

On Thursday March 12, the Calgary Municipal Emergency Plan was activated due to the COVID-19 pandemic. Self-isolation measures, business and school closures, work from home directives, and travel restrictions have changed the day-to-day lives for all Calgarians. As daily routines change, travel patterns have changed which has an impact to the entire transportation system.

Transportation data from a variety of sources provides a glimpse into the evolving changes. This document summarizes available data up to and including April 5 and compares it to “typical travel days”. For the purposes of this document, data from the first week in March (March 2-9, 2020) is used as a baseline reference for “typical travel days”. In recognition that weekday travel tends to be different than weekend travel, data is compared day vs. day. (i.e. Tuesday March 3 vs. Tuesday March 24) or using weekly weekday totals (i.e. Sum of Monday to Friday March 2-6 vs. Sum of Monday-Friday March 23-27). Data summaries prepared by sources outside of the Transportation Data and Forecasting team may have used differing baseline weeks.

### Vehicle Volume

City of Calgary permanent vehicle count stations on roadways throughout the city provide continual observations of vehicle volumes. Trends at these locations are indicative of trends on other similar roadways. Since the COVID-19 crises began, average weekday daily volume has decreased as shown for several locations in the chart below. *The average change in weekly weekday volumes is 54% during the week of March 30 compared to the first week in March.*



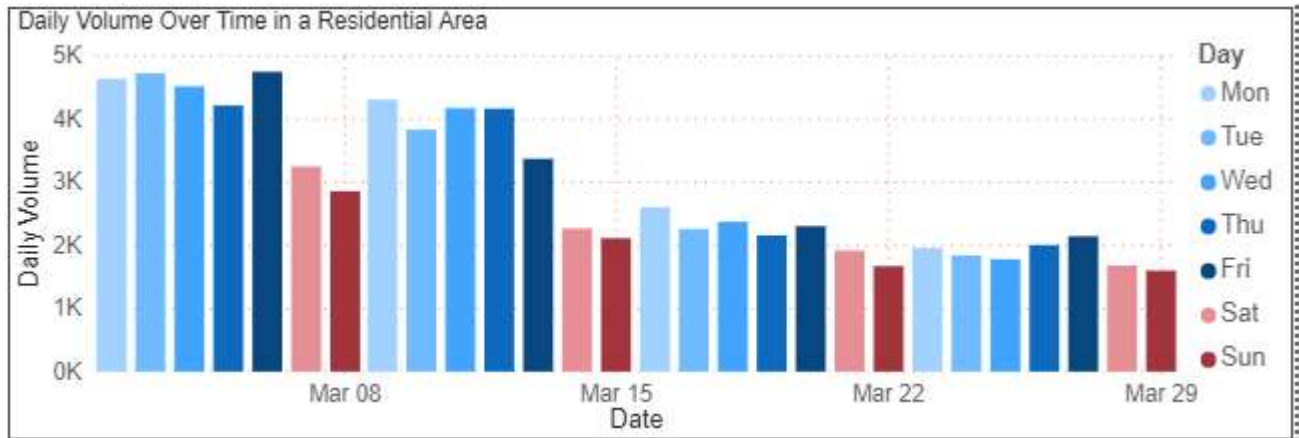
**Average Daily Weekday Volume (Vehicles / Day)  
& Percent Change March 2-8 versus March 30-April 5  
(Source: City of Calgary Permanent Counter Data)**

Of all the permanent counter locations, *17 Avenue SE has shown the least decline in daily weekday volume at only -36% reduction compared to early March.* The greatest decrease observed so far is on Bow Trail entering the downtown which has decreased by 64% since March 2-8 which is in line with the expected decline for a predominantly commuter road.

