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 13th 2020. Further restrictions involving the retention of essential services only were announced on March 24th 2020. On the evening of Friday March 27th 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 1st, the Government published a "*Roadmap for reopening society and business*" outlining Ireland's plan for lifting COVID-19 restrictions. On Tuesday May 5th 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 18th. 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 8th where personal travel is now permitted anywhere within a county or, if crossing county boundaries, anywhere within 20km. This phase also allows all retail business to reopen and people to visit each other in their homes in groups of no more than 6 people.

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 18th 2020. Previous notes were prepared on March 27th, and weekly thereafter, 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 1st 2020 is shown in Figure 1.

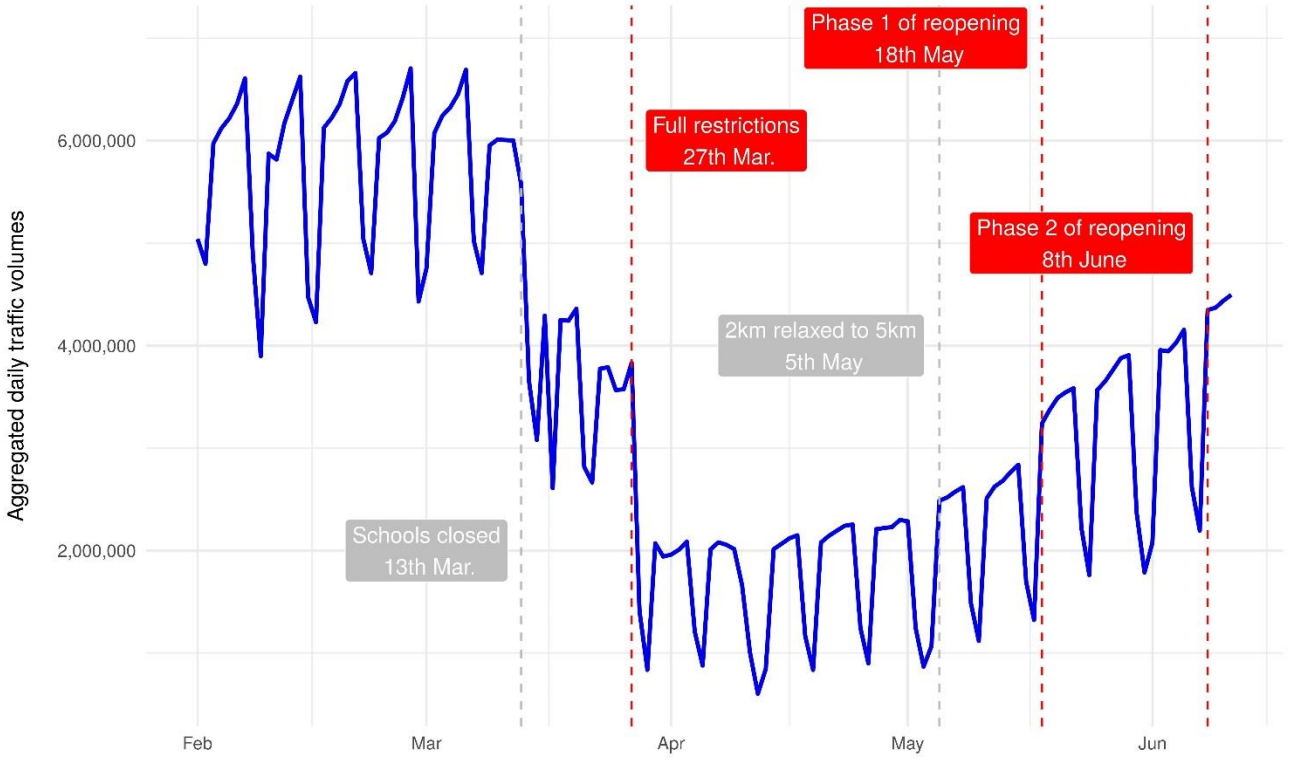

Figure 1: Aggregated traffic volumes on national roads since February 1st 2020

The plot demonstrates the scale of the reduction. Traffic volumes, since the restrictions imposed on March 27th 2020, initially reduced by 60-70%. Volumes have recovered somewhat, but still represent a reduction of 25-35% 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 30th in more detail. This is presented in Figure 2.

