



City of Richmond

Report to Committee

To: Public Works and Transportation Committee **Date:** September 18, 2024


From: Lloyd Bie, P. Eng **File:** 10-6050-01/2024-Vol 01
 Director, Transportation


Milton Chan, P. Eng
 Director, Engineering



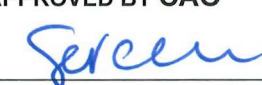
Re: **Arterial Roadway Improvement Program (2021), Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021), and Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2022) – Project Update**

Staff Recommendations

1. That Option 1 be approved as presented in the staff report titled “Arterial Roadway Improvement Program (2021), Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021), and Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2022) – Project Update” dated September 18, 2024, from the Director, Engineering and Director, Transportation; and
2. That the budget increase of \$3,750,000 funded by Roads Development Cost Charges (DCC) and Capital Reserve (Revolving Fund), as described in Table 4 of the attached report “Arterial Roadway Improvement Program (2021), Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021), and Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2022) – Project Update” dated September 18, 2024, from the Director, Engineering and Director, Transportation, be included in the Consolidated 5 Year Financial Plan (2025-2029).


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REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Finance	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS:	APPROVED BY CAO
		

Staff Report

Origin

The following capital projects and associated scopes were previously approved by Council as part of the 2021 and 2022 Capital Budgets:

- Arterial Roadway Improvement Program (2021), including intersection improvement projects at Granville Avenue & Cooney Road, St. Edwards Drive & Cambie Road, and Westminster Highway & Garden City Road.
- Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021) including intersection improvement projects at Cambie Road & No. 4 Road and Westminster Highway & No. 2 Road.
- Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2022) including intersection improvement projects at Westminster Highway & No. 5 Road and Alderbridge Way & No. 4 Road.

At the General Purposes Committee meeting on July 2, 2024, staff presented the report titled, Capital Project Delivery Performance. Following the project management approach outlined in the report, these three capital projects are at a state where the designs have advanced, and costing has been received based on updated estimates and on actual procurement showing higher costs. Any open and future procurement for the projects identified above has been paused to eliminate the risks of these projects going over budget.

This report provides a project update and, as a result of price escalation, provides options for Council's consideration to adjust scope and budgets as required to deliver these projects.

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

Strategic and sustainable growth that supports long-term community needs and a well-planned and prosperous city.

2.4 Enhance Richmond's robust transportation network by balancing commercial, public, private and active transportation needs.

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

Community safety and preparedness through effective planning, strategic partnerships and proactive programs.

3.2 Leverage strategic partnerships and community-based approaches for comprehensive safety services.

3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.

This report supports Council’s Strategic Plan 2022-2026 Focus Area #4 Responsible Financial Management and Governance:

Responsible financial management and efficient use of public resources to meet the needs of the community.

4.3 Foster community trust through open, transparent and accountable budgeting practices and processes.

4.4 Work with all levels of governments for grant and funding opportunities.

Analysis

Project Background and Funding Updates

Three Council-approved transportation-related projects, Arterial Roadway Improvement Program (2021), Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021), and Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2022) include the upgrade of seven intersections which will improve road safety for all users.

These three projects have new or updated information available, including studies, reviewed and optimized project scopes, updated cost estimates, and market construction pricing. There have been significant cost increases due to factors such as uncertainties within the construction market, supply chain restrictions, and high levels of inflation. Staff have determined that these projects require Council approval for additional budget or changes to the project scope to proceed.

The scope and status of these three projects are shown in Table 1 below.

Table 1: Project Scope and Status

Project	Intersection	Scope	Status
Arterial Roadway Improvement Program (2021)	Granville Avenue & Cooney Road	<ul style="list-style-type: none"> Removal of a channelized right-turn island and traffic signal modifications 	<ul style="list-style-type: none"> Detailed design underway
	St. Edwards Drive & Cambie Road	<ul style="list-style-type: none"> Removal of channelized right-turn island and traffic signal modifications 	<ul style="list-style-type: none"> Detailed design completed Construction procurement in progress. Construction pricing exceeds budget. Award of contract on hold.
	Westminster Highway & Garden City Road	<ul style="list-style-type: none"> Construction of an asphalt walkway and pedestrian landing area and traffic signal modifications 	<ul style="list-style-type: none"> Detailed design completed Construction procurement in progress. Construction pricing exceeds budget. Award of contract on hold.

