

From: ["Mochrie, Paul" <Paul.Mochrie@vancouver.ca>](mailto:Paul.Mochrie@vancouver.ca)

To: ["Direct to Mayor and Council - DL"](#)

Date: 5/16/2022 9:50:07 AM

Subject: Council Memo - Prior/ Venables Street Pilot - RTS 12872

Attachments: ENG - Council Memo - RTS - 12872 - Prior Street Pilot.pdf

Dear Mayor and Council,

Please see the attached memo from Lon LaClaire regarding Prior/Venables Underpass Project Update. A short summary of the memo is as follows:

- ☐ Responding to 2019 Council direction, the Prior Street Pilot included traffic calming measures such as installing traffic bulges and concrete barriers, converting parking to all day access and implementing a 30km/hr zone adjacent Strathcona Park.
- ☐ The Pilot was a success in reducing traffic volumes and speeds and improving the pedestrian experience.
- ☐ The Prior Street pilot project measures will remain in place until the Prior Venables Underpass Project proceeds, at which time permanent improvements along Prior Street can be implemented.
- ☐ Adjustments to the existing measures on Prior Street will be considered in the interim where appropriate.

If you have any questions, please feel free to contact Lon LaClaire at 604-873-7336 or lon.laclaire@vancouver.ca.

Best,
Paul

Paul Mochrie (he/him)
City Manager
City of Vancouver
paul.mochrie@vancouver.ca



The City of Vancouver acknowledges that it is situated on the unceded traditional territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliłwətał (Tsleil-Waututh) Nations.

MEMORANDUM

May 13, 2022

TO: Mayor and Council

CC: Paul Mochrie, City Manager
Armin Amrolia, Deputy City Manager
Karen Levitt, Deputy City Manager
Katrina Leckovic, City Clerk
Lynda Graves, Administration Services Manager, City Manager's Office
Maria Pontikis, Chief Communications Officer, CEC
Anita Zaenker, Chief of Staff, Mayor's Office
Neil Monckton, Chief of Staff, Mayor's Office
Alvin Singh, Communications Director, Mayor's Office
Paul Storer, Director of Transportation

FROM: Lon LaClaire
General Manager, Engineering Services

SUBJECT: Prior Street Pilot Project

RTS #: 12872

Purpose

This memo provides an overview of the Prior Street pilot project scope, a summary of the results of the pilot on traffic patterns, vehicle speeds and parking, and next steps.

Background

In September 2019, following five years of comprehensive study and engagement by staff, Vancouver City Council approved a route alignment for grade separation of the Burrard Inlet Rail Line (BI Line) with an underpass along the Prior/Venables Street alignment. Council directed staff to work with partners to advance the project. Staff continue to work with project partners towards funding for next steps, including scoping and design.

In addition to approving the route alignment for grade separation in 2019, Council also directed staff as follows:

D. THAT Prior/Venables Street be downgraded to a collector street, with a 30km/h speed limit near Strathcona Park;

E. THAT staff implement a pilot to reduce traffic volumes and speeds on Prior/Venables Street with low cost initiatives in the near term, such as all-day parking on both sides and temporary curb bulges, with the intention of restricting traffic to one traffic lane in each direction; and that staff monitor travel time and reliability impacts to transit and emergency services, shortcutting on local residential streets, and traffic and safety impacts on other neighbourhoods; and that this will inform the future street and underpass design, which is intended to be one general purpose through-traffic lane in each direction; and

Staff have responded to this Council direction by implementing the Prior Street pilot project, which has been shaped through regular engagement with the Strathcona Residents Association over the past two years. The duration of the pilot was planned for a year, but due to the COVID-19 pandemic, BC Hydro construction along Prior Street in summer of 2020, and the Strathcona Park encampment in summer 2021, staff decided to extend the pilot project to the end of 2021. This extension allowed for final data to be collected, once patterns in the neighbourhood had stabilized, but before substantial construction on the New St. Paul's hospital begins.

Pilot Project Scope

The pilot project focused on improvements to Prior Street between Gore Avenue and Raymur Avenue. Adjustments to Malkin Avenue, which runs parallel to Prior Street and provides access to the Produce Row businesses, was also reviewed as part of this work.

BC Hydro construction occurred on Prior Street in the summer of 2020 and many of the improvements were implemented following this construction.

The following measures were implemented to reduce traffic volumes, lower vehicles speeds and improve the pedestrian experience along the Prior Street in 2020 and 2021:

- A 30 km/hr zone was created adjacent Strathcona park through signage and pavement markings;
- AM & PM peak hour rush regulations on Prior St were removed to allow all-day parking along Prior Street, reducing the number of dedicated travel lanes to one in each direction;
- Art sculpture carts called 'PARK' were installed in the curb lane to encourage parking on Prior Street, between Hawks Ave and Campbell Ave;
- Street lighting was upgraded to LED fixtures;
- Parking was removed on Malkin Ave, adjacent Produce Row access driveways, to provide additional space for improved truck maneuvering to encourage use of Malkin;
- Existing bus shelters in poor condition were replaced with the City's standard shelters;
- Street restoration followed BC Hydro construction and allowed for updated pavement markings;
- The eastbound curb lane approaching Malkin Avenue was converted to a right turn lane to encourage trucks to turn onto Malkin Ave and reduce travel lanes on Prior Street;
- Concrete barriers were installed on the north side of Prior Street, between Campbell Avenue and Raymur Avenue, to reduce the number of travel lanes as vehicles approach Strathcona Park;

- Speed reader board signage was repaired and adjusted;
- Temporary curb bulges at Dunlevy Avenue and Heatley Avenue were installed using concrete barriers;
- Coloured crosswalk at Hawks Avenue and Campbell Avenue were installed; and
- Leading pedestrian intervals were added to signals at Prior Street and Campbell, Jackson and Princess Avenues.

See Appendix A for a map of the different measures implemented.

Data Collection and Results

Staff completed data collection to determine the impact of the pilot project measures on traffic volumes, vehicle speeds and parking occupancy. Data collection was completed in three phases:

- The baseline data was collected in October and November 2019, before pilot measures were implemented.
- Shortly after the first round of pilot measures were installed, data was collected in February and March 2020.
- Following the second round of pilot measures, which took place after BC Hydro work along Prior Street, a final round of traffic data was collected in November 2021. Final parking data collection followed in March 2022.

The 2021 data collection was expanded to inform the Strathcona Neighbourhood Traffic Management Pilot.

A summary of results is included below. Additional information is provided in Appendix B.

Traffic Volumes:

- Overall traffic volumes have decreased along Prior Street during the pilot project by up to 15%. This aligns with the citywide trends as traffic volumes have reduced across the City during the COVID 19 pandemic.

Vehicle Speed Results:

- Vehicle speeds on Prior Street reduced between 2019 and 2020, and further reduced between 2020 and 2021.
- Specifically, in the 800 Block of Prior adjacent Strathcona Park, where the speed limit was adjusted by the pilot project to 30 km/hr, the City has observed the following. Note that the 40 km/hr metric is utilized as it is not significantly over the speed limit and aligns with general travel behavior.
 - In the morning, 59% of vehicles in 2021 were travelling below 40km/hr compared to 30% of vehicles in 2020 and 19% of vehicles in 2019.
 - In the afternoon, 87% of vehicles in 2021 were travelling below 40km/hr compared to 49% of vehicles in 2020 and 38% of vehicles in 2019.

- In the late evening, 33% of vehicles in 2021 were travelling below 40km/hr compared to 17% of vehicles in 2020 and 2021.
- For local streets such as National Ave, Campbell Ave, and Glen Drive, vehicle speeds were generally observed within the posted limits during peak and off-peak hours.

Parking Occupancy Results:

- Between 2019 and 2022, average parking use increased 6% during the day and 25% in the evening.
- During the 2022 data collection, approximately 47% of parking stalls in the area were occupied during the day, and 56% of stalls were occupied in the evening.

The results of the data collection confirm that the pilot has been successful in reducing traffic volumes and vehicle speeds, and increasing parking occupancy.

Community Feedback

The community, specifically the Strathcona Residents Association, was engaged throughout the pilot project. Through this relationship, staff heard a number of requests for additions and adjustments to the pilot scope, which were considered and implemented where appropriate. For example, the community championed concrete barriers on Prior Street, between Campbell Avenue and Raymur Avenue, to help reduce speeds on the curve approaching Strathcona Park. Other stakeholder groups such as BC Trucking were involved in reviewing aspects of the trial measures as they related to truck access to Produce Row and concerns about truck shortcutting.

The results of the data collection were shared with the community in early 2022 and the community is supportive of maintaining the existing pilot project measures. There has been continuing feedback regarding vehicle speeds and volumes on Prior Street, as well as the number of trucks on Prior Street. Staff are currently reviewing traffic calming measures as part of the Strathcona Neighbourhood Traffic Management Pilot, which may influence traffic on Prior Street. Monitoring of the Prior Street measures will continue as traffic patterns adjust from the Strathcona Neighbourhood Pilot and construction in the area, such as the New St. Paul's Hospital. Staff also acknowledge the opportunity to explore additional changes as part of future work on the Prior Underpass, including more significant upgrades like signal upgrades and sidewalk widening.

The Community has also made some requests that Staff have been unable to support such as removing Prior Street as a truck route. The Prior Street truck route is critical to the Produce Row business access, via Malkin Avenue, and the overall east-west goods movement to and from Downtown. It should be noted that TransLink would need to support such a change as trucks routes are regional serving. To respond to the community desire to reduce the number of trucks, Staff has worked with the new St. Paul's Hospital contractor to encourage use of other adjacent truck routes for primary access to and from the hospital site, specifically Terminal Avenue. BC Trucking and Produce Row business have also been engaged to determine if any improvements to Malkin Avenue or National Ave could be implemented to encourage use of these streets. City staff have also committed to exploring designs to limit truck use on Hawks Ave to further encourage the use of Malkin Ave instead of Prior Street.

Summary and Next Steps

The pilot project has been a success in reducing speeds and improving comfort for people walking along Prior Street.

Staff are now focusing on piloting traffic calming in Strathcona neighbourhood between Prior Street and Hastings Street with a focus on Glen and Campbell Streets. Community engagement on potential measures is underway with implementation of supported measures anticipated in Summer 2022.

The Prior Street pilot project measures will remain in place until the underpass project proceeds, at which time permanent improvements along Prior Street can be implemented. Adjustments to the existing measures on Prior Street will be considered in the interim where appropriate. When funding is secured for the underpass project, staff will proceed with project scoping and design.

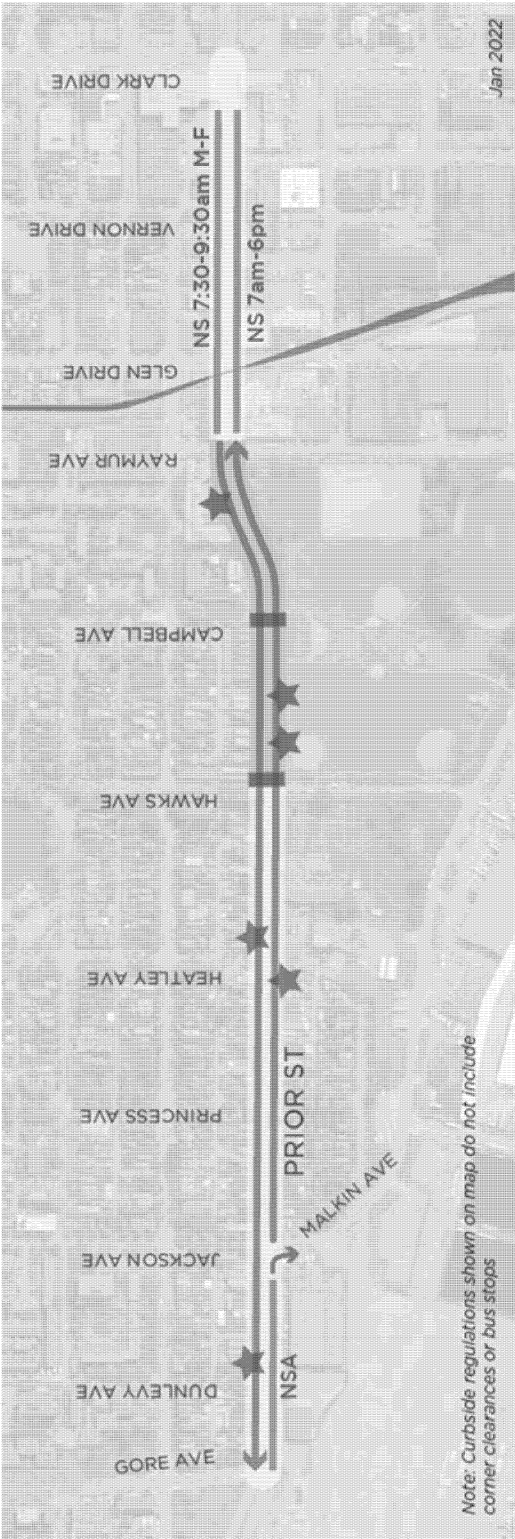
Sincerely,

A handwritten signature in blue ink, appearing to read 'Lon LaClaire', with a stylized flourish at the end.

