Committee of Council Agenda

Tuesday, May 25, 2021
2:00 p.m.
Virtual Meeting

Pages

1. CALL TO ORDER

2. ADOPTION OF THE AGENDA

2.1. Adoption of the Agenda

Recommendation:
That the Tuesday, May 25, 2021, Committee of Council Meeting Agenda be adopted as circulated.

3. CONFIRMATION OF MINUTES

3.1. Minutes of Committee of Council 1

Recommendation:
That the minutes of the following Committee of Council Meetings be adopted:

- *May 11, 2021.*

4. DELEGATIONS

4.1. School District #43 - RAC & SUPER

5. REPORTS

5.1. Rezoning Application for 2650 Burleigh Avenue and 2634-2636 Kingsway Avenue 5

Recommendation:
That Committee of Council recommend to Council:

1. *The zoning of 2650 Burleigh Avenue, 2636 Kingsway Avenue, and 2634 Kingsway Avenue be amended from CC (Community Commercial) and RS1 (Residential Single Dwelling 1) to a Comprehensive Development Zone that includes the following provisions:*

i. Ground floor community commercial uses, to a maximum of 170 m2;

ii. Up to 46 residential units;

iii. Density bonus in the amount of $50 per square foot for residential floor area proposed in excess of 2,962 m2 (31,891 ft2);

iv. A minimum of 171m2 of outdoor amenity area and 94m2 indoor amenity area.

2. Prior to adoption of the amending bylaw, the following conditions be met to the satisfaction of the Director of Development Services:

a. Demolition of existing structures;

b. Closure and sale of the lane within the development site;

c. Consolidation of lots, including dedication of corner cut-offs;

d. Completion of design and submission of securities and fees for off-site works and services;

e. Submission of an acoustic study and registration of a legal agreement to ensure for construction in accordance with recommendations of the study; and

f. Registration of a legal agreement to ensure installation of protective fencing for trees on the adjacent lots prior to any land clearing or demolition activities and that any disturbance of lands identified within the root protection zones are in accordance with the arborist recommendations for these trees.

g. Confirmation of compliance with the Environmental Management Act and Contaminated Sites Regulation for previous commercial uses on-site.

Recommendation:
That the Committee of Council:
1. Authorize staff to provide notice of an application to vary the underground servicing requirements for an apartment development at 2446 Shaughnessy Street, and
2. Advise Council that it supports further consideration of Development Variance Permit DVP00080.

Recommendation:

None.

5.4. 2023 Capital Methodology

Recommendation:
That Committee of Council approve reallocating a portion of the Long Term Reserve (LTR) (approximately $4.53M general, $892K water, $669K sanitary) in 2023 to the respective capital reserves for funding the capital plan, and

That the 2023 capital plan be prepared consistent with the 2017-2022 capital plans, utilizing the three project categories of neighbourhood rehabilitation, other rehabilitation and new.

5.5. Bear Hazard Update

Recommendation:
That Committee of Council endorse the 2020 Bear Hazard Assessment attached to this report and direct staff to prepare a Bear-Human Conflict Management Plan to identify and prioritize actions and strategies that address hazards outlined in the Bear Hazard Assessment at a cost of $25,000 to be funded from accumulated surplus and;

That the 2021 Financial Plan be amended accordingly.

5.6. 2021 Q1 Financial Variance and Forecast Report

Recommendation:
None.

6. COUNCILLORS' UPDATE

7. MAYOR'S UPDATE

8. CAO UPDATE

9. RESOLUTION TO CLOSE

9.1. Resolution to Close

Recommendation:
That the Committee of Council Meeting of Tuesday, May 25, 2021, be closed to the public pursuant to the following subsections(s) of Section 90(1) of the Community Charter:
Item 5.1

i. the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose;

k. negotiations and related discussions respecting the proposed provision of a

municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public;

l. discussions with municipal officers and employees respecting municipal objectives, measures and progress reports for the purposes of preparing an annual report under section 98 [annual municipal report].

10. ADJOURNMENT

10.1. Adjournment of the Meeting

Recommendation:
That the Tuesday, May 25, 2021, Committee of Council Meeting be adjourned.

11. MEETING NOTES

Committee of Council Minutes

Tuesday, May 11, 2021
Virtual Meeting

Present:	Chair - Mayor West	Councillor Penner
	Councillor Darling	Councillor Pollock
	Councillor McCurrach	Councillor Washington
Absent:	Councillor Dupont	

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1. CALL TO ORDER

The meeting was called to order at 2:00 p.m.

2. ADOPTION OF THE AGENDA

2.1 Adoption of the Agenda

Moved-Seconded:

That the Tuesday, May 11, 2021, Committee of Council Meeting Agenda be adopted as circulated.

In Favour (5): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, and Councillor Pollock

Carried

3. CONFIRMATION OF MINUTES

3.1 Minutes of Committee of Council

Moved-Seconded:

That the minutes of the following Committee of Council Meetings be adopted:

- *April 27, 2021.*

In Favour (5): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, and Councillor Pollock

Carried

4. REPORTS

4.1 Development Variance Permit for 2279 Kelly Avenue

Moved-Seconded:

That the Committee of Council:

1. *Authorize staff to provide notice of an application to vary the underground servicing requirements for an apartment development at 2279 Kelly Avenue, and*
2. *Advise Council that it supports further consideration of Development Variance Permit DVP00079.*

In Favour (6): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

4.2 Election Review

Staff presented the Election Review report to Committee of Council.

4.3 Lions Park Rain Garden Proposal

Moved-Seconded:

That Committee of Council endorse the Coquitlam River Watershed Roundtable's proposal for inclusion of rain gardens at Lions park adjacent to the storage building and the Railside Skate Park.

In Favour (6): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

4.4 RCMP First Quarter 2021 Report

RCMP answered questions from Committee of Council.

4.5 2020 Audited Financial Statements Report (Time Specific 3:00 p.m.)

KPMG provided an overview of the audit findings report and answered questions from Committee of Council.

Moved-Seconded:

That Committee of Council:

1. *Accept the 2020 Audited Consolidated Financial Statements; and*

2. *Direct staff to amend the 2021 financial plan to include a transfer of $3,397,800 from accumulated surplus to the General Long Term Reserve Fund and $317,700 from accumulated surplus to the Sewer Long Term Reserve Fund.*

In Favour (6): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

5. COUNCILLORS' UPDATE

No update.

6. MAYOR'S UPDATE

No update.

7. CAO UPDATE

No update.

8. RESOLUTION TO CLOSE

8.1 Resolution to Close

Moved-Seconded:

That the Committee of Council Meeting of Tuesday, May 11, 2021, be closed to the public pursuant to the following subsections(s) of Section 90(1) of the Community Charter:
Item 5.1

k. negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.

Item 5.2

f. law enforcement, if the council considers that disclosure could reasonably be expected to harm the conduct of an investigation under or enforcement of an enactment;

k. negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.

Item 5.3

b. personal information about an identifiable individual who is being considered for a municipal award or honour, or who has offered to provide a gift to the municipality on condition of anonymity.

Item 5.4

i. the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose;

k. negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public;

l. discussions with municipal officers and employees respecting municipal objectives, measures and progress reports for the purposes of preparing an annual report under section 98 [annual municipal report].

In Favour (6): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

9. ADJOURNMENT

9.1 Adjournment of the Meeting

Moved-Seconded:

That the Tuesday, May 11, 2021, Committee of Council Meeting be adjourned at 5:39 p.m.

In Favour (6): Mayor West, Councillor Darling, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

10. MEETING NOTES

Councillor Washington joined the meeting during Item 4.1 (2:01 p.m.).

Mayor

Corporate Officer

Rezoning Application - 2650 Burleigh Avenue and 2634-2636 Kingsway Avenue

RECOMMENDATION:

That Committee of Council recommend to Council:

1. The zoning of 2650 Burleigh Avenue, 2636 Kingsway Avenue, and 2634 Kingsway Avenue be amended from CC (Community Commercial) and RS1 (Residential Single Dwelling 1) to a Comprehensive Development Zone that includes the following provisions:
    i. Ground floor community commercial uses, to a maximum of 170 m^2;
    ii. Up to 46 residential units;
    iii. Density bonus in the amount of $50 per square foot for residential floor area proposed in excess of 2,962 m^2 (31,891 ft^2);
    iv. A minimum of 171m^2 of outdoor amenity area and 94m^2 indoor amenity area.
2. Prior to adoption of the amending bylaw, the following conditions be met to the satisfaction of the Director of Development Services:
    (a) Demolition of existing structures;
    (b) Closure and sale of the lane within the development site;
    (c) Consolidation of lots, including dedication of corner cut-offs;
    (d) Completion of design and submission of securities and fees for off-site works and services;
    (e) Submission of an acoustic study and registration of a legal agreement to ensure for construction in accordance with recommendations of the study; and
    (f) Registration of a legal agreement to ensure installation of protective fencing for trees on the adjacent lots prior to any land clearing or demolition activities and that any disturbance of lands identified within the root protection zones are in accordance with the arborist recommendations for these trees.
    (g) Confirmation of compliance with the *Environmental Management Act* and *Contaminated Sites Regulation* for previous commercial uses on-site.

PREVIOUS COUNCIL/COMMITTEE ACTION

None.

REPORT SUMMARY

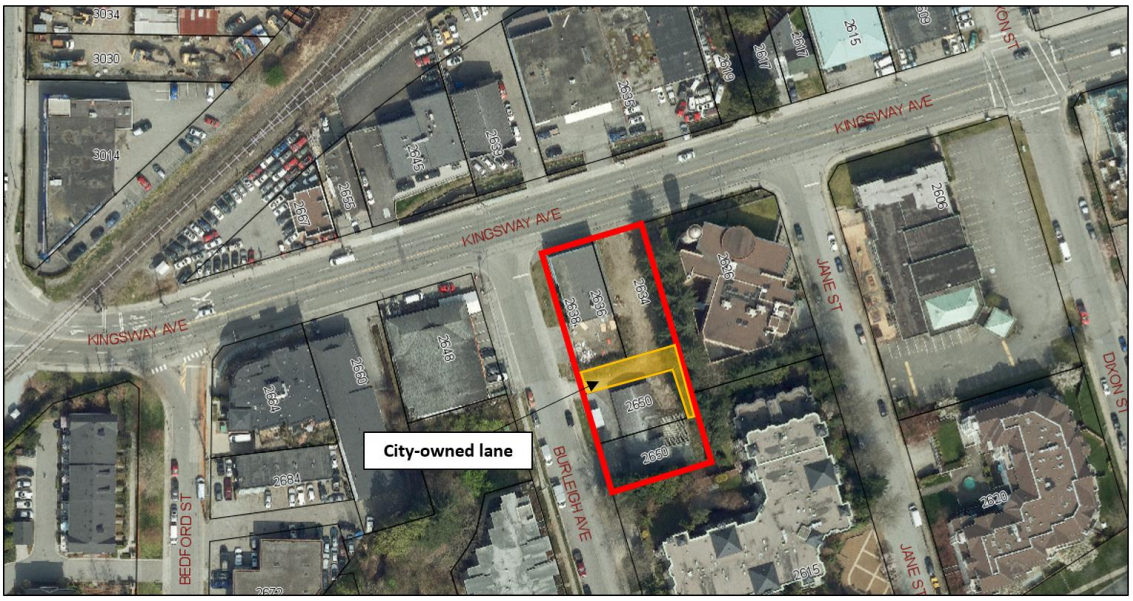
This report provides for consideration of a rezoning application to amend the zoning at 2650 Burleigh Avenue, 2636 Kingsway Avenue, and 2634 Kingsway Avenue from CC (Community Commercial) and RS1 (Residential Single Dwelling 1) to a Comprehensive Development Zone to permit a 5-storey, 46-unit apartment building with underground parking, landscaping and ground floor commercial along Kingsway Avenue. This proposal is in keeping with the Official Community Plan's land use designation for the area as Apartment and Neighbourhood Commercial. The report recommends a set of conditions be met as part of the rezoning to achieve these objectives and approval is recommended.

BACKGROUND

Proposal: The applicant, Hamid Tavakoli, has proposed to redevelop a site on the south-east corner of Burleigh Avenue and Kingsway Avenue with a 5-storey, 46-unit apartment building with ground floor commercial fronting Kingsway Avenue.

Context: The proposed development site is approximately 1975 m^2 (21,261 ft^2) and consists of four properties and a municipal lane. The site is currently developed with a commercial building and an older single-residential home; both buildings are currently vacant. The proposed site is currently in tidy order and has been fenced off by the applicant. The applicant has been working with the City's Bylaw Division over the last year to address issues of vagrancy and unsightliness.

Surrounding land uses include small-scale industrial and commercial uses to the north and west, an institutional building (Masjid Alhidayah and Islamic Cultural Center) to the east and multi-family residential to the south. The Canadian Pacific Railway corridor is located approximately 60 meters adjacent to the industrial development on the north side of Kingsway Avenue.

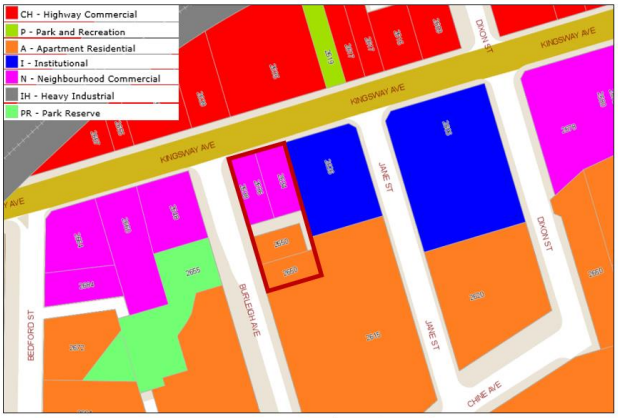


Location Map

Policy and Regulations: The site is currently zoned a mixture of RS1 (Residential Single Dwelling 1) and CC (Community Commercial). The land use designations in the Official Community Plan for the properties are NC (Neighbourhood Commercial), which is intended to provide for a mixed use development, and A (Apartment Residential).

Through the development permit process, the proposal would be subject to guidelines within the Intensive Residential and Environmental Conservation Permit Areas. These objectives include the

orderly development of the area and to encourage coordination of the siting, form, and volume of intensive residential buildings and areas for parking, storage, and landscaping.

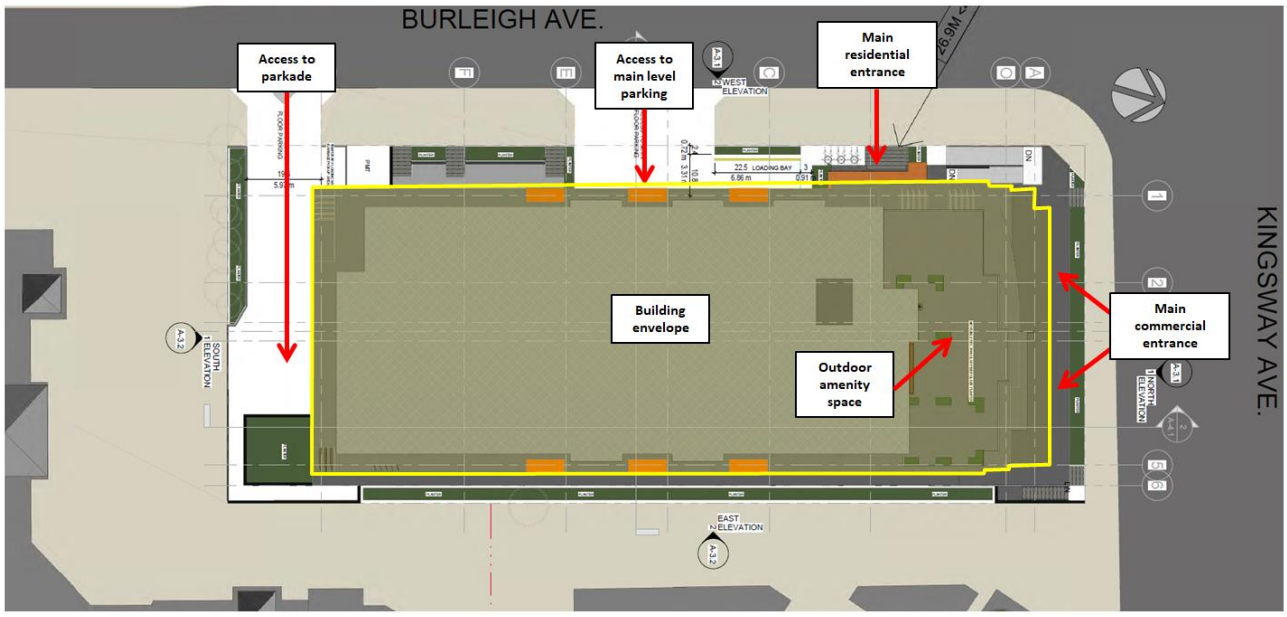


Current OCP Land Designations

Current Zoning

Project Description: The applicant has proposed a 5-storey development which includes approximately 168m^2 (1812 ft^2) of ground floor commercial space and 46 apartment residential units built over a common, two level parkade. The applicant has advised that the unit breakdown will include 25% family-friendly units with 30 one-bedroom, 14 two-bedroom and 2 three-bedroom units, with units varying in size from 55 m^2 (597 ft^2) to 145 m^2 (1563 ft^2).

The building is designed with the ground level commercial units fronting Kingsway Avenue and a prominent main entry providing pedestrian access to the residential apartment building from Burleigh Avenue. The ground level of the building also includes a level of parking for commercial and visitors parking, accessed from Burleigh Avenue. The apartment residential units are located on the 2-5th floors above the commercial space and parking garage, with two street-oriented apartment units fronting Burleigh Avenue. A second vehicular access on Burleigh Avenue is located at the rear of the property and is for residential tenants.



Site Plan

The developer proposes a contemporary architectural style with detailed consideration given to ensure the building will fit the context of the neighbourhood. The high quality materials include a variety of cultured stone and brick, aluminum woodgrain ornamental features, a lighter colour palette of stucco, and glass railings.

The southeast corner of the site has been designed to increase privacy and screening between the proposed building and the adjacent residential building by utilizing smaller vertical windows above eye level. The west side of the building provides for privacy from adjacent commercial and industrial buildings by limiting sizeable windows and stepping back the second storey along Kingsway Avenue. The setback will also help to reduce impact of traffic noise along Kingsway Avenue.

The ground floor apartment units along Burleigh Avenue have individual front doors and landscaped walkways leading to the street to promote pedestrian access and eyes on the street. All units have private outdoor space in the form of a balcony or patio. Indoor and outdoor amenity space has been provided in the amounts required for apartment development and includes a 1,840 sq. ft. common outdoor amenity space on the roof with gardening beds, tables and chairs and an area for children to play. Details of the project's design and landscaping would be confirmed in Committee's future consideration of the development permit application after bylaw adoption.

Proposed rendering looking north east.

Proposed rendering looking east

Proposed rendering looking south west

The proposal would be regulated through a Comprehensive Development zone, which would allow for the proposed mix of commercial and apartment residential uses. The development is proposing a lot coverage of 55% and a building height of 15.6 meters; these metrics are slightly greater than our RA1 Apartment Residential regulations but significantly less than what would be permitted in a CC Community Commercial building. The development is proposed to mirror the setback requirements of the RA1 zone, with the exception of the interior side yard (adjacent to the Masjid Alhidayah and Islamic Cultural Center) where a slightly smaller setback is proposed.

Proposed floor area and density bonus provisions are also in keeping with provisions of the RA1 and CC zones, which permit a residential floor area ratio of up to 1.5 and provide for an increase to 2.0 provided that a contribution in the amount of $50 per square foot of floor area created by this provision is provided to the City reserve funds for community amenities and social housing amenities.

The proposed parking and loading is in keeping with the requirements of the Parking and Development Management Bylaw and include bicycle storage. A carwash for residents has been provided within the main level parkade. The garbage and recycling room is located off of the entry to the parkade and staging for the bins will be located at the front of the street for easier pick up. The applicant has provided a letter confirming that the staging is acceptable for pick up from a private waste contractor. A loading bay is proposed off of Burleigh Avenue to be used for smaller commercial vehicles.

Project Profile

	Regulations	Proposed CD Zone [1]
Site Area	-	1,975 m^2 (includes the lane)
Floor Area Ratio		
Residential	1.5 2 (w/ density bonus)	1.96 (41, 671 sq. ft.)
Commercial		1, 812 sq. ft.
Dwelling Units		46
Adaptable Apartments	30% (14 units)	14 units
Family-oriented Units	25% (12 units)	12 units
Lot Coverage (Building)		55%
Setbacks:		
Front (Kingsway)		4.02 m
Rear (south)		7.52 m
Interior Side (east)		1.43 m
Exterior Side (Burleigh)		4.03 m
U/G structure		1.2 m
Building Height		15.6 m
Parking - Total	76	76
Resident	63	63
Visitor	1 per 5 units (9)	9
Commercial	4	4
Small Car	25% (19)	19 stalls
Indoor Recreation Area	2 m^2 per unit (92 m^2)	92 m^2
Outdoor Recreation Area	3.5 m^2 per unit (161 m^2)	161 m^2
Bicycle Storage		
Short term	6	6
Long term	46	46

Trees: The applicant has submitted an arborist report assessing all trees on-site as well as neighbouring trees to the east and to the south that are close to the property line. There are a total of ten trees on-site proposed to be removed, the majority of which are Douglas fir; two of the trees are considered significant based on the City's Tree Bylaw.

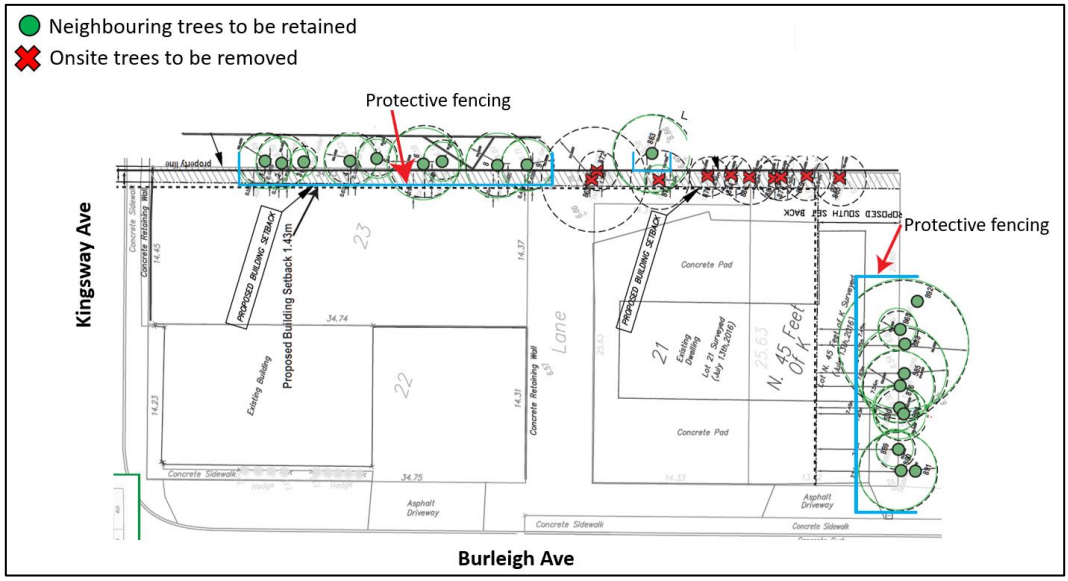
There are 10 trees on the neighbouring property to the east at 2626 Kingsway Avenue that are within proximity to the proposed parkade. There is also a cluster of ten trees on the neighbouring property to the south at 2615 Jane Street that straddle the property line. Protective fencing will be

[1] Information provided by applicant.

installed to ensure there is no impact to the health of all existing trees on the neighbouring properties. All protection, removal and replacement of trees would be in accordance with the City's Tree Bylaw.

In addition to the arborist report, a letter detailing precautionary measures was provided by the arborist. This letter recommends monitoring of the root protection zone during excavation and construction of the foundation and parkade of the building and provides examples of trees within proximity to multi-family developments that remain in good standing health due to mitigating measures and monitoring of an arborist during construction.

In keeping with requirements for developments in similar contexts, a restrictive covenant would be recommended as a condition of the rezoning to ensure that measures will be taken in accordance with the arborist's precautionary measures. This would include identifying root protection zones and ensuring any disturbance of lands identified within these zones is undertaken as directed by the arborist's letter and monitored by an arborist approved by the City in writing.



Land Purchase and Road Closure: To facilitate the consolidation with adjacent properties, the applicant has requested to purchase a portion of a city-owned lane in the middle of the subject development. This lane has previously been assessed and Council support for inclusion was provided as it is not required to service additional parcels. The total area of land to be purchased is approximately 215 m^2 (2,314 ft^2).

Offsite Infrastructure and Services: In accordance with the Subdivision Servicing Bylaw, required improvements would include additional service connections, reconstruction of half road plus 1 metre fronting Burleigh Avenue and Kingsway Avenue, curb and gutter, sidewalk and street

lighting and the site is to be serviced with underground Hydro and telecommunication connection. A 3m x 3m corner cut off at Burleigh/Kingsway Avenue intersection to be dedicated to the City.

Proximity to railway operations and Kingsway Ave truck route: The site is located in proximity to the CP Rail corridor and adjacent to Kingsway Avenue, which is an arterial route and truck corridor. These two factors present the potential for noise impacts to residents, particularly those facing Kingsway Avenue. In keeping with requirements for developments in similar contexts, an acoustic report and restrictive covenant would be recommended as a condition of the rezoning to ensure that measures will be taken in accordance with any recommendations from the report.

The guidelines from the Federation of Canadian Municipalities & the Railway Association of Canada recommend building setbacks to new residential development in proximity to railway operations should be a minimum of 30 metres. The applicant has advised the subject property is approximately 60 metres from the rail tracks and notes it is buffered by existing industrial buildings to the north of the site.

Site Identification: One of the subject properties was previously used as an appliance and repair business. In accordance with the *Environmental Management Act* and *Contaminated Sites Regulation,* confirmation will be required to ensure that the site is not contaminated and does not require remediation prior to development.

DISCUSSION

The OCP and additional City policies establish how the community is intended to develop, designates lands for uses in keeping with these policies and provides guidance on the types of housing, services and community supports the City should encourage. An evaluation of the proposal with applicable policies and regulations indicates the following:

- The OCP provides that residential development should remain consistent with the form and character of existing development. The apartment uses and landscaping proposed will complement the existing character of the area and achieve a superior quality of design to fit with the established neighbourhood.
- Accommodate different housing needs including family friendly units for the growing population in Port Coquitlam.
- The proposal provides opportunity for additional commercial services within the neighbourhood so that residents do not have to drive elsewhere for these services.
- The proposal will result in improvements to the appearance of Kingsway Avenue and Burleigh Avenue by continuing pedestrian connections with a new sidewalk and street lighting along Burleigh Avenue.

Staff note the high quality design and respectful building mass help blend the proposal into the surrounding neighbourhood of multi-family residential buildings. The building height, siting and lot coverage is appropriate for the site context; the building setback from Kingsway above the ground floor and vertical articulation are intended to break up the building massing; the top (5th) floor is

stepped with an outdoor amenity area; and the building walls adjacent to neighbouring properties have limited windows and are buffered by existing trees and landscaping to be retained and protected.

