AGENDA

SPECIAL FINANCE AND AUDIT COMMITTEE MEETING

November 19, 2021, 9:00 AM - 3:00 PM
SHAW AUDITORIUM, VANCOUVER ISLAND CONFERENCE CENTRE
80 COMMERCIAL STREET, NANAIMO, BC

SCHEDULED RECESS 10:30-10:45
LUNCH RECESS 12:00 - 12:30

Pages

1. CALL THE MEETING TO ORDER:

   [Note: This meeting will be live streamed and video recorded for the public.]

2. INTRODUCTION OF LATE ITEMS:

3. ADOPTION OF AGENDA:

4. ADOPTION OF MINUTES:

5. PRESENTATIONS:

   a. 2022 - 2026 Draft Financial Plan Recap — 3 - 22

      To be introduced by Laura Mercer, Director, Finance.

6. REPORTS:

   a. Reconciliation Events 2022 — 23 - 26

      To be introduced by Dale Lindsay, General Manager, Development Services.

      Purpose: To provide Council with an update on Snuneymuxw-led reconciliation events for 2022. This includes National Day for Truth and Reconciliation and National Indigenous Peoples Day.

   b. Buttertubs Bridge Project — 27 - 30

      To be introduced by Bill Sims, General Manager, Engineering and Public Works.

      Purpose: To provide Council with an update on the Buttertubs Bridge project in support of 2022 budget deliberations.

c. **Albert and Fourth Complete Street Phase 2** 31 - 37

To be introduced by Bill Sims, General Manager, Engineering and Public Works.

Purpose: To provide Council with an update on Phase 2 of the Albert/Fourth Complete Street project, and seek Council direction on project related issues.

d. **Refuse Truck Optimization** 38 - 53

To be introduced by Bill Sims, General Manager, Engineering and Public Works.

Purpose: To present information and an overview to the Finance and Audit Committee of a strategy to optimize the refuse truck fleet in support of budget deliberations.

7. OTHER BUSINESS:

8. QUESTION PERIOD:

9. ADJOURNMENT:

CITY OF NANAIMO
THE HARBOUR CITY

2022 – 2026 Draft Financial Plan Recap

November 19 2021

November 10th Decisions

Decision Point #1. d

Add a Parkade Security Plan to 2022 funded from the Parking Reserve Fund.

Decision Point #1.e

Extend the Community Clean Team Pilot to December 31, 2022 funded from the Strategic Infrastructure Reserve

Decision Point #1.f

Add a Manager, VIERA effective February 1, 2022. Additional VIERA revenues will cover cost of changes and result in a 0.09% property tax decrease

Decision Point #3

Reduce 2022 Snow and Ice Control (SNIC) budgets back to 2021 levels.

Impact to Projected Property Tax Increases

	2022	2023	2024	2025	2026
General Asset Management Reserve	1.0%	1.0%	1.0%	1.0%	1.0%
General Property Tax Increase	3.1%	2.6%	2.2%	1.8%	1.1%
Total Municipal Taxes	**4.1%**	**3.6%**	**3.2%**	**2.8%**	**2.1%**

Summary of Changes

VIERA	-0.09%
SNIC	-0.08%
Total	**-0.17%**
Draft Property Tax Increase	4.3%
Net Changes	-0.2%
Revised Draft Property Tax Increase	**4.1%**

2022 – 2026 Draft Financial Plan

Impact on a Typical Home

	2021	2022	$ Change	% Change
Property Taxes	$2,294	$2,389	$95	4.1%
Municipal User Fees				
Water Fees	638	670	32	5.0%
Sewer Fees	146	152	6	4.0%
Sanitation Fees	189	201	12	6.3%
Total Municipal Taxes & User Fees	**$3,267**	**$3,412**	**$145**	**4.4%**

Based on $544,227 assessed value (average for Nanaimo per BC Assessment)

Rounded to nearest dollar
Assumes a typical single family house with average assessment change

2022 – 2026 Draft Financial Plan

Items for Council Discussion

1.a Manager, Financial Services & Special Projects

To provide additional resources for the Finance Department to effectively and efficiently meet current and future expectations and demands.

Option #1 Add Position

April 1st Implementation

Funding Source:

General Revenue ~ 0.11% in 2022

Motion

That the Finance and Audit Committee recommend that Council add a Manager, Financial Services & Special Projects position to the 2022 – 2026 Financial Plan effective April 1, 2022.

Option #2 Status Quo – *No Motion Required*

2022 – 2026 Draft Financial Plan

1.b Supervisor, Technical Support

To provide the IT Technical & Client Services section with additional capacity and oversight to support the City's increasing technology requirements.

Option #1 Add Position

April 1st Implementation

Funding Source:

General Revenue ~ 0.09% in 2022

Motion

That the Finance and Audit Committee recommend that Council add a Supervisor, Technical Support position to the 2022 – 2026 Financial Plan effective April 1, 2022.

Option #2 Status Quo – *No Motion Required*

2022 – 2026 Draft Financial Plan

1.c Police Services: Support Staff Resourcing Plan

To provide additional resources to adequately, and better support contracted RCMP members.

Four possible options for Council's consideration

Option #1 Ideal Scenario: 15 Positions Over 5 Years

April 1st Implementation

Funding Source:

General Revenue ~ 0.44% in 2022, ~0.37% in 2023, ~0.19% in 2024,~0.11% in 2025 and ~ 0.09% in 2026

Motion

That the Finance and Audit Committee recommend that Council add 15 Police Support positions over the next 5 years as outlined in the ideal staffing scenario to the 2022 – 2026 Financial Plan effective April 1, 2022.

2022 – 2026 Draft Financial Plan

1.c Police Services: Support Staff Resourcing Plan Continued

Option #2 Moderate Scenario: 11 Positions Over 4 Years

April 1st Implementation

Funding Source:

General Revenue ~ 0.32% in 2022, ~0.33% in 2023, ~0.12% in 2024, and ~0.09% in 2025

Motion

That the Finance and Audit Committee recommend that Council add 11 Police Support positions over the next 4 years as outlined in the moderate staffing scenario to the 2022 – 2026 Financial Plan effective April 1, 2022.

2022 – 2026 Draft Financial Plan

1.c Police Services: Support Staff Resourcing Plan Continued

Option #3 Minimal Scenario: 8 Positions Over 4 Years

April 1st Implementation

Funding Source:

General Revenue ~ 0.26% in 2022, ~0.13% in 2023, ~0.14% in 2024, and ~0.09% in 2025

Motion

That the Finance and Audit Committee recommend that Council add 8 Police Support positions over the next 4 years as outlined in the minimal staffing scenario to the 2022 – 2026 Financial Plan effective April 1, 2022.

Option #4 Status Quo for 2022 – *No Motion Required*

2022 – 2026 Draft Financial Plan

1.g RCMP - Additional Bike Patrol Units

Add 4 additional bike patrol members. These geographically targeted units would patrol the downtown area and work proactively in an outreach capacity with the Community Outreach Team.

Option #1 Add Additional Units

April 1st Implementation

Funding Source:

General Revenue ~ 0.43% in 2022

Motion

That the Finance and Audit Committee recommend that 4 additional RCMP Bike Patrol members to the 2022 – 2026 Financial Plan effective April 1, 2022.

Option #2 Status Quo – *No Motion Required*

4 RCMP Bike Patrol Members are in addition to 3 the RCMP Members being added April 1, 2022

2022 – 2026 Draft Financial Plan

1.h Aquatics Development Plan

To support adequate supervision of 90+ staff and provide the necessary resources to create and sustain an enhanced team-based workplace environment.

Three possible options for Council's consideration

Option #1 Full Implementation in 2022

Funding Source:

General Revenue ~ 0.26% in 2022

Motion

That the Finance and Audit Committee recommend that Council add the Aquatics Development Plan to the 2022 – 2026 Financial Plan effective January 2022.

2022 – 2026 Draft Financial Plan

1.h Aquatics Development Plan

Continued

Option #2 Phased Implementation of the Aquatics Development Plan

Funding Source:

General Revenue ~ 0.12% in 2022, ~0.06% in 2023, and ~0.07% in 2024

Motion

That the Finance and Audit Committee recommend that Council add the phased Aquatics Development Plan to the 2022 – 2026 Financial Plan effective January 2022.

Option #3 Alternative Options

Motion

That the Finance and Audit Committee recommend that Council direct staff to return to Council with a report on alternative options.

2022 – 2026 Draft Financial Plan

1.i Parks, Trails and Natural Areas – Lead Supervisor

To provide additional resources to proactively manage park assets in a planned and strategic fashion.

Option #1 Add Position

February 15th Implementation

Funding Source:

General Revenue ~ 0.17% in 2022

(includes one-time capital costs in 2022)

Motion

That the Finance and Audit Committee recommend that Council add a Parks, Trails and Natural Areas – Lead Supervisor position to the 2022 – 2026 Financial Plan effective February 15th , 2022.

Option #2 Status Quo – *No Motion Required*

2022 – 2026 Draft Financial Plan

1.j Parks Maintenance Worker – Playgrounds

To support enhanced playground maintenance, moving towards a more proactive maintenance model .

Option #1 Add Position

April 1st Implementation

Funding Source:

General Revenue ~ 0.16% in 2022

(includes one-time capital costs in 2022)

Motion

That the Finance and Audit Committee recommend that Council add a Parks Maintenance Worker – Playgrounds position to the 2022 – 2026 Financial Plan effective April 1st, 2022.

Option #2 Status Quo – *No Motion Required*

2022 – 2026 Draft Financial Plan

2 Climate Action Reserve

At the July Finance and Audit it was moved and seconded that Council consider during the 2022 – 2026 Financial Plan deliberations a new funding strategy based on an annual allocation of $165,000 to the new Climate Action Reserve Fund to support energy and emission reduction projects and initiatives.

Option #1 $165,000 annual contribution to reserve – *No Motion Required*

Option #2 Reduce Annual Contribution

Impact to Property Taxation ~ 0.05% reduction

Motion

That the Finance and Audit Committee recommend that Council amend the annual contribution to the Climate Action Reserve Fund to $100,000 in the 2022 – 2026 Financial Plan

2022 – 2026 Draft Financial Plan

4 Pavement Preservation

The 2022 – 2026 Draft Financial Plan includes a $50,000 increase for pavement preservation. The budget increase will allow department to explore alternative treatments with increased extension to the asset life and reduce the backlog of identified work.