Lon LaClaire, M.Eng., P.Eng.
General Manager, Engineering Services

604.873.7336 | lon.laclaire@vancouver.ca

Appendix A – Map of Pilot Project Measures



New all day parking with one travel lane in each direction. Previously, two travel lanes during peak periods.



Unchanged curbside regs



30km/h speed limit



Temporary curb bulge



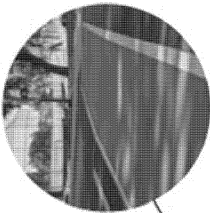
Right-turn bay



Public art installation or concrete barriers in curb lane



Artistic crosswalk



- Changes not shown on map include
- New bus shelters on Prior
 - New LED street lighting on Prior
 - Minor parking changes along Malkin

Appendix B – Data Collection Summary

MEMORANDUM

April 11, 2022

TO: Megan Pate, Branch Head, Northeast False Creek Implementation

CC: Winston Chou, Branch Head, Traffic & Data Management

FROM: Jennica Chiu, EIT – Civil Engineer I, Traffic & Data Management
Maria Albitar, P.Eng. – Civil Engineer I, Traffic & Data Management

SUBJECT: Prior St Downgrade- Traffic Data Summary (2021 Update)

On October 1st 2019, City Council approved downgrading Prior/Venables St from an Arterial street to a Collector street, with a 30 km/hr speed limit reduction near Strathcona Park. In addition, Council directed staff to implement a pilot to reduce traffic volumes and speeds on Prior/Venables St with low cost initiatives such as all-day parking on both sides, with the intent to permanently restrict traffic to one traffic lane in each direction. Figure 1 below illustrates the locations of the approved / implemented changes.



Figure 1 -Implemented Changes along Prior Street

Changes were implemented on January 27, 2020 including:

- A 30km/hr reduced speed limit on Prior St, signed from Hawks Ave to Raymur Ave
- The conversion of rush-regulated parking (No parking 7 am to 9:30 am for westbound and no parking 3-6pm for eastbound) to all-day parking along both sides of Prior St between Gore Ave and Raymur Ave.

City staff conducted an extensive “before” and “after” data collection effort that includes vehicle speeds, vehicle volumes, queueing counts, and parking occupancy within the study area during

weekday peak hours. The “before” data was collected in Fall 2019 whereas “after” data was collected in February 2020. Data from this work is presented in the Prior St Downgrade – Traffic Data Summary (dated May 13th, 2020, and included as Appendix A of this report).

This report summarizes a subsequent round of data collection in November 2021 and provides highlights of key changes since the previous rounds of data collection.

Key Findings

Notable findings from the 2021 volume and speed data include:

- Overall, lower traffic volumes were seen in 2021 compared to both 2019 and 2020. Since March 2020, motor vehicle traffic across the City and the region has seen significant changes in both quantity (volume) and trend (distribution throughout the day). Therefore, changes noted in this report are likely a combination of project impacts and changes to general traffic trends since March 2020.
- Volumes turning from Prior St onto adjacent residential streets have also generally decreased and continue to be under 50 veh/hr (less than 1 veh per min).
- 59% and 87% of vehicles along 800 Block Prior Street were travelling at under 40 km/hr in the AM and PM peak hours, which is an improvement from 29% and 49% in 2020, respectively.

Average Daily Traffic Volumes

The latest average daily traffic volumes from November 2021 are shown in Figure 2 below. Overall, higher traffic volumes are found along Campbell Ave and Glen Dr, as well as in the northwest area near Hastings St & Main St.

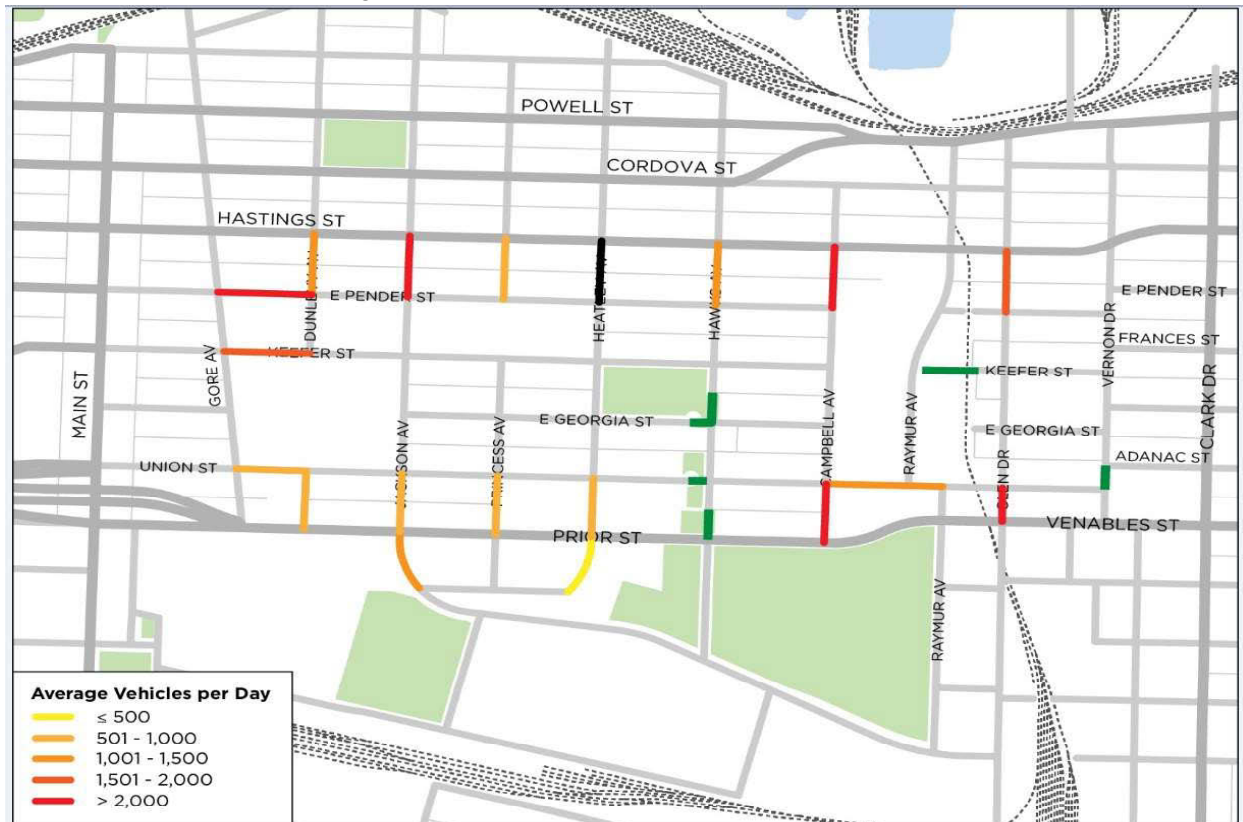


Figure 2 - Average Weekday Volume by Segment (November 2021)

Daily volumes along local streets within the study have generally decreased or not significantly changed since 2019 and 2020 as shown in Figure 3 and Figure 4, likely due to impacts of the pandemic, a trend observed throughout the City. One notable exception to the overall traffic volume reductions is the road segment at 800 Glen Drive, which saw an increase from 1,500 vehicles per day to 2,000 vehicles per day. Hawks Avenue also experienced a relative increase over the time period; however, the volume remains low at around 1000 vehicles per day.

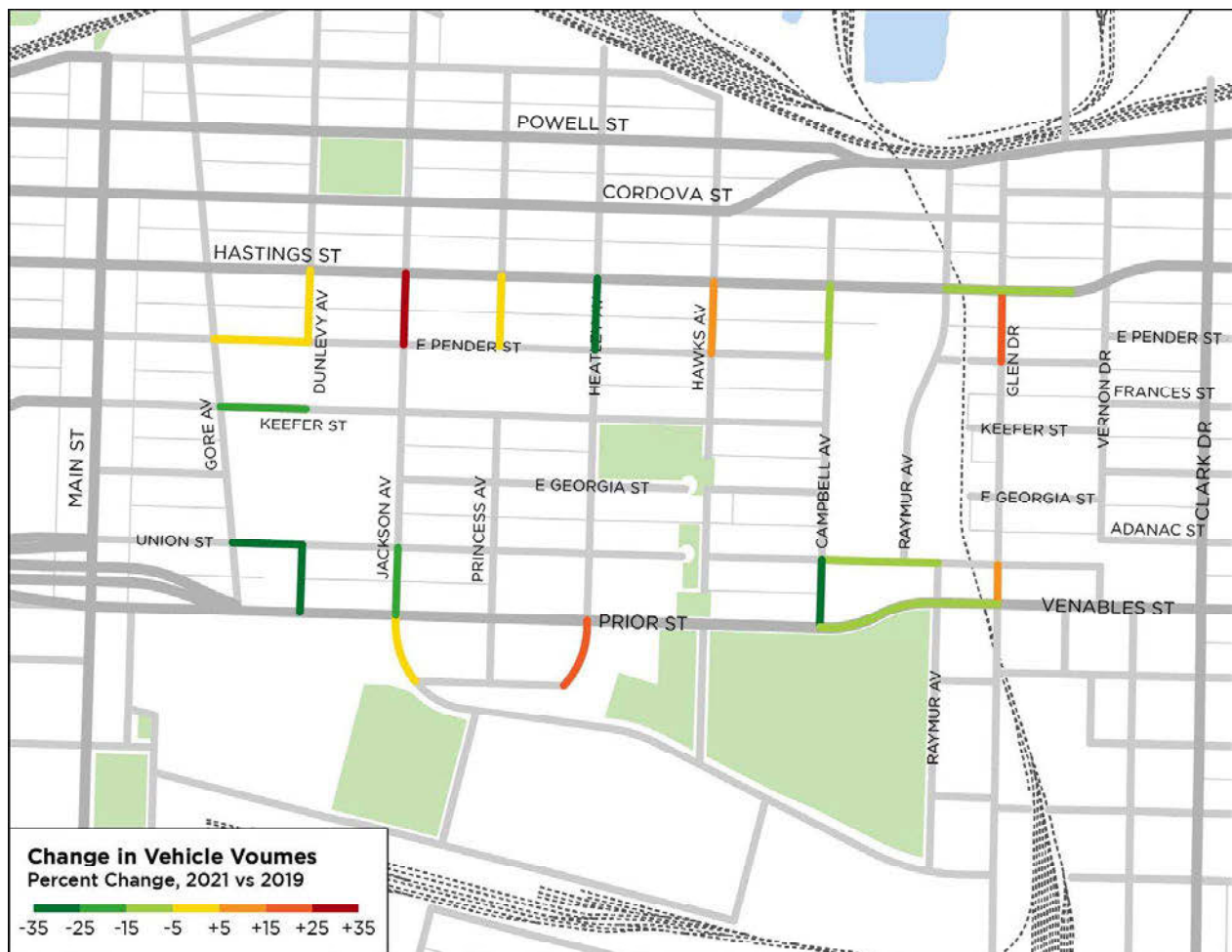


Figure 3 - Change in Weekday Vehicle Traffic (2021 vs 2019)