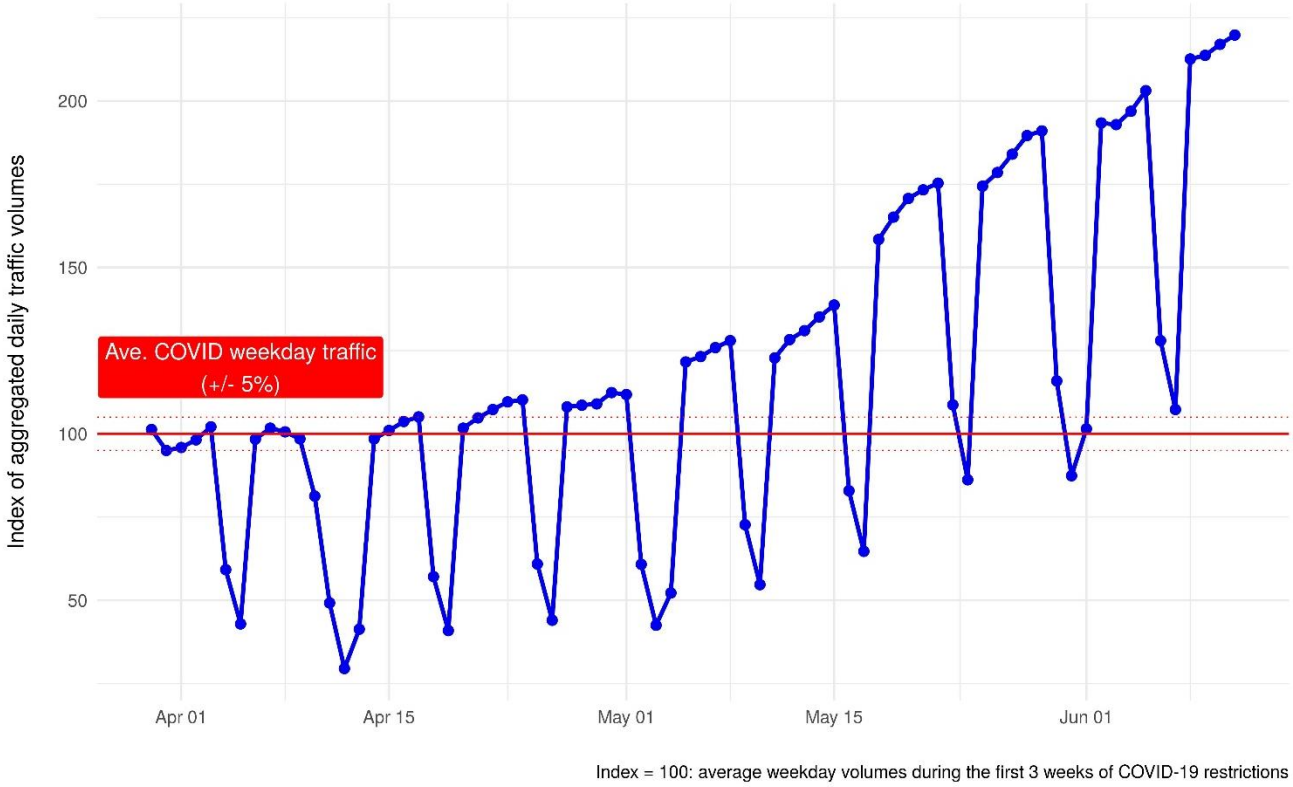

Figure 2: Index of aggregated traffic volumes on national roads since March 30th 2020

The plot shows the variation in daily traffic volumes since March 30th compared with an average of typical working day volumes between March 30th and April 17th 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 20th.

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

After Tuesday May 5th, there was a marked increase in traffic volumes on national roads since certain restrictions were eased. By Friday May 15th, 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 18th, as the economy and society started to reopen. By Friday June 5th, overall traffic volumes were 103% above the average volumes on the network during the first 3 weeks of the COVID restrictions.

Phase 2 of the easing of restrictions commenced on Monday June 8th and by Thursday June 11th, overall traffic volumes were 120% above the average volumes on the network during the first 3 weeks of the COVID restrictions. This equates to an approximate 12% increase in daily traffic from last week. It should be noted that traffic volumes this week are still down 25-35% on the equivalent weekdays in 2019. 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 27th 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 27th, 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 20th week and this continued through to week beginning April 27th.
- Since the easing of certain restrictions on Tuesday May 5th, there was a marked increase in traffic volumes.
- There was a further significant increase, as expected, since May 18th 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 18th was approximately three times the rate of increase in any other recent week.
- This week beginning June 8th, Phase 2 of the Roadmap commenced and led to another 12% week-on-week increase in traffic volumes. Overall traffic is down 25-35% 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 58% observed on Sunday June 7th.

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 in the Dublin Tunnel and impacts on national road border crossings.

