



ADMINISTRATIVE REPORT

Report Date: December 1, 2015
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Meeting Date: December 10, 2015

TO: Standing Committee on Planning, Transportation and Environment
FROM: General Manager of Engineering Services
SUBJECT: Southwest Marine Drive Rehabilitation Project (Granville Street to Camosun Street) - Bikeway Improvements

RECOMMENDATION

THAT Council approve, in coordination with the Southwest Marine Drive Streets Rehabilitation Project (5.5km corridor length from Granville Street to Camosun Street), a multi-year capital project budget of up to \$3.1 million for bikeway improvements, detailed in this report, to improve safety and comfort for people biking along the corridor; source of funding to be:

- i) \$1.2 million from the 2016 Capital Budget for the Active Transportation Corridors and Spot Improvement Program, subject to approval of the 2016 Capital Budget, including \$800,000 cost sharing funding from the TransLink Major Road Network and Bike (MRNB) program and \$400,000 City-wide Development Cost Levies (DCL) and;
- ii) \$1.9 million from the 2015-2018 Transportation Capital Plan, with Citywide DCL to replace external funding in the Capital Plan.

Expenditures for this project will be managed within the overall approved annual Capital Expenditure Budget.

REPORT SUMMARY

Road rehabilitation work is needed to upgrade Southwest Marine Drive (Granville Street to Camosun Street), where current pavement conditions do not meet TransLink's Major Road Network (MRN) performance objectives. Planned repaving work (April 2016) provides an opportunity to upgrade the bikeway as well as provide other transportation and utility services along the corridor.

Currently, the bike lane widths on Southwest Marine Drive do not meet guidelines for minimum widths and have inconsistent conditions for people cycling and driving. The bikeway improvements on Southwest Marine Drive would improve existing conditions by providing a consistent and safer on-street bike lane width with a painted buffer.

This is consistent with the City's Transportation 2040 Plan to coordinate and consider cycling improvements as part of all street capital projects and/or rehabilitation projects.

Figure 1 - Southwest Marine Drive Project Corridor



COUNCIL AUTHORITY/PREVIOUS DECISIONS

The City's [Transportation 2040](#) Plan (adopted October 31, 2012)

- **C1.2** - Upgrade and expand the cycling network to efficiently connect people to destinations.
- **C 1.2.6** - Consider cycling improvements as part of all street capital projects, installing and upgrading routes as opportunities arise through construction and rehabilitation projects.
- **Cycling Route Priorities Map** - identified this portion of Southwest Marine Drive in the near-term Five-Year Cycling Route Priorities map as a potential All Ages and Abilities (AAA) route.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The Acting City Manager and General Manager of Engineering recommend approval of this report. The Southwest Marine Drive Rehabilitation Project - Bikeway Improvements supports Transportation 2040 by providing a consistent and safer cycling facility along the corridor. Today, almost half of the bike lane length between Camosun Street and Wiltshire Street is in poor condition and does not meet guidelines for minimum bike lane widths. With the planned street rehabilitation and other City and regional utility upgrades work, this would be the ideal opportunity to coordinate

and implement the bikeway improvements at the same time. This work, if approved, will produce a significant safety and comfort improvement over the existing conditions.

REPORT

Background/Context

Southwest Marine Drive (Granville Street to Camosun Street) is a two-lane arterial road, a truck and transit route and a part of TransLink's Major Road Network (MRN). It facilitates the safe and efficient movement of people and goods by connections to regional destinations. The length of this segment is approximately 5.5km.

Existing traffic volumes on Southwest Marine Drive range between 15,000 and 25,000 vehicles per day (2014). These daily traffic volumes are similar to other arterial roads in the area such as West 41st Avenue (truck and transit route) and West 49th Avenue.

Southwest Marine Drive is an important truck route that provides a key connection to/from the west side of Vancouver including University of British Columbia (UBC)/University Endowment Lands (UEL). Heavy truck volumes average 400 over a 12-hour period, which is consistent with heavy truck volumes from past years (1999, 2008 and 2014). As part of the [UBC Transportation Plan \(2014\)](#), UBC continues to minimize and manage truck impacts by focusing their efforts on managing/reducing waste material from on-campus projects.

The corridor is also a designated bike route (since 1997) with on-street painted bike lanes that provide an important connection between UBC/UEL and Marpole. The bike route is a popular road cyclist training route with approximately 300 people cycling daily mid-week and approximately 450 cyclists on weekends (12-hour summer period).

