February 8, 2023

TO: Park Board Chair and Commissioners

FROM: General Manager – Vancouver Board of Parks and Recreation

SUBJECT: Stanley Park Temporary Bike Lane Options – Report Back

RECOMMENDATION

A. THAT the Vancouver Park Board directs staff to proceed with implementation to (insert wording of OPTION A, B, or C) for returning pre-COVID 19 Pandemic traffic flows in Stanley Park and improving the 2021 temporary bike lane: and

OPTION A – Return the Pre-COVID-19 Traffic Flow on the East Side of the Park & Construct an Interim Bike Lane on the West Side of the Park - Remove the temporary bike lane on the east side of Stanley Park, and upgrade the bike lane on the west side of the park to a semi-permanent bike lane for summer of 2023; or

OPTION B – Return the Pre-COVID Traffic Flow & Construct an Interim Bike Lane Around the Entire Park – Replace several temporary segments of the bike lane with a semi-permanent bike lane that would be in place for summer of 2023; or

OPTION C – Return the Pre-COVID-19 Traffic Flow & Conditions on Park Drive with Added Safety Measures – Remove much of the temporary bike lane on Park Drive in May of 2023, with some sections remaining for safety as detailed in the report.

B. THAT staff redirect funding from appropriate funding sources within the existing capital expenditure budget to enable this work; and

C. THAT the Vancouver Park Board confirms that this motion supersedes and replaces all previous motions passed by the Park Board with respect to the timing of the removal of the temporary bike lane on Park Drive.

REPORT SUMMARY

The purpose of this report is to provide an update and to seek direction from the Board on three options for implementing pre-Covid-19 Pandemic traffic flow in the park and removing and/or changing the Stanley Park temporary bike lane as per the urgent Board motion on January 16, 2023, with considerations for the planning of a more permanent bike lane on Park Drive, as per the Board motion on December 5, 2023, including estimated costs, timelines and potential impacts.

The options enclosed in this report represent different pathways to improving traffic flow and accessibility in the park while considering the voices of many people who have expressed appreciation and concerns. The options vary in their ability to deliver improvements by this summer and differ in their ability to provide a fully permanent bike lane in the long term in two phases or incrementally over time. Included in this report are considerations related to each option, including recent Board directions from motions, public feedback, key issues, information pertaining to the monitoring of traffic conditions, phasing ability, associated costs and timelines for each option.

BOARD AUTHORITY/ POLICY

VanPlay, the Park Board's 30-year masterplan for parks and recreation services approved on October 9, 2019, includes the "Playbook" action plan, with the following relevant actions:

- ***Stanley Park Cycling Plan:*** *Improve flow and access throughout Stanley Park by separating pedestrians and cyclists for safety (implement the Stanley Park Cycling Plan).*
- ***Advocate for Enhanced Transit and Active Transportation to Facilities:*** *Advocate for enhanced transit and active transportation connectivity between existing facilities and amenities.*

BACKGROUND

Note: The following motions listed in this section are considered complete and referenced for information only. New motions passed after November of 2021 are active and referenced further in the report for context.

Stanley Park COVID-19 Pandemic Response (2020):

- On April 6, 2020, a staff memo was sent to the Board in response to the COVID-19 pandemic and lockdown measures outlining the General Manager's operational decision to close Stanley Park to vehicles.
- On June 18, 2020, a board decision supported the General Manager's operational decision to open the park for vehicle access and to maintain cyclists on Park Drive with a temporary bike lane installed on one of the two lanes, while the seawall remained closed to bikes, in response to the four-stage B.C. Restart Plan which allowed public facilities to reopen with physical distancing measures still in place. On June 22, 2020, the park and all parking lots were re-opened for vehicle access.
- On September 18, 2020 a staff memo informed the Board that the bike lane was removed with an exception for the Ceperley Meadow area due to the need to integrate cyclist and vehicle traffic with Beach Avenue traffic outside of the park, which allows for one-way vehicular flow into the park only. The City's original Beach Avenue installation coincides with the Park Board's April 2020 works.
- On November 23, 2020, staff provided an update to the Board on the *Mobility in Stanley Park: Survey Results, Data Analysis and Next Steps* including a summary of the changes in Stanley Park in response to COVID-19 pandemic, mobility data and results of the Public Survey open in the late summer of 2020.

Stanley Park Temporary Bike Lane (2021):

- On March 8, 2021, a Board motion titled *Stanley Park Temporary Bike Lane on Park Drive - 2021* was passed to direct staff to reinstall a temporary bike lane on Park Drive, and to focus on more community engagement including the businesses in the park, and those with mobility needs, and to make improvements based on feedback received about the project completed in 2020.
- On May 3, 2021 a staff memo to the Board outlined a phased approach, where the first phase of the temporary bike lane was installed on May 16, 2021, on the west side using

orange traffic cones and signage, and on July 31st, 2021, the second phase was installed, which added concrete barriers, asphalt ramps, line painting and signage.

- On November 15, 2021, a motion titled *Extension of Stanley Park Temporary Bike Lane on Park Drive* was passed to keep the 2021 temporary bike lane in place until the completion of the Mobility Study.

CURRENT BOARD DIRECTION

The temporary bike lane as it exists in the park today was installed in two phases during the spring and summer of 2021 along the 8.5 km length of Park Drive in Stanley Park. The first phase installed in May of 2021 included temporary features that could be installed quickly such as traffic cones and signage, in order to separate cyclists and vehicles where there is not an adjacent seawall route. Phase 2 was installed in late July 2021 which consisted of concrete barriers, traffic delineators, asphalt paving, line painting and custom signage for the eastern side as well as upgrades to the Prospect Point Café parking lot, the parking lot area near the Teahouse, the angled parking at Second Beach, and Park Drive in Ceperley Meadow.

This time lag between phases allowed time for in-depth engagement with park stakeholders and users with mobility needs, as well as time to incorporate this feedback and to install design solutions to address safety, accessibility, traffic flow, and access to parking and destinations in the park.

The following improvements exist and are included in the three options presented for Board consideration:

1. **All parking lots are open** for full vehicle access to all amenities and attractions in the Park (94 to 96% of parking stalls are retained in all three options).
2. **Causeway entrances/exits are open** to provide better vehicle access to different parts of the park, and from North Vancouver.
3. **Vehicle access** to Brockton Point, Ceperley Meadow Washroom, and the Lawn Bowling Club is open so that those with mobility needs can drive and/or be dropped off by vehicle at these locations.
4. **Seawall is open to bikes** to support riding for users of all ages and abilities.
5. **Concrete barriers** are in place at key locations for added safety and comfort for cyclists and vehicles and to improve aesthetics.
6. **Access for operations and emergency services is improved** by creating strategic gaps in barriers using traffic delineators for ease of access.
7. **Pull-out spaces for the horse and carriage operator are improved** to reduce vehicle congestion by allowing for passing and to improve the experience for carriage users.
8. **Line Painting, speed bumps, crosswalks and extra signage** are in place to slow traffic and improve safety.

Bike Lane Considerations

On December 5, 2022, a motion titled *Stanley Park Drive Temporary Bike Lane – Next Steps* was passed which instructed staff to remove the temporary bike lane and to begin planning for a new more permanent bike lane. Work began to determine what would be required to remove the

temporary bike lane, and a proposed timeline, an estimate of costs and a proposed plan to meet the Board's objectives was summarized in a memo to the Board on December 15, 2022.

Making changes to Park Drive, as with all roads in British Columbia, requires an Engineer of Record to deliver sealed design drawings for the changes before constructing the works. This is necessary to ensure that the changes are safe for all users and in conformance with regulatory design standards. There are seven key components of work required for the removal of the temporary bike lane: signage removal, previous signage reinstatement, traffic cone removal, concrete barrier removal, line painting removal, existing line painting reinstatement and temporary asphalt removal. These components are part of an integrated design and therefore each component cannot be removed in isolation. For a detailed breakdown of quantities and locations of these components in the park currently, refer to **Appendix A – Existing Temporary Bike Lane Configuration – Details and Map**.

The preliminary estimated costs for full removal of the bike lane were between $375,000 to $425,000 as stated in the memo from December 15, 2022, and therefore, would require at least 3 months of work immediately following a Board decision. In order to progress the removal of the bike lane by the holiday season in 2022 as directed by the Board, a section of the bike lane on Park Drive between Prospect Point and Third Beach was removed, which involved the design, fabrication and installation of new signs to indicate a shared lane with vehicles, as well as removing traffic cones along a 1.7 km segment of Park Drive. This change in traffic patterns was communicated to the public via social media.

On January 16, 2023, an emergency motion titled *Stanley Park Drive Temporary Bike Lane Removal – Phase 2* was passed to direct staff to "*consider recommendations for site specific modifications that could be repurposed from the current configuration that would improve safety, accessibility, traffic flow, wayfinding, and aesthetics on Stanley Park Drive, over the pre-COVID-19 configuration"* and to report back to the Board no later than February 13, 2023. In order to address this motion, staff revisited previous public feedback and traffic data, as summarized below.

Public and Stakeholder Feedback

Since March of 2020 there has been over 15,000 responses to three public surveys, over 50 operational, business and user group stakeholders engaged through over 85 meetings, at least 150 speakers at public board meetings, thousands of website visits, and hundreds of emails. This extensive engagement and considerable feedback have been collected on an ongoing basis, shaped improvements made to date, and helped inform the options. A brief summary of this engagement can be found attached as **Appendix B – Public Engagement Summary** which highlights feedback on several key issues.