It is staff's opinion that the proposal provides substantial community benefit and is aligned with established direction in the OCP. Staff recommend the proposal be supported with the following provisions:

1. Zoning for the site be amended to a Comprehensive Development (CD) zone that provides for the proposed mix of land uses and confirms permitted density, built form, family-friendly units, siting and parking requirements;
2. Demolition of all existing structures;
3. Closure and sale of the lane, consolidation of all lots into one parcel and dedication of corner cuts;
4. Submission of civil design and fees and securities for off-site works and services;
5. Submission of an acoustic study to determine noise impact from traffic and the rail corridor and registration of a legal agreement for construction in accordance with recommendations of the study; and
6. Registration of a legal agreement to ensure any disturbance of lands identified within the root protection zones are in accordance with the arborist recommendations for the neighbouring. All protection, removal and replacement of trees would be in accordance with the City's Tree Bylaw.
7. Confirmation of compliance with the *Environmental Management Act* and *Contaminated Sites Regulation* for previous commercial uses on-site.

PUBLIC CONSULTATION

A sign has been posted on the site providing notice of the rezoning application since August 1st, 2019. To date, no comments have been received.

The applicant has discussed trees on the neighbouring property to the east with property representatives and has addressed requests to retain and protect trees in the current submission.

Photo of sign

FINANCIAL IMPLICATIONS

The redevelopment will increase the assessed value of the property, resulting in increased property taxation and utility fees for the City.

The increased density will provide approximately $244,500 to the Social Housing Reserve and $244,500 to the Community Amenities Reserve.

OPTIONS **(✓= Staff Recommendation)**

	#	Description
✓	1	Recommend to Council that the zoning of 2650 Burleigh Avenue, 2636 Kingsway Avenue, and 2634 Kingsway Avenue be amended from CC and RS1 to a CD zone and that the specified conditions be met prior to adoption of the rezoning bylaw.
	2	Request additional information or amendments to the application to address specified issues prior to making a decision on the application.
	3	Recommend to Council that the rezoning application be refused.

ATTACHMENTS:

Attachment 1: Arborist report

Attachment 2: Precautionary letter on monitoring measures

Lead author(s): Graeme Muir, Jennifer Little

CENTRAL VALLEY
ARBORIST CONSULTING LTD.

CERTIFIED ARBORIST

604-850-4938
P.O Box 882 Abbotsford Station A
Abbotsford, BC V2T 7A2

REVISED
ARBORIST REPORT
For
2634 and 2638 Kingsway Avenue,
2650 Burleigh Avenue
Port Coquitlam, BC

Prepared for: Hamid Tavakoli
1252988 BC Ltd.
2221 Grandville Street
Vancouver, BC
V6H 3G1

Prepared by: Bob Kwak
Certified Arborist ISA #PN-1736A
Qualified Tree Risk Assessor

Date: February 25, 2021

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CENTRAL VALLEY
ARBORIST CONSULTING LTD.

CERTIFIED ISA ARBORIST

604-850-4938
P.O Box 882 Abbotsford Station A
Abbotsford, BC V2T 7A2

February 25, 2021

Hamid Tavakoli
1252988 BC Ltd.

Introduction

The following revised arborist report has been prepared by Bob Kwak (Certified Arborist) for the proposed development located at 2634, 2638 Kingsway Avenue & 2650 Burleigh Avenue, Port Coquitlam BC.

In January of 2021, I was advised by the Developer, Hamid Tavakoli that the neighbouring property owner to the east was strongly against the removal of his trees. In order to facilitate the continued retention of the neighbouring trees the previous arborist report dated October 24, 2018 has been revised.

On February 12, 2021 I attended the site to assess what steps needed to be taken to retain the neighbouring trees along the east property line. The following details my findings.

On September 12th, 2018, Central Valley Arborist Consulting Ltd was retained by Brian Saadatmandi to undertake an assessment of the existing trees located at the proposed development and to give a tree inventory with the intent of making recommendations for removal and preservation. The suitability for tree retention was evaluated based on the health of the trees and their location in relation to the proposed building envelopes and infrastructure. This report also outlines the existing condition of the trees on and adjacent to the property, summarizes the proposed tree removals and retention trees as well as suggested guidelines for protecting the remaining trees during the construction process. (Note: The objective of this report is to ensure the proposed development is in compliance with the City of Port Coquitlam Tree Bylaw, 2019, No. 4108.)

Site Overview

The proposed development consists of the creation of commercial buildings on the north side and two residential building lots on the south side. (See Site Plan for details)

On Site Evaluation

On October 4th, 2018 I attended the site to inventory and assess the trees. Information was documented with respect to the common name, diameter at breast height (DBH), overall health and structural condition, retention value and required root zone protection has been suggested. The trees were tagged and are numbered. In total there are 10 trees with a DBH of 15 centimeters or greater located on the

proposed development property. Included in this report are 20 neighboring trees, which have been added to the report because of their proximity to the development property. (See attached Evaluation Summary and Site Plan for details)

Note: The rating criteria for "Overall Tree Health and Structural Condition" and "Tree Retention Value Rating" is located on page 5 of this report.

Tree Retention and Removal

On-Site Trees to be RETAINED within the Subject Property

- There is a total of **0** trees to be retained (0 trees with a DBH of 15 centimeters to 59 centimeters and 0 trees with a DBH of 60 centimeters or greater.)

On-Site Trees to be REMOVED within the Subject Property

- There is a total of **10** trees that require removal (9 trees with a DBH of 15 centimeters to 59 centimeters and 1 tree with a DBH of 60 centimeters or greater.)
- Of which there are:
  - **7** trees within the development property in direct conflict with the proposed development with a retention value rating of medium.
  - **3** trees within the development property in direct conflict with the proposed development with a retention value rating of low.

Off-Site Trees with in City Lands:

- Not applicable to this project

Off Site Trees on Neighboring Private Property:

- **PROTECT 20** off-site neighboring trees. There are 10 trees numbered, 891, 890, 889, 590, 884, 876, 585, 888, 865 and 892 located along the south property line and 10 trees located along the east property line, Tree Tag #'s 1 to 9 and #863.
- I recommend an arborist to be on site during excavation within the critical root zone of the neighbouring trees along the east property line. A Hydro-vac may be required to help expose the roots to insure minimal root damage. I also recommend deep root fertilizer applied to the between the months of March to October. This will help to enhance the health and vigor of the trees.

Tree Replacement

Replacement tree means a tree with a minimum caliper diameter of 5.0 cm if deciduous, or a minimum height of 2.0 m if coniferous, planted on a lot to replace a tree which has been cut down on the same lot. As per the City of Port Coquitlam, Tree Bylaw, 2019. Bylaw No. 4108; eleven tree replacements will be required.

Construction Guidelines

Six times the diameter was used to determine the optimal root protection zone (RPZ). **The optimal root protection zone is to be measured in the field from the outer edge of the stem of the tree**. The RPZ is the area around the tree in which no grading or construction activity may occur without project arborist approval and is required for the tree to retain good health and vigor.

The following are tree preservation guidelines and standards for the RPZ's

- No soil disturbance or stripping;
- The natural grade shall be maintained within the protection zone;
- No storage, dumping of materials, parking, underground utilities or fires;
- Any plan affecting trees should be reviewed by a consultant including demolition, erosion control, improvement, utility, drainage, grading, landscape and irrigation;
- Special foundations, footings and paving designs are required if within the tree protection zone;
- Utilities should be routed around the RPZ;
- If excavation within the tree protection zone is required it is mandatory to be supervised by a consulting arborist;
- Surface drainage should not be altered so as to direct water into or out of the RPZ; and
- Site drainage improvements should be designed to maintain the natural water table levels within the RPZ.

Respecting these guidelines will prevent changes to the soil and rooting conditions, wounding of the trees and contamination due to spills and waste. Any plans for work or activities within the RPZ that are contrary to these guidelines should be discussed with the project arborist so that mitigation measures can be implemented.

Tree Protection Fences

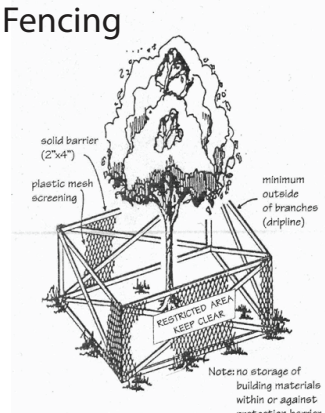
Prior to any construction activity on site, tree protection fences must be constructed at the specified distance from the tree trunks. The protection barrier or temporary fencing must be at least 1.2 meters in height and constructed of 2 by 4 lumber with orange plastic mesh screening. This must be constructed prior to tree removal, excavation or construction and remain intact throughout the entire period of construction. (See attached Fencing Instructions and Site Plan for Fencing locations)

If there are any further questions, please do not hesitate to contact our office.

Respectfully submitted,

Bob Kwak
Certified Arborist PN #1736A
Qualified Tree Risk Assessor (TRAQ)

Protective Fencing



Tree Protection Barrier

Tree Protection Distance Table

Trunk Diameter (cm)	Minimun Protection Req'd Around Tree (distance from trunk in metres)
20	1.2
25	1.5
30	1.8
35	2.1
40	2.4
45	2.7
50	3
55	3.3
60	3.6
75	4.5
90	5
100	6.0

Dashed Painted White Line

1.43m PROPOSED EAST SET BACK

Concrete Sidewalk

Concrete Retaining Wall

14.45

14.23

Concrete Sidewalk

property line

Concrete Retaining Wall

PROPERTY LINE

PROPOSED BUILDING SETBACK

Existing Building

Proposed Building Setback 1.43m

Protecive Fencing
2.3m from base of tree to fence

Tree Tag #1-9
neighbouring trees
Arborist must be on site
during excavation

Concrete Retaining Wall

Fence Location
Arborist must inspect fencing

Protecive Fencing
2.3m from base of tree to fence

Protecive Fencing
2.3m from base of tree to fence

Hedge

34.74

23

22

Asphalt Driveway

34.75

Burleigh Avenue

14.31

14.37

Concrete Retaining Wall

6.57

Lane

Concrete Sidewalk

25.63

PROPOSED BUILDING SETBACK

21

Existing Dwelling

Lot 21 Surveyed (July 13th,2016)

Concrete Pad

Concrete Pad

14.33

PROPERTY LINE

25.63

N. 45 Feet Of K

Concrete Curb

Concrete Sidewalk

Asphalt Driveway

Lot N. 45 Feet of K Surveyed (July 13th,2016)

PROPOSED SOUTH SET BACK

7.52m

Protective Fencing

Neighbouring Trees

February 26, 2021

Client:
SEI Project Management
211-828 Harbourside Dr. N Van
c/o Brian Saadatmandi
604-603-4986

Site Location:
2650, 2634 Burleigh Street &
2638 Kingsway Avenue Port Coquitlam, BC

CENTRAL VALLEY
ARBORIST CONSULTING LTD.
604-850-4938

10		Total tagged trees 15cm (DBH) or greater located on developable property
10	X	Total trees removed on development property 15cm (DBH) or greater
20	●	Trees tagged 1-9 and #863 located on adjacent neighbouring property to the west & Tree tags # 891,890, 889, 884, 590, 876, 585, 888, 865 & 892 located on neighbouring property to the south
	—	Protective Fencing

TREE RATING CRITERIA

Overall Health and Structural Rating

- **Excellent** = Tree of possible specimen quality, unique species or size with no discernible defects, or heritage tree.
- **Normal** = Tree is in good condition with no significant structural weaknesses or health concerns considering its growing environment and species.
- **Moderate** = Tree has noted health and/or minor structural weaknesses; however, treatments may be recommended to improve the health or structural condition of the tree.
- **Poor** = Tree is in serious decline from its typical growth habits and has multiple very definable health and/or structural weaknesses. These trees may have difficulty adapting to land use changes.
- **Dead/Dying** = Tree was found to be dead, and/or has severe defects and is in severe decline.

Tree Retention Value Rating

This rating provides guidance for tree retention planning and takes into account the tree's species profile and its growing conditions.

- **High** = Trees are worthy of consideration for retention. This includes dominant trees in a stand as well as open grown individual trees would be typically included in this category.
- **Medium** = Trees may be considered for retention with limitations and/or treatments. This may include trees growing within groves, moderately difficult topography for root system expansion, recently exposed trees or trees with minor structural defects that can be mitigated through pruning.
- **Low** = Trees with structural/health defects that are not currently high risk or imminent for failure. Trees should not be considered for retention if within striking distance of a high value target. These include poor species profiles* for long term viability. Trees growing in poor locations such as dense stands of trees with high height to diameter ratios, recently exposed edge trees or areas with high water tables leading to shallow constricted rooting.
- **Nil** = Trees should not be considered for retention due to high risk condition or extenuating circumstances that have led to the tree being at high risk of failing and dead or dying trees.

*The species profile is based upon mature age and height/spread of the species, adaptability to land use changes and tree species susceptibility to diseases, pathogen and insect infestation.

CENTRAL VALLEY ARBORIST CONSULTING LTD. *TREE EVALUATION SUMMARY*

Address: 2634 and 2638 Kingsway Avenue and 2650 Burleigh Avenue, Port Coquitlam, BC **Date: Feb 23, 2021**

Tag #	Common Name	# of Trees	DBH (cm)	Overall Condition	Retention Value	Location	Retain/ Remove	Overall Condition/Tree Retention Suitability	Root Protection Zone (m)
1	Western red cedar	1	46	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.8
2	Douglas fir	1	44	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.8
3	Douglas fir	1	26	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	1.6
4	Douglas fir	1	45	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.8
5	Douglas fir	1	30	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	1.8
6	Douglas fir	1	61	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	3.7
7	Douglas fir	1	29	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	1.7
8	Douglas fir	1	57	Moderate	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	3.4

CENTRAL VALLEY ARBORIST CONSULTING LTD. *TREE EVALUATION SUMMARY*

Address: 2634 and 2638 Kingsway Avenue and 2650 Burleigh Avenue, Port Coquitlam, BC **Date: Feb 23, 2021**

Tag #	Common Name	# of Trees	DBH (cm)	Overall Condition	Retention Value	Location	Retain/ Remove	Overall Condition/Tree Retention Suitability	Root Protection Zone (m)
9	Western red cedar	1	41	Normal	Medium	Located on neighboring property to the east	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.7
585	Western red cedar	1	35/25	Moderate	Medium	Neighboring property to the south	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.8
590	Western red cedar	1	35	Moderate	Medium	Neighboring Property to the south	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.1
863	Big Leaf Maple	1	40/40	Moderate	Medium	Neighboring property to the east	Retain	Two stemmed tree - Neighboring property owner wants this tree to be retained -Arborist must be on-site during excavation	3.4
865	Hemlock	1	35	Poor	Low	Neighboring Property to the south.	Retain	Tree is in decline – Improper past crown reduction – Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.1
868	Douglas fir	1	80	Poor	Low	Located on the east side of the development property	Remove	Previously topped; regrowth is poorly attached to trunk	4.8
870	Douglas fir	1	30	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	1.8

CENTRAL VALLEY ARBORIST CONSULTING LTD. *TREE EVALUATION SUMMARY*

Address: 2634 and 2638 Kingsway Avenue and 2650 Burleigh Avenue, Port Coquitlam, BC **Date: Feb 23, 2021**

Tag #	Common Name	# of Trees	DBH (cm)	Overall Condition	Retention Value	Location	Retain/ Remove	Overall Condition/Tree Retention Suitability	Root Protection Zone (m)
871	Douglas fir	1	45	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	2.7
872	Douglas fir	1	35	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	1.8
874	Douglas fir	1	30	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	1.8
876	Western red cedar	1	38	Moderate	Medium	Located on neighboring property to the south	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.3
878	Douglas fir	1	40	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	2.4
879	Douglas fir	1	40	Poor	Low	Located on the east side of the development property	Remove	Previously topped; regrowth is poorly attached to trunk - In conflict with proposed parking stalls	2.4
881	Douglas fir	1	30	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	1.8

CENTRAL VALLEY ARBORIST CONSULTING LTD. *TREE EVALUATION SUMMARY*

Address: 2634 and 2638 Kingsway Avenue and 2650 Burleigh Avenue, Port Coquitlam, BC **Date: Feb 23, 2021**

Tag #	Common Name	# of Trees	DBH (cm)	Overall Condition	Retention Value	Location	Retain/ Remove	Overall Condition/Tree Retention Suitability	Root Protection Zone (m)
884	Douglas fir	1	40	Poor	Low	Neighboring property to the south	Retain	Previously topped; regrowth is poorly attached to trunk - Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.4
885	Douglas fir	1	41	Poor	Low	Located on the east side of the development property	Remove	Previously topped; regrowth is poorly attached to trunk - In conflict with proposed parking stalls	2.5
886	Douglas fir	1	40	Moderate	Medium	Located on the east side of the development property	Remove	In conflict with proposed parking stalls	2.4
888	Western red cedar	1	90	Moderate	Medium	Neighboring property to the south	Retain	Previously topped - Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	5.4
889	Douglas fir	1	30	Poor	Low	Neighboring property to the south	Retain	Previously topped -Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	1.8
890	Douglas fir	1	55	Poor	Low	Neighboring property to the south	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	3.3
891	Japanese Maple	1	<20	Normal	Medium	Neighboring property to the south	Retain	Neighboring property owner wants this tree to be retained - Arborist must be on-site during excavation	2.4

Photograph #1: View of south portion of property

Photograph #2: Tree tag # 1-9, neighbor's trees

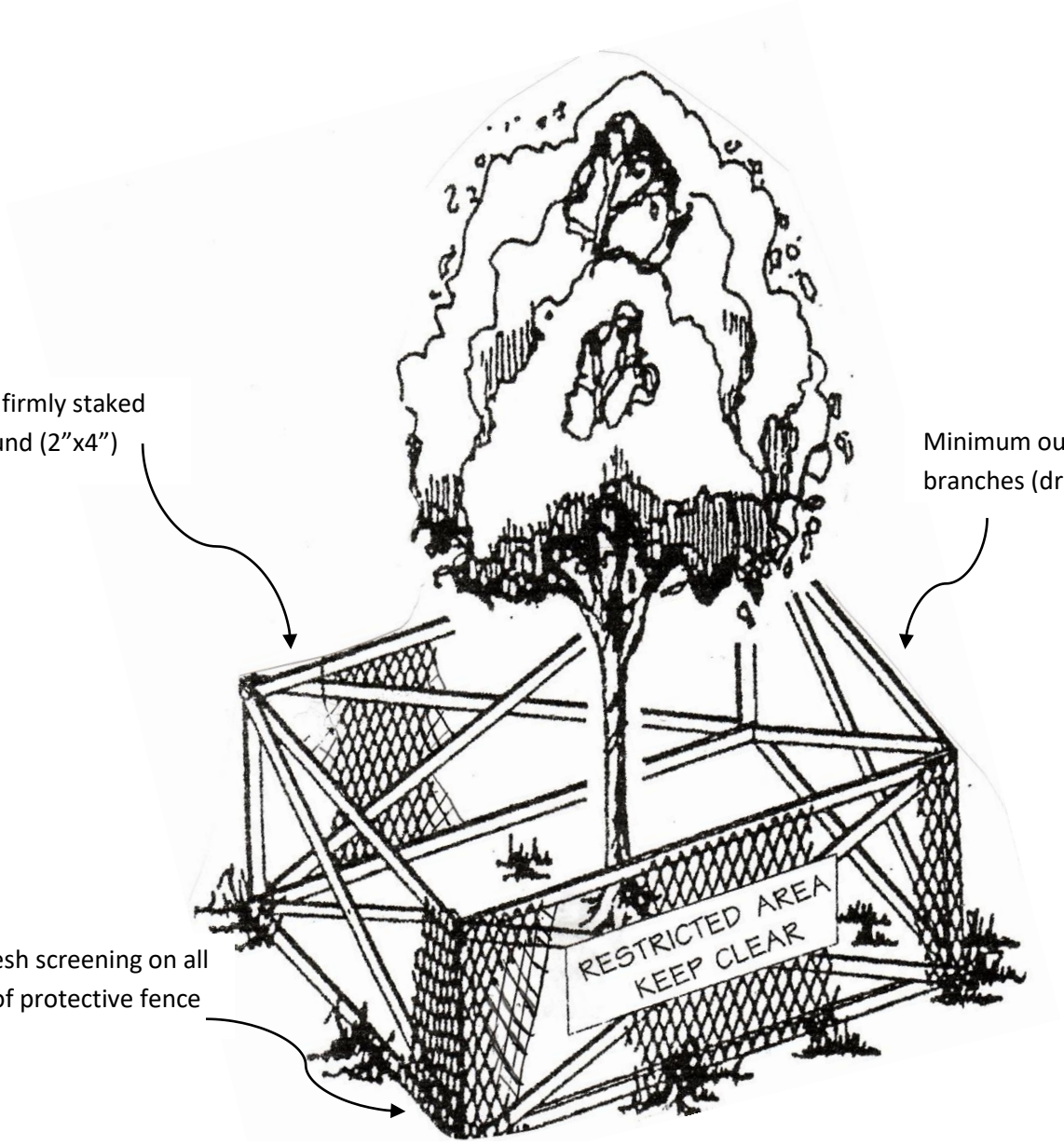
Photograph #3: Tree tag # 1-9, neighboring trees along east property line

Photograph #4: Tree tag # 1-9, neighboring trees along east property line

Photograph #5: The trees on the East side of the property require removal due to parking requirements for the new development.

Photograph #6: Tree tag #1 dead branches in upper crown, tree is in decline

PROTECTIVE FENCING INSTRUCTIONS



Note: No storage of building materials within or against protection barrier and no booms or equipment to enter drip-line at anytime. Barrier is not to be moved once erected.

Qualifications of Author

Robert F. Kwak

P.O Box 882, Station A
Abbotsford, BC
V2T 7A2

Cell: 604-850-4938
Email: kwak@shaw.ca

- President and owner of Central Valley Arborist Consulting Ltd; 2015 to present
- President and owner of Central Valley Tree and Arborist Services Ltd; 2002 to 2015
- Manager of Westland Tree Services 2000 to 2002
- President and owner of B.K. Tree Services Ltd; 1981 to 1999
- International Society of Arboriculture; Certified Arborist PN-1736A
- PNW-ISA Certified Tree Risk Assessor; Certification (TRAQ)
- WCB Wildlife Danger Tree Assessor: Parks and Recreation Module; Certification #P0072
- Consulting Arborist; June 2000 – Present
- Member: International Society of Arboriculture (ISA)
  Pacific Northwest Chapter of Arborist
- Over 35 of years professional work in the tree industry and land clearing business.
- Insurance policy #040149195 ($5,000,000 Liability) – Saxbee Insurance Agencies Ltd.
- Business License: Abbotsford Intra Municipal #128082
- Work Safe BC – 961482-AA

Assumptions and Limiting Conditions

1. Except as expressly set out in this report and in these Assumptions and Limiting Conditions, Central Valley Arborist Limited (Central Valley) makes no guarantee, representation or warranty (express or implied) with regard to: this report; the findings, conclusions and recommendations contained herein; or the work referred to herein. This report has been prepared, and the work undertaken in connection herewith has been conducted, by Central Valley for Hamid Tavakoli, 1252988 BC Ltd. regarding **2634, 2638 Kingsway Avenue and 2650 Burleigh Avenue, Port Coquitlam, BC.** It is intended for the sole and exclusion use by the Client, for the purpose(s) set out in this report. Any use of, reliance on, or decisions made based on this report by any person other than the Client, for any purpose other than the purpose(s) set out in this report, is the sole responsibility of, and at the sole risk of, such other person or the Client, as the case may be. Central Valley accepts no liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm (including without limitation financial or consequential effects on transactions or property values, and economic loss) that may be suffered or incurred by any person as a result of the use of or reliance on this report or the work referred to herein. The copying, distribution or publication of this report (except for the internal use of the Client) without the express written permission of Central Valley (which consent may be withheld in Central Valley's sole discretion) is prohibited. Central Valley retains ownership of this report and all documents related thereto both generally and as instruments of professional service.
2. The findings, conclusions and recommendations made in this report reflect Central Valley's best professional judgment in light of the information available at the time of preparation. This report has been prepared in a manner consistent with the level of care and skill normally exercised by arborists currently practicing under similar conditions in a similar geographic area and for specific application to the trees subject to this report as at the date of this report. Except as expressly stated in this report, the finds, conclusions and recommendations set out in the report are only valid for the day on which the assessment leading to such finds, conclusions and recommendations was conducted. If generally accepted assessment techniques or prevailing professional standards and best practices change at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Central Valley expressly excludes any duty to provide any such modification if generally accepted assessment techniques and prevailing professional standards and best practices change.
3. Conditions affecting the trees subject to this report (the "Conditions", including without limitation structural defects, scares, decay, fungal fruiting bodies, evidence of insect attack, discolored foliage, condition of root structures, the degree and direction of lean, the general condition of the tree(s) and the surrounding site, and the proximity of property and people) other than those expressly addressed in this report may exist. Unless otherwise expressed: information contained in this report covers only those conditions and trees that are expressly stated to be subject to this report and only reflects such Conditions and trees at the time of inspection; and the inspection is limited to visual examination of such Conditions and trees without dissection, excavation, probing, or coring. While every effort has been made to ensure that the trees recommended for retention are both healthy and safe, no guarantees, representations or warranties are made (express or implied) that those trees will remain standing or will not fail. The Client acknowledges that it is both professionally and practically impossible to predict with absolute certainty the behavior of any single tree, or group of trees, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure and this risk can only be eliminated if the risk is removed. If Conditions change or if additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. Central Valley expressly excludes any duty to provide any such modification if Conditions change or additional information becomes available.
4. Nothing in this report is intended to constitute or provide a legal opinion, and Central Valley expressly disclaims any responsibility for matters legal in nature (including, without limitation, matters relating to title to and ownership or real or personal property and matters relating to cultural and heritage values). Central Valley makes no guarantee, representation or warranty (express or implied) as to the requirements of or compliance with applicable laws, rules, regulations, or policies established by federal, provincial, local government or first Nations bodies (collectively, "Governmental Bodies") or as to the availability of licenses, permits or authorizations of any Governmental Body. Revisions to any regulatory standards (including by-laws, policies, guidelines and any similar directions of a Government bodies in effect from time to time) referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary. Central Valley expressly excludes any duty to provide any such modification if any such regulatory standard is revised.
5. Central Valley shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
6. In preparing this report, Central Valley has relied in good faith on information provided by certain persons, Governmental Bodies, government registries and agents and representatives of each of the foregoing, and Central Valley assumes that such information is true, correct and accurate in all material respects. Central Valley accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of or information provided by such persons, bodies, registries, agents and representatives.
7. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
8. Loss or alteration of any part of this report invalidates the entire report.