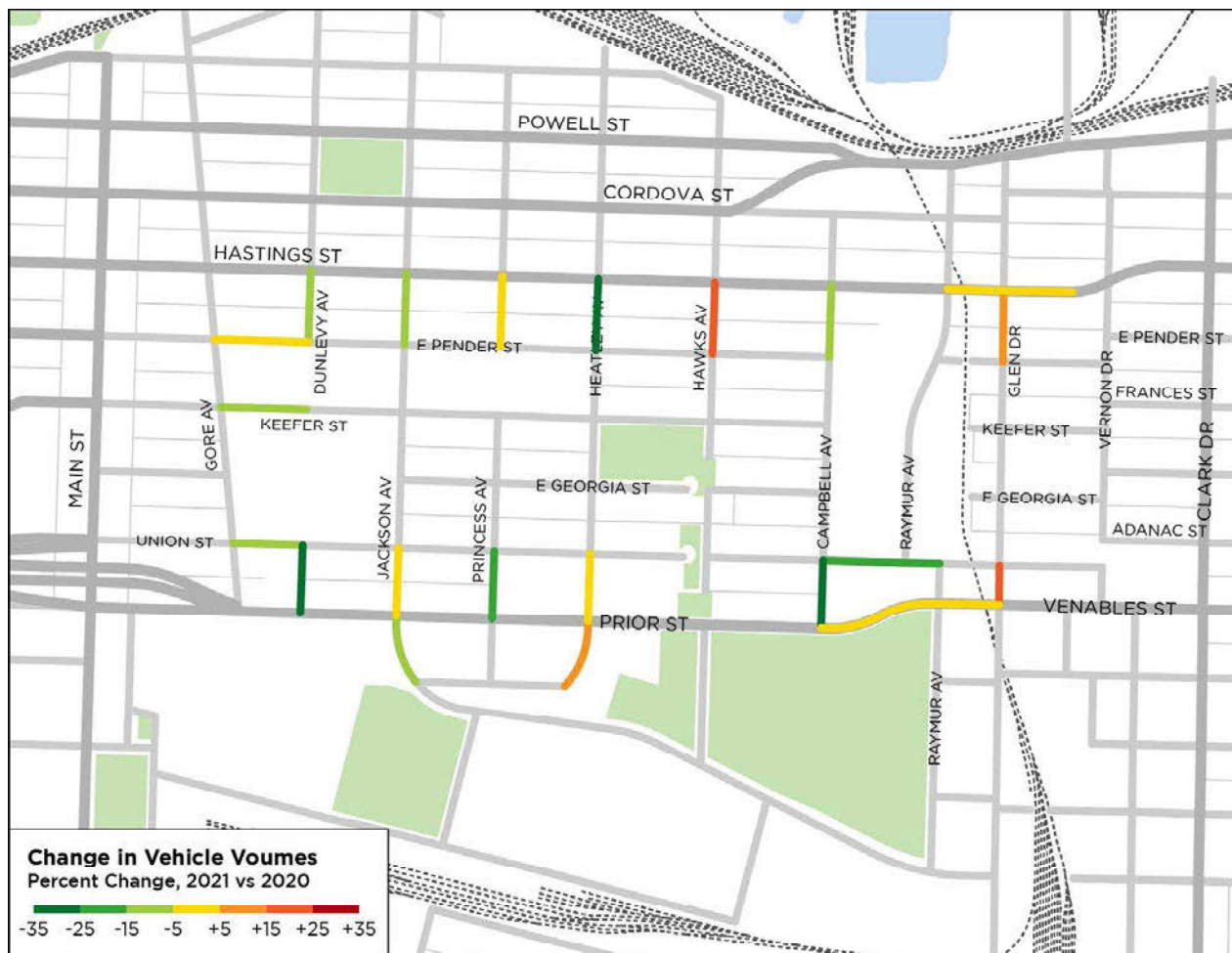


Figure 4 - Change in Weekday Vehicle Traffic (2021 vs. 2020)

Turning Movement and Cordon Volumes

Weekday peak hour turning movement and cordon volumes based on updated counts from November 2021 are summarized in Figure 5 and Figure 6. Turning movement counts were collected for 4 hours, representing the AM and PM peak hours. It is noted that there is a large natural variation when comparing peak hour counts conducted over different time frames. Link volumes represent the peak conditions using data from at least 3 typical weekdays.

Volumes along arterial portions of the study area generally saw changes in line with post-pandemic arterial routes entering and exiting the downtown core as shown in Figure 7 to Figure 10. Typical trends from November 2021 show reductions of 18%, 11% and 12% reductions on their AM peak, PM peak, and daily traffic volumes, respectively based on major arterial segments across the City. Volumes turning from Prior St onto adjacent residential streets have also generally decreased and continue to be under 50 veh/hr (less than 1 veh per min).

Directional and Turning Movement Volumes (2021 AM Peak Hour)

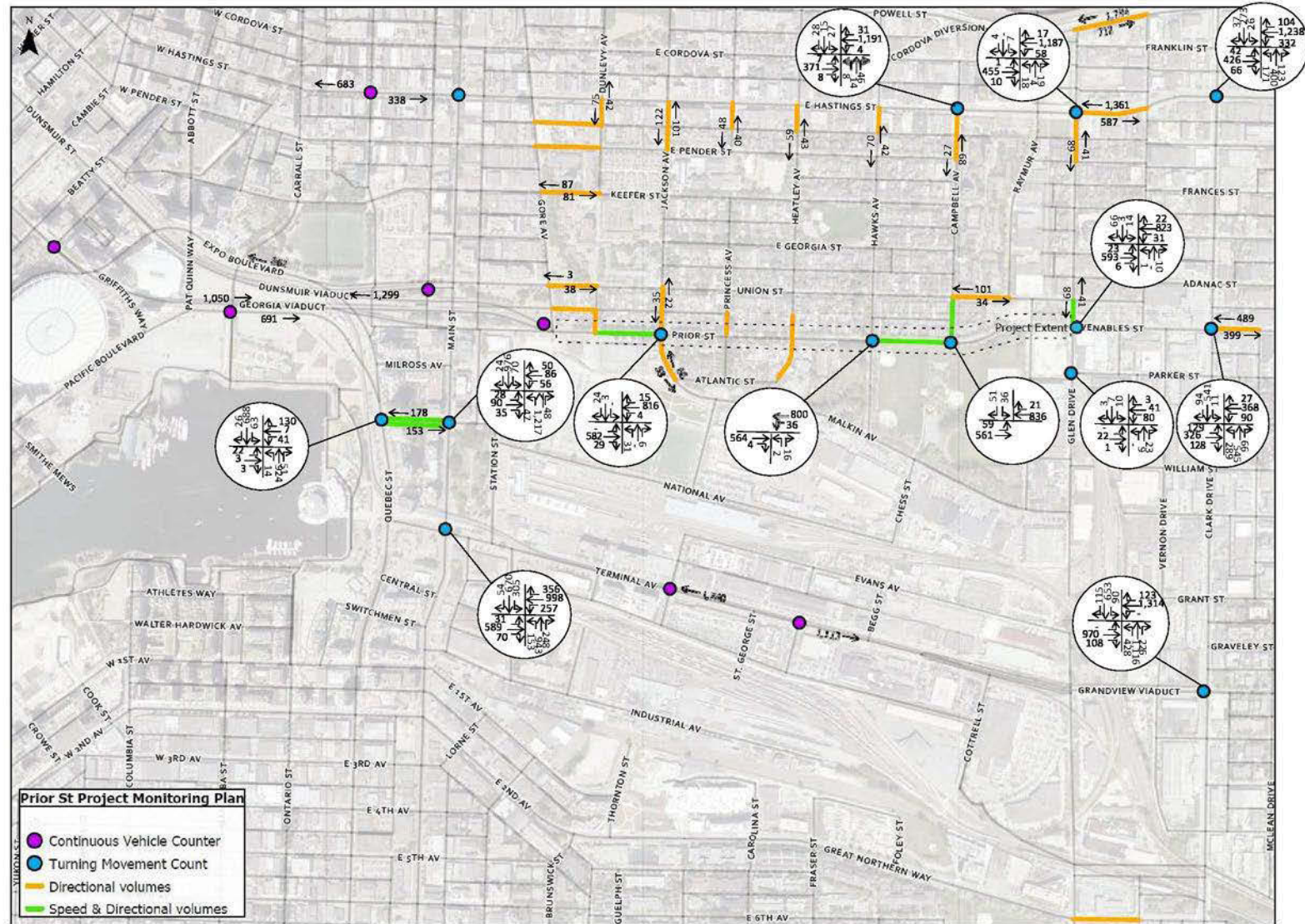


Figure 5 - Directional and Turning Movement Volumes (2021 AM Peak Hour)

Directional and Turning Movement Volumes (2021 PM Peak Hour)

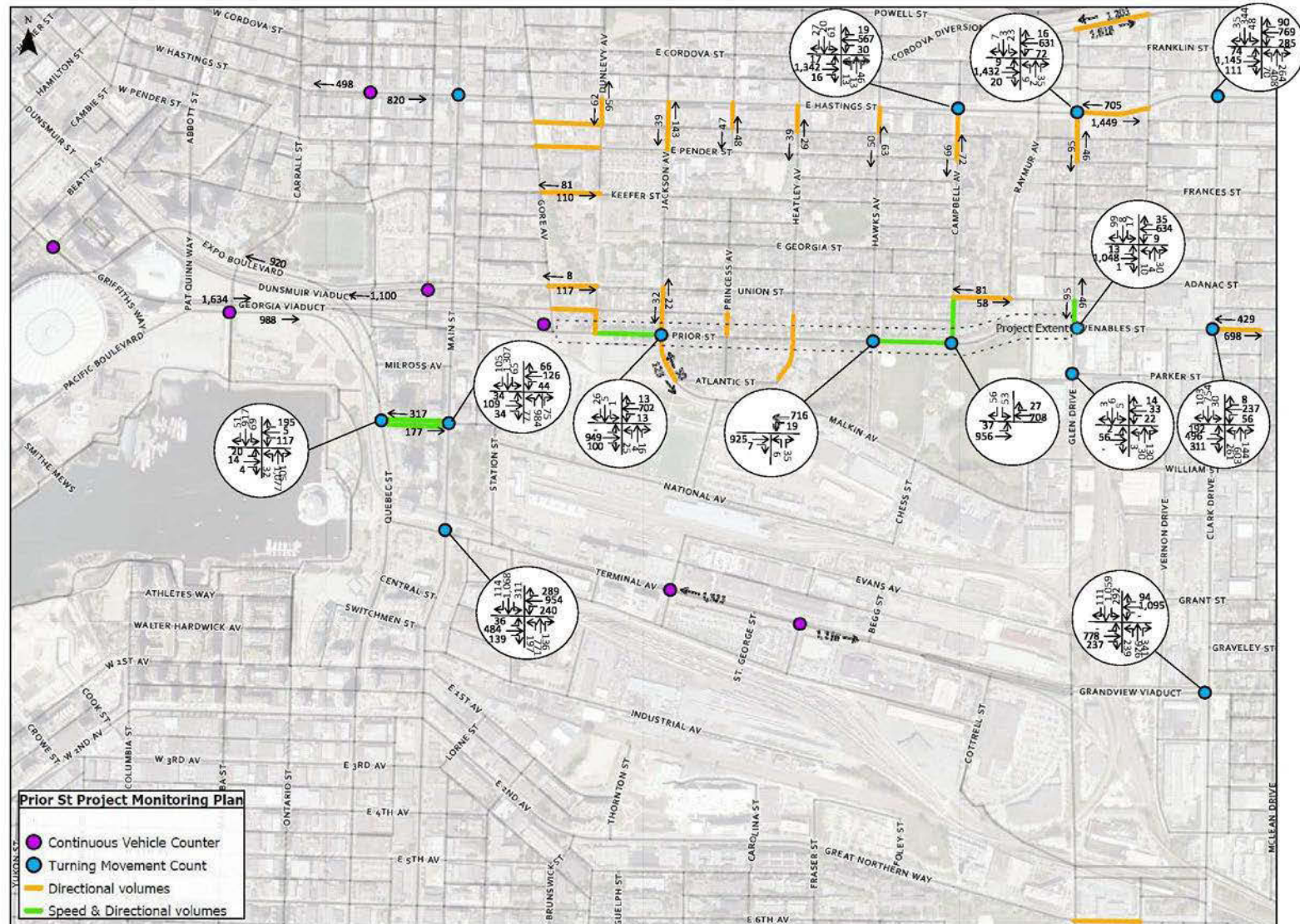


Figure 6 - Directional and Turning Movement Volumes (2021 PM Peak Hour)

Comparison of Directional Volumes and Intersection Totals (2019 to 2021 AM Peak Hour)