Key Issues Identified

Through extensive public and stakeholder engagement and data collection, the following key issues were identified that seek to be addressed through the options to varying degrees:

1. ***Vehicle Traffic Flow -*** Based on public feedback, site observations and traffic data monitoring from June 2020 to today, there are three conditions contributing to vehicle traffic congestion:

a. *Queuing Behind the Horse and Carriage* **–** Traffic monitoring conducted mid-week and on weekends in the summer of 2020 along the Horse and Carriage route showed that queuing behind the Carriage mainly occurred on weekends. Vehicle travel speed slowed to 3-5 km per hour on the east side of the park where the Horse and Carriage route is located. Although the impact can be significant for individual drivers, traffic was always moving and once the Horse and Carriage reached a passing location the queue could clear quickly. Options A and C improve this issue.

b. *Aquarium Parking Lot on Weekends* – There were reports of extended wait times for parking at the Aquarium, resulting in traffic backing up down Avison Way and onto Park Drive, which blocks the vehicle lane for motorists travelling around the park. This occurred during peak visitation to the Aquarium on holidays when special promotions on ticket sales were offered. Options A and C will help resolve this issue.

c. *Exiting the Park onto Georgia Street* – Currently, the only exit from the west side of the park is via North Lagoon Drive to Georgia Street. Due to vehicle traffic congestion on Georgia Street, there have been reports of vehicles backing up on North Lagoon Drive and up Park Drive, as well as at the roundabout backing up Pipeline Road. Vehicle exits to the west end are returned through all the options which will take pressure off the Georgia Street exit.

There were no other reports of ongoing traffic congestion throughout Park Drive, nor has Engineering Services identified any impacts on the city street network or regional bridge connections. Volumes on city streets generally and Burrard Inlet bridges specifically remain below 2019 volumes.

2. ***Vehicle Access to Ceperley Meadow Washroom from the Park Drive Loop*** – The Ceperley Meadow washrooms are currently only accessible by vehicle via South Lagoon Drive. As there is currently no exit from the northwest corner of Stanley Park, those with mobility needs cannot stop at the Ceperley Meadow parking lot washroom on their way out of the park. All the options allow easier access to this washroom travelling southbound on Stanley Park Drive.

3. ***Coach Bus Parking at Prospect Point*** – With the current configuration of the temporary bike lane at Prospect Point, there is space for only one coach bus to pull over, and it is shared with the loading bay for deliveries. Space for more coach bus parking at Prospect Point will enable more tour operators to park at this destination in the peak summer season.

4. ***Reverse Circulation of the Parking Lot by Teahouse Restaurant -*** The current vehicle circulation in the Teahouse Restaurant parking lot was necessary to accommodate the temporary bike lane on Park Drive for safety reasons and traffic engineering standards. The reverse circulation has both benefits and challenges and opportunities to address flow and parking will vary depending on the option that will be preferred by the Board. Pending this outcome, staff will work in collaboration with the Teahouse Restaurant owner and operator in addressing key issues.

DISCUSSION

The motion passed by the Board on January 16, 2023, sets out clear priorities for the desired condition on Park Drive which include *safety, accessibility, traffic flow, wayfinding, and aesthetics.* The Board has also directed staff to plan for future construction of a more permanent bike lane on Park Drive.

Due to the complexity and length of Stanley Park Drive and associated costs, timelines and competing priorities, and in order to address the public and stakeholder feedback and key issues identified by the Board, three options were developed, which are summarized in the following table and are described in further detail below.

Future Permanent Bike Lane – Initial Feasibility Review

Construction of a permanent, separated bike lane on Park Drive would require an extensive and comprehensive process complete with public, rightsholder and stakeholder engagement, design, substantial construction, archeological permitting and site supervision, traffic control and project management. A project of this scope would not be implementable within this capital plan or the next few capital plans without significant impacts to Park Board's Capital and Operating budgets. Further to this, costs and timelines increase significantly if the bike lane is constructed outside of existing road space due to considerable environmental, utility, and archeological impacts that would result. A preliminary assessment of the feasibility of a future permanent bike lane is attached as **Appendix C – Future Permanent Bike Lane – Initial Feasibility Assessment**.

Interim (Semi-Permanent) Bike Lane Condition

As a fully permanent bike lane (especially one that requires additional road space) will not be feasible in the near future, an interim bike lane could serve the needs of park visitors for many years. Interim (or semi-permanent) solutions involve the use of materials for a separated bike lane that are more robust, easier to maintain and more visually attractive than temporary features (such as cones, delineators, barricades, etc) but that are more cost effective, easy to design and relatively quick to install. Using an interim condition for a bike lane that is semi-permanent with fixtures similar to those seen on Beach Avenue could have an expected service life of 10 to 15 years, still provide a sense of separation for cyclists and are passable for emergency service and operations vehicles. Examples of cost effective but robust construction considered to be an interim approach are attached as **Appendix D – Examples of Interim Bike Lane Construction**.

Options for Bike Lane Removal and/or Changes

Option	Description	Timeline & Costs	What Is Achieved
A	**Return the Pre-COVID Traffic Flow & Construct Interim Bike Lane on West Side of Park** - Remove the temporary bike lane on the east side of Stanley Park, and upgrade the bike lane on west side only for the summer of 2023	Summer 2023 TOTAL COST ~$550k for upgrades to semi-permanent bike lane*(Includes $50k for design fees)*	Two-lane vehicle traffic on east side of Park to reduce congestion impacts; allows potential for future incremental upgrades to permanent bike lane

			over multiple capital plan phases on west side
B	**Return the Pre-COVID Traffic Flow & Construct Interim Bike Lane Around the Entire Park** - Replace temporary segments of the bike lane as a more semi-permanent bike lane that would be in place for 2023	Summer 2023 TOTAL COST ~$550k for upgrades to semi-permanent bike lane *(includes $50k for design fees)*	Interim (semi-permanent) bike lane in place for summer of 2023 & allows potential for future incremental upgrades to permanent bike lane
C	**Return the Pre-COVID Traffic Flow & Condition on Park Drive with Added Safety Measures -** Remove most of the temporary bike lane on Park Drive, with some sections remaining as detailed in report for safety and accessibility, with potential for a future permanent bike lane to be delivered when funding is available in future capital plans.	Late Spring 2023 TOTAL COST ~$330k for removal *(includes $30k for design fees)*	Returns most of Park Drive to two-lane vehicle traffic with some exceptions for safety & accessibility; defers a future permanent bike lane to longer term plan as it would need to be installed in two major phases.

For a detailed breakdown of the costs shown above, refer to **Appendix E – Breakdown of Costs**. While the table above describes the differences between each option, it should be noted that *all* options listed above include the following changes and/or improvements:

1. **Removal/Replacement of Traffic Cones** – Each option removes the “temporary” nature of the current bike lane by removing or replacing traffic cones and delineators with concrete mountable curbs
2. **Improvements to Coach Bus Parking & Maneuvering** – All options include the provision for additional coach bus parking at Prospect Point (for a total of three coach bus parking bays).
3. **Exit to West End Neighbourhood** - All options allow vehicle traffic to exit at Beach Avenue onto Park Lane as the fourth exit from the Park, in addition to the North Lagoon – Georgia Street exit, roundabout to Georgia Street exit, and the northbound Causeway exit
4. **Brockton Point By-Pass** – A bike lane on Park Drive for this segment to allow cyclists to by-pass the Brockton Point parking lot, reducing overall congestion for pedestrians and motorists in this area
5. **Lumberman’s Arch By-Pass** – To enable those with mobility needs who use hand-cycles, as well as families using trailers, and visitors on tandem bikes, to by-pass the check gates allowing them to use the seawall on the east side of the Park

Further details on each option and the differences between them are described below.

OPTION A - Return to Pre-COVID Traffic Flow & Construct Interim Bike Lane on West Side of Park

Traffic flow challenges of a separated bike lane occur largely on the east side of the park where the Horse and Carriage operator travels and where major park destinations such as the Aquarium are located. Therefore, removal of the temporary bike lanes on the east side of the Park will enable two vehicular lanes on Stanley Park Drive in this section.

This eastern section of Park Drive is also consistently aligned with the seawall path, where the existing temporary bike lane reaches all the same destinations. However, Park Drive on the west side of the park does not have a safe and separated cycling option to enable users to reach destinations like the Lions Gate Bridge, Prospect Point, the Hollow Tree, Third Beach and the Teahouse. Both the uphill climb and the downhill descent present safety challenges for cyclists of all ages and abilities cycling in mixed traffic, particularly where driver speeds are also higher.