There is a building line requirement to preserve future transportation options on the corridor (approximately 5.2m past the property line on each side). Any development must respect the building line and cannot place any structures within it. Building lines are governed by the principle of not increasing vehicle capacity, but rather giving priority to pedestrians, bikes, and transit.

Street rehabilitation is planned for Southwest Marine Drive in Spring 2016 as current pavement conditions do not meet TransLink's Major Road Network (MRN) performance objectives. Other City and regional utility upgrades are also planned to be coordinated with this project:

- minor intersection traffic signal upgrades at existing signalized intersections (West 41st Avenue, Dunbar Street, Blenheim Street, and West 57th Avenue)
- sewer separation (Cornish Street to Angus Drive)
- sewer trunk line replacement (Crown Street to Westbrook Mall)
- water main replacement (Musqueam Lands) which started in November 2015

Strategic Analysis

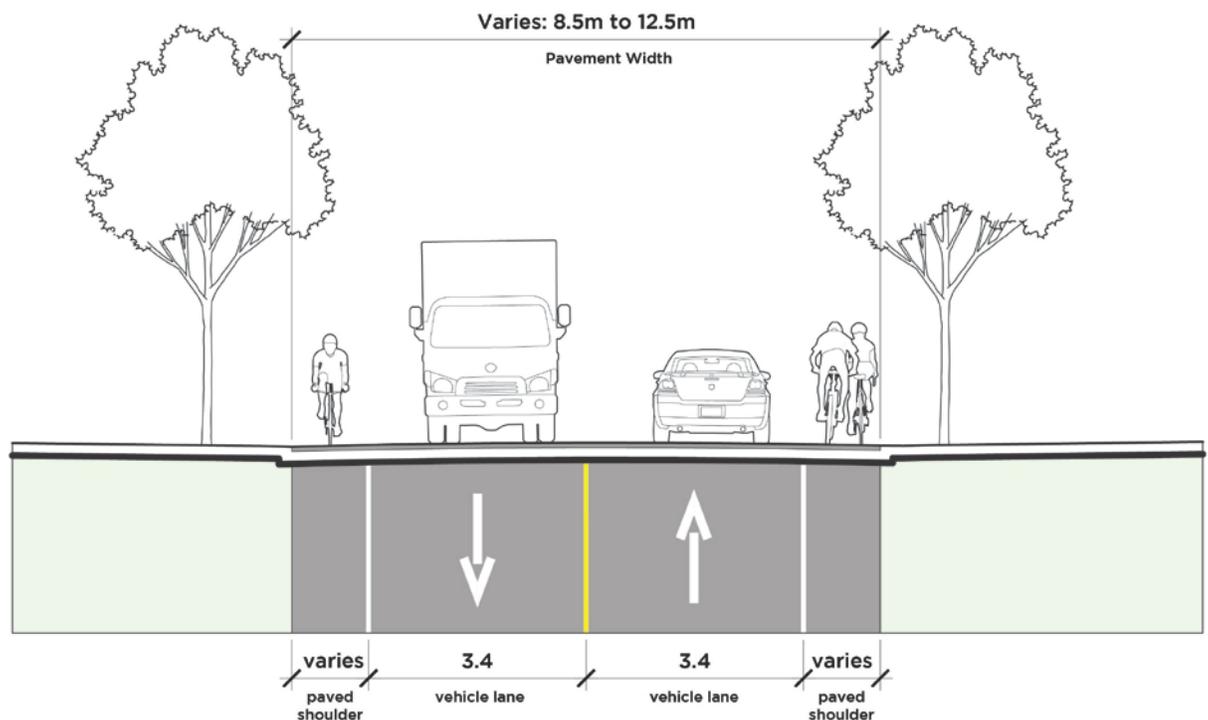
Existing Conditions

The bikeway is in poor condition with irregular and insufficient pavement/shoulder widths. In some areas, the bike lanes merge with vehicle travel lanes to become a shared lane, and in other locations, the bikeway becomes narrow due to the lack of pavement. Some illegal on-street parking within the bike lane causes obstruction and as a result cyclists are forced to merge with moving vehicle traffic. Current on-street parking regulation on the corridor lacks clarity since there are no 'no stopping signs' which would typically exist adjacent to bike lanes.