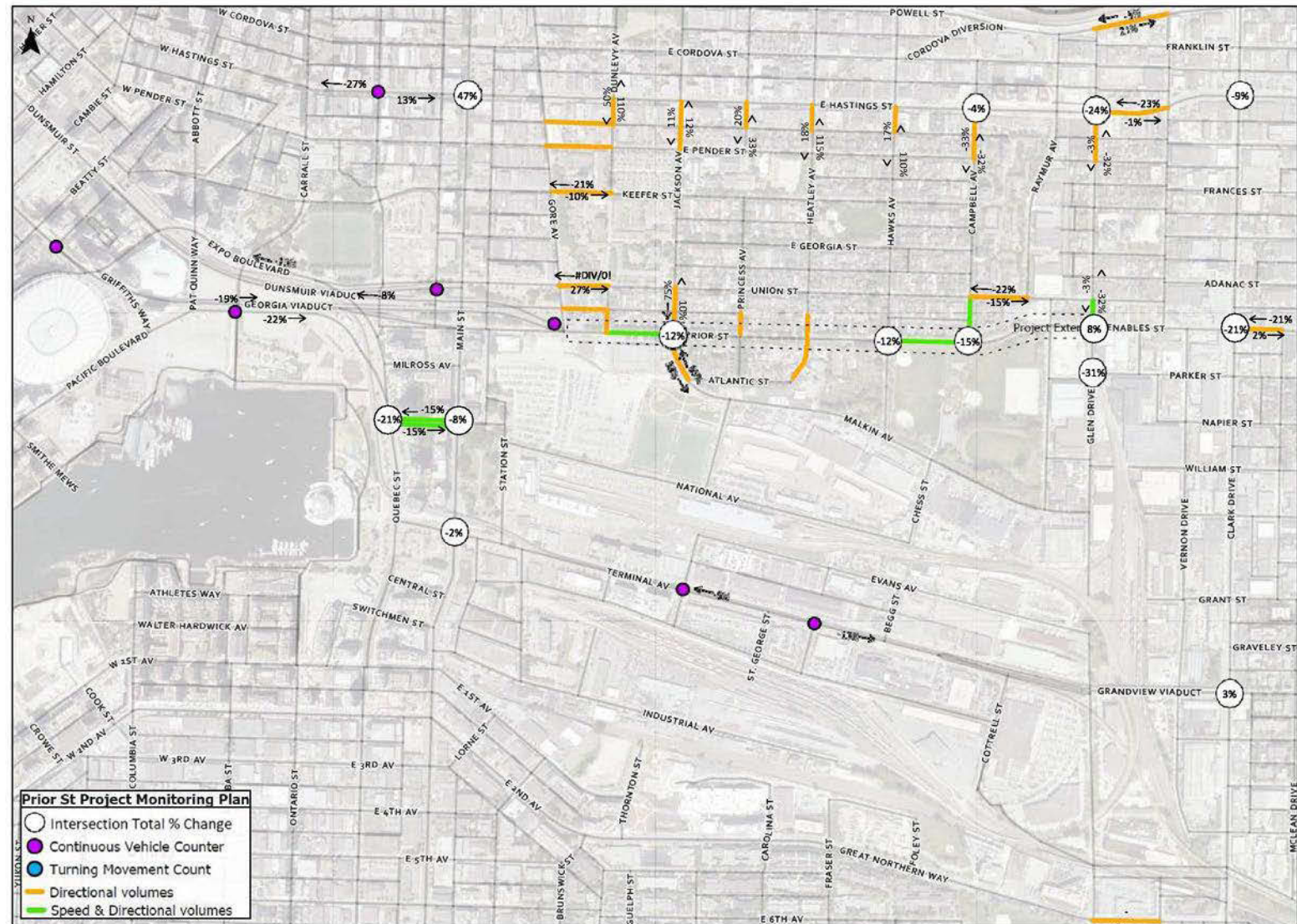


Figure 7 - Comparison of Directional Volumes and Intersection Totals (2019 to 2021 AM Peak Hour)

Comparison of Directional Volumes and Intersection Totals (2019 to 2021 PM Peak Hour)

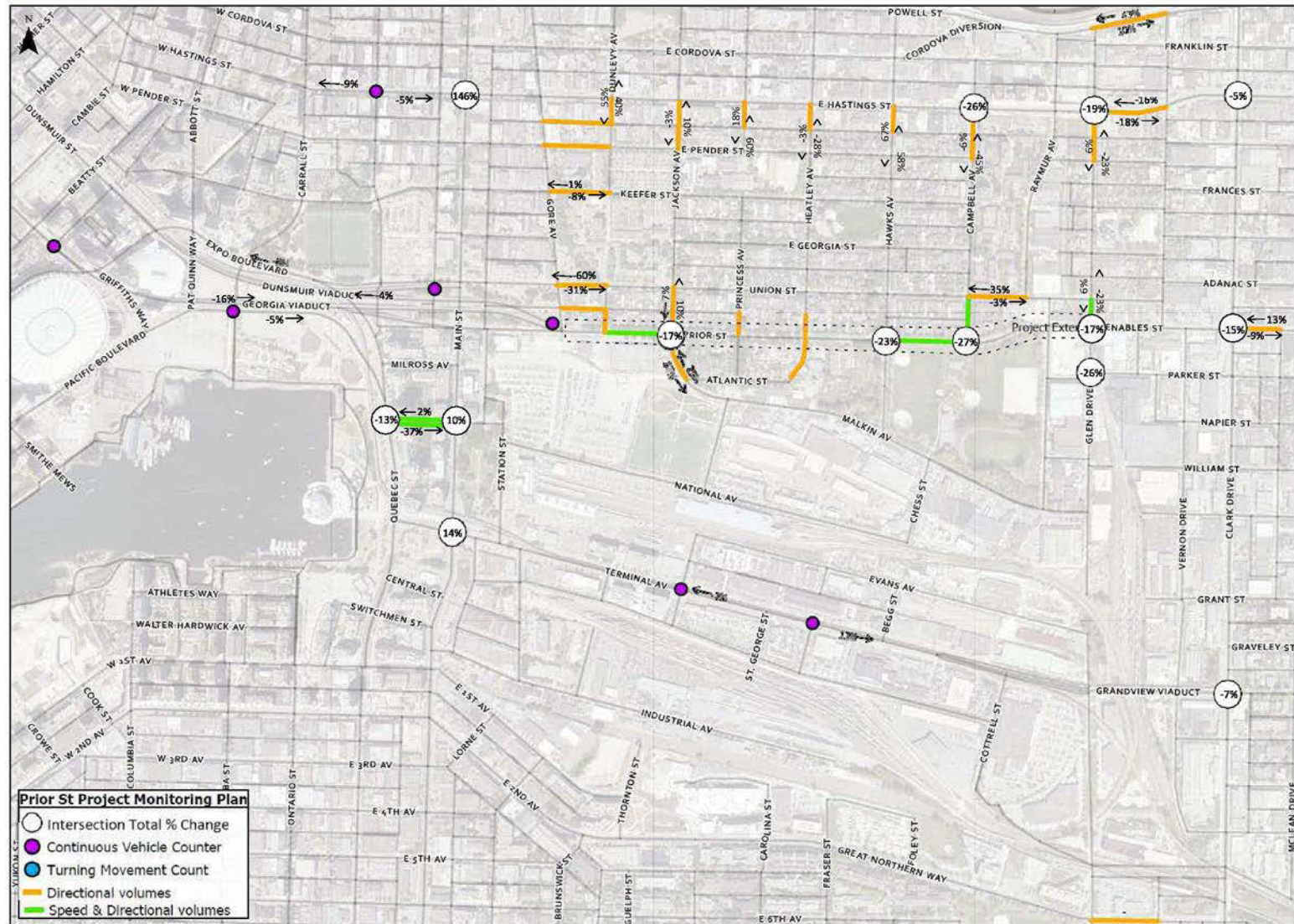


Figure 8 - Comparison of Directional Volumes and Intersection Totals (2019 to 2021 PM Peak Hour)

Comparison of Directional Volumes and Intersection Totals (2020 to 2021 AM Peak Hour)

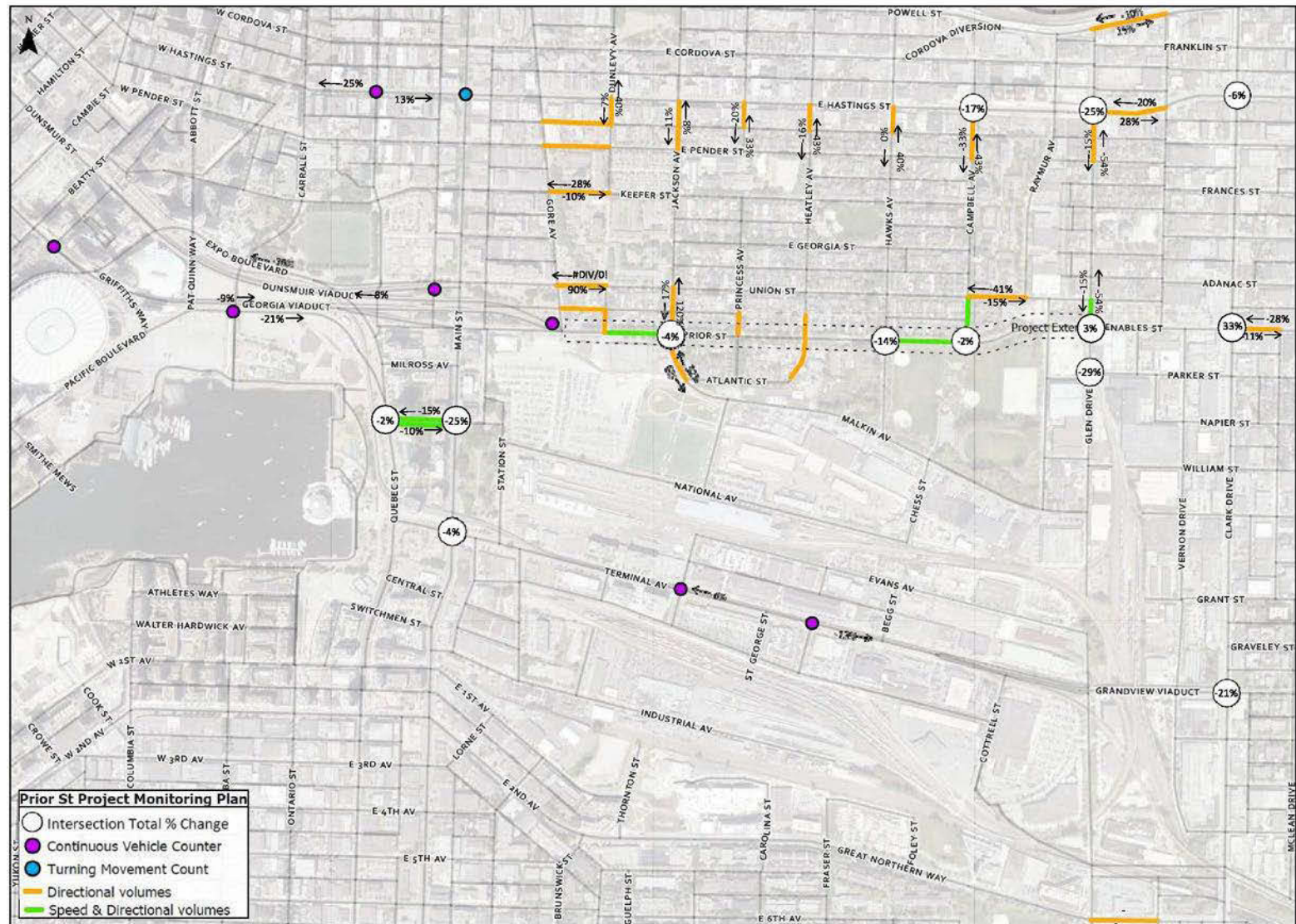


Figure 9 - Comparison of Directional Volumes and Intersection Totals (2020 to 2021 AM Peak Hour)

Comparison of Directional Volumes and Intersection Totals (2020 to 2021 PM Peak Hour)