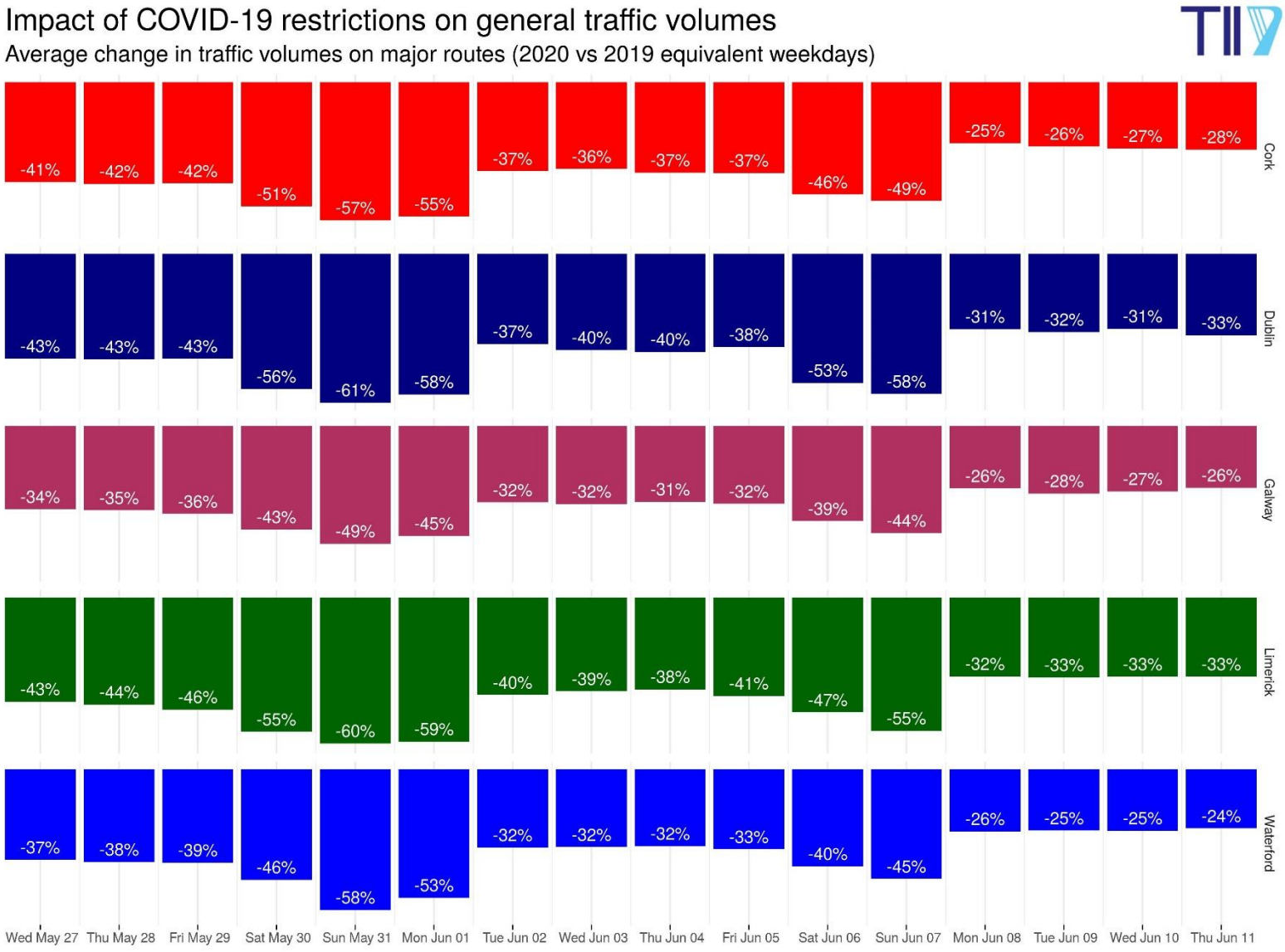

Figure 3: General Traffic

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

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 27th there was a clear reduction in HGV traffic volumes of the order of 30-40% which continued up to the week beginning April 27th.
- Since the easing of certain restrictions on Tuesday May 5th, HGV volumes increased.
- There was a significant increase, as expected, since May 18th 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 8th where Phase 2 of the Government *"Roadmap for reopening society and business"* commenced and all retail businesses reopened.
- Volumes this week beginning June 8th were 5-15% below volumes on the equivalent days in 2019.
- HGV traffic has almost returned to 2019 levels, with even small increases in HGV traffic recorded at certain sites this week when compared to the equivalent days in 2019.

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 27th volumes of LGVs have reduced by over 50%. These reductions in LGV traffic have continued up to week beginning April 27th.
- Since the easing of certain restrictions on Tuesday May 5th, LGV volumes increased.
- There was a significant increase, as expected, since May 18th 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 8th where Phase 2 of the Government *"Roadmap for reopening society and business"* commenced and all retail businesses reopened.
- LGV traffic volumes this week beginning June 8th were 5-15% below volumes on the equivalent days in 2019.

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 25-40% compared to 2019 figures.

