

## 1.0 Overview

TII operates a comprehensive network of over 350 traffic counters and sensors across the national road network incorporating dedicated traffic monitoring units as well as barriers and camera-based sensors at PPP toll plazas, M50 Eflow and the Dublin Tunnel. This network of traffic counters provides a comprehensive overview of traffic movements across all parts of the national road network.

In response to the COVID-19 pandemic, the Government of Ireland imposed restrictions on the movement of people in order to contain the spread of the virus. This commenced with the closure of all schools and colleges from March 13<sup>th</sup> 2020. Further restrictions involving the retention of essential services only were announced on March 24<sup>th</sup> 2020. On the evening of Friday March 27<sup>th</sup> 2020, a Government announcement was made which advised all citizens to stay at home and to only leave their homes for a limited number of reasons.

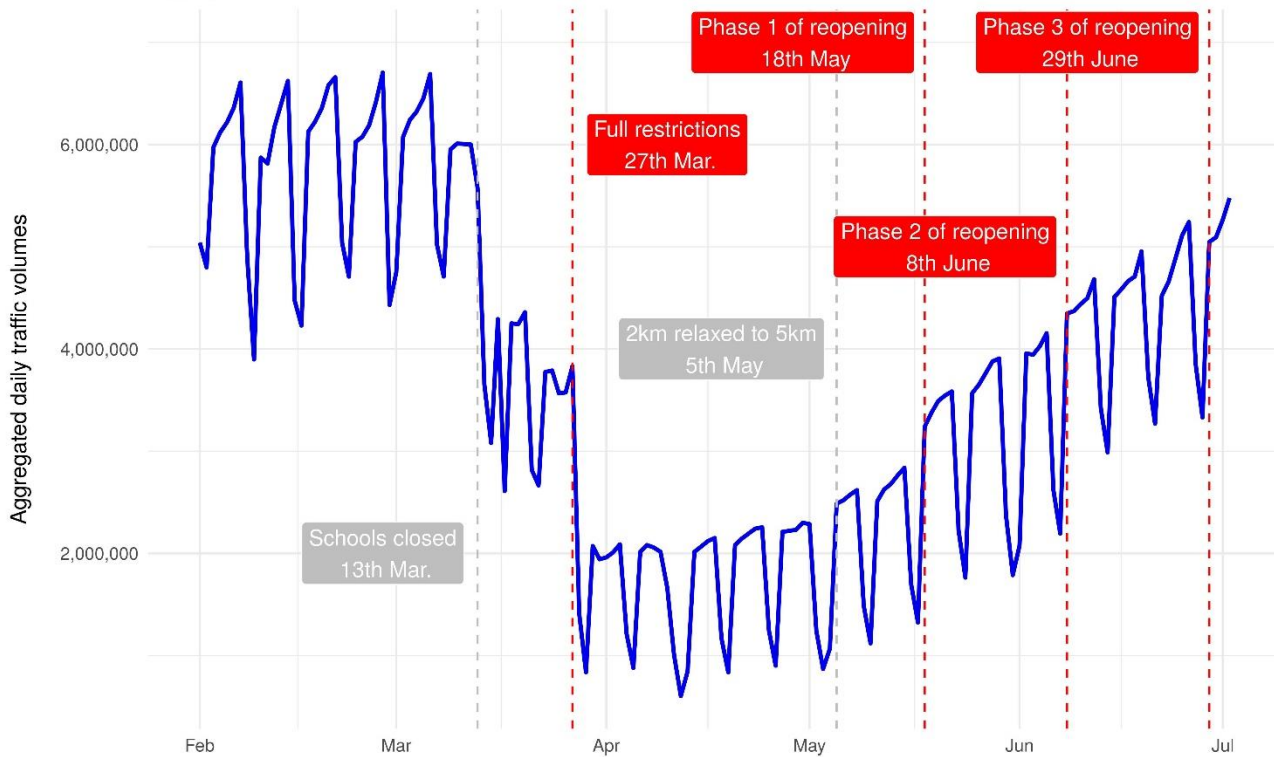
On the evening of Friday May 1<sup>st</sup>, the Government published a *“Roadmap for reopening society and business”* outlining Ireland’s plan for lifting COVID-19 restrictions. On Tuesday May 5<sup>th</sup> the distance that people can leave their home for the purposes of exercise was increased from 2km to 5km. In addition people who were cocooning were permitted to go outside for exercise also from this date. Phase 1 of the Government *“Roadmap for reopening of society and business”* commenced on Monday May 18<sup>th</sup>. This allowed for the re-commencement of work in certain outdoor workplaces notably construction sites and has also allowed people to meet outside in small groups, the reopening of certain retail businesses such as hardware shops.