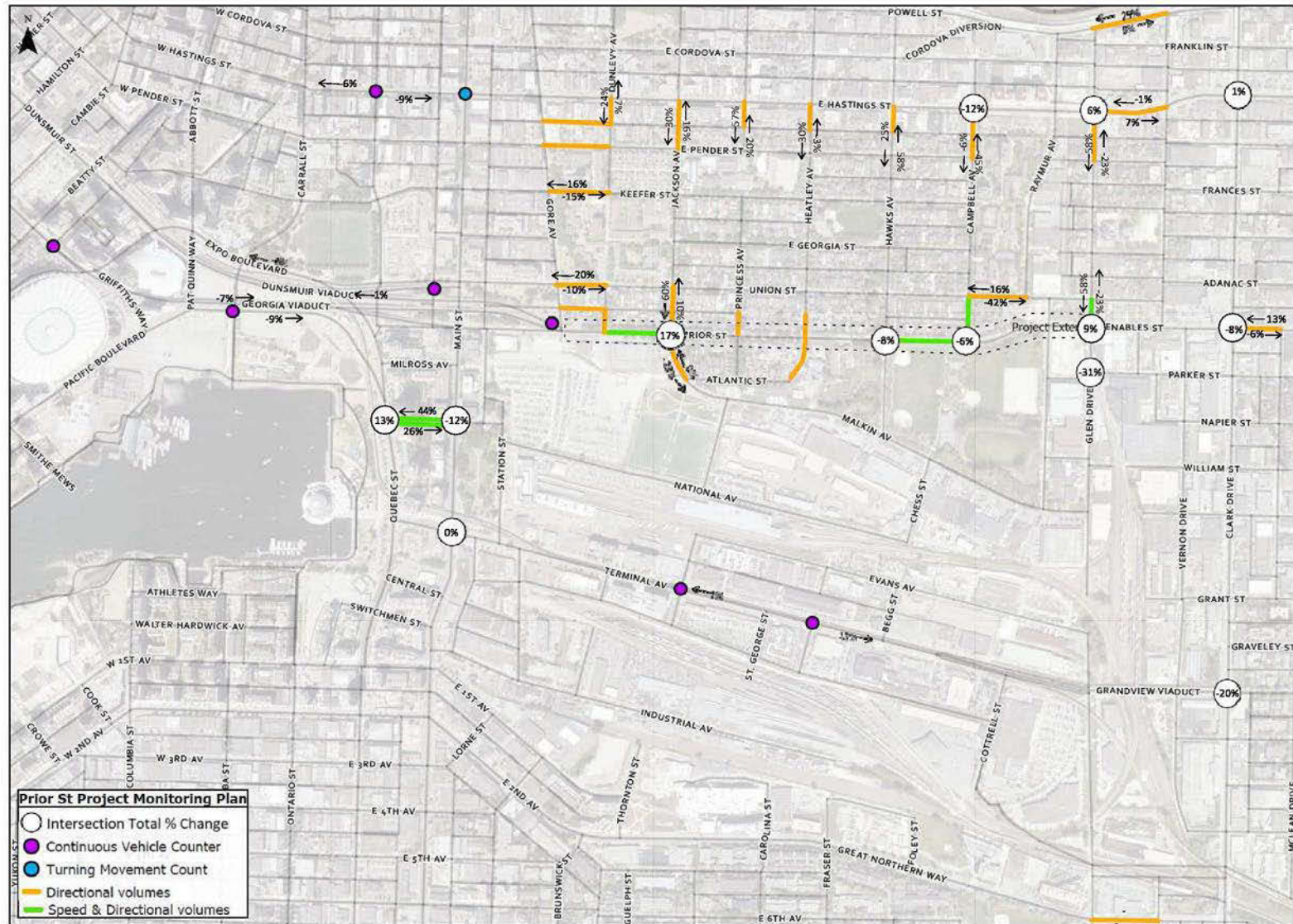


Figure 10 - Comparison of Directional Volumes and Intersection Totals (2020 to 2021 PM Peak Hour)

Railway Crossing Impact

Two key movements were assessed to identify potential shortcutting and other traffic impacts of the railway crossing to local streets.

For the eastbound left turn movement at Prior St & Campbell Ave, as shown in previous exhibits, AM and PM peak hour volumes were 59 veh/hr and 37 veh/hr, respectively. During peak hours, the average rate is relatively low, at under 1 veh/min. There was only one train crossing event in the duration of the PM peak hour, lasting 6 minutes. During this brief period, 10 eastbound left turns were recorded and included as part of the overall peak hour volume. The increase in turn volume is temporary and considered low.

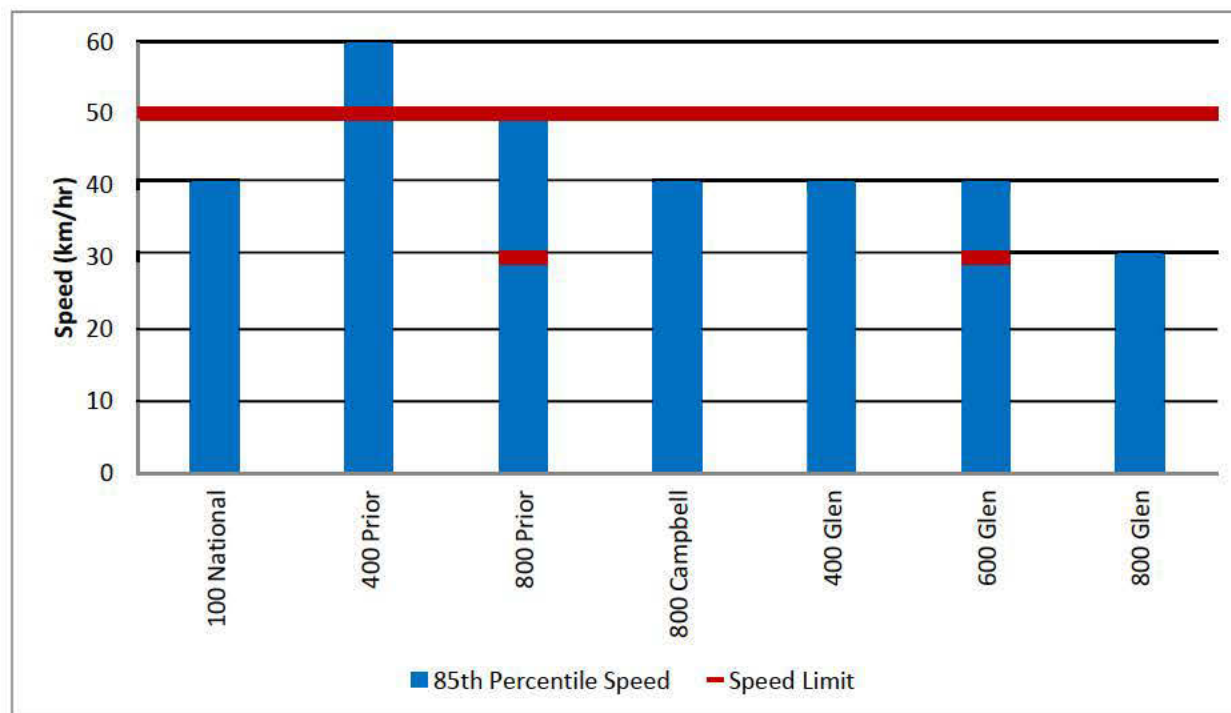
For the westbound right turn movement at Prior St/Venables St & Campbell Ave, AM and PM peak hour volumes were 21 and 27 veh/hr, respectively. The average rate during peak hours is under 0.5 veh/min. During the train crossing event, there were no westbound right turns, possibly due to the westbound queue extending beyond Glen Dr to the east leg of Vernon Dr. Peak turn volumes (6 veh in 5 min) were observed immediately before the train crossing event, possibly indicating that drivers saw the train coming and turned off before the train arrived. However, this is not considered to be a high increase in turn volume.

It should be noted that both noted locations saw reduced turn volumes compared to 2020, which may be because of the dynamic message boards and reduced traffic on Prior St.

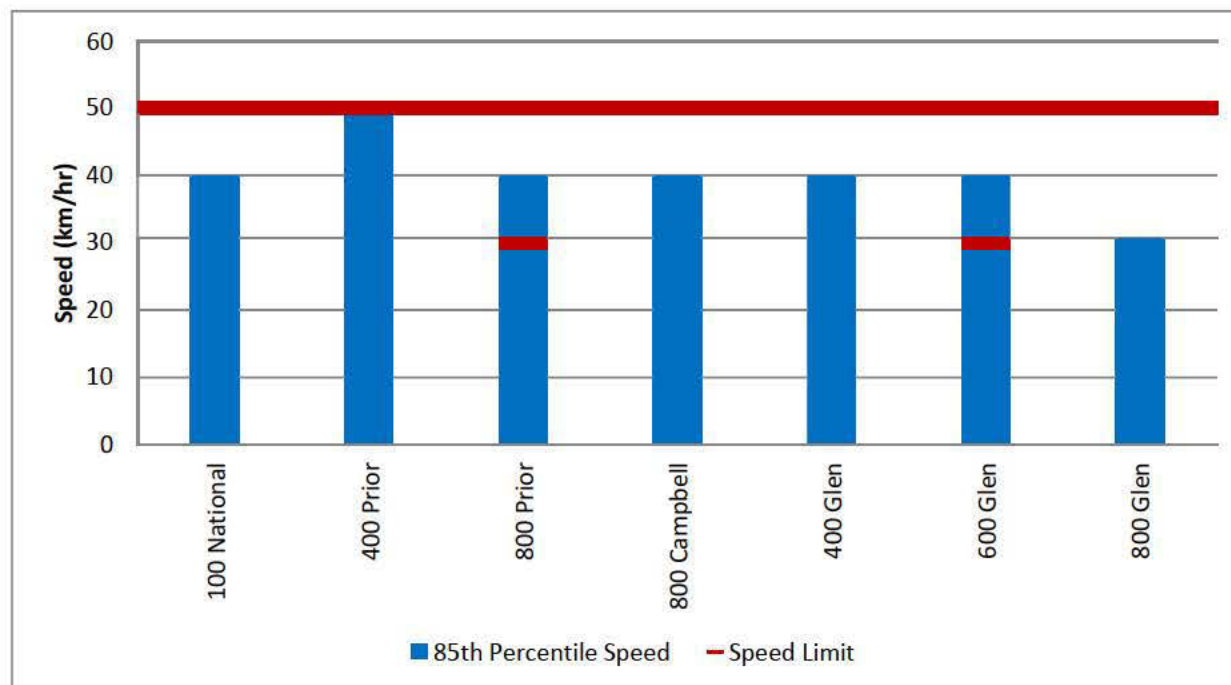
Speeds

The speed radar was deployed on various local streets in the study area to collect updated speed data during both peak hours (7-9 AM, 4-6 PM) and late evenings (7-10 PM) in November 2021. For each local street, the 85th percentile speed was calculated and compared with the posted speed limit, as shown in the graphs below. Speed data was collected in ranges of 10 km/hr. The speed axis labels shown in the graphs below represent the maximum value within the range. For example, 40 km/hr represents speeds captured between 31 km/hr to 40 km/hr.