Option #1 Maintain Draft Budget – *No Motion Required*

Option #2 Eliminate the $50,000 Increase for Pavement Preservation

Impact to Property Taxation ~ 0.04% reduction

Motion

That the Finance and Audit Committee recommend that Council decrease the pavement preservation budget by $50,000 annually in the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

5 Landscaping - Boxwood Detention Pond

The 2022 – 2026 Draft Financial Plan includes a $67,000 increase to contracted landscaping budgets for the newly completed Boxwood Detention Pond. The detention pond was completed in 2021, for the purpose of preventing localized flooding while returning the water to the earth. Annual maintenance is required to ensure the detention pond is functioning as intended and to maintain the health of the newly established native plants and trees and controlling invasive species.

Option #1 Maintain Draft Budget – *No Motion Required*

Option #2 Remove the Boxwood Detention Pond Contracted Landscaping Budget

Impact to Property Taxation ~ 0.06% reduction

Motion

That the Finance and Audit Committee recommend that Council reduce Parks Operations contracted landscaping budget by $67,000 annually in the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

6 Public Art Maintenance

The 2022 – 2026 Draft Financial Plan includes a new $25,000 annual budget to ensure the longevity of the City's Public Art Collection. The City has invested in significant public artworks that are displayed in various civic facilities and outdoor locations. The maintenance budget will allow for the planning and scheduling of maintenance for the artworks to ensure continued enjoyment for residents and visitors.

Option #1 Maintain Draft Budget – *No Motion Required*

Option #2 Remove the Public Art Maintenance Budget

Impact to Property Taxation ~ 0.02% reduction

Motion

That the Finance and Audit Committee recommend that Council remove the Public Art Maintenance budget in the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

7 Urban Design Roster

At the June Finance and Audit it was moved and seconded that Council consider an increase of $25,000 to the Public Art budget during the 2022 – 2026 Financial Plan deliberations to support the Urban Design Roster initiative. The 2022 – 2026 Draft Financial Plan includes an additional $25,000 per year in the Public Art project.

Option #1 Maintain Draft Budget – *No Motion Required*

Option #2 Reduce the Public Art project budget to 2021 budget levels

No impact to property taxation as general revenue funding for projects is a set amount. The $25,000 in funding will be reallocated to another project(s) currently funded from reserves.

Motion

That the Finance and Audit Committee recommend that Council reduce the Public Art project back to 2021 budget levels in the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

8 National Indigenous People Day & Truth and Reconciliation Day

Provide $60,000 in annual funding for events to recognize National Indigenous People Day & Truth and Reconciliation Day. Additional information in accompanying Information Report.

Three possible options for Council's consideration

Option #1 Fund from Property Taxation

Funding Source:
General Revenue ~ 0.05% in 2022

Motion

That the Finance and Audit Committee recommend that Council add $60,000 in annual funding to support events for National Indigenous People Day & Truth and Reconciliation Day to the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

8 National Indigenous People Day & Truth and Reconciliation Day

Continued

Option #2 Reallocate $60,000 from Downtown Events Grant Budget

Reallocate $60,000 from the $150,000 annual Downtown Events grant budget.

Motion

That the Finance and Audit Committee recommend that Council reallocate $60,000 annually from the Downtown Events grant budget to support events for National Indigenous People Day & Truth and Reconciliation Day in the 2022 – 2026 Financial Plan.

Option #3 Status Quo – *No Motion Required*

2022 – 2026 Draft Financial Plan

9 Buttertubs Pedestrian Bridge

The 2022 – 2026 Draft Financial Plan includes $500,000 for construction of the Buttertubs Pedestrian Bridge. The current feasibility report estimates the cost of construction between $1.0 - $1.5 million. See information report for additional information.

Option #1 Remove Project

Funding will be available for other projects.

Motion

That the Finance and Audit Committee recommend that Council remove the Buttertubs Pedestrian Bridge project from the 2022 – 2026 Financial Plan.

Option #2 No Change to Project Plan

Additional funding will be required to move forward, this may involve reprioritizing/cancelling other projects. Staff will return to a future meeting with an update when costs are further refined.

2022 – 2026 Draft Financial Plan

10 Albert and Fourth Complete Street Ph 2 Project

Based on current cost estimates additional funding and direction is required. See information report for additional information.

Four possible options for Council's consideration

Option #1 Reduce Scope of Project and Increase Budget

Reduce the scope of the Fourth and Albert Complete Street Phase 2 project to Pine Street to Milton Street and increase the project budget by $400,000 funded from the Strategic Infrastructure Reserve.

Motion

That the Finance and Audit Committee recommend that Council reduce the scope of the Fourth and Albert Complete Street Phase 2 project to Pine Street to Milton Street and increase the budget by $400,000 in the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

10 Albert and Fourth Complete Street Ph 2 Project

Continued

Option #2 Increase the Budget & Proceed with Option A (Bike Lanes Uphill Only)

Increase the project budget by $800,000 funded from the Strategic Infrastructure Reserve and proceed with Option A for the Dunsmuir Street to Kennedy Street section.

Motion

That the Finance and Audit Committee recommend that Council increase the budget of the Albert and Fourth Street Complete Streets Phase 2 by $800,000 in the 2022 – 2026 Financial Plan and proceed with Option A.

2022 – 2026 Draft Financial Plan

10 Albert and Fourth Complete Street Ph 2 Project

Continued

Option #3 Increase the Budget & Proceed with Option B (Bike Lanes Both Directions)

Increase the project budget by $800,000 funded from the Strategic Infrastructure Reserve and proceed with Option B for the Dunsmuir Street to Kennedy Street section.

Motion

That the Finance and Audit Committee recommend that Council increase the budget of the Albert and Fourth Street Complete Streets Phase 2 by $800,000 in the 2022 – 2026 Financial Plan and proceed with Option B.

2022 – 2026 Draft Financial Plan

10 Albert and Fourth Complete Street Ph 2 Project Continued

Option #4 Remove Project

Funding will be available for other projects.

Water Reserves ~ $0.9 million

General Reserves ~ $1.4 million

Motion

That the Finance and Audit Committee recommend that Council remove the Albert Street Complete Streets Phase 2 project from the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

11 Sanitation

Implement recommendations from the Refuse Truck Life Cycle & Funding Analysis. See information report for additional information.

Current draft user rates:

2022 - $201 2023 - $205

Option #1 Implement Recommendations

1. Replace department owned diesel units #317 & #318 with fleet owned CNG units.
2. Lease a CNG refuse truck to replace unit #317 until new unit arrives.
3. Shorten the life-cycle on all fleet owned units to 8 years.

Revised user rates:

2022 - $215 2023 - $227

2022 – 2026 Draft Financial Plan

11 Sanitation

Motion for Option #1

That the Finance and Audit Committee recommend that Council implement recommendations from the Refuse Truck Life Cycle & Funding Analysis as detailed in the November 10th Information Report to the Finance and Audit Committee for the 2022 – 2026 Financial Plan.

Option #2 Status Quo – *No Motion Required*

12 RCMP Contract

The 2022 – 2026 Draft Financial Plan budgets the RCMP contract at 95% for all years due to the history of vacancies and to minimize annual operating surplus.

Option #1 Change Percentage to 94% for 2022 only (95% for 2023 forward).

Impact to 2022 Property Taxation ~ 0.27% reduction
Impact to 2023 Property Taxation ~ 0.26% increase

Motion

That the Finance and Audit Committee recommend that Council budget the RCMP contract at 94% for 2022 and 95% for 2023 to 2026 for the 2022 – 2026 Financial Plan.

Option #2 Status Quo – *No Motion Required*

13 Special Initiatives Reserve

The 2022 – 2026 Draft Financial Plan includes the use of $3.4 million in funding from the Special Initiatives Reserve between 2022 to 2025 to lower property taxes.

Option #1 Reduce Use of Reserves

Council could direct staff to reduce the amount of reserve funding used to reduce property taxes. Funds could then be directed to other priorities or saved for future opportunities.

Impact to Property Taxation - dependent on direction provided

Next Steps

Timeline

December 6th	2022 – 2026 Financial Plan Bylaw to Council for first three readings
December 20th	2022 – 2026 Financial Plan Bylaw (Provisional Budget) adopted by Council

2022 – 2026 Draft Financial Plan

Decision Slides Completed

1.d Parkade Security Plan

Retain the service of a security consultant who specializes in parking facilities to conduct a risk assessment which will identify strengths and weaknesses in existing security measures in City owned parkades.

Option #1 Prepare Security Plan

Funding Source:

Parking Reserve Fund - $25,000

Motion

That the Finance and Audit Committee recommend that Council add a Parkade Security Plan to 2022 of the 2022 – 2026 Financial Plan.

Option #2 Status Quo – *No Motion Required*

2022 – 2026 Draft Financial Plan

1.e Community Clean Team

The Community Clean Team pilot project began in November 2019 and is currently scheduled to end December 31, 2021. The pilot project has increased the cleanliness of public spaces in downtown and parks and relieved the strain on the Bylaw Services section.

Three possible options for Council's consideration

Option #1 Create a Permanent Community Clean Team

Funding Source:

General Revenue ~ 0.40% in 2022

(includes one-time capital costs in 2022)

Motion

That the Finance and Audit Committee recommend that Council add a permanent Community Clean Team to the 2022 – 2026 Financial Plan effective January 2022.

2022 – 2026 Draft Financial Plan

1.e Community Clean Team

Continued

Option #2 Extend Community Clean Team Pilot to December 31, 2022

Funding Source:

General Revenue ~ 0.21% in 2022 or

Strategic Infrastructure Reserve - $249,800

Motion

That the Finance and Audit Committee recommend that Council extend the Community Clean Team Pilot to December 31, 2022.

Option #3 Project Ends December 31, 2021 – *No Motion Required*

2022 – 2026 Draft Financial Plan

1.f Manager, VIERA

Adding a dedicated manager to the Vancouver Island Emergency Response Academy (VIERA) will allow for the Assistant Chief of Education and Training to focus on Nanaimo Fire Rescue staff development requirements and allow for VIERA to increase course offerings.

Option #1 Add Position

February 1st Implementation

Funding Source:

Position is anticipated to result in a 0.09% property tax **decrease**

Motion

That the Finance and Audit Committee recommend that Council add a Manager, VIERA position to the 2022 – 2026 Financial Plan effective February 1, 2022.

Option #2 Status Quo– *No Motion Required*

VIERA course offerings will be scaled back effective 2023, resulting in decreased revenues. Anticipated impact is a ~0.04% increase to property taxes in 2023.

2022 – 2026 Draft Financial Plan

3 Snow and Ice Control (SNIC)

The 2022 – 2026 Draft Financial Plan includes a $95,000 increase to the SNIC budgets (PRC & ENGPW combined) based on the 3 year actual costs (2018 – 2020). The City has a SNIC reserve with a current balance of $1.2 million (minimum required balance) to address extraordinary snow years.