Phase 2 of the Roadmap commenced on Monday June 8<sup>th</sup> where personal travel was permitted anywhere within a county or, if crossing county boundaries, anywhere within 20km. This phase also allowed all retail business to reopen and people to visit each other in their homes in groups of no more than 6 people. Phase 3 of the Roadmap commenced on Monday June 29<sup>th</sup> where all personal travel restrictions were lifted and childcare facilities and pub and restaurant businesses started to reopen.

This note examines the impact of the COVID-19 restrictions on national roads traffic volumes, initially in terms of the reduction in movement as a result of the restrictions. It also examines the subsequent increases in movement on the national road network during the phased easing of restrictions, which is now in place since Monday May 18<sup>th</sup> 2020. Previous notes were prepared on March 27<sup>th</sup>, and weekly thereafter up to June 19<sup>th</sup>, outlining the impacts of these measures on traffic demand on the national road network.

## 2.0 Reduction in national road traffic volumes in context

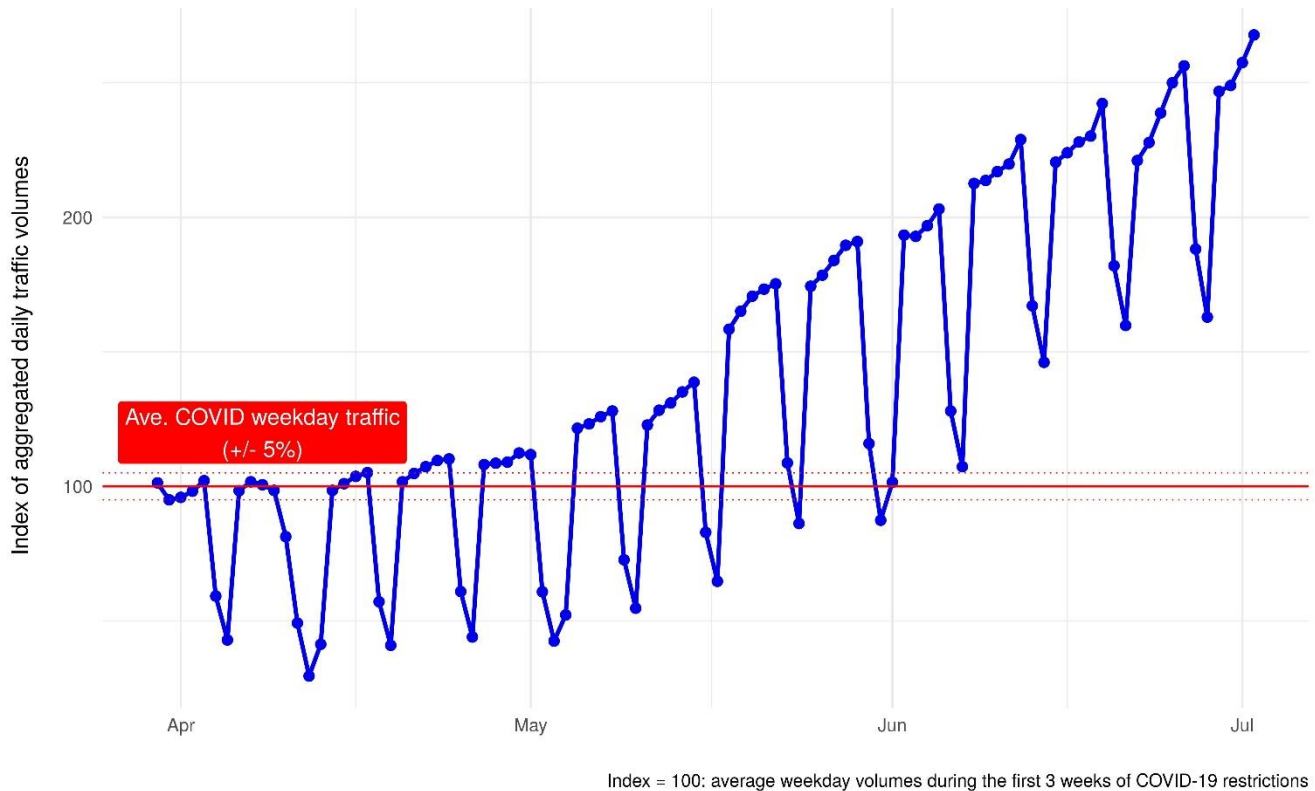
The restrictions implemented by Government in order to tackle the spread of the COVID-19 virus have had significant impact on national road traffic volumes. A plot of aggregate daily traffic volumes on multiple traffic counters since February 1<sup>st</sup> 2020 is shown in Figure 1.



**Figure 1: Aggregated traffic volumes on national roads since February 1st 2020**

The plot demonstrates the scale of the reduction. Traffic volumes, since the restrictions imposed on March 27<sup>th</sup> 2020, initially reduced by 60-70%. Volumes have recovered somewhat, but still represent a reduction of 15-20% from typical conditions in 2019. This is described further in the following sections of this note.