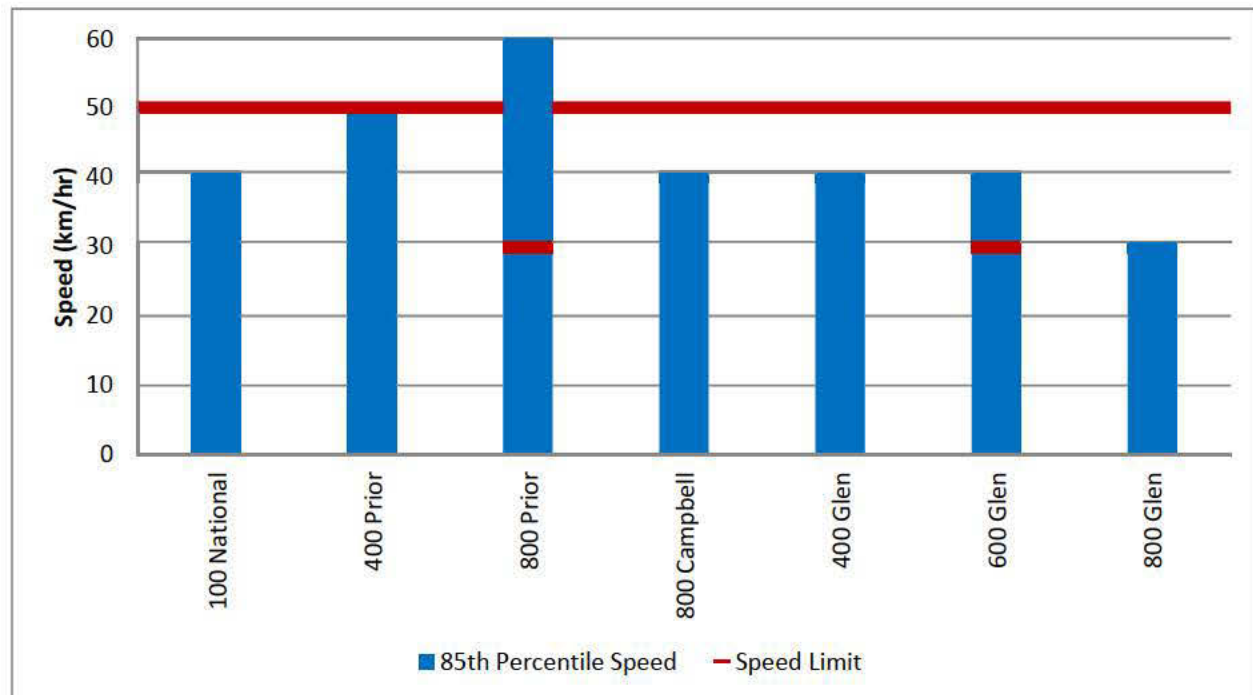
85th Percentile Speeds (AM Peak Hour)



85th Percentile Speeds (PM Peak Hour)



85th Percentile Speeds (Late Evening)



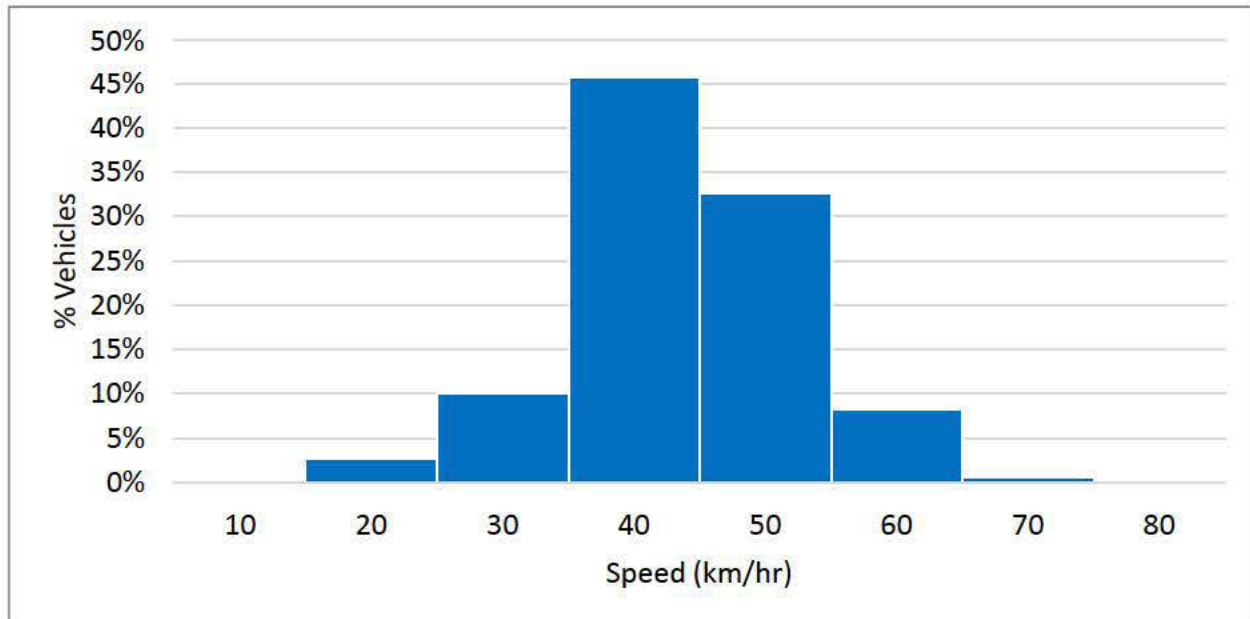
For National Ave, Campbell Ave and Glen Dr, the vehicular speeds observed were generally within the posted speed limits, indicating that speed limits are typically being followed properly during both peak hours and late evenings.

On Prior St, more significant speeding was observed. Along 400 Prior St, which has a speed limit of 50 km/hr, the 85th percentile speed exceeded the posted speed limit by 10 km/hr during the AM peak hour and remained just within the posted speed limit during the PM peak hour and late evenings. At the 800 Prior St location, where the speed limit was reduced to 30 km/hr, the 85th percentile speeds observed were 50 km/hr, 40 km/hr and 60 km/hr during the AM peak hour, PM peak hour and late evenings, respectively, indicating more significant speeding.

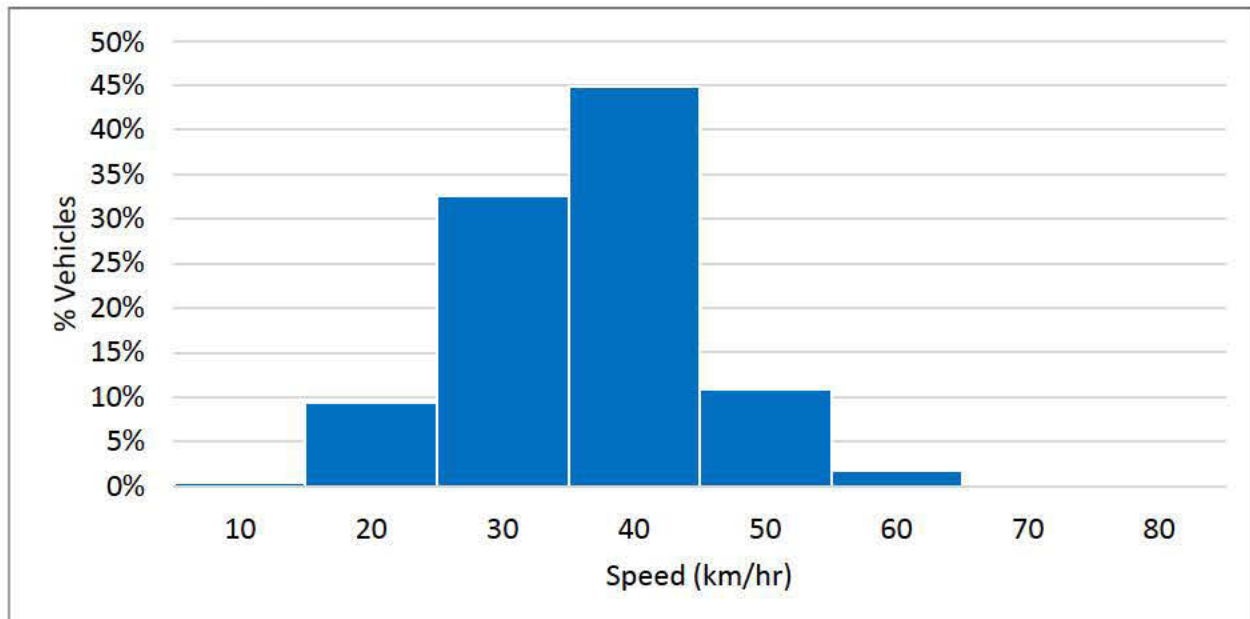
It should be noted that the speed reduction to 30 km/hr at 800 Prior St does appear to decrease vehicular speeds during the AM and PM peak hours, causing a reduction of approximately 10 km/hr. In the late evenings, however, the observed 85th percentile speed exceeds the posted speed limit which may be due to visibility of posted speed limits, reduced volume, or other factors.

A breakdown of vehicular speeds observed at 800 Prior St is shown in the graphs below.

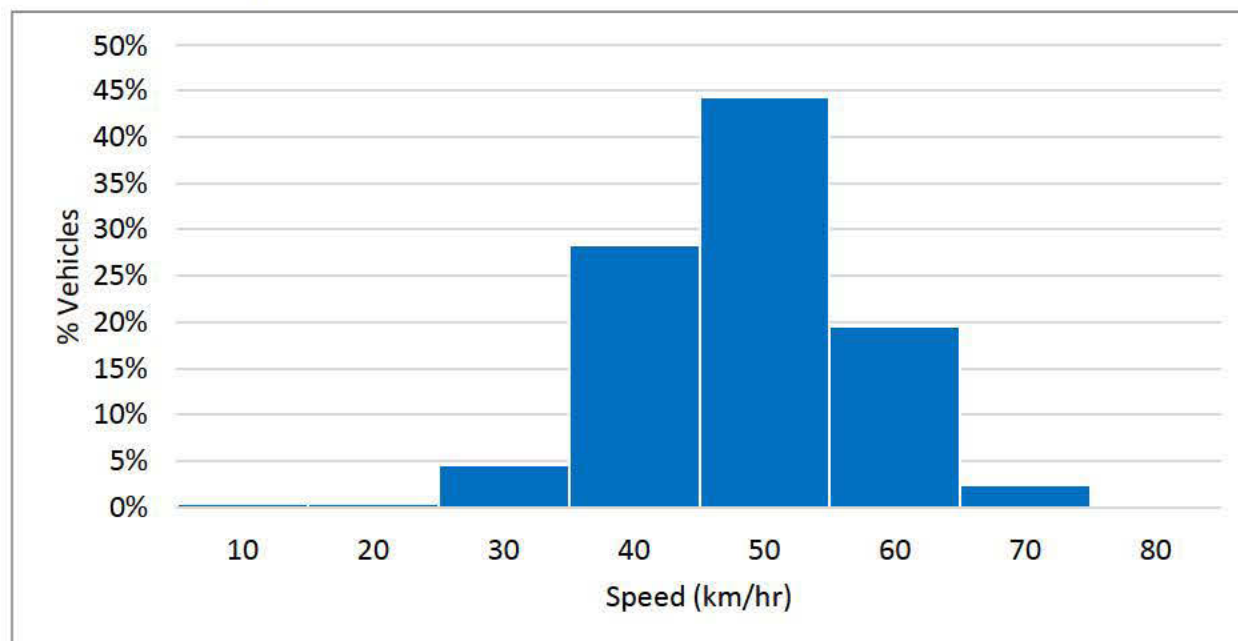
800 Prior Street Speeds Breakdown (AM Peak Hour)