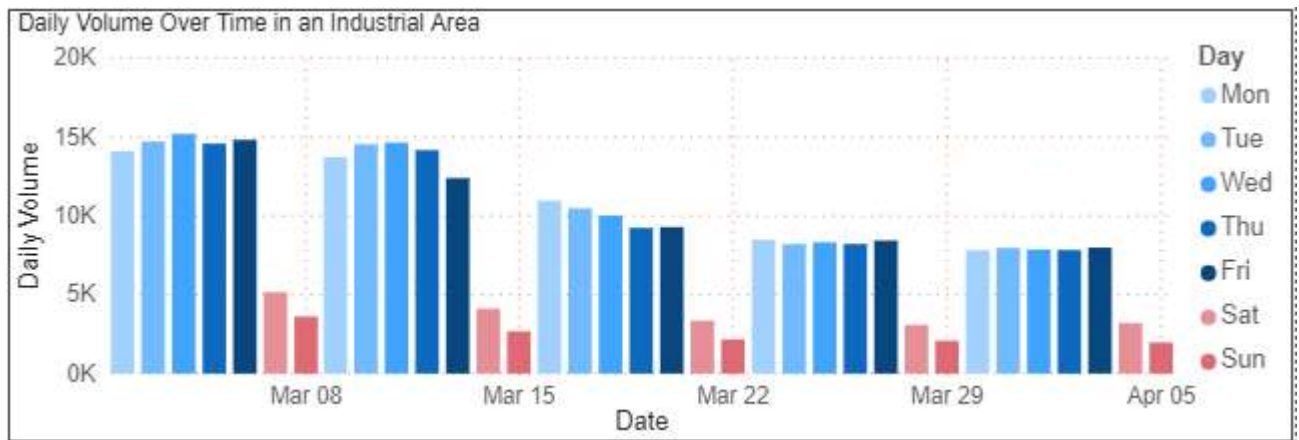
56 Street near 31 Avenue NE which is a collector street in a residential area has also been reviewed using semi-permanent side fire radar technology. This street had a *57% decrease in weekday volume from March 2-8 to March 23-*

27. The percent decline is higher than other higher classification roads likely since these roads typical serve adjacent homes whose occupants are now isolated, while other higher classification roads continue to serve more goods movements and other essential trips.

Another interesting attribute of this road within the community is the daily weekday and daily weekend volumes are becoming more similar as is illustrated in the following graphs. *On this residential focused road, the ratio of weekday daily volume to weekend daily volume has declined from 1.50 to 1.19, likely the result of diminished commuting trips.* Meanwhile, Ogden Road, which is in an industrial focused area, continues to have much higher weekday volumes compared to weekend volumes, indicating businesses and services in the area continue to operate.



**Daily Volumes on 56 St NE near 31 Ave (Vehicles / Day)**  
 (Source: City of Calgary Semi-Permanent Counter Data)



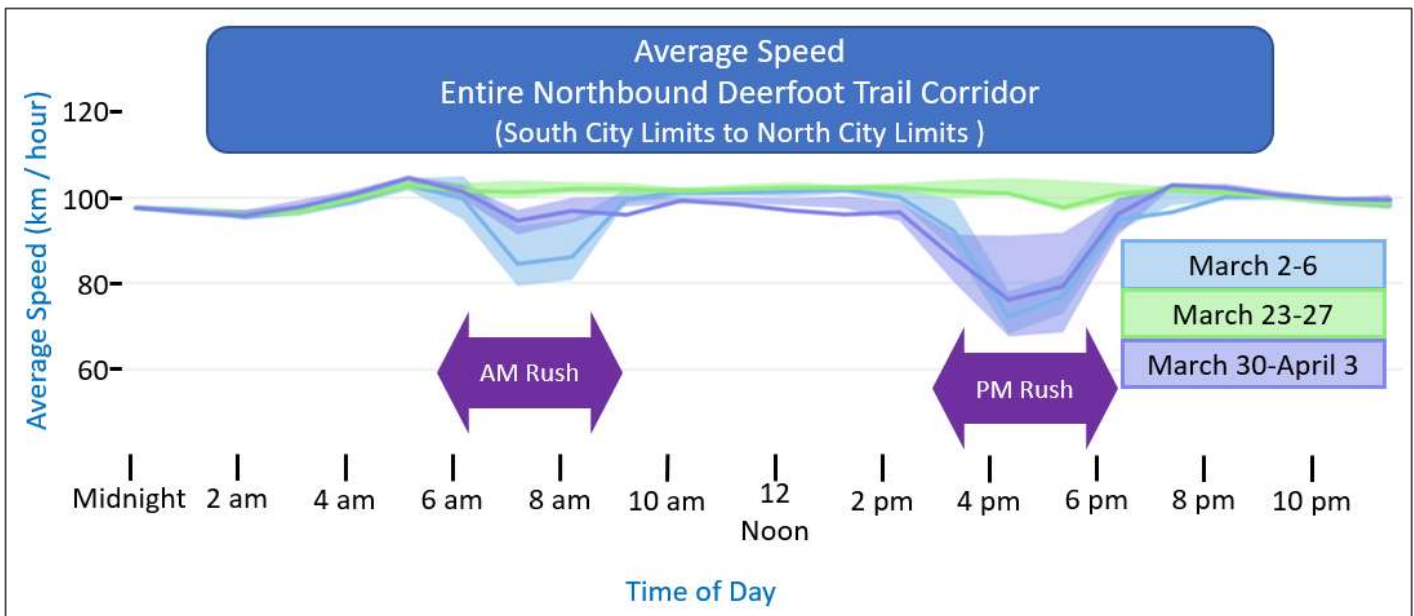
**Daily Volumes on Ogden Road South of Bonnybrook Road SE (Vehicles / Day)**  
 (Source: City of Calgary Permanent Counter Data)