It is also worth analysing trends in traffic volumes since the restrictions imposed on March 30<sup>th</sup> in more detail. This is presented in Figure 2.



**Figure 2: Index of aggregated traffic volumes on national roads since March 30th 2020**

The plot shows the variation in daily traffic volumes since March 30<sup>th</sup> compared with an average of typical working day volumes between March 30<sup>th</sup> and April 17<sup>th</sup> 2020, i.e. for the first three weeks of restrictions excluding weekends and public holidays. This average, which represents a baseline of weekday conditions in the period of initial COVID-19 restrictions, is shown as a red horizontal line with the red dotted lines represented a +/- 5% interval around this, and is set to an index of 100. The trend shows that volumes were generally stable over the initial weeks of the restrictions with some increases in movements noted since week beginning April 20<sup>th</sup>.

On Monday April 20<sup>th</sup> national traffic volumes were 2% above the average COVID weekday and by Friday May 1<sup>st</sup> volumes rose to 12% above this average

After Tuesday May 5<sup>th</sup>, there was a marked increase in traffic volumes on national roads since certain restrictions were eased. By Friday May 15<sup>th</sup>, volumes were 39% above the average weekday in the initial weeks of the COVID restrictions. As expected there was a very significant rise in traffic volumes on the national road network in the week commencing May 18<sup>th</sup>, as the economy and society started to reopen.

Phase 1 of the reopening of society and business commenced Monday 18<sup>th</sup> May. By Friday June 5<sup>th</sup>, overall traffic volumes were 103% above the average volumes on the network during the first 3 weeks of the COVID restrictions. Phase 2 of commenced on Monday June 8<sup>th</sup> and by Thursday June 25<sup>th</sup>, overall traffic volumes were 150% above the average volumes during the full COVID restrictions.

**Phase 3 of the reopening of society and business commenced Monday 29<sup>th</sup> June. By Thursday July 2<sup>nd</sup>, overall traffic volumes were 168% above the average volumes on the network during the full COVID restrictions. This equates to an approximate 7% increase in daily traffic from last week. It should be noted that traffic volumes this week are still**

down 15-20% on the equivalent weekdays in 2019, i.e. they are at 80-85% of 2019 traffic levels. This is set out further in Section 3.0 of this note.

## 3.0 Comparison to Typical Traffic Levels

### 3.1. General Traffic

A summary of the impacts of the restrictions on general traffic, i.e. all classes of vehicles, is provided in Figure 3 overleaf. This represents an analysis at selected locations whereby traffic volumes in May 2020 are compared with the equivalent weekday in 2019 and the aggregate percentage change is plotted.

The emerging impacts of the restrictions on vehicular travel can be summarised as follows:

- Prior to the March 27<sup>th</sup> restrictions, the reduction in general traffic volumes was of the order of 40% on weekdays.
- In the week following the announcement of restrictions on Friday March 27<sup>th</sup>, there was a reduction in traffic volumes across the network of the order of 65-70%.
- There were gradual increases in traffic since the week beginning April 20<sup>th</sup> week and this continued through to week beginning April 27<sup>th</sup>.
- Since the easing of certain restrictions on Tuesday May 5<sup>th</sup>, there was a marked increase in traffic volumes.
- There was a further significant increase, as expected, since May 18<sup>th</sup> where Phase 1 of the Government *“Roadmap for reopening society and business”* commenced. This included a step change of an increase in car traffic volumes. The week-on-week increase in car traffic volumes in the week beginning Monday May 18<sup>th</sup> was approximately three times the rate of increase in any other recent week.
- Phase 2 of the Roadmap commenced on June 8<sup>th</sup> and led to another 12% week-on-week increase in traffic volumes. The week beginning June 15<sup>th</sup> there was a further 5% increase in traffic volumes and another 6% increase for the week beginning June 22<sup>nd</sup>.
- Phase 3 of the Roadmap commenced on June 29<sup>th</sup> and led to a 7% week-on-week increase in traffic volumes. Overall traffic is down 15-20% when compared with the equivalent weekday traffic flows in 2019.
- This reduction is broadly consistent across all parts of the country including the motorway corridors and the M50.
- Traffic reductions over the weekends remain greater than during weekdays, with reductions of up to 38% observed on Sunday June 28<sup>th</sup>.

A breakdown of the impacts for heavy goods vehicles (HGV), light goods vehicles (LGV) and private cars separately is detailed in the following sections of this note, along with a summary of impacts on national road border crossings.

# Impact of COVID-19 restrictions on general traffic volumes

Average change in traffic volumes on major routes (2020 vs 2019 equivalent weekdays)



Figure 3: General Traffic



(Based on aggregations of traffic volumes\* on selected key national roads on approach to each of the major cities.

