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Corporation of the City of
NEW WESTMINSTER

REPORT
Engineering Services

To:	Mayor Coté and Members of Council	**Date:**	1/28/2019
From:	Jim Lowrie Director of Engineering Services	**File:**	09.1800.13 (Doc#1314138)
		Item #:	20/2019

Subject: **Queen's Park Traffic Calming Review**

RECOMMENDATION

THAT Council endorse the Queen's Park Traffic Calming Review, and implementation of the recommended near term measures, as described in the Discussion section of this report.

PURPOSE

This report provides Council with an update on the Queen's Park neighbourhood traffic calming review.

BACKGROUND

Queen's Park is one of the City's oldest neighbourhoods, and is home to many families who value safe and reliable forms of transportation. Various traffic calming measures have been implemented over many years, including curb extensions at several intersections on First Street, raised crosswalks on First Street and Queens Avenue, and a traffic diverter at the intersection of Fifth Street and Fifth Avenue. Some turn restrictions have also been implemented at various intersections along Royal Avenue to discourage commuters from short-cutting through the neighbourhood and to address safety concerns. It should also be recognized, however, that Queen's Park is a major local (and, to some extent, regional) destination in itself, with a primary park access on First Street at Third Avenue.

In recent years, neighbourhood residents have continued to express concern to the City about shortcutting traffic and road safety. To better understand these concerns, City staff met with

Queen's Park residents through a "travelling roadshow" in June 2017. This public engagement effort involved a series of on-site workshops with residents and an online survey to provide residents with an opportunity to share their experiences, opinions, concerns, and issues. As noted in the Engagement Summary Report in **Attachment 1**, specific issues and concerns raised by the residents include:

- Illegal U-turns at Royal Avenue and 4th Street parking lot;
- Non-compliance by drivers for the southbound left-turn restriction during the afternoon peak period on 1st Street at Royal Avenue;
- 1st Street appears to have high traffic volumes and speeds from motorists accessing the Pattullo Bridge (related to previous point);
- 4th Avenue appears to have high traffic and speeds that make walking and cycling uncomfortable; and,
- Interest in increasing transit frequency on 6th Street and maintaining the #105 (formerly C4) bus service.

Following public engagement, City staff retained WATT Consulting Group, an engineering consultant, to provide technical support in summarizing existing traffic conditions and infrastructure. City staff then conducted further technical analysis and identified potential measures, which have been presented to the Queen's Park Residents' Association Annual General Meeting and to the Neighbourhood Traffic Advisory Committee. Staff have also distributed an information notice to neighbourhood residents to advise them of the proposed interventions.

EXISTING POLICY/PRACTICE

The Queen's Park Traffic Calming Review is consistent with the principles and general direction outlined in the City's Neighbourhood Traffic Calming Policy (2010). However, it must be noted that the review is not a full neighbourhood traffic calming plan of the scope outlined in the policy. Instead, it builds on existing traffic calming measures already in place and addresses concerns about specific issues that have been raised and confirmed through data and observations.

The review was also developed in alignment with the following Master Transportation Plan (MTP) policies and actions:

- Policy 7A – Prioritize Traffic Calming Treatments
  - 7A.1: Continue to identify and prioritize New Westminster neighbourhoods that require traffic calming treatments to improve neighbourhood livability
  - 7A.2: Align traffic calming locations where possible with the Pedestrian Plan, Bicycle Plan, Greenway and Trails Master Plan and Best Routes to School Plan, to enhance the safety, comfort, and appeal of key walking and cycling corridors

- Policy 7C – Manage Through Traffic
  - 7C.1: Keep through traffic on major routes
- Policy 7D – Maintain Local Access
  - 7D.1: Maintain and improve local access for residents, employees, and businesses in New Westminster without encouraging additional through traffic
  - 7D.2: Manage traffic at key entry points to the City to minimize the impact of through-traffic while maintaining access to local destinations
  - 7D.3: Work with local residents and businesses on establishing the right balance between local access and through traffic

The recommended plan for improvements has been developed with reference to Transportation Association of Canada (TAC) and National Association of City Transportation Officials (NACTO) guidelines.

ANALYSIS

Based on the background information, residents' concerns, and City staff observation, staff and consultants undertook analysis to confirm and quantify areas of concern. Background information and traffic data are summarized in the consultant's report in **Attachment 2**.

Based on traffic data collected, various streets in Queen's Park have traffic volumes ranging from 1000 to 2000 vehicles daily. As noted in the MTP, it is preferred that local streets carry 1000 vehicles per day or less in lower-density neighbourhoods such as Queen's Park. These results confirm that a modest amount of traffic may be short-cutting through the neighbourhood, but it must also be recognized that park-related traffic may account for some of this volume.

To assess traffic speeds on a street, the 85th-percentile speed is typically measured. The observed 85th-percentile traffic speeds in Queen's Park range from 40 km/h to 55 km/h. This measure means that 15% of motorists are exceeding these speeds. Except on First Street adjacent to Queen's Park and on Queens Avenue adjacent to Tipperary Park and the Friendship Garden, the speed limit on Queen's Park streets is 50 km/h. That being said, people walking and cycling along local residential streets can feel uncomfortable when traffic is moving at or near 50 km/h. Next to Queen's Park, Tipperary Park and the Friendship Garden, the speed limit is 30 km/h during daylight hours. As illustrated on the map in **Attachment 2**, 85th-percentile speeds exceed the speed limits on Queens Avenue, First Street, Second Street, and Park Row. There are also numerous other blocks where traffic is moving between 40 km/h and 50 km/h, particularly along Second Street, potentially

causing discomfort for vulnerable road users. It should be noted that data have not been collected for all block segments in the neighbourhood.

