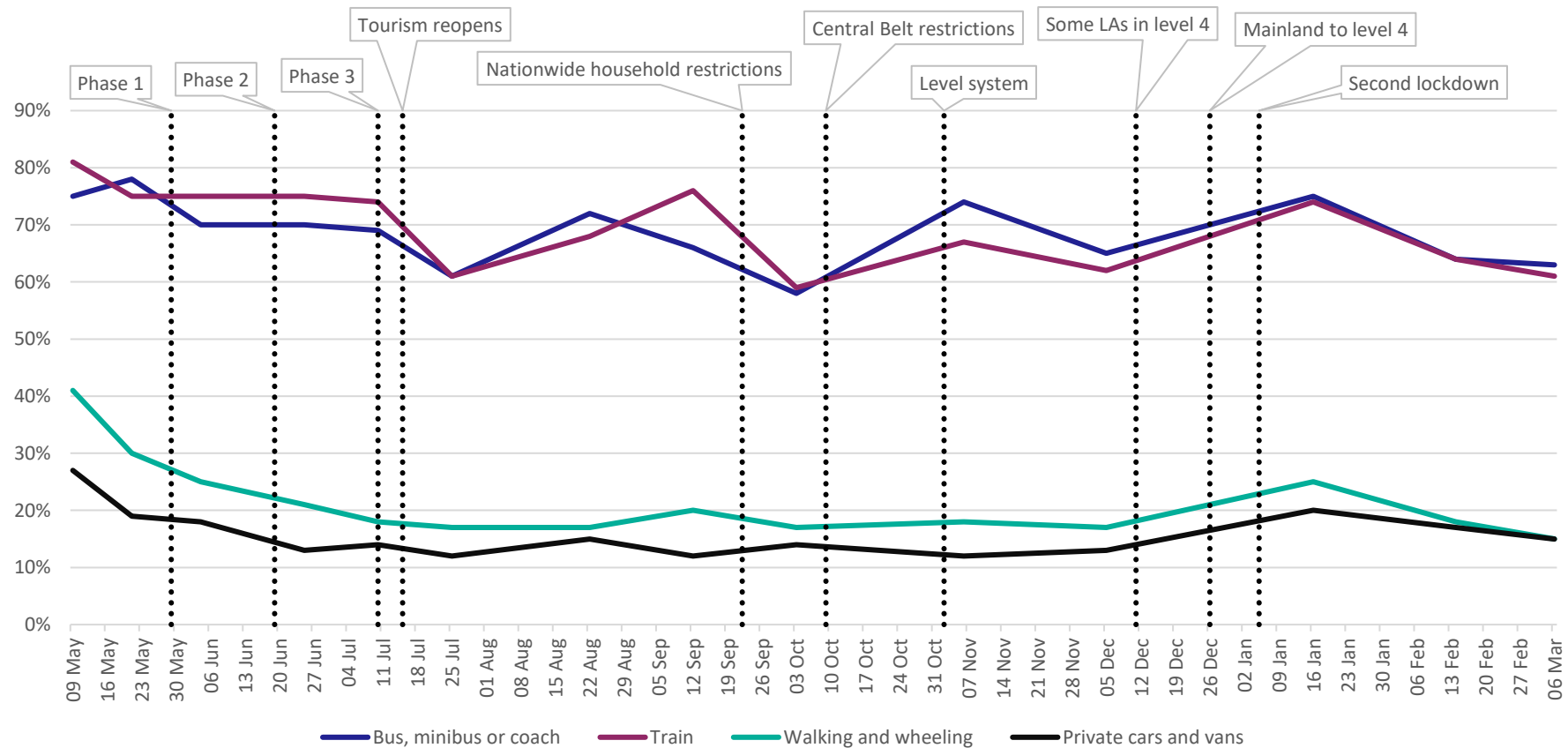


Figure 39 Respondents very or fairly concerned about COVID-19 transmission by mode

In contrast, only 41 per cent of respondents indicated a similar level of concern regarding the risk of transmission while walking or wheeling and 27 per cent while travelling by private car or van in early May. These statistics fell to 17 per cent and 12 per cent respectively in late July and remained no higher than 20 per cent and 15 per cent respectively until the first survey wave of 2021 which fell during the second lockdown. Transmission concerns remained considerably lower during the second lockdown than during the first lockdown for all four modes.

