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**TO:** CHIEF ADMINISTRATIVE OFFICER      **DATE:** 2022 July 20

**FROM:** ACTING GENERAL MANAGER      **FILE:** 94000 20  
ENGINEERING      *Reference: Lakefield Drive*

**SUBJECT: LAKEFIELD DRIVE ACTIVE TRANSPORTATION IMPROVEMENT PROJECT**

**PURPOSE:** To present options for the proposed Lakefield Drive Active Transportation Improvement Project, and to seek Council direction to proceed with detailed design.

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**RECOMMENDATION:**

1. **THAT** Council direct staff to proceed with Option 1 to detailed design in coordination with FortisBC,
- OR**
2. **THAT** Council direct staff to proceed with Option 2 to detailed design in coordination with FortisBC,
- OR**
3. **THAT** Council refer this project back to staff for further review to develop a less impactful option on the neighbourhood for a targeted Spring 2023 construction that provides better value for the community.

**REPORT****1.0 INTRODUCTION**

The City of Burnaby is implementing a series of active transportation improvements along Lakefield Drive and 4<sup>th</sup> Street between Nursery Street to the north and Wedgewood Street to the south. Given that FortisBC's Pattullo Gas Line Replacement project required construction along Lakefield Drive/4<sup>th</sup> Street, the City saw the opportunity to improve active transportation facilities for pedestrians and cyclists along the same project area. The proposed options include a combination of different cycling facility types that are best suited to the unique sections of this corridor, and will improve accessibility, and enhance opportunities for those who travel in this area to shift to healthy and sustainable modes of transportation such as walking, rolling, and cycling.

## 2.0 POLICY SECTION

This project is part of the Phase 1 Cycle Network and supports the vision, goals, and targets as described in *Connecting Burnaby*, Burnaby's Transportation Plan, including the implementation of cycling facilities for all ages and abilities (AAA) to facilitate sustainable mode-shifts and reductions in overall greenhouse gas emissions.

## 3.0 EXISTING CONDITIONS

Lakefield Drive/4<sup>th</sup> Street is classified as a Local Road north of Reigate Drive and a Minor Collector Road south of Reigate Drive, respectively. The approximate length of the subject section is 1.7 km, the curb to curb pavement width is 8.5m, and while some sections are near level, others are of grades in excess of 13%. City street lights are located on the north / northeast side of the road. The *average daily traffic volumes* are approximately 2,300 – 2,400 vehicles per day (2019) between Nursery Street and Edmonds Street.

There is an existing sidewalk along the south side of Lakefield Drive/4<sup>th</sup> Street between Nursery Street and Edmonds Street; however, it does not meet the City's current design criteria to provide sidewalks on both sides on all city roads and for 1.8m width with a boulevard. Potential constraints along Lakefield Drive include steep grades up to 14% and sharp horizontal curves that limit sightlines between Reigate Road and Elwell Street.

## 4.0 DESIGN CONSIDERATIONS

Lakefield Drive/4<sup>th</sup> Street is identified on the Priority Cycling Network Map in Burnaby's Transportation Plan (adopted in December 2021). The City strives to develop a cycling network suitable for All Ages and Abilities (AAA).

Based on the expected traffic volumes, the BC Active Transportation Design Guide, and the City's Phase 1 Cycle Network, a shared on-road facility, north of Reigate Road, is appropriate for an AAA cycling facility as this segment is considered a Local Road. However, physical separation is required for an AAA cycling facility south of Reigate Road due to the expected higher traffic volumes.

FortisBC is in the process of constructing a new gas line along Lakefield Drive/4<sup>th</sup> Street, which along with a community amenity contribution, provides the City with a good opportunity to construct an active transportation facility. Due to the FortisBC construction, a section of Lakefield Drive is currently closed to through traffic.

## 5.0 PUBLIC INPUT

Public engagement took place between May 24 and June 14, 2022 comprising of an online survey and popup events. The purpose of the engagement was to inform the community of the proposed design (Option 1) for the Lakefield Drive/4<sup>th</sup> Street corridor and solicit feedback on areas where there were opportunities for new public spaces.

While the majority of participants expressed support for active transportation improvements along this corridor, they were also unsupportive of the proposed road closures in the Central Segment. Community members expressed concerns regarding access, safety, and connectivity in case of emergencies. The majority of participants were supportive of a design that accommodates and balances all road users, including cyclists and pedestrians.