These data, and field observations of violations of the turn restriction at the intersection of First Street and Royal Avenue, suggest that higher traffic volumes and speeds within the neighbourhood are at least partially related to commuters short-cutting through Queen's Park to access the Pattullo Bridge and other destinations.
Short-cutting traffic has also been noted to pass through the City Hall parking lot between Sixth Street and Fourth Street, continuing southbound on Fourth Street and eastbound on Royal Avenue to the Pattullo Bridge. Hence, the City now blocks through traffic in the parking lot during the afternoon peak hours.

Queen's Park residents are also concerned about commuters performing u-turns on Fourth Street just north of Royal Avenue, which serves as an entrance to Tipperary Park and City Hall, in addition to serving as a pedestrian way during the summer Farmer's Market. Because right turns from northbound Fourth Street to eastbound Royal Avenue are prohibited, some drivers continue across Royal Avenue and do u-turns to subsequently make a legal left turn on to Royal Avenue to access the Pattullo Bridge and other points east. This manoeuvre is most common in the afternoon when the Columbia Street on-ramp to the Pattullo Bridge is closed. To address this concern, City crews installed a line of traffic delineators along the centreline of Fourth Street north of Royal Avenue, and observations of u-turning vehicles have declined significantly. In addition, on days that the Farmer's Market is held in the parking lot of Tipperary Park, Fourth Street north of Royal Avenue is closed to all motor vehicle traffic. It should be noted that this behaviour will likely be eliminated with replacement of the Pattullo Bridge, which will enable full-time access from Columbia Street, and with other network changes being contemplated in the ongoing Downtown Transportation Plan.

One notable intersection with awkward geometry and challenging sightlines is the intersection of Royal Avenue with Second Street and Park Row. Currently, the southbound left-turn movement from Second Street is prohibited during weekday afternoon peak periods. For safety reasons, left turns from Park Row to eastbound Royal Avenue are prohibited at all times. Right turns on to Second Street from Royal Avenue are prohibited during the weekday morning peak period.

Left turns have also been prohibited at the t-intersection of Third Street and Royal Avenue to address safety concerns.

DISCUSSION

The data and field observations described in the preceding section confirm that some motorists appear to be short-cutting through the Queen's Park neighbourhood at inappropriate speeds, leading to safety and livability concerns for local residents. However, relative to some other areas of New Westminster and considering that Queen's Park itself generates traffic demand through the neighbourhood, the short-cutting issue is considered to be modest and staff are recommending interventions that are commensurate with the scale of

the problem. A more drastic intervention with numerous diversionary traffic calming measures may have unintended consequences on adjacent neighbourhoods and within the neighbourhood itself, would require substantially more planning, staff resources, capital investment, and public engagement, and would introduce significant inconvenience for many neighbourhood residents and emergency responders. It would also make motor vehicle access to the park more challenging. Public engagement survey results indicate mixed support in Queen's Park for diversionary traffic calming.

Accordingly, the following options were assessed to address short-cutting and speeding:

- *All-Way Stop Control along First Street and Second Street:* Currently, both First Street and Second Street predominantly have right-of-way with stop controls for the minor approaches from Sixth Avenue to Royal Avenue. In fact, many minor streets intersecting First Street are not signed or marked for a stop condition. (These would constitute uncontrolled intersections under the Motor Vehicle Act.) Second Street is a wider roadway with a tree-lined median. With few stop controls along First Street or Second Street, traffic speeds are higher than desirable for local residential roads.

  Additional all-way stop control is proposed on First Street at Queens Avenue and at Fourth Avenue, and on Second Street at Third Avenue. From a strictly technical standpoint and as described in **Attachment 2**, all-way stop control is not warranted at these intersections and is no longer recommended as a traffic calming approach. However, there are other existing (likely technically unwarranted) all-way stops in the neighbourhood and these three intersections would be consistent with those. They would likely provide some benefit by reducing speeds, and may make the intersections more comfortable for people walking and cycling. For these reasons, staff recommend proceeding with their implementation.

- *Speed Humps/Tables and Other Speed Management Techniques:* Traffic speeds are higher than the posted speed limit adjacent to Queen's Park and Tipperary Park, and on segments of Second Street and Park Row. Currently, there are two raised crosswalks on Queens Avenue at Fourth Street and Third Street with opportunities for additional speed humps. Additional speed humps are recommended along First Street adjacent to Queen's Park to supplement existing raised crosswalks and speed humps.

  Second Street accommodates transit service, and conventional speed humps are generally not used on bus routes. Instead, speed tables (elongated speed humps) may be used. The new edition of the *Canadian Guide to Traffic Calming* also provides other options for speed management using pavement markings. Some of these techniques are new to North America but have been demonstrated to reduce traffic speeds to some degree. Staff are recommending to pilot the use of these new techniques along Second Street, and will collect follow-up speed data after

implementation to quantify their effectiveness for potential application elsewhere in the city.