### Travel Speed

On a typical day, higher volumes during the morning and afternoon rush hours cause increased congestion while average speed decreases. Outside of the rush hours when typical volumes are lower, vehicles travel at a speed closer to free-flow. Volume on roads has decreased during the COVID-19 pandemic, altering the typical congestion trends and travel speeds during the rush hours.

INRIX Analytics captures data from cell phones, connected vehicles, and fleet vehicles which provides insight to the average travel speed along corridors. *During the first two weeks of the COVID-19 crises, typical AM and PM rush hour slowdowns were not apparent and vehicles were able to travel closer to free flow speed all times of the day. From March 30-April 3, the average speed during the PM rush hour decreased similar to “pre-COVID” PM peak hour behaviour.* The decreased speed during the afternoon rush, like “normal” speed, could be the result of snowfall or slippery conditions during that week. The decreased speeds may also be due to latent demand for road capacity where vehicles may be adjusting their routes or departure time due to the reduced travel time on many corridors.

The following graph illustrate the changes in Average Speed on the northbound Deerfoot Corridor. The speed decreases on a typical day (blue) were eliminated in during the beginning of the COVID-19 crises. *During the week of March 30-April 3, the AM rush experienced faster speeds while the PM rush had speeds consistent with before COVID-19.* For example, the average speed at 4:00 PM on northbound Deerfoot corridor was 70km/hr at the beginning of March, increased to 100km/hr March 23-27, and returned to 75km/hr March 30-April 3.