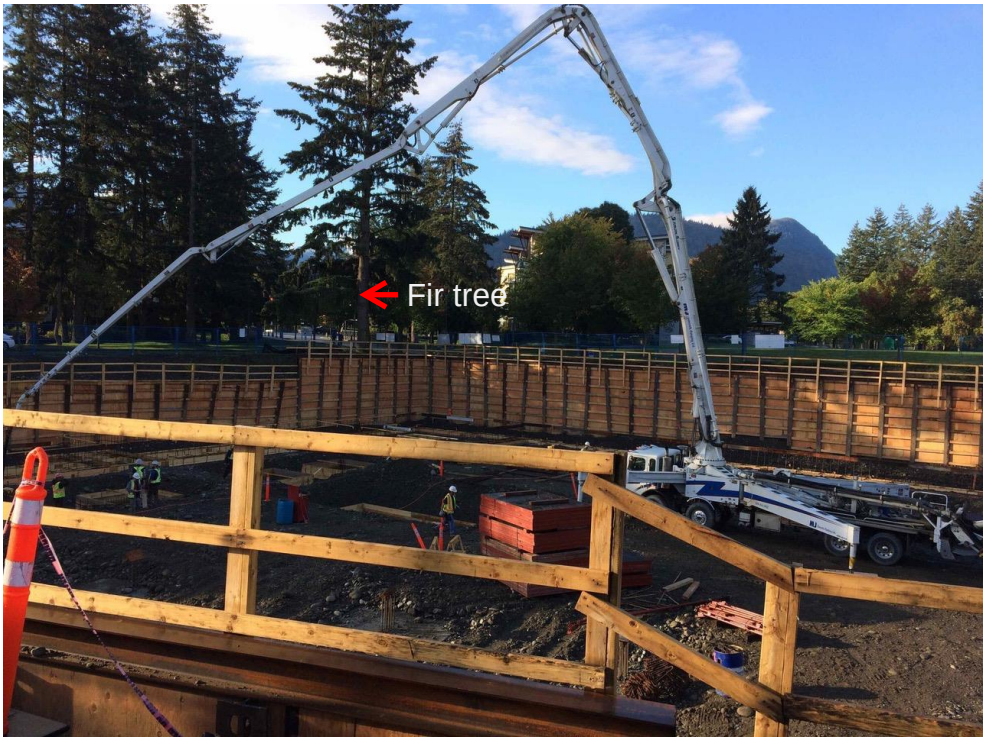
Hi Graeme, the following are general precautionary procedures when working within the Root Protection Zone (RPZ) are as follows:

- Any work within the RPZ must have a Certified Arborist on site to instruct on proper working procedures.
- To ensure the critical roots of the trees is not adversely impacted the onsite arborist will require hand digging where necessary and if required a hydro-vac will be utilized to insure the damage if any to the critical roots is minimal.
- The roots that are exposed will be pruned back properly to promote a responsive growth. The exposed roots will be covered with burlap and soaked down to keep moist.
- I recommend replacing the original soil with a product called structural soil for municipal trees (See C.V. Structural Soils Cornell University). Structural soil is to be utilized where trees are located or installed in hard surface paved areas where additional growing medium is required to provide adequate space for tree root development. The mix consists of 75% single size stone 60 mm to 75 mm clear sieve designation: Blasted quarry rock, aggregates to be free of any foreign elements or material. Then 25% of a good soil, mixed with a soil stabilizer (a non-toxic organic binder). After adequate compaction of the structural soil is confirmed, non-woven filter fabric is to be installed as a separate layer directly above the compacted structural soil mixture.
- Pilings or shoring may be required during excavation to insure the soil surrounding the remaining roots stays in tacked.
- After excavation is completed and the soil has been replaced, I recommend deep root fertilizer to be applied to the remaining roots.
- Deep root fertilizer, is an injected fertilizer which helps to aerate the soil's spore space, health and vigor of the tree. It also helps to improve drought tolerance and increases foliage.

I have provided a number of photographs of past sites that we have worked at to show examples of how trees have survived under similar circumstances.

Example #1: This is an example of two cedar trees that were approximately 3m from a newly constructed apartment building with an underground parking area. This photograph was taken 5 years later and the tree shows no signs of decline.

Example 2: Fir tree at the same complex (3.0 meter from the building foundation). 5 years, later no signs of decline.



Example #3: This is an example of where piling were installed 2 meters from the base of a fir tree.

Example #3: This a photograph that was taken of the fir tree after the construction of the building.

Example #3: Three years this tree shows no sign of decline.

Example #4: A retaining was installed 2 meters from the Oak tree in this photograph. Approximately 10 years later the tree still shows no sign of decline.

Close up picture of large oak.

Example #5: Shows excavation work 2.8m from the tree, no structural roots were exposed.

Example #5: View of shoring to support soil around the root system during excavation.

Example of new road and sidewalk well within critical root zone of neighboring trees. Tree show no signs of decline after 3 years.

Development Variance Permit Application – 2446 Shaughnessy Street

RECOMMENDATIONS:

That the Committee of Council:

1. Authorize staff to provide notice of an application to vary the underground servicing requirements for an apartment development at 2446 Shaughnessy Street, and
2. Advise Council that it supports further consideration of Development Variance Permit DVP00080.

PREVIOUS COUNCIL/COMMITTEE ACTION

January 28, 2020, the Committee of Council approved Development Permit DP000396 to regulate an apartment development at 2446 Shaughnessy Street.

REPORT SUMMARY

This report provides for Committee's consideration of a request to vary the requirement for undergrounding of overhead services along Atkins Avenue to facilitate the development of an apartment building. The recommended variance for the undergrounding would allow for the developer to install pre-ducting and provide funding that would facilitate these works to be implemented in the future.

BACKGROUND

The property owner, Kutak Holdings, intends to build a 33-unit apartment building on the southeast corner of Shaughnessy Street and Atkins Avenue. A development permit was issued in 2020 and a building permit application has been submitted and is close to issuance.

The offsite infrastructure works and services associated with this development included a requirement to underground overhead utilities along Atkins Avenue. However, BC Hydro has advised it is not feasible for the lines to be undergrounded at this time as they provide overhead service to a number of homes along Atkins Avenue. The costs for the underground wiring is estimated to be $107,050.

DISCUSSION

The requested variance would require the developer to install pre-ducting and provide funding to facilitate implementation of the undergrounding along Atkins Avenue in the future. Staff recommend approval of the variance.

FINANCIAL IMPLICATIONS

The $107,050 would be deposited in the city's Future Works liability account and held for the future undergrounding.

PUBLIC CONSULTATION

An opportunity for public input would be provided as part of Council's consideration of the variance application.

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Authorize notification of the application and advise Council that Committee supports the application.
	2	Request additional information or amendments to the application to address specified issues prior to making a determination; or
	3	Determine that it does not wish to authorize the notification. The applicant may then request the application be forwarded to Council for consideration.

ATTACHMENTS

Attachment #1: Draft Development Variance Permit

Lead author(s): Bryan Sherrell

Attachment 1

THE CORPORATION OF THE CITY OF PORT COQUITLAM

"DEVELOPMENT PROCEDURES BYLAW, 2013, NO. 3849"

DEVELOPMENT VARIANCE PERMIT

NO. DVP00080

Issued to: KUTAK (SHAUGHNESSY01) HOLDINGS INC.
(Owner as defined in the Local Government Act,
hereinafter referred to as the Permittee)

Address: SUITE 2007 – 1177 WEST HASTINGS STREET, VANCOUVER, BC V6E 2K3

1. This Development Variance Permit is issued subject to compliance with all of the bylaws of the Municipality applicable thereto, except as specifically varied by this permit.

2. This Development Variance Permit applies to and only to those lands within the Municipality described below:

Address:	2446 SHAUGHNESSY STREET
Legal Description:	LOT 86 DISTRICT LOT 289 GROUP 1 NEW WESTMINSTER DISTTRICT PLAN NWP15939, LOT 87 DISTRICT LOT 289 GROUP 1 NEW WESTMINSTER DISTRICT PLAN NWP15939.
P.I.D.:	010-141-332, 000-599-506

3. The Parking and Development Management Bylaw, 2018 No. 4078 is varied as follows:

    - To vary the requirement to underground electrical, cable, and telephone wiring located along Kelly Avenue with a one-time payment of $107,050.00.

    For clarity, this variance applies to and only to the Parking and Development Management Bylaw requirement to underground overhead utilities associated with Development Permit Application DP000396.

4. The land described herein shall be developed strictly in accordance with the terms and conditions and provisions of this permit.

5. This permit shall lapse if the Permittee does not obtain a Building Permit within two years of the date of this permit.

6. This permit is not a building permit.

AUTHORIZING RESOLUTION PASSED BY COUNCIL THE _____DAY OF _____, 2021.

ISSUED THIS _____ DAY OF _____,2021.

_____
Mayor

_____
Corporate Officer

I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS UPON WHICH THIS PERMIT IS ISSUED.

_____
Applicant (or Authorized Agent or Representative of Applicant)

Asset Management Progress Report

RECOMMENDATION:

None

PREVIOUS COUNCIL/COMMITTEE ACTION

Development of city-wide asset management plans is included in the approved CAO, Engineering and Public Works, Finance, Corporate Services, and Recreation department work plans.

At the May 1, 2018 Finance and Budget Committee, a report was brought forward with information on the Phase 1 asset management work, which included assessment, strategy and policy items.

At the December 11, 2018 Committee of Council meeting, a report was brought forward with information on the 2018 asset management work which included an assessment of city assets and asset management practices along with the development of an asset management strategy. A draft Asset Management Strategy report, dated November 2018, was provided to Council members.

At the January 15, 2019 Committee of Council meeting, a presentation was provided to Council on the Asset Management Strategy along with an opportunity to provide feedback on the report.

At the March 26, 2019 Committee of Council meeting, a report was brought forward with information on the work planned for 2019 and a resolution request for receipt of $15,000 in grant funding from the Union of British Columbia Municipalities (UBCM).

REPORT SUMMARY

This report presents a progress update on the City's Asset Management Plans and a summary of the State of the Infrastructure (SOTI) report dated May 2021. The SOTI report will become a core section within each asset management plan and includes a detailed analysis of the asset inventory, current portfolio value, asset condition, age profiles, historical infrastructure investment trends, and upcoming replacement projections. A full copy of the SOTI report is provided as Attachment #1.

BACKGROUND

The City currently meets requirements for financial reporting of the city's assets; however, the need for a systematic, viable and informed approach to asset management was identified to ensure the City is making the right investments, maximizing the value of assets, and planning for the future. A corporate wide asset management program ensures that investments in asset renewal are sustainable and integrated with the long-term financial plan to balance those financial

demands for renewal relative to the demand for new services. The program also establishes policies and practices to inform budgeting and project decisions. Additionally, it provides tools and metrics to evaluate the performance of assets over their service life and consider operational changes to maximize their value.

The foundation and roadmap for the City's asset management program was developed in 2018 with an initial assessment of assets and asset management practices, followed by the development of the City's Asset Management Strategy. The strategy identified the steps and resources required to address gaps and develop asset management plans for each of the City's eight asset groups.

DISCUSSION

The following section provides an update on the asset management work completed since 2019. A summary is provided of the SOTI report developed in coordination with the consulting team. Lastly, information is provided on next steps for the remainder of the work in 2021 and 2022.

1.0 PROGRESS UPDATE

Following finalization of the Asset Management Strategy in March 2019, City staff earned professional certificates in Asset Management Planning while undertaking the procurement process for a consultant to guide the City through the development of asset management plans. In August 2019, staff secured the services of Public Sector Digest Research, Consulting and Software (PSD). PSD is the vendor for the Citywide software that is currently used by the City for tangible capital asset reporting. PSD also has research and consulting divisions, expertise in the development of asset management plans, and an established history of working with local governments and municipal practices.

The City is taking a holistic approach to asset management planning by developing plans for all eight of its asset categories in tandem: Water, Sanitary, Drainage, Transportation, Parks, Facilities, Fleet/Equipment and Information Technology. This is a major undertaking as the development of a single plan typically takes other municipalities 1 to 2 years. Although daunting, the rationale for this approach is founded on the experience of others. When developed independently, it can take several years to complete plans for all asset groups and efforts often stall out after the first one or two due to the long term commitment required. As a consequence, some asset groups are left without asset management plans years later. Developing plans independently can also result in inconsistent approaches. Accordingly, the City's approach to developing plans collectively over a three year period enables them to be completed in a more timely and consistent manner.

An asset management plan is a tactical document that describes how a group of assets is to be managed over a period of time in order to deliver an agreed upon standard of service. It identifies a desired state for assets and service levels and defines the activities needed to achieve it (actions,

resources, funding, time). A flow chart from the Asset Management Strategy in Figure 1 shows the key components of an asset management plan. It illustrates the key inputs and decision points with the objective of achieving a long term financial plan that is both practical and affordable. The work in 2019 and 2020 focused on items 1-2 while the 2021 work focuses on items 3-5. Items 6-9 are planned for early 2022.

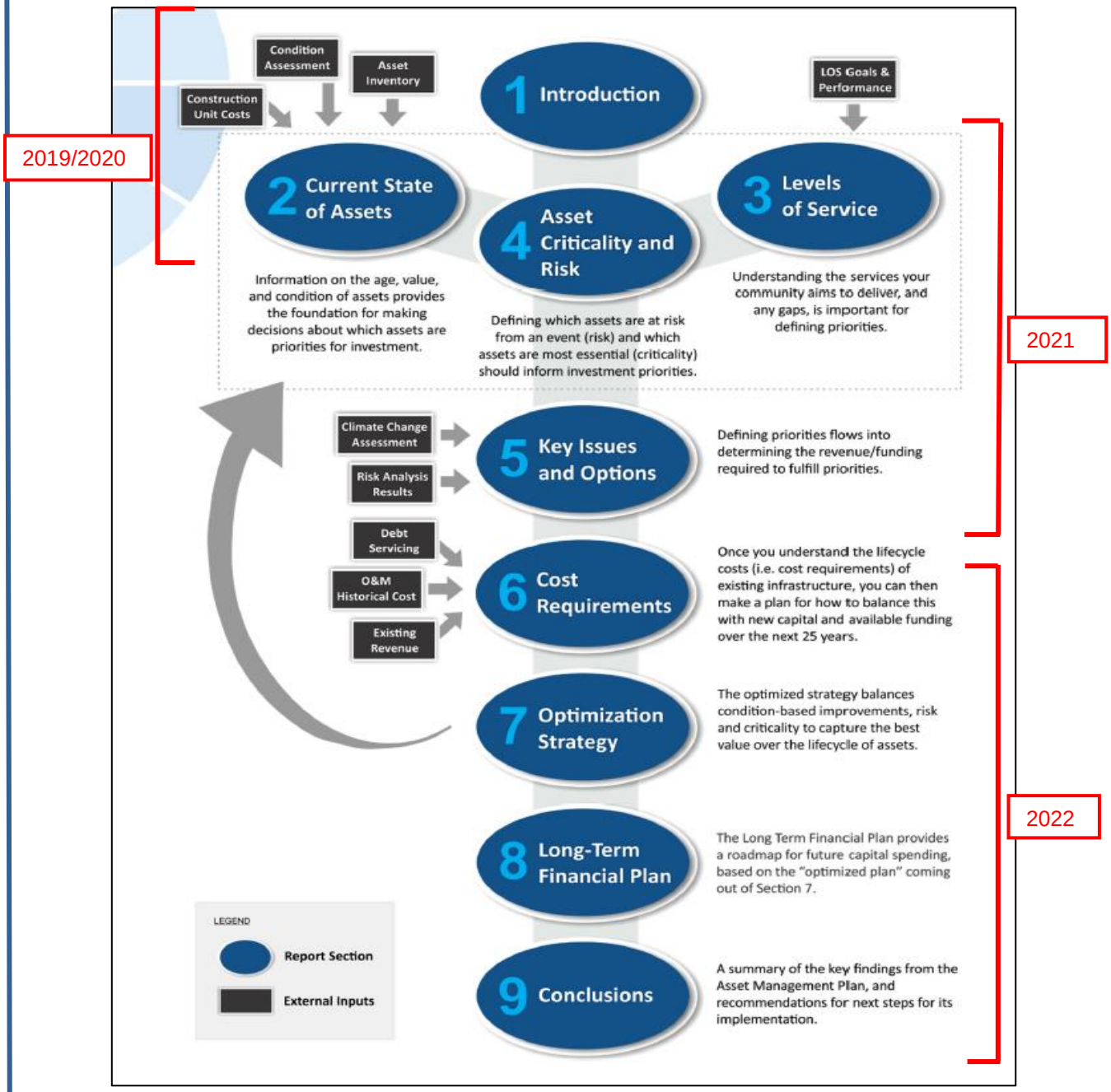


Figure 1: Asset Management Plans - Process Map

A summary of the work completed in 2019-2021 is provided in Table 1 with additional details provided in the remainder of this report.

Table 1: 2019-2021 Asset Management Plan Progress Table

Progress	Activity
100%	Secure consultant to support the City with AM Plan development
100%	AM Training for core staff
100%	Workshop with AM Team and Key Staff - AM Plan Development
100%	Develop a consistent format and approach for the eight AM plans
100%	Consolidate data – GIS and asset registers, software, reports
100%	Develop corporate frameworks for condition assessments
100%	Fill in asset gaps – site visits, staff review
100%	Refine replacement costs and estimated useful life values for all asset categories
100%	Analyze data and develop State of the Infrastructure Report
5%	Develop corporate frameworks; complete risk and level of service assessments
0%	Identify key issues and options
0%	Determine capital, maintenance and operating costs.

The following capital and long term financial planning processes planned for 2022 will focus on the items listed below:

- Forecast financial needs (5 year, 20 year, lifecycle)
- Establish a short term (5 years) and long term (20 years) capital plan and process
- Prepare the first iteration of long term financial plan with 20 year horizon
- Determine revenue requirements for renewal and new capital based on short and long term issues and priorities
- Formalize the financial planning approach to reflect required revenue and available funding
- Assess reserve funding levels for adequacy over the long term
- Explore strategies to address funding gaps

2.0 STATE OF THE INFRASTRUCTURE REPORT

The City is developing asset management plans or each of the eight asset categories of: Water, Sanitary, Drainage, Transportation, Parks, Facilities, Fleet/Equipment and Information Technology. The plans will include pertinent cross-sectional data on the City's infrastructure portfolio, as well as strategies to achieve financial sustainability over the long term. The content in the SOTI report will become a core section within each asset management plan. It includes a detailed analysis of the City's asset inventory, current portfolio value, asset condition, age profiles, historical infrastructure investment trends, and upcoming replacement projections. A summary is provided below, with details for each asset group provided in the SOTI report in Attachment #1.

DATA REVISIONS

In order to plan and budget for the future appropriately, revisions were made to improve the accuracy of the data. Discrepancies with asset inventory, estimated useful lives or replacement costs can have large budgeting impacts so warrant the time to get them right. While many municipalities have forged ahead with their existing data, staff determined that taking the time to make critical revisions was essential to developing accurate forecasts and supporting the next steps of the asset management plans. Data revisions added three months to the overall project schedule which was scheduled for completion by the end of 2020 and was completed in Q1 2021.

Refining the existing asset data will help the City to budget with confidence and support future funding discussion and informed decision making. The data refinement completed for the City's assets determined:

- *how many* assets/components we actually have vs how many we had on record
- *when* assets actually need to be replaced vs theoretical design or industry standards
- what it will actually *cost* to replace assets vs. replacement costs based on inflation

The data refinement results along with other asset management tools such as life cycle strategies, risk assessments and level of service assessments, will help to 'flatten the curve' (replacement spikes) by pushing some investments out and spreading others across several years while maximizing the value of all assets.

ASSET INVENTORY

While it is not necessary to inventory every nut on a fire hydrant for the purposes of replacement budgeting, it is critical to know what major components are owned, how much they cost to replace, and when they need to be replaced. This was difficult to determine with the City's current data set because the data was not in one place. Additionally, assets have been added or removed over the years through operational work, capital projects and development.

To date, asset data has been kept in several places: the City's asset register, GIS, spreadsheets, reports, and custom software in each division. In addition, some assets that have been added or removed over the years have not been recorded in the asset register, or GIS or both. Refinement of the City's asset inventory began by consolidating all existing asset data into one repository using existing Citywide software. As mentioned, Citywide is currently used for financial reporting but also has a platform for asset management which makes it an ideal tool for the establishment of one database that can ultimately be used for both functions. Staff reviewed the consolidated data to confirm which assets have been added or removed. As a final check, a refined list of assets is provided to staff in each asset group to vet the data and cross-check it with assets in the field.

The City has approximately 86,796 assets across eight asset groups: Transportation, Drainage, Sanitary, Water, Parks, Information Technology, Fleet/Equipment and Facilities. Asset counts were refined with the data revisions completed in 2020.

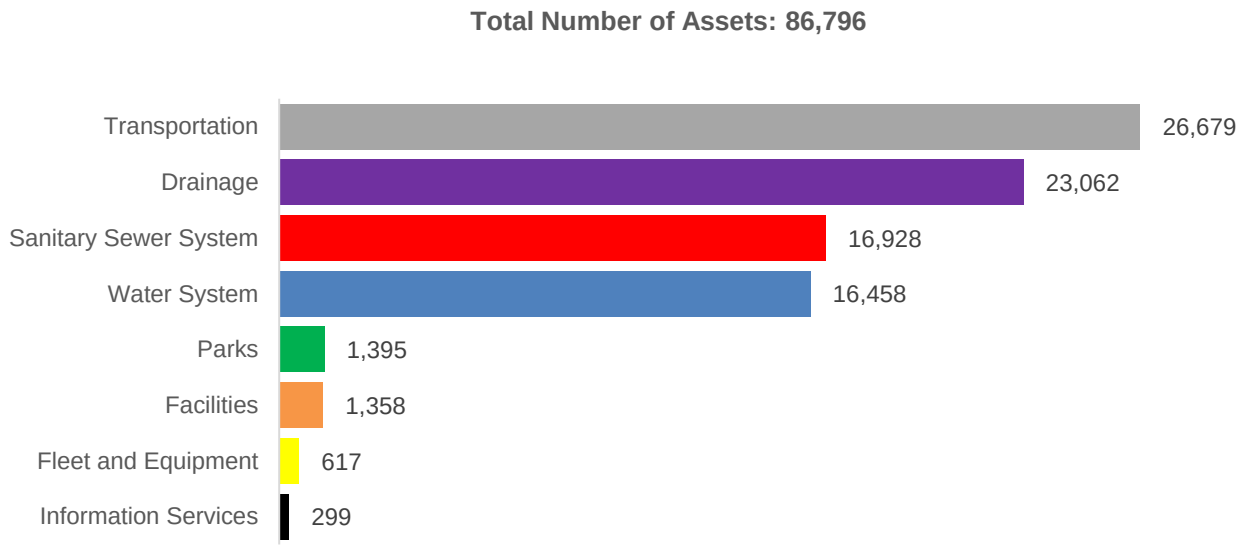


Figure 2: Number of Assets by Asset Group

As shown in Figure 3 below, the current asset portfolio is valued at $1.5 billion, or approximately $70,000 per household based on 21,750 households.

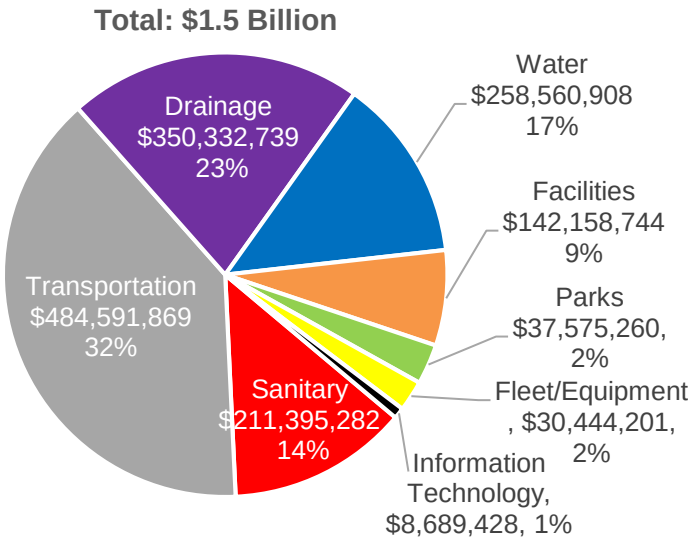


Figure 3: Asset Portfolios

AGE AND CONDITION ASSESSMENTS

An asset's age profile comprises two key values: estimated useful life (EUL) and the percentage of EUL consumed. The EUL of an asset is the serviceable lifespan during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life. An asset's age profile can help identify assets that are candidates for condition assessments; inform the selection of optimal lifecycle strategies, and support planning for potential replacement spikes.

Condition assessments can be used as a further refinement tool to avoid costly repairs due to failures but also to avoid premature replacements, maximize the value of assets, and defer replacement funding. For example, the EUL of an asset may be 15 years but if a condition assessment is conducted when the asset is 10 years determines that the asset is in good condition with another 10 years of service left, the EUL for that asset can be extended to 25 years. Overall, that nets an additional 10 years of service from the asset and pushes out the replacement year and funding required by 10 years as well.

Staff reviewed useful life revisions for all City assets to determine accurate replacement year estimates. Condition assessment guidelines were developed for all of the asset groups in order to standardize grading and evaluation (Attachment #2). Condition assessments were carried out on major or critical assets in 2019-2021. As demonstrated above, condition assessments are a valuable optimization tool that will be used by the City moving forward in its asset management program. In many cases, condition assessments can be completed by City staff as they perform annual maintenance on an asset.

Many of the City's assets have reached or exceeded their service life and likely need to be replaced. Across the eight asset groups, the City has an age-based infrastructure backlog of outstanding replacements totalling approximately $170 million dollars (Figure 4). The age-based backlog includes assets that have reached the end of their useful life but remain in operation. The condition based backlog includes assets that may need to be replaced immediately or in the short term because they are in very poor or poor condition. Figure 4 below shows that when condition is included to estimate immediate and short-term replacement needs, the backlog increases to nearly $500 million across the eight asset groups.

Both age and condition data should be used to forecast replacement needs and refine capital expenditure estimates. The amount ultimately dedicated to address the backlog will depend on the level of service the City wants to provide and the amount of risk it wants to take on. For example, a decision to only replace assets that have exceeded their service life would be at the lower end of the range ($170M), while including assets that are also in very poor condition would fall mid-range, and including those that are in poor condition would cost at the upper limit of the range ($500M).

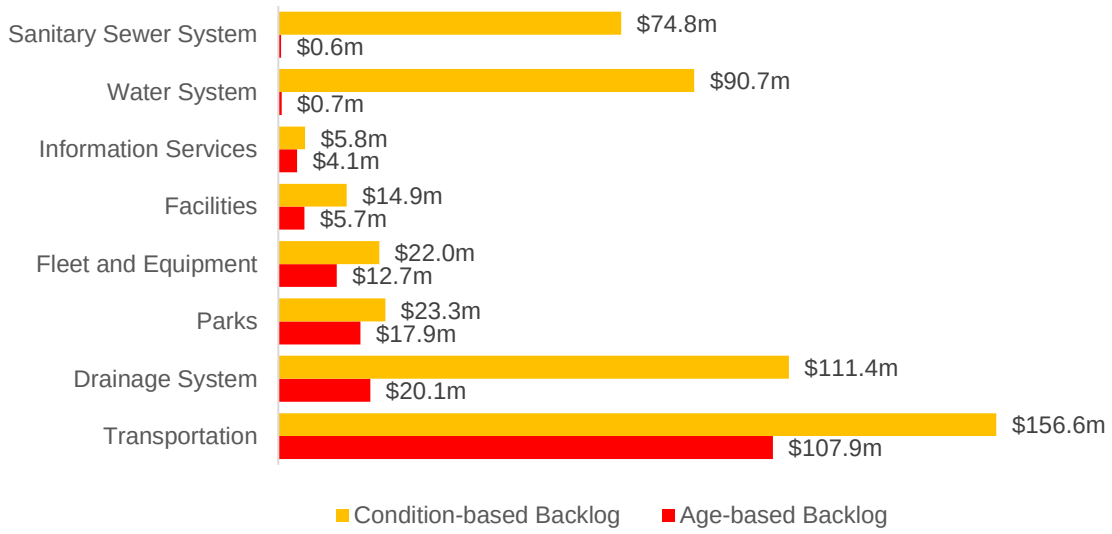


Figure 4: Age-based and Condition-based Infrastructure Backlogs

ASSET REPLACEMENT COSTS AND YEARS

As part of the data refinements, staff worked through replacement cost updates. Existing data in the City's asset register had historical purchase costs inflated to today's replacement cost using a consumer price index (CPI) with industry standard inflation values particular to each asset. Much more accurate are staff estimates, similar to the approach used for capital project budgeting. Better yet are construction costs from recent replacements. Replacement costs for the City's assets were revised from CPI values to either staff estimates or construction costs. This will significantly improve budgeting accuracy for replacements.