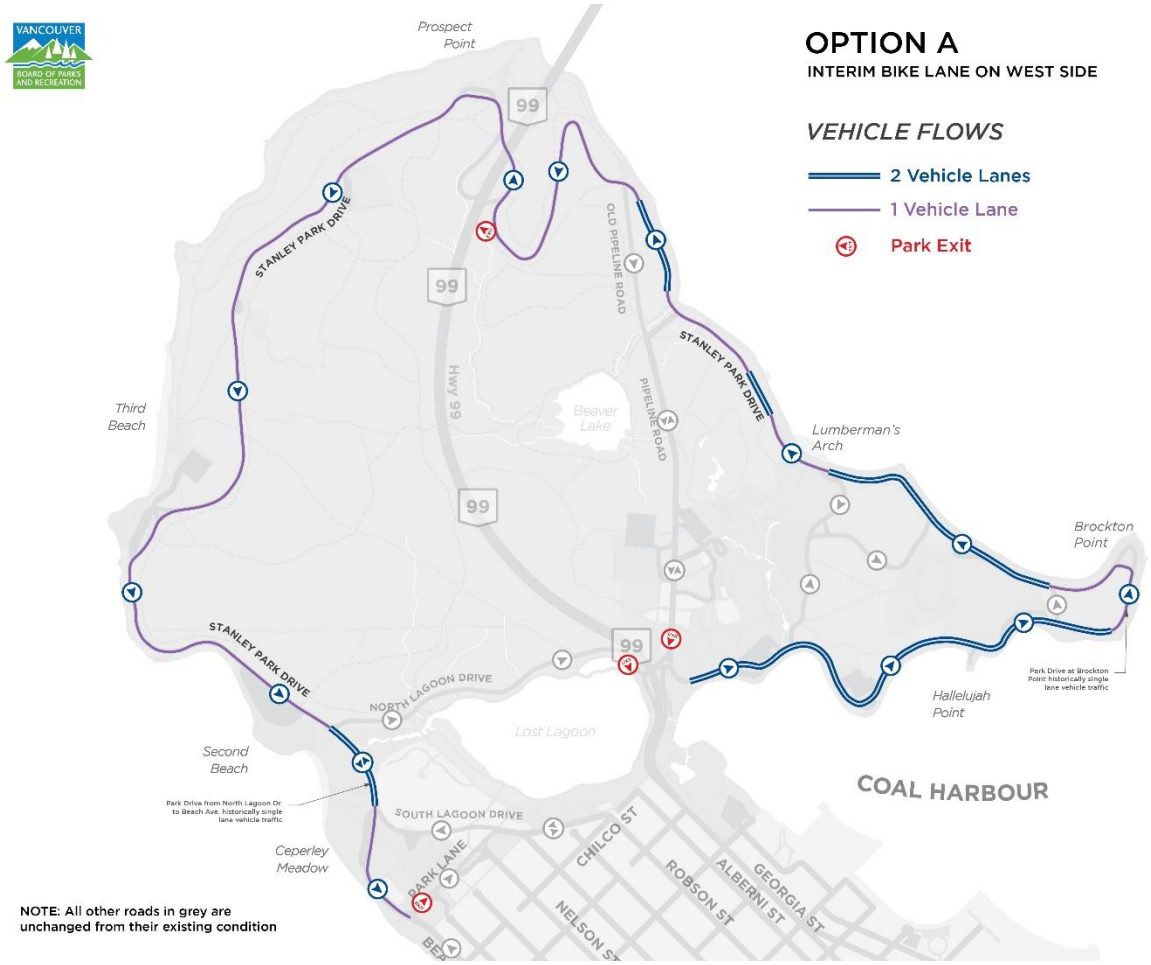
The west side is not used by the Horse and Carriage operator, and therefore there is less concern for traffic queuing. Furthermore, the seawall on the west side of the park is narrower than any other section of the seawall path and is most exposed to King Tides and other weather events. This section of roadway is one of the least feasible locations to expand the road with to add a parallel bike path to give the proximity of adjacent cliffs and trees. Option A maintains and upgrades this section.

The existing bike lane would become semi-permanent just east of Lumberman's Arch in this option. This gives cyclists a choice of either continuing along the seawall or switching to Stanley Park Drive just before the splash park, benefiting those using adaptive cycles, trailers, and tandems, and other cyclists who are less physically able to dismount to continue cycling, while reducing bicycle traffic and speed in this area of the seawall. West of this area, the roadway has substantial sections of two lanes of vehicle traffic plus the temporary bike lane. This is a location where on-street parking spaces were removed as these were historically the least used parking spaces in the park.

At Pipeline Road, there is an opportunity for motor vehicle traffic to exit the park toward Georgia Street, reducing vehicular traffic volumes in the western portion of the park, and the Horse and Carriage also exits Park Drive at Pipeline Road. As a result, this option includes a single motor vehicle lane between destinations on the west side of the park, with separate turn lanes at destinations where needed to maintain traffic flow and improve safety.

This option includes the same potential for upgrades to accommodate coach buses and provide additional motor vehicle egress to the West End as described above, but provides a potentially faster timeline for a permanent bike lane than Option C. An interim installation on the west side of the park that can be upgraded in shorter phases. There is also the potential to upgrade the eastern side of the park.

The total cost for this work would be approximately ~$550,000 to cover the costs of design and construction of removing cones, signage and line painting and reinstating some line painting on the east side of the park, while relocating concrete barrier and adding new concrete barrier on the west side of the Park. The resulting vehicle traffic flow in Stanley Park for Option A is shown in the map below outlining where two vehicle lanes would be provided.

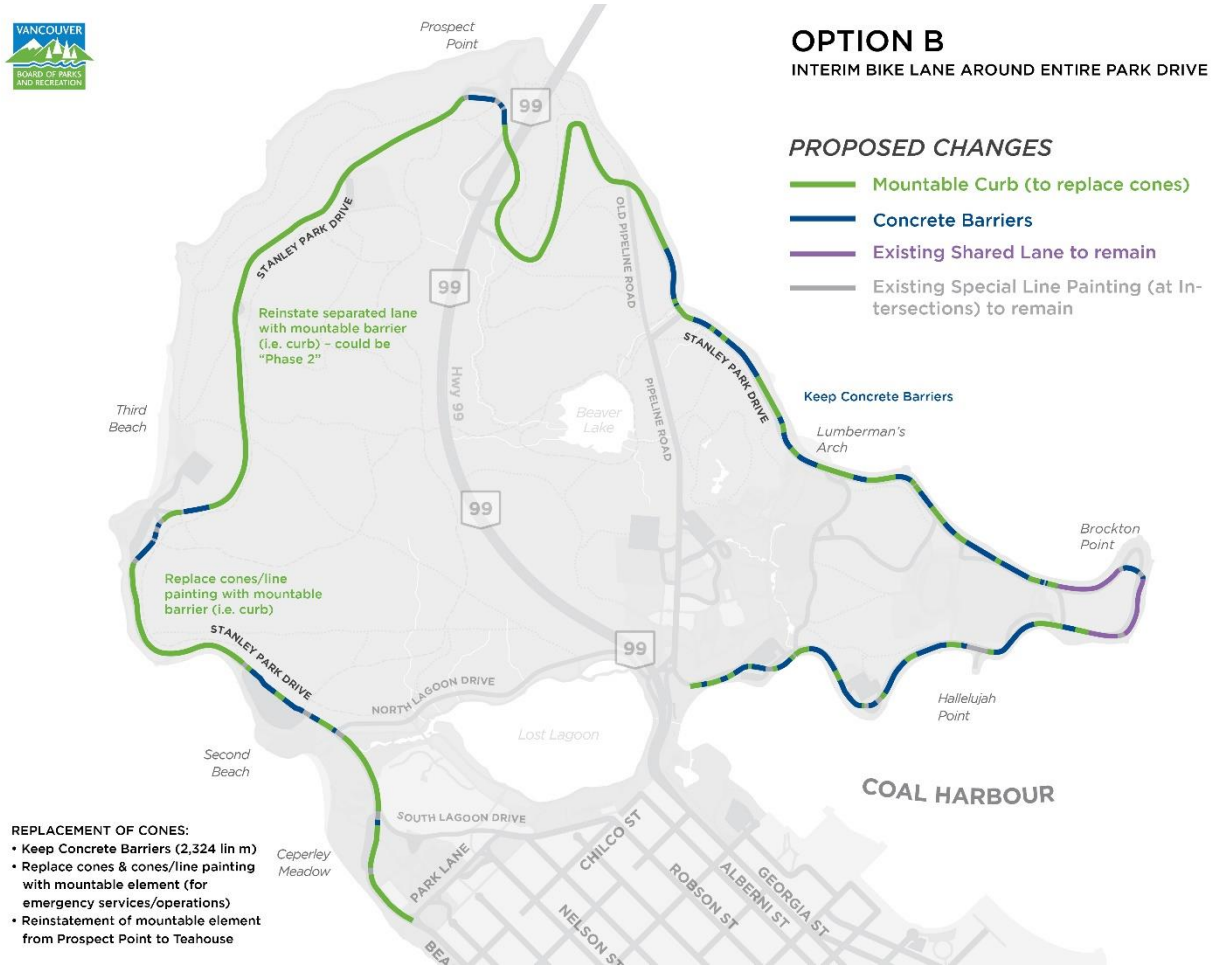


OPTION B – Return to Pre-COVID Traffic Flow & Construct Interim Bike Lane Around the Entire Park