**Average Speed on Northbound Deerfoot Trail (Source: INRIX Analytics)**

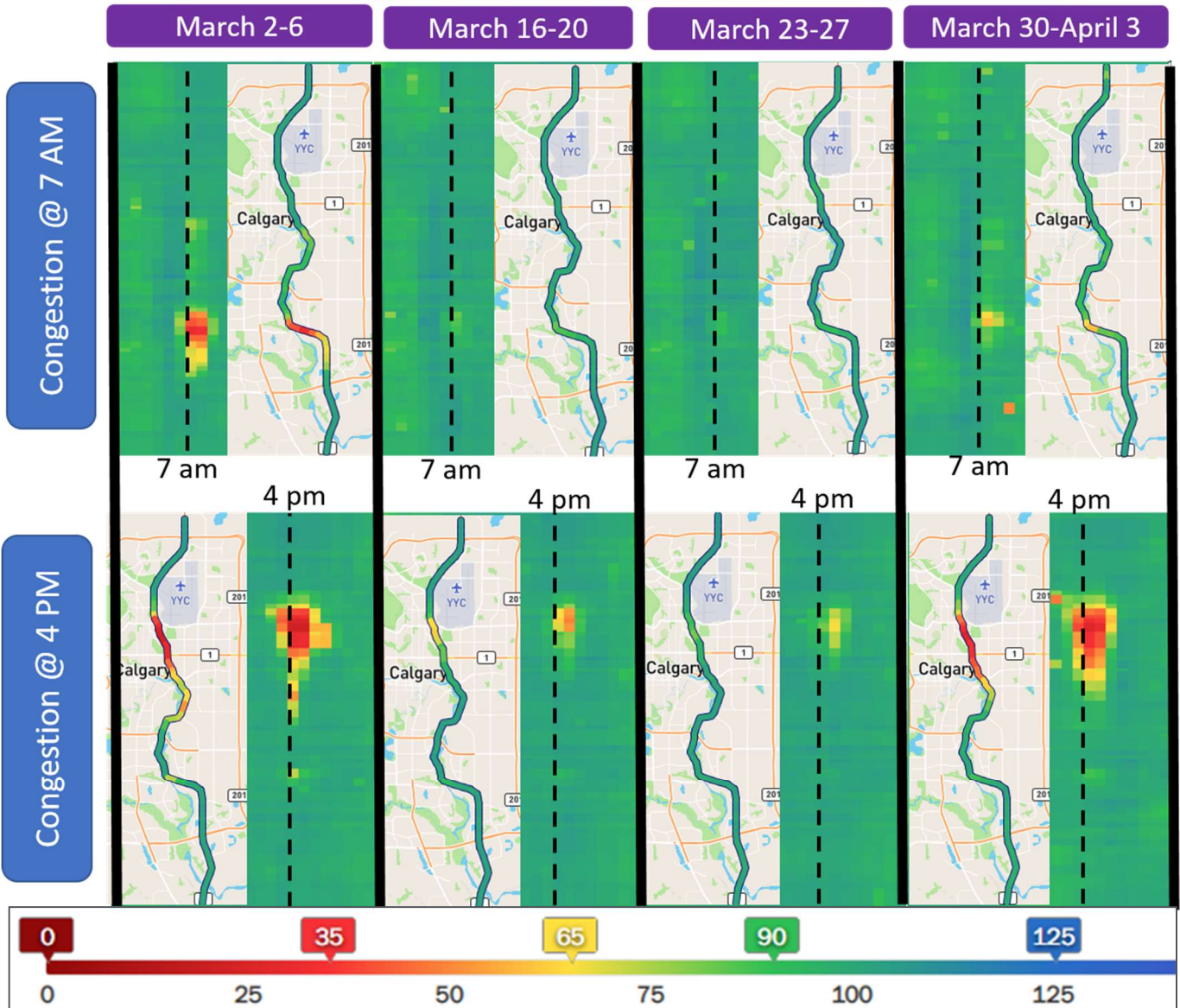
The next graphic illustrates congestion on northbound Deerfoot Trail over the past four weeks. The upper set of maps illustrate the average congestion at 7:00 AM, while the lower set of maps illustrate the average congestion at 4:00PM. The coloured boxes beside each map illustrate congestion as it changes hour by hour during the day, where the dashed line indicates the hour associated with the adjacent map. Congestion (red) is apparent from Memorial Drive to McKnight Boulevard in the map representing 4PM from March 30-April (bottom right map). This congestion is comparable to 4PM congestion in the beginning of March (bottom left map), and is much higher than what was observed March 16-20 and March 23-27.