Figure 5 below illustrates the City's aggregate future replacement needs and replacement spikes on the horizon. The data shows that the City is currently in a large replacement cycle with outstanding replacements totaling between $169.7M (based on age) and $500M (based on age and condition). The next largest spending spike is forecasted to occur between 2032 and 2041 with replacements totaling $442M. The existing backlog today and replacement spikes forecasted ahead demonstrate the need to invest in infrastructure replacements now while also saving for future replacements.

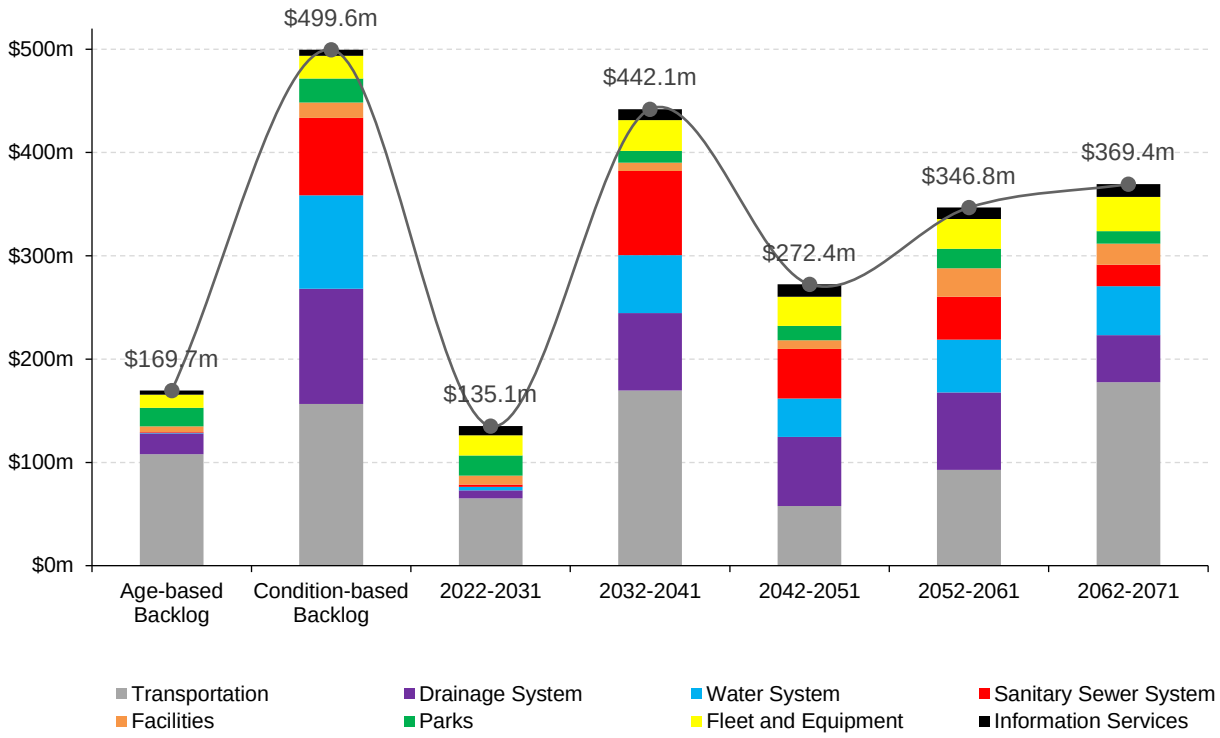


Figure 5: Replacement Costs and Years

VALUE OF DATA REVISIONS

Data refinements help to accurately forecast infrastructure spending and answer the questions of 'how much is needed' and 'when is it needed'. Working with accurate data becomes particularly important when faced with the decisions and trade-offs that come with later funding strategy discussions. Figure 6 below demonstrates the usefulness of the inventory, cost estimate and useful life revisions. Prior to the data revisions, the largest future replacement spike was forecasted to occur in 2042-2051 with $255 million dollars of replacements. After data revisions, the largest future replacement spike was forecasted to occur a decade earlier, between 2032 and 2041, with potential replacement needs totalling $442 million. The asset data refinements completed in this phase of work will improve the overall reliability of the asset management plans and help to instill confidence in future budgeting and planning decisions

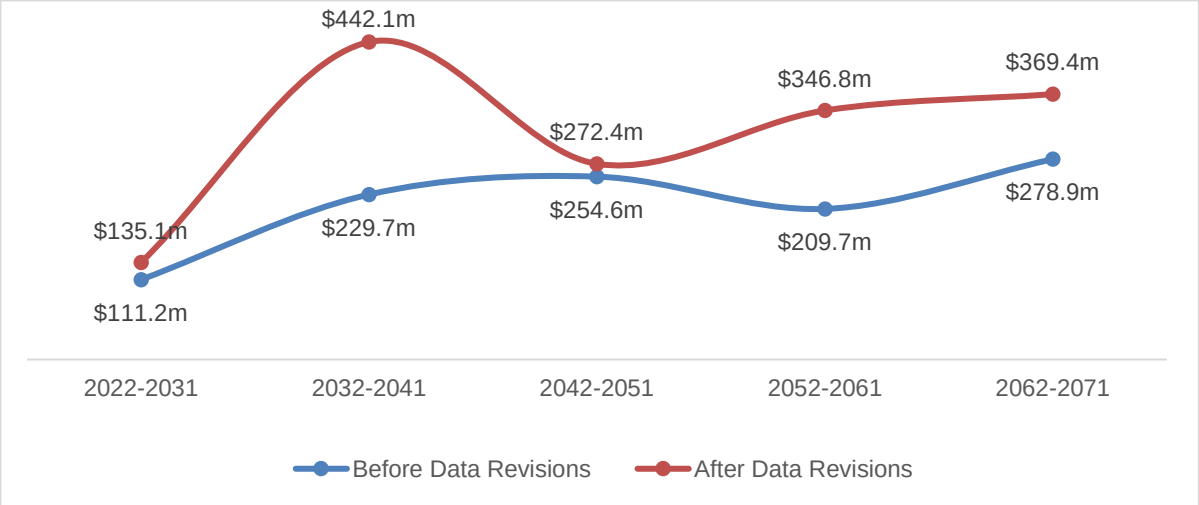


Figure 6: Replacements - Before and After Data Revisions

There is always more data refinement that can be done. However, this must be balanced with the need to keep the asset management plans moving forward and avoid getting mired in unnecessary details. As was recognized in the Asset Management Strategy, creating and implementing an asset management program is a step-by-step journey that takes time and resources. With a limited amount of time, funding and resources each year, the approach is strategic and guided by three core principles: i) start basic, ii) build in complexity over time, and iii) stay focused. Accordingly, the elements of the data that are the most critical to replacement planning were refined now, while others were identified for improvement in future years.

3.0 NEXT STEPS

As shown, many of the City's assets have reached or exceeded their service life and need to be replaced. Across the eight asset groups, the City has an infrastructure backlog of outstanding replacements totalling at least $170 million dollars. Accordingly, there is justification for investing some of the City's Long Term Reserves on replacements now. More details on that approach are provided in the 2023 Capital Methodology report.

How much is budgeted and when it is allocated depends largely on the level of service the City wants to provide, the amount of risk it wants to take on, and the amount of pro-active spending on lifecycle activities to extend the useful lives of assets. This work will be undertaken next with risk assessments, level of service assessments and life cycle strategies. The capital and strategic planning activities following that will be used to budget, plan for growth, and prioritize investments.

From that, an optimized capital plan can be developed to fund infrastructure replacement that takes into account City priorities, service levels, life cycle expenditures, and risk tolerance. Lastly, financial planning activities will be used to determine how to fund the capital plan using a combination of approaches to close the funding gap between revenues and expenditures (e.g. deferring replacements, adjusting service levels, taking on more risk with non-critical assets, increasing revenue, exploring new funding sources).

FINANCIAL IMPLICATIONS

Initial funding for asset management was approved in the 2017-18 Financial Plan ($200,000) with additional funding approved in 2019 ($200,000) to support the continued development of the City's asset management program. The City's Asset Management Strategy was completed with the initial funding, while the subsequent funding is supporting the development of the eight asset management plans along with the capital and financial plans to implement them.

External funding secured for asset management planning to date includes a Union of British Columbia Municipalities (UBCM) grant for $15,000 in 2018, a Provincial Infrastructure Planning grant for $10,000 in 2019, and a Federation of Canadian Municipalities (FCM) grant for $50,000 in 2020.

An optimized capital plan for infrastructure replacements will be developed with the asset management plans that takes into account City priorities, service levels, life cycle expenditures, and risk tolerance. A long term financial plan to fund the optimized capital plan will then be developed based on selected strategies to close the gap between revenues and expenditures.

ATTACHMENTS

Attachment #1: State of the Infrastructure Report

Attachment #2: Condition Assessment Guidelines

Lead author(s): Melony Burton

Asset Management at the City of Port Coquitlam

State of the Infrastructure

May 2021

Contents

About this document

The City of Port Coquitlam and PSD are developing asset management plans (AMP) for each of the City's eight asset categories. These categories are: Water, Sewer, Drainage, Parks, Transportation, Facilities, Fleet/Equipment and Information Technology. The AMPs will include pertinent cross-sectional data on the City's infrastructure portfolio, as well as strategies to achieve financial sustainability over the long term.

The content in this state of the infrastructure (SOTI) report will become a core section within the asset management plan for each asset category. It includes a detailed analysis of the City's asset inventory, current portfolio valuation measured using replacement costs, asset condition, age profiles, historical infrastructure investment trends, and upcoming replacement projections.

Portfolio Overview

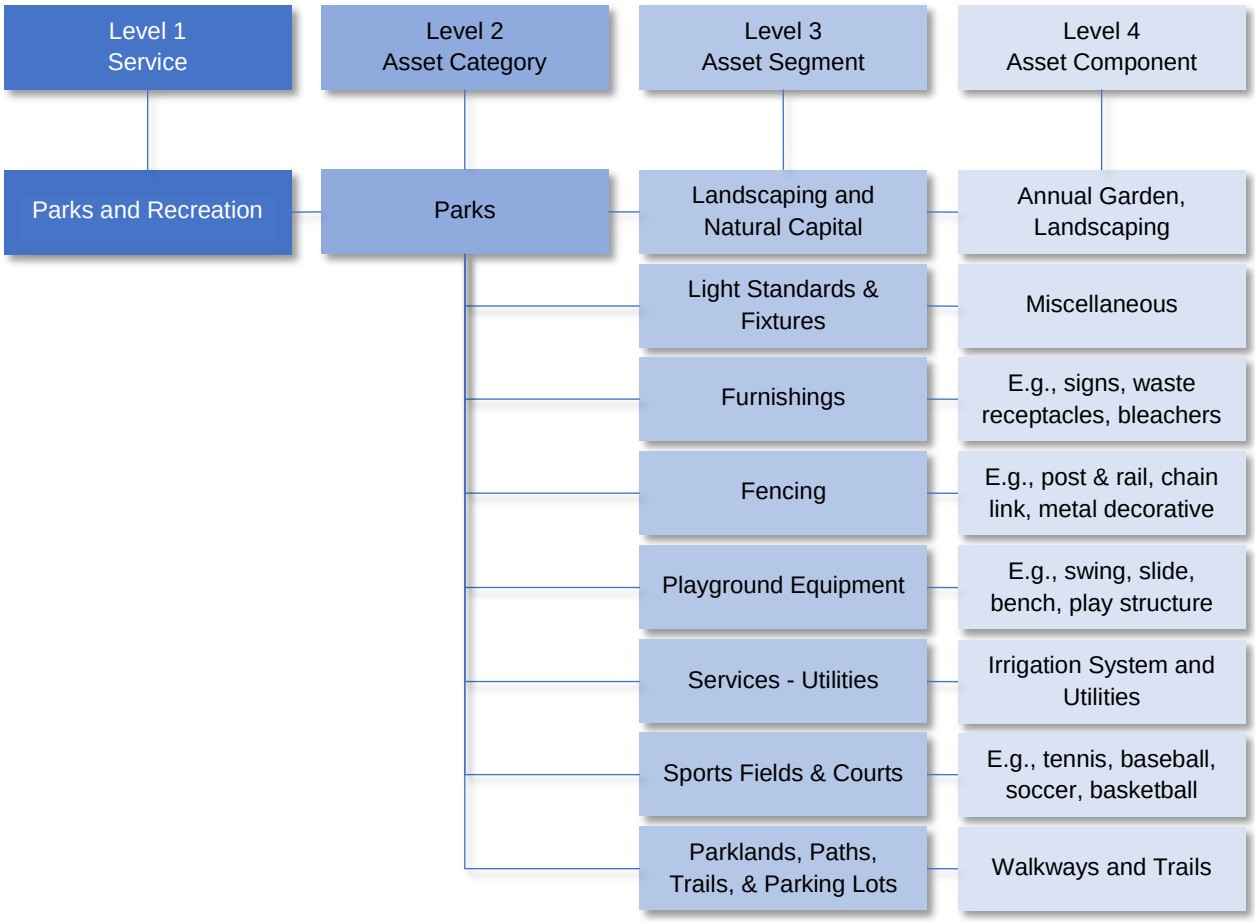
[Forthcoming]

Parks

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels. Asset segmentation for Parks was derived from the Uniformat II code standard.

Figure 1 Parks: Asset Hierarchy and Segmentation



Although not practical or necessary for smaller sites, this segmentation allows staff to generate individual, 'mini' asset management plans for larger City parks with a more complex or substantial asset base.

Asset Inventory and Valuation

Port Coquitlam's Parks inventory is managed in CityWide™, and comprises more than 1,550 assets.. Table 1 summarizes the City's Parks assets. Using 2020 replacement cost estimates provided by staff, Port Coquitlam's Parks infrastructure is valued at $37.6 million, or $1,726 per household. At 56%, Sports Fields & Courts comprise the largest share of Parks asset portfolio.

Table 1 Parks: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Costing Method
Sports Fields & Courts	$21,006,015	56%	64	User Defined
Fencing	$4,072,150	11%	12,972 m	User Defined
Services-Utilities	$3,846,492	10%	85	User Defined
Parklands, Paths, Trails & Parking Lots	$3,801,795	10%	24,117 m	User Defined
Playground Equipment	$2,596,372	7%	106	User Defined
Furnishings	$1,421,781	4%	1,126	User Defined
Light Standards and Fixtures	$420,000	1%	120	User Defined
Water Play & Features	$200,000	1%	1	User Defined
Shelters & Structures	$188,974	<1%	2	User Defined
Landscaping & Natural Capital	$21,681	<1%	41	User Defined
Total	$37,575,260	100%		

Projected Asset Condition

Figure 2 summarizes the replacement cost-weighted, projected condition of the City's Parks infrastructure as of 2021. Based on a combination of field inspection data and age, more than 60% of Parks assets, worth $23 million, are in poor or very poor condition. These assets may be candidates for replacement in the short term; similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition. Figure 3 details the condition of each asset segment.

Figure 2 Parks: Asset Condition – All Assets

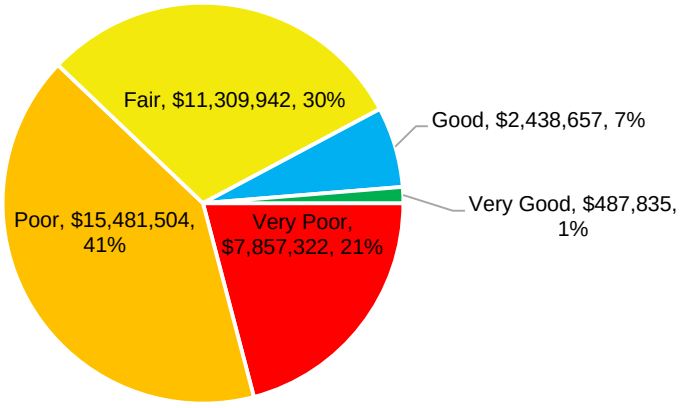
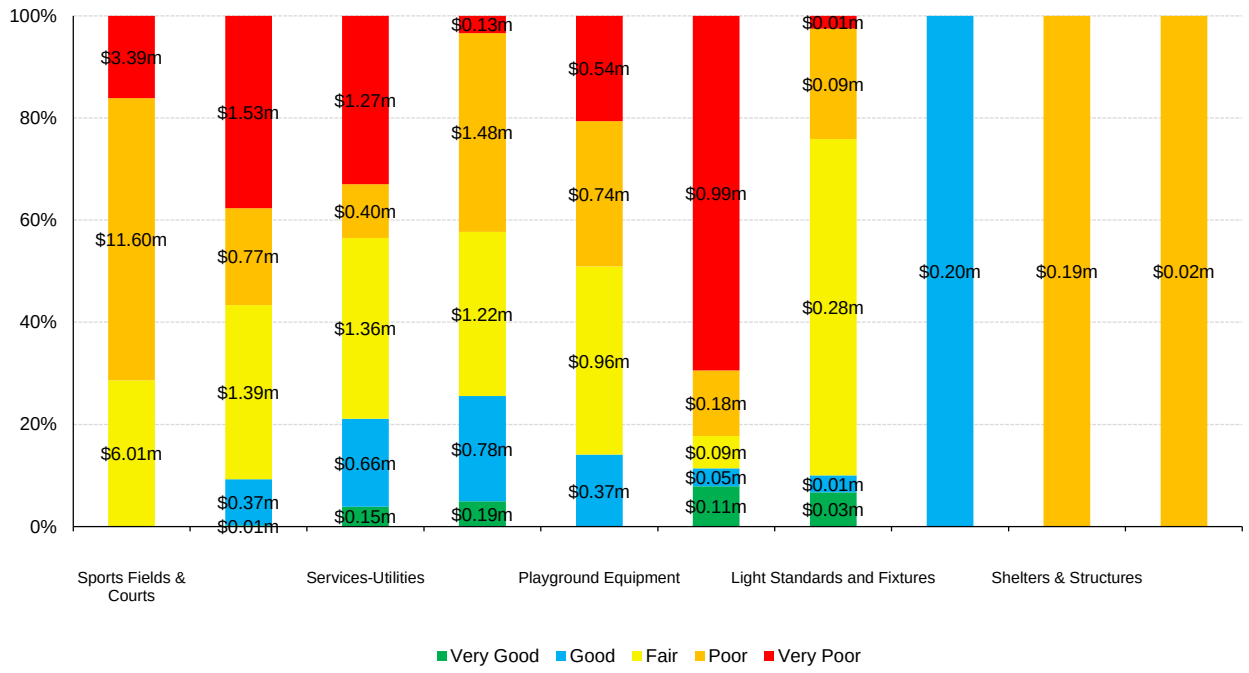
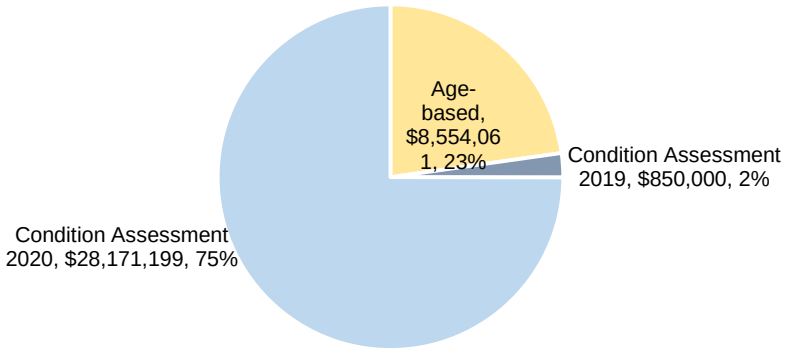


Figure 3 Parks: Asset Condition – By Asset Segment



By default, Figure 2 and Figure 3 rely on condition assessment data when available. In the absence of such data, the age of an asset is used to approximate its condition. Figure 4 illustrates how condition data was derived for Parks assets. Based on replacement costs, 77% of Parks assets were included as part of condition assessments conducted in 2019 and 2020 which included major assets such as playground equipment and sports fields. Age was used as an estimate for condition for the remaining 23% of assets, valued at $8.6 million. The 2019 and 2020 condition data was then projected forward to estimate condition ratings for 2021.

Figure 4 Parks: Source of Condition Data



Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure assets can vary dramatically, from several years to many decades. For the City's Parks assets, EULs range from a minimum of 12 years for an irrigation system, to 100 years for gravel walkways. The histogram in Figure 5 illustrates the distribution of useful life across Port Coquitlam's Parks assets using asset quantity; Figure 6 provides a similar analysis using replacement costs. Both approaches show that the majority of assets have an estimated useful life of 11-30 years. This data can be useful in developing asset replacement projections. (See Figure 10 Parks: Forecasted Replacement Needs).

Figure 5 Parks: Useful Life Frequency Distribution – By Asset Quantity

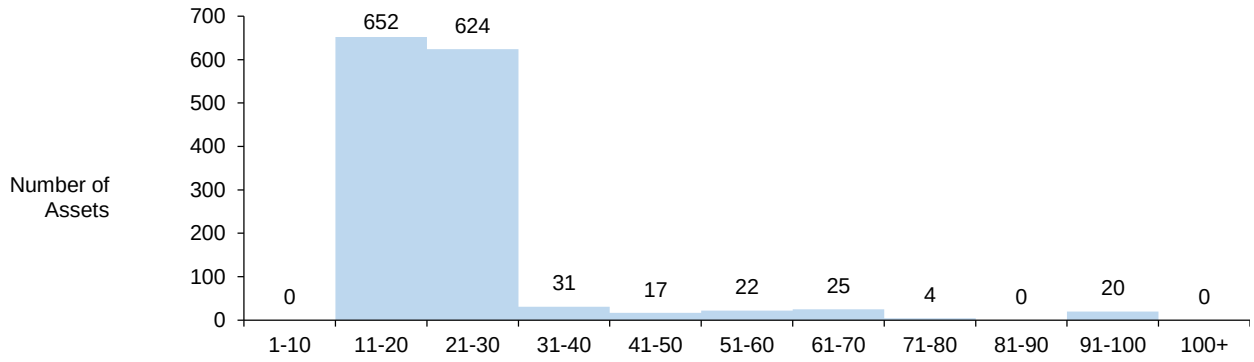
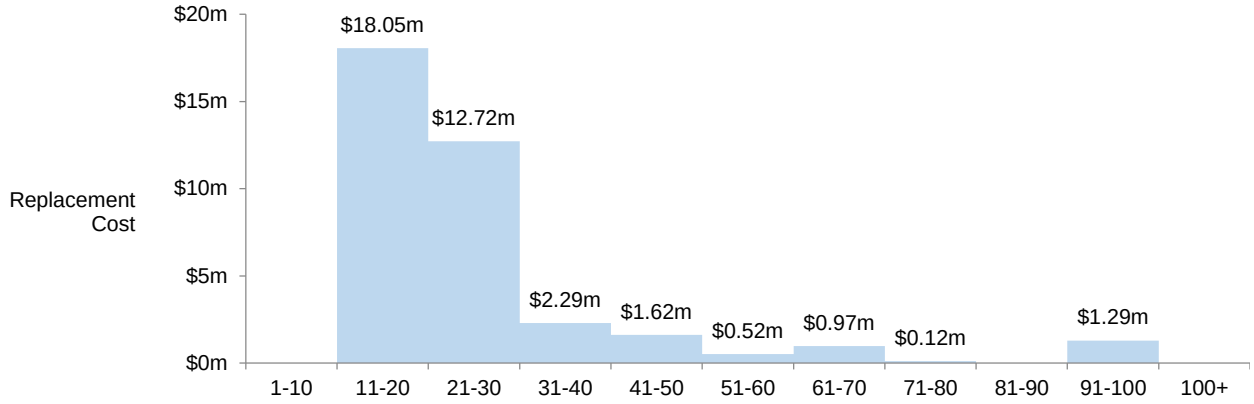


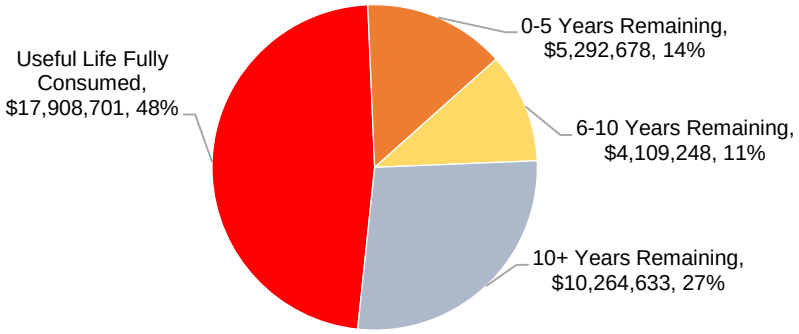
Figure 6 Parks: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

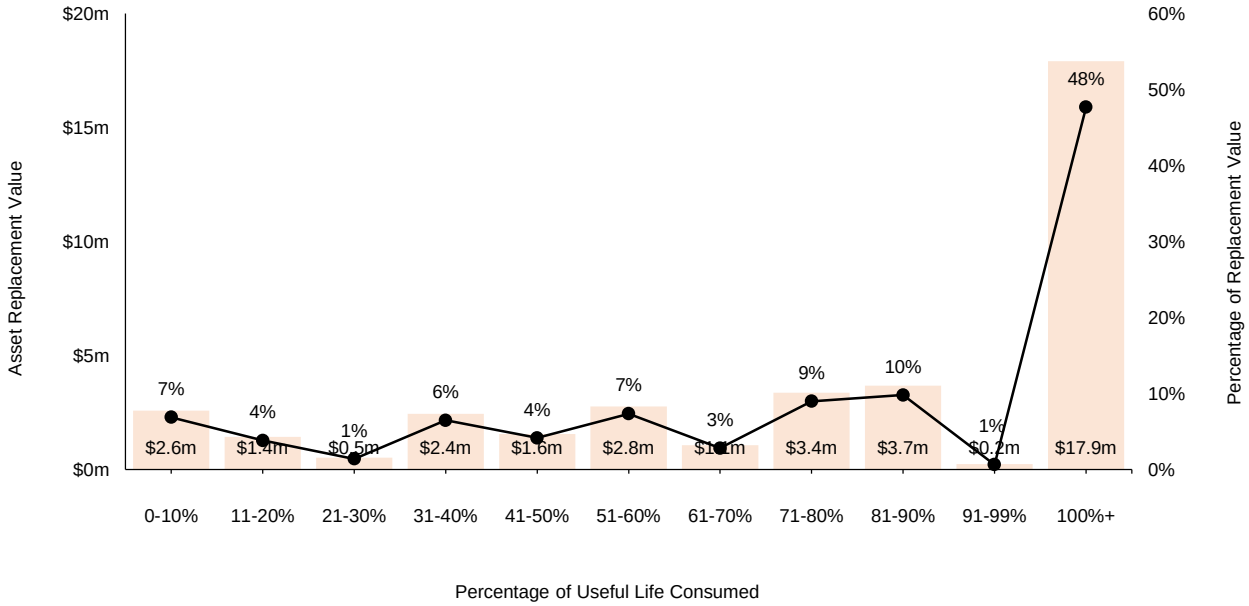
Figure 7 shows that, as of 2021, 48% of Parks assets, worth nearly $18 million, remain in operation beyond their estimated useful life. An additional 14% will reach the end of their design life in the next five years.

Figure 7 Parks: Service Life Remaining in Years



For additional context, Figure 8 provides a more detailed summary of the percentage of useful life consumed by Parks assets.