From 2009 through 2013 (5 year period), there were twenty-six (26) collisions that involved vehicle traffic and people cycling along Southwest Marine Drive (approximately six collisions per year). The collisions attributed to factors such as vehicle dooring and parking in the bike lane, drivers passing too closely to people biking, and vehicles turning at intersections or in and out of driveways.

Overall, the current paving and cycling conditions on Southwest Marine Drive do not meet guidelines for minimum bike lane widths and have inconsistent conditions for people cycling and driving. If upgrading the bike route to the recommended condition is not achieved through this street rehabilitation project opportunity, the existing bike route would need to be removed from the City's official bike network.

Figure 2 - Existing Road Conditions



Recommended Design

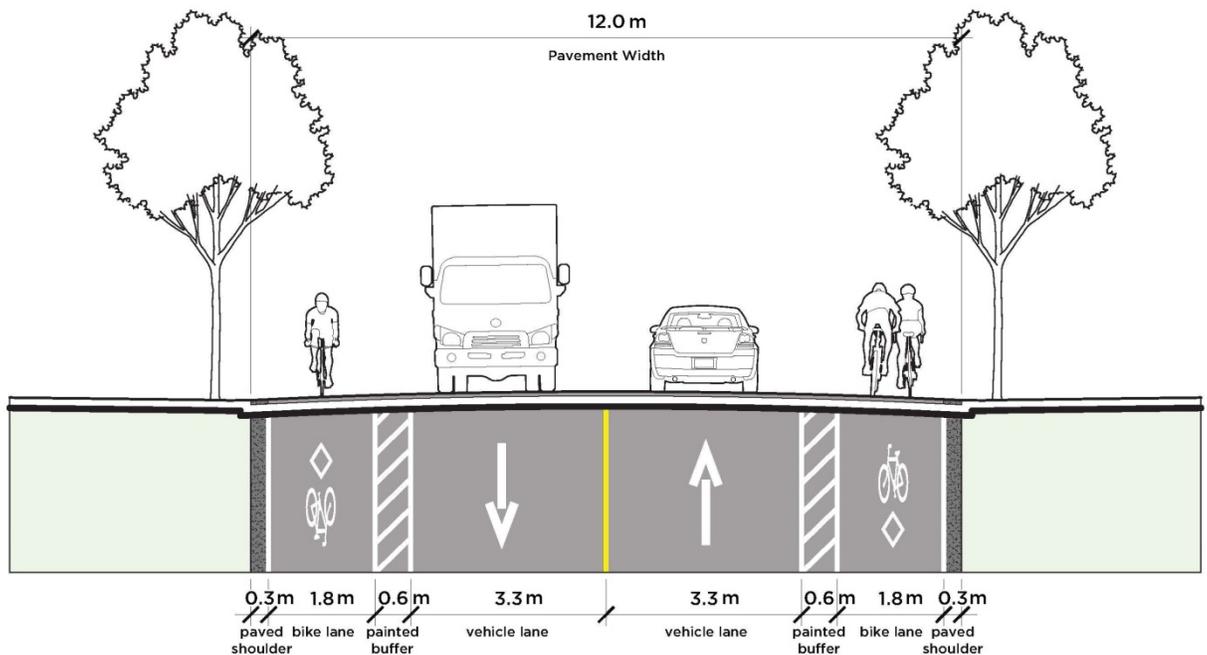
To meet current bike lane width guidelines and provide a clear and consistent bikeway width along Southwest Marine Drive, the recommended design includes widening the bike lanes generally to 1.8m with a 0.6m painted buffer within the existing road right-of-way. In some circumstances these widths will be reduced slightly to preserve trees and avoid utility poles or catch basins.

The recommended design will not achieve a full all-ages-and-abilities (AAA) bikeway as part of the street rehabilitation project. The proposed width for Southwest Marine Drive represents the greatest widening possible for increased safety and comfort while minimizing impacts. Any widening beyond the proposed bikeway improvements would have significant impacts on costs, trees, and utility relocations as well as introduce substantial delays to project implementation.

The key impacts and approximate requirements of the recommended design include:

- Relocation of eleven (11) trees and replacement of one (1) tree.
- Relocation of four (4) BC Hydro poles and twenty-seven (27) catch basins.
- Increase of approximately ten percent (10%) asphalt surface to support the recommended consistent bike lane width and buffer.

