

Memorandum

To:	Geoffrey Keyworth, City of Port Moody	From:	Matt Woo, Binnie Aaron MacLeod, Binnie
Cc:	Ava Li, Binnie	Date:	April 11, 2023
Project Title:	Brew Street Traffic Monitoring	File No.:	22-0446-05
Re:	Brew Street Traffic Monitoring Memorandum FINAL Rev.0		

1 INTRODUCTION

R.F. Binnie & Associates (Binnie) was retained by the City of Port Moody (the City) to monitor traffic behaviour on Brew Street before and after the implementation of traffic calming measures. The implementation of temporary traffic calming measures and operational changes to address safety issues included a temporary one-way traffic configuration in the southbound direction. The purpose of this memorandum is to summarize the recorded observations from the site visits, compare the observed behaviour before and after the implementation of one-way traffic, and offer recommendations to address the identified conflicts in the area.

2 BACKGROUND

2.1 Project Area

Brew Street is an approximately 200 m long private road that was originally designed to accommodate two-way traffic. The road is owned by Onni Group, the developer of Suter Brook Village. It mainly runs in the north-south direction, but curves and runs to the west for approximately 40 m at its northern end until it intersects with Morrissey Road. There are sidewalks and on-street parking areas on both sides of the road, and the statutory speed limit of the street is 50 km/h. Crosswalks and letdowns are provided at each of the intersection corners and at the bend at the northern end of the road.

Brew Street is located within Suter Brook Village, a residential and shopping district mainly populated with mixed-use buildings with ground-level commercial units. In addition to multi-family residential units, there are restaurants, cafés, gyms, a grocery store, an office tower, and various small shops and services located along Brew Street. An underground parkade offering free 60-minute parking for visitors of the area is accessible via Brew Street at the Capilano Road intersection and via Morrissey Road, west of Brew Street. The Suter Brook Village area is shown in **Figure 2-1**.



Figure 2-1: Suter Brook Village Area

2.2 Identified Location Challenges

Through past public engagement, the City received concerns regarding traffic and public space issues in Suter Brook Village, which included the following:

- Vehicles failing to obey signage
- Vehicles failing to stop for pedestrians waiting to cross
- Speeding vehicles
- Jaywalking and inattentive pedestrians
- Delivery trucks blocking traffic
- Issues related to congestion
- Illegal parking and drop-off/pick-up

As a response, various measures were proposed to improve safety which included new loading zone designations, raised crosswalks and intersections, curb extensions, posted 30 km/h speed limit signs, refreshed pavement markings for stop bars and crosswalks, and piloting the change of Brew Street to

one-way traffic. All measures are to be implemented by Onni Group, except for the one-way traffic pilot implemented by the City. The proposed improvements are summarized in **Figure 2-2**.