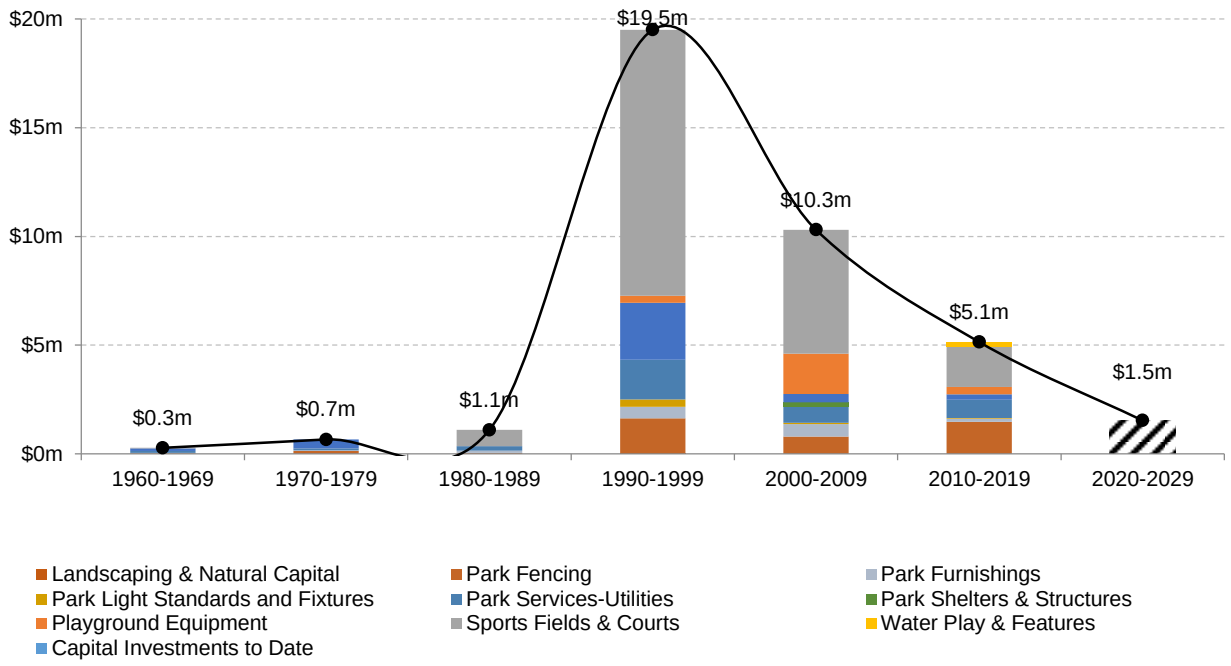
Figure 8 Parks: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure 9 shows the level of investment the City of Port Coquitlam has made in its Parks assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community infrastructure needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Figure 9 Parks: Historical Investments in Infrastructure



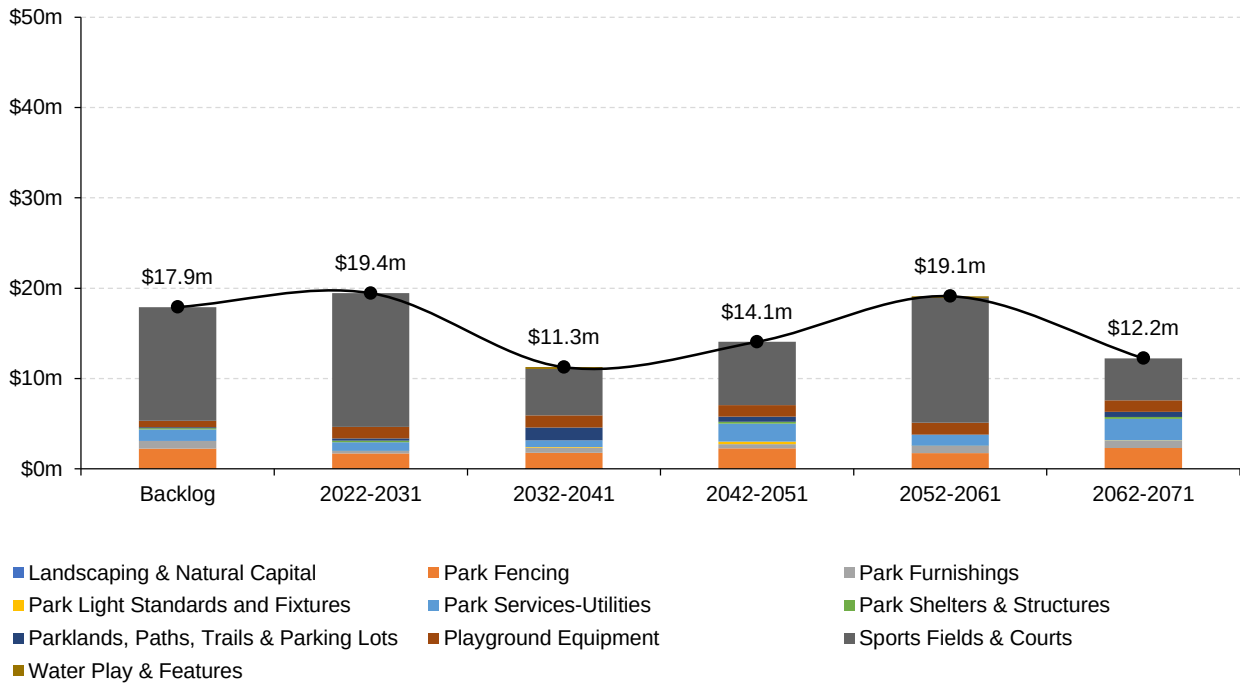
More than 50% of the City's current Parks asset portfolio was placed into service in the 1990s. During the period between 1991 and 2001, the City experienced a 28% population growth rate, its largest in the last three decades. In addition to the level of population, its composition or structure also impacts the type of infrastructure that is prioritized and built. Based on the 2016 Census, the City's population totalled 58,612 people; the age group between 50 and 60 years old comprises the largest portion of the City's population.

Forecasted Replacement Needs 2021-2070

Figure 10 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the City's various Parks assets. The City is projected to experience two major replacement spikes, each totalling approximately $20 million. The first of these is forecasted to take place between 2022 and 2031, followed by the second in 2052 and 2061.

The chart also illustrates a Parks age-based replacement backlog of $17.9 million, comprising assets that have reached the end of their estimated useful life; approximately 70% of the backlog is attributed to Sports Fields and Courts. However, the condition analysis illustrated previously suggests that up to 60% of Parks assets worth $23 million may be candidates for immediate or short-term replacement because they are in poor or very poor condition. Both age and condition should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 10 Parks: Forecasted Replacement Needs

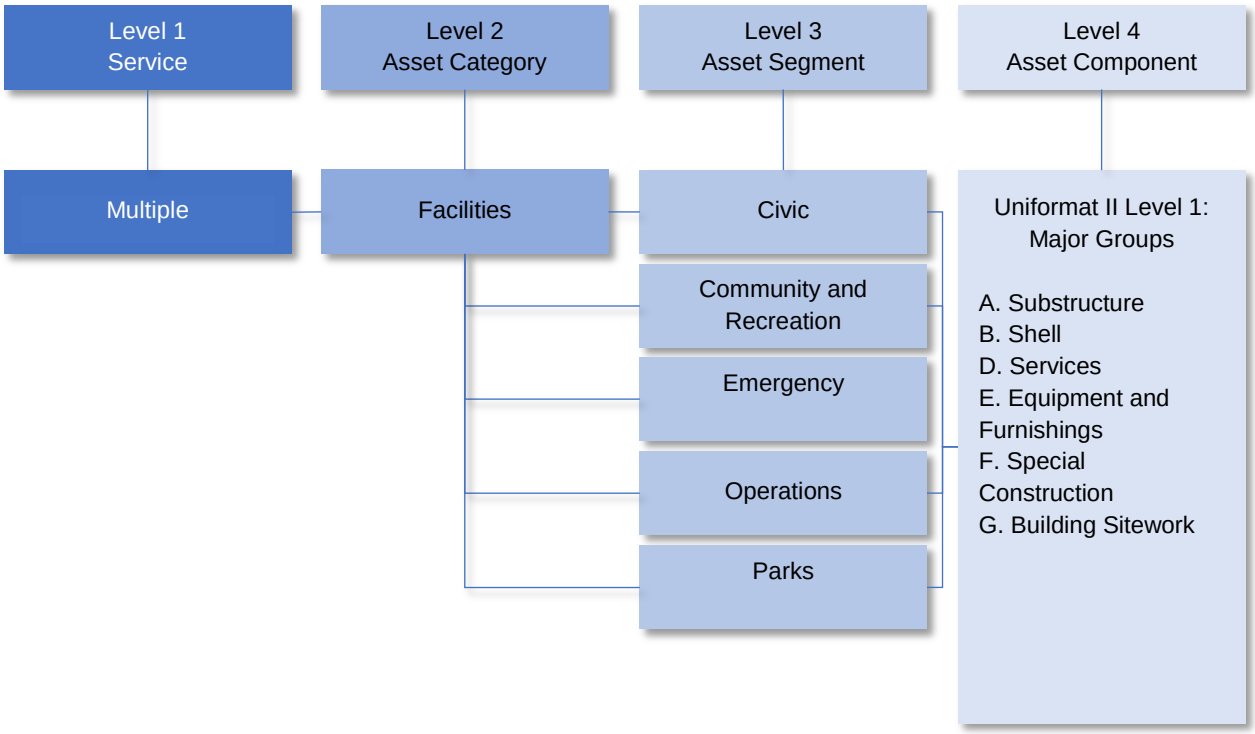


Facilities

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels. Asset segmentation for Facilities was derived from the Uniformat II code standard.

Figure 11 Facilities: Asset Hierarchy and Segmentation



Level 4 Asset Components (Uniformat II Level 1) were further disaggregated into Uniformat II Levels 2 and 3 (Components). Although not practical or necessary for smaller sites, this segmentation allows staff to generate individual, 'mini' asset management plans for larger City buildings and facilities with a more complex or substantial asset base.

Asset Inventory and Valuation

Port Coquitlam's Facilities inventory is managed in CityWide™, and contains a diverse portfolio of facilities that provide community services and serve internal business functions. Table 2 summarizes the City's Facilities assets. Using 2020 replacement cost estimates based on consumer price index (CPI) inflated historical costs and costs provided by staff, Port Coquitlam's Facilities infrastructure is valued at $142.2 million, or $6,536 per household. At 73%, Community and Recreation facilities comprise the largest share of the Facilities asset portfolio.

Community and Recreation includes the Heritage Museum, Hyde Creek Rec Centre, Gathering Place, Outlet and Port Coquitlam Community Centre; Emergency includes Fire Hall #1 and 2, Community Police, and RCMP buildings, Civic buildings include City Hall and the City Hall Annex; Parks includes park washroom facilities, outdoor pools and spray parks. Operations includes the Public Works yard buildings and outbuildings,

Table 2 Facilities: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Costing Methods
Community and Recreation	$104,378,854	73%	709	User Defined and CPI
A - Substructure	$18,407,656	13%	9	User Defined and CPI
B - Shell	$33,550,419	24%	22	User Defined and CPI
D - Services	$10,404,150	7%	499	User Defined and CPI
E - Equipment & Furnishings	$335,226	<1%	103	User Defined and CPI
F - Special Construction	$2,019,232	1%	70	User Defined and CPI
Other	$39,662,171	28%	3	User Defined and CPI
Emergency	$13,525,608	1<1%	127	User Defined and CPI
A - Substructure	$2,257,856	2%	5	User Defined and CPI
B - Shell	$7,450,232	5%	11	User Defined and CPI
D - Services	$3,773,520	3%	103	User Defined and CPI
E - Equipment & Furnishings	$39,000	<1%	8	User Defined and CPI
Civic	$11,170,500	8%	116	User Defined and CPI
A - Substructure	$912,897	1%	5	User Defined and CPI
B - Shell	$7,159,325	5%	7	User Defined and CPI
D - Services	$2,996,991	2%	88	User Defined and CPI
E - Equipment & Furnishings	$39,133	<1%	15	User Defined and CPI
G - Building Sitework	$62,154	<1%	1	User Defined and CPI
Parks	$7,033,878	5%	285	User Defined and CPI
A - Substructure	$404,619	<1%	13	User Defined and CPI
B - Shell	$3,826,401	3%	36	User Defined and CPI
D - Services	$1,013,400	1%	144	User Defined and CPI
E - Equipment & Furnishings	$78,000	<1%	44	User Defined and CPI
F - Special Construction	$1,537,308	1%	46	User Defined and CPI
Other	$174,150	<1%	2	User Defined and CPI
Operations	$6,049,904	4%	186	User Defined and CPI
A - Substructure	$209,949	<1%	4	User Defined and CPI

Segment	Replacement Cost	Percentage of Total	Quantity	Costing Methods
B - Shell	$4,148,064	3%	12	User Defined and CPI
D - Services	$1,563,891	1%	140	User Defined and CPI
E - Equipment & Furnishings	$98,000	<1%	28	User Defined and CPI
G - Building Sitework	$30,000	<1%	2	User Defined and CPI
Total	$142,158,744	100%	1,423	

Projected Asset Condition

Figure 12 summarizes the replacement cost-weighted, projected condition of the City's Facilities infrastructure as of 2021. Based on age data, 71% of Facilities assets, worth more than $100 million, are in good to very good condition, while 10% with a current replacement value of nearly $15 million are in poor to very poor condition. These assets may be candidates for replacement in the immediate or near terms. Similarly, assets in fair condition may require rehabilitation or replacement in the medium term and should be monitored for further degradation in condition.

Figure 12 Facilities: Asset Condition – All Assets

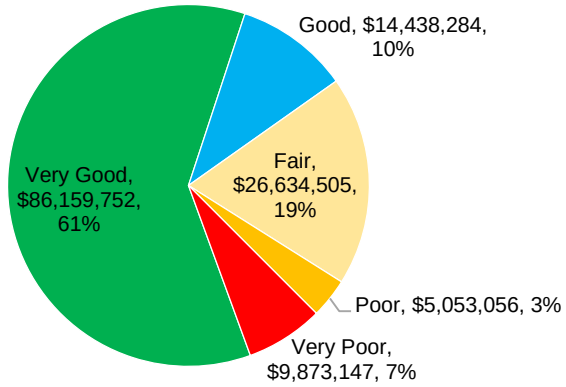
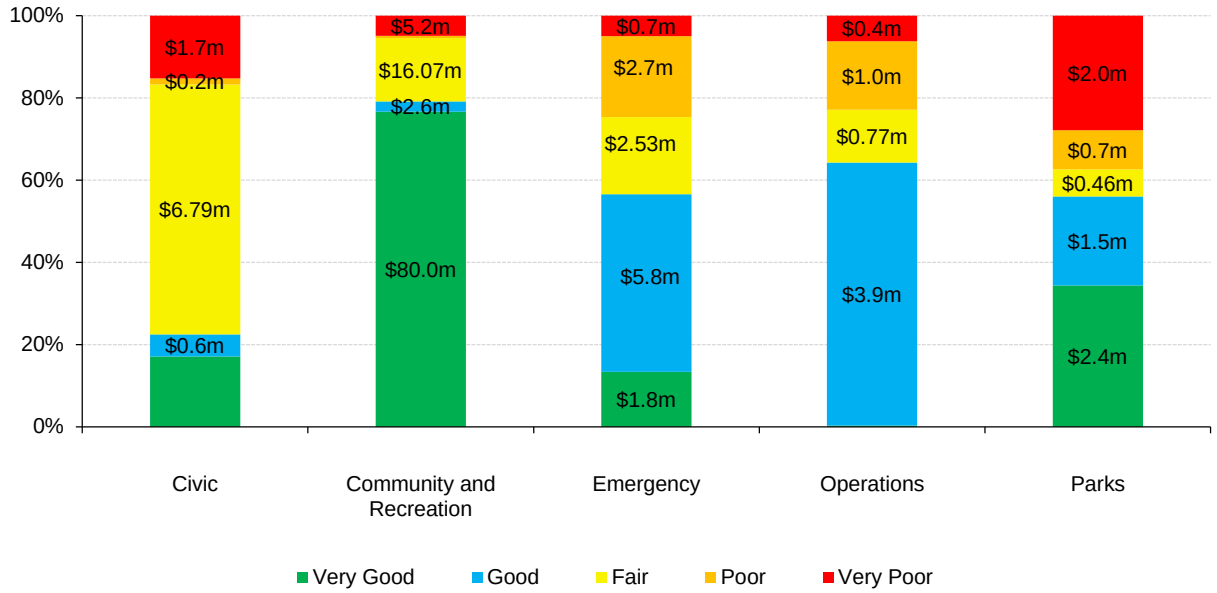


Figure 13 below details the condition of the City's Facilities by each asset segment, or facility function. At 37%, Parks facilities have the highest portion of assets in poor to very poor condition, with a current replacement value of $2.6 million.

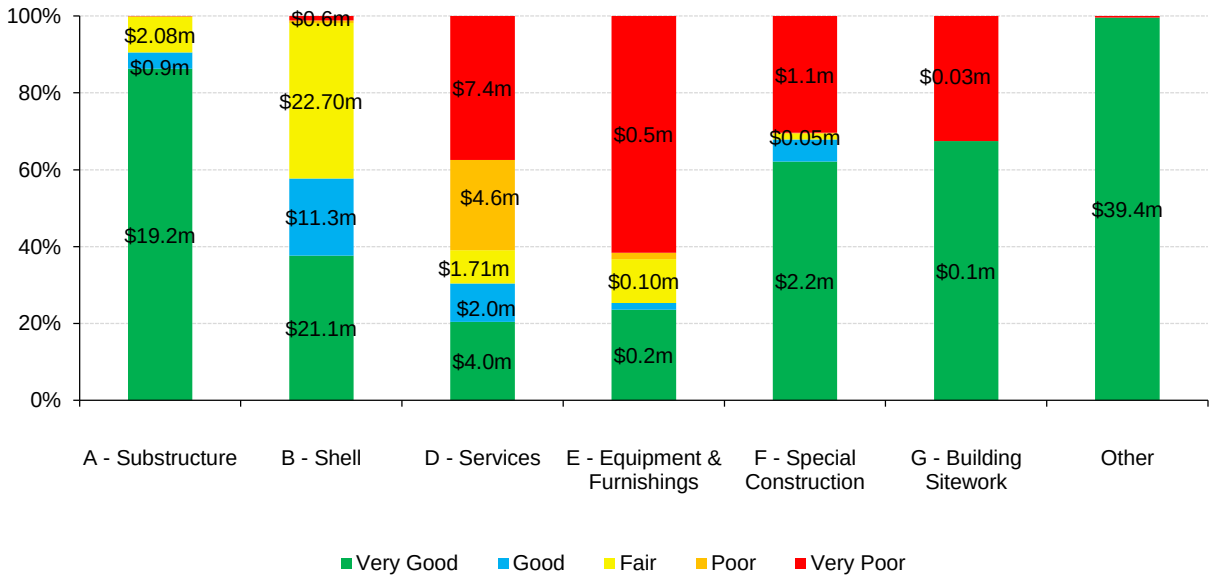
Figure 13 Facilities: Asset Condition – By Asset Segment



Given the variability of assets within buildings and facilities, condition analysis was also conducted by Uniformat II Code Level 1 groupings to better understand the type of assets that may require immediate or short-term rehabilitation or replacement. Figure 14 below shows that 61% of Services assets, with a current replacement value of $12 million, are in poor to very poor condition. Services assets include conveying, electrical, HVAC, plumping and fire protection systems.

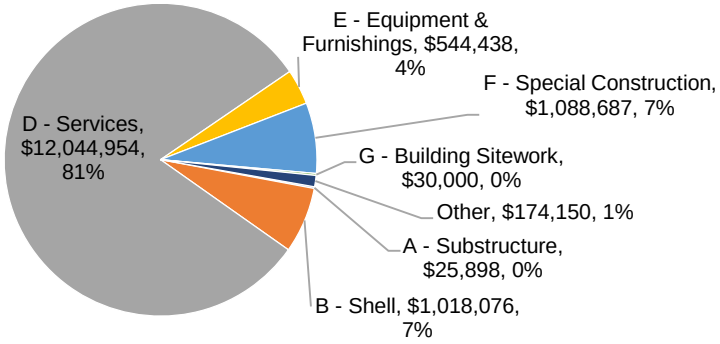
We note that the overwhelming majority of assets classified as 'Other' are part of the new Port Coquitlam Community Centre, which has not yet been fully componentized.

Figure 14 Facilities: Asset Condition – By Uniformat II Code Level 1 Grouping



Lastly, Figure 15 provides an alternate perspective, and illustrates that of the nearly $15 million of assets in poor to very poor condition, more than 80% are attributed to services assets. In addition, more than 90% of assets in poor to very poor condition have a unit cost of at least $10,000. However, we do note that some assets remain pooled; as a result, further componentization of these assets may be required to refine the set of individual assets that may meet this threshold.

Figure 15 Facilities: Composition of Assets in Poor or Very Poor Condition



Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure assets can vary dramatically, from several years to many decades. For the City's Facilities assets, EULs range from a low of 12 years for chemical feed systems and furniture/fixtures, to 80 years for building shells and substructures. The histogram in Figure 16 illustrates the distribution of useful life across Port Coquitlam's Facilities assets using asset quantity; Figure 17 provides a similar analysis using replacement costs.

Figure 16 Facilities: Useful Life Frequency Distribution – By Asset Quantity

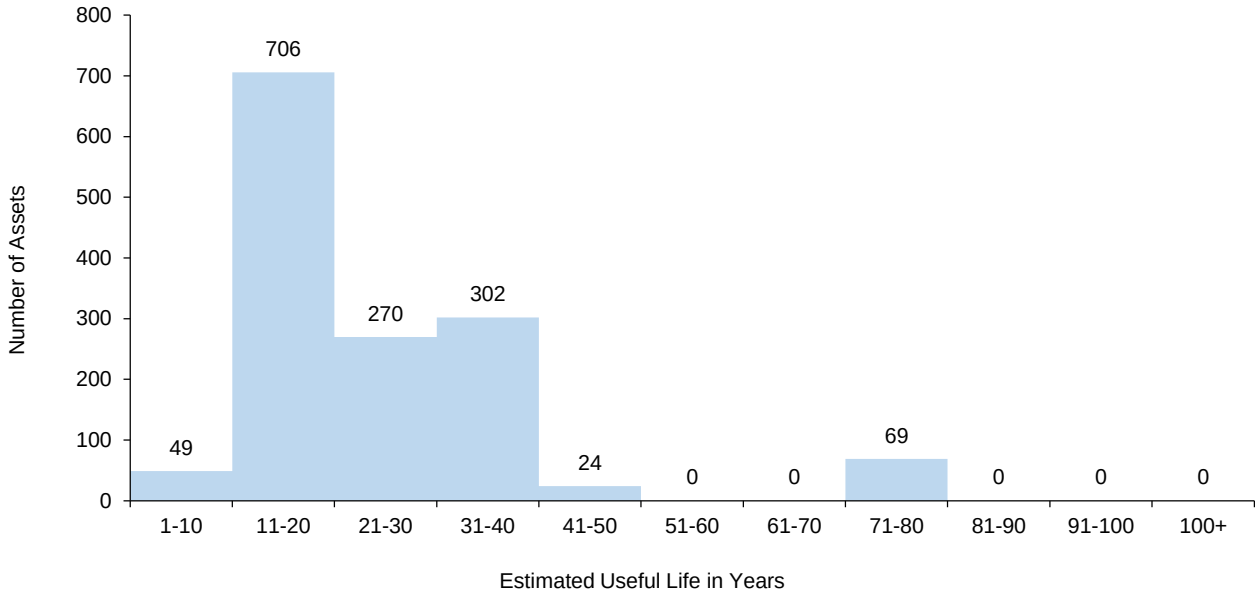
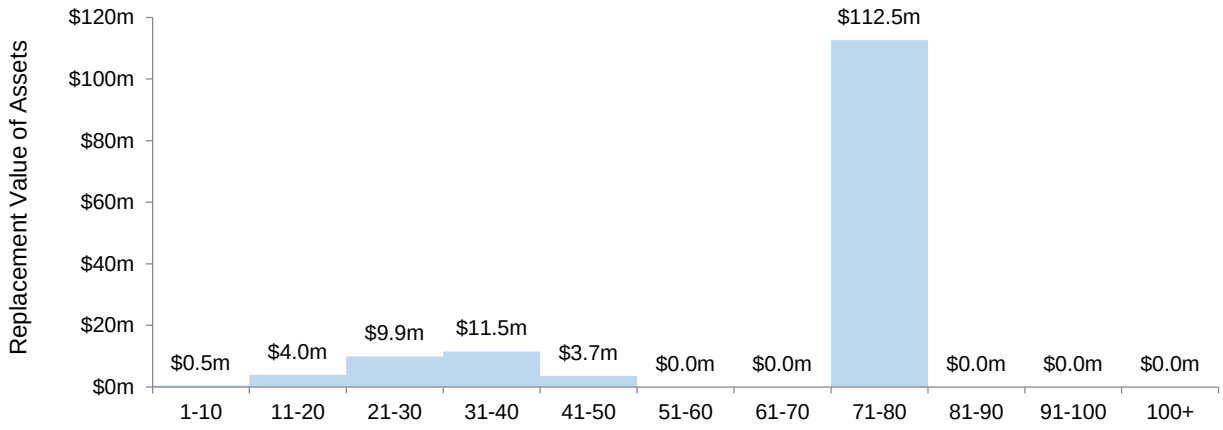


Figure 16 above shows that based on the quantity, nearly 50% of assets have an estimated useful life of 11-20 years. However, when asset replacement costs are used, approximately 80% of assets have an EUL of 71-80 years. This data can be useful in developing asset replacement projections. (See Facilities: Forecasted Replacement Needs).

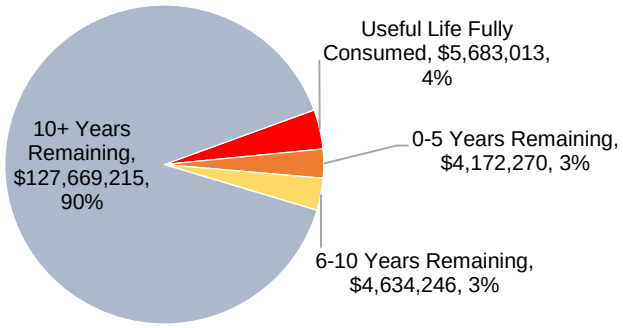
Figure 17 Facilities: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

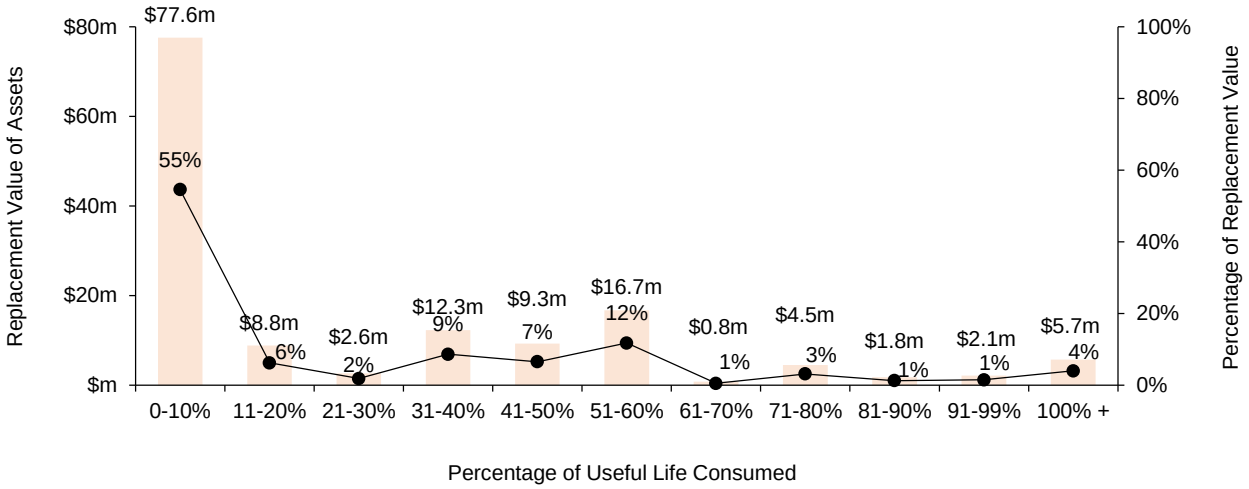
Figure 18 shows that, as of 2021, 90% of Facilities assets, worth $127.7 million, have at least 10 years of service life remaining. Approximately 4% remain in operation beyond their useful life.