800 Prior Street Speeds Breakdown (PM Peak Hour)

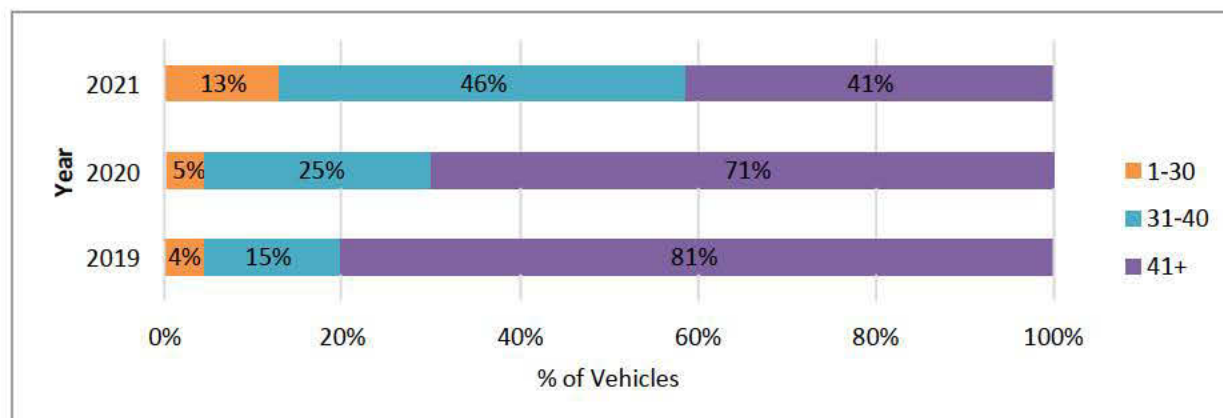


800 Prior Street Speeds Breakdown (Late Evening)

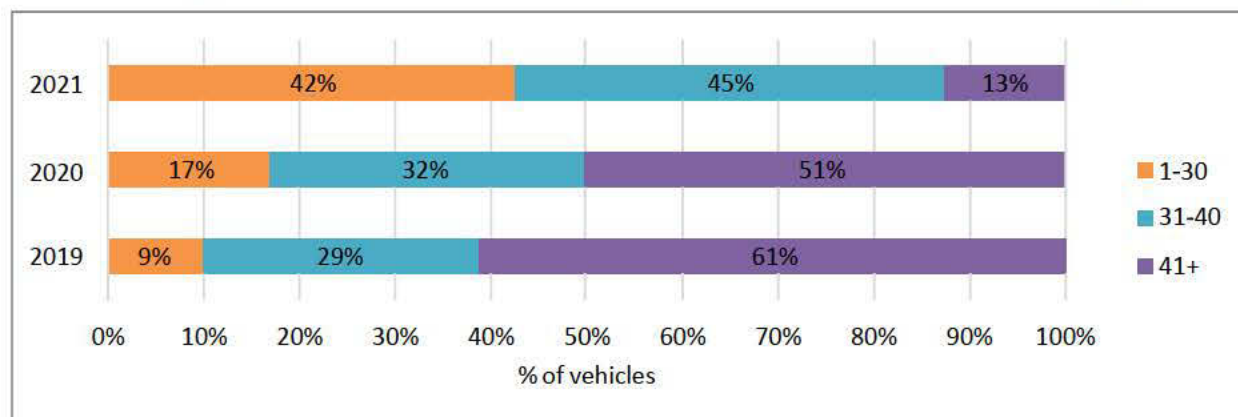


As shown above, the percentages of vehicles observed to have been travelling within the speed limit in the AM peak hour, PM peak hour and late evening were only 13%, 42% and 5%, respectively. This indicates that the majority of vehicles travelling through the speed reduction zone on Prior St fail to reduce speeds to the 30 km/hr maximum. On the positive side, in the AM and PM peak hours, a large portion of vehicles have speeds between 30 to 40 km/hr, does not significantly exceed the speed limit and is in line with general travel behaviour. In fact, 59% and 87% of vehicles were travelling at under 40 km/hr in the AM and PM peak hours, respectively. Speeding is more significant in the late evening, when only 34% of vehicles were travelling at speeds of 40 km/hr and under. To further highlight improvements to speeding at this location, speed distributions at 800 Prior St were plotted for 2019, 2020 and 2021 in the graphs below.

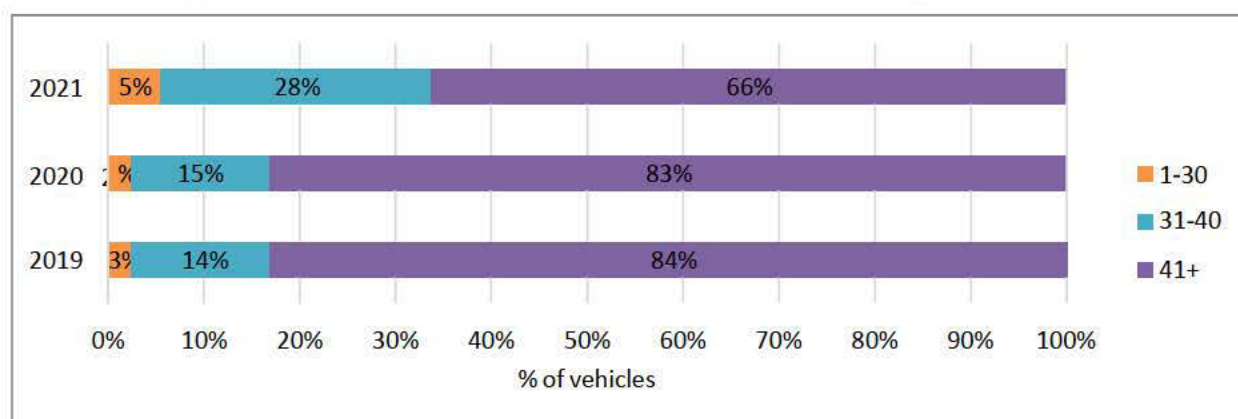
800 Prior St Speed Distribution: Comparison with 2019 and 2020 (AM Peak Hour)



800 Prior St Speed Distribution: Comparison with 2019 and 2020 (PM Peak Hour)



800 Prior St Speed Distribution: Comparison with 2019 and 2020 (Late Evening)



As shown above, the speed distribution at 800 Prior St has seen a significant shift towards lower speeds below 30-40 km/hr compared to previous years, during both peak hours and the late evening. Therefore, vehicular speeding along Prior St has been significantly mitigated.

Parking

On-street parking occupancy data was collected during both daytime and evening periods along Prior Street and intersecting road sections shown in March 2022 as a follow up to the previous data collection. An overall supply of approximately 392 parking spaces is contained within the sections highlighted below.

Post-intervention overall occupancies of 47% and 56% respectively, were recorded in the daytime and evening periods. This presents an increase from the baselines of 46% and 38% from the 2020 data. Occupancy by block after the intervention is summarized below.



Appendix A

MEMORANDUM

May 13, 2020

TO: Nelson Szeto, Branch Head, Northeast False Creek Implementation
Dominic Lao, Civil Engineer I, Northeast False Creek Implementation

CC: Winston Chou, Branch Head, Traffic & Data Management

FROM: Liliana Quintero, P.Eng – Senior Civil Engineer, Traffic & Data Management
Maria Albitar, EIT – Civil Engineer I, Traffic & Data Management

SUBJECT: Prior St Downgrade- Before and After Data Summary

On October 1st 2019, City Council approved downgrading Prior/Venables Street from an arterial street to a collector street, with a 30 km/hr speed limit reduction near Strathcona Park. In addition, Council directed staff to implement a pilot to reduce traffic volumes and speeds on Prior/Venables Street with low cost initiatives such as all-day parking on both sides, with the intent to permanently restrict traffic to one traffic lane in each direction.

Changes were implemented on January 27, 2020 including:

- A 30km/hr reduced speed limit on Prior Street, signed from Hawks Avenue to Raymur Avenue
- The conversion of rush-regulated parking (No parking 7 am to 9:30 am for westbound and no parking 3-6pm for eastbound) to all-day parking along both sides of Prior Street between Gore Avenue and Raymur Avenue.

In order to determine the effects of the implemented measures, City staff conducted an extensive before and after data collection effort. The data included vehicle speeds, vehicle volumes, queueing counts, and parking occupancy on selected corridors during peak hours.

Summary

Transportation-related changes can be summarized as follows:

Time Period	Change Observed
AM Peak (7-9 AM)	<p>Traffic volumes</p> <ul style="list-style-type: none">• Reduction of approximately 150 (20%) vehicles westbound along Prior St, between Glen and Gore Ave from 7-8 AM• Increase of approximately 200 (~10%) vehicles per hour westbound along Powell St near Glen Dr

	<ul style="list-style-type: none"> No significant volume changes on Jackson Ave, Princess Ave, Heatley Ave, Hawks Ave, Campbell Ave, and Glen Drive Reduction of approximately 200 (15%) vehicles westbound on the Dunsmuir Viaduct from 8 - 9 AM <p>Speed</p> <ul style="list-style-type: none"> Increased proportion of vehicles travelling on Prior St under 40 km/hr, from 19% to 30% <p>Parking demand:</p> <ul style="list-style-type: none"> Slight increase in parking demand, from 41% to 46% occupancy
PM Peak (4-6 PM)	<p>Traffic volume</p> <ul style="list-style-type: none"> Reduction of approximately 300 (~20%) vehicles per hour eastbound along Prior St, between Glen and Gore Ave Reduction of approximately 400 (~25%) vehicles per hour eastbound on Hastings St between Glen Dr and Campbell Ave Increase of approximately 700 (55%) vehicles per hour eastbound along Great Northern Way near Glen Dr Reduction of approximately 200 (10%) vehicles per hour eastbound on the Georgia Viaduct Increase of approximately 550 (~65%) vehicles per hour southbound on Main St between National and Terminal Av No significant changes on Venables St near Clark Dr No significant volume changes on Jackson Ave, Princess Ave, Heatley Ave, Hawks Ave, Campbell Ave, and Glen Drive <p>Speed</p> <ul style="list-style-type: none"> Increased proportion of vehicles travelling on Prior St under 40 km/hr, from 39% to 49% Increased proportion of vehicles travelling on Prior St under 30km/hr, from 9% to 17% <p>Parking demand:</p> <ul style="list-style-type: none"> Slight increase in parking demand, from 31% to 38% occupancy



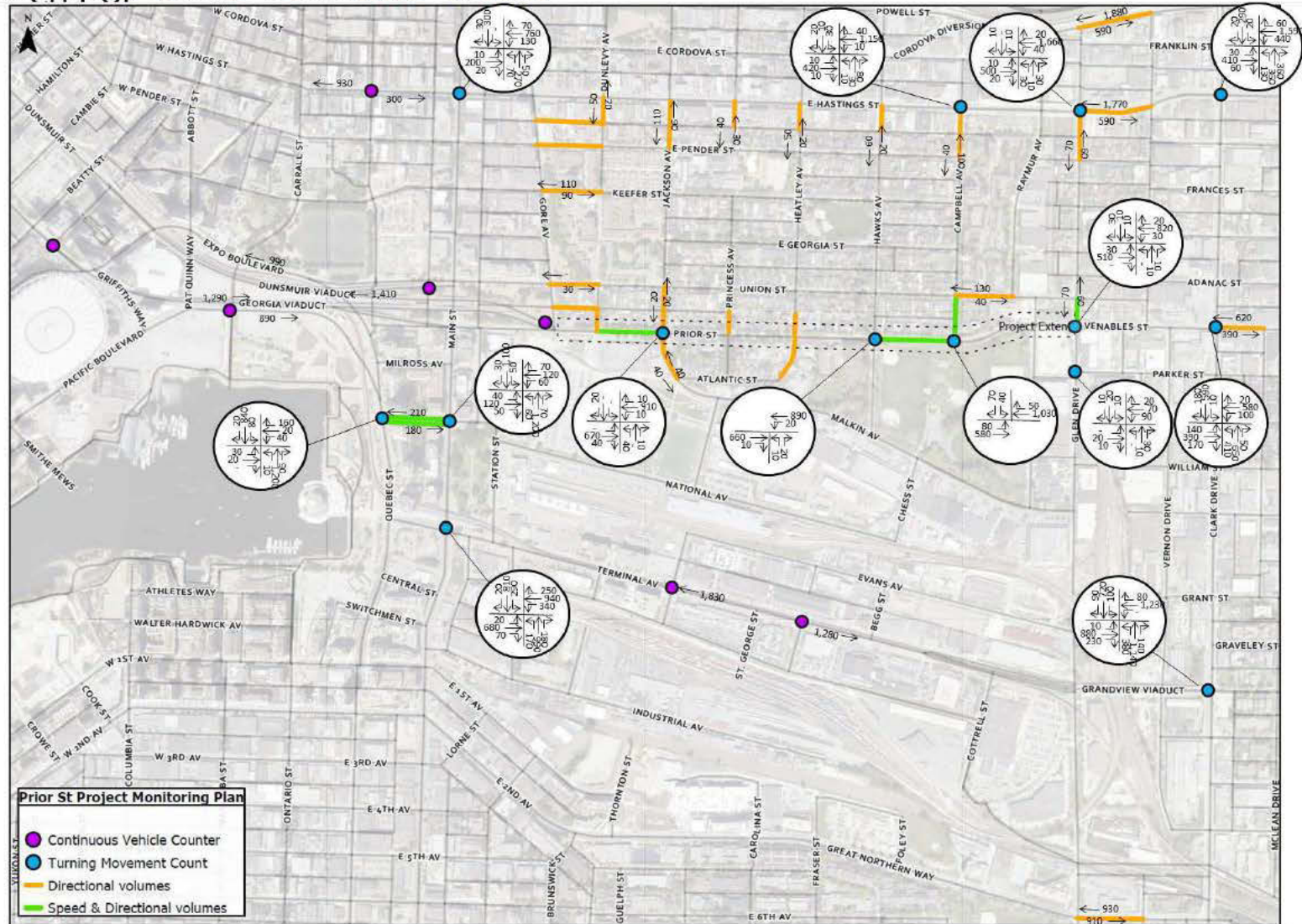
Volumes

Turning movement and cordon volumes representing baseline conditions from weekdays in October and November 2019 for the baseline and February and March 2020 for the study are summarized in the exhibits below.