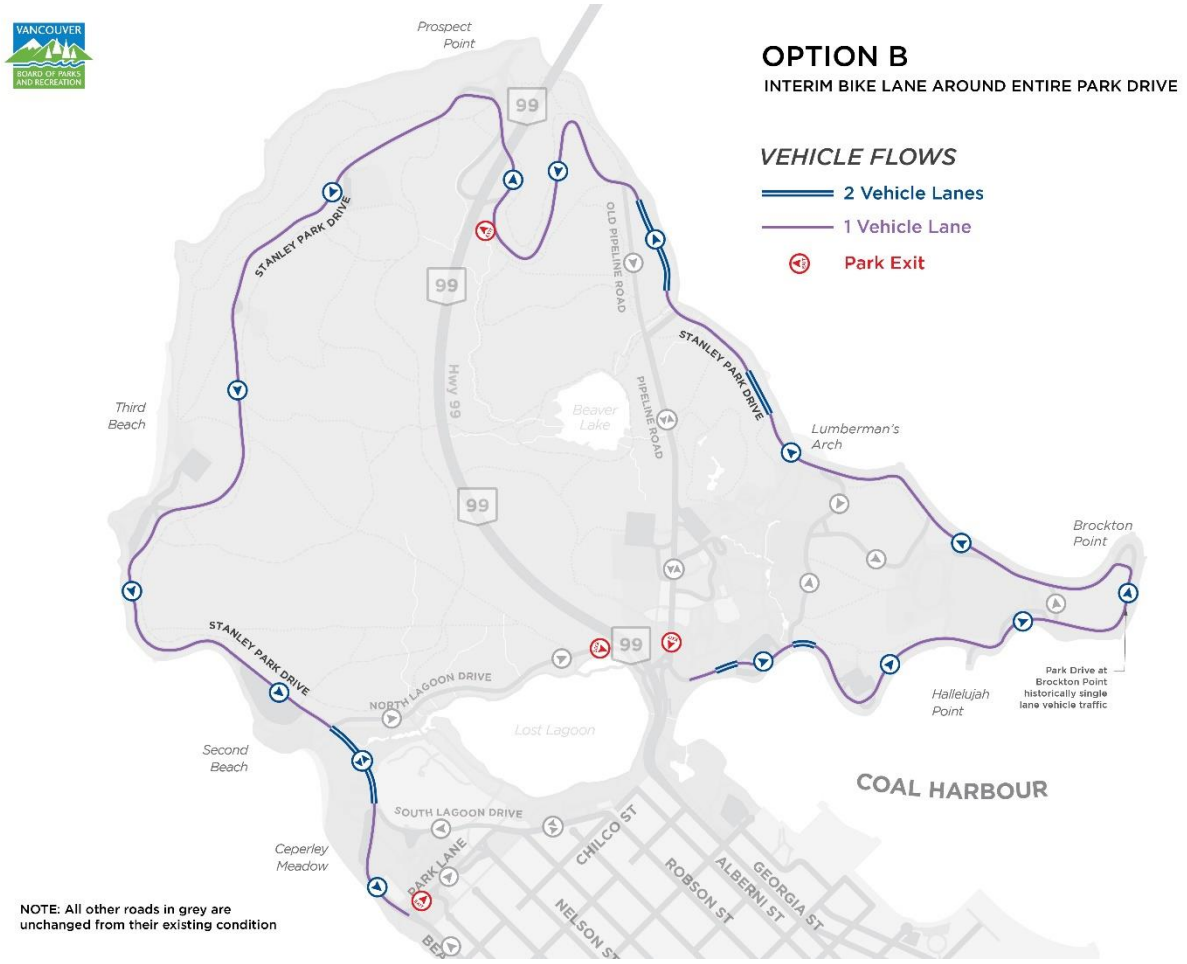
The existing temporary bike lane has segments that are separated with concrete barriers, which have a 10-year life span and provide a semi-permanent treatment compared to other more temporary materials like traffic delineators. Traffic delineators and cones were used in many areas to provide openings in the concrete barrier segments for emergency and park operations vehicle access to both lanes, driveways and intersections.

Therefore, an alternative option is to replace those temporary segments of the existing bike lane which are high maintenance (traffic cones and delineators) and replace them with a mountable separation design that is more attractive and allows for emergency and operation vehicles access where needed. The result would be a semi-permanent bike lane that can be in place for the summer of 2023.

The total cost for this work would be approximately ~$550,000 to cover the removal of cones and line painting and replacing them with mountable curbs for access by emergency services and operations, along with design and traffic management.



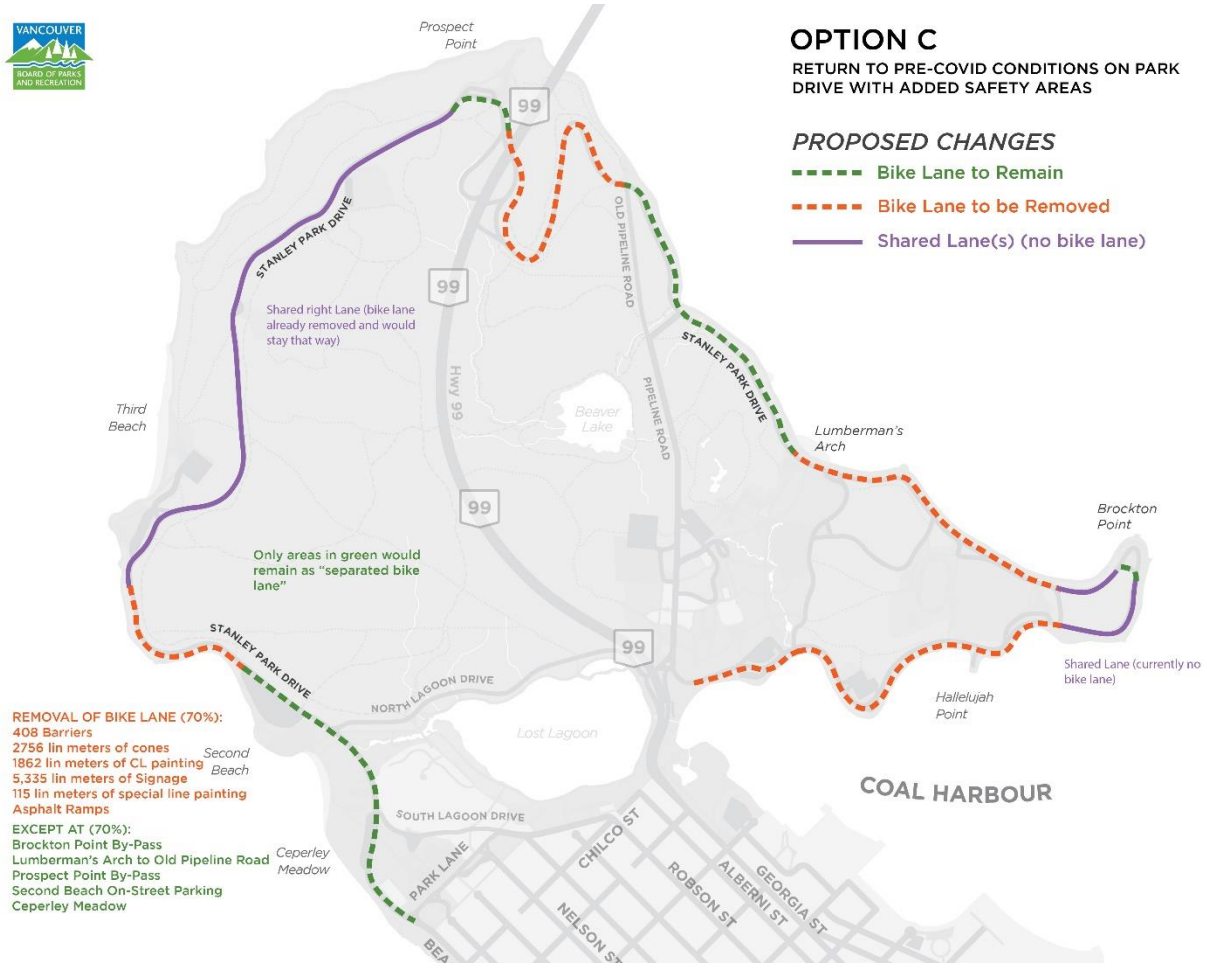
The resulting vehicle traffic flow in Stanley Park for Option B is shown in the map below outlining where two vehicle lanes would be provided.



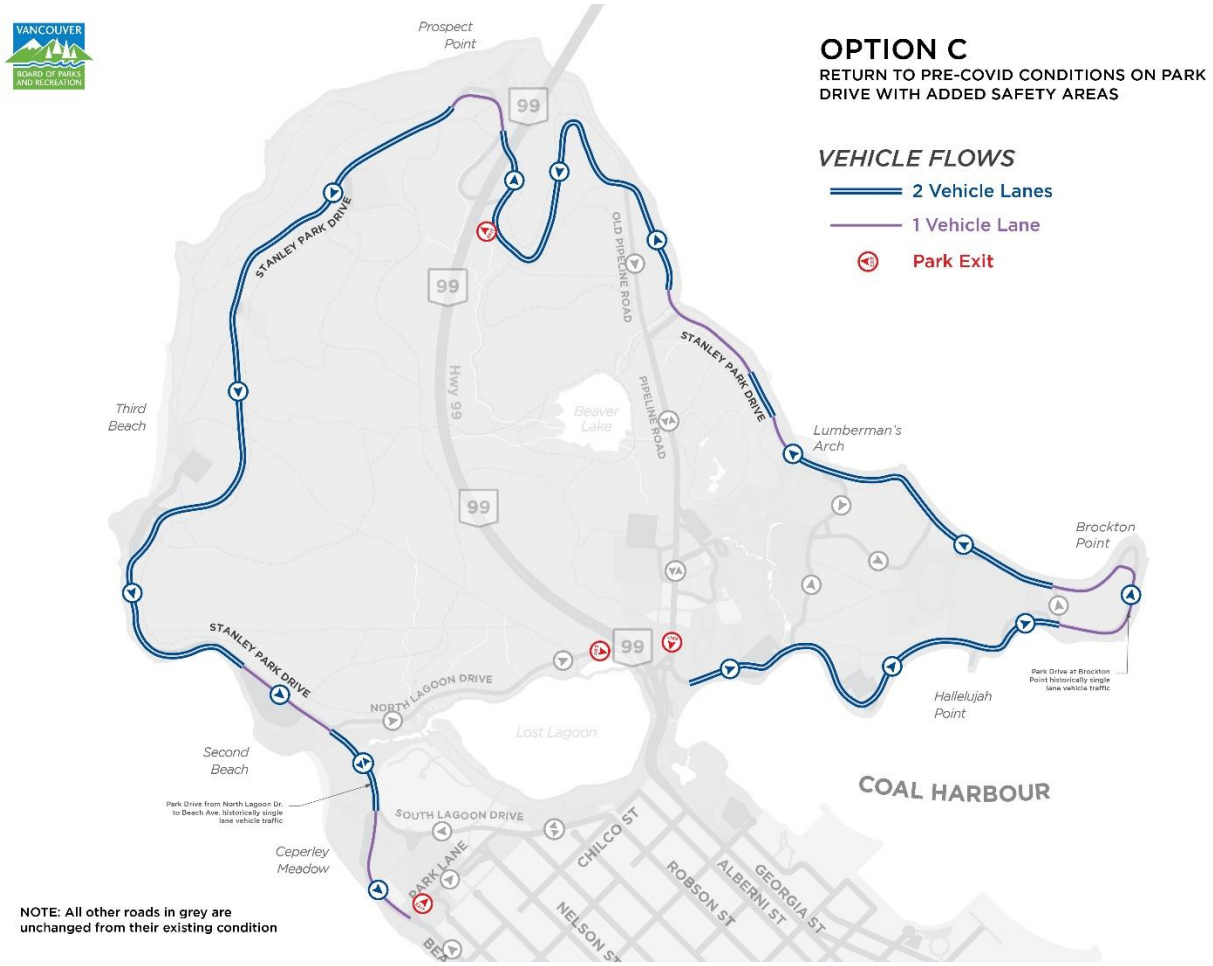
OPTION C – Return to Pre-COVID Traffic Flow & Condition on Park Drive with Added Safety Measures