- *Closure of Park Row between Bonson Street and Royal Avenue:* Park Row currently meets the intersection of Second Street and Royal Avenue at approximately a 45-degree angle, creating an awkward intersection with restricted sightlines for motorists travelling southbound. It is also an awkward intersection for people walking along Royal Avenue. Although traffic volumes are low, traffic speeds on Park Row are the highest observed in the neighbourhood. The section between Bonson Street and Royal Avenue has no residential accesses and there are alternate access routes for the relatively few residences in this corner of the neighbourhood. A closure could be implemented temporarily with concrete barriers, with staff monitoring traffic operations. Once the closure has been confirmed to be operating acceptably with improvement to overall traffic operations and pedestrian comfort at the Second Street/Royal Avenue intersection, consideration could be given to permanently repurposing the closed segment of Park Row as park space, to the benefit of the neighbourhood and City as a whole.

- *Full-time Southbound Left-Turn Restriction and Signal Adjustments at First Street and Royal Avenue:* The City has implemented a prohibition on the southbound left-turn movement from First Street to eastbound Royal Avenue during the weekday afternoon peak hours; however, many drivers are observed to violate the restriction, which is contributing to higher traffic volumes and speeds throughout the neighbourhood. To address this short-cutting issue, staff recommend that the temporal restriction on the southbound left-turn movement be expanded to a full-time prohibition reinforced with physical delineation. Low-cost temporary delineation could be installed in the near term while staff continue to monitor traffic operations. For permanent installation, concrete curbing would be designed to delineate the permitted movements while maintaining pedestrian accessibility. Fire truck movements have also been assessed and fire trucks on emergency calls would need to use the northbound lane or drive over the delineation/curb when travelling southbound on First Street. Engineering staff have confirmed with senior Fire Department staff that this manoeuvre is infrequent and that the proposed measures are acceptable.

  The north and south approaches of the intersection have an offset alignment with concurrent signal phasing. To reduce driver confusion on the northbound and southbound approaches and to reinforce the southbound left-turn prohibition, staff will consider reconfiguring the signal phasing for this intersection. This will need to be done in conjunction with transit priority/pre-emption to enable safe movement of the existing #105 transit route.

Staff recommend implementation of the above measures in the near term, as illustrated in Figure 1 below. Measures that restrict traffic movements would be implemented on a trial basis, followed by continued monitoring of volumes and speeds on the affected streets. Provided the measures have the desired effect, staff would implement permanent measures as part of a future capital program.

There are further potential actions that may be considered after staff continue monitoring of traffic conditions in the Queen's Park neighbourhood. These are also related to outcomes of the Downtown Transportation Plan, which is anticipated for completion in 2019.

- *Further Restrictions on Left-Turn Movements from Royal Avenue:* Although left turns from Royal Avenue are already restricted at most intersections, consideration could be given to additional restrictions to address short-cutting in neighbourhoods and to mitigate congestion along Royal Avenue. This is especially problematic where there are no left-turn lanes on Royal Avenue.

- *Adjustment of the #105 Bus Route:* The #105 (formerly the C4) bus route travels southbound along Second Street and turns left onto Queens Avenue to continue south on First Street towards the downtown area. For the northbound direction, the #105 bus turns left from First Street on to Royal Avenue and then turns north on Second Street. Re-routing of the southbound #105 bus to access Royal Avenue via Third Street would make the left-turn prohibition at First Street and Royal Avenue easier to implement and reinforce by potentially eliminating the need for a southbound traffic signal. However, a left-turn prohibition on southbound Third Street at Royal Avenue was recently implemented, and would require rethinking to accommodate adjustment of the #105 routing. Future routing of the #105 south of Royal Avenue is currently being explored as part of the Downtown Transportation Plan.

Figure 1: Proposed Traffic Calming Measures for Queen's Park

SUSTAINABILITY IMPLICATIONS

This project supports the objectives of the Master Transportation Plan by facilitating a shift from motor vehicle to active transportation, which supports the City's goals for a healthy, active, livable and vibrant community.

FINANCIAL IMPLICATIONS

The short-term recommendations in this report can be accomplished within existing capital budgets for speed humps and traffic calming. Total predicted cost to implement the recommended measures is less than $20,000. Permanent measures would be implemented as part of a future capital program.

OPTIONS

The following options are presented for Council's consideration:

1. THAT Council endorse the Queen's Park Traffic Calming Review, and implementation of the near term measures, as outlined in the Discussion section of this report; or,
2. THAT Council provide alternative direction to staff.

Staff recommend Option 1.

CONCLUSION

Traffic data confirm that the Queen's Park neighbourhood experiences a modest amount of short-cutting commuter traffic and that some local streets are seeing relatively high traffic speeds. The Queen's Park Traffic Calming Review proposes a modest level of intervention, commensurate with the scale of the observed issues. With Council endorsement, staff will implement the measures proposed in this report – some on a trial basis – and continue to monitor traffic volumes and speed as part of the City's ongoing efforts to manage external traffic passing through residential neighbourhoods.