Figure 40 shows that concern about being able to maintain physical distancing of at least a metre is much higher for public transport than it is for travelling in private vehicles, walking or wheeling. Concern about physical distancing peaked at 84 per cent of respondents for train travel and 78 per cent of respondents for bus travel in late May.

The level of concern about physical distancing was lower for all four modes in early October than it had been in May, but still relatively high at 49 per cent for rail travel and 56 per cent for bus travel. Differences in distancing concerns presumably provide the key explanation for the disparity between public transport and private mode transmission concerns shown in figure 39.

Before October distancing concerns were more widespread among rail passengers than among bus passengers, but from October onwards distancing concerns were more prevalent among bus passengers than rail passengers. This change may reflect the bus passenger per service index shown in figure 6 remaining elevated close to its summer high during the autumn while the rail patronage per service index shown in figure 9 fell steadily to around half of its summer peak.

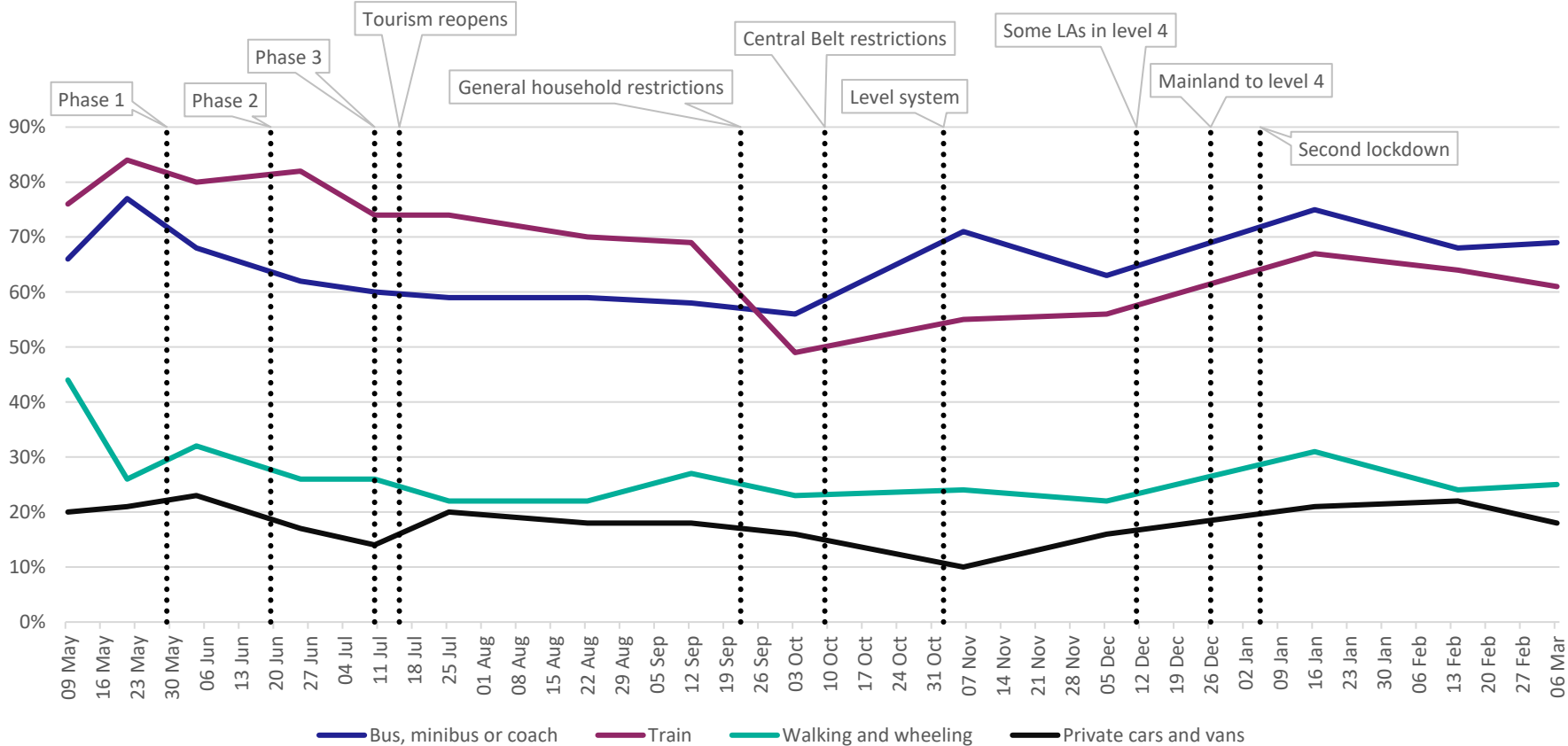


Figure 40 Respondents very or fairly concerned about physical distancing by mode

Annex A: Timeline of public messages and government measures

(Scotland only except where stated)

- 16 March – No gatherings of over 500 people
- 16 March – Work from home where possible guidance (PM statement)
- 16 March – Physical distancing advice including on essential travel (UK)
- 20 March – All pubs, bars and restaurants closed
- 22 March – Advice on shielding for those with serious health conditions (UK)
- 22 March – Further advice on essential travel
- 23 March – First lockdown begins: travel restricted to essential work, shopping for food and medicine, caring for others and limited exercise
- 23 April – COVID-19 framework for decision making published
- 11 May – Outdoor exercise multiple times daily no longer discouraged
- 21 May – Scotland's route map published
- 26 May – Transport Transition Plan published
- 29 May – Scotland entered phase one of lockdown easing