# Congestion Percent

Entire Northbound Deerfoot Trail Corridor

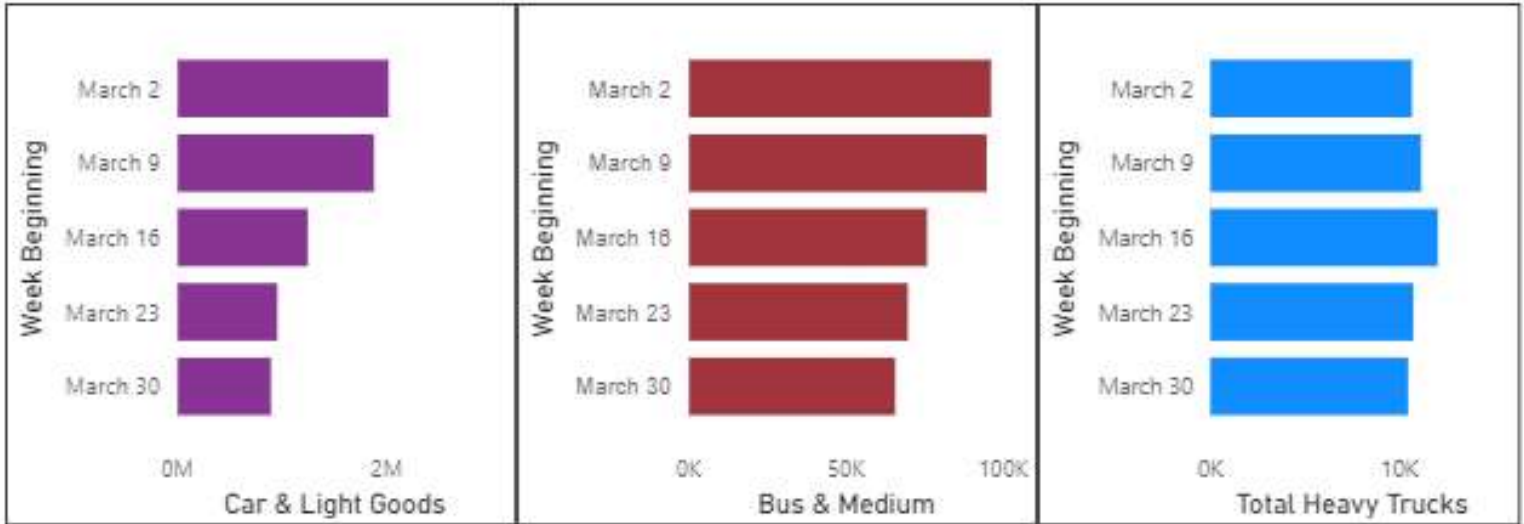
(South City Limits to North City Limits)



Congestion Index on Northbound Deerfoot Trail (Source: INRIX Analytics)

## Truck Volume

The trucking industry plays an important role in goods movements and to ensure supplies continue to be delivered to Calgarians. Data from the truck classification counters indicates that trucks, particularly heavy trucks, continue to travel through the city. Although some count locations have slight decreases in trucks, the decreases are not at the same rate as what has been observed for the passenger vehicles. The data below for the total volumes from several counters along trucks routes show that the passenger vehicle volume has decreased at a higher rate than trucks.

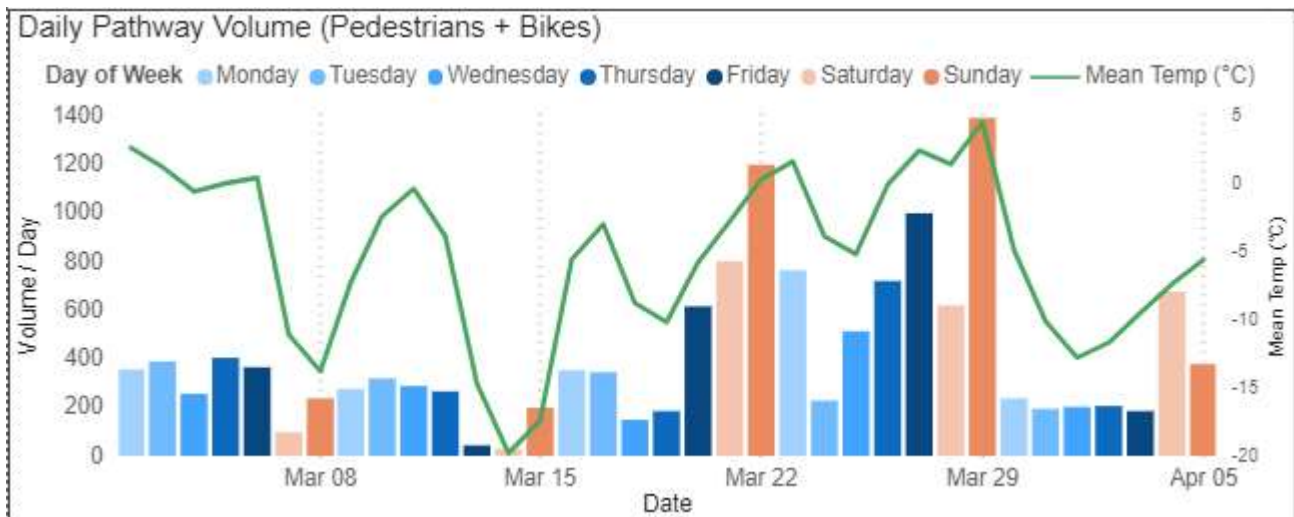


**Weekly volume by vehicle classification at Counters Along Truck Routes**  
 (Source: City of Calgary Permanent Counter Data)