ATTACHMENTS

Attachment 1 - Queen's Park Traffic Calming Engagement Summary Report
Attachment 2 - WATT Consulting Group - Queen's Park Traffic Calming – Review of Proposed Traffic Calming Devices

This report has been prepared by:
Mike Anderson, P.Eng., MCIP, RPP, Transportation Engineer

This report was reviewed by:
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Approved for Presentation to Council

For Jim Lowrie, Eng.L, MBA
Director of Engineering Services

Lisa Spitale
Chief Administrative Officer

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Attachment #1

Queen's Park Traffic Calming

Engagement Summary Report

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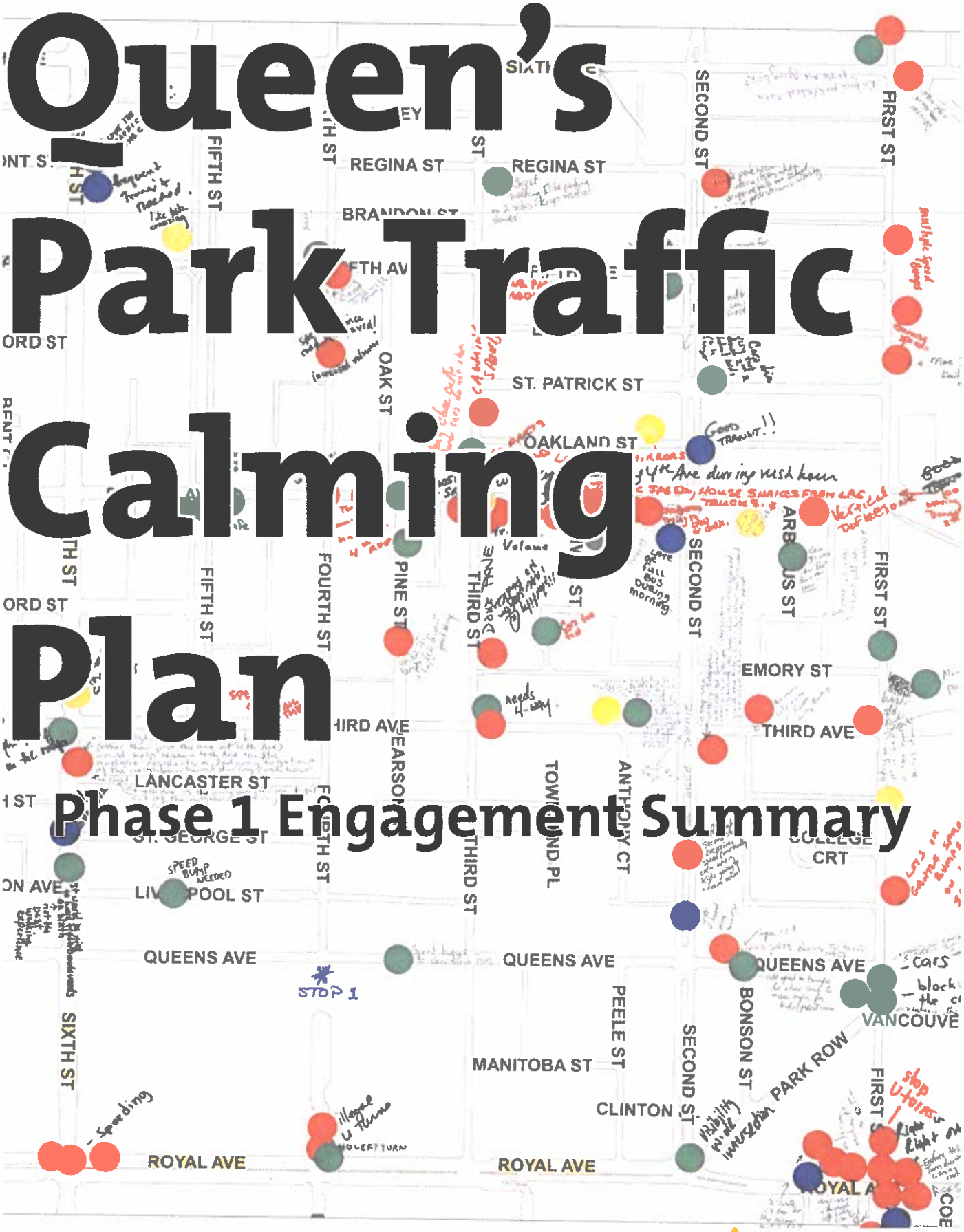
Queen's Park Traffic Calming Plan