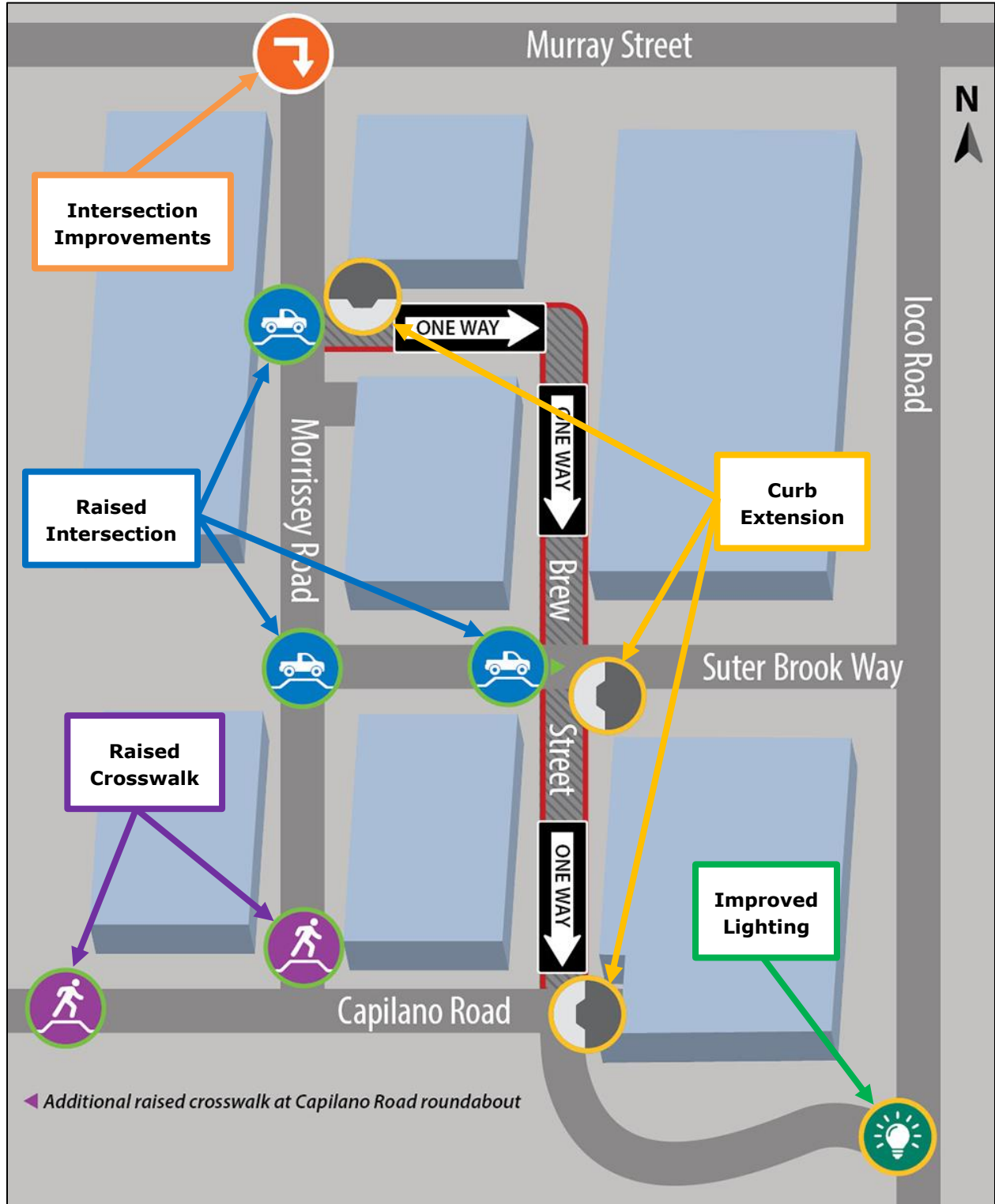


Figure 2-2: Planned Suter Brook Village Traffic Improvements (Source: City of Port Moody)

2.3 Methodology

Prior to the implementation of any traffic improvements in Suter Brook Village, Binnie monitored traffic along Brew Street in the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (3:00 PM to 6:00 PM) on Thursday, July 7, 2022, and in the Saturday midday peak period (11:00 AM to 4:00 PM) on July 9, 2022. Qualitative observations regarding unsafe driving and pedestrian behaviour, vehicle interactions with pedestrians and cyclists, and on-street parking utilization and behaviour were recorded.

In February 2023, the City began to pilot a temporary southbound one-way traffic configuration on Brew Street. Signage was implemented to restrict northbound movements on Brew Street from Capilano Road and Suter Brook Way, and planter boxes were placed at curb corners as temporary curb extensions. Other planned traffic improvements such as raised intersections and crosswalks were not implemented at the time observations were collected.

On March 9 and 11, 2023, Binnie returned to monitor traffic along Brew Street in the weekday AM and PM peak periods, and the Saturday midday peak period, with the temporary one-way traffic configuration implemented. Again, observations were recorded, and the new one-way configuration was compared to the observations recorded from the site visit conducted in July 2022 to determine the impact to safety conditions.

3 BREW STREET UNDER TWO-WAY CONDITIONS

3.1 Conditions

Conditions on Brew Street during the July 2022 site visits included two-way traffic along Brew Street from Capilano Road to Morrissey Road. The intersection traffic controls are detailed in the subsections below and in **Figure 3-1**.

3.1.1 Morrissey Road and Brew Street

Morrissey Road and Brew Street is a four-legged intersection with a stop sign controlling westbound traffic. The west leg of the intersection is an access to an underground residential parkade and does not have a stop sign, but eastbound traffic is expected to yield to northbound and southbound traffic. All four approaches have one shared movement lane and there are no turning restrictions.

3.1.2 Suter Brook Way and Brew Street

Suter Brook Way and Brew Street is a four-legged intersection with stop signs controlling northbound and southbound traffic. All four approaches have one shared movement lane and there are no turning restrictions.

3.1.3 Capilano Road and Brew Street

Capilano Road and Brew Street is a four-legged stop-controlled intersection. The south leg of the intersection is currently an egress-only road that connects directly to Ioco Road; therefore, there is no stop sign to control northbound traffic. Based on information from the City, Capilano Road from Brew Street to Ioco Road will revert to two-way traffic when construction in the area is complete, at which point a northbound stop sign is expected to be added to the south leg of the intersection. The east leg of the intersection is an access to an underground parkade for visitors and tenants of Suter Brook Village. The west, north, and east legs have one shared movement approach lane with no turning restrictions, while the south leg only has one receiving lane.