Option #1 Maintain Draft Budget – *No Motion Required*

Option #2 Reduce SNIC budgets to 2021 budget levels

Impact to Property Taxation ~ 0.08% reduction

Motion

That the Finance and Audit Committee recommend that Council reduce the 2022 SNIC budgets back to 2021 budget levels in the 2022 – 2026 Financial Plan.

2022 – 2026 Draft Financial Plan

CITY OF NANAIMO
THE HARBOUR CITY

Information Report

DATE OF MEETING November 10, 2021

AUTHORED BY LISA BHOPALSINGH, MANAGER, COMMUNITY PLANNING

SUBJECT RECONCILIATION EVENTS 2022

OVERVIEW

Purpose of Report:

To provide Council with an update on Snuneymuxw-led reconciliation events for 2022. This includes National Day for Truth and Reconciliation and National Indigenous Peoples Day.

BACKGROUND

On 2019-JUN-17, Council passed the following motion implementing the Truth and Reconciliation Commission's (TRC) Call to Action[1] #57:

"It was moved and seconded that Council support the proposed Intercultural Competency Implementation Plan to support City of Nanaimo Staff learning about local, provincial, and national histories of Indigenous Peoples, including the history and legacy of residential schools, United Nations Declaration on the Rights of Indigenous Peoples, treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations."

Since this time, City Staff have been provided with internal opportunities to learn more about Canada's historical relationship with Indigenous peoples as well as receiving training that supports cultural competency. This includes opportunities since 2019 to learn directly from members of Snuneymuxw and Snaw-Naw-As[2] during National Indigenous History Month and Orange-Shirt Day, as well as Diversity and Inclusion training.

On 2021-SEP-30, the City of Nanaimo in partnership with Snuneymuxw First Nation and Nanaimo Ladysmith Public Schools (NLPS) recognized and commemorated the first National Day of Truth and Reconciliation[3] at Sway-a-Lana/Maffeo Sutton Park. This event led by Snuneymuxw First Nation involved close collaboration and support from the City of Nanaimo and NLPS. The event was well attended and live streamed by several thousand people,

[1] The Truth and Reconciliation Commission (TRC) was mandated in 2008 to shed light on the truth behind residential schools. On 2015-JUN-02, the TRC released its findings and 94 Calls to Action in their report titled *Honouring the Truth, Reconciling the Future.*

[2] Snaw-Naw-As, also known as Nanoose First Nation

[3] This year's first National Day for Truth and Reconciliation reflects the Federal Governments implementation of one of the 94 Truth and Reconciliation Commissions Calls to Action. Action #80 calls upon…."*the federal government, in collaboration with Aboriginal peoples, to establish, as a statutory holiday, a National Day for Truth and Reconciliation to honour Survivors, their families, and communities, and ensure that public commemoration of the history and legacy of residential schools remains a vital component of the reconciliation process*."

marking its significance for both Indigenous[4] and non-Indigenous community members and leaders.

Extending support for community wide learning through reconciliation events is consistent with Council's support for TRC#57, as well as as the United Nations' Declaration on the Rights of Indigenous Peoples (UNDRIP)[5]. It also recognizes the City's broader capacity to work with First Nations Governments, and other partners to provide opportunities for wider community reconciliation actions.

DISCUSSION

A key outcome of the first National Day for Truth and Reconciliation event at Sway-a-Lana was the development of successful partnerships, and the collaborative work leading up to it making this event happen. This involved respecting the guidance of Snuneymuxw First Nation leadership to ensure protocols were followed, and the needs of Snuneymuxw mustimuxw (people) and other Indigenous community were met in a culturally safe way. Reconciliation events done the right way can have lasting effects on learning, and cultural competency development for community members and organizations. They have the potential to support better community outcomes and relationships that are fundamental to achieving meaningful reconciliation.

The findings at the 215 children's graves Tk'emlups te Secwépemc people at the former Kamloops Indian Residential Schools site highlighted the reality of Canada's Indian Residential School System and triggered a greater need for change and increasing ways to honour those lost and impacted in our own communities. The new National Day for Truth and Reconciliation provides an annual public opportunity for the City to support community reconciliation, healing, and hope.

The success of the joint planning and outcomes of 2021-SEP-30 establishes a foundation to build on future events to commemorate National Day of Truth and Reconciliation. It also sets the stage to collaborate on other days of significance including National Indigenous Peoples Day, celebrated annually on June 21 during National Indigenous History Month. National Indigenous Peoples Day provides opportunity to celebrate, enjoy, and respect the cultural richness and resiliency of Snuneymuxw, Snaw-Naw-As, and other Indigenous Peoples who have made Snuneymuxw and Snaw-Naw-As Territories their home.

Based on the resources allocated by the City for this year's initial event (that included in kind support from NLPS and SFN), approximately $60,000 would provide sufficient funding for another partnership event for National Day for Truth and Reconciliation (2022-SEP-30), as well as supporting an event on National Indigenous People's Day (2022-JUN-21).

There is also potential to consider two additional smaller events in the downtown to celebrate and honour Indigenous culture and history for up to an additional $40,000 ($20,000 each)

[4] 'Indigenous Peoples' or 'Aboriginal Peoples' are collective terms used to describe the original inhabitants of North America and their descendants. In Canada these terms refer to people of First Nations, Inuit and Métis ancestry.

[5] UNDRIP Article 15.2: "*States shall take effective measures, in consultation and cooperation with the indigenous peoples concerned, to combat prejudice and eliminate discrimination and to promote tolerance, understanding and good relations among indigenous peoples and all other segments of society*."

however, details on what these could look like would need to be explored further for inclusion in the 2023 budget.

CONCLUSION

Allocating $60,000 a year in the 2022-2026 Financial Plan will support two annual Snuneymuxw-led reconciliation events, including National Day for Truth and Reconciliation and National Indigenous Peoples Day.

This work is consistent with Council's commitments to TRC#57 to educate City Staff and expands that to the wider community. By providing opportunity for Indigenous and non-Indigenous community members to gather and share experiences, these events support conditions for a more compassionate and equitable community.

Planning and resourcing these two significant days, shows proactive City leadership to support, honour, and respect First Nations Governments and Indigenous peoples. It also shows respect and support for Snuneymuxw's direction on how reconciliation is publically demonstrated. These initiatives will ultimately strengthen the City's cultural competency to work effectively on ongoing government-to-government projects.

SUMMARY POINTS

- On 2021-SEP-30 the City of Nanaimo in partnership with Snuneymuxw First Nation and Nanaimo Ladysmith Public Schools (NLPS) recognized and commemorated the first National Day of Truth and Reconciliation.
- During 2022, there is an opportunity to plan for another joint commemoration event for National Day for Truth and Reconciliation (2022-SEP-30), as well as an event to celebrate National Indigenous People's Day (2022-JUN-21).
- An estimated budget of $60,000 will be allocated in the 2022-2026 Financial Plan to support these annual events.
- Supporting these Snuneymuxw-led events reflects the City's commitment to the Truth and Reconciliation Commission's (TRC) Calls to Action and United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) as they relate to learning the truth about Residential Schools, honouring those lost, providing healing and hope for survivors, and celebrating the richness and resiliency of Indigenous cultures.
- Reconciliation events done the right way have the potential to support better community outcomes and relationships that are fundamental to achieving meaningful reconciliation.

Submitted by:

Lisa Bhopalsingh
Manager, Community Planning

Concurrence by:

Bill Corsan
Director, Community Development

Laura Mercer
Director, Finance

Art Groot
Acting General Manager, Parks, Recreation and Culture

Dale Lindsay
General Manager, Development Services

CITY OF NANAIMO
THE HARBOUR CITY

Information Report

DATE OF MEETING NOVEMBER 10, 2021

AUTHORED BY PHIL STEWART, MANAGER, ENGINEERING PROJECTS

SUBJECT **BUTTERTUBS BRIDGE PROJECT**

OVERVIEW

Purpose of Report:

To provide Council with an update on the Buttertubs Bridge project in support of 2022 budget deliberations.

BACKGROUND

At the May 19, 2021 Finance and Audit Committee meeting, Council included $500,000 for the Buttertubs Bridge project for consideration in the 2022 budget.

The Buttertubs Bridge is a key link in the Off Bowen Bikeway connecting active transportation routes in the VIU and Downtown Area to the Off Bowen Bikeway along Boxwood Road connecting to the north. Attachment A shows the overall Off Bowen Bikeway and Attachment B shows the location of the Buttertubs Bridge.

DISCUSSION

The Millstone River Pedestrian Crossing Feasibility Study was started to better understand the costs and constraints of the project.

The study included a review of geotechnical and environmental conditions, the presence of exiting utilities, and the general requirements for an active transportation crossing.

A number of challenges were identified including:

- Poor soil conditions requiring piled foundations
- High 200 year flood levels relative to the surrounding grade which required a significant grade change along the crossing
- Few locations suitable for an abutment on the east side of the river
- Constructing the abutments and the approaches to the bridge would have a significant impact on the existing property

These challenges impact the estimated cost of the project; the estimate presented at the May 19, 2021 Finance and Audit Committee meeting was $500,000. The new estimated cost of the crossing, considering the above constraints, is between $1M and $1.5M.

Some of these constraints could be mitigated by designing and constructing the bridge in conjunction with a redevelopment of the property at 15 Buttertubs Drive. Staff are currently in conversations with the owners of the property about future redevelopment plans and the

possibility of developing an agreement regarding the bridge. This could also open some possibility of alternative bridge locations.

CONCLUSION

It is recommended that work continue on the planning of the Buttertubs Bridge by evaluating other locations for the crossing and developing strategies to mitigate the challenges found in the feasibility study. It is also recommended that construction would be deferred to a future year possibly in conjunction with a redevelopment of 15 Buttertubs Drive. This would enable the funds to be diverted to other projects.

SUMMARY POINTS

- Several challenges were identified in the Millstone River Pedestrian Crossing Feasibility Study.
- The revised cost estimate for the project is between $1M and $1.5M.
- There is the possibility of mitigating some of the challenges by constructing the bridge in conjunction with a redevelopment of 15 Buttertubs Drive.