- 19 June – Scotland entered phase two of lockdown easing
- 19 June – Households with one adult allowed to form extended household group with one other one adult household
- 22 June – Face coverings became mandatory on public transport
- 29 June – Some non-essential shops allowed to reopen
- 3 July – Guidance on not travelling more than five miles for leisure purposes dropped
- 10 July – Scotland entered phase three of lockdown easing
- 10 July – Up to five households (max 15 people) allowed to meet outdoors
- 13 July – Non-essential shops within shopping centres allowed to reopen
- 15 July – Tourism sector allowed to reopen
- 15 July – Pubs, bars and restaurants allowed to reopen
- 15 July – Childcare venues, hairdressers, places of worship, museums, galleries and libraries allowed to reopen
- 5-24 August – Travel restrictions in Aberdeen
- from 11 August – Schools reopened

- 2 September – Additional household restrictions in Glasgow, East Renfrewshire and West Dunbartonshire
- 8 September – Additional household restrictions in Renfrewshire and East Dunbartonshire
- 12 September – Additional household restrictions in North Lanarkshire and South Lanarkshire
- 22 September – Additional household restrictions across Scotland
- 9-10 October – Additional nationwide hospitality restrictions and a wider range of restrictions in Central Belt local authorities including travel restrictions
- 2 November – Levels system introduced with more than half of local authorities under level 3 restrictions
- 20 November – Eleven Central Belt local authorities placed under level 4 restrictions
- 11 December – All level 4 local authorities moved to level 3
- 25 December – Some relaxation of household restrictions for Christmas Day only
- 26 December – All mainland local authorities placed under level 4 restrictions
- 5 January – Second lockdown begins
- 22 February – Return to school for P1 to P3 pupils and return of early learning and childcare

Annex B: Data sources and baselines used

Active travel

Sources – Local authorities (Argyll & Bute, East Dunbartonshire, Edinburgh, Glasgow, North Ayrshire, Perth & Kinross and Stirling) and Cycling Scotland.