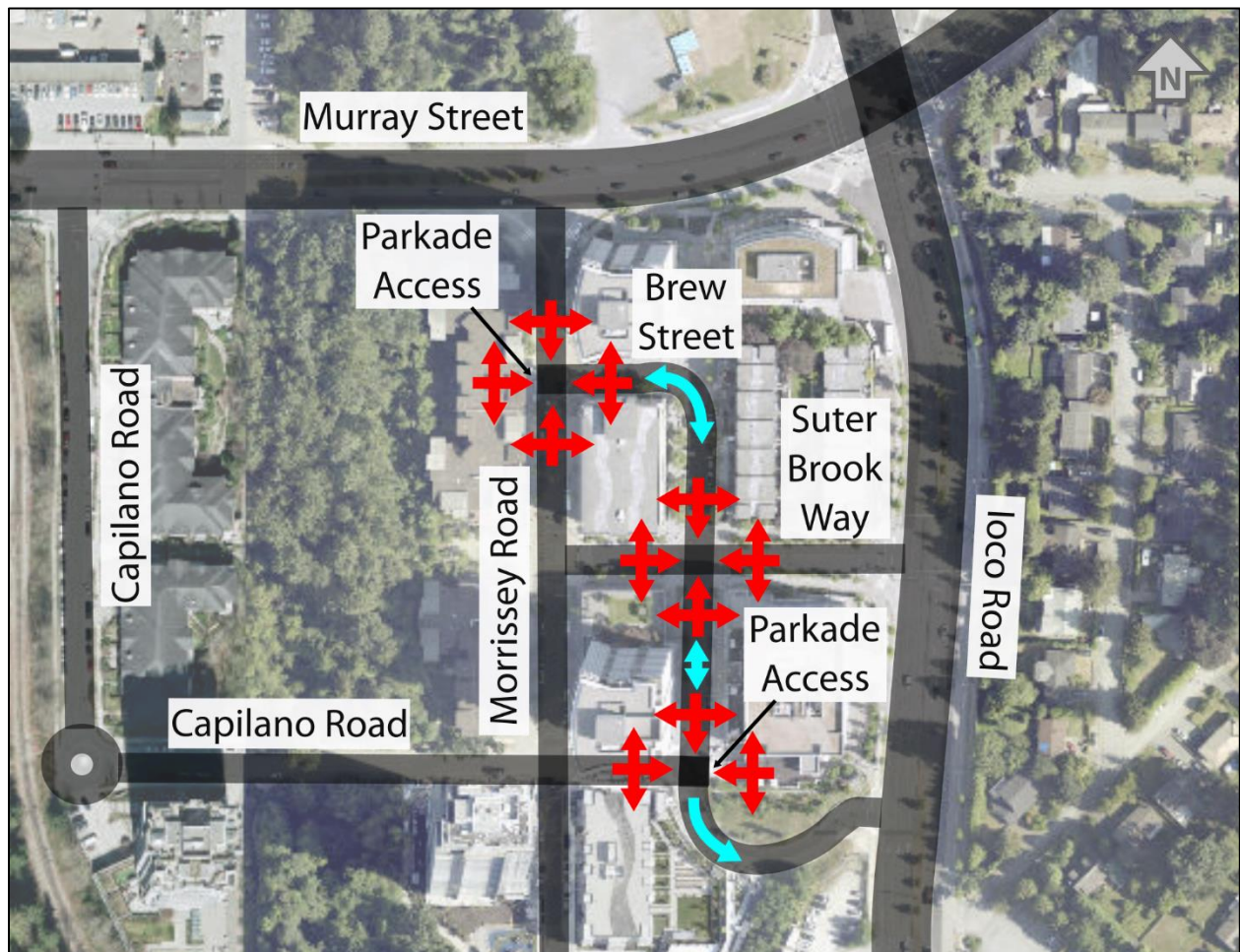


Figure 3-1: Brew Street With Two-way Traffic as Observed in July 2022

3.2 Summary of Observations

The subsections below provide a summary of observations recorded during the three site visits. There was not a significant difference in driver or pedestrian behaviour between peak periods; therefore, the below observations are applicable to all three peak periods.

The weekday PM peak period and Saturday peak period experienced similar vehicle and pedestrian traffic volumes, while the traffic volumes in the AM peak period were noticeably lower. The AM peak period generally had the same issues as the other two observed peak periods, but at a lower frequency.