Figure 3 - Proposed Road Design for Southwest Marine Drive



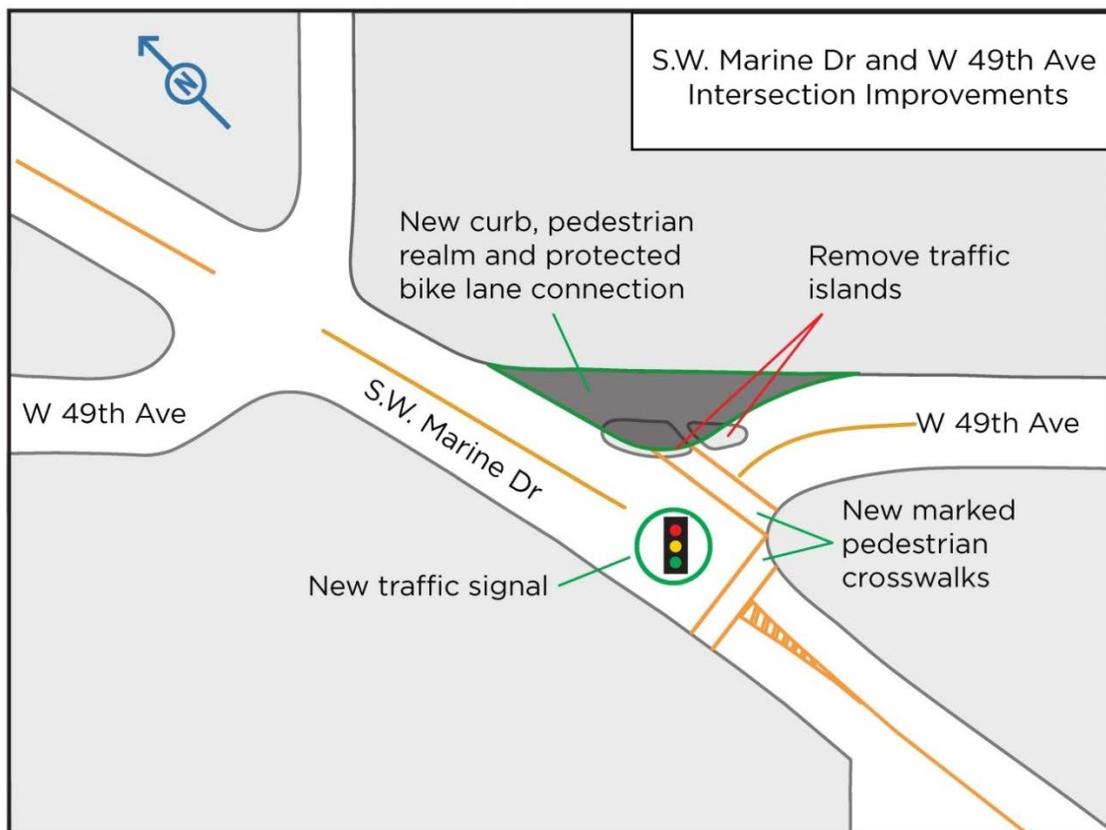
Parking will generally be restricted with the addition of new parking signage, although some on-street parking will be maintained to accommodate uses by visitors, contractors and deliveries. On-street parking demand is low on Southwest Marine Drive (generally less than one car parked per block during the afternoon peak period). The recommended design considers provision of space for parking pads or similar treatment between the bike lanes and the property lines based on the following conditions:

- There is adequate space between the bike lane and the existing property line to accommodate pedestrian movements as well as a parking space.
- The proposed parking location does not negatively impact the safety of all road users, particularly vulnerable road users.
- No other parking is available within a reasonable walking distance (about 100 metres), and does not require crossing Southwest Marine Drive at an unmarked or un-signalized pedestrian crosswalk.

The final recommended design also includes safety improvements at the intersection of Southwest Marine Drive and West 49th Avenue. From 2009 through 2013 (5 year period), this unsignalized intersection had the most vehicle collisions (approximately 110 collisions) compared to the other un-signalized intersections (approximately 30 collisions or less) on this portion of Southwest Marine Drive.

The intersection safety improvements include modifying the alignment of West 49th Avenue to meet perpendicular with Southwest Marine Drive and adding a new traffic signal and pedestrian crosswalk on Southwest Marine Drive. Existing sightlines would be improved with a shorter crossing distance for pedestrians on West 49th Avenue. The intersection improvements also support a safer intersection for people cycling and for transit operation, particularly for bus route # 49 (Metrotown-UBC).