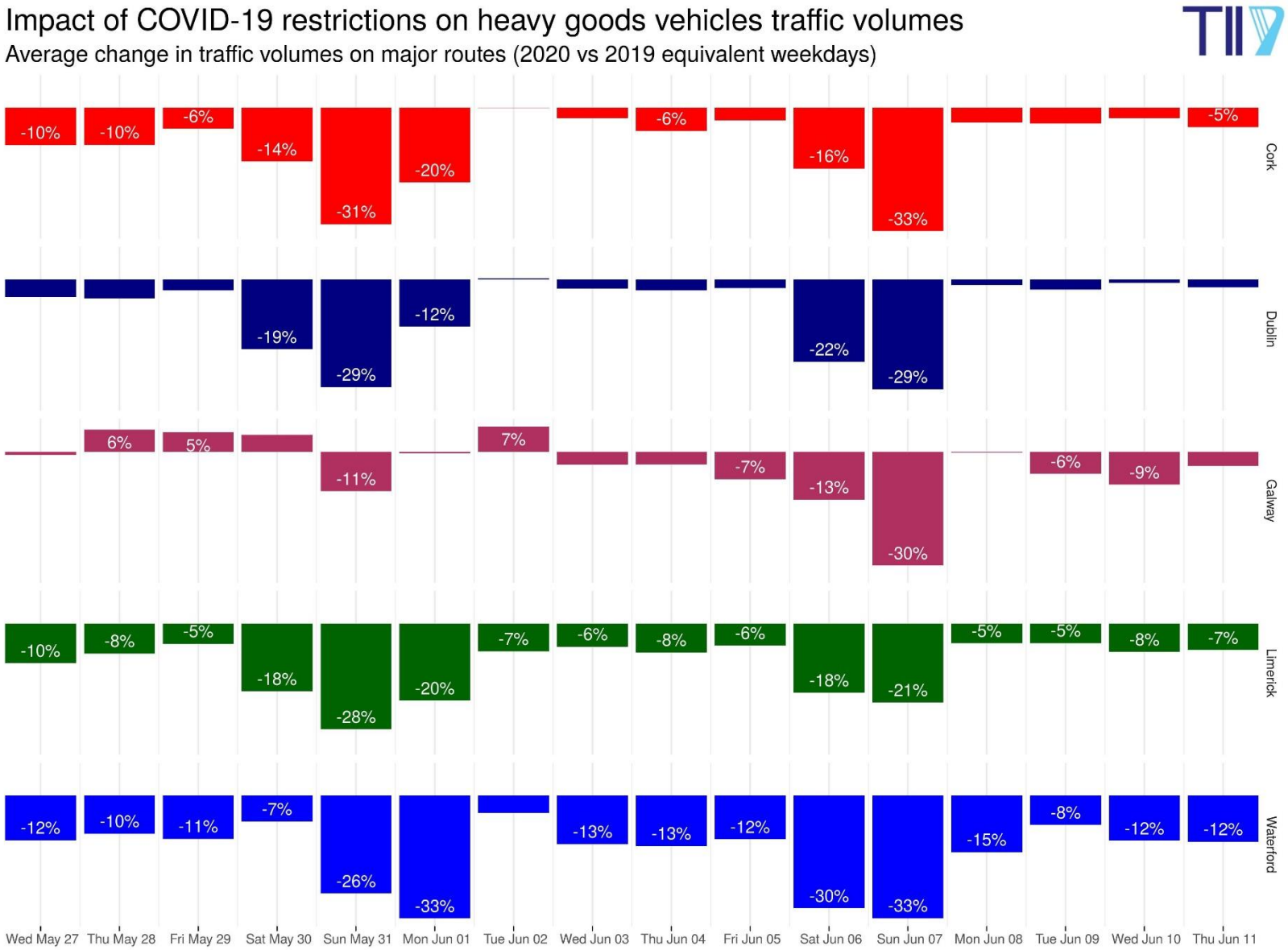

Figure 4: Heavy Goods Vehicles

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

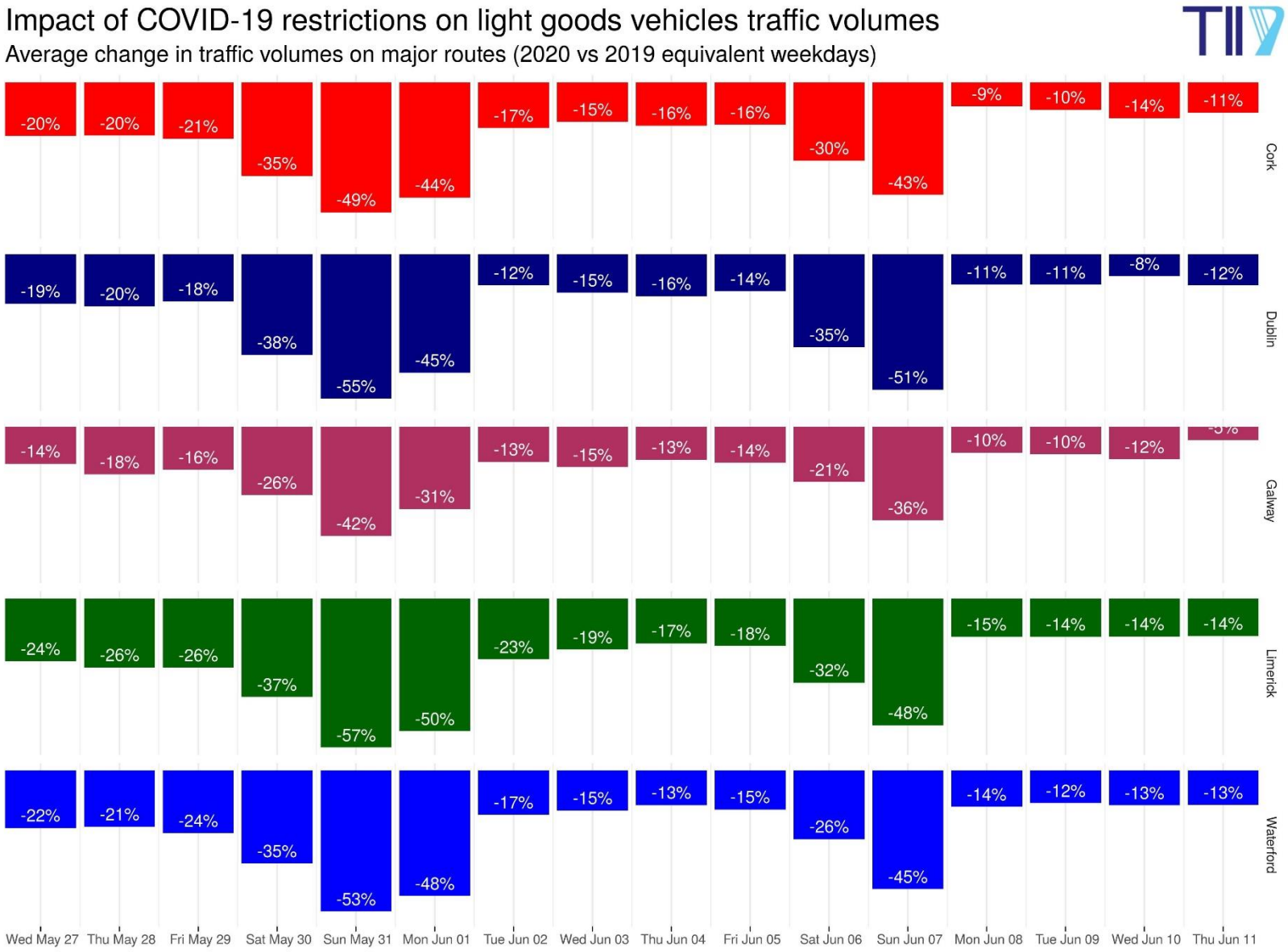

Figure 5: Light Goods Vehicles

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

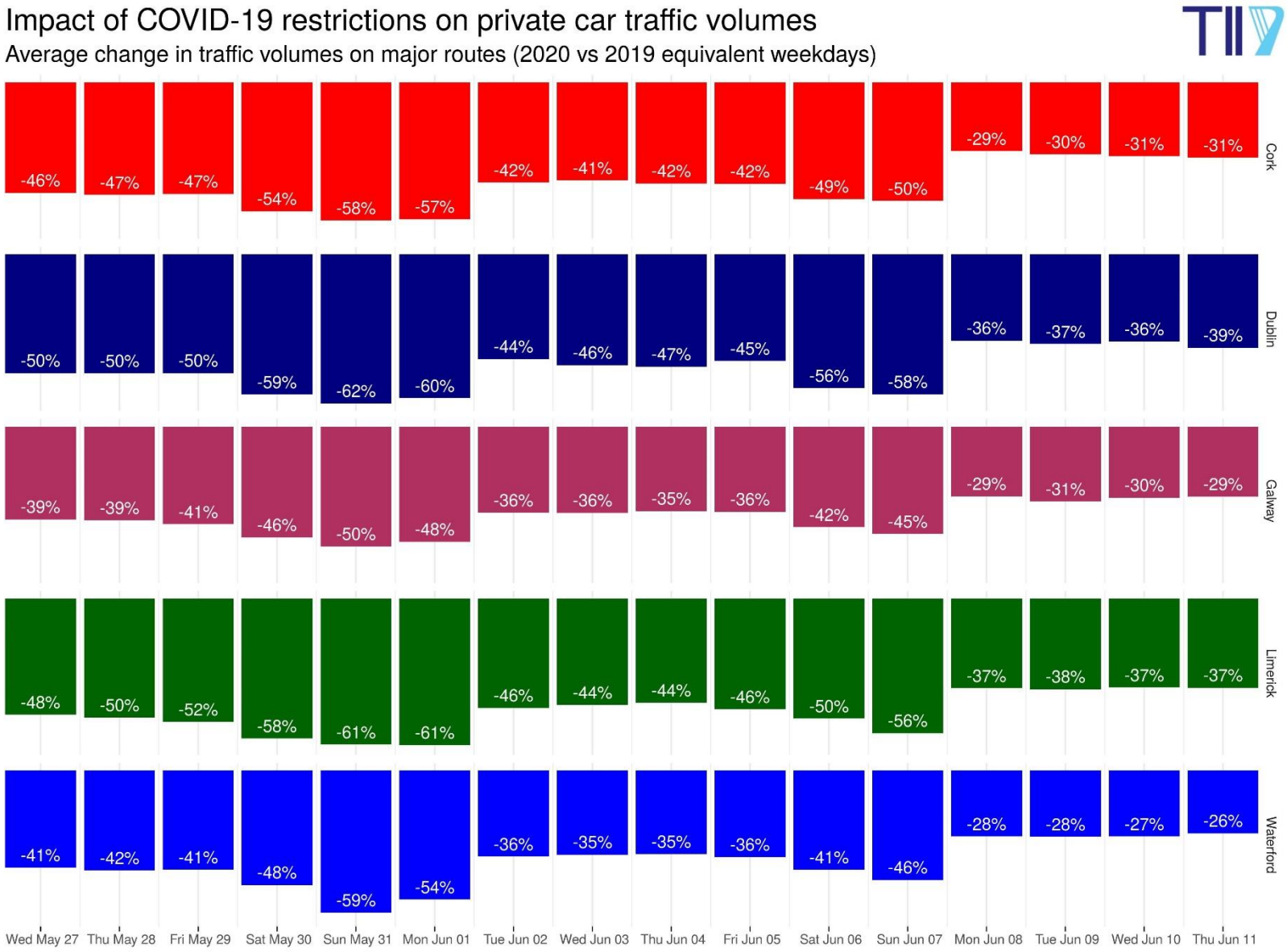

Figure 6: Private Cars

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

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 27th 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 27th. In the period between Monday March 30th and Friday May 1st, 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 23rd, 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 30th and Friday May 1st, 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 18th with a 20% increase the week beginning May 25th. The following week, beginning June 1st, there was a further 9% week-on-week increase in car traffic volumes.
- Phase 2 of the reopening of society and business commenced this week, beginning June 8th. Following further easing of restrictions, there was a 2% week-on-week increase in private car traffic in the tunnel. There was an average of approximately 6,350 cars travelling through the tunnel per day between Monday and Thursday of this week. This still represents an approximate 60-65% 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
- Since May 15th there was also a notable increase in HGV volumes in the tunnel with an initial week-on-week increase of approximately 15% in HGV traffic volumes, with a 9% increase the week commencing May 25th. This week, beginning June 8th, there was a further 5% week-on-week increase in HGV traffic volumes. HGV volumes in the tunnel this week were approximately 10-20% below volumes on the equivalent days in 2019.