3.2.1 Intersection Observations

All three intersections along Brew Street were monitored; however, the intersection of Suter Brook Way and Brew Street was observed to have the highest number of observed conflicts due to the higher vehicle and pedestrian volumes. The following observations apply to the Suter Brook Way and Brew Street intersection, unless otherwise stated.

Northbound and southbound vehicles at the intersection consistently stopped beyond the stop sign, typically around where the red pavers start at the intersection, consequently blocking the north and south approach crosswalks. It is noted that the stop bars at both approaches were not visible. This would force pedestrians to walk around the vehicles to cross Brew Street. Furthermore, if there was clearly no cross traffic from the east and west directions, northbound and southbound vehicles rarely

came to a complete stop. The stop signs were generally treated more like yield signs, but there were instances where drivers exhibited minimal effort to slow down. This was also an issue for southbound and eastbound traffic at the Capilano Road intersection since cross traffic and pedestrian volumes were generally low.

In all directions of the intersection, but most commonly for eastbound and westbound traffic, there were instances where vehicles failed to yield to pedestrians at the corners of the intersection waiting to cross. Typically, pedestrians waited until they made eye contact with drivers or waited until the vehicle traveled through the intersection to cross. In one instance, a pedestrian was forced to scramble back onto the northeast corner after starting to cross Suter Brook Way due to a westbound vehicle not showing any signs of slowing down for them.

Vehicles were observed to stop mid intersection, rather than at their approach, when pedestrians were crossing at the opposite approach. For example, westbound through traffic coming from the east approach would stop mid-intersection for pedestrians using the west approach crosswalk. This would temporarily block traffic in the intersection.

Pedestrians were generally observed to use the grey pavers, the intended crosswalk, to cross the road, but there were instances where pedestrians used the red pavers as the crosswalk. In one instance, a westbound travelling vehicle yielded for a pedestrian crossing Suter Brook Way using the grey pavers then began to proceed through the intersection. During this time, a pedestrian several meters behind the first pedestrian was crossing Suter Brook Way using the red pavers. The vehicle did not yield to the pedestrian in the red pavers and narrowly avoided striking them. In addition, if pedestrians needed to travel from corner to opposite corner, some were observed to travel more diagonally through the intersection rather than from crossing one approach then the other.

There were instances where vehicles performed U-turns and three-point turns in the intersection. The corners of the intersection were also observed to be used as quick drop-off/pick-up locations.

Figure 3-2 shows the Suter Brook Way and Brew Street intersection with labels denoting the different pavers and stop sign locations.