Figure 4 - Southwest Marine Drive and West 49th Avenue Conceptual Improvements



There are five (5) transit stops between Dunbar Street and West 49th Avenue that do not meet TransLink's universal design guidelines for wheelchair accessible bus stops. Upgrades will be considered through TransLink's Transit Related Road Infrastructure Program (TRRIP) in 2016 and coordinated with the project where possible.

Public Engagement Feedback

Stakeholder and public engagement process for the bikeway improvements took place in Fall 2015. Staff met with key stakeholder groups that included the Transportation 2040 stakeholder group, the Active Transportation Policy Council (ATPC), and Arbutus-Ridge Kerrisdale Shaughnessy (ARKS) community group. A public open house for the project was also held to seek feedback/comments for the project and the recommended design.

Based on the overall feedback, there is general support for the bikeway improvements and general preference for an intensive construction schedule (e.g. shorter timelines with full road closures). A summary of the key concerns from the stakeholder and public engagement process regarding the rehabilitation project and recommended design include:

- Lack of provisions for pedestrians such as sidewalks and pedestrian crossings, particularly between Balaclava Street and West 57th Avenue.
- Concern that the project does not implement an all-ages-and-abilities (AAA) bikeway as part of the upgrade.
- Potential removal of on-street parking and regulation of on-street parking.
- Overall concerns regarding existing traffic volumes, including heavy truck volumes as well as vehicle speeds along Southwest Marine Drive.
- Concerns regarding project construction impacts and the potential for increased traffic shortcutting through adjacent neighbourhoods.

Public Engagement Staff Response

Staff have addressed these concerns where feasible based on the opportunity to coordinate street improvements with the necessary rehabilitation of Southwest Marine Drive. The following sections describe these efforts:

Sidewalks

Currently there are sidewalks on the north side of Southwest Marine Drive between West 49th Avenue and West 41st Avenue and between Angus Drive and East Boulevard. Generally, the proposed bikeway improvements aim to ensure that sufficient informal pedestrian space is available in the boulevard adjacent to the bike lane without any obstructions such as trees or utility poles.

There are existing landscaping conditions that reduce or provide no informal pedestrian space that need to be addressed. Proposed measures will include maintenance notifications (and if necessary enforcement) for the adjacent properties.

Although there are existing City-wide programs that provide new sidewalks and new pedestrian/cycling traffic signals, at this time the programs are unable to support new pedestrian facilities on Southwest Marine Drive based on city-wide priorities where the existing demand for pedestrians and improved safety is greater.

Pedestrian Crossings

Safety intersection improvements at West 49th Avenue and Southwest Marine Drive will include provision of a new full traffic signal and create a new controlled marked pedestrian crossing on Southwest Marine Drive (between Balaclava Street and West 57th Avenue). This will facilitate a safer crossing for pedestrians and help moderate vehicle speeds through this area.

Bikeway Design

Based on public feedback and request for the City to install an AAA bikeway, staff recommend \$0.2 million for AAA bikeway improvements at spot locations (such as green paint and/or concrete separators). These would be applied where vehicle encroachment into the bike lane is a concern, such as near intersections or around curves in the roadway. Locations would be evaluated for their overall impact on safety, as well as impacts on maintenance, street cleaning, and fire and emergency vehicle access along the corridor. Based on additional feedback and monitoring, more such spot improvements can be considered in 2017/2018.

An AAA bikeway would require installing continuous physical separation between bicycle and motor vehicle traffic. This is not recommended, as it would require widening beyond the proposed design, an additional \$1 million to \$2 million and would result in a single-file bikeway. City staff are concerned about introducing a no-passing condition for people cycling for 5.5km as well as the maintenance challenges. The City has received considerable negative feedback with respect to the no-passing condition on east side of the Burrard Bridge. Given the length of the Southwest Marine Drive bike route and the varying levels of cycling abilities of those using the bikeway, City staff consider the ability of people biking to pass one another an important design criteria.