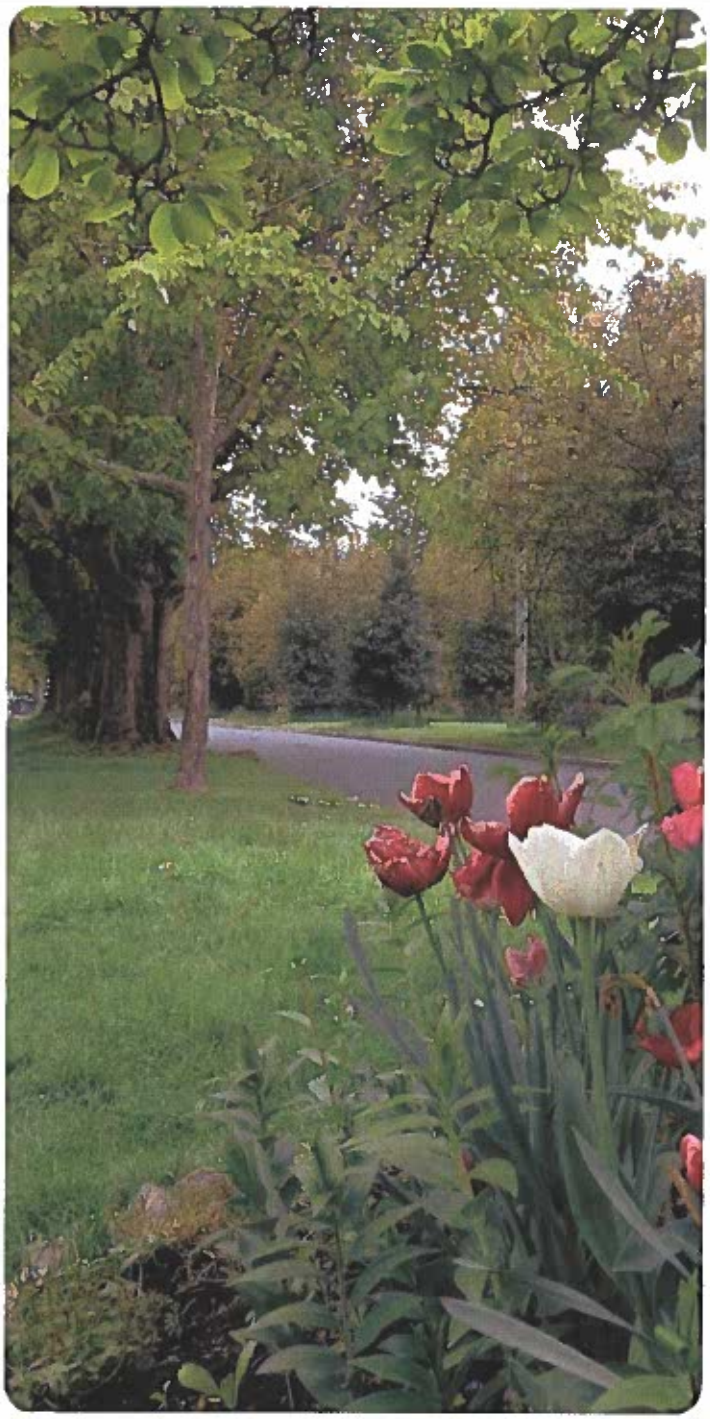
Phase 1 Engagement Summary



September 2017

NEW WESTMINSTER
Engineering Services

Introduction



Queen's Park on a spring day.

Queen's Park is one of the oldest neighbourhoods in the city and is home to many young families who value safe and reliable forms of transportation. The Queen's Park Traffic Calming Plan (the plan) focuses on walking, cycling, transit and driving enhancements. The study area is bordered by 6th Street and McBride Avenue on the west and east and 6th Avenue and Royal Avenue on the north and south.

This report summarizes the outcome of the first phase of public engagement for the plan, which consisted of a 'travelling roadshow', conducted by the City of New Westminster staff on June 17, 2017, as well as an online and in-person community survey. The workshop was attended by over 50 members of the community and over 140 responses were received for the survey. The purpose of this report is to provide an overview of the concerns and priorities mentioned in the roadshow and the survey in order to strategically plan for traffic calming in the neighbourhood.

The Roadshow

The City hosted a 'travelling roadshow' on June 17, 2017 to engage the residents of Queen's Park about transportation issues in the neighbourhood. Three 1-hour stops were made throughout the day which included Friendship Gardens, Sullivan Park and Queen's Park. The purpose of the roadshow was to provide the community with an accessible opportunity to share their experiences, opinions, concerns and issues in relation to all modes of transportation in the Queen's Park area. During the workshop, City staff facilitated conversations with the aid of a large roadmap of the neighbourhood. Residents left color coded comments, using sticky dots, on the map. Each dot corresponded to a transportation mode. Green dots indicated walking, yellow indicated cycling, blue indicated transit and red indicated driving. The roadshow was advertised through the City webpage, Facebook, Twitter, direct ad-mail to all addresses in the neighbourhood and through communication with the Queen's Park Residents' Association. **Based on sign in sheets and photographs approximately 50-60 people attended the in person sessions.**

Transportation Engineer Jerry Behl talking with residents.

The Roadshow

Resident's discussing transportation in Queen's Park.

Emergent Themes

- Traffic calming created by crosswalks and parking on 6th Street between 5th & 6th Avenue is well received;
- There is a desire for increased transit frequency on 6th Street;
- Illegal U-turns at Royal Avenue and 4th Street parking lot are problematic;
- Drivers do not comply with the turn restrictions on 1st Street at Royal Avenue. 1st Street also has issues with excessive speeding and high traffic volumes from those travelling to the Pattullo Bridge;
- Generally speaking the transit service on 2nd Street is working well;
- Comments were received that 4th Avenue between 3rd and 1st Street has high traffic volumes and speeds which make it uncomfortable for walking and cycling;
- There is a desire to maintain the C4 bus service.