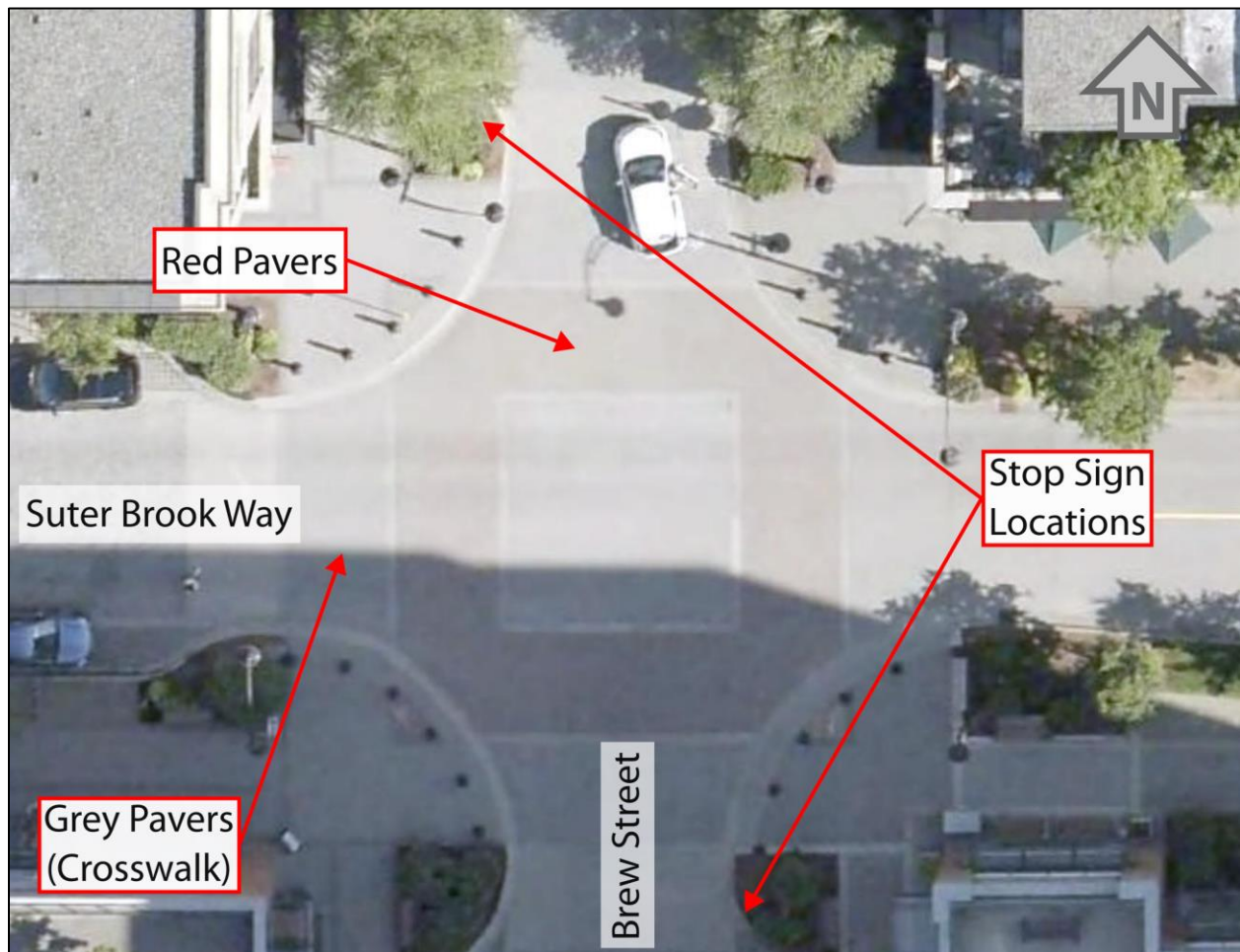


Figure 3-2: Suter Brook Way and Brew Street Intersection

3.2.2 Parking and Stopping

The on-street parking spaces along Brew Street were typically well-utilized (80% or higher at any given time during observation) and the turnover for these spaces was generally high (30 minutes or less). Vehicles were observed parked in the designated loading spaces east of Morrissey Road. The small parking area on the west side of Brew Street just south of the Suter Brook Way intersection did not always comfortably accommodate two vehicles depending on the length and parking position of the vehicles. As a result, there were instances where the tail end of a vehicle would be sticking out into the roadway, but not to the extent to significantly obstruct southbound traffic.

The bend at the northern end of Brew Street was observed to be used as a pick-up/drop-off area despite the no-stopping signage posted on posts. This area was also observed to be used for northbound U-turns when parking was available on the west side of Brew Street and the spaces were full on the east side. Drop-off and pick-up activities were also observed within the traffic lane just south of this area in front of the grocery store, which would temporarily block northbound traffic, forcing vehicles to maneuver around the stopped vehicle into the opposing traffic.

Large delivery trucks were observed to stop and unload within the traffic lane between Suter Brook Way and Capilano Road. This would temporarily block southbound traffic, forcing vehicles to maneuver around, and leading to queues if oncoming northbound traffic was heavy.

3.2.3 Cycling, Micromobility, and Pedestrians

A low number of cyclists were observed on Brew Street. Issues with cyclists and vehicle interactions on the roadway were not observed. However, cyclists and other micromobility users such as skateboarders and electric scooter users were sometimes observed using the sidewalks instead of the roadway. One near-miss involving a cyclist riding on the sidewalk toward the Suter Brook Way and Brew Street intersection was observed. The cyclist had crossed the intersection without stopping, leading to a near-miss between the vehicle and cyclist.

A motorcyclist was observed driving northbound onto the pedestrian area at the northern end of Brew Street and illegally parking their vehicle next to a storefront. After the motorcyclist returned to their vehicle, they drove southbound back onto Brew Street with excessive speed before finally turning left onto Suter Brook Way toward Ioco Road.

Jaywalking was observed between intersections, but it typically occurred while there were no oncoming vehicles. In instances where jaywalking occurred with oncoming traffic, vehicles were observed to yield to pedestrians. Pedestrians generally crossed the road at intersections and designated crosswalks.

3.2.4 Vehicle Speed

Vehicles were observed to generally travel at speeds that allowed drivers to safely react to pedestrians and traffic conditions on Brew Street. There were several instances where vehicles traveled at speeds where an unexpected vehicle or pedestrian may have resulted in a collision or near-miss. Vehicle speed data will need to be collected to confirm if speeding is an issue on Brew Street.