To achieve an AAA bikeway, the roadway would need additional 1m to 2m widening to provide sufficient width for people biking to be able to comfortably and safely pass one another in addition to full separation from vehicles. Given the additional complexity of this design, it would not be possible to complete an AAA bikeway within the rehabilitation project timeframe, due to required significant intersection upgrades, including approximately:

- 100 to 150 more tree removals
- 50 to 100 utility pole relocations
- 40 to 80 catch basin relocations, and;
- 10 to 20 lamp standard relocations

As well, sightline obstructions that impact safety would need to be addressed at most driveways. The cost estimate for a full AAA bikeway (in construction cost and does not include property acquisition) would range from an additional \$6 million to \$11 million beyond the construction costs of the recommended design.

Accordingly, due to its high impacts and costs, a full AAA bikeway approach is not recommended at this time. An all-ages-and abilities bikeway is still a long-term goal as part of a complete street vision for Southwest Marine Drive that would include

appropriate widths and physical separation between continuous sidewalks, bike lanes, and vehicle travel lanes to provide facilities that are safe and comfortable for all users. Additional spot improvements to improve the corridor can be considered in 2017/2018 based on evaluation and monitoring of the recommended design.

Parking

On-street parking will be maintained where required and feasible, while preserving the green space environment and ensuring that there are no impacts to road safety.

Traffic Management

Traffic management during project construction will be vital for the successful implementation of the project. Development of the required traffic management strategy will include consideration of full or partial road closure options; access requirements for local residents, businesses (golf courses in the area), trucks and transit and; potential additional temporary traffic calming measures on local streets to minimize shortcutting and coordination with any special events/projects in the area.

Summary of Staff Response to Public Engagement

In summary, the proposed changes based on stakeholder and public engagement feedback are as follow:

- For pedestrians, ensure that either existing sidewalks or the informal pedestrian space is preserved with the widening for bike lanes and requests for parking.
- Issue maintenance notifications to properties with encroaching landscaping that conflict with either the informal pedestrian space and/or the bikeway.
- For pedestrian crossings, provide a new traffic signal at West 49th Avenue and Southwest Marine Drive as part of safety improvements at this location.
- For bikeway design, implement the proposed buffered bikeway improvements but also pilot and monitor protected bike lane improvements at key spot locations. Based on results of these initial pilot locations, provide additional protected bike lane improvements along the corridor.
- Maintain on-street parking where required and feasible by considering allocation of space for parking pads or similar treatment.
- Develop a traffic management strategy based on resident feedback/input as part of the project implementation in Spring 2016.

Implications/Related Issues/Risk (if applicable)

Financial

The estimated total cost of all work on Southwest Marine Drive, including sewer and water work, is \$22 million. Of this total cost, the cost of the road rehabilitation work is \$5.2 million, included in the 2016 Capital Budget for Major Roads Rehabilitation - MRN, subject to approval of the 2016 Capital Budget. The cost of the recommended transportation improvements is \$3.1 million. The breakdown of the work and associated costs include:

- Roadway widening / bike lane improvements - \$2.4 million
- A new traffic signal - \$0.5 million

- Incremental testing of AAA bikeway measures at areas of concern - \$0.2 million

The funding sources for the recommended transportation improvements include:

- \$1.9 million City-Wide Development Cost Levies (DCL) allocated to Transportation to replace external funding in the 2015-2018 Transportation Capital Plan for the Gastown Street Rehabilitation Project. This project has been delayed for implementation after the Gastown 150 year celebration to avoid disruption to the celebrations, and allow a transportation study to be carried out to examine potential improvements to be coordinated with the rehabilitation work.
- The remaining \$1.2 million will be funded from the 2016 Active Transportation Corridor and Spot Improvement Program which includes cost sharing from TransLink's Major Road Network and Bike (MRNB) Program and City-Wide DCL.

Expenditures relating to this project will be managed within the overall approved annual Capital Expenditure Budget.

Environmental

The bikeway improvements would require approximately a relocation of eleven (11) trees and replacement of one (1) tree.

Other

The proposed bikeway improvements on Southwest Marine Drive would provide a consistent minimum bike lane width and painted buffer to better accommodate people cycling through this corridor. If upgrading the bike route to the recommended condition is not achieved through this rehabilitation project opportunity, the existing bike route would need to be removed from the City's official bike network.

CONCLUSION

The bikeway improvements as part of the road rehabilitation project (that will commence Spring 2016) will provide a more consistent and safer cycling facility to accommodate people cycling on Southwest Marine Drive.

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CONSULTATION SUMMARY

Stakeholder and public consultation for the Southwest Marine Drive bikeway improvements took place in Fall 2015.