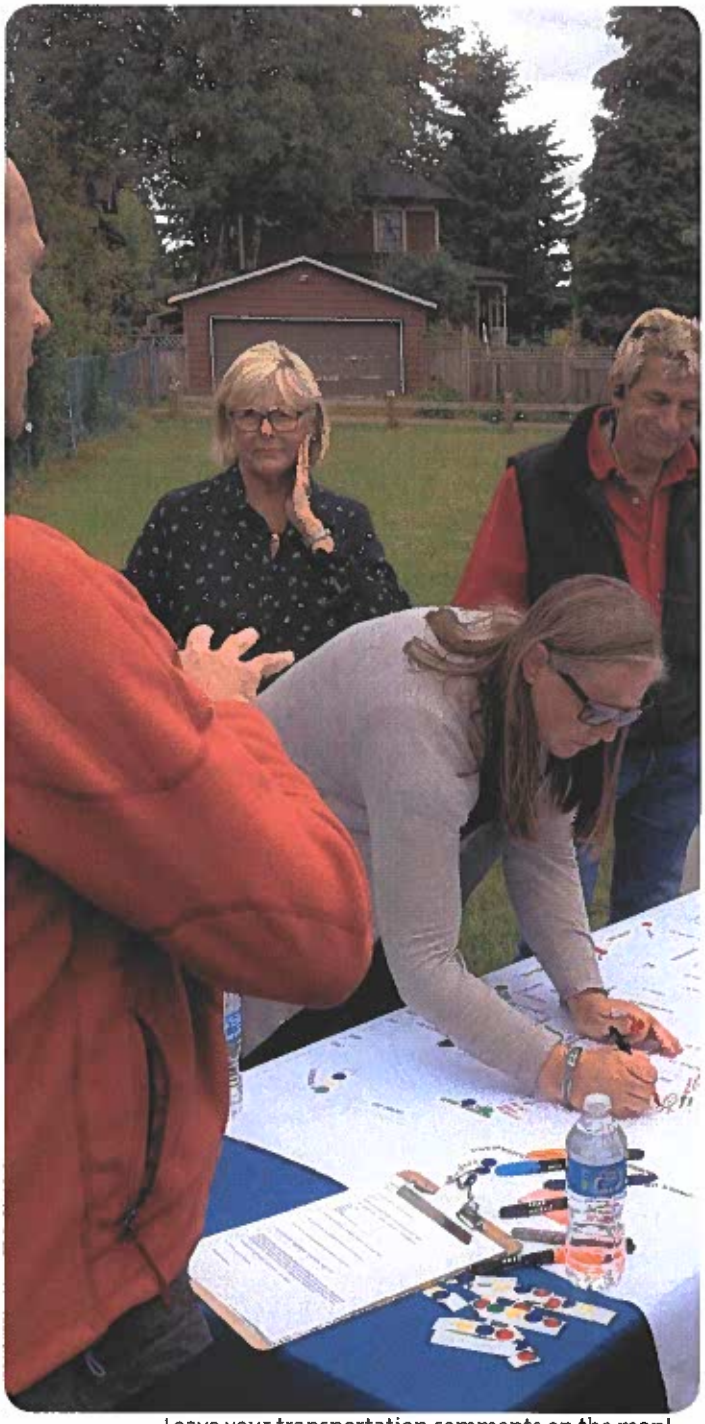
Survey

Residents had an opportunity to complete the survey in person at the roadshow and online. The survey was advertised through the City webpage, Facebook, Twitter, direct ad-mail to all addresses in the Queen's Park neighbourhood and through communications with the Queen's Park Residents' Association. **In total over 140 responses were received.** See appendix 1 for survey questions.

Methodology

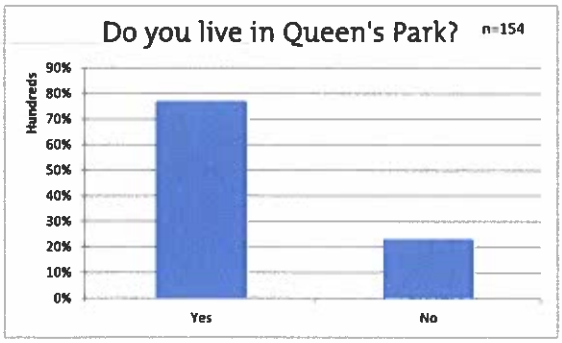
The survey results were analyzed using Microsoft Excel. Given the qualitative nature of many questions, subjective grouping of answers, by theme and/or topic, was conducted.

In addition, when asking residents to rank their preferred mode of transportation, responses were assigned a point value. For example, if a resident indicated walking as their preferred mode, then walking received 3 points. The second most preferred mode received 2 points and third most preferred received 1 point. Although this exaggerates the differences between mode preferences, this data, in combination with other qualitative and quantitative information begins to paint a picture of how Queen's Park residents move about.

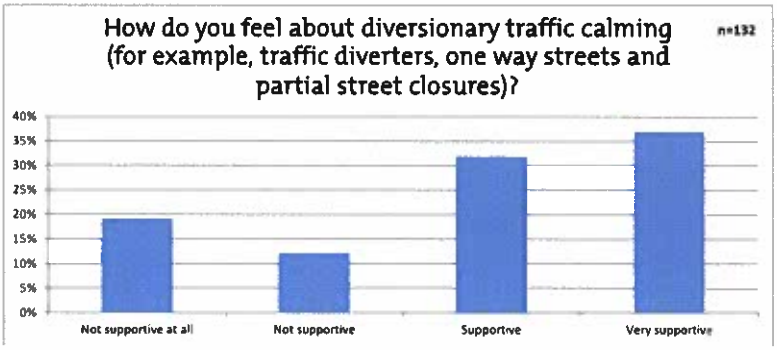


Leave your transportation comments on the map!

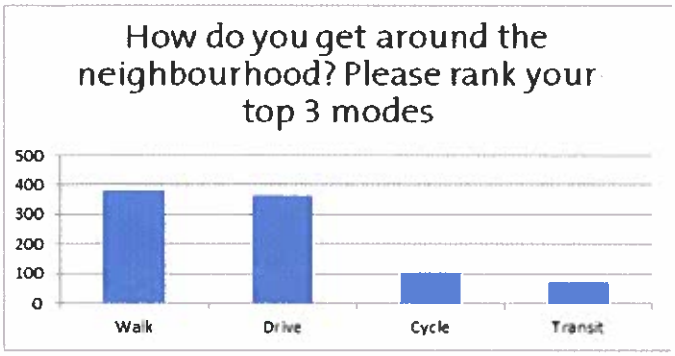
Survey Results



The majority of survey takers lived in Queen's Park. The remaining presumably live in other New Westminster neighbourhoods who frequent the Queen's Park area or are not from New Westminster altogether but, nevertheless, have a vested interest in the neighbourhood.