### Pedestrians and Cyclists

People use pathways to walk or bike to work, and they also use them for recreation. Changes in pathway use can be observed using Eco-counters installed at several locations along the pathway system. Data from these Eco-Counters continue to show higher weekend volumes, indicating that these pathways are being used for recreation. The pedestrian / bike volume on Saturday/Sunday April 4/5 were lower than the previous weekend, likely due to the low temperatures.

The following chart for Memorial Drive pathway near Prince’s Island provides insight into the role weather may play on pedestrian/bike volumes. On Sunday April 5, the mean daily temperature was -5C and 400 daily users were observed on the Memorial Drive Pathway near Prince’s Island Park, much lower than the 1,400 daily users observed on Sunday March 29 when the mean temperature was closer to +5C.



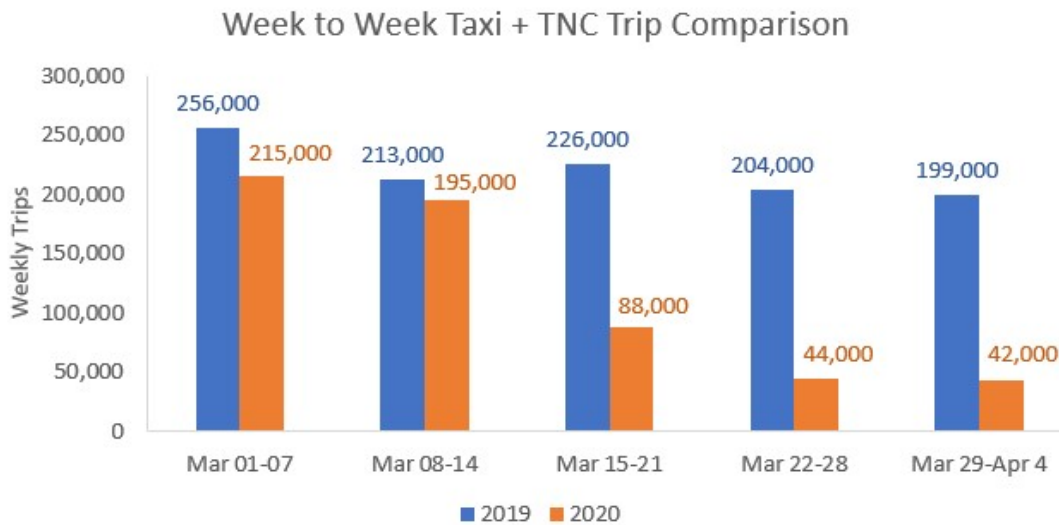
**Daily Users on Memorial Drive Pathway near Prince’s Island Park and Mean Temperature**  
 (Source: City of Calgary Eco-Counter perm Stations)

Another feature on the Memorial Pathway near Prince’s Island which may influence the pathway volumes is the social distancing measures implemented for the first time on March 28. Memorial Drive adjacent to this pathway was transformed into temporary pedestrian space allowing people to spread out in the area. Pedestrians and bikes spreading out onto the roadway will not have been counted by the eco-counter.

E-scooters were a popular mode choice during 2019 and were expected to return to Calgary in the spring of this year. Due to the risks associated with the COVID-19 pandemic, The City of Calgary has decided to postpone the re-launch of the e-scooters until further notice.