ATTACHMENTS

Attachment A - Off Bowen Bikeway
Attachment B - Buttertubs Bridge Location

Submitted by:

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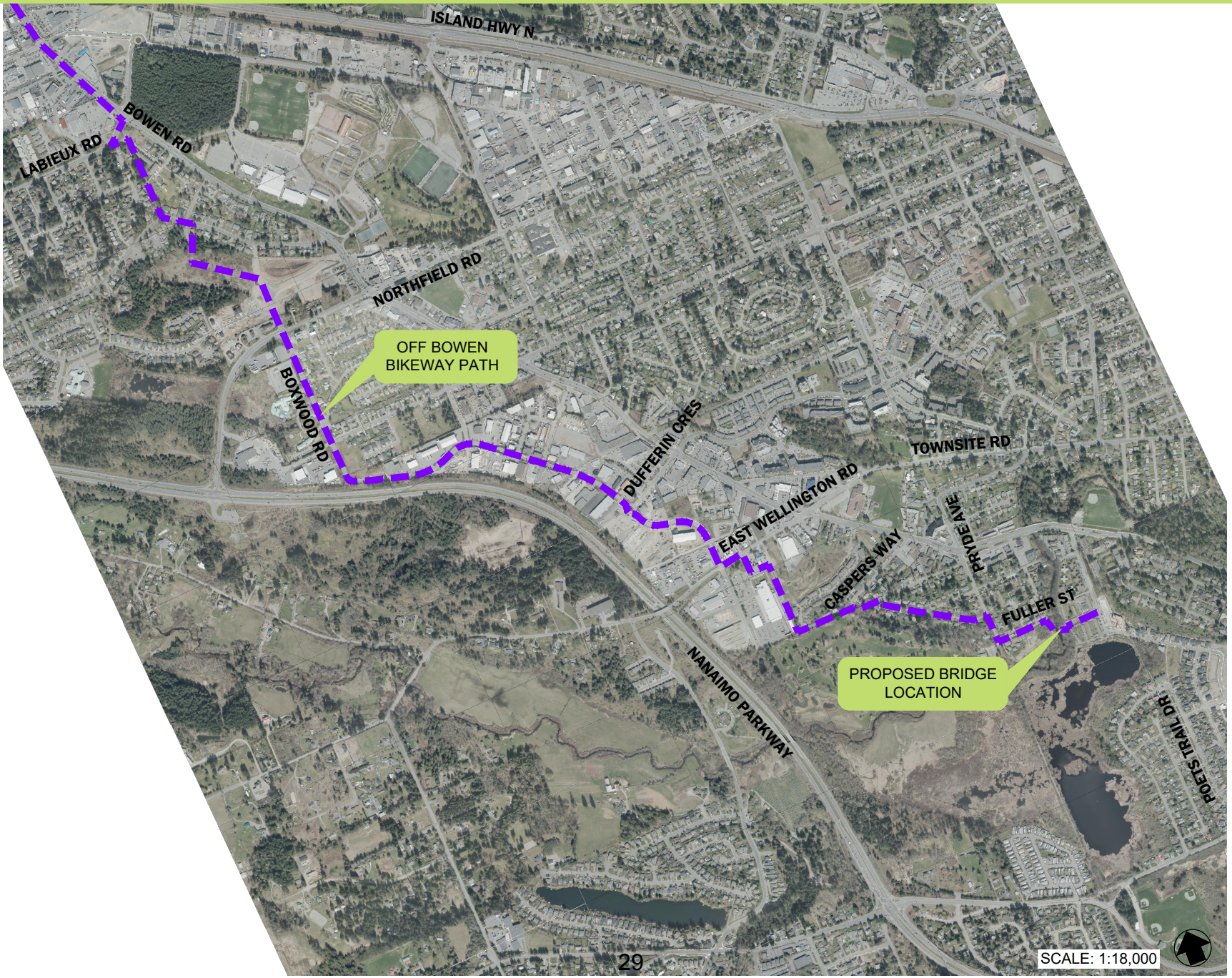
Manager, Engineering Projects

Concurrence by:

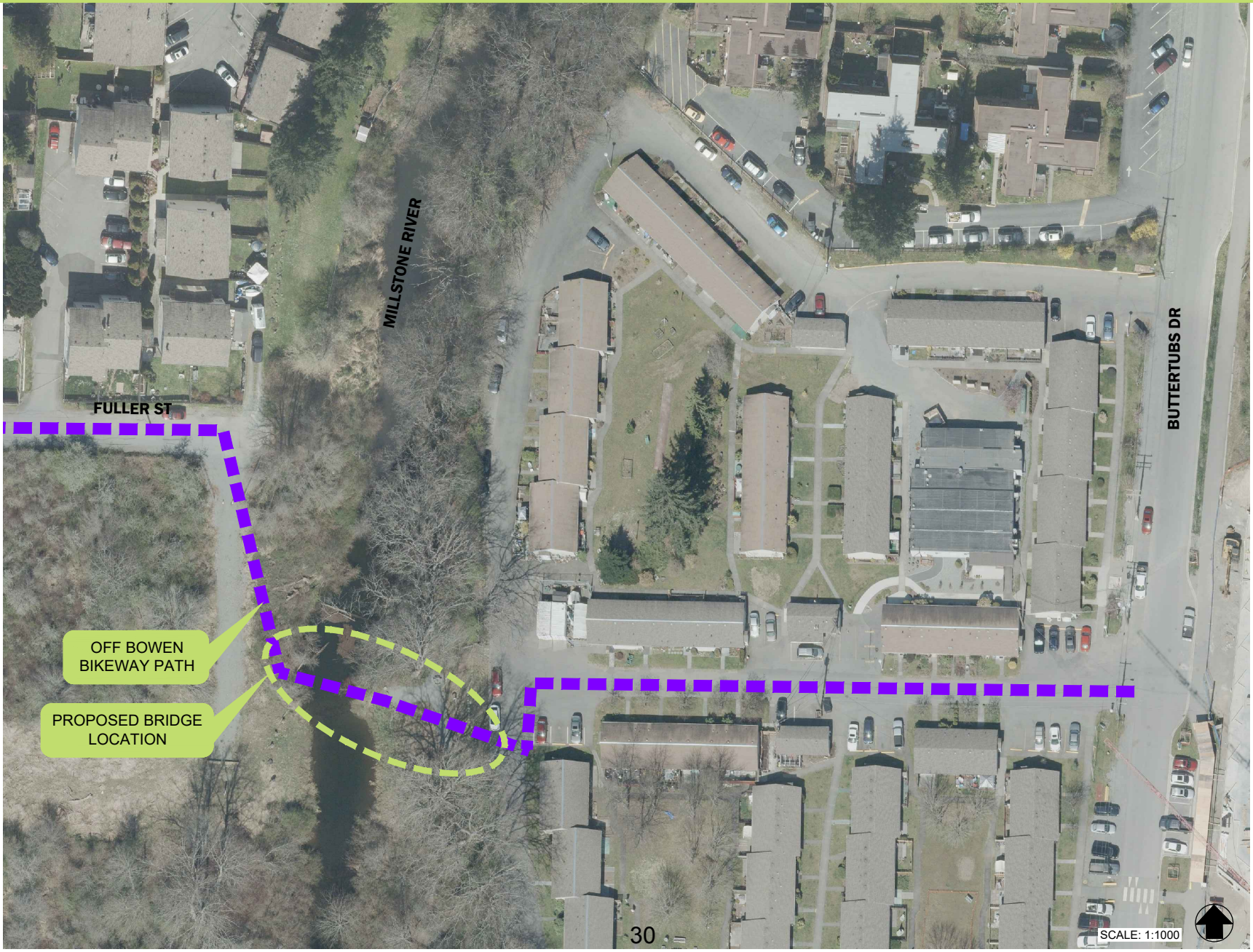
Poul Rosen
Director, Engineering

Laura Mercer
Director, Finance

OFF BOWEN BIKEWAY



OFF BOWEN BIKEWAY | BUTTERTUBS BRIDGE LOCATION



CITY OF NANAIMO
THE HARBOUR CITY

Information Report

DATE OF MEETING NOVEMBER 10, 2021

AUTHORED BY PHIL STEWART, MANAGER, ENGINEERING PROJECTS

SUBJECT **ALBERT AND FOURTH COMPLETE STREET PHASE 2**

OVERVIEW

Purpose of Report:

To provide Council with an update on Phase 2 of the Albert/Fourth Complete Street project, and seek Council direction on project related issues.

BACKGROUND

The Vancouver Island University (VIU) Bikeway was identified as a medium-long term project in the 2014 Nanaimo Transportation Master Plan (NTMP) and the Albert Street section was identified in the 2020 Downtown Mobility Hub study as a short term priority. The bikeway, when completed, will connect downtown Nanaimo to VIU along the Albert/Fourth Street corridor.

The section between Harewood Road and Wakesiah Avenue was completed in 2011. The remainder of the corridor comprises the Albert/Fourth Complete Street project and has been divided into two phases. Phase 1 runs on Fourth Street from Harewood Road to Pine Street and is scheduled to start construction in late 2021. Phase 2, the subject of this report, follows Albert Street from Pine Street to Dunsmuir Street and is scheduled for construction in the summer of 2022. Phase 2 was established as a Council priority at the Special Finance and Audit Committee meeting of December 4, 2020.

The current budget for the project is $2.4M which is comprised of $1.3M for transportation upgrades, $900,000 for watermain upgrades and $200,000 for the Cat Stream culvert replacement. This report summarizes financial challenges on the project, the public consultation that took place, and presents options for Council's consideration.

DISCUSSION

Phases 1 and 2 of the Albert/Fourth Complete Street project are shown below in Attachment A. In the NTMP, the VIU Bikeway along this section was intended to be unidirectional bike lanes, one bike lane on each side of the travelled roadway. Phase 2 has two distinct sections with considerations on each section:

Section 1 – Pine Street to Kennedy Street

The first section between Pine Street and Kennedy Street currently has limited facilities for pedestrians and cyclists. The road grade and horizontal curves make this section a challenge for cyclists to navigate. Utility upgrades in this section include watermain replacement and replacement of the box culvert at the Cat Stream crossing. Due to the road widening and utility

replacements required, it is necessary to rebuild the road through this section of the project. The new road cross section, as shown in Attachment B, includes dedicated buffered cycling facilities, sidewalks and street lighting.

The current estimated cost for Section 1 of the project is $2.8M which exceeds the existing budget for the entire project by $300,000. The additional costs are related to widening the road which will require a retaining wall, upgrading the substandard street lighting, and constructing a sidewalk on the downhill (north) side of the road.

Phase 2 - Section 2 –Kennedy Street to Dunsmuir Street

The second section from Kennedy Street to Dunsmuir Street requires significantly less work to accommodate active transportation facilities as there are existing sidewalks and there is space between the curbs to add cycling facilities. Two concepts were developed and presented to the public for feedback in September 2021. Both options are described below and shown in Attachment C. The estimated cost of either option in Section 2 is $500,000.