Table 1: Project Scope and Status

Project	Intersection	Scope	Status
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2021)	Cambie Road & No. 4 Road	<ul style="list-style-type: none"> Addition of dedicated left-turn lanes on all four legs of the intersection. This is #13 of the City’s most collision-prone intersections. 	<ul style="list-style-type: none"> Detailed design underway Updated cost estimates exceed approved budget
	Westminster Highway & No. 2 Road	<ul style="list-style-type: none"> This is #3 of the City’s most collision-prone intersections. Removal of one channelized right-turn island, introduction of an additional westbound left-turn bay and traffic signal modifications. Project scope includes re-purposing the westbound merge lane between No. 2 Road and Lynas Lane using no-post concrete barriers to create protected bi-directional bicycle facilities. This work may be eligible for additional external funding. 	<ul style="list-style-type: none"> Detailed design underway Updated cost estimates exceed approved budget
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2022)	Westminster Highway & No. 5 Road	<ul style="list-style-type: none"> Removal of a channelized right-turn island, removal of two right-turn merge lanes and pedestrian and cycling infrastructure improvements. This is #5 of the City’s most collision-prone intersections. 	<ul style="list-style-type: none"> Construction contract awarded
	Alderbridge Way & No. 4 Road	<ul style="list-style-type: none"> Removal of two channelized right-turn islands, traffic signal modifications and introduction of an additional westbound left turn bay. This is #4 of the City’s most collision-prone intersections. 	<ul style="list-style-type: none"> Detailed design to be completed Insufficient funds to proceed with construction

Options for Proceeding

Options for addressing the identified budget variances are presented below.

Option 1 – Increase Project Budgets with Minor Scope Modification (Recommended)

Option 1 includes:

- Increasing the project budgets for the Arterial Roadway Program (2021) and Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021) by a total of \$3.75M, as outlined in Table 2.
- Funding the budget increase from the Roads Development Cost Charges (DCC) and Capital Reserve (Revolving Fund).

- Reducing the project scope by removing construction of the Alderbridge Way and No. 4 Road intersection from the Budget for the Top 20 Collision Prone Intersections Implementation of Medium/Long-term Improvements (2022) project. Upgrade of this intersection will be included in a capital submission for Council’s consideration in a future budget process once design is further advanced and a detailed cost estimate is available.
- Pursuing external funding opportunities with TransLink and the Province of BC which could reduce required City funding for the projects.

Table 2: Option 1 - Proposed Budget Increase to Capital Projects

Project	Approved Budget	Estimated Cost	Proposed Budget Increase
Arterial Roadway Improvement Program (2021)	\$1,000,000	\$2,500,000	\$1,500,000
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2021)	\$3,000,000	\$5,250,000	\$2,250,000
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2022)	\$3,000,000*	\$2,475,000	N/A

*The approved budget includes an estimate for the external grant in the amount of \$525,000 associated with No. 4 Road and Alderbridge Road intersection which may be lost. If this intersection is removed from the project scope, the available funding for this project is reduced to \$2,475,000. Any excess funding will be returned to the originating funding sources upon project closure.

Option 2 – Reduce the Project Scope to Fit Within Approved Budgets

Option 2 would reduce the project scope to only include intersections that can be completed within the approved funding, taking into consideration the available budget, updated estimates, project status and priority. In this Option, the scope of the projects would be amended to include the intersections outlined in Table 3 only, with the remainder deferred to future years. Any excess funding will be returned to the originating funding sources.

Table 3: Option 2 - Revised Scope and Project Costs

Project	Approved Budget	Proposed Revised Scope	Estimated Project Cost
Arterial Roadway Improvement Program (2021)	\$1,000,000	Westminster Highway & Garden City Road	\$1,000,000
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2021)	\$3,000,000*	Westminster Highway & No. 2 Road	\$2,300,000
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2022)	\$3,000,000**	Westminster Highway & No. 5 Road	\$2,475,000

*The approved budget includes an estimate for the external grant in the amount of \$475,000 associated with deferred project scope that may be lost. If the project scope is deferred, the available funding for this project is reduced to \$2,525,000. Any excess funding will be returned to the originating funding sources upon project closure.