### Taxis and Ride Sharing

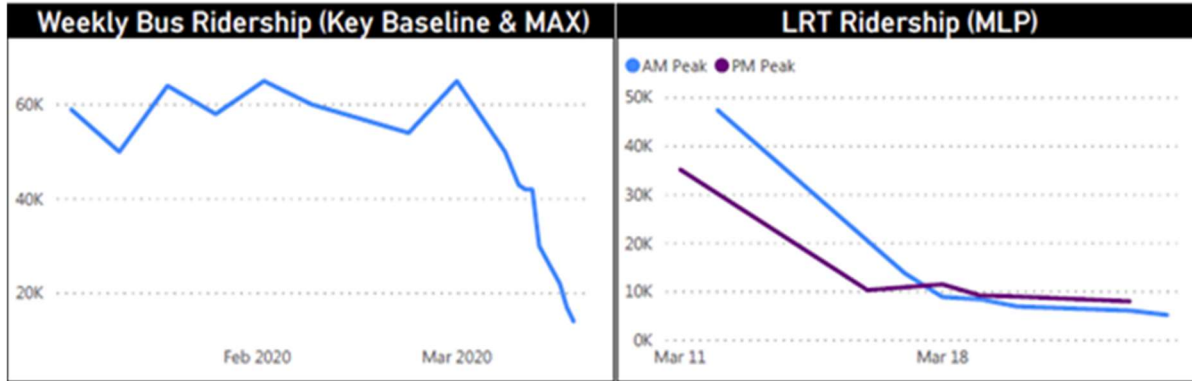
With Calgarians practising social distancing and with many travel restrictions in place, Taxi and Ride Sharing trips have also decreased since the beginning of the COVID-19 crises. Trip data from *Taxis and ridesharing companies indicate that trips have decreased 80% since the beginning of March.* The chart below illustrates how the weekly number of trips have changed in March 2020 compared to March 2019 for Taxis and Transport Network Companies (TNC, also known as ridesharing companies).



**Weekly Trips for Calgary Taxi and Transportation Network Companies (TNC)**  
 (Source: Data provided to City of Calgary by Taxis and TNC’s)

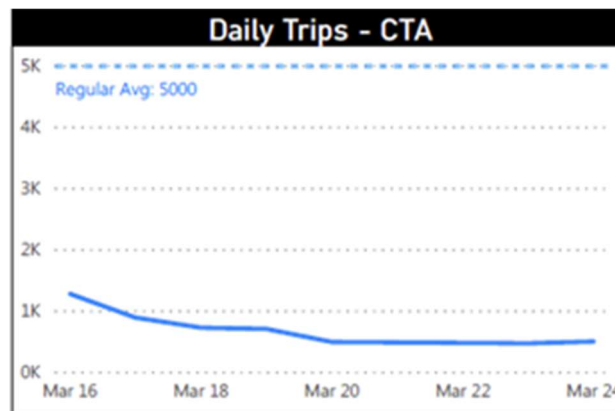
### Transit

Many people typically use Calgary Transit to commute to and from work. Yet, with the directive to stay at home, many of these travellers no longer rely on Transit daily. According to Calgary Transit, ridership has decreased significantly. As of the 3rd week in March, C-Train and Bus ridership declined by 80%.



**Bus Ridership and LRT Ridership (Source: Calgary Transit – Transit Data)**

Many Calgarians are unable to use regular transit service and instead use Calgary Transit Access to travel around the city, often to attend medical appointments, run errands, and pick-up groceries. Calgary Transit has indicated that COVID-19 has resulted in a decline of 90% ridership on Calgary Transit Access (CTA).