\* note that traffic data between 24<sup>th</sup> June and August 6<sup>th</sup> 2019 is missing at some counters due to technical problems in 2019. This data has been interpolated using 2018, 2019 and 2020 data for comparison with current traffic volumes)

## 3.2. Heavy Goods Vehicles (HGVs)

A summary of the impacts of the restrictions on HGVs (>3.5 tonnes) is provided in Figure 4.

- Since March 27<sup>th</sup> there was a clear reduction in HGV traffic volumes of the order of 30-40% which continued up to the week beginning April 27<sup>th</sup>.
- Since the easing of certain restrictions on Tuesday May 5<sup>th</sup>, HGV volumes increased.
- There was a significant increase, as expected, since May 18<sup>th</sup> where Phase 1 of the Government *“Roadmap for reopening society and business”* commenced and certain retailers and constructions sites reopened.
- There was a further increase since June 8<sup>th</sup> where Phase 2 of the Government *“Roadmap for reopening society and business”* commenced and all retail businesses reopened.
- Volumes this week, following commencement of Phase 3 of the Roadmap on June 29<sup>th</sup>, ranged between 8% below volumes on the equivalent days in 2019 to 7% above these levels.

## 3.3. Light Goods Vehicles (LGVs)

A summary of the impacts of the restrictions on LGVs (<3.5 tonnes) is provided in Figure 5.

- Since March 27<sup>th</sup> volumes of LGVs have reduced by over 50%. These reductions in LGV traffic have continued up to week beginning April 27<sup>th</sup>.
- Since the easing of certain restrictions on Tuesday May 5<sup>th</sup>, LGV volumes increased.
- There was a significant increase, as expected, since May 18<sup>th</sup> where Phase 1 of the Government *“Roadmap for reopening society and business”* commenced and certain retailers and constructions sites reopened.
- There has been a further increase since June 8<sup>th</sup> where Phase 2 of the Government *“Roadmap for reopening society and business”* commenced and all retail businesses reopened.
- Volumes this week, following commencement of Phase 3 of the Roadmap on June 29<sup>th</sup>, ranged between 10% below volumes on the equivalent days in 2019 to 3% above these levels.

## 3.4. Private Cars

A summary of the impacts of the restrictions on private cars is provided in Figure 6.

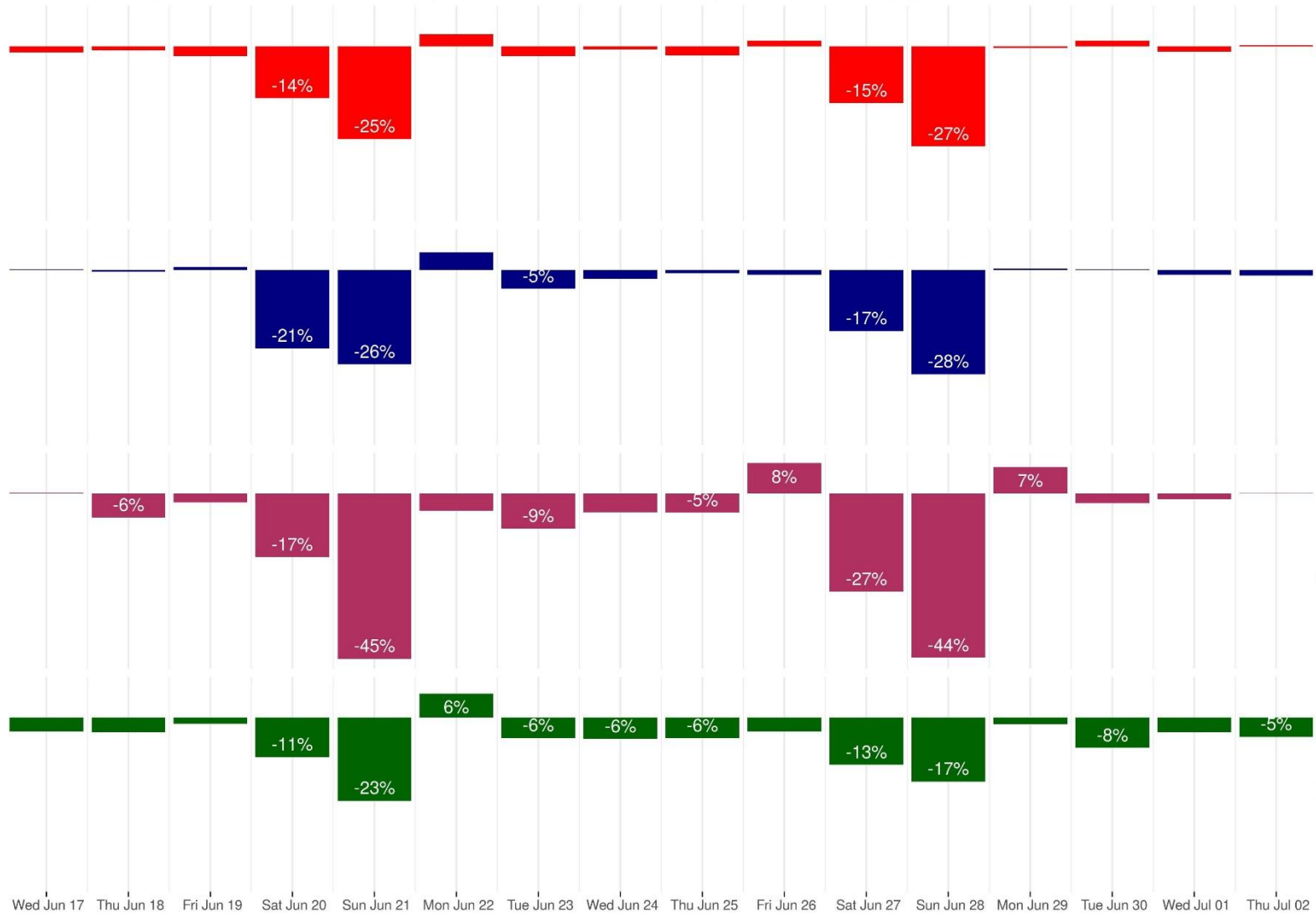
As private cars represent approximately 80 to 90% of all traffic, the reduction in private car traffic is very similar to trends for general traffic discussed above, i.e. namely a reduction in the order of 10-25% compared to 2019 figures.