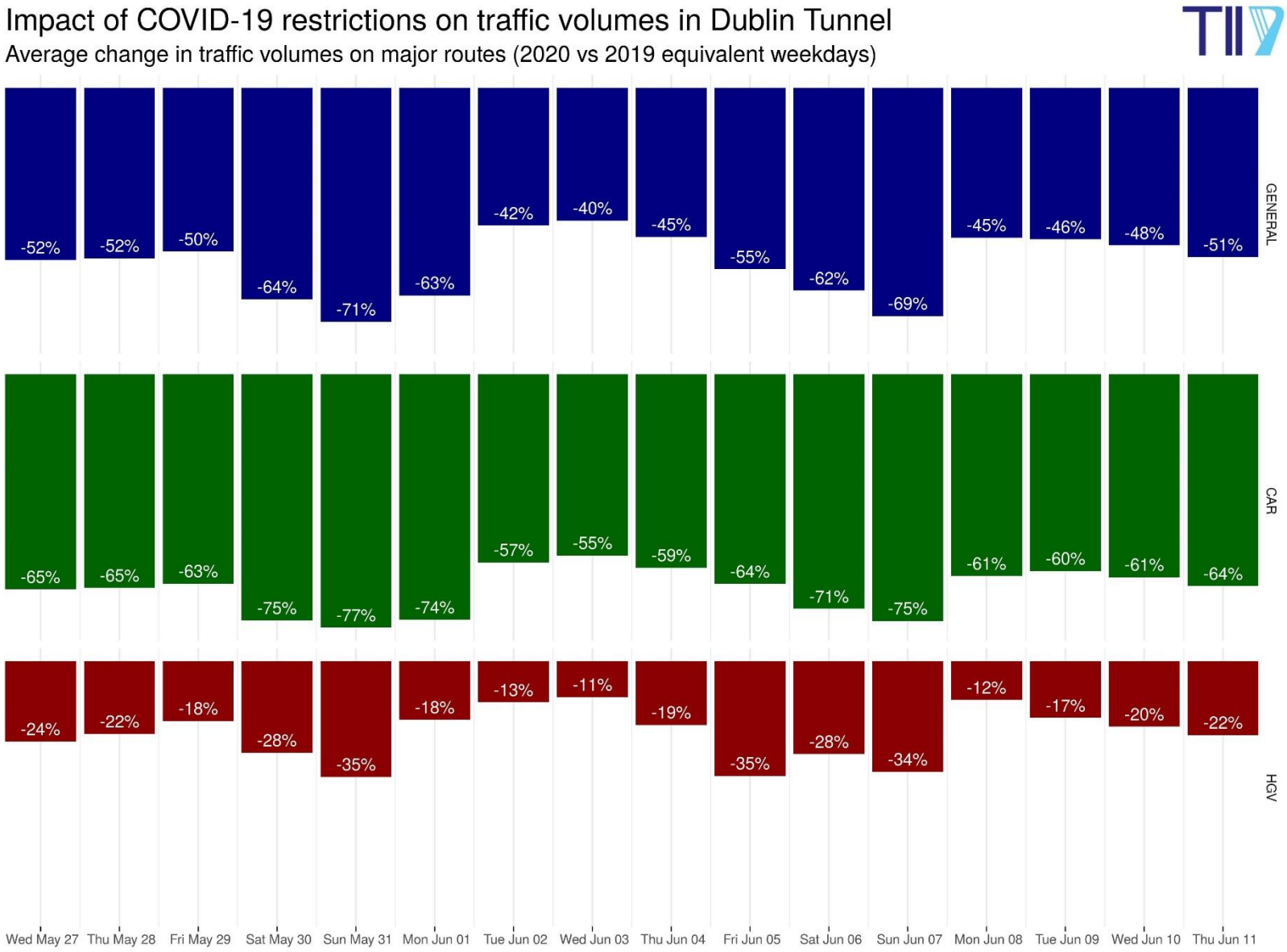

Figure 7: Dublin Tunnel: general traffic

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 7th 2020, in order to smooth seasonal patterns.

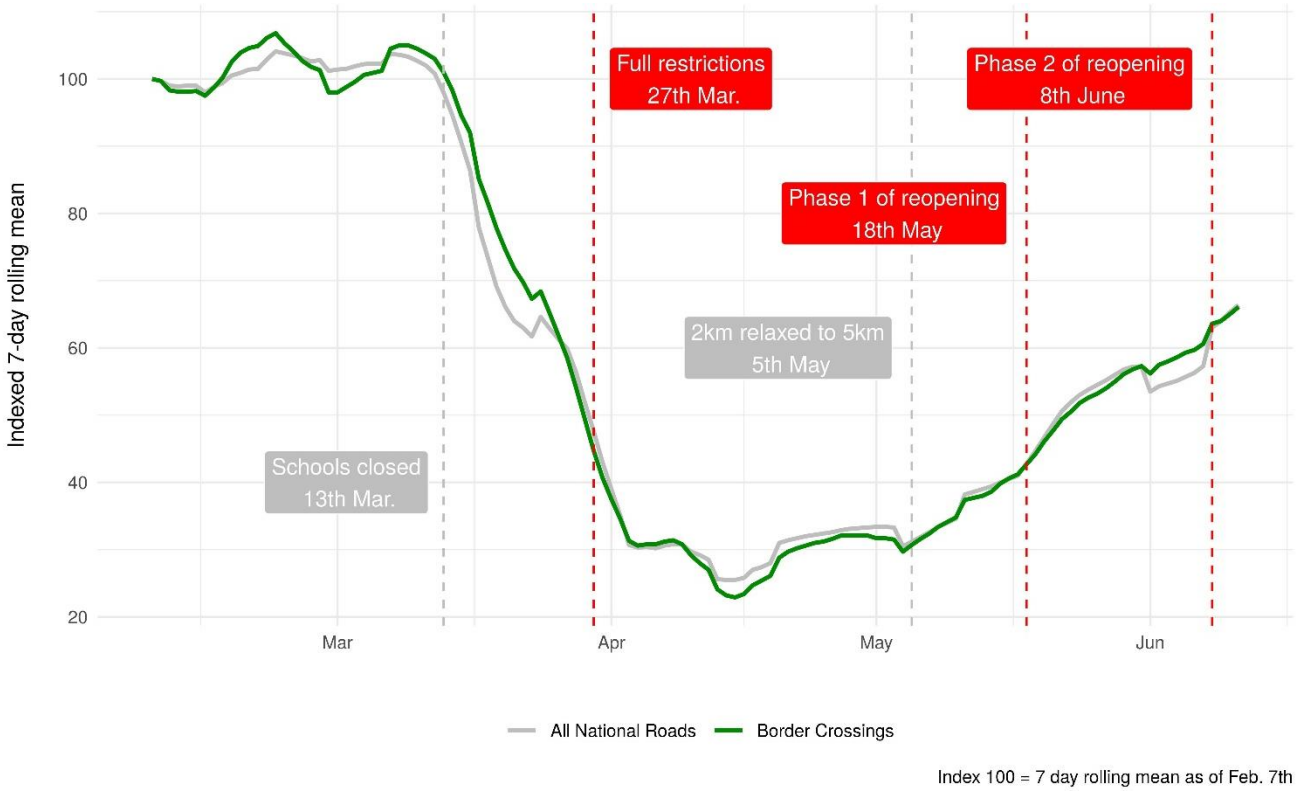

Figure 8: Trends in traffic at national road border crossings compared with all national roads