In response to the Board motions on December 5, 2022 and January 16, 2023, this option removes most of the bike lane with exceptions in a few key areas that staff recommend should be maintained/upgraded as described below for reasons of safety and access. The map below shows the following segments of the current temporary bike lane that are recommended to be maintained as part of Option C which are described further in **Appendix F – Option C - Exception Areas.**

1. Brockton Point
2. Lumberman's Arch to Old Pipeline Road
3. Prospect Point Café Parking Lot with upgrades for Coach Bus Parking
4. Second Beach On-Street Parking Area
5. Ceperley Meadow Area (upgraded design to enable exit and align with Beach Avenue)



With these areas excluded from the full bike lane removal, the approximated costs for Option C is approximately $330,000. This is less than the $375,000 to $425,000 range estimated for full removal of the bike lane as per the memo on December 15, 2021 due to cost savings from leaving materials in place for 30% of the length of Park Drive. The resulting vehicle traffic flow in Stanley Park for Option C is shown in the map below outlining where two vehicle lanes would be provided.



Stanley Park Exit at Park Lane

As noted above, all three options enable outbound vehicle traffic from the west side of the Park to enter the west end neighbourhood via Park Drive to Park Lane. As the Ceperley Meadow area links with the road network west of Denman Street (outside of the park), the City's Engineering staff would aim to coordinate changes to the street network with the Board's goals and decision on how to proceed from this report. There is a long history of Engineering and Park Board working together on this linked network, including between 2017 and 2019 when, at the Park Board's request, Engineering Services funded and operated traffic control personnel on summer weekends at the Beach Avenue & Davie Street crosswalk to control people walking to help reduce vehicle queueing. Even during these peak periods with traffic control, Beach Avenue represented a relatively small (estimated at less than one third) proportion of total exiting traffic from the Park at around 300 vehicles per peak hour.

Engineering staff intend to monitor summer traffic conditions in the West End area to determine how 2023 differs from previous years in response to changes within the Park as a result of any of the three options. Staff will review the results of this monitoring over the summer season to determine what changes to make to the street network to balance park and neighbourhood needs. It should be noted that this area will also be reviewed in the future with the Stanley Park transportation planning studies and the West End Waterfront Masterplan.

Considerations for Opening Exit at Park Lane

Prior to the installation of the temporary bike lane, queues of exiting motor vehicle traffic were typical in Stanley Park, particularly on sunny summer weekend afternoons. Based on previous studies and observations, some vehicles not destined for Stanley Park have used Stanley Park Drive as a bypass route to Georgia Street by exiting off the Lions Gate Bridge and travelling through Stanley Park and into the west end. Without an exit from Stanley Park into the west end neighborhood, this traffic was likely reduced. The Ceperley Meadow exit is proposed to be reopened in all options and this means that traffic will now be able to pass through to the west end which could result in a potential increase in overall traffic in the Park as Lions Gate Bridge travelers start to take advantage of this bypass route once again.

Traffic exiting North Lagoon Drive onto Georgia Street has long been a problem and has been referenced in past Stanley Park transportation studies and reports. Similar strategies for exiting traffic, such as positioning traffic management police at the intersection of Stanley Park and North Lagoon drives, had been proposed as early as 1989. Based on the above, it is expected that queuing and delays in Stanley Park will continue during peak summer seasons for motorists exiting the Park, including after these changes.

FINANCIAL / OTHER CONSIDERATIONS

The range of capital costs for the above options is between $330k - $550k. The current funding source for the design and construction of the temporary bike lane is not sufficient to cover the costs associated with the options proposed for removal and/or update. Staff will need to reallocate funds from within existing capital expenditure budgets in order to bridge the shortfall. This would have a direct impact on the future planned infrastructure and renewal projects within Park Board. The funding adjustment will be pending Council approval. Staff are also analyzing potential maintenance needs and operating cost impacts.

NEXT STEPSPending Board decision on this report, staff will immediately work with stakeholders, user groups, and event organizers and engage an Engineer of Record to prepare construction drawings to advance the Board’s preferred and recommended option and will provide the Board with updates on the progress in the project including the project capital costs, schedule, and funding details including operating costs.

CONCLUSION

There are many factors to consider when planning for the potential return of pre-Covid 19 Pandemic traffic flow and/or changes to the temporary bike lane on Park Drive in Stanley Park. Staff look forward to moving forward with the Board’s preferred Option as soon as possible in order to realize improvements before the summer of 2023.

General Manager's Office
Vancouver Board of Parks and Recreation
Vancouver, BC

Prepared by: Emily Dunlop, Planner III, Park Planning, Policy & Environment

/em/tm/jk

APPENDIX A

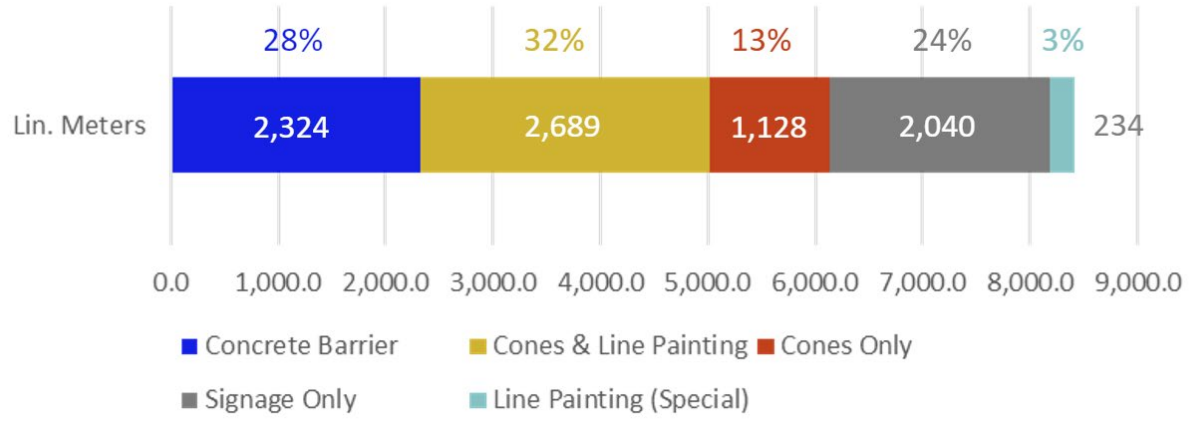
Existing Temporary Bike Lane Configuration – Map and Details

Existing Temporary Bike Lane Configuration

The current temporary bike lane consists of five different types of separation design conditions dispersed intermittently along Stanley Park Drive:

Condition	Total Length	% of Total Length
Concrete Barrier	2,324 m	28%
Traffic Delineators and Line Painting	2,689 m	32%
Traffic Cones Only	1,128 m	13%
Signage Only (Shared Lane with Vehicles)	2,040 m	24%
Special Line Painting (at intersections)	234 m	3%
TOTAL	**8,415 m**	**100%**

The graphic below shows the breakdown of these conditions and % of the total length of Park Drive along with images of these conditions.