Automatic counters record pedestrians and cyclists passing fixed locations across Scotland.

Baseline: 3 – 30 June 2019 average = 100

Commercial bus

Source – Ticketer

National bus ticket sales for operators using Ticketer machines. This includes most major operators, but not Stagecoach or Lothian Buses.

Baseline: Equivalent day in week ending 2 March 2020 = 100

Concessionary bus

Source – Fareshare

Fareshare is the system used to reimburse concessionary bus journeys.

Baseline: Equivalent day in 2019-20 = 100

Rail

Source – ScotRail

Only covers ScotRail passengers. Cross border services run by other operators are excluded.

Patronage baseline: Equivalent day in 2019-20 = 100

Service level baseline: Pre-pandemic timetable level = 100

Ferry

Sources – CalMac and Serco Northlink

Passenger and vehicle data is only available on a weekly basis. Ferry services run by other operators are excluded.

Patronage baselines: Equivalent week in 2019-20 = 100

Air

Flights source – [Eurocontrol](#)

Scottish Area Control flight data covers flights arriving in, leaving from or passing through the space monitored by Scottish Area Control. This covers maritime areas and part of Northern England as well as Scotland.

Baseline: Equivalent day in 2019-20 = 100

Patronage source – [Civil Aviation Authority](#)

Baseline: Equivalent month in 2019-20 = 100

Road

Source – National Traffic Data System (NTDS)

Automatic traffic counters measure the number of vehicle movements and are able to discriminate between vehicle types. Counters close to the English border are used to monitor cross border traffic levels. Counters near popular rural tourist locations are used to monitor traffic on routes suspected to be heavily influenced by tourism.

Baseline: Equivalent day in 2019-20 = 100

(2 – 8 March 2020 = 100 is also used for tourist routes.)

Glasgow Subway

Source – Strathclyde Partnership for Transport

Baseline: Equivalent day in 2019-20 = 100

Edinburgh Trams

Source – Edinburgh Trams Ltd.

Baseline: Equivalent week in 2019-20 = 100

Mobility

Source – [Google COVID-19 Community Mobility Reports](#)

Baseline: Median of equivalent days from 3 January 2020 to 6 February 2020 = 100

Annex C: Equivalent days

Where data is compared to the same day 52 weeks earlier some anomalies arise around when holidays fall. Easter fell in a different week in 2020 than it did in 2019, the May Day holiday was replaced by a VE Day holiday in 2020 and Christmas and New Year fell on a different day of the week. The latter is less easy to fix comprehensively in part because holidays fall at different times relative to the weekend, so equivalent day data over the festive season should be treated with some caution.

Table 1 shows which equivalent days were altered. For all other days in 2020-21, the equivalent day occurred 52 weeks earlier.

2020-21	52 weeks earlier (2019-20)	Day used as equivalent (2019-20)
Fri 10 April	Fri 12 April	Fri 19 April
Mon 13 April	Mon 15 April	Mon 22 April
Fri 17 April	Fri 19 April	Fri 12 April
Mon 20 April	Mon 22 April	Mon 15 April
Mon 4 May	Mon 6 May	Fri 10 May
Fri 8 May	Fri 10 May	Mon 6 May
Tue 22 December	Tue 24 December	Mon 23 December
Wed 23 December	Wed 25 December	Mon 23 December
Thu 24 December	Thu 26 December	Tue 24 December
Fri 25 December	Fri 27 December	Wed 25 December
Sat 26 December	Sat 28 December	Thu 26 December
Sun 27 December	Sun 29 December	Fri 27 December
Tue 29 December	Tue 31 December	Mon 30 December
Wed 30 December	Wed 1 January	Mon 30 December
Thu 31 December	Thu 2 January	Tue 31 December
Fri 1 January	Fri 3 January	Wed 1 January

Table 1 Altered equivalent days



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