Communications Products

Communications Products	Quantity	Details
Notification letters	3353	Mailed to residents and businesses located within two- to four-blocks of SW Marine Drive between Granville Street and Camosun Street (including all addresses south of SW Marine Drive)

Consultation Activities

Consultation Activities	Details	Participants
Public Open House	Wednesday, October 14, 2015 4:00-7:30 pm Dr. R.E. McKechnie Elementary School Gym 7455 Maple Street	92 participants
Comment Sheet	Available at public open house	66 responses
Project Website	vancouver.ca/marinedrive	1084 page views (Oct 1-31)
Social Media	1 post on the BikeVancouver Facebook page	707 views
Stakeholder Groups and Advisory Committees	Transportation 2040 Stakeholder Advisory Group ARKS (Arbutus Ridge / Kerrisdale / Shaughnessy) Active Transportation Policy Council	52 participants
Email/Phone Comments	Received through bikeupgrades@vancouver.ca , 3-1-1, and individual project staff	~50 contacts
Letters/Formal Submissions		5 letters

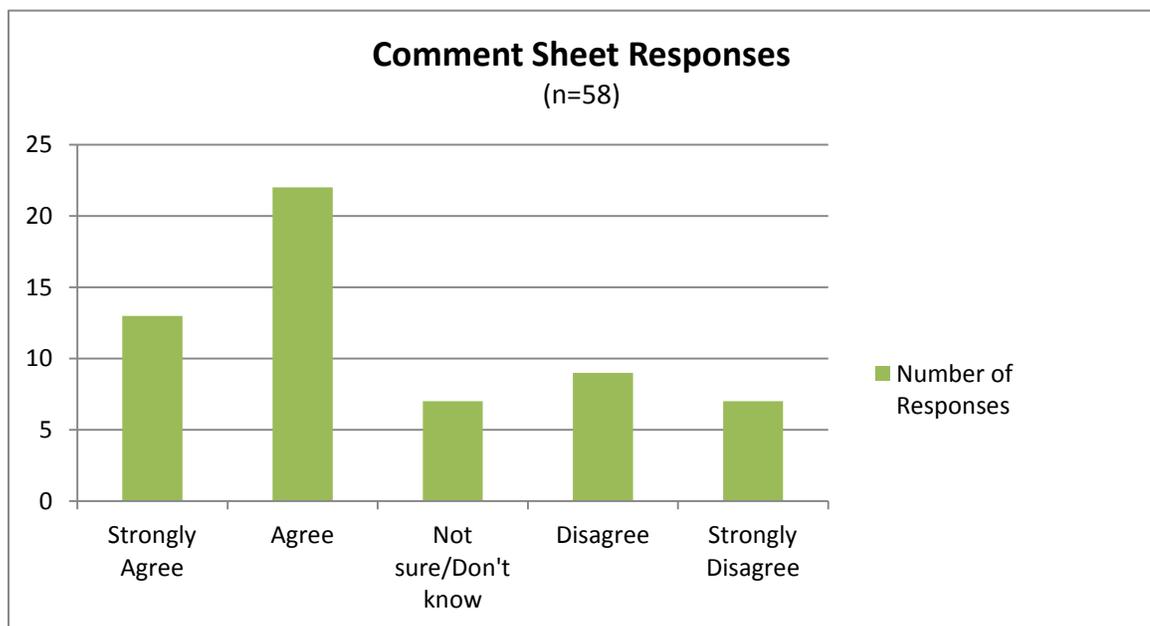
Key Themes

Key themes heard during the stakeholder and public consultation process include:

- Lack of provisions for pedestrians such as sidewalks and pedestrian crossings, particularly between Balaclava Street and West 57th Avenue;
- Concerns regarding potential removal and/or regulation of on-street parking;
- Overall concerns regarding existing high traffic volumes, including heavy truck volumes, as well as vehicle speeds along Southwest Marine Drive;
- An all-ages-and-abilities (AAA) bikeway should be pursued as part of the project;
- Concerns regarding impacts of construction and the potential for increased traffic shortcutting through adjacent neighbourhoods.

Two specific questions were asked on the open house comment sheets regarding the bikeway improvements and preferred construction schedule.

Q: While the bikeway improvements will not meet an All Ages and Abilities (AAA) standard, the improvements will provide a safer, more comfortable and consistent cycling environment.



Q: On a scale of 1 to 5, how intensive would you prefer the construction schedule to be?