APPENDIX A

Existing Temporary Bike Lane Configuration – Map and Details

Delineators & Line Painting (double white line)

Signage Only (Shared Lane)

Cones Only

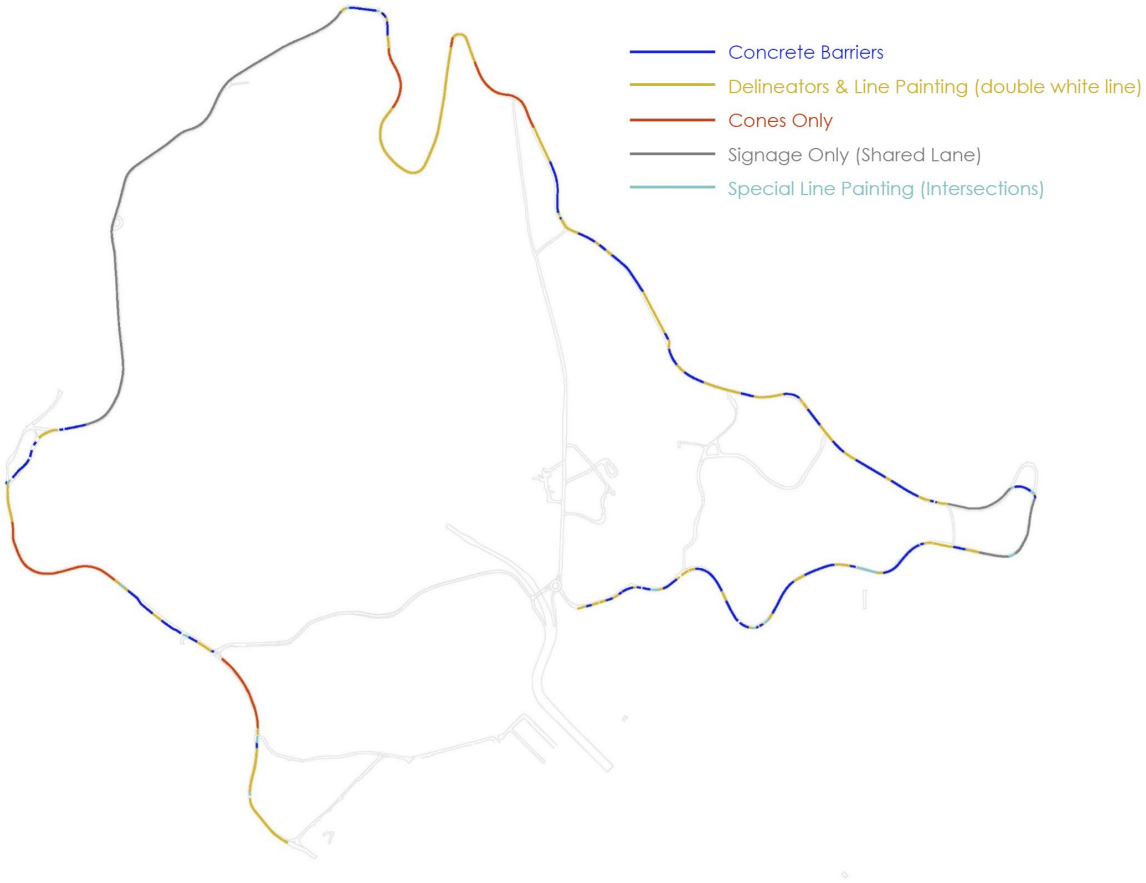
Special Line Painting (Intersections)

Concrete Barriers

APPENDIX A

Existing Temporary Bike Lane Configuration – Map and Details

The following map shows where these conditions currently exist around Stanley Park Drive.



APPENDIX B

Stanley Park Bike Lane – Public & Stakeholder Engagement

Stakeholder Engagement

The following groups and organizations participated in engagement opportunities between 2020 to present on all changes to vehicle and cycling modes on Park Drive in Stanley Park.

Name	Group	Type
AAA Horse & Carriage (Works Yard and Info Booth)	Park Stakeholders	Attraction/Tourism
BC Ferries Connector (Wilson's Group of Companies)	Park Stakeholders	Infrastructure
BC Mainland Cricket League	Park Stakeholders	Recreation
Brand LIVE Management Group	Park Stakeholders	Attraction/Tourism
Cactus Club Restaurants Ltd.	Park Stakeholders	Hospitality/Food
Capilano Group - Brockton Pavilion	Park Stakeholders	Hospitality/Food
Capilano Group of Companies (Prospect Point & SP Pavillion)	Park Stakeholders	Hospitality/Food
Artist in Residency (A-Frame)	Park Stakeholders	MST
Destination Vancouver	Park Stakeholders	Attraction/Tourism
DND - Real Property Custodian (Chilliwack)	Stanley Park Operations	Government Authority
DND HMCS Discovery (Deadman's Island)	Stanley Park Operations	Government Authority
EasyPark	Stanley Park Operations	Infrastructure
FIeldhouse Caretaker (Brockton)	Park Stakeholders	Infrastructure
Fieldhouse Caretakers (Prospect)	Park Stakeholders	Infrastructure
Legends of the Moon	Park Stakeholders	Attraction/Tourism
Lumbermen's Arch Concessions	Park Stakeholders	Hospitality/Food
Metro Vancouver	Stanley Park Operations	Infrastructure
Ministry of Transportation and Infrastructure	Park Stakeholders	Government Authority
MOBI Bike Share	Stanley Park Operations	Infrastructure
MODO	Stanley Park Operations	Infrastructure
PB / COV Operations - BSW Workers - Contractor Passes	Stanley Park Operations	PB or COV Operations
Pooh Corner Daycare	Park Stakeholders	Env/Edu
Railway Cafe Concession (near SP Bus Loop)	Park Stakeholders	Hospitality/Food
Royal Vancouver Yacht Club	Park Stakeholders	Recreation
Sequioa Group (Teahouse)	Park Stakeholders	Hospitality/Food
Stanley Park Brewery	Park Stakeholders	Hospitality/Food
Stanley Park Ecology Society (SPES)	Park Stakeholders	Env/Edu
Stanley Park Lawn Bowling Club	Park Stakeholders	Recreation
Stanley Park Police Mounted Squad	Stanley Park Operations	Government Authority
Stanley Park Tennis	Park Stakeholders	Recreation
Stanley Park Tennis Club	Park Stakeholders	Recreation
Sylvia Hotel	Park Stakeholders	Hospitality/Food
Theatre Under the Stars (Malkin Bowl)	Park Stakeholders	Attraction/Tourism
Third and Second Beach Concession	Park Stakeholders	Hospitality/Food
Translink (Stanley Park 19 Bus)	Stanley Park Operations	Infrastructure
Vancouver Aquarium	Park Stakeholders	Attraction/Tourism
Vancouver Fire and Rescue Services	Stanley Park Operations	Government Authority
Vancouver Rowing Club	Park Stakeholders	Recreation
Vancouver Rugby Union	Park Stakeholders	Recreation

APPENDIX B

Stanley Park Bike Lane – Public & Stakeholder Engagement

Public Feedback

During the initial COVID-19 pandemic response in 2020 when a temporary bike lane was implemented on Stanley Park Drive, a public survey (self-selecting and hosted on Park Board's digital engagement platform) was open for four weeks in August of that year and garnered a total of 10,859 responses. A detailed report was published on March 4, 2021 and of relevance to this report, results showed that:

- When asked if respondents agreed or disagreed with statements about future changes in Stanley Park (page 54), 70% of respondents (7,601) agreed with the statement "I would like to see some sections of road space dedicated to cyclists in the future with more planning, public engagement, and a more permanent, safe and attractive separation design", 24% of respondents (2,606) disagreed and 6% of respondents were neutral (651).
- In the same survey, respondents were asked if they used the bike lane on Park Drive in the summer of 2020, and if so, what they thought of it. Of the 5667 of respondents who used the bike lane in 2020: 33% (1,840) said "it was pretty good", 26% (1,473) said "It was great", but about 22% (1,246) of respondents said that they "found the temporary set up confusing and/or challenging" with a majority citing concerns with the appearance of the traffic cones

A second survey was conducted in September of 2021 and received 1,223 responses. As noted in the survey report, 735 respondents said they cycled the bike lane. When asked what was challenging about their experience, the top response at 41% (299 responses) was "the bike lane on Park Drive was too congested with cyclists of varying abilities in one lane". When asked about what aspects of their experience were positive, the top choice at 55% (404 responses) was "I felt safer with the concrete barriers in place".

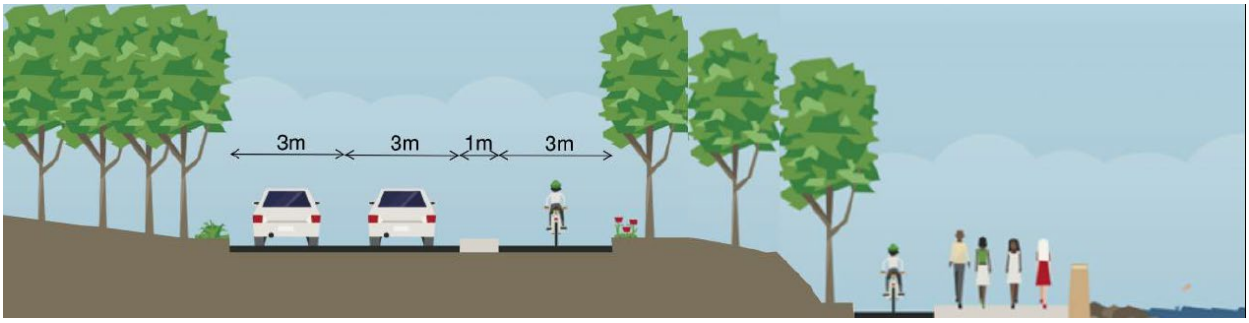
APPENDIX C

Future Permanent Bike Lane – Initial Feasibility Assessment

Future Permanent Bike Lane – Initial Feasibility Review

Construction of a permanent, separated bike lane on Park Drive would require an extensive and comprehensive process complete with public, rights-holders and stakeholder engagement, design, substantial construction, archeological permitting and site supervision, traffic control and project management. A project of this scope would not be implementable within this capital plan or the next few capital plans without significant impacts to Park Board's Capital and Operating budgets.