69% of survey respondents were supportive or very supportive of diversionary traffic calming measures. This support may allow for more creative engineering solutions to achieve traffic calming and enhance walking, cycling and transit experiences.



1st - 3 points | 2nd – 2 points | 3rd – 1 point

As mentioned, the points assignment does exaggerate the differences between mode preferences. However, by doing this, we begin to understand the nuances around how Queen's Park residents, and those that frequent the area, move around.

The preferred mode of transportation for those surveyed is walking. With nearby amenities and a pleasant streetscape, walking proves to be enjoyable and accessible mode. Driving is the second most preferred mode followed by cycling and transit.

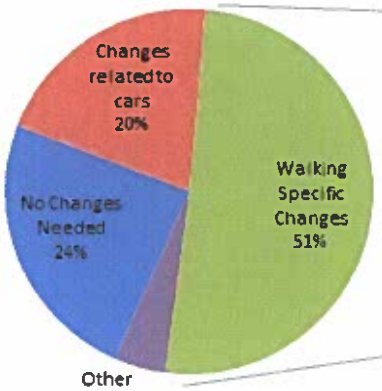
What is your age? n=136

Average age = 51

The average age of participants was 51. Many, based on the in-person engagement, appeared to be home owners. A few youth tangentially engaged in the process through their parents during the in-person events.

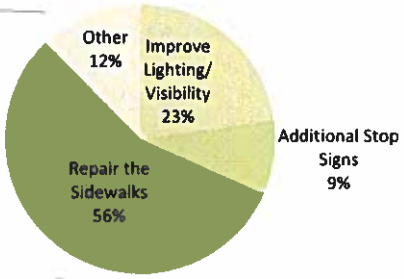
Survey Results

How can the City help improve walking for people who live in Queen's Park?



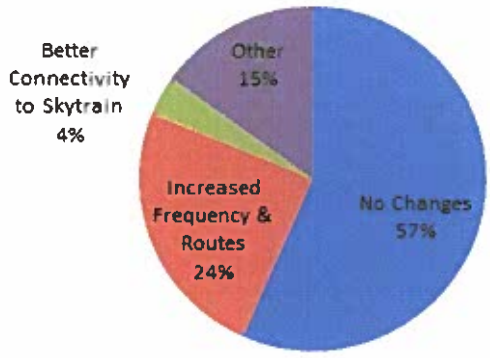
n=112

Walking Specific Improvements n=57



Many survey respondents felt that no changes were needed to improve walking or, if they were needed, they related to vehicles in terms of speed, frequency and so forth. Approximately half of survey respondents provided walking specific improvement suggestions. These included repairing the condition of the sidewalks, improving lighting and visibility and improving crossings with stop signs.

How can the City help improve transit for people who live in Queen's Park?

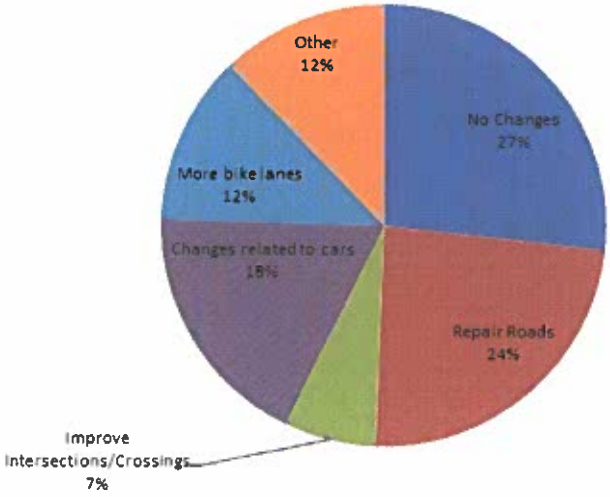


n=106

The majority of respondents did not feel any transit improvements were needed. This is due to them using other modes of transportation or feeling that the proximity to the Skytrain was quite good. Nevertheless, some did indicate a desire to have increased frequency on certain bus routes in addition to new bus routes altogether. Finally, a small number of people indicated better connectivity to the Skytrain by way of walking.

Survey Results

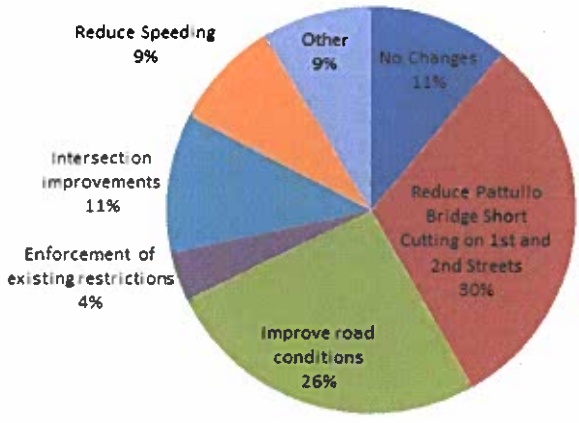
How can the City help improve cycling for people who live in Queen's Park?



n=108

Respondents indicated that repairing the roads, improving conflict zones to make it more safe and increasing the number of bike lanes would all help improve the cycling experience within Queen's Park.