Option A - Bike Lane Uphill Only

This conceptual layout was developed to balance the need for bike lanes with the need for parking. While it only offers a bike lane uphill (one direction), it retains on-street parking uphill for businesses and residents. In the downhill direction, this option restricts parking and provides a sections of a dedicated cycling lane and a section of a shared shared bike/vehicle lane. The cross section includes:

- 1.6m wide cycle lanes with 0.5m wide buffers from vehicle traffic
- Floating bus stops on the ‘uphill’ side of Albert Street
- Shared bus stop zones on the ‘downhill’ side of Albert Street
- Some parking retained on the ‘uphill’ side of Albert Street

Option B - Bike Lanes in Both Directions

This option more directly meets the intent of the VIU Bikeway offering separated bike lanes in both directions. In order to achieve this, parking restrictions become necessary. For this option, the cross section of Albert Street includes:

- 2.0m wide cycle lanes with 1.3m wide buffers from vehicle traffic (localized narrowing at bus stops)
- Floating bus stops on both sides of Albert Street
- No on-street parking on Albert Street

Public Consultation

During the Downtown Mobility Hub project, public feedback was sought on cycling facilities around the downtown area. A majority of respondents (77%) indicated general support for a protected cycling connection on Albert Street.

Additional public engagement was carried out from July 20 to Sept 7, 2021 with the intent of receiving direct feedback from residents and businesses on Albert Street. The engagement included:

- creation of a project web page, complete with details and illustrations for each proposed concept option,
- letters were mailed to 143 businesses and residents adjacent to the project site,
- a link was posted on the City website for electronic responses, and,
- direct contact was made with the residents and strata managers for the apartment buildings on Albert Street.

From these efforts, Staff received seven responses. Of the seven, six respondents indicated preference for Option A - Bike Lane Uphill Only (Option A) which provides the bike lane and parking in the uphill direction. Parking on-street was cited as being very important to the respondents.

Parking on Albert Street

Parking on Albert Street and side streets adjacent to Albert Street was examined as part of the Downtown Mobility Hub Project (DMHP). Data collection included quantity of parking, location of parking, and parking restrictions through a combination of desktop review and field verification. The occupancy determined by the study is shown below in Table 1.

Table 1 – Albert Street Parking Occupancy

Street	From	To	Stalls	AM	MID	PM	Weekend	Restrictions
Albert Street	Wallace Street	Milton Street	58	52%	61%	66%	47%	• unrestricted (27) • 2-hour parking (29) • loading zone (1) • 1-hour parking (1)

The values of parking occupancy, range from 52% to 66%. As the parking occupancy rises above 85% it becomes increasingly difficult for drivers to find parking leading to circulating traffic and spillover parking on nearby streets or lots. Occupancy of 85% and higher is perceived by the public as problematic. Using 85% as a benchmark, the amount of parking currently available on Albert Street would be considered acceptable with room for additional demand.

Parking is also available on side streets along the Albert Street corridor, and the occupancy rate of the side streets is approximately 45%. The parking demand from Albert Street can be accommodated on these streets, which all currently have supply exceeding demand, even after the bike lanes are implemented.

Option A would retain approximately 28 stalls of the 58 stalls. Option B - Bike Lanes in Both Directions (Option B) would result in complete parking removal on Albert Street. The public consultation indicated a strong preference for retaining parking in at least one direction. Distributing all of the on-street parking from Albert Street to the side streets will result in a parking occupancy of 75% - 80% on the side streets in the area.

CONCLUSION

Council could consider reducing the scope of the Fourth and Albert Complete Street Phase 2 project to Pine Street to Milton Street which could be completed for an additional $400,000 The $400,000 includes $300,000 to complete Section 1 between Pine Street and Kennedy Street and $100,000 to complete the section between Kennedy Street and Milton Street. A reduced project scope enables the section that is most challenging to cyclists and pedestrians, to be improved. The reduced scope would also enable the project to be completed without significant impacts to the parking on Albert Street, however it will sacrifice the completion of the cycling connection from Milton Street to Dunsmuir Street.

Alternatively, Council could consider adding $800,000 to the project to complete the full scope of the project. There are two options for Section 2 between Kennedy Street and Dunsmuir Street. Option A provides some street parking at the expense of a fully separated cycling facility on the downhill side. Option B removes all the parking on Albert Street and provides a fully separated cycling facility to Option A.

SUMMARY POINTS

- Phase 1 of the Albert/Fourth Complete Street project is underway and construction will start in early 2022.
- The cost estimate for Phase 2 exceeds the project budget largely due to major road reconstruction required between Pine Street and Kennedy Street.
- The entire project can be completed for an additional $800,000.
- A reduced scope from Pine Street to Milton Street can be completed for an additional $400,000.
- On-street parking was a concern raised by the public during consultation.
- Phase 2 is scheduled for construction in the summer of 2022.
- Funding is available for the project from the Strategic Infrastructure Reserve.

ATTACHMENTS

Attachment A – VIU Bikeway
Attachment B – Pine Street to Kennedy Street Cross Section
Attachment C – Kennedy Street to Dunsmuir Street Cross Sections

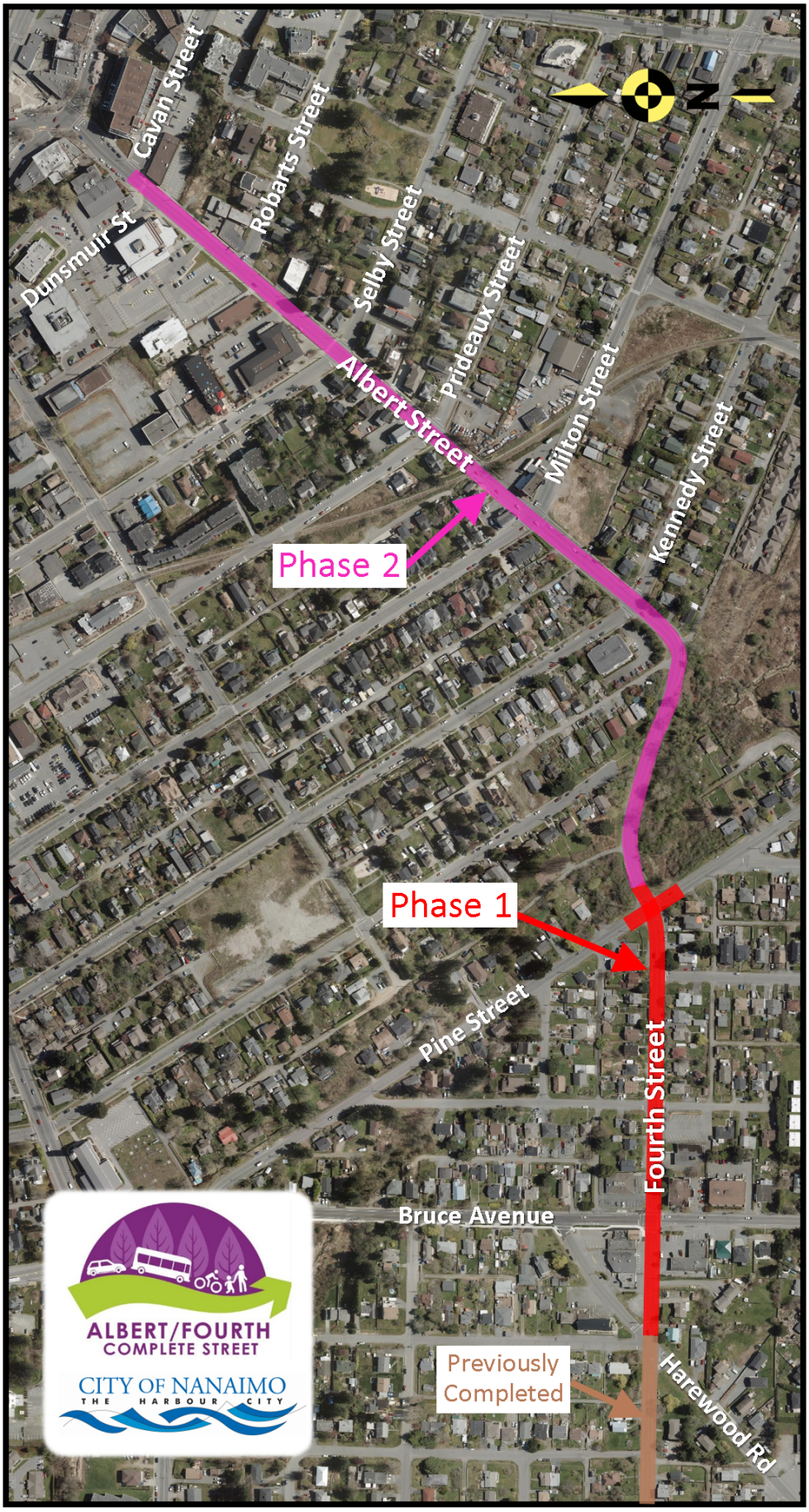
Submitted by:

Phil Stewart
Manager, Engineering Projects

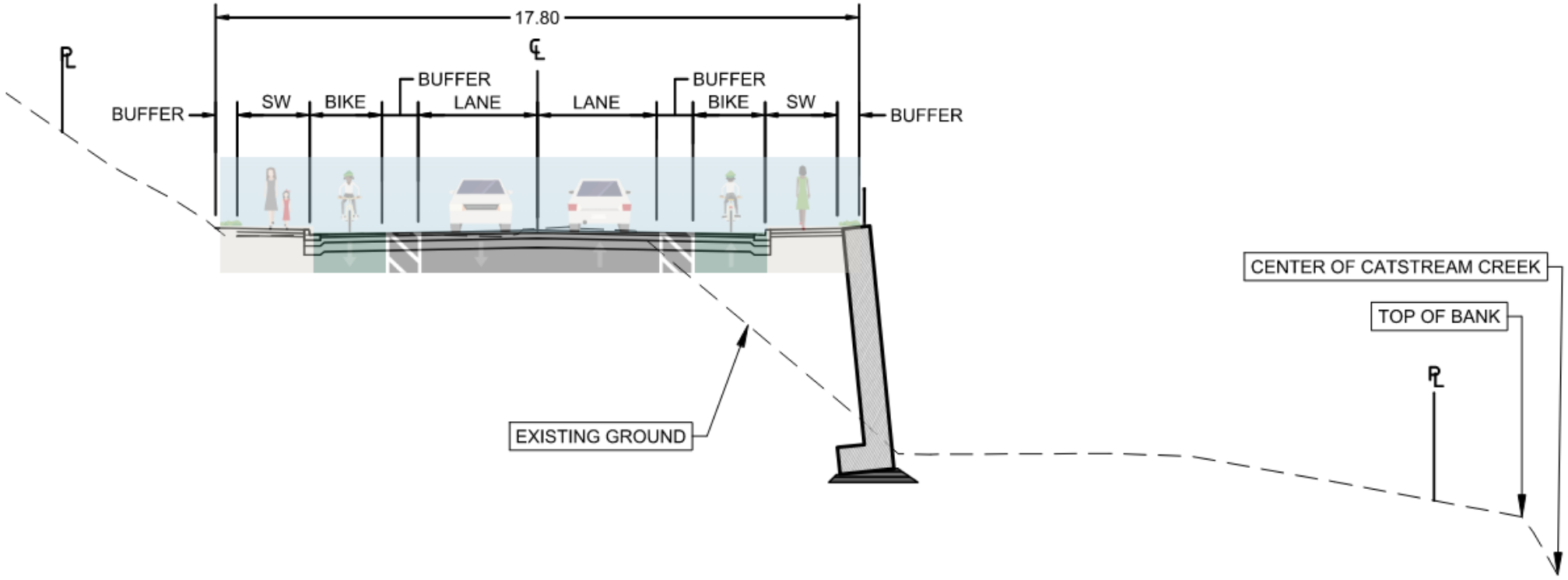
Concurrence by:

Poul Rosen
Director, Engineering

Laura Mercer
Director, Finance


Cavan Street
Roberts Street
Dunsmuir St
Selby Street
Prideaux Street
Albert Street
Milton Street
Kennedy Street
Phase 2
Phase 1
Pine Street
Fourth Street
Bruce Avenue
ALBERT/FOURTH
COMPLETE STREET
CITY OF NANAIMO
THE HARBOUR CITY
Previously
Completed
Harewood Rd

VIU Bikeway



Pine Street to Kennedy Street Cross Section

Kennedy Street to Dunsmuir Street Cross Section

CITY OF NANAIMO
THE HARBOUR CITY

Information Report

DATE OF MEETING NOVEMBER 10, 2021

AUTHORED BY BRANDON MILLER, MANAGER, FLEET OPERATIONS

SUBJECT **REFUSE TRUCK OPTIMIZATION**

OVERVIEW

Purpose of Report:

To present information and an overview to the Finance and Audit Committee of a strategy to optimize the refuse truck fleet in support of budget deliberations.

BACKGROUND

As endorsed by Council, the Residential Waste Collection Optimization plan was implemented on January 25, 2021. This plan created about 20% additional capacity and had a positive impact on the Solid Waste Collection program by:

- Optimizing collection routing,
- Reducing service delays,
- Reducing Staff overtime hours,
- Reducing public service-related calls and emails, and
- Reducing number of collection-related incidents and accidents.

The next step to further optimize the Solid Waste Collection program is to ensure the refuse truck fleet is sustainably funded. Neilson have been contracted to develop a plan to alleviate these issues. See Attachment A.

DISCUSSION

The refuse truck fleet consists of thirteen units. Three diesel trucks are owned by the Sanitation department, and ten Compressed Natural Gas (CNG) trucks are owned by the Fleet Services department.

Unit #	Year	End of Useful Life	Fuel Type	Owner
301	2008	2018	Diesel	Sanitation
317	2008	2018	Diesel	Sanitation
318	2009	2019	Diesel	Sanitation
434	2017	2027	CNG	Fleet Services
435	2017	2027	CNG	Fleet Services
436	2018	2028	CNG	Fleet Services
437	2018	2028	CNG	Fleet Services
438	2018	2028	CNG	Fleet Services

439	2018	2028	CNG	Fleet Services
440	2018	2028	CNG	Fleet Services
441	2018	2028	CNG	Fleet Services
442	2020	2030	CNG	Fleet Services
443	2022	2032	CNG	Fleet Services

There are several concerns with units 301, 317, and 318, which include:

- **Replacement Plan**
  Three trucks were purchased by the Sanitation department second-hand and are now several years past their useful life. Typically, vehicles are purchased and "owned" by Fleet Services. A charge-out rate is established and charged to each department that utilizes the vehicle. This fee recovers the maintenance and replacement costs of the vehicle. Because these trucks are owned by the Sanitation department, they do not have a charge-out rate, and therefore, do not have a replacement plan associated with them.

- **Reliability and Annual Operating Costs**
  Due to the age of these trucks, they are prone to breakdowns, which leads to costly repairs and service disruptions. The average annual operating costs (maintenance, repairs, and fuel) are $4.24 per kilometer higher than the CNG refuse vehicles, a 250% difference.

- **Green Fleet Strategy**
  These trucks are diesel-powered and emit approximately 30% more CO2 emissions than the CNG refuse trucks and do not align with the City's Green Fleet Strategy.

Ten CNG refuse trucks in the fleet have a planned ten-year life cycle. As the trucks near their end-of-life they are susceptible to costly repairs, burn more fuel, and have increased down-time, which has a negative effect on the Solid Waste Collection program. These issues could be mitigated by shortening the life cycle of these trucks from ten years to eight years. This increases the charge rate, but ensures vehicles are sustainably funded.

FINANCIAL IMPLICATIONS

Implementing all recommendations, would see an increase in user fees of $23.00 over planned increases, phased in over two years. In 2022, the user fee would increase $15.00, and in 2023 the user fee would increase $8.00. This is in addition to the increase created by RecycleBC relocating the designated reception facility, estimated to be $8.00. Based on recent projections for 2021, the final rates may be trimmed slightly.

CONCLUSION

The recommended strategy to alleviate the current concerns and optimize the refuse truck fleet are:

- Replace Units 317 and 318 with two new CNG trucks.
- Continue to utilize Unit 301 and re-evaluate in 2023.
- Once the new CNG refuse trucks are purchased, delivery will take 12 – 15 months. In the interim, lease a new CNG refuse truck and remove Unit 317 from service. Unit 318

will be retained as an operational spare in case of emergencies and used when other refuse trucks are scheduled for maintenance.
- Shorten the useful life of the refuse trucks from ten to eight years.

SUMMARY POINTS

- Sustainable funding will continue to optimize the refuse truck fleet. Funding would be generated by increasing the Solid Waste Collection user fee.
- If approved, two new CNG refuse trucks would be purchased and two diesel trucks that have reached their end of life would be removed from service.
- The strategy to optimize the refuse truck fleet reduces costly truck repairs, decreases service disruptions, and reduces the City's Greenhouse Gas emissions.
- Residents in Nanaimo are generating a significant increase in all waste streams – 20% increases in each of the past two years. It is not feasible to sustain the Sanitation service without a commensurate increases in fees.
- The most effective way to reduce user fees is to reduce the disposal of waste by residents.

ATTACHMENTS

Attachment A – Refuse Truck Life Cycle and Funding Analysis

Submitted by:

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Concurrence by:

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Director, Public Works

Laura Mercer
Director, Finance

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MEMORANDUM

TO: Taaj Daliran, Manager, Sanitation
City of Nanaimo

Brandon Miller, Fleet Operations Manager
City of Nanaimo

FROM: Emily Lewis, CPA, CMA — ERPIE Advisory Inc.
Allan Neilson, MPA — Neilson Strategies Inc.

DATE: September 28, 2021

SUBJECT: **REFUSE TRUCK LIFE CYCLE & FUNDING ANALYSIS**

INTRODUCTION

Neilson Strategies Inc. and ERPIE Advisory Inc. were asked to develop a business case for the replacement of three aging diesel refuse trucks owned by the sanitation department, along with funding analysis for inclusion in the fleet funding model. Additionally, they were tasked with reviewing the existing life cycle of the fleet owned refuse trucks to ensure viability of replacement funding at their end of life. This *Memorandum* presents the consultants' assessment and recommendations.

The *Memorandum* begins with a description of the approach taken by the consultants to complete the work and the route optimization completed by City staff in early 2021. The text then outlines the replacement analysis, the life cycle analysis and high-level user fee impacts. The *Memorandum* ends with a summary of the consultants' recommendations and a note on implementation.

BACKGROUND

The City of Nanaimo completed implementation of an automated residential solid waste collection service in 2018, which resulted in considerable service efficiencies and benefits. In 2020, Neilson Strategies Inc. was asked to conduct a post-implementation review to address challenges experienced in the first two years of the renewed program. The City has implemented many of the recommendations from the *Collection Service Post-Implementation Review*, including various aspects of route optimization, cart management, driver training, data collection and resident education. The City is now interested in addressing the fleet life cycle, a point included in the final set of recommendations titled "Recommendations Beyond 2021".

The review conducted relates to the amortization period of refuse trucks using a data-based analysis of standard useful lives across the industry and how the City's particular context might impact the application of that average useful life. This analysis will determine recommendations for

amortization, replacement timing, asset management and funding. The City's *Green Fleet Strategy*, reserve funding status and present accounting treatment and debt funding of refuse trucks will all be considered in this analysis. There is some urgency in the business case as there are three fully amortized diesel fueled refuse trucks that require review for potential replacement.

CONSULTANTS' APPROACH

The consultants began their work on this project at the end of May. As the first stage of the review, an evaluation of all relevant information on the current fleet was conducted including: the purchase history, funding model, capitalization policy, *Green Fleet Strategy*, maintenance costs and other financial information. Key staff were also interviewed, including the Fleet Operations Manager, Manager of Sanitation, Maintenance Supervisor, and the Director of Finance. In addition to interview time and notes, City staff also provided extensive data regarding repair and maintenance costs. This data enabled analysis to determine key issues and options for solutions.

In addition, the consultants connected with solid waste operational comparators and compiled data from other municipal governments, a large private sector operator, and data from a large research lab maintained at the University of Toronto. As a final note, the consultants spoke with Fortis BC about Fortis' perspective on funding, the fuelling market and rebates, as well as their outlook on compressed natural gas (CNG) fleet.

IMPLEMENTATION OF OPTIMIZATION PROGRAM

As recommended in Neilson Strategies' *Collection Service Post Implementation Review*, City staff undertook a routing analysis in late 2020 and implemented a revised routing system mid-January 2021. The collection schedule now leaves one vehicle available as operational and maintenance spares four days per week, with two available on the fifth day – this will increase in July when the newest truck arrives. There is also a smaller spare diesel truck, Unit 301, that is used to complete missed collections and other small pickups but cannot be used as a full spare due to size.