## 6.0 DESIGN OPTIONS

Targeting an AAA active transportation facility design, the project team considered several alternatives during the planning process. Due to the challenging and steep terrain, soil conditions, sight lines, and environmental impacts, two principal options were developed that could be accommodated within the technical considerations and constraints. Both options impact on-street parking and vehicular through-traffic.

The project includes three distinct segments, as shown in **Attachment 1**:

- **North Segment** is located north of the BC Hydro right-of-way;
- **Central Segment** is located between the BC Hydro right-of-way to the north and the laneway north of Elwell Street; and
- **South Segment** is located between the lane north of Elwell Street and Wedgewood Street.

### 6.1 Option 1

This option involves closing the Central Segment to general vehicle traffic with two cul-de-sac closures on Lakefield Drive/ 4<sup>th</sup> Street between Reigate Road and north of Elwell Street, while maintaining emergency vehicle access. This option would also provide opportunities for public realm space.

For Option 1, the cycling facility types for each segment of the project include:

- **North Segment:** Neighbourhood bikeway where cyclists share the road with motor vehicles. This configuration is suitable based on expected traffic volumes due to the cul-de-sac closures in the Central Segment. Parking will be restricted on the east side of the street.
- **Central Segment:** Street closure to general vehicle traffic with the on-street vehicular travel lanes reallocated to be used as on-street bi-directional bike path along with a new sidewalk along the east side of the street. There will be no parking on the street due to the full street closures. This segment would still be accessible for emergency vehicles.
- **South Segment:** Off-street separated sidewalk and bi-directional bike path on the east side of the street. There will be no impacts to existing parking regulations. Residents would still be able to park on the west side of the street.

The street closure for the Central Segment was considered because of significant grades (grades in excess of 13% in some areas), which could present safety challenges for pedestrians and cyclists. Due to these steep grades, an off-street pathway for both pedestrians and cyclists is not feasible as there would not be adequate space to safely separate high speed downhill cyclists from uphill cyclists and pedestrians and other users. Based on national design standards, additional width is required to accommodate cycling design speeds based on these steep grades, which resulted in a technical design decision to close the Central segment to vehicle traffic and provide a sufficiently wide cycling facility along the roadway with separated sidewalks. This design approach provides a safe facility for pedestrians and cyclists travelling along this segment, implementing an AAA cycling facility consistent with the goals of *Connecting Burnaby*.

While the closure of the Central Segment to vehicles supports the Phase 1 Burnaby Cycle Network, it is also recognized that *Connecting Burnaby* identifies the Segment as a Minor Collector road. The closure of this segment would still maintain internal access within each of the north and south neighbourhoods consistent with this direction, although it would restrict access between these neighbourhoods.

The Transportation Association of Canada's *Neighbourhood Traffic Calming Guide* provides guidance on applicability of full closures for traffic calming approaches, noting that they are typically considered on local streets, or on streets with any traffic volumes "provided alternative routes exist with sufficient capacity to accommodate diverted traffic". The Guide further suggests this can be considered on "residential streets with 20% or more cut-through traffic". Based on the number of single family residences in the Study area, the 2019 historic traffic data indicates that the expected traffic volumes in this corridor are above the 20% threshold for cut-through traffic.

A concept plan of Option 1 is provided in the **Attachment 2**.

## 6.2 Option 2

Option 2 provides an AAA cycling facility while maintaining vehicular access, but compared to Option 1, the removal of additional on-street parking (approximately 48 spaces) between Reigate Drive and Wedgewood Street would be required. Sidewalks would be restricted to the existing facility except for the South Segment, and there would not be any opportunities for public realm space.

Option 2 was developed in response to concerns from the community regarding street closures in the Central Segment. For Option 2, the cycling facility types for each segment of the project include:

- **North Segment:** Neighbourhood bikeway where cyclists share the road with motor vehicles. This treatment is suitable based on expected traffic volumes (similar to Option 1). Similar to Option 1, parking will be restricted on the east side of the

street. However, there will be additional parking removal on the west side of the street between Reigate Rd and the BC Hydro right-of-way.