# Impact of COVID-19 restrictions on heavy goods vehicles traffic volumes

Average change in traffic volumes on major routes (2020 vs 2019 equivalent weekdays)



Figure 4: Heavy Goods Vehicles



(Based on aggregations of traffic volumes\* on selected key national roads on approach to each of the major cities.

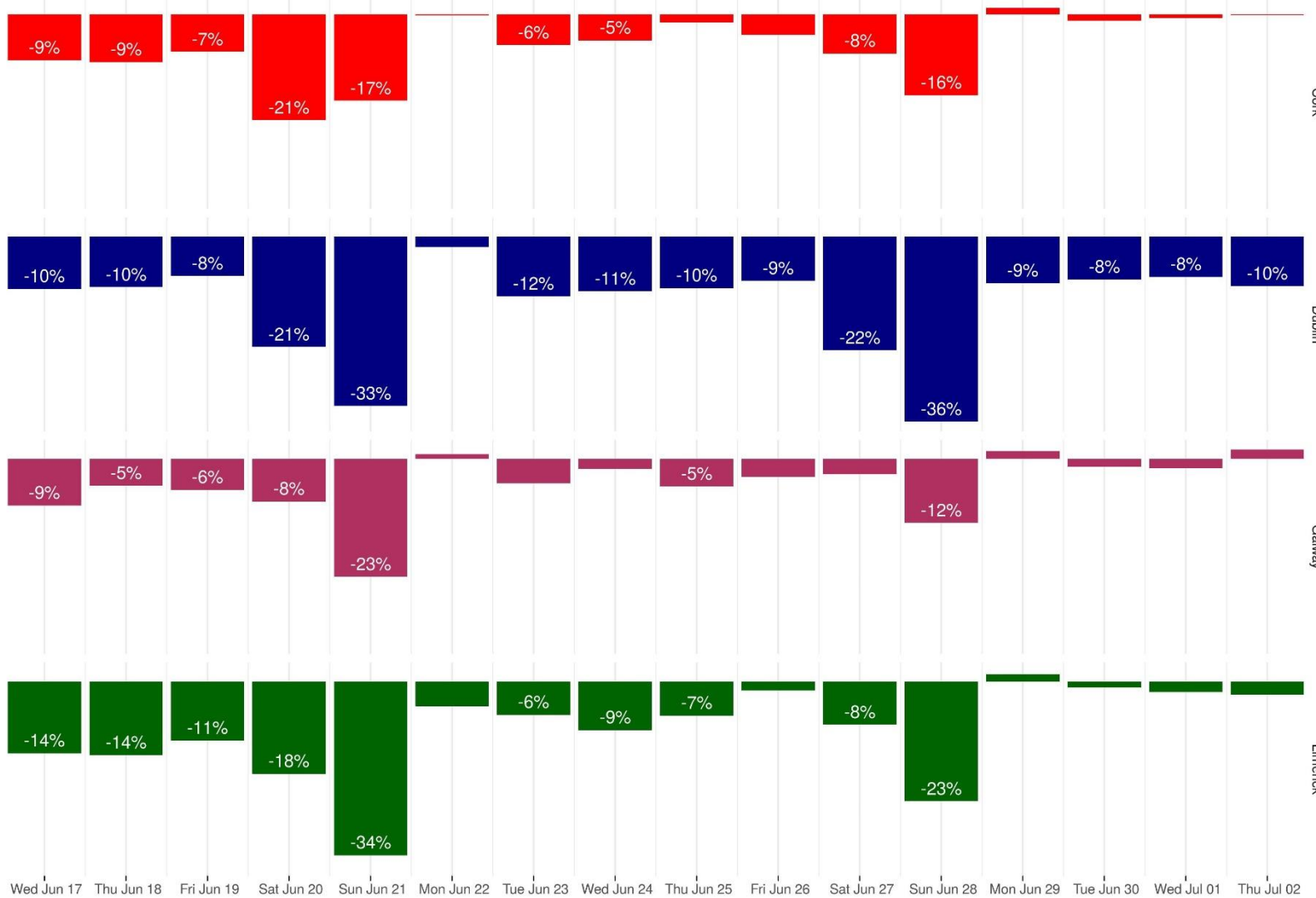
\* note that traffic data between 24<sup>th</sup> June and August 6<sup>th</sup> 2019 is missing at some counters due to technical problems in 2019. This data has been interpolated using 2018, 2019 and 2020 data for comparison with current traffic volumes)