**The approved budget includes an estimate for the external grant in the amount of \$525,000 associated with deferred project scope that may be lost. If the project scope is deferred, the available funding for this project is reduced to \$2,475,000. Any excess funding will be returned to the originating funding sources upon project closure.

The following intersections will be deferred and brought forward for Council’s consideration as part of future budget processes:

- Granville Avenue & Cooney Road
- St. Edwards Drive & Cambie Road
- Cambie Road & No. 4 Road
- Alderbridge Way & No. 4 Road

External funding of \$1,305,000 that was secured for these deferred projects may be lost.

Option 3 – Cancel Projects

Option 3 is to cancel all project scope that has not yet been awarded or is complete. This option would only construct the awarded intersection at Westminster Highway & No. 5 Road and not construct the other six intersections. Staff will cancel unawarded projects and leave the intersections in their current conditions. Any approved capital funding, less expenditures that have been incurred, will be returned to its original funding sources. These intersections will be brought forward for Council’s consideration as part of future budget processes. External funding of \$1,955,000 that was secured for these projects may be lost.

Staff Recommendation

Staff recommend proceeding with Option 1. Upgrade of these intersections has been identified as high priority for improving road safety, particularly for vulnerable road users such as pedestrians and cyclists. Increasing project budgets as outlined in Option 1 will allow all projects except the Alderbridge Way and No. 4 Road intersection to be completed as planned. Detailed design of all projects is underway, with some intersections ready for construction. If Option 1 is supported, construction of these projects will begin within the next year and most projects will be completed by the end of 2025.

The existing budget has sufficient funding to complete the detailed design for the Alderbridge Way and No. 4 Road intersection. Once the design is further advanced and an updated cost estimate is available, a request for construction funding of this intersection will be brought forward for Council's consideration as part of a future budget process.

External grant funding has been secured for a number of these intersection upgrade projects. Proceeding through Option 1 will allow the City to best utilize secured grant funding and pursue opportunities for additional external funding based on the identified budget increases.

Financial Impact

Staff recommend Option 1, and that an increase to the capital projects' budgets, funded by Roads Development Cost Charges (DCC) and Capital Reserve (Revolving Fund) in the amounts as outlined in Table 4, be approved, and be included in the Consolidated 5 Year Financial Plan (2025-2029).

Temporary funding sources for \$3,750,000 from previously Council-approved projects (2023 Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements, 2024 Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements, 2022 Arterial Roadway Improvement Program, 2023 Arterial Roadway Improvement Program and 2024 Arterial Roadway Improvement Program) will be utilized for the capital projects until the budget increases can be included in the Consolidated 5 Year Financial Plan (2025-2029).

Table 4: Financial Impact – Increase to Capital Project Budget

Project	Roads DCC (94.05%)	Capital Reserve (Revolving Fund) (5.95%)	Total
Arterial Roadway Improvement Program (2021)	\$1,410,750	\$89,250	\$1,500,000
Top 20 Collision Prone Intersections- Implementation of Medium/Long-term Improvements (2021)	\$2,116,125	\$133,875	\$2,250,000
Total	\$3,526,875	\$223,125	\$3,750,000

Conclusion

The Arterial Roadway Improvement Program (2021), Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2021), and Top 20 Collision Prone Intersections - Implementation of Medium/Long-term Improvements (2022) projects are an integral part of the City’s ongoing efforts to improve intersection and road safety throughout Richmond. This infrastructure will enhance road safety for all users, reduce traffic congestion, and improve comfort and accessibility for pedestrians and cyclists.

Staff recommend Option 1, and that an increase to the capital projects' budgets, funded by Roads Development Cost Charges (DCC) and Capital Reserve (Revolving Fund) in the amounts as outlined in Table 4, be approved, and be included in the Consolidated 5 Year Financial Plan (2025-2029).



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