- **Central Segment:** There will be a partial restriction of vehicular traffic at the intersection of Lakefield Drive/Reigate Road such that only southbound movement for vehicles from Lakefield Road north approach would be allowed. Northbound vehicles coming from south of Reigate Road would need to be diverted to turn left westbound onto Reigate Road. The existing traffic circle will be removed. Uni-directional protected bicycle lanes would be provided on each side of the street. A new sidewalk would not be provided on the east side of the street, and pedestrian facilities would be limited to the existing sidewalk on the west side of the street. Similar to Option 1, on-street parking removal on both sides of the street would be required due to the limited road width.
- **South Segment:** Uni-directional protected bicycle lanes would be provided on each side of the street. A new sidewalk would be provided on the east side of the street (similar to Option 1). Additional on-street parking removal on the west side of the street would be required.

A concept plan of Option 2 is provided in **Attachment 3**.

**7.0 BUDGETARY NOTES**

The Lakefield Drive AAA cycling/pedestrian facility was initially developed as an off-street shared multi-use pathway. Since that time, staff have developed two substantially different options as described above. However, due to cost escalation, and the terms of the Agreement with Fortis for project cost sharing, staff at this point does not consider that completing this project at the updated cost of just over \$6 million by FortisBC represents a good value for the City. Renegotiating the Agreement is necessary, irrespective of the option selected.

**8.0 OPTIONS EVALUATION**

The two options have been compared based on users' safety, neighbourhood access and parking impacts, compliance with Council approved plans, opportunities for public spaces and impact on trees. Both options include a number of compromises as shown in the Evaluation Table in **Attachment 4**.

Neither option has emerged as a clearly superior solution. Both options are comparable in that they do provide an AAA facility consistent with City's adopted *Connecting Burnaby*, Burnaby's Transportation Plan.

To: Chief Administrative Officer  
From: Acting General Manager Engineering  
Re: Lakefield Drive Active Transportation Improvement Project  
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## 9.0 RECOMMENDATION

Staff recommends that Council direct staff:

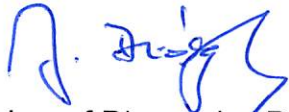
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OR

2. to proceed with Option 2 to detailed design in coordination with FortisBC,

OR

3. to develop a less impactful option on the neighbourhood for a targeted Spring 2023 construction that provides better value for the community.



Jozsef Dioszeghy, P.Eng.  
ACTING GENERAL MANAGER ENGINEERING

ALC/sla  
**Attachments (4)**

Copied to: General Manager Planning and Development  
General Manager Community Safety  
General Manager Parks, Recreation and Cultural Services  
City Clerk

ATTACHMENT 1 – Study Area and Project Segments



# ATTACHMENT 2 – Option 1 Concept Plan





# ATTACHMENT 3 – Option 2 Concept Plan



## ATTACHMENT 4 – Option Evaluation Table

Better	Neutral	Worse
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	Option 1	Option 2
Policy Alignment	Aligns with Phase 1 Cycling Network but the closure limits the mobility functions of the corridor based on the Minor Collector road classification in <i>Connecting Burnaby</i> .	Aligns with the Phase 1 Cycling Network and the Minor Collector road classification in <i>Connecting Burnaby</i> .
Cycling Safety	Cyclists are separated from motor vehicles and pedestrians for the full corridor. The cycling facility is wide enough to address safety concerns due to high-speed downhill cyclists.	Cyclists are separated from motor vehicles and pedestrians for the full corridor. The cycling facility is not as wide as Option 1 and may present some safety challenges for high speed cyclists with the horizontal and vertical curves.
Pedestrian Safety	Sidewalks provided on both sides of the street.	Sidewalk is limited to existing facility on one side of the street except for the South Segment.
Neighbourhood Access and Circulation	Restricts vehicle access in the Central Segment.	Maintains vehicle access with some modifications.
On-street Parking	<i>North Segment:</i> On-street parking is restricted on the east side.	<i>North Segment:</i> On-street parking is restricted on the east side.
	<i>Central Segment:</i> No on-street parking.	<i>Central Segment:</i> No on-street parking.
	<i>Central/South Segment:</i> No additional parking impact.	<i>Central/South Segment:</i> Additional on-street parking removal on the west side between Reigate Drive and Wedgewood Street.
Public Space	4 additional public realm space opportunities.	No additional public realm space opportunities.
Trees	No impacts to trees.	No impacts to trees.