# Impact of COVID-19 restrictions on light goods vehicles traffic volumes

Average change in traffic volumes on major routes (2020 vs 2019 equivalent weekdays)



Figure 5: Light Goods Vehicles



(Based on aggregations of traffic volumes\* on selected key national roads on approach to each of the major cities.

\* note that traffic data between 24<sup>th</sup> June and August 6<sup>th</sup> 2019 is missing at some counters due to technical problems in 2019. This data has been interpolated using 2018, 2019 and 2020 data for comparison with current traffic volumes)



# Impact of COVID-19 restrictions on private car traffic volumes

Average change in traffic volumes on major routes (2020 vs 2019 equivalent weekdays)



Figure 6: Private Cars



(Based on aggregations of traffic volumes\* on selected key national roads on approach to each of the major cities.

\* note that traffic data between 24<sup>th</sup> June and August 6<sup>th</sup> 2019 is missing at some counters due to technical problems in 2019. This data has been interpolated using 2018, 2019 and 2020 data for comparison with current traffic volumes)

## 4.0 Dublin Tunnel

A plot of the impacts of the restrictions on weekday traffic in the Dublin Tunnel for general traffic, heavy goods vehicles and private car traffic are provided in Figure 7.

The emerging impacts of the restrictions on vehicular travel can be summarised as follows:

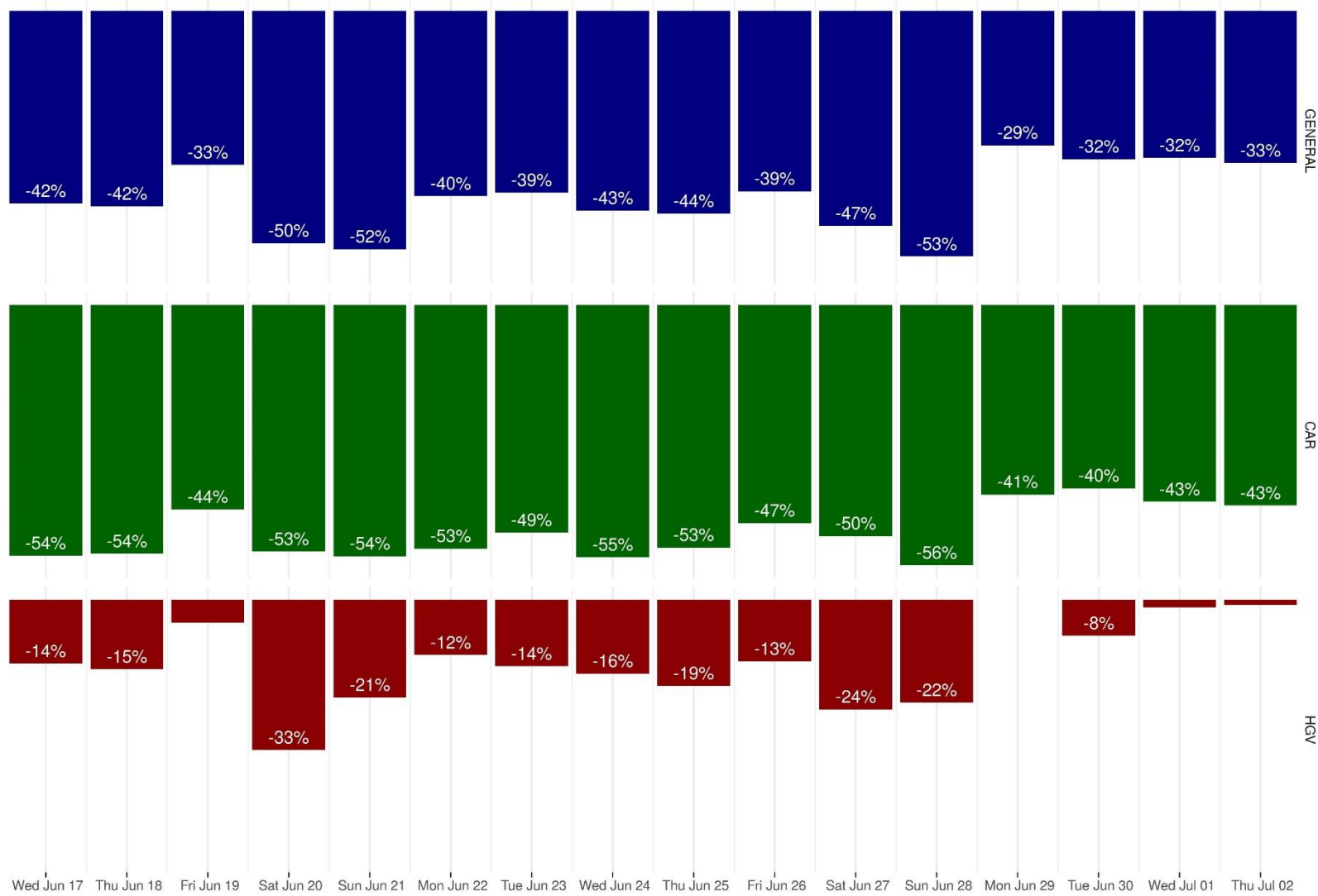
- In the Dublin Tunnel since March 27<sup>th</sup> TII saw reductions, relative to 2019 levels, in general traffic exceeding 60% on weekdays.
- The reduction, relative to 2019 levels, in HGV volumes in the tunnel was in the region of 30-40% on weekdays following the restrictions imposed on Friday March 27<sup>th</sup>. In the period between Monday March 30<sup>th</sup> and Friday May 1<sup>st</sup>, weekday HGV volumes through the tunnel averaged at approximately 6,500 vehicles per day.
- The restrictions have resulted in a dramatic fall in the use of the tunnel by private cars. During week commencing March 23<sup>rd</sup>, car volumes through the tunnel were approximately 5,000 – 6,000 per day as compared with normal weekday volumes of over 16,000. In the period between Monday March 30<sup>th</sup> and Friday May 1<sup>st</sup>, car volumes reduced to an average of approximately 2,450 per day, an overall reduction versus normal conditions of almost 85%.
- Following the commencement of Phase 1 of the reopening of society and business, there was a week-on-week increase of approximately 40% in car traffic volumes in the tunnel during the week beginning May 18<sup>th</sup> with a 20% increase the week beginning May 25<sup>th</sup>. The following week, beginning June 1<sup>st</sup>, there was a further 9% week-on-week increase in car traffic volumes.
- Phase 2 of the reopening of society and business commenced on June 8<sup>th</sup>. Following this there was a week-on-week increase of approximately 5% in car traffic volumes in the tunnel during the week beginning June 8<sup>th</sup> with an 8% increase the week beginning June 15<sup>th</sup>. The following week, beginning June 22<sup>nd</sup>, there was a further 7% week-on-week increase in car traffic volumes.
- Phase 3 of the reopening of society and business commenced on June 29<sup>th</sup>. Following further easing of restrictions, there was an 11% week-on-week increase in private car traffic in the tunnel this week. There was an average of approximately 8,250 cars travelling through the tunnel per day between Monday and Thursday of this week. This still represents an approximate 40-45% reduction in car traffic volumes on the equivalent days in 2019. It should be noted that there is now much less incentive for cars to use the tunnel as other routes into the city that are normally heavily congested may now be experiencing free-flow conditions
- This week, beginning June 29<sup>th</sup>, there was an 8% week-on-week increase in HGV traffic volumes. HGV volumes in the tunnel this week were approximately 0-10% below volumes on the equivalent days in 2019.

# Impact of COVID-19 restrictions on traffic volumes in Dublin Tunnel

Average change in traffic volumes on major routes (2020 vs 2019 equivalent weekdays)