4 BREW STREET UNDER ONE-WAY CONDITIONS

4.1 Conditions

Conditions on Brew Street during the March 2023 site visits included one-way traffic along Brew Street from Capilano Road to Morrissey Road and the intersection traffic control detailed in the subsections below. **Figure 4-1** details the one-way traffic configuration with the yellow road denoting the section that changed to one-way traffic control.

4.1.1 Morrissey Road and Brew Street

Morrissey Road and Brew Street is a four-legged intersection with free-flow traffic in the north-south direction. The west leg of the intersection is an access to an underground residential parkade and does not have a stop sign, but eastbound traffic is expected to yield to northbound and southbound traffic. The east leg supports one-way eastbound traffic; no westbound traffic is permitted. The west, north, and south legs have one shared movement lane with no turning restrictions, while the east leg has one receiving lane. Planter boxes are placed on the roadway around the northeast corner of the intersection to act as temporary curb extensions. Planter boxes are also placed to the east of the intersection along the bend on the outer edge of the roadway.

4.1.2 Suter Brook Way and Brew Street

Suter Brook Way and Brew Street is a four-legged intersection with a stop sign controlling southbound traffic. The south leg supports one-way southbound traffic; while no northbound traffic is permitted. Do Not Enter signs are affixed to the back of the north leg stop signs, one-way traffic signs are posted for the east and west legs, and turn restriction signs are posted for the south, west, and east legs of the intersection. The east leg has one shared left-turn/through lane, the west leg has one shared through/right-turn lane, the north leg has one shared movement lane, and the south leg has one receiving lane. Planter boxes are placed on the roadway around the southeast corner and west of the northeast corner to act as temporary curb extensions and to restrict northbound traffic.

4.1.3 Capilano Road and Brew Street

Capilano Road and Brew Street is a four-legged stop-controlled intersection. The south leg of the intersection supports one-way southbound traffic that connects directly to Ioco Road; no northbound traffic is permitted. Based on information from the City, Capilano Road from Brew Street to Ioco Road will revert to two-way traffic when construction in the area is complete, at which point a northbound stop sign is expected to be added to the south leg of the intersection. The east leg of the intersection is an access to an underground parkade for visitors and tenants of Suter Brook Village. Do Not Enter signs are affixed to the back of the north leg stop signs, and one-way traffic and turn restriction signs are posted for the east and west legs. The east leg has one shared left-turn/through lane, the west leg has one shared through/right-turn leg, the north leg has one shared movement lane, and the south leg has one receiving lane. Planter boxes are placed on the roadway west of the northeast corner of the intersection to act as temporary curb extensions.



Figure 4-1: Brew Street One-way Traffic Conditions as Observed in March 2023

4.2 Summary of Observations

The subsections below provide a summary of observations recorded during the three site visits. This summary will outline the observed improvements and persisting issues on Brew Street after the change from two-way traffic to one-way traffic.

Just as in the July 2022 site visits, observed behavioural patterns between peak periods were similar; therefore, the below observations are applicable to all three peak periods. The weekday PM peak period and Saturday peak period experienced similar traffic volumes, while the traffic volumes in the

AM peak period were noticeably lower. The AM peak period generally had the same issues as the other two observed peak periods, but at a lower frequency.

4.2.1 Improvements

Generally, there was less observed risky and unsafe driving actions with the one-way traffic configuration when compared to with the two-way traffic configuration, most noticeably at the intersection of Suter Brook Way and Brew Street. Without northbound traffic at the intersection, pedestrians generally had an easier time crossing Brew Street on the east-west crosswalks on the north and south legs. Overall, fewer near-miss collisions between pedestrians and vehicles were observed with the one-way traffic configuration implemented.

The number of observed pick-ups and drop-offs at the bend of the northern end of Brew Street and in front of the grocery store was significantly reduced after the one-way-traffic configuration was installed. Overall, there were generally fewer stops between intersections for drop-offs and pick-ups.

When large delivery trucks were stopped on the west side of Brew Street between Suter Brook Way and Capilano Road, they caused less disruption to traffic flow with one-way traffic. Southbound vehicles were able to easily manoeuvre around the delivery trucks since there were no oncoming northbound traffic.

Southbound vehicle generally remained travelling at speeds that allowed drivers to safely react to pedestrians and traffic conditions on Brew Street with the onset of the one-way traffic configuration.