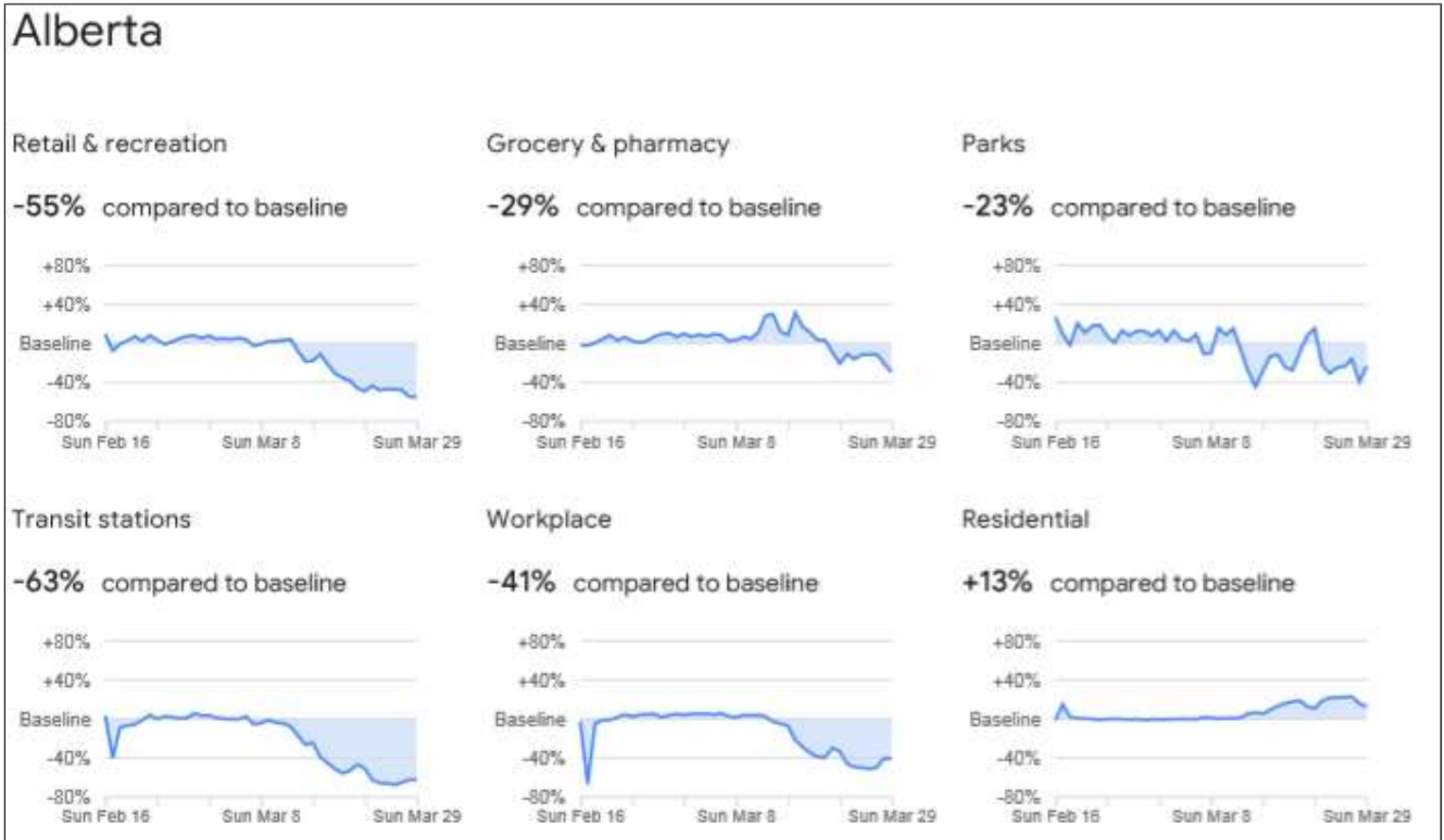
**Calgary Transit Access (CTA) Ridership (Source: Calgary Transit – Transit Data)**

### Summary

This document illustrates that all modes of transportation have been impacted by the COVID-19 pandemic. The absence of regular commuting activities has caused volume to decrease, while absence of congestion has resulted in higher average speed. Weather continues to appear to have an influence on our travel behaviours.

This week, Google released data collected from their user's location information which can be found at <https://www.google.com/covid19/mobility/> and is included below. This data provides insight to how typical trip destinations have changed in recent weeks. The trends illustrated in the Alberta section of the report are similar to what has been observed through City of Calgary data sources. Generally, commuter travel and transit travel are down. Many

of these trip patterns in recent days are more like the Family Day statutory holiday (February 17, 2020) than a typical weekday.



**Google Mobility Data for Alberta – March 29, 2020**  
 (Source: Google <https://www.google.com/covid19/mobility/>)

Other cities throughout North America have reported similar changes to their Transportation system, with the timelines for each city aligning with the spread of COVID-19 and the introduction of government response measures. Of note, INRIX has posted summaries on their blog (<https://inrix.com/blog/>) which uses their speed and trip data to provide insight how vehicle transport in U.S. and European cities has changed in recent weeks

Additional details and summaries from these data sets are included in the appendix of this document. It is Transportation Planning's hope to continue to capture and report on these trends as the pandemic progresses. Although manual data collection has been postponed for the foreseeable future, the automated and continual data sources highlighted here provide a wealth of insight to the transportation system during this challenging situation.