Figure 18 Facilities: Service Life Remaining in Years



For additional context, Figure 19 provides a more detailed summary of the percentage of useful life consumed for Facilities assets.

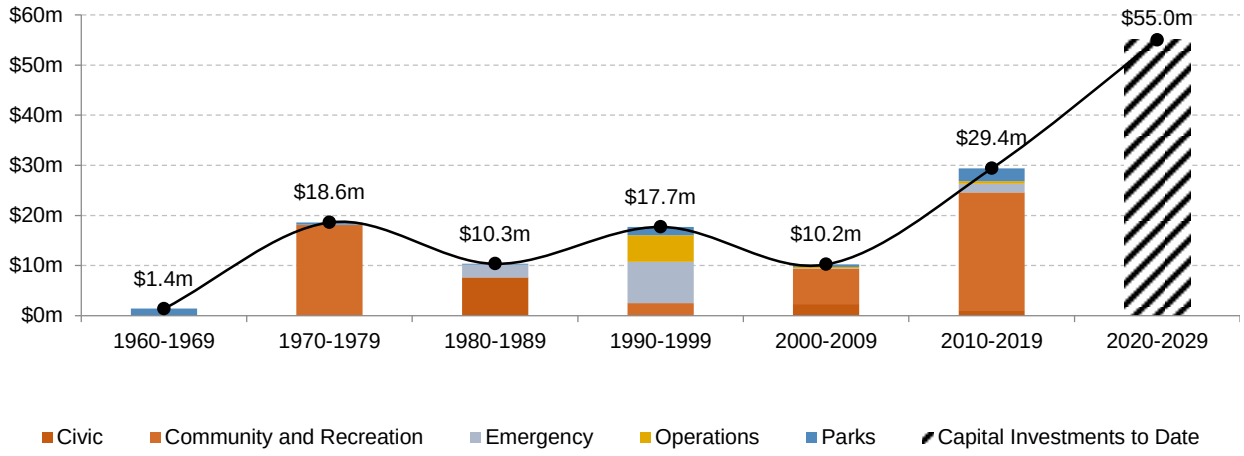
Figure 19 Facilities: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure 20 shows the level of investment the City of Port Coquitlam has made in its Facilities assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community infrastructure needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Figure 20 Facilities: Historical Investments in Infrastructure



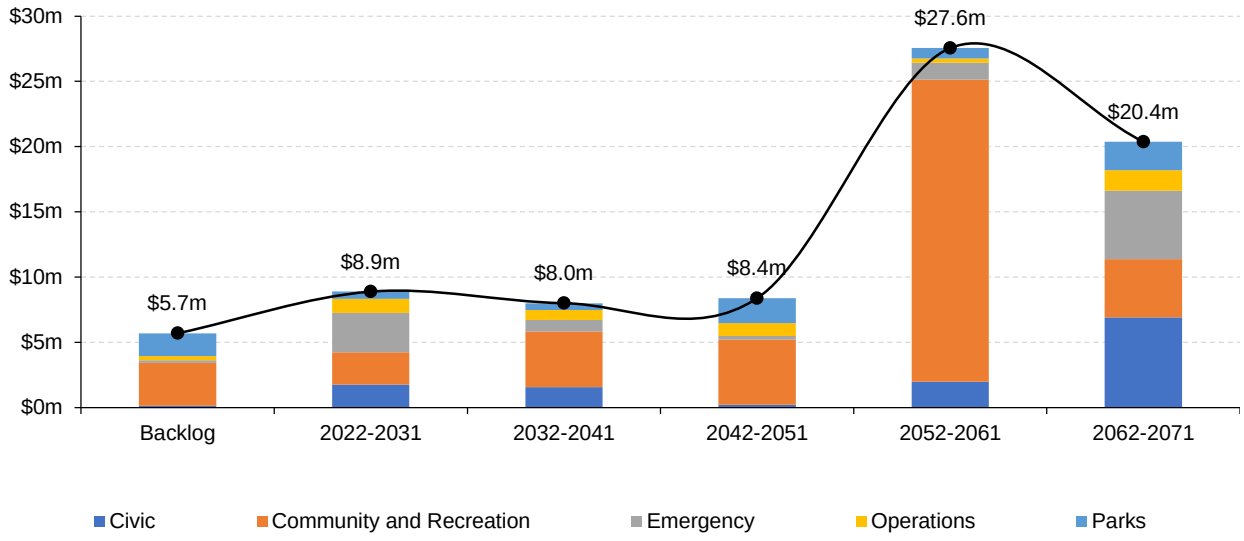
The City has made the largest investments in Facilities in the current decade, dominated by the development of the new Port Coquitlam Community Centre. The Centre, with a current replacement value of $52.5 million, replaced the aging downtown recreation facilities and library, and includes a leisure pool, three ice sheets, library, multi-use spaces, games room and lounge, café, gym, fitness centre, parking, outdoor plazas, sport courts and more.

Forecasted Replacement Needs 2021-2070

Figure 21 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the City's various Facilities assets. Although consistent investments may be in each of the next five decades to keep up with replacement needs, the City is projected to experience a substantial increase in replacement needs in 2052-2061, totalling $27.6 million. Further componentization of pooled assets will assist in refining these projections.

The chart also shows a Facilities age-based backlog of $5.7 million, comprising assets that have reached the end of their estimated useful life. However, the condition analysis illustrated previously suggests that up to 10% of Facilities assets with a current replacement value of nearly $15 million may be candidates for immediate or short-term replacement because they are in poor or very poor condition. Both age and condition should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 21 Facilities: Forecasted Replacement Needs

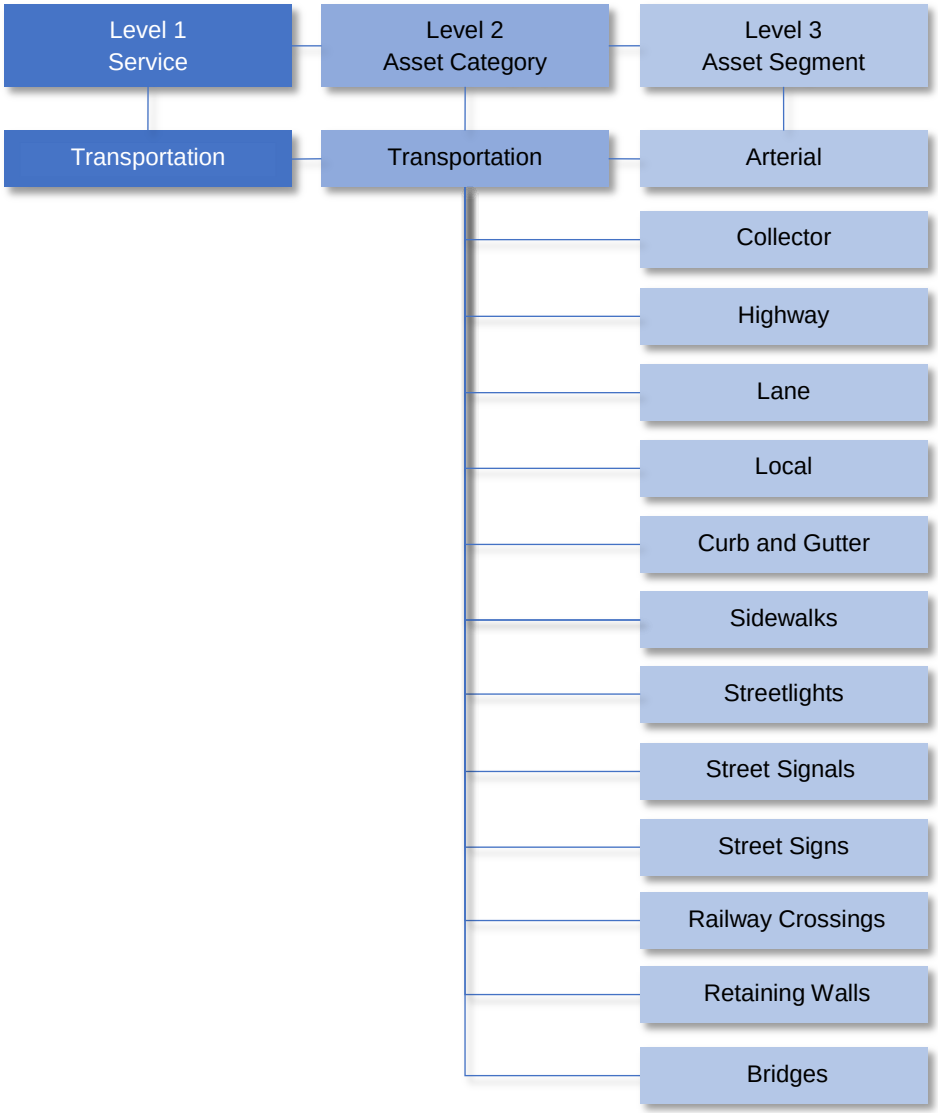


Transportation

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels.

Figure 22 Transportation Services: Asset Hierarchy and Segmentation



Asset Inventory and Valuation

Port Coquitlam's Transportation Services inventory is managed in CityWide™, and comprises 27,000 unique assets, including 241 centreline kilometres (CL-KM) of roadway, 144 kilometres of sidewalks, 33 bridges, and various roadway appurtenance such as streetlights, street signs, signals, and railway crossings. Table 3 summarizes the City's Transportation assets.

Using 2020 replacement cost estimates provided by staff, Port Coquitlam's Transportation infrastructure is valued at $484.6 million, or $22,300 per household. The City's road network comprises 49% of the portfolio, followed by bridges which make up 32%.

Table 3 Transportation Services: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Primary Costing Method
Roads	$235,874,810	49%	241,301 CL-M	
Local	$125,075,636	26%	124,027 CL-M	Cost per unit
Collector	$43,934,528	9%	36,779 CL-M	Cost per unit
Arterial	$40,539,438	8%	33,494 CL-M	Cost per unit
Lane (Paved only)	$21,746,640	4%	42,928 CL-M	Cost per unit
Highway	$4,578,569	1%	4,073 CL-M	Cost per unit
Bridges	$153,745,000	32%	33	User defined
Sidewalks	$23,702,354	5%	144,164 m	Cost per unit
Curb and Gutter	$23,679,447	5%	384,258 m	Cost per unit
Streetlights	$18,290,000	4%	3,658	CPI
Traffic Signals	$12,284,466	3%	262	User defined
Traffic Signs	$9,360,000	2%	55	Cost per unit
Retaining Walls	$7,130,792	1%	6,194 m	Cost per unit
Railway Crossings	$525,000	<1%	75	Cost per unit
Total	$484,591,869	100%		

Projected Asset Condition

Figure 23 summarizes the replacement cost-weighted, projected condition of the City's Transportation infrastructure as of 2021. Based on a combination of assessed condition and age-based data, 32% of all Transportation assets, valued at $156.6 million are in poor, very poor, or failed condition. As illustrated in Figure 24, roads comprise $126.3 million of these assets, or 81%. The remaining 19% of assets with a poor or worse rating was distributed between bridges and other Transportation assets, including sidewalks, and various roadside appurtenances.

Assets in poor, very poor, or failed condition may be candidates for immediate or short-term replacement. In addition, 29% of assets are in fair condition. As their condition degrades further, these assets are likely to require rehabilitation or replacement over the medium term.

Figure 23 Transportation Services: Asset Condition – All Assets

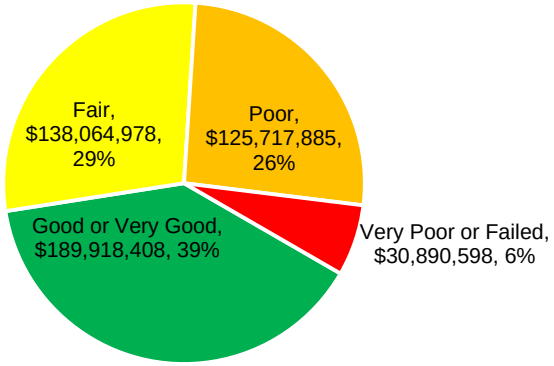
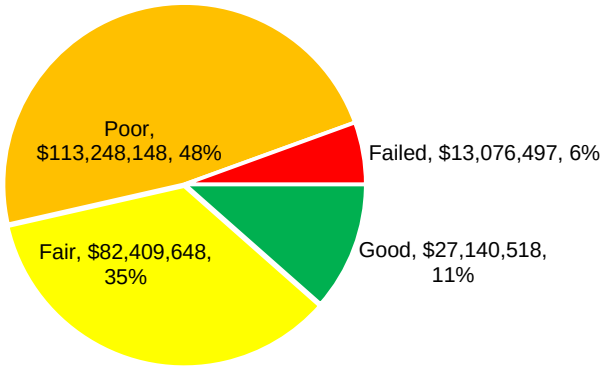


Figure 24 below shows that 54% of the City's road network, with a current replacement value of $126.3 million, is in poor or failed condition (projected), and may require replacement in the immediate or short terms.

Figure 24 Transportation Services: Asset Condition – Roads



As further illustrated in Figure 25, 70% of arterial and collector roads are in poor or failed condition. With a replacement value of $53.6 million, local roads have the largest share of assets in poor or failed condition, comprising 42% of all roads assets with this condition profile.

Figure 25 Transportation Services: Asset Condition – By Roads Functional Classification

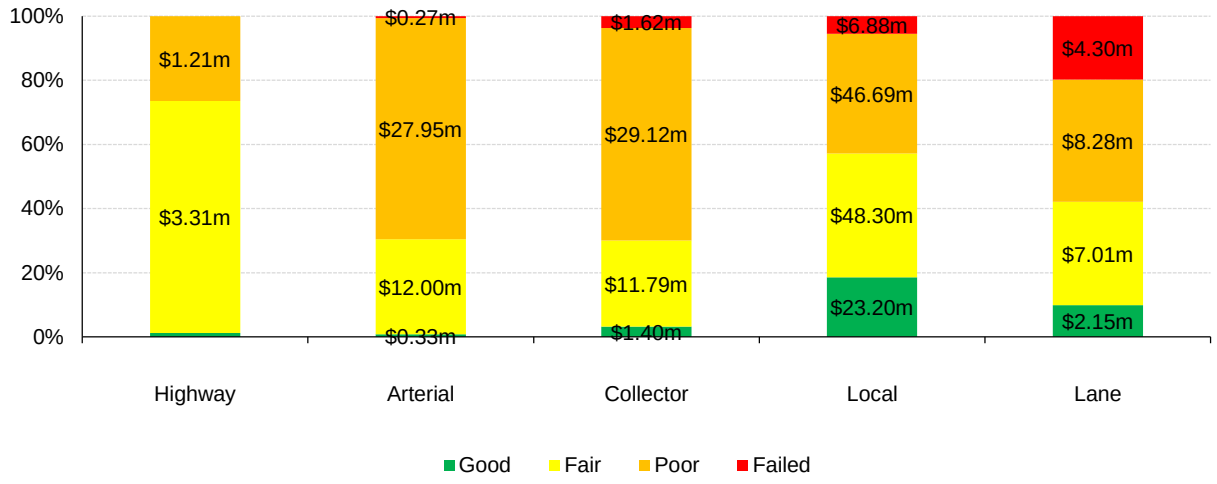
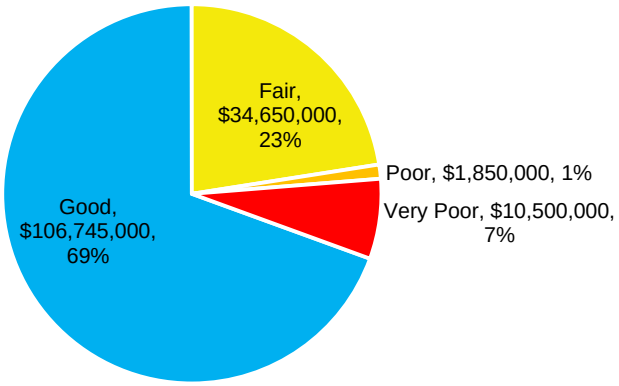


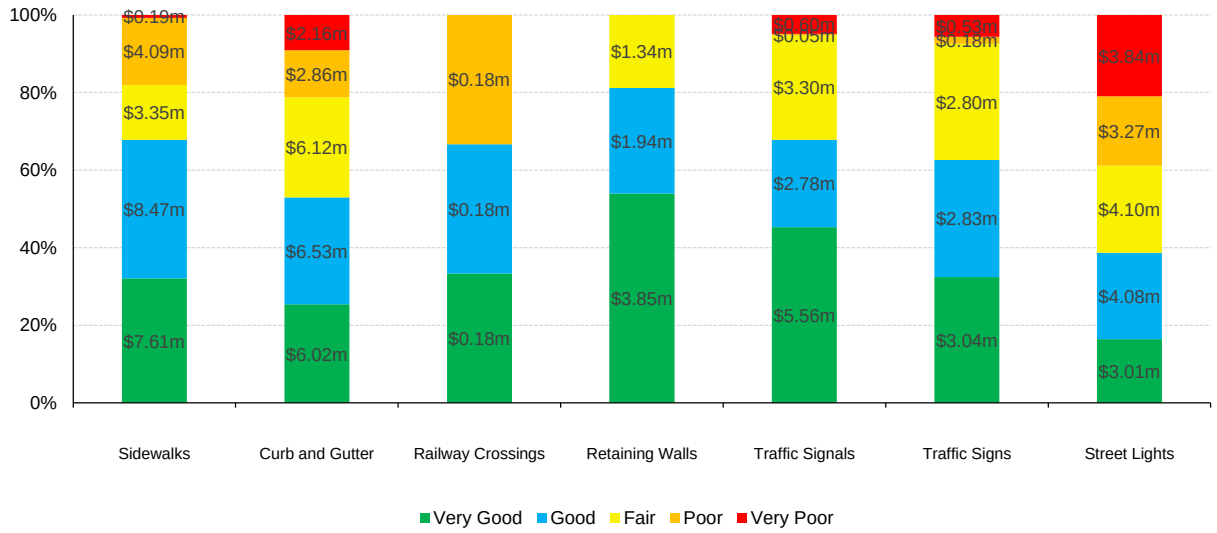
Figure 26 below shows that although the majority of bridges are in good condition, 8% of assets, valued at nearly $12 million are in poor or very poor condition, requiring potential replacements in the short or immediate term.

Figure 26 Transportation Services: Asset Condition – Bridges



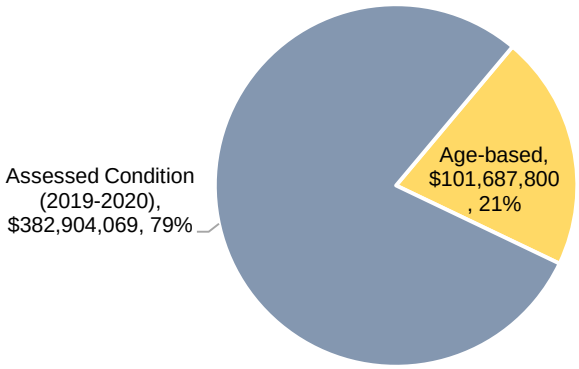
Lastly, Figure 27 shows that of the remaining Transportation assets which include sidewalks, and various roadside appurtenances, 19%, valued at $17.9 million, were determined to be in poor or very poor condition.

Figure 27 Transportation Services: Asset Condition – Other Transportation Assets



By default, condition summary charts rely on field assessment data when available. In the absence of such data, the age of an asset is used to approximate its condition. Figure 28 illustrates how condition data was derived for Transportation Services assets. Based on replacement costs, 79% of assets were included as part of condition assessment conducted in 2019 and 2020. Age was used as an estimate for condition for the remaining 21% of assets, valued at $101.7 million. The 2019 and 2020 condition data was then projected forward to estimate condition ratings for 2021.

Figure 28 Transportation Services: Source of Condition Data



Age Profile

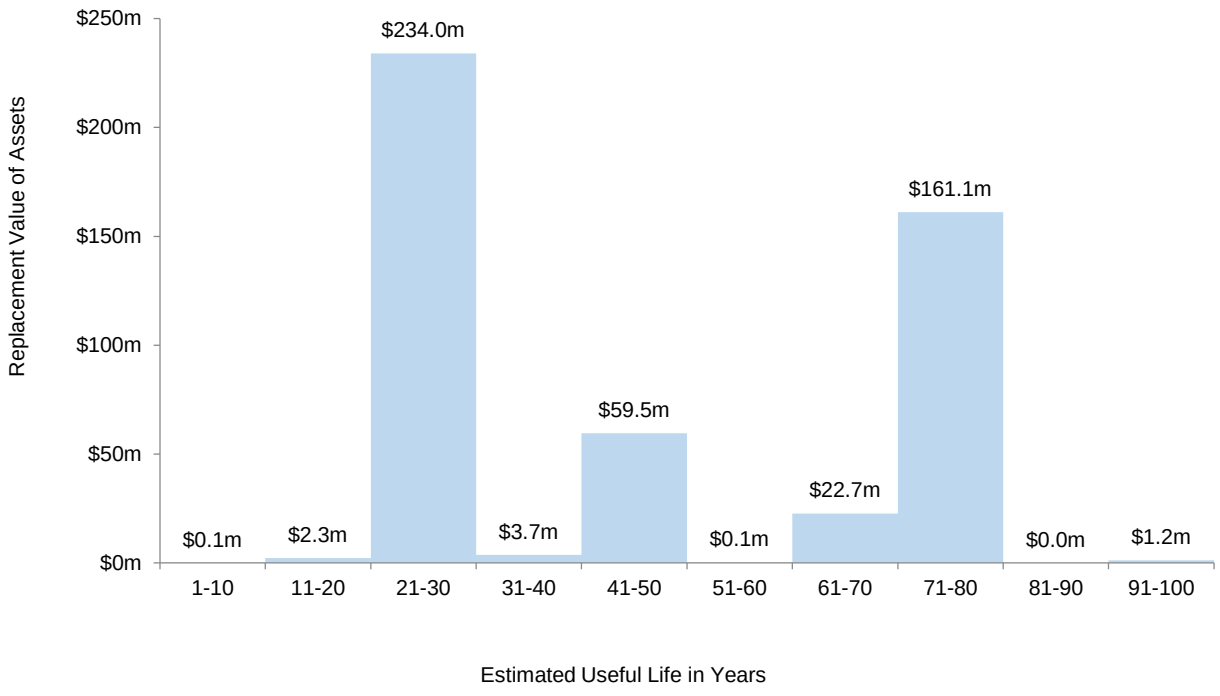
An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure assets can vary dramatically, from several years to many decades. The histogram in Figure 29 illustrates the distribution of useful life across Port Coquitlam's Transportation assets using replacement costs. The analysis shows that the majority of roads have an estimated useful life of 21-30 years; the useful life of sidewalks, bridges, and retaining walls is concentrated in the 71-80 years interval. This data can be useful in developing asset replacement projections. (See Transportation Services: Forecasted Replacement Needs).

Figure 29 Transportation Services: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

Figure 30 shows that, as of 2021, 22% of all Transportation assets, worth nearly $108 million, remain in operation beyond their estimated useful life; roads comprise 96% of this asset group. An additional 7% of all Transportation assets will reach the end of their design life in the next five years.

Figure 30 Transportation Services: Service Life Remaining in Years – All Assets

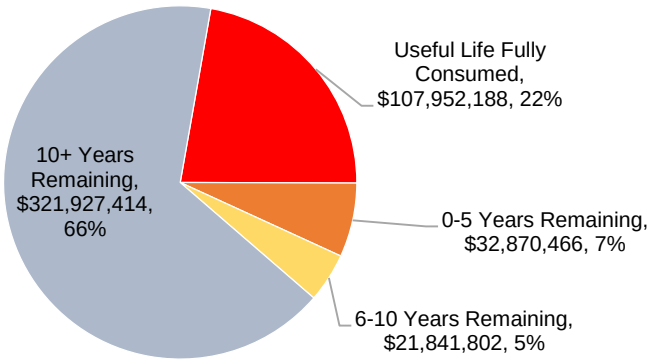
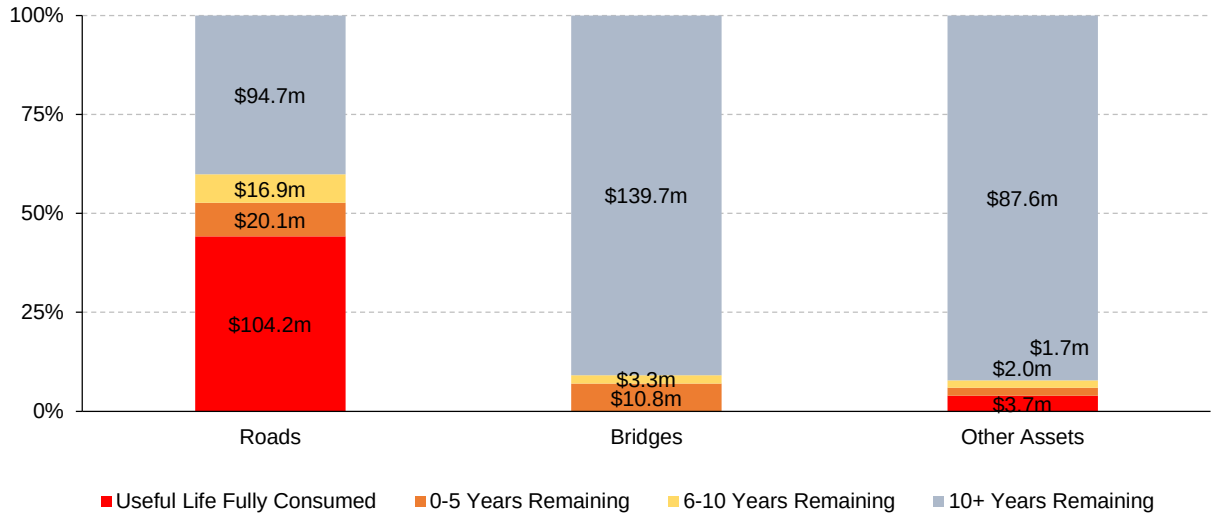


Figure 31 Transportation Services: Service Life Remaining in Years – By Asset Type



For additional context, Figure 32 provides a more detailed summary of the percentage of useful life consumed for all Transportation assets. The analysis again shows that 22% of all Transportation assets, worth $107.9 million remain in operation beyond their estimated useful life. An additional 23% have consumed between 51-99% of their EUL and are in the latter stages of their estimated lifecycle.