4.2.2 Issues

Although fewer unsafe driving actions were generally observed by the implementation of the one-way traffic configuration, most of the issues outlined in **Section 3.2** were still observed in the site visits. Common issues that were observed under one-way traffic conditions include:

- Vehicles stopping beyond stop signs, blocking the crosswalk
- Vehicles not coming to a full stop or barely slowing down for stop signs
- Vehicles not yielding to pedestrians waiting to cross
- Vehicles stopping mid-intersection for pedestrians crossing at opposite approach
- Confusion on the location of crosswalk at the Suter Brook Way and Brew Street intersection (i.e., the difference between the red brick and grey brick strip)

In addition to the issues mentioned above, the onset of the one-way traffic configuration introduced an issue that was not applicable to the previous conditions of Brew Street. Vehicles attempting to turn onto Brew Street to travel northbound were commonly observed, most notably on the westbound right turn at the Suter Brook Way and Brew Street intersection. In most of those instances, vehicles realized they were not permitted to travel northbound by the time they reached the north approach crosswalk and would quickly correct themselves to travel westbound through the intersection. In some cases, drivers had fully oriented their vehicles northbound before they reversed back into the intersection and turned to travel westbound through the intersection. In both of these scenarios, it caused temporary delays for other vehicles at the intersection while the driver corrected themselves. It is noted that this issue may improve over time as drivers become more accustomed to the configuration.

In a few instances, drivers completely ignored all one-way and Do Not Enter signage and continued to travel northbound on Brew Street until parking or reaching the next intersection.

The tendency of vehicles to attempt to travel northbound on Brew Street is likely due to experience with two-way traffic on the road. Compliance with the posted one-way traffic signage may increase over time as drivers become more accustomed to the new conditions.

The implementation of the one-way traffic configuration also resulted in noticeably longer southbound queues at the Suter Brook Way and Brew Street intersection during the PM and Saturday midday peak periods. Queues were observed to extend up to six cars back from the intersection; however, queues were generally observed to clear quickly.

Although drop-offs and pick-ups were observed to decrease on the traffic lane between intersections, the number of drop-offs and pick-ups occurring at the corners of the Suter Brook Way and Brew Street intersection was observed to increase with the implementation of one-way traffic. The most commonly observed pick-up and drop-off location at the Suter Brook Way and Brew Street intersection was the northwest corner where westbound vehicles would stop on the west approach crosswalk, as shown in **Figure 4-2**. These drop-offs and pick-ups ranged from a few seconds with little to no disruption to traffic, to more than a minute causing significant congestion.

It is possible these issues may be alleviated by the implementation of all the planned traffic improvements shown in **Figure 2-2**. Further monitoring would be required to assess the impacts of the permanent improvements and to determine the need for further improvements.