Further to this, timeline and costs increase significantly if the bike lane is constructed outside of existing road space due to the additional work required on archeological permitting, excavation, utility relocation, tree removal, material hauling, and structural reinforcement. Parsons Engineering has prepared a high-level analysis to review the initial feasibility of designing and constructing a permanent bike lane to be in place in addition to two lanes of vehicle traffic on Stanley Park Drive. The section graphic below shows the space requirements for two vehicle lane widths and a 3m wide separated single direction bike lane.



Based on the review, it was determined that of the changing conditions along the 8km stretch of Park Drive, only 1.7km (or 18%) of Park Drive has enough road width to integrate an approximately 3m wide separated bike lane (to accommodate passing safely) without the loss of additional green space. Refer to page 3 below for details and a map titled *Two Vehicle Lanes Plus One Cycle Lane Feasibility Review* regarding where these areas exist around the Park. For the remaining 7km (82%) of Park Drive, an additional paved area outside of the existing curb line on Park Drive would be required and involves the following key considerations:

- **Greenspace Loss/Tree Removal** - Approximately 7,500m of Park Drive would require widening of 1 to 5 meters into green space and treed areas and sloped sections.

- **Archeological Considerations –** All ground disturbance in Stanley Park requires archeological permitting, approvals and oversight from all three Nations. Some areas may require archeological impact assessments, and should sites of archeological potential be identified, then archeological permits and mitigation would be required to protect or remove those archeological materials. The archeological permitting process is extensive and can require more than a year of process.

- **Intergovernmental Relationship with MST Nations –** Under this Intergovernmental Commitment, all major capital projects in Stanley Park would require collaboration and consultation with Musqueam, Squamish and Tsleil-Waututh Nations. Widening Stanley Park Drive has not been referenced or discussed with the Nations in the context of this new relationship.

- **Stanley Park Mobility Study** – The Mobility Study is intended to look at different approaches for encouraging alternate modes of transportation in Stanley Park and determine the potential benefits and impacts on the environment, economy, park experience, and other considerations, in which a bike lane on Park Drive, is only one option. This study is slated to conclude this year and staff will be reporting back to the Board with an update on March 6, 2023 with more information on the scope and progress of this study.

- **Stanley Park Comprehensive Plan** – The Comprehensive Plan is a 100-year vision and strategic plan for the management of Stanley Park, which may recommend guiding principles for how Stanley Park is managed including considerations and concerns for additional paved spaces in Stanley Park.

Based on the estimated timeline and costs to complete a project of this scale, a permanent bike lane would not be achievable until future capital plan phases assuming funding is approved for this project. In the context of Option C, there will no longer be a bike lane on the majority of Park Drive, therefore, with respect to safety, transportation standards and operational needs, implementing a new bike lane would have to be built either all at once, or in two phases: East Side and West Side. Each of these phases could cost anywhere from $20 million to $50 million each, as a preliminary estimate based on per linear meter costs from the Costing of Bicycle Infrastructure and Programs in Canada Guide (2019), and therefore, would be a major capital investment.

APPENDIX C

Legend

Sections that will require road widening to incorporate the proposed cross section (existing road width < 10m). Total length: 7,060m approx.

Sections where there is enough space to incorporate the proposed cross section (existing road width ≥ 10m). Total length: 1,670m approx.

Road Widening Impacts

- Environmental impacts: Trees and vegetation will need to be removed which will especially affect wildlife habitats in the Park.

- Archaeological impacts: Excavations outside the existing roadway boundaries may potentially affect First Nations' interests.

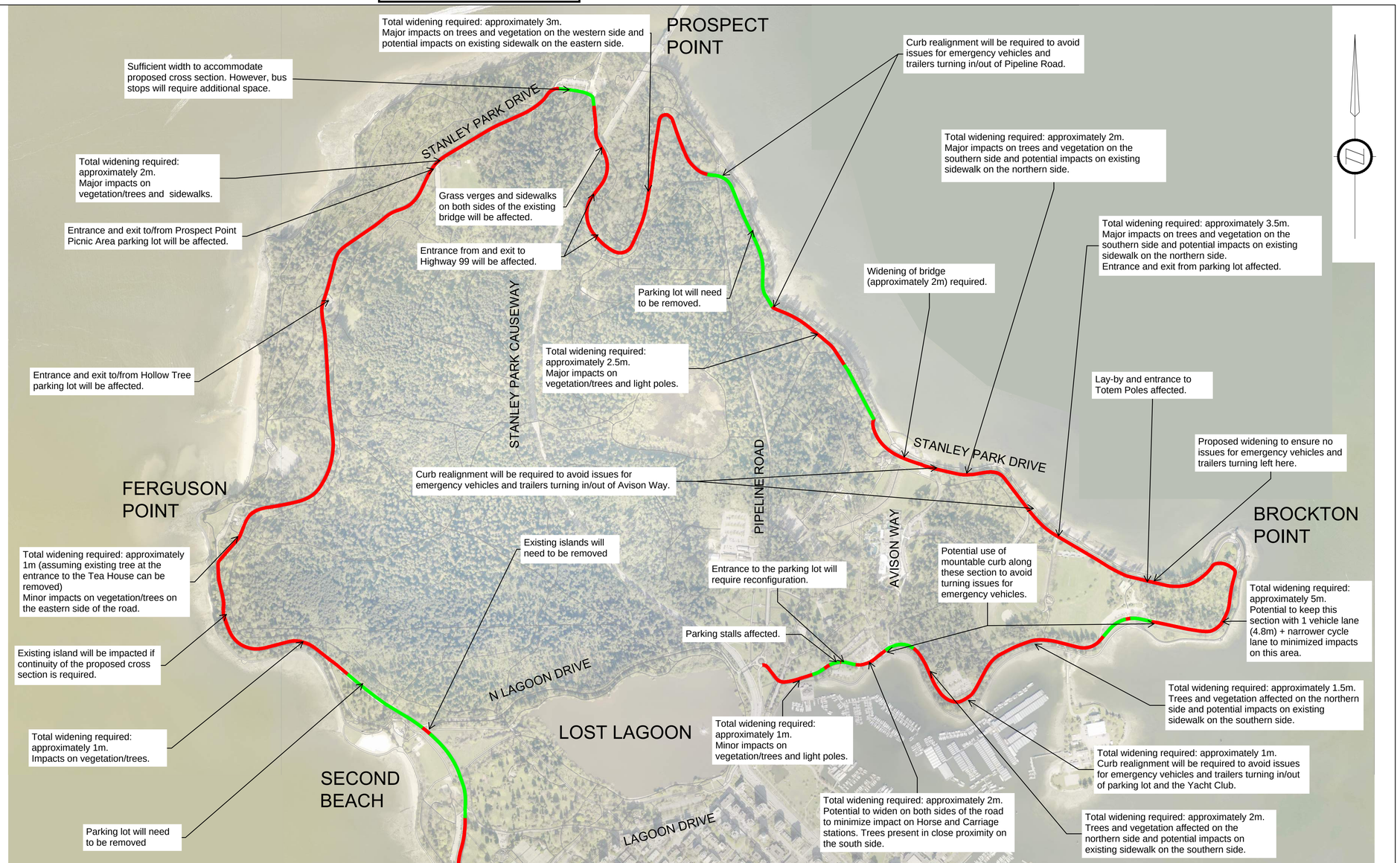
- Impacts on existing parking areas: the availability for parking alongside Park Drive will be significantly reduced.

- Road closures during construction will have a significant impact on accessibility to the park users, negatively impacting businesses within the Park.

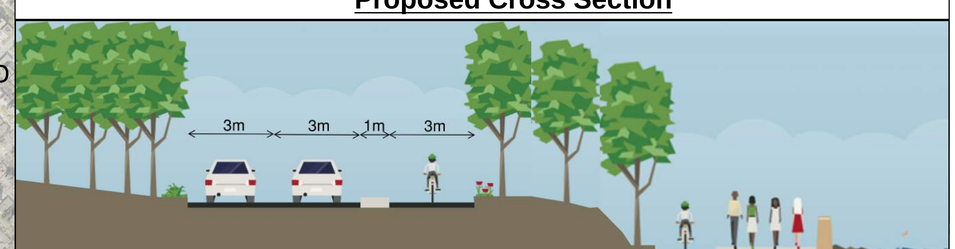
- Traffic impacts: It is expected that traffic disruptions during construction will affect West Georgia Street, Stanley Park Causeway (Highway 99), Beach Avenue, North Lagoon Drive, Park Lane, Lagoon Drive and streets within the West End area.

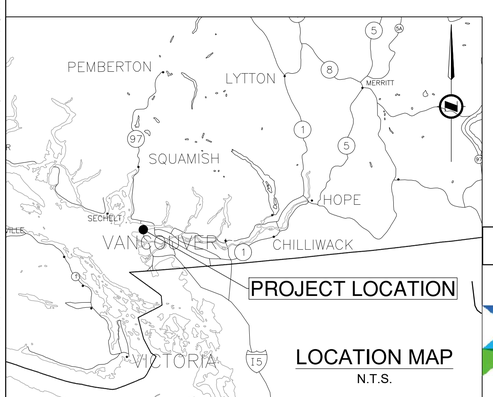
- Location of utilities may be affected by the proposed works (further assessment required to quantify these impacts).

- Possible negative public opinion.