Figure 32 Transportation Services: Percentage of Useful Life Consumed – All Assets

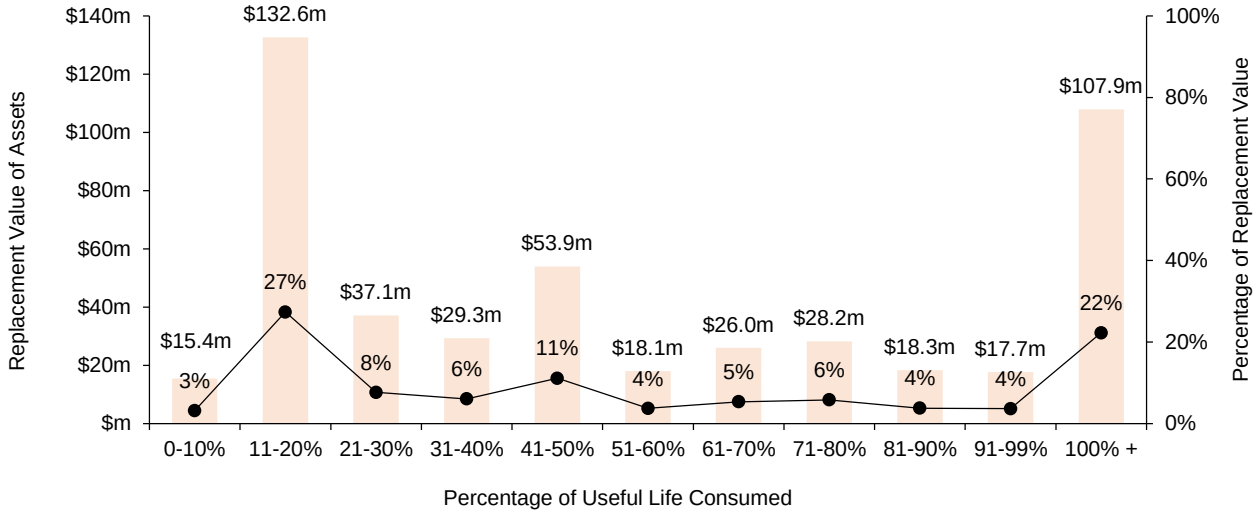


Figure 33, Figure 34, and Figure 35 offer similar, individualized analysis for the City's roads, bridges, and other Transportation assets, respectively.

Figure 33 Transportation Services: Percentage of Useful Life Consumed – Roads

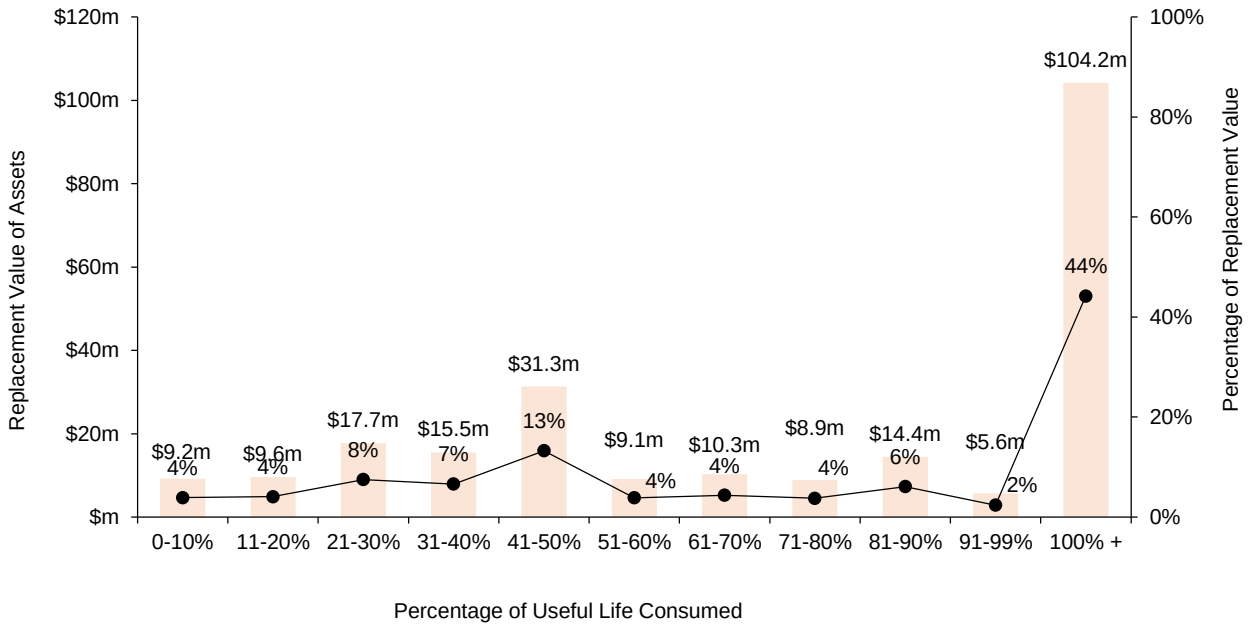


Figure 34 Transportation Services: Percentage of Useful Life Consumed – Bridges

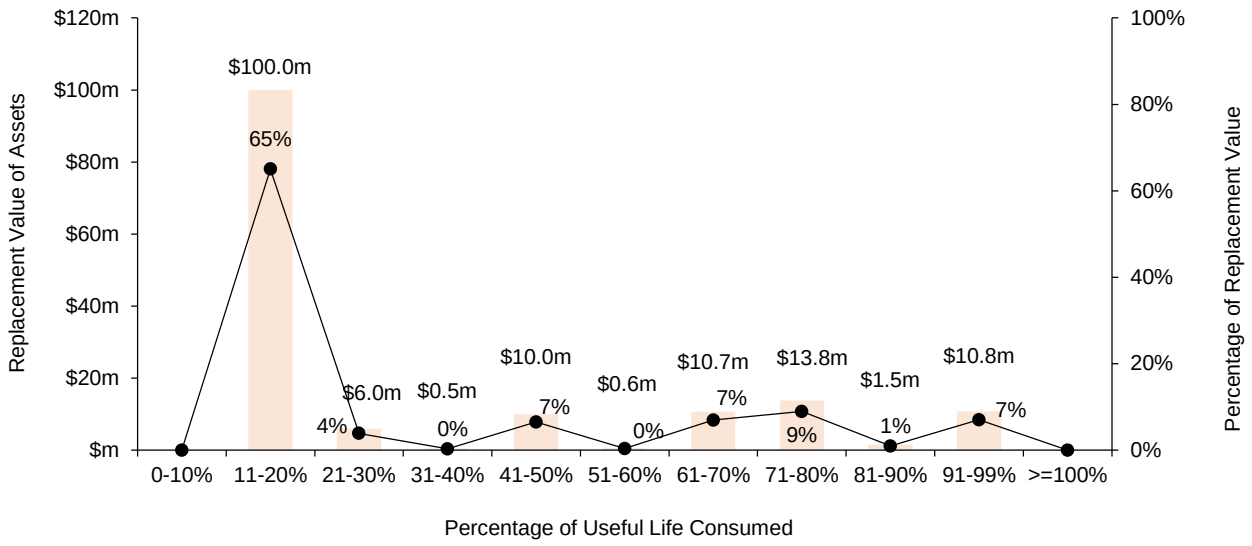
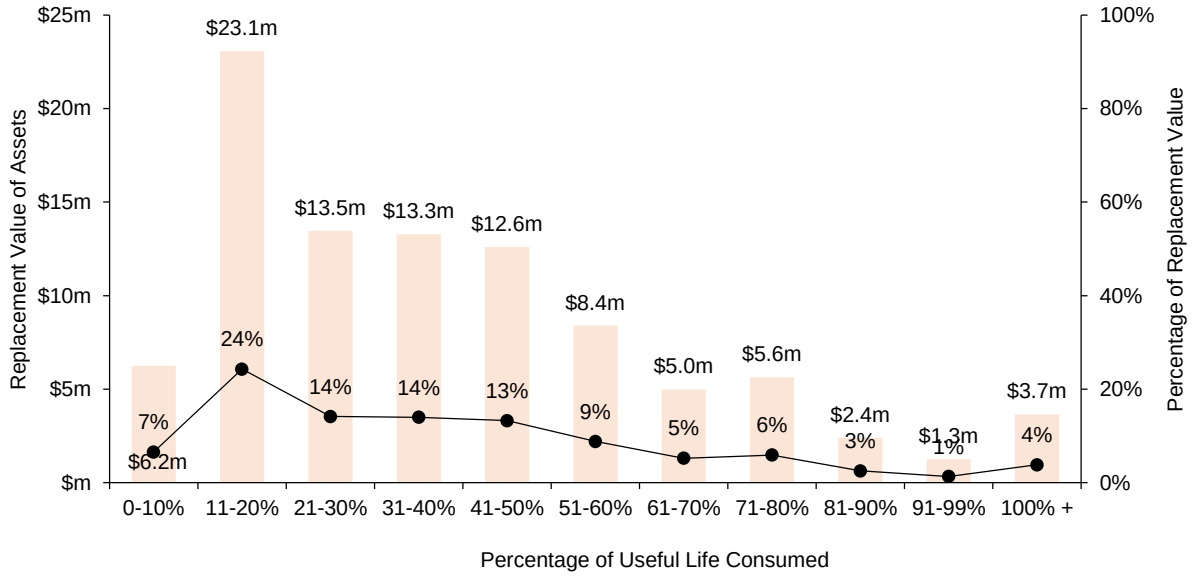


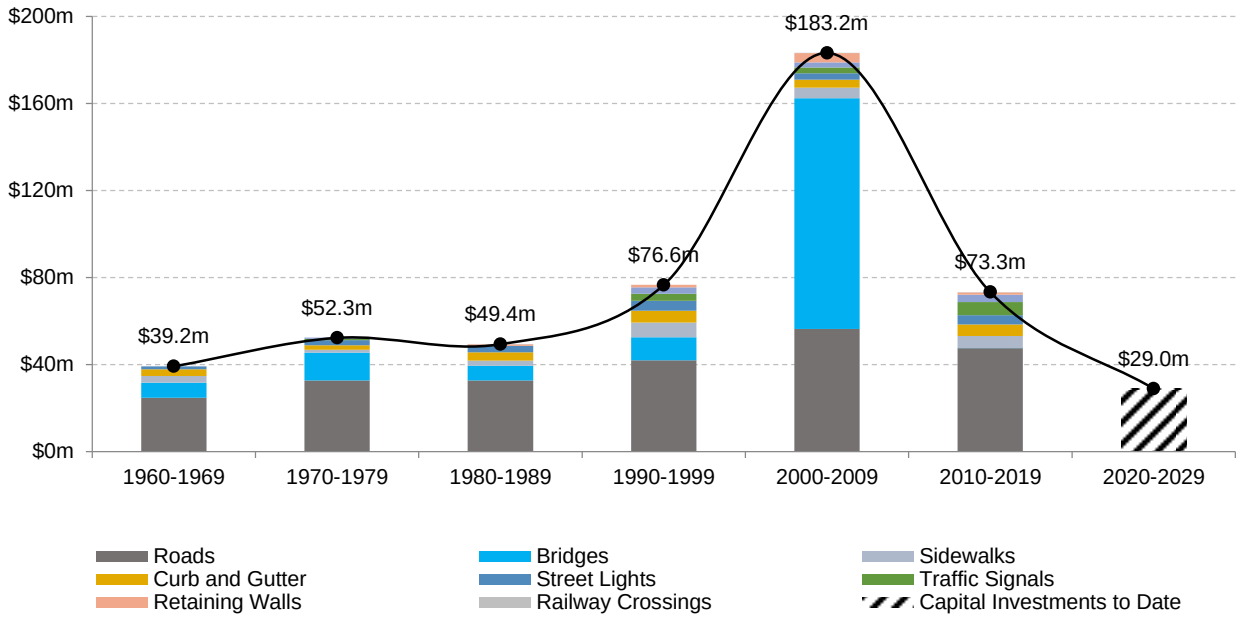
Figure 35 Transportation Services: Percentage of Useful Life Consumed – Other Assets



Historical Investments in Infrastructure

Figure 36 shows the level of investment the City of Port Coquitlam has made in its Transportation Services assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community infrastructure needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Figure 36 Transportation Services: Historical Investments in Infrastructure



The decade from 2000-2009 represented a period of substantial investments into the City's transportation network; more than $106 million was invested in bridges, followed by $56.2 million in the roads network.

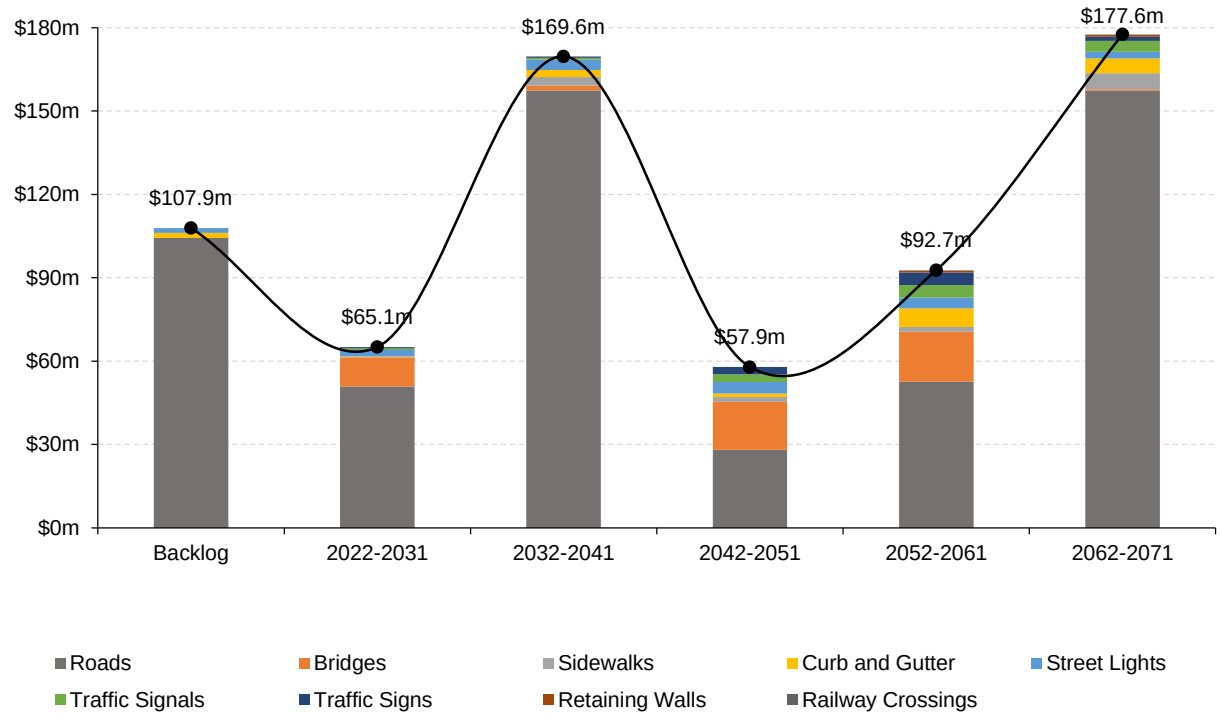
In the current decade, the City has already made substantial investments in roads, signals, streetlights, sidewalks, and safety improvements, totaling $29 million between 2020 and 2021.

Forecasted Replacement Needs 2021-2070

Figure 37 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the City's Transportation assets. Two substantial spikes are forecasted: the first, totalling $169.6 million is projected for 2032-2041; the second, totalling $177.6 million is forecasted for 2062-2071.

The chart also shows a Transportation Services age-based backlog of $107.9 million, comprising assets that have reached the end of their estimated useful life; 97% is attributed to roads. However, the condition analysis illustrated previously suggests that up to 32% of Transportation assets worth $156.6 million may be candidates for immediate or short-term replacement because they are in poor or very poor condition. Both age and condition should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 37 Transportation Services: Forecasted Replacement Needs

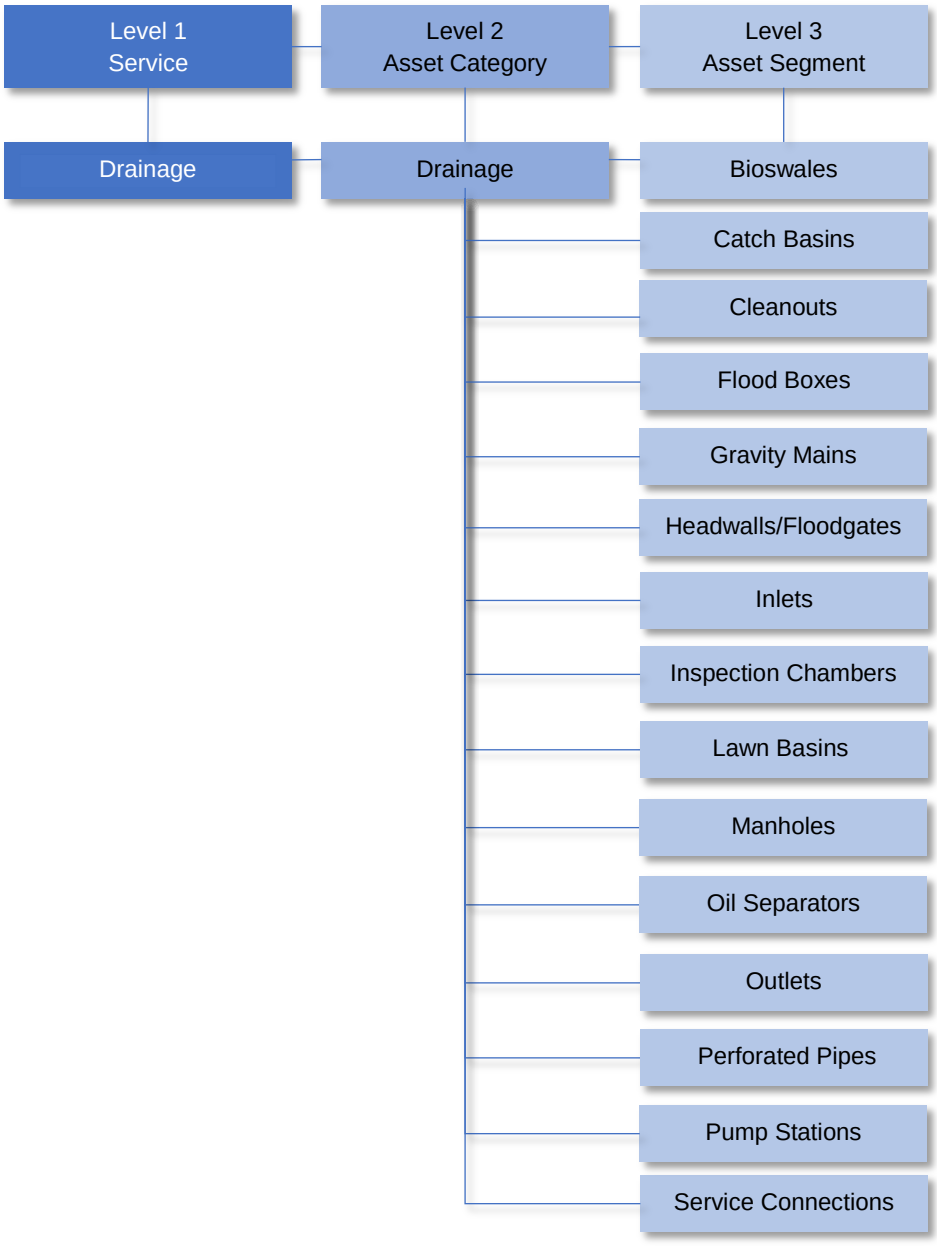


Drainage System

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels.

Figure 38 Drainage System: Asset Hierarchy and Segmentation



34

Asset Inventory and Valuation

Port Coquitlam's Drainage infrastructure inventory is managed in CityWide™, and comprises more than 23,000 unique assets, including 197 kilometres of gravity mains, 84 kilometres of service connections, more than 3,300 manholes, and 5,400 catch basins. Table 4 summarizes the City's Drainage assets in greater detail.

Using 2020 replacement cost estimates provided by staff, Port Coquitlam's Drainage infrastructure is valued at $350.3 million, or $16,107 per household. Underground linear assets comprise nearly 70% of the Drainage portfolio.

Table 4 Drainage System: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Primary Costing Method
Gravity Mains	$170,287,978	49%	197,254 m	Cost per unit
Service Connections	$67,592,399	19%	84,247 m	Cost per unit
Culverts	$28,624,995	8%	8,689 m	Cost per unit
Catch Basins	$27,005,000	8%	5,404	Cost per unit
Manholes	$23,436,000	7%	3,348	Cost per unit
Pump Stations	$22,990,752	7%	52	User defined
Perforated Pipes	$3,053,039	1%	3,804 m	Cost per unit
Headwalls & Floodgates	$1,770,000	1%	177	Cost per unit
Inlets	$1,340,000	<1%	134	Cost per unit
Outlets	$1,280,000	<1%	128	Cost per unit
Lawn Basins	$1,077,000	<1%	359	Cost per unit
Flood Box	$570,000	<1%	24	User defined
Bioswales	$540,576	<1%	676m	Cost per unit
Inspection Chambers	$348,000	<1%	174	Cost per unit
Cleanouts	$342,000	<1%	114	Cost per unit
Oil Separators	$75,000	<1%	5	Cost per unit
Total	$350,332,739	100%		

Projected Asset Condition

Figure 39 summarizes the replacement cost-weighted, projected condition of the City's Drainage infrastructure as of 2021. Based on a combination of condition assessment data and age, 32% of Drainage assets, worth $111.4 million, are in poor to very poor condition and may be candidates for immediate or short-term replacement. In addition, 28% of assets are in fair condition. As their condition degrades further, these assets are likely to require rehabilitation or replacement over the medium term.

Figure 39 Drainage System: Asset Condition – All Assets

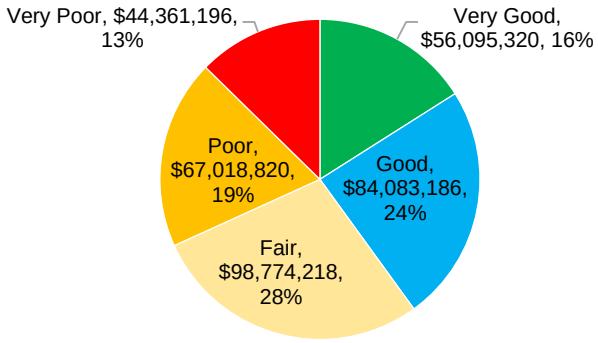
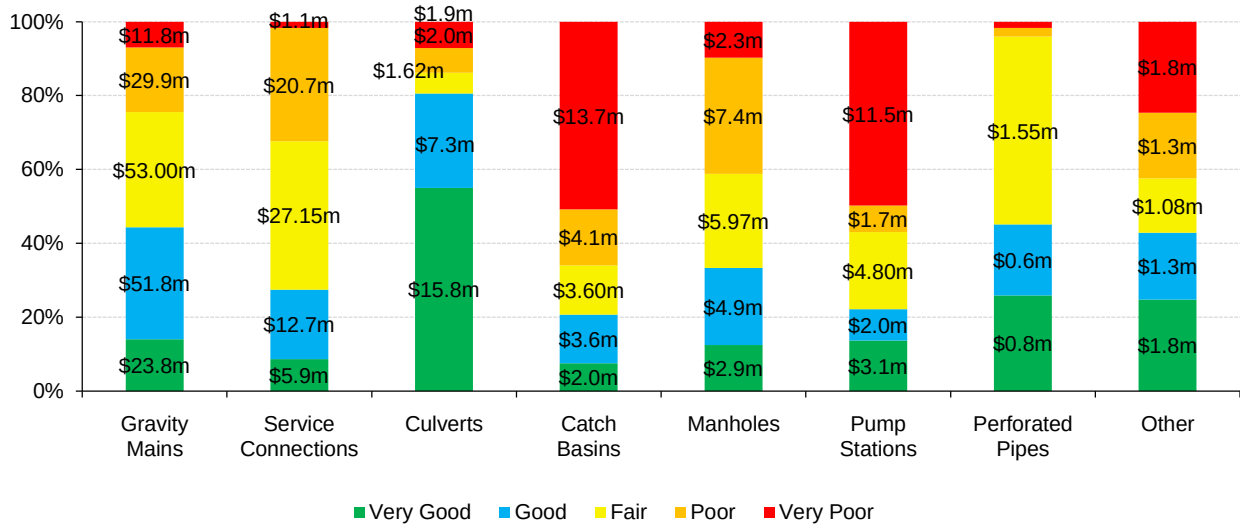


Figure 40 shows that, based on a combination of CCTV inspection data and age, 25% of gravity mains, valued at $41.7 million, are in poor to very poor condition. Based on age, 32% of service connections are in poor to very poor condition. Other major segments, such as catch basins, manholes, pump stations, have at least 40% of assets with an age-based condition rating of poor or worse.

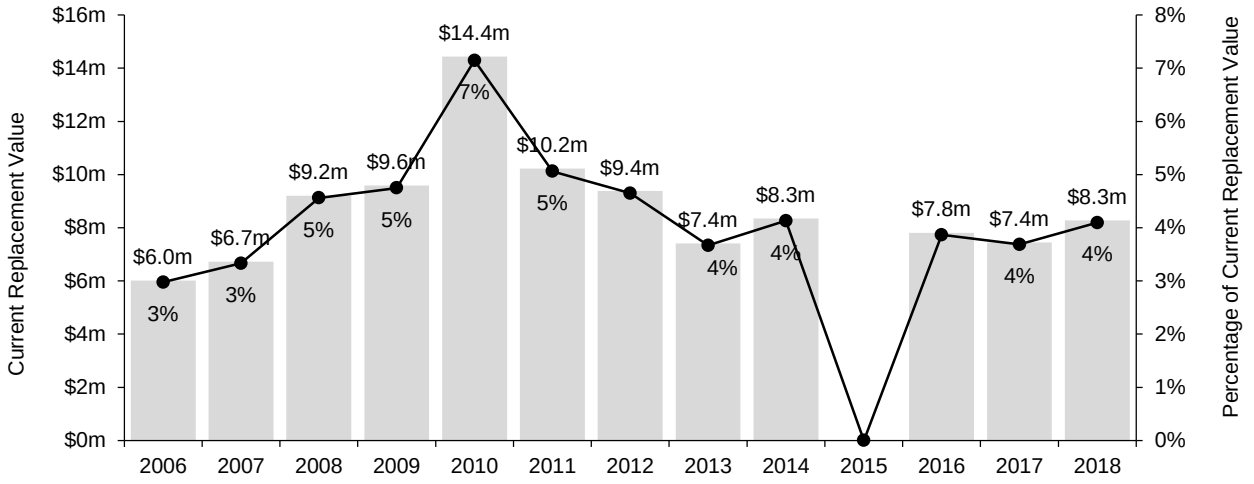
Figure 40 Drainage System: Asset Condition – By Segment



By default, Figure 39 and Figure 40 rely on condition assessment data when available. In the absence of such data, the age of an asset is used to approximate its condition. Condition data was provided for a portion of the City's gravity mains, perforated pipes, and culverts. Figure 41 illustrates the value of these assets inspected annually between 2006 and 2018. On average, over the 13 year period, the City assessed 4% of its Drainage gravity mains, perforated pipes, and gravity mains each year, by replacement value. No condition data was available for 2015.

Overall, CCTV inspection data was provided for 59% the City's Drainage mains and perforated pipes, valued at $101.9 million, and 11% of its culverts. Age was used as an estimate for condition for the remaining 29% of these assets. In total, condition data was available for 30% of all Drainage infrastructure; age was used as a proxy for condition for the remaining 70% of assets.