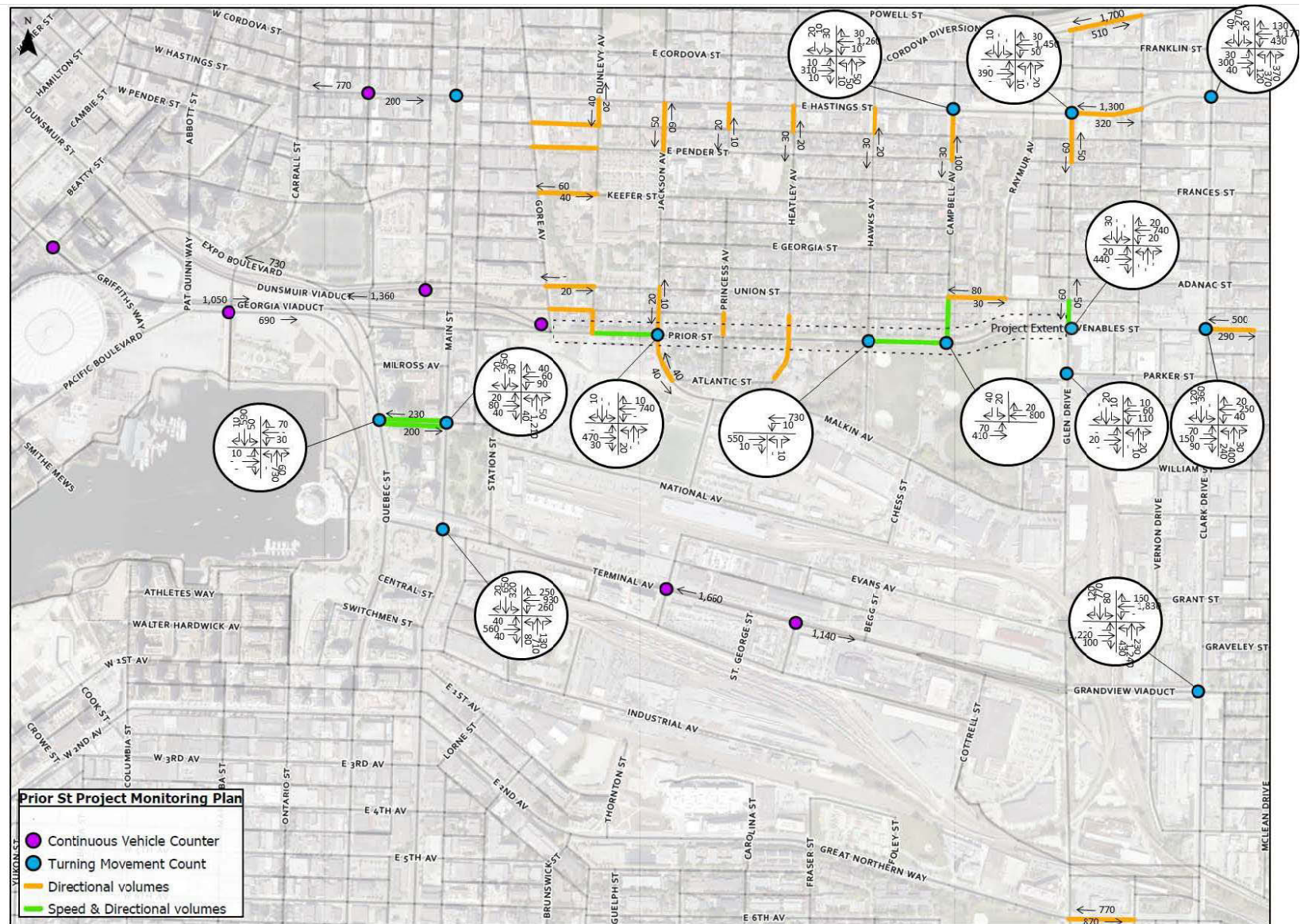
Turning movement counts were collected for 4 hours, representing the AM and PM peak hours. Link volumes represent the average conditions for every hour using data from at least 3 typical weekdays.

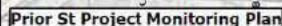


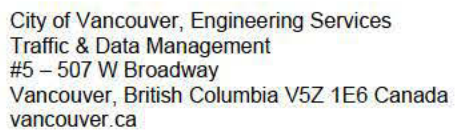
Baseline AM Peak Hour Volumes (7:00 - 8:00 AM)



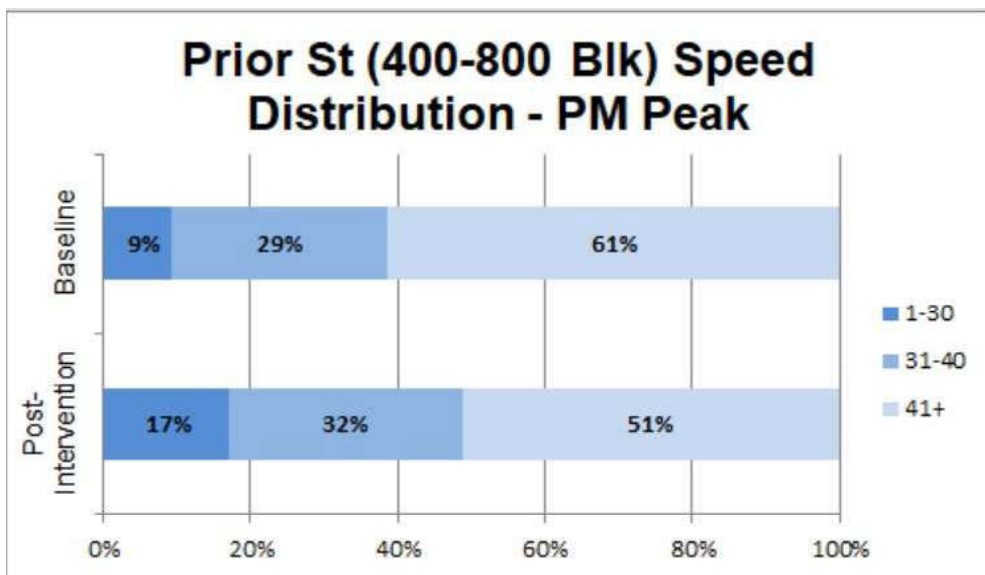
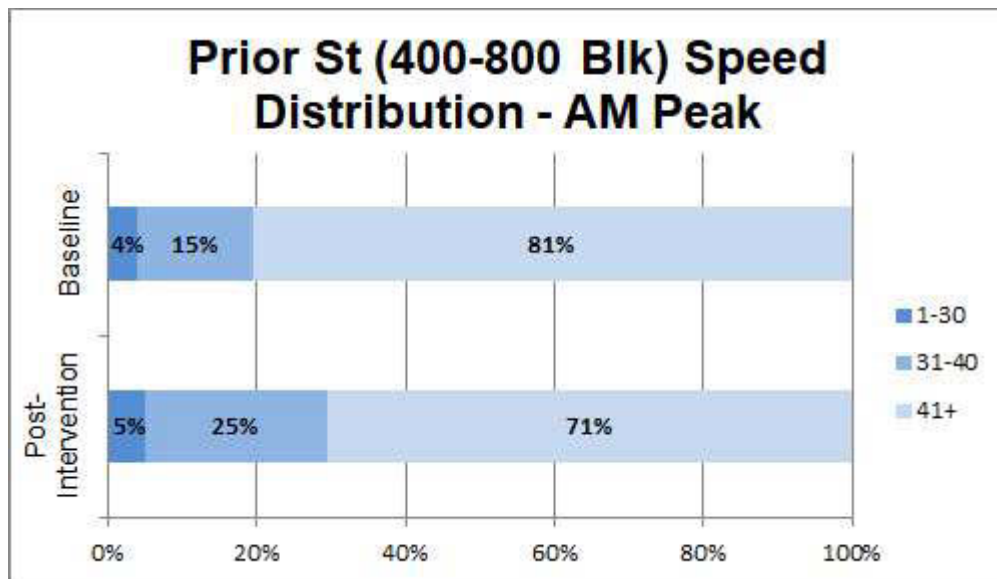
Post-Intervention AM Peak Hour Volumes (7:00 - 8:00 AM)

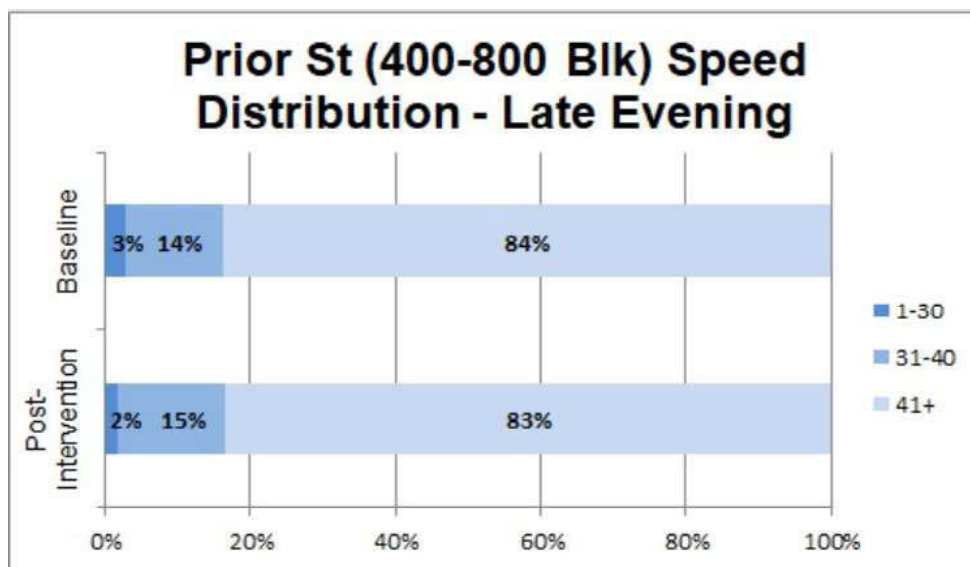






Speed radar was deployed on Prior St to quantify the impact of the downgrade on vehicle speeds. Comparisons were made between the baseline and the post-intervention scenario for both peak hours (7-9 AM, 4-6 PM) and late evenings (7-10 PM) as shown below. During the peak hours, a greater proportion of vehicles was travelling under 40km/hr compared to the baseline. During the late evening period, no significant changes were observed.





Queueing on Prior Street

Queueing for westbound vehicles on Prior Street, between Raymur Avenue and the rail crossing to the east, was recorded.

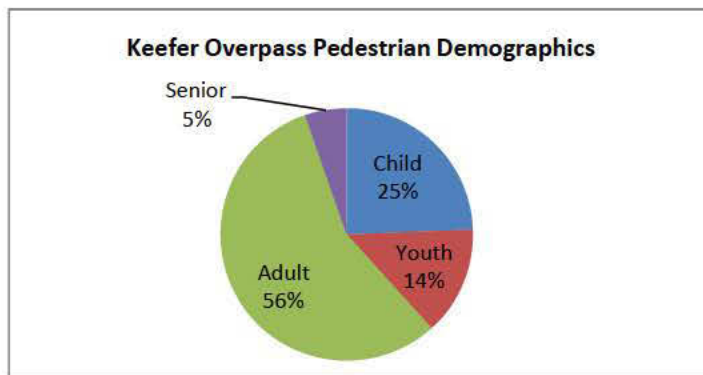


No significant operational differences were observed before and after the intervention. During both the AM and PM peak periods, queueing was observed to occur when the pedestrian/ cyclist signal at Raymur was activated, on average 30 and 22 activations per hour in the baseline and post-intervention, respectively. Approximately 10% of these instances in both cases (~3 / hour) led to a vehicle queue up to or exceeding the rail track (9 vehicle lengths). In the post-intervention video, queue exceeding the extent of the rail track was observed due to a left-turning vehicles? onto Raymur Ave.

Keefer Bridge Overpass Demographics

The City of Vancouver collected data relating to the demographics of cyclists and pedestrians

on the Keefer Bridge overpass in October 2019. No succeeding data was collected after Prior St measures were implemented.



In total, approximately 400 pedestrians traversed the Keefer overpass between 7:00 and 9:30 AM. There was an equal number of male and pedestrian females utilizing the overpass. No users of mobility aids were observed during this time frame.

The age category of pedestrian users is summarized below.

As for cyclists, approximately 20 were observed during the same 90-minute time frame of whom 80% were male.

Parking

On-street parking occupancy data was collected during both daytime and evening periods along Prior Street and intersecting road sections shown below in October 2019 and February 2020. An overall supply of approximately 392 parking spaces is contained within the sections highlighted below. Post-intervention overall occupancies of 46% and 38%, respectively, were recorded in the daytime and evening periods. This represents a slight increase from the baselines of 41% and 31%, respectively. Occupancy by block after the intervention is summarized below.