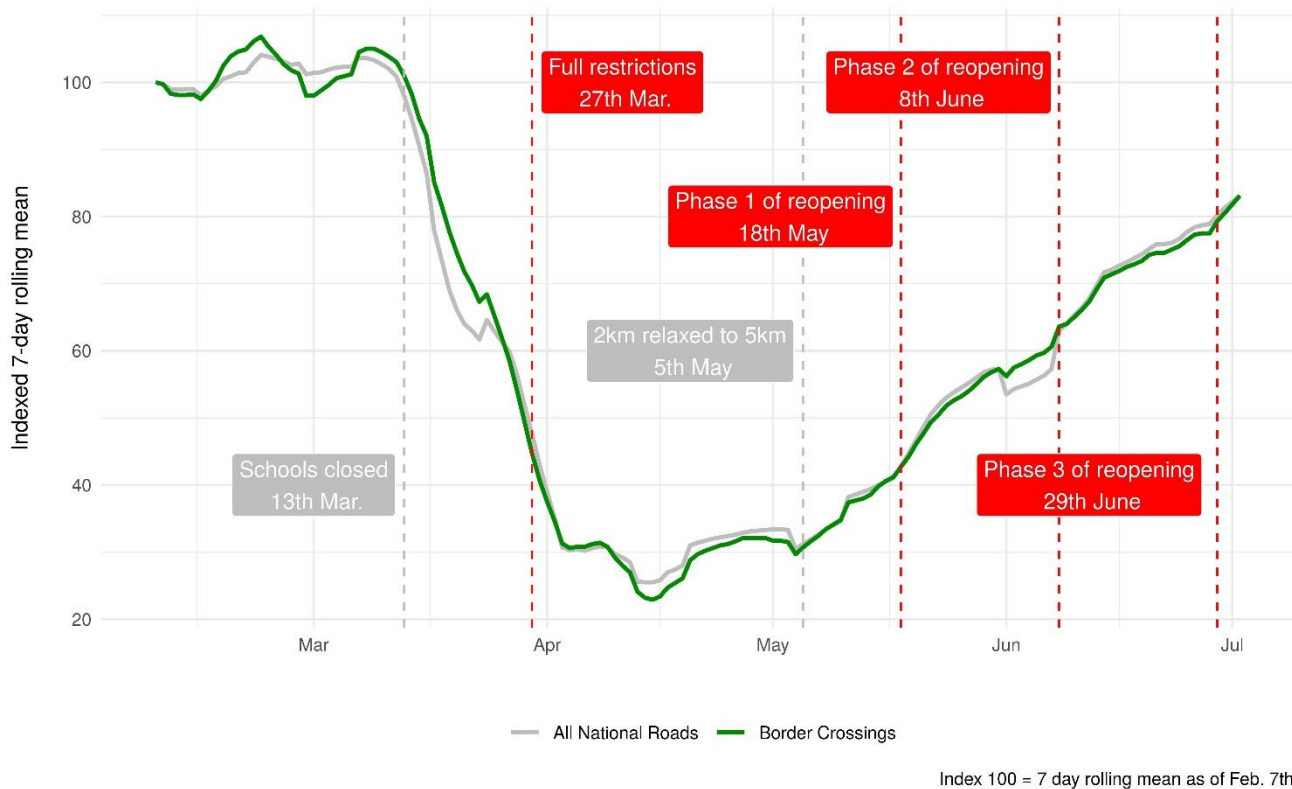


Figure 7: Dublin Tunnel: general traffic



## 5.0 The Border

A selection of 12 traffic counter sites on national roads close to the border were analysed. A plot of trends at the border, compared to national traffic, is provided in Figure 8. The trend is developed using an index of a 7 day rolling mean traffic flow from February 7<sup>th</sup> 2020, in order to smooth seasonal patterns.



**Figure 8: Trends in traffic at national road border crossings compared with all national roads**

The plot indicates that trends on vehicles crossing the border via national roads are very similar to the global trend across all national roads with volumes reduced to 60-70% of typical levels, over the period of restrictions between March 27<sup>th</sup> and May 5<sup>th</sup>. Since the easing of restrictions on May 5<sup>th</sup> and the Phase 1 of reopening of society and business on May 18<sup>th</sup>, volumes of traffic crossing the border were approximately 50-60% of typical levels.

Phase 2 of the reopening commenced on June 8<sup>th</sup> and by the week beginning June 22<sup>nd</sup>, volumes of border traffic were approximately 75-80% of typical levels. Phase 2 of the reopening commenced this week on June 29<sup>th</sup> and volumes of border traffic are now 80-85% of typical levels

A further comparison between private car and heavy goods vehicle traffic volumes crossing the border is provided in Figure 9. This indicates that during this week, private car volumes are down approximately 25-30% when compared with the equivalent day of last year while heavy goods vehicle volumes are down by 0-5%. Private car traffic levels are further below typical levels when compared to goods vehicles. This can be attributed to the ongoing impacts of the requirements to work from home on private car traffic volumes.

# Impact of COVID-19 restrictions on border traffic

Average change in traffic volumes on national road border crossings (2020 vs 2019 equivalent weekdays)



Figure 9: Border Crossings

(Based on aggregations of traffic volumes\* on national roads near border crossings.

\* note that traffic data between 24<sup>th</sup> June and August 6<sup>th</sup> 2019 is missing at some counters due to technical problems in 2019. This data has been interpolated using 2018, 2019 and 2020 data for comparison with current traffic volumes)