Significant improvements are noted as follows:

- *Service Failures* — 91% reduction in service failures, from an average of 22 monthly in 2020 to two per month in 2021
- *Labour Cost (per collected tonne)* — 10% drop at August 31, 2021, from 2020
- *Significant Repairs* — adding a spare arm to inventory to reduce repair related downtime
- *Overtime at August 31, 2021*
    - 41% reduction of OT expense for Collection staff compared to the 2017-2020 average expense
    - overtime for Fleet Staff also reduced based on enhanced truck availability

In addition to the 2021 improvements from optimization, safety trends resulting from automation have continued to improve, with approximately 80% fewer incidents and lost days in the first half of 2021, down from 21 incidents and 262 lost days in 2018. These improvements reduce spending on Insurance Corporation of British Columbia claims, vehicle repairs, staff coverage and WorkSafe

BC premiums. As well, based on a review of maintenance availability for the first half of 2021, time available for refuse trucks has been increased from 17 to 35 hours weekly. This improvement can be attributed to the route optimization, as well as the implementation of an earlier maintenance shift.

The route optimization initiative and the associated improvements were achieved using data collected by the Sanitation Division since 2018. Based on these data, and with some further fine-tuning of the optimization schedule, staff are confident that the current level of curbside service can be maintained without additional resources for the next three years. It should be noted, this expectation takes into account the increase in the weight and volume of curbside materials that has occurred in recent years as a result of working and consumption patterns related to COVID-19.[1]

DIESEL REFUSE TRUCK REPLACEMENT

Refuse truck costs are tracked carefully by the City and were made available by finance and operations to the consultants for analysis. All repair and maintenance costs, overtime for collection staff, warranty schedules and maintenance data were provided. In addition, significant qualitative information was provided by staff to assist in understanding the history and status of the refuse trucks.

A summary of the CNG and diesel refuse trucks and their fleet status are as follows:

- *Acquisition* — Both truck types are built for automated curbside collection, and both were purchased at the outset of the transition from manual to automated collection.
  - The CNG trucks were purchased brand new through an extensive and careful RFP process.
  - The diesel-fuelled trucks were purchased as used vehicles within a short timeframe to ensure capacity as spares when rolling out the automated collection program.
- *Fleet Program* — The CNG trucks went through the formal budget and procurement process and were incorporated into the City's fleet program, which involves careful cost tracking by finance and incorporation of two specific costs (discussed below). The diesel trucks were not incorporated into the fleet program, and as such have not had these charges applied – they are 'owned' by the sanitation department. During interviews it was suggested that the trucks were not intended to be a long-term solution, as all three were effectively at end of life at the time of purchase and were thus excluded from the fleet program.

[1] COVID-related changes were noted in the *Collection Service Post-Implementation Review*.

- *Fleet Program Finances:* There are two costs incorporated into vehicle funding that assist the City in maintaining financial health, neither of which have been applied to the diesel trucks.

  - Replacement costs are estimated when a vehicle is purchased, and an annual charge is applied to fund a reserve for that eventual replacement. The annual charge is based on the anticipated useful life of the vehicle.
  - Overhead charges to recover the cost of operating the fleet maintenance program.

- *Kilometres Driven* — The diesel trucks have been driven far less than their CNG counterparts. This is due to their 'backup' status as fully amortized less reliable vehicles, and increases the cost per kilometre (KM) driven and well as the fleet flexibility.

The operating cost per KM is very different for the City's CNG and diesel trucks both in absolute spending per year, and in relative cost per KM driven. Figure 1 shows an absolute difference of $32,195 per year, which can be explained by the greater need for maintenance on and repairs to the diesel vehicles. Figure 1 also shows that diesel trucks on a relative per KM basis cost more than 250% of the CNG trucks. This difference can be explained by both the volume and cost of repairs as a result of age, but also to the KM driven. The diesel trucks, based on their poor reliability, are not used as a first choice for collection service — indeed, they are often not available for service because they are with the fleet maintenance team awaiting repairs. As a result, CNG trucks are driven an average of 155% more KM annually than the diesels.

Figure 1
Average Annual Operating Cost (per truck)
2017-2020

Vehicle Type	Cost / Truck*	Cost / KM
Diesel Truck	$ 82,187	$ 7.02
CNG Truck	$ 49,992	$ 2.78
Difference (Diesel – CNG)	**$ 32,195**	**$ 4.24**

** Active use years per truck used to calculate averages. Fleet charges not included.*

Additional to the difference in operating cost in Figure 1 is the downtime impact, which is identified as the program cost of trucks being off the road for servicing. As the City's current asset management program does not track the 'downtime' total *per se*, the consultants have created a proxy calculation that includes:

- overtime hours that are worked to compensate for vehicle shortages that occur when trucks are not out on the road, and staff are required to complete all routes with fewer vehicles

- extra "wear and tear" on vehicles that are required to be on the road for extended periods to service routes that cannot be serviced by vehicles under repair

Using data from 2017 to 2020, downtime cost has been calculated at an average of $110,000 annually, with approximately 76% or $84,000 of that cost attributable to overtime and the balance to "wear and tear".

Recommendations: Diesel Trucks Replaced
The recommendations for the three diesel trucks owned by the sanitation department are as follows:

- *Unit 301* — The City should consider retaining this smaller refuse truck. The vehicle is fitted with an arm for park and smaller missed pickup. As well, although the vehicle rarely goes out it provides a valuable service. A decision to retain this limited-use truck can be re-evaluated in 2023.

- *Units 317 and 318* — The City should consider replacing both full-size trucks with new CNG vehicles. This decision would reduce downtime cost as well as operating costs per KM. It would also result in the inclusion of the trucks in the City's fleet program so that proper replacement funding and overhead charges could be applied insuring appropriate contributions to financial stability are made. Additionally, the emissions reduction (approximately 30% by transitioning from diesel to CNG) to be recognized by this replacement would be beneficial as the City implements its *Green Fleet Strategy* to move toward established climate goals.

CNG REFUSE TRUCK USEFUL LIFE
As discussed in the *Collection Service Post-Implementation Review*, capital plans for solid waste systems are based on several assumptions including the useful life period over which collection vehicles are amortized. One of the recommendations from that report was to review the ten-year useful life period currently in use by the City to ensure it aligned with best practice. As stated in the report, refuse trucks can be made to last the full ten years, or longer, which was confirmed by the research conducted. The key is to understand how the City's operations, resources and model impact the costs of ownership.

The consultants spoke with two municipalities — the Cities of Abbotsford and Kamloops — that have geographic footprints and automated collection systems similar to those of Nanaimo. They also spoke with two non-municipal organizations: a large waste collection company in the Lower Mainland, and an office in charge of a large comparative-fuels database at the University of Toronto. A summary of key information is presented in Figure 2.

Figure 2
Comparison Data on CNG Vehicles

Organization	Truck Fuel	Useful Life	Significant Issues	Average Annual KM
City of Nanaimo	CNG	10	Arms	17,000
City of Abbotsford	Renewable Diesel	7	TBD	25,000
City of Kamloops	Diesel, one with electric truck body	8	Packer, Arms	42,000
Large Waste Collection Company (Lower Mainland)	CNG	10 - 15	Engine Rebuilds	100,000
University of Toronto Data Lab	CNG dataset (large fleets)	10 - 12	Arms, Engine Rebuilds	110,000

The data from the University of Toronto were compared to actual City costs to provide a sense of the useful life expectations based on the City's particular information. The University's data are presented in Figure 3.

Figure 3
Operating & Maintenance, plus Rehabilitation Costs over 15 Year Lifecycle
Data from University of Toronto

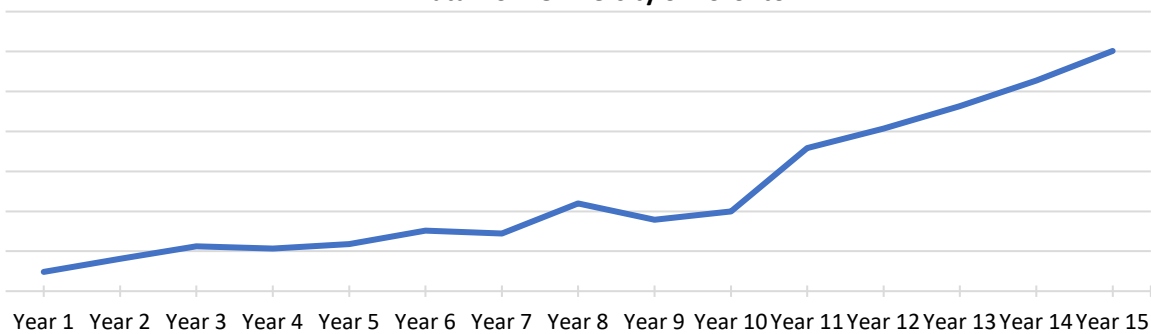


Figure 3 illustrates that maintenance costs can be expected to increase steadily as vehicles age. Figure 3 also suggests that a seven-year useful life period may be slightly short — eight years may be better, depending on the need for engine rebuilding.

When establishing an ideal useful life period for the City of Nanaimo's CNG vehicles, several factors must be considered:

- *Kilometres Driven* — The number of KM driven by refuse trucks is attributable to a variety of factors including length of workday, distance to and from fuelling and transfer stations, and the geographic spread of service areas. Notably, higher annual KM is often a sign of lower wear & tear per KM as more driving is highway based, and involves far fewer lifts or active collection work per KM.

- *Engine Rebuilds* — Significant overhaul work is a key determining factor in useful life evaluations as the capacity to complete the work in-house drives the cost of this work. For organizations with smaller fleets and less capacity to complete the work and absorb the associated downtime, the increased frequency of major maintenance and repair works as trucks age reduces the number of years it is practical to keep them in service.

- *Operations & Maintenance Schedules* — The degree of overlap between working hours of collection and maintenance teams reduces the ability to service vehicles when they are not required for service delivery. The degree of overlap directly increases the downtime costs of regular preventative maintenance and repairs.

- *Active Collection Hours* — The number of collection hours each day impacts the efficiency of truck ownership. Many municipalities are constrained in their ability to have more than six hours of active collection time on account of collective agreements and work conditions. Private companies in non-unionized environments are able to run their fleet for much longer periods each day, which helps to reduce the cost per household of collection activities.

Figure 4 considers these factors together to help identify a preferred useful life for the City of Nanaimo.

Figure 4
Consideration of Useful Life for
City of Nanaimo CNG Vehicles

Factors to Consider	Useful Life Options (years)			
	10	9	8	7
Kilometres Driven Annually	✓			
Engine Rebuilds (contracted out)				✓
Operations & Maintenance Schedule Overlap			✓	
Active Collection Hours			✓	

Recommendation: CNG Truck Eight Year Useful Life
Based on the assessment in Figure 4 — an assessment that recognizes the need for the City to contract-out the rebuilding of its vehicles' engines — it is recommended that the City consider reducing the useful life of its CNG vehicles from ten years to eight years.