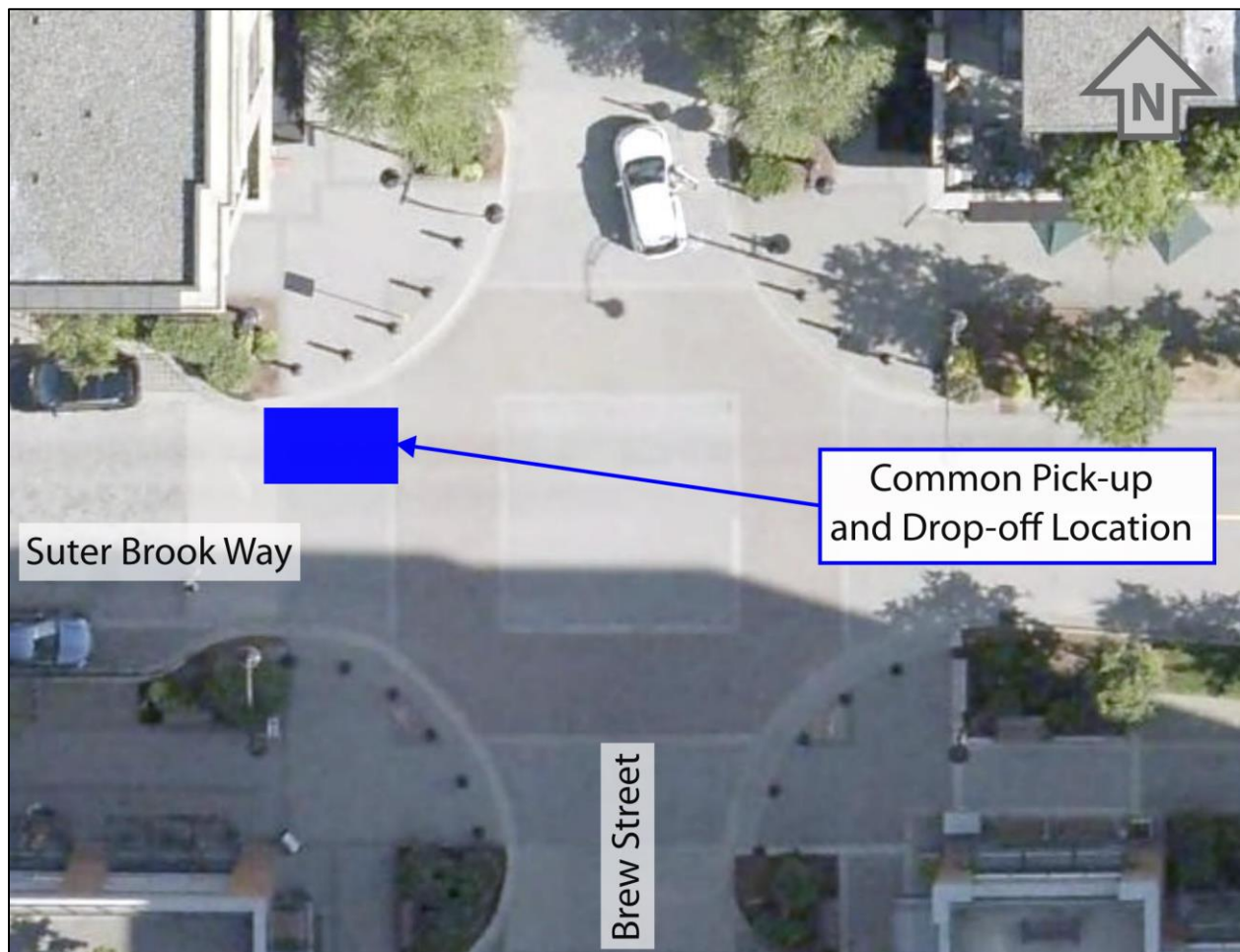


Figure 4-2: Common Pick-up and Drop-off Location

5 RECOMMENDATIONS

In addition to the planned Suter Brook Village traffic improvements by the City, the following improvements are recommended to be considered to further increase safety in the area:

- Add stop bar pavement markings that have been faded out at each intersection on Brew Street
- Add crosswalk pavement markings to reinforce crosswalk location at each intersection on Brew Street
- Upgrade the Capilano Road and Brew Street intersection to a raised intersection
- Install a stop sign on the eastbound approach (parkade access) of the Morrissey Road and Brew Street intersection
- Convert a portion of or all on-street parking spaces on Brew Street to dedicated short-term drop-off and pick-up locations
- Monitor for any unsafe vehicle overtaking manoeuvres given the wide travel lane. Lane may require narrowing with paint lines.
- Continue to monitor driver behaviour on Brew Street to ensure traffic calming measures remain effective as drivers become familiar with the changes
- Increase enforcement for vehicles conducting illegal manoeuvres
- Invest in ongoing education for residents and commercial business patrons
- Conduct a safety study to review collision and conflict data
- Add wayfinding signage in Suter Brook Village for vehicles to access the free 60-minute parking in the underground parkade

6 CONCLUSIONS

Brew Street is a road within the shopping and residential district of Suter Brook Village. The road is lined with mixed-use developments that have ground floor commercial units providing shops, restaurants, gyms, and various services. The road is generally busy in the peak periods with vehicles travelling through Suter Brook Village and accessing the street and underground parking areas.

Site visits conducted in July 2022 during three different peak periods determined that Brew Street, under existing conditions, including the two-way traffic configuration, experienced several issues from unsafe driver behaviour, such as the following:

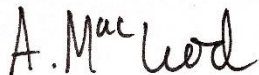
- Vehicles failing to obey signage
- Vehicles failing to stop for pedestrians waiting to cross
- Illegal parking and drop-off/pick-up
- Three-point turns and U-turns in intersections

In February 2023, the City implemented signage and temporary curb extensions to restrict Brew Street to one-way southbound traffic. Site visits conducted in March 2023 found that many of the same issues observed on Brew Street under the two-way traffic configuration persisted with the one-way traffic configuration, but generally with reduced frequency.

New issues were observed on Brew Street with the one-way traffic configuration, such as longer southbound queues at the Suter Brook Way intersection, an increase in drop-offs and pick-ups at intersection corners, and vehicles attempting to travel in the restricted direction; however, overall unsafe driver behaviour and the number of near-miss collisions were not observed to occur as frequently. The persisting issues observed may be alleviated by the permanent implementation of all the planned traffic improvements by the City, but further monitoring would be required.

Memorandum Prepared by:

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