Figure 41 Drainage System: Asset Condition - Condition Assessments Timeline



Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

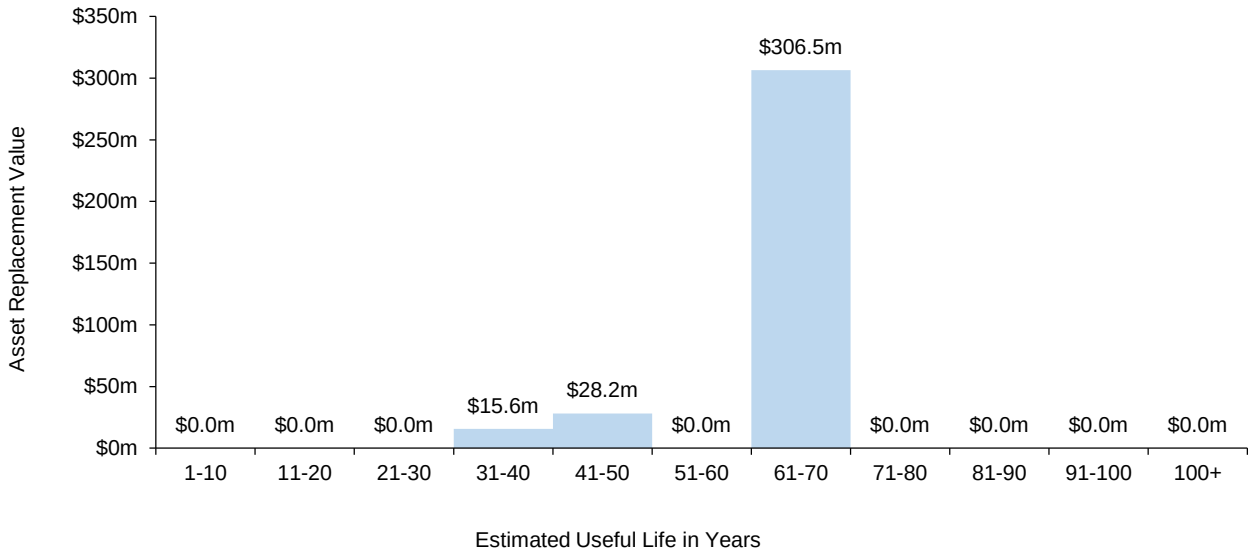
In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure assets can vary dramatically, from several years to many decades. For Drainage assets, and based on replacement costs, the estimated useful life distribution was dominated by linear assets. Overall, EULs range from a minimum of 35 years for pump stations to 70 years for gravity mains, service connections, and culverts.

The histogram in Figure 42 illustrates the distribution of useful life across Port Coquitlam's Drainage assets using replacement costs. This data can be useful in developing asset replacement projections. (See Figure 46 Drainage System: Forecasted Replacement Needs).

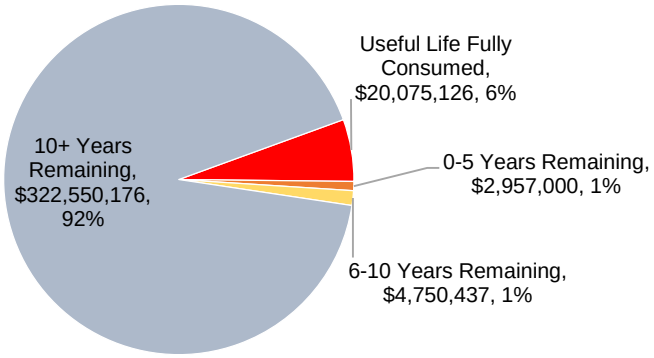
Figure 42 Drainage System: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

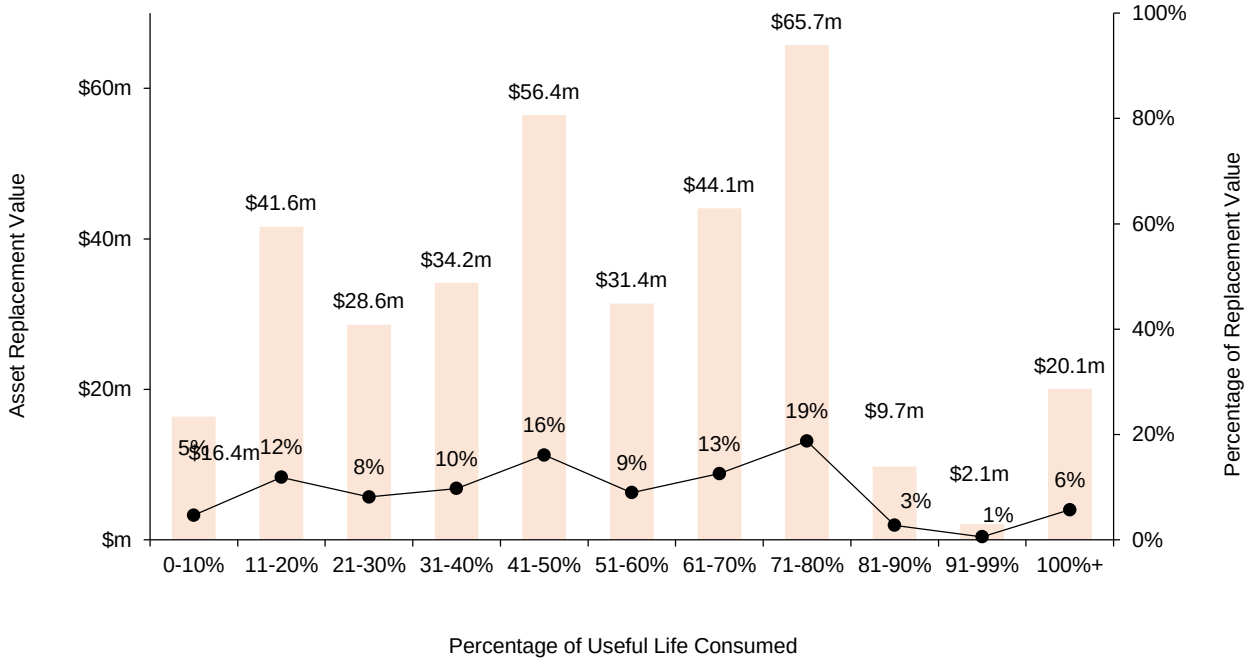
Figure 43 shows that, as of 2021, 92% of Drainage assets have at least 10 years of useful life remaining. However, 6% worth $20.1 million remain in operation beyond their estimated useful life.

Figure 43 Drainage System: Service Life Remaining in Years



For additional context, Figure 44 provides a more detailed summary of the percentage of useful life consumed for Drainage assets. The analysis suggests a consolidation of assets into the latter stages of lifecycle; approximately 50% of assets, based on replacement value, have consumed at least 51% of their estimated useful life.

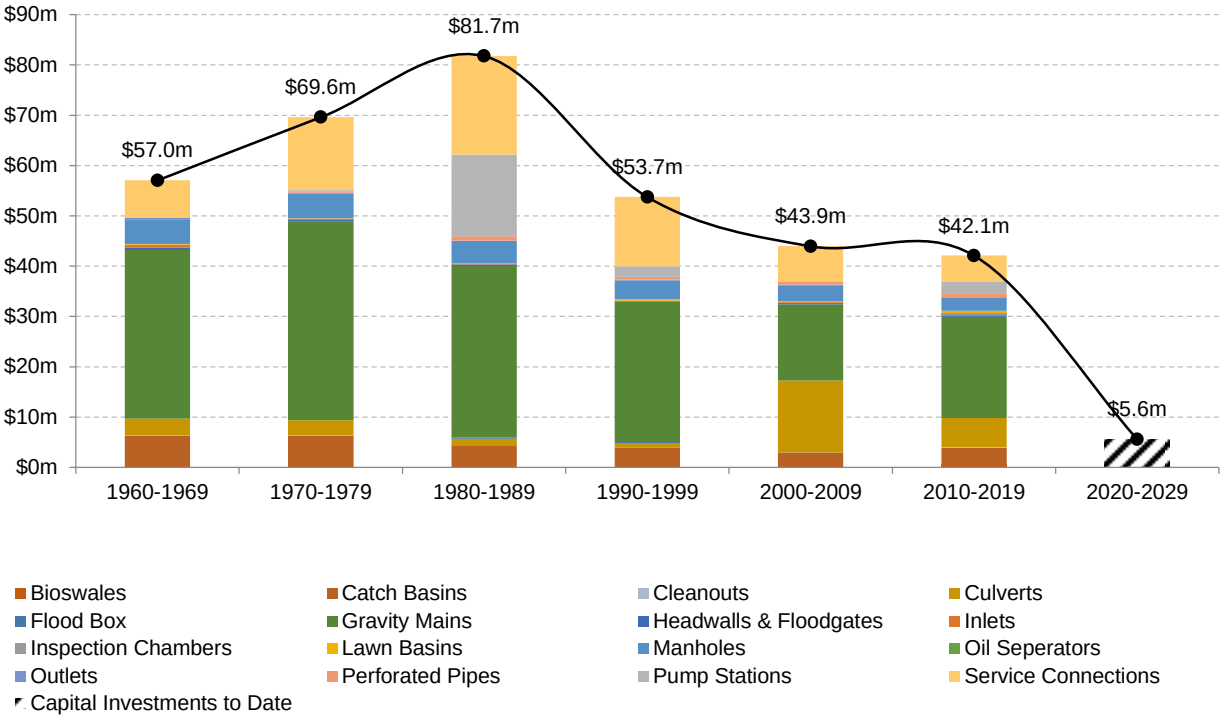
Figure 44 Drainage System: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure 45 shows the level of investment the City of Port Coquitlam has made in its Drainage infrastructure since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community infrastructure needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Figure 45 Drainage System: Historical Investments in Infrastructure



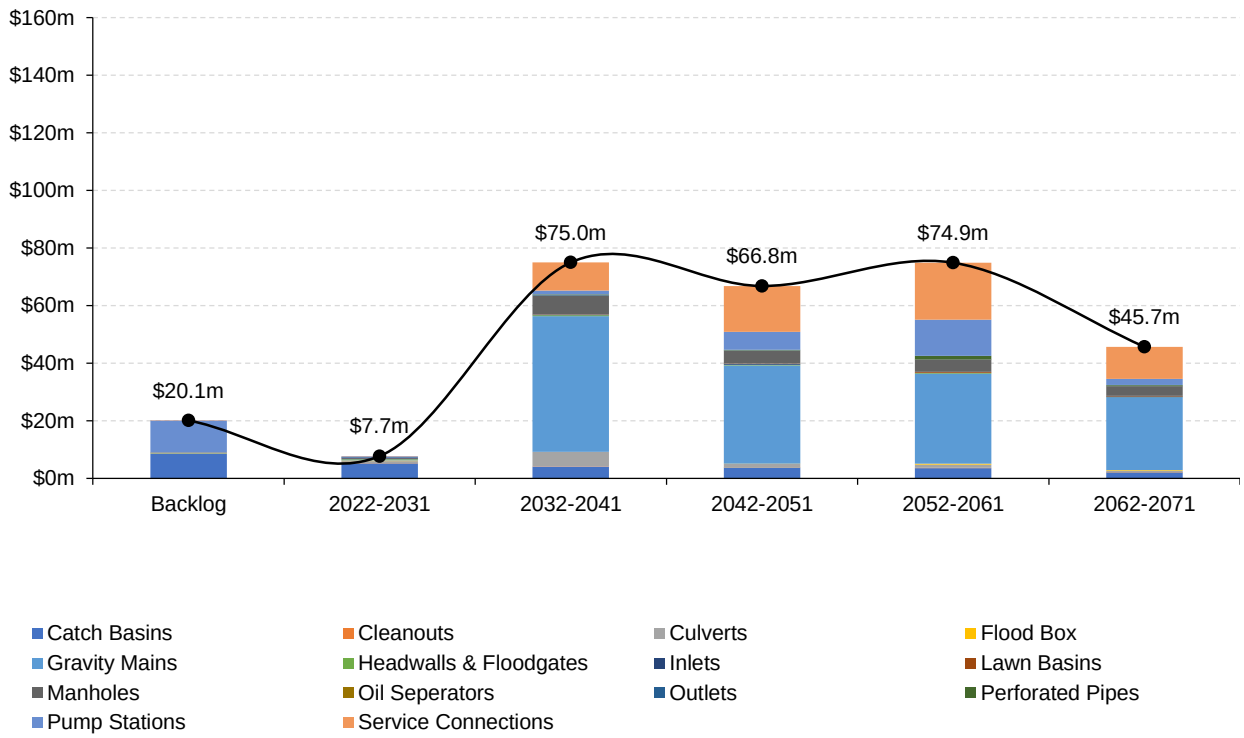
Investments in Drainage infrastructure peaked in the 1980s, with gravity mains, service connections, and pump stations comprising the largest share. Since the 1990s, investments have remained relatively stable, with a noticeable increase in spending on culverts.

Forecasted Replacement Needs 2021-2070

Figure 46 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the City's Drainage assets. Based on age data, replacement needs will total $7.7 million between 2022-2031. However, they are forecasted to rise substantially in the decades that follow, averaging $63.6 million.

The chart also illustrates a Drainage age-based replacement backlog of $20.1 million, comprising assets that have reached the end of their estimated useful life. However, the condition analysis illustrated previously suggests that up 32% of Drainage assets worth $111.4 million may be candidates for immediate or short-term replacement because they are in poor or very poor condition. Both age and condition should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 46 Drainage System: Forecasted Replacement Needs

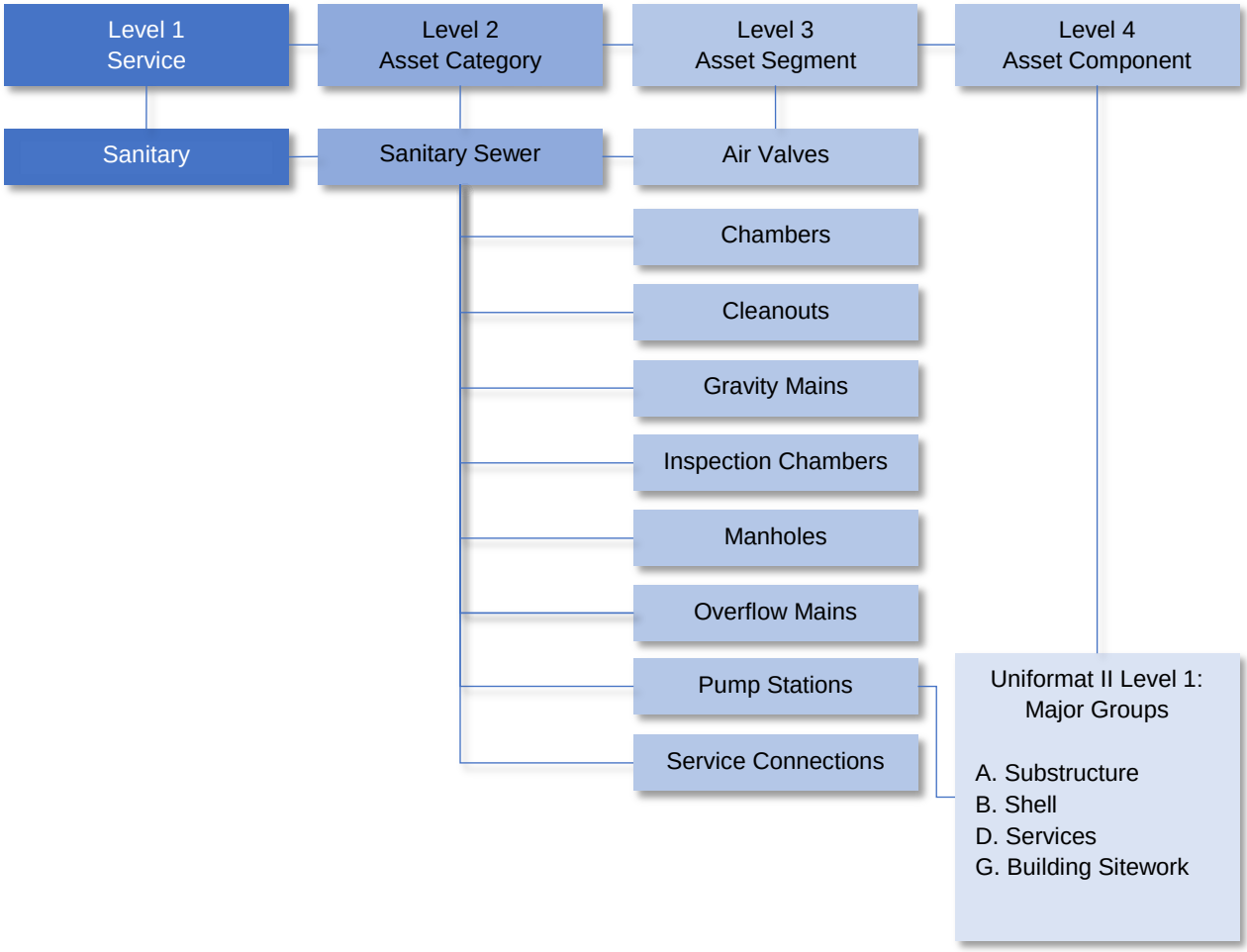


Sanitary System

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels. Pump stations were also disaggregated into subcomponents using the Uniformat II code classifications.

Figure 47 Sanitary System: Asset Hierarchy and Segmentation



Asset Inventory and Valuation

Port Coquitlam's Sanitary System inventory is managed in CityWide™, and contains 17,000 unique assets, including 181 kilometres gravity mains, 100 kilometres of service connections, 2,790 manholes, and 144 pump stations.

Table 5 summarizes the City's Sanitary assets. Using 2020 replacement cost estimates provided by staff, Sanitary infrastructure is valued at $211.4 million, or $9,719 per household. Linear infrastructure comprises 86% of the total Sanitary portfolio.

Table 5 Sanitary System: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Primary Costing Method
Gravity Mains	$146,260,342	69%	180,596m	Cost per unit
Service Connections	$36,917,418	17%	100,134m	Cost per unit
Pressure Mains	$5,465,104	3%	9,947 m	User defined
Overflow Mains	$44,954	<1%	52m	Cost per unit
Manholes	$13,950,000	7%	2,790	Cost per unit
Pump Stations	$7,954,912	4%	144	
A - Substructure	$987,966	<1%	22	
B - Shell	$700,597	<1%	8	User defined
D - Services	$2,700,663	1.3%	21	
G - Building Sitework	$3,565,687	1.7%	92	
Cleanouts	$420,000	<1%	140	Cost per unit
Chambers	$208,466	<1%	2	User defined
Air Valves	$19,386	<1%	6	User defined
Total	$211,395,282	100%		

Projected Asset Condition

Figure 48 summarizes the replacement cost-weighted, projected condition of the City's Sanitary System infrastructure as of 2021. Based on a combination of condition assessments and age data, 35% of Sanitary assets, worth $74.8 million, are in poor to very poor condition, and may require replacement in the immediate or short terms. An additional 23% of assets, with a current replacement value of $48.5 million, are in fair condition and may be candidates for replacement in the medium term. Figure 49 details the condition of each asset segment.

Figure 48 Sanitary System: Asset Condition – All Assets

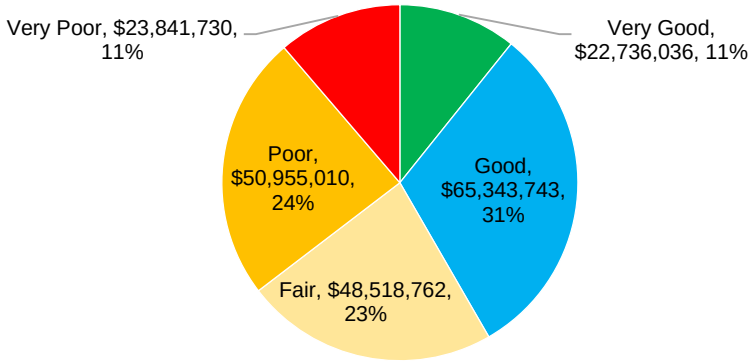
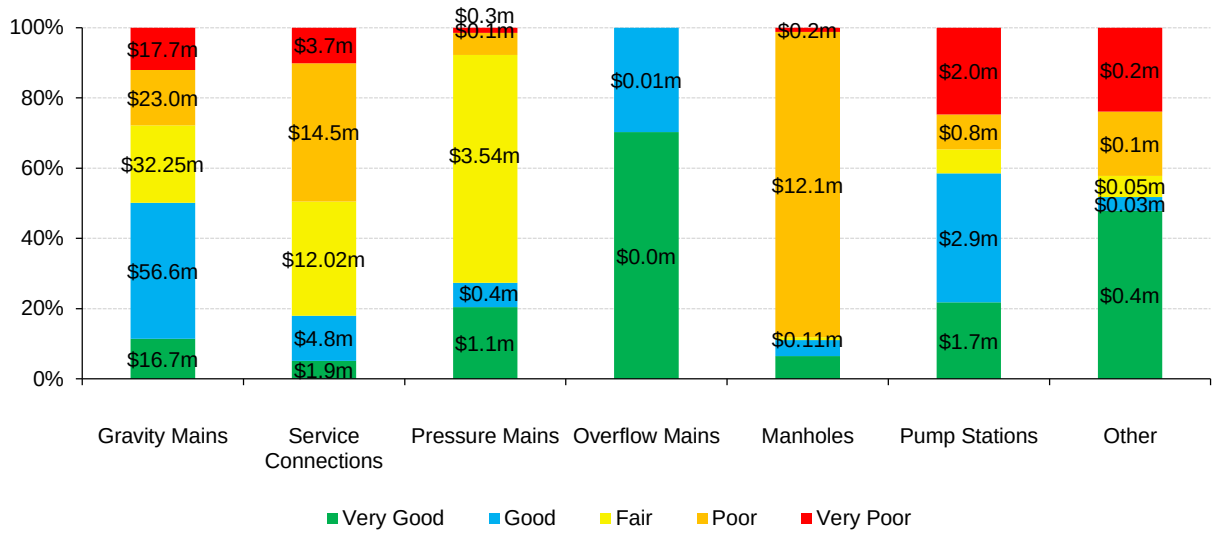


Figure 49 shows that based on a combination of CCTV inspections and age data, 28% of gravity mains, with a current replacement value of $40.7 million are in poor or very poor condition. In addition, based on age data, nearly 50% of service connections worth $18.3 million are also in poor to very poor condition. Most minor appurtenances such as chambers and air valves, are in fair or better condition.

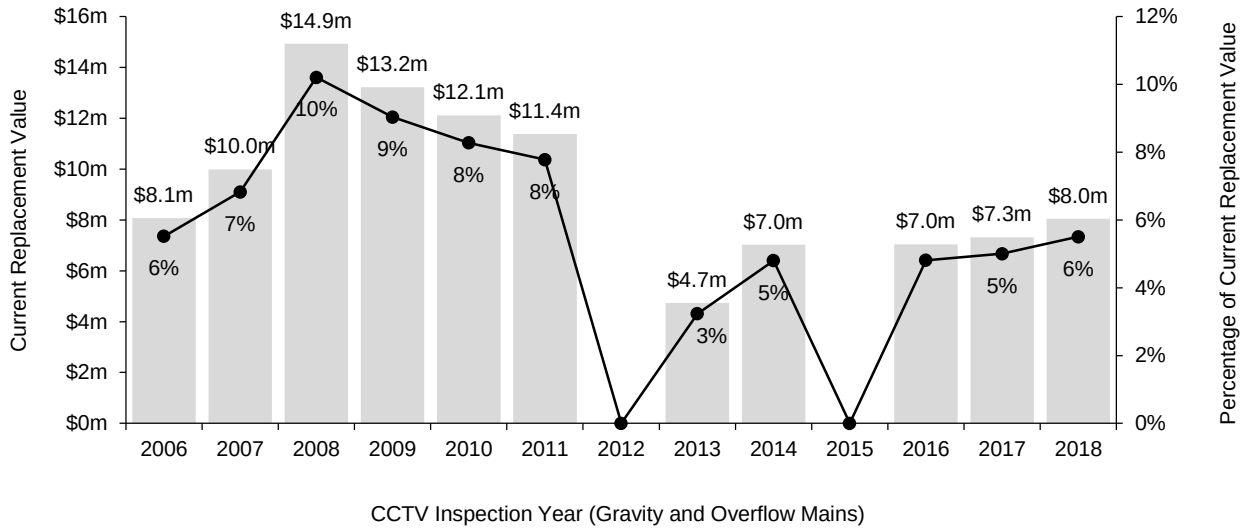
Figure 49 Sanitary System: Asset Condition – By Segment



By default, Figure 48 and Figure 49 rely on condition assessment data when available. In the absence of such data, the age of an asset is used to approximate its condition. Condition data was provided for a portion of gravity and overflow mains. Figure 50 illustrates the value of the sanitary mains inspected annually between 2006 and 2018. On average, over the 13 year period, the City assessed 5% of its gravity and overflow mains each year, by replacement value. No condition data was available for 2012 and 2015.

Overall, CCTV inspection data was provided for 71% the City's gravity and overflow mains, valued at $103.9 million. Figure 4Age was used as an estimate for condition for the remaining 29% of these assets. In total, condition data was available for 49% of all Sanitary infrastructure; age was used a proxy for condition for the remaining 51% of assets.

Figure 50 Sanitary System: Asset Condition - Condition Assessments Timeline



Age Profile

An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

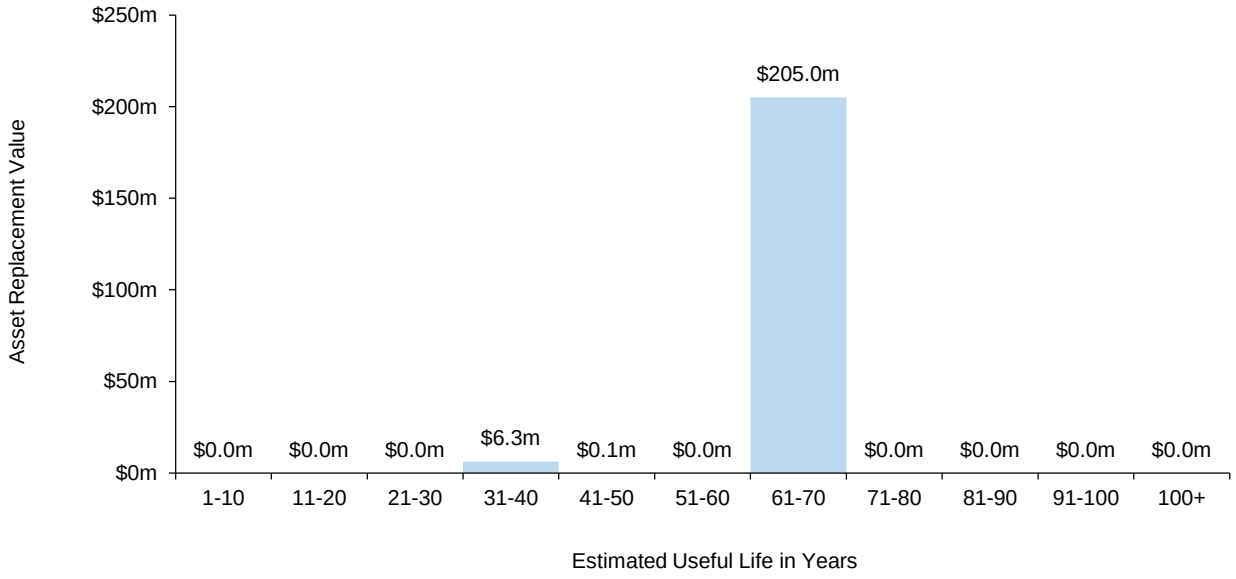
In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure assets can vary dramatically, from several years to many decades. For the City's Sanitary system, EULs ranged from a low of 35 years to a high of 70. However, as linear assets comprise the largest share of the City's Sanitary system, the EULs for 97% of assets was 70 years. The

histogram in Figure 51 illustrates the distribution of useful life across Port Coquitlam's Sanitary assets using replacement costs.