This recommendation represents a departure from the 2016 business case prepared by the Sanitation Division. That business case identified the ten-year useful life period that the City has been following to date. The new recommendation benefits from data that have been collected since the inception of the automated system.

It should also be noted that the original business case estimated a total annual operating cost of $91,000 per CNG truck, which adjusted for inflation is approximately $105,000. The 2020 annual average cost is $128,000, for a difference of $23,000. The current figure reflects:

- capacity constraints for completion of repairs and maintenance in-house
- overlap of sanitation and maintenance department schedules
- 12% higher than planned KM driven, almost double the tips anticipated and a 20% increase in waste collected since 2020
- need for higher-than-anticipated frequency of arm rebuilds (the City now plans arm rebuilds every three years, not every five)
- higher-than-expected parts costs

USER FEE IMPACTS & COMPARISON
Diesel Trucks Replaced
To provide a thorough analysis for the cost of replacing diesel trucks 317 and 318 with CNG and bringing them into the fleet program, two items have been calculated. The first is the budget impact to the user fees, and second is an estimate of cost per household considering actual truck costs averaged between 2017 and 2020.

The budgeted fee impact calculated by the City's Finance Department is $11.00 annually. This fee impact contains internal assumptions regarding capital funding, fleet and user rate setting practice, as well as budgeted operating costs.

For further analysis, the consultants have provided a comparison in Figure 5 that shows the net new cost to households based on actual costs incurred for diesels and CNG trucks, averaged over 2017-2020.

Figure 5
Actual Costs Offset: Replace Two Diesel Vehicles

Cost Components	Costs (two vehicles)
Avoided Costs	
Annual Operating Cost Differential (Diesel minus CNG)	$ 64,000
Portion of Downtime*	$ 5,000
Annual Costs Avoided	**$ 69,000**
New Fleet Costs	
Reserve Transfers**	$ 138,000
Overhead Charges	$ 34,000
Annual New Fleet Costs	**$ 172,000**
Net Annual Cost (avoided costs minus new costs)	**$ 103,000**
Cost (per household)	**$ 3.50**

* Downtime from 2017-2020 averaged $110,000 per year, this assumes $33,000
** Assume useful vehicle life (10 years), funding and fleet charges associated with newest CNG truck in City's current fleet + 30% for discount/borrowing

Figure 5 shows a markedly lower number than the internal City finance calculation of $11.00. There are two reasons for the difference:

- there is an approximately $6.00 per household cost to finance the trucks, as they have not been part of the fleet program to date and therefore have no reserve funding to draw from for the purchase and outfit
- there are differences in budget versus actual operating costs used for this calculation

Figure 6 reconciles the differences.

Figure 6
Reconciling City User Fee Calculation

Cost Components	Fee Impact
City Calculated Fee Impact	**$11.00**
Cost of Financing	**$6.00**
Budget to Historical Actual Cost Fleet charges vs actual costs	**$1.50**
Consultant Cost Calculation	**$3.50**

CNG Truck 8 Year Useful Life

As noted earlier, the fee impact from the replacement of two diesel trucks (Units 317 and 318) with two new CNG trucks is $11.00 per household. To this base increase must be added the cost impact of reducing the useful life period from ten to eight years. This cost impact can be managed in a number of ways, each of which would have a different impact on user fees. Consider the following options:

- *Option 1* — Under this option, the City would adjust the useful life for all CNG refuse trucks to eight years in 2022. The City would also increase the amount of funding transferred to reserves to provide for vehicle replacement, and to compensate for retroactive reserve shortfalls that would arise as a result of shortening the life period.

  - This option would result in a one-time, ongoing fee adjustment of $12.00 per household. This fee impact has been calculated by the City Finance Department and has been smoothed over multiple years using the Sanitation Levelling Reserve Fund.

- *Option 2* — Under this option, the City would adjust the useful life and related replacement reserve funding to eight years beginning with the two replacement trucks purchased to replace the existing diesel trucks. The existing CNG vehicles would be left at ten-year useful life periods, which would require the City to risk-manage significant (upwards of $1.5 million) in replacement funding shortfall over a four-year period. On the assumption that trucks would be replaced at eight years, despite having a ten-year useful life amortization period, the funding shortfall would occur between 2024 and 2027. Operational decisions on replacing poor performing trucks at eight years and pushing out high-performing trucks would have the potential to smooth the impacts over a four-year period.

- *Option 3* — This option would be a hybrid approach that would consider the City's financial practice and internal capacity and results in a combination of Options 1 and 2.

INTERIM MEASURES

In the latter part of July and into August, while finalizing this report, there were multiple breakdown events for the existing fleet resulting in significant downtime. There was an increase in overtime paid during this time period and, more importantly, a 400% increase in service failures in August specifically. The diesel trucks are now 12 years into service and are proving out the arc in maintenance costs shown in Figure 3 of this report.

With the timeline for the procurement, purchase and outfitting of a new refuse truck stretching 15-18 months, the consultants recommend a short-term lease to allow the Sanitation Department to remove one diesel truck from the road in the immediate term. This measure has been confirmed as possible for November 1, 2021 — the total cost impact is presented in Figure 7,and the user fee impact is not part of the 2021 budget. It is anticipated that the lease would allow for significant downtime costs to be avoided.

Figure 7
Interim Measure — Short-term Lease

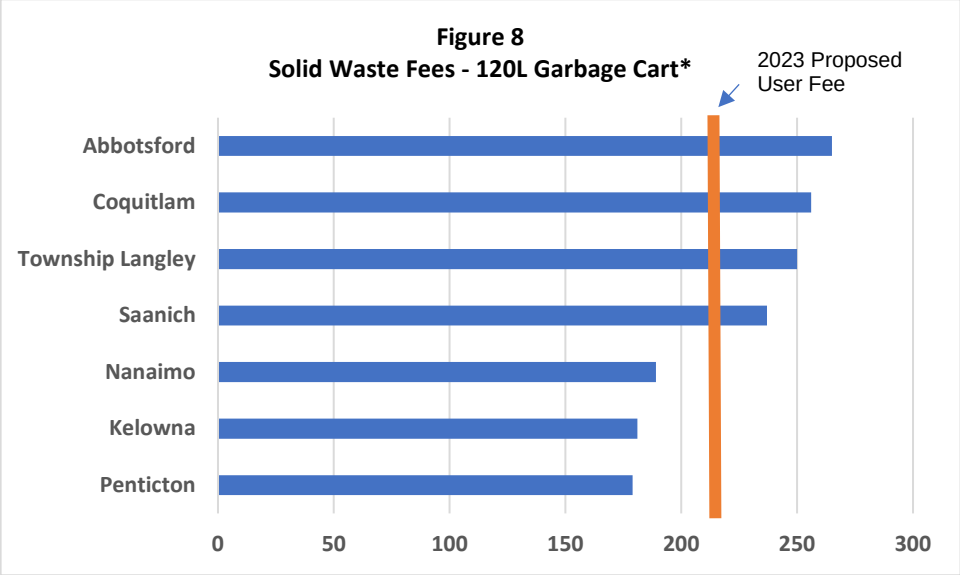
Cost Components*	Costs (One leased vehicle)
Avoided Costs	
Reduced Diesel Operating Cost (Annual average, one truck)	$ 82,187
Annual Costs Avoided	**$82,187**
New Costs	
CNG Vehicle Lease	$ 114,000
CNG Truck Maintenance, Fuel, GPS (average first year costs historically)	$ 52,000
Annual New Costs	**$ 166,000**
Net Annual Cost (Avoided costs minus new costs)	**$ 83,813**
User Fee Impact (per household, rounded)	**3.00**

*historical costs are 2017-2020 averages

FEE COMPARISON

Solid Waste user fees have been increased in recent years. These increases, coupled with the changes presented in this memorandum, make it important to consider how Nanaimo's fees compare against those of other municipalities. Figure 7 presents a comparison. As shown in the figure, Nanaimo's fees are third lowest of the range of closest comparative municipalities in BC.[2]

[2] The range of local options for comparison is small as not all local governments have modernized their collection to automated service. Also, among municipalities that are automated, not all collect the three waste streams.



* 82% of Nanaimo's households have and pay for the default 120L garbage cart option.

FLEET FUNDING

With the user fee impact of the recommendations of this report it is clear there are significant costs to the acquisition, maintenance and replacement of fleet (sanitation in particular is a high risk area for fleet management). The relatively significant costs can be attributed to many factors, including:

- KM Driven and type of driving
- Cost of vehicles to purchase and outfit
- Cost, skill sets and facilities to maintain
- Certainty of ongoing maintenance trends for vehicles as they age

As a result, it is critical to ensure funding availability at time of replacement, as debt servicing adds such a burden to the rate as seen in Figure 6. This need is particularly important with the shortening of the useful life to eight years, with a significant amount of funding required to "catch up" reserve balances. Finance has a sophisticated and detailed process for planning for fleet replacements and operational costs — this process will support that funding requirement.

SUMMARY OF RECOMMENDATIONS

Recommendations made throughout the report are summarized here, along with the fee impacts presented in Figure 9.

- *Refuse Truck Analysis* — Replace two diesel trucks with new CNG units, numbers 317 and 318; keep Unit 301 and re-evaluate use in 2023.

- *Interim Measures* — Lease a new CNG truck to replace one of the diesel trucks on an interim basis while procurement and outfitting of two new CNG trucks takes place.

- *Useful Life* — Reduce useful lives of the refuse trucks from ten to eight years, adjusting user fees to account for the increased reserve transfers required to fund a nearer replacement date.

These program changes aimed at sustaining the curbside collection program would result in user fee increases as shown in Figure 9, which do not consider any other program costs that may change as part of the normal budget process. The fee increases are a direct result of cost drivers noted earlier in this report, particularly the truck usage due to the increased volume of waste since 2020.[3]

TOTAL FEE IMPACT & TIMING

The total increase in user fees to account for both the replaced diesel trucks and the shortened life cycle of all CNG trucks is $23.00, phased in over two years as seen in Figure 9.

Figure 9
Implementation of User Fee Change

Change Recommended	2022	2023
CNG Truck Replacement		$11.00
CNG Truck Lease – Interim	$3.00	($3.00)
Eight-Year Useful Life (Option 1)	$12.00	
Annual Fee Impact	**$15.00**	**$8.00**
Total 2022 & 2023	**$23.00**	

* All impacts are one-time, ongoing.

[3] The 20% increase in waste has resulted in 12% higher-than-planned KM driven. Additional kilometres have been incurred in making additional trips to the recycling depot, and in performing almost double the number of annual lifts originally anticipated.