Proposed Cross Section





LOCATION MAP
N.T.S.

PRELIMINARY - FOR DISCUSSION ONLY

PARSONS

SCALE 1:6500

REV	DATE	REVISIONS	SIGNATURE
-	2023-01-31	FIRST DRAFT	P. WRIGHT

CITY OF VANCOUVER

P. WRIGHT, P.ENG.
SENIOR DESIGNER
DATE 2023-01-31

DESIGNED	A.F. BLANCO	DATE	2023-01-31
QUALITY CONTROL	P. WRIGHT	DATE	2023-01-31
QUALITY ASSURANCE		DATE	-
DRAWN	C. WANNOP	DATE	2023-01-31

HIGH LEVEL PARK WIDE STUDY
STANLEY PARK DRIVE - 2 LANES + CYCLE LANE
VANCOUVER BOARD OF PARKS AND RECREATION

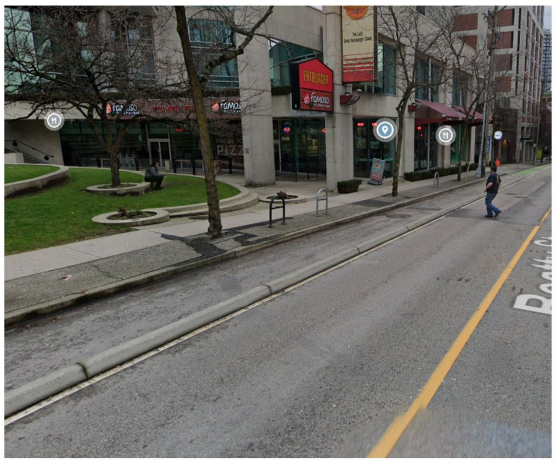
FILE NUMBER	PROJECT NUMBER	SPR	DRAWING NUMBER	REV
-	20210444		PLAN-01	-

Jan 31, 2023 – 2:54pm Q:\PROJECTS\Infrastructure\477898 Vancouver – Stanley Park Bike Lanes\Dwgs\Feasibility Study – 2 vehicle lanes + bike lane\230130_PLAN – STANLEY PARK EAST – CW.dwg

APPENDIX D

Stanley Park Bike Lane – Examples of Interim Bike Lane Construction

Extruded curb at about 6"
by just under a foot wide



Beatty Street
Installed 2016

Extruded curb at about 6"
by just over a foot wide

Beach Avenue
Installed 2020

Cast-In-Place at about 3”,
just over 1’ wide

10th Avenue Bike Lane
Installed 2019

Concrete Low Barrier

Quebec Street
Installed 2013

APPENDIX E

Stanley Park Bike Lane – Breakdown of Costs

Option A - Return the Pre-COVID-19 Traffic Flow on the East Side of the Park & Construct an Interim Bike Lane on the West Side of the Park

Remove the temporary bike lane on the east side of Stanley Park, and upgrade the bike lane on the west side of the park to a semi-permanent bike lane for summer of 2023

OPTION A - SUMMARY OF WORK	lin. m.	Each	cost	total cost
Concrete Barriers to be Removed & Relocated		393	$ 145.00	$ 56,985.00
CL painting to be removed & reinstated	2,325		$ 12.00	$ 27,900.00
Cones to be removed	3218.8			$ 10,000.00
Signage to be removed	lump sum			$ 30,000.00
Special Line Painting to be removed	127		$ 321.00	$ 40,767.00
New Concrete barriers for west side		598	$250.00	$ 149,550.00
Repainting of traffic lines				$ 30,000.00
Project Management, Traffic control, traffic management				$ 55,000.00
Removal of curb and gutters, drainage pipes, asphalt ramps and asphalt path				$ 50,000.00
Contingency (10%)				$ 45,020.20
Engineering Design Fees				$ 50,000.00
TOTAL COST				**$ 545,222.20**

Option B - Return the Pre-COVID Traffic Flow & Construct an Interim Bike Lane Around the Entire Park

Replace several temporary segments of the bike lane with a semi-permanent bike lane that would be in place for summer of 2023

OPTION B - SUMMARY OF WORK	lin. m.	cost	total cost
Concrete Barriers to be Removed	0	$ 145.00	$ -
CL painting to be removed & reinstated	0	$ 12.00	$ -
Cones to be removed	3218.8		$ 10,000.00
Signage to be removed	lump sum		$ -
Special Line Painting to be removed	0	$ 321.00	$ -
Install mountable curb	3816	$ 100.00	$ 381,600.00
Repainting of traffic lines			$ -
Project Management, Traffic control, traffic management			$ 65,000.00
Removal of curb and gutters, drainage pipes, asphalt ramps and asphalt path			$ -
Contingency (10%)			$ 45,660.00
Engineering Design Fees			$ 50,000.00
TOTAL COST			**$ 552,260.00**

APPENDIX E

Stanley Park Bike Lane – Breakdown of Costs

Option C - Return the Pre-COVID-19 Traffic Flow & Conditions on Park Drive with Added Safety Measures

Remove much of the temporary bike lane on Park Drive in May of 2023, with some sections remaining for safety as detailed in the report.

OPTION C - SUMMARY OF WORK	lin. m.	units	cost	total cost
Concrete Barriers to be Removed	1,224	408	$145	$ 59,208.33
CL painting to be removed & reinstated	1,862		$12	$ 22,344.00
Cones to be removed	2,756			$ 10,000.00
Signage to be removed	lump sum			$ 25,000.00
Special Line Painting to be removed	115		$300	$ 34,500.00
Repainting of traffic lines				$ 30,000.00
Project Management, Traffic control, traffic management				$ 55,000.00
Removal of curb and gutters, drainage pipes, asphalt ramps and asphalt path				$ 40,000.00
Contingency (10%)				$ 27,605.23
Engineering Design Fees				$ 30,000.00
TOTAL COST				**$ 333,657.57**

NOTE: *The above costs for all options are preliminary estimates to give a sense of the scope of work and costs. Final cost estimate will to be confirmed through official procurement process for construction, pending Board decision.*

APPENDIX F

Stanley Park Bike Lane – Option C Exception Areas

As per the Board motion on January 16, 2023, the following areas are recommended to be maintained in Option C as exceptions to full bike lane removal, to maintain safety and accessibility.

Brockton Point

The existing seawall around Brockton Point narrows to approximately 1.0m, and has historically been reported as a frequent conflict zone with pedestrians existing from vehicles and crossing the bike lane to the look-out areas. The current existing bike lane has performed as a bypass route, connecting to the seawall at the entrance and exit to the Brockton Point parking lot. This section of road is wider and the bike lane does not take up an existing vehicle lane in this location. Therefore staff recommend that this 75 linear meter section of separated bike lane remain in order to support the safety of all users at Brockton Point, until it can be replaced with a wide path around the parking lot through a permanent redesign.

Lumberman's Arch to Old Pipeline Road

The section of existing seawall south and north of the Lumberman's Arch spray park area requires that cyclists dismount to reduce conflicts with pedestrians and many children at the splash park and pathway intersection under the overpass up to the Vancouver Aquarium. This metal dismount gate is not accessible for those with mobility needs who use hand-cycles or assisted devices, and can be problematic for tandems, children's trailers, and other cycle users. Maintaining a by-pass using the temporary bike lane on Park Drive alongside the dismount area will allow those users and cyclists to avoid dismounting, and will further reduce congestion and potential for conflicts in the splash park plaza area.

APPENDIX F

Stanley Park Bike Lane – Option C Exception Areas

Connecting down to the seawall on the north side is a challenge for riders as the existing path that connects Park Drive down to the seawall is a steep downward grade in this location. Park Drive opens to two lanes of vehicle traffic plus has an additional (width) of existing road space for paved parking at this same location. Staff recommend that the bike lane by-pass continues north to Old Pipeline Road where there is a safer, less steep pathway connection from Park Drive back down to the seawall. Through this section of Park Drive, it would begin as one lane of vehicle traffic for 230 m, then as two lanes of vehicle traffic for 295 m, then down to one lane for 344m, then back up to two lanes for 236 m as depicted on the diagram below.

Prospect Point

The existing temporary bike lane on Park Drive just south of the Prospect Point Cafe enables a by-pass for cyclists similar to what was there before 2020 however, it is now protected with concrete barriers and improved line painting. Improved signs facilitate safer crossings of vehicles into the parking lot. Given this is a high traffic area for all modes, it is recommended that the protected bike lane is maintained, while staff continue to explore ways to expand the tour bus loading zones to accommodate more tour bus parking/loading. Presently there is space for one full length bus and one medium sized length bus.

Second Beach On-Street Parking Area

The section of Park Drive next to the 45-degree angled parking at Second Beach has long been a safety concern, with vehicles backing up onto Park Drive into the travel path of road cyclists travelling southbound on Park Drive. The existing separated bike lane with concrete barriers allows for a separation for cyclists in front of the angled parking to avoid these conflicts. Staff recommend that this section of separated bike lane with concrete barriers remain in place to continue separate users in this high conflict area for safety reasons.

Ceperley Meadow Area

In order to facilitate an exit from Stanley Park Drive at Beach Avenue, two-way vehicle traffic will need to be reinstated between North Lagoon Drive and South Lagoon Drive. Therefore, the temporary bike lane will need to be removed off of Park Drive to enable two vehicle lanes of traffic. A connection is required to connect cyclists travelling counter-clockwise around the Stanley Park seawall at Second Beach to transition them onto the Beach Avenue connect to the bike lane.