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 27th and May 5th. Since the easing of restrictions on May 5th and the Phase 1 of reopening of society and business on May 18th, volumes of traffic crossing the border were approximately 50-60% of typical levels. This week, following the commencement of Phase 2 of the reopening on June 8th, volumes of border traffic were approximately 60-70% of typical levels

A plot of the impacts of the restrictions on daily traffic on national road border crossings for private cars and heavy goods vehicles is provided in Figure 9. This indicates that during this week, beginning June 1st, private car volumes are down approximately 40% when compared with the equivalent day of last year while heavy goods vehicle volumes are down 0-5%.

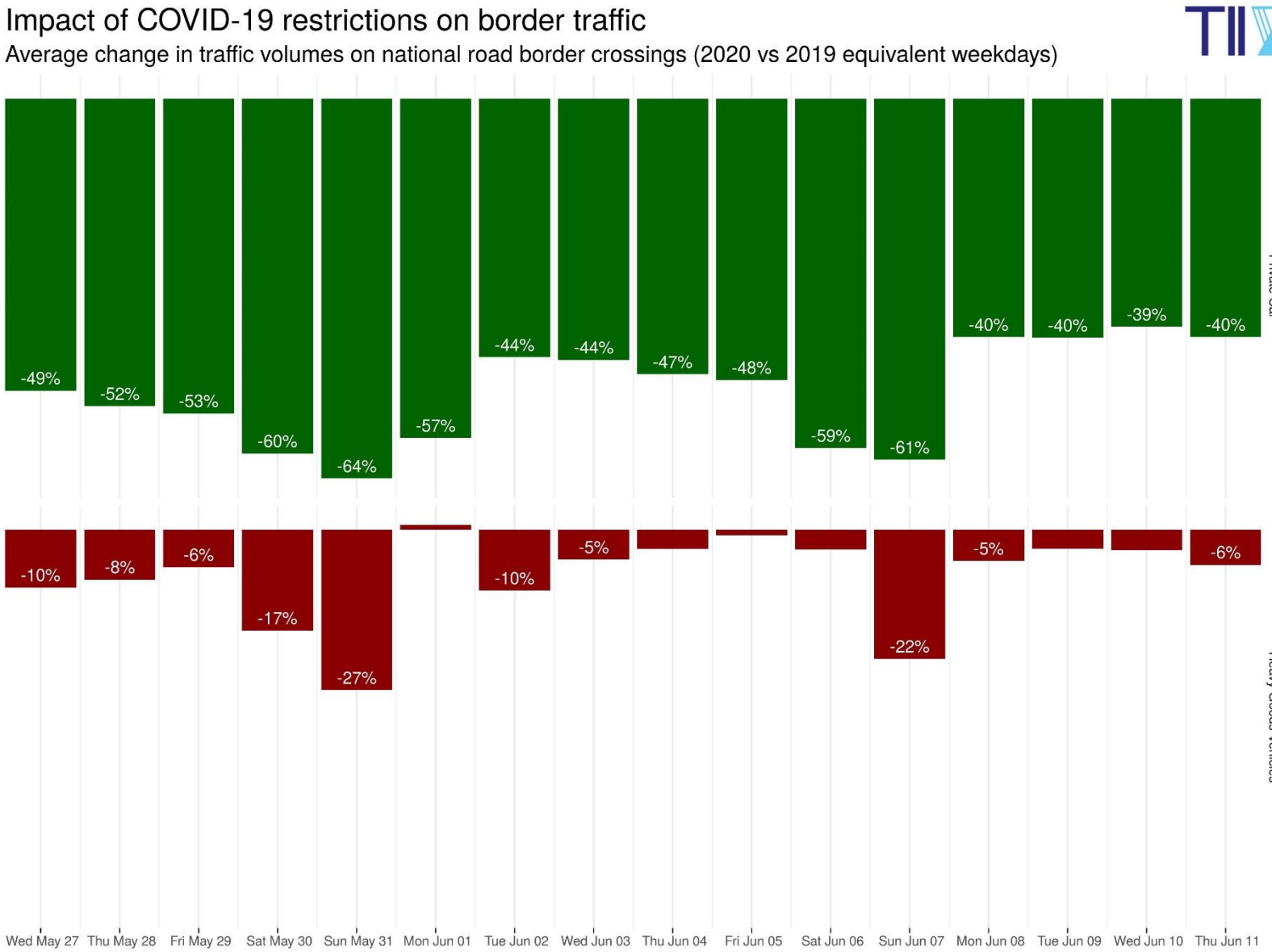

Figure 9: Border Crossings