How can the City help improve driving for people who live in Queen's Park?



n=116

A major challenge indicated by respondents with regards to driving relates to shortcutting traffic and associated volumes, frequency and speeds. Specifically, traffic shortcutting down 1st and 2nd Streets to get to the Pattullo Bridge has been identified as problematic. In addition, the condition of the roads has been indicated as a challenge with a desire to have smoother surfaces. However, some residents also indicated that the current road conditions do produce a form of 'natural' traffic calming. Finally, a number of intersection improvements were indicated in addition to enforcement of existing turn restrictions.

Conclusion

Implications

•There is support for diversionary traffic calming measures in order to improve livability within Queen's Park.

•Walking is a high priority mode and interventions should reflect this in terms of sidewalk conditions, connectivity and improved lighting and visibility.

•Perceived cycling and vehicle improvements go hand –in hand in terms of road conditions, bike lanes and intersection design.

Next Steps

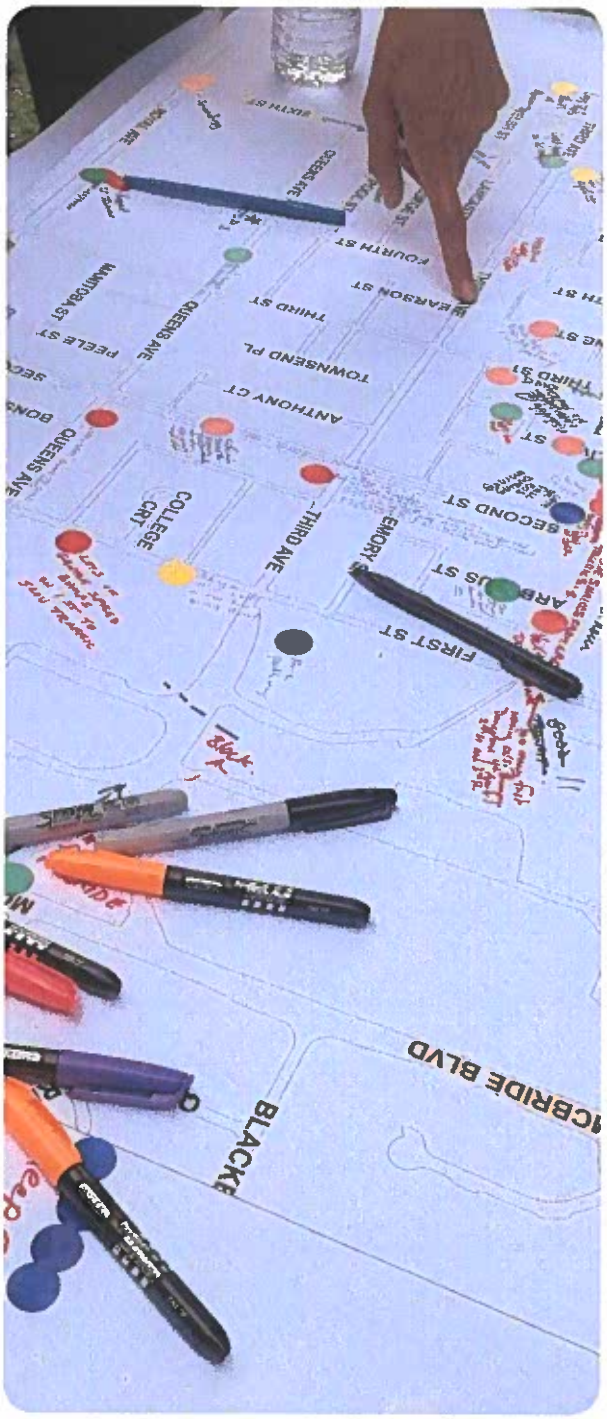
The next steps in the traffic calming process are:

•Data collection in October 2017;

•Phase 2 of public engagement, in the Fall of 2017, providing information on what was heard and possible engineering measures to address the issues that were raised;

•Design of engineering measures in Winter 2017;

•Begin construction of some traffic calming measures the Summer 2018.



Transportation comments are coming together!

Appendix 1

Queen's Park Traffic Calming Plan – Survey
Phase 1 – Listen and Learn
June 17, 2017

1. Do you live in Queen's Park? Please circle one.

Yes | No

2. How do you get around the neighbourhood? Please rank your top 3 modes.

1 = the most often used | 2 = the second most used | 3 = the third most used.

Walk _____
Transit_____
Cycle_____
Drive_____
Other (please specify and rank)_____

3. How can the City help improve walking for people who live in Queen's Park?

4. How can the City help improve transit for people who live in Queen's Park?

5. How can the City help improve cycling for people who live in Queen's Park?

6. How can the City help improve driving for people who live in Queen's Park?

7. How do you feel about diversionary traffic calming (for example, traffic diverters, one way streets and partial street closures)? In order to reduce the number of vehicles short cutting through the neighbourhood and, by association, improve walking and cycling conditions, would you be supportive of measures that may make it inconvenient (but still possible) to drive through your neighbourhood? Please circle one.

Not supportive at all | not supportive | supportive | very supportive

8. Are there any other comments?

9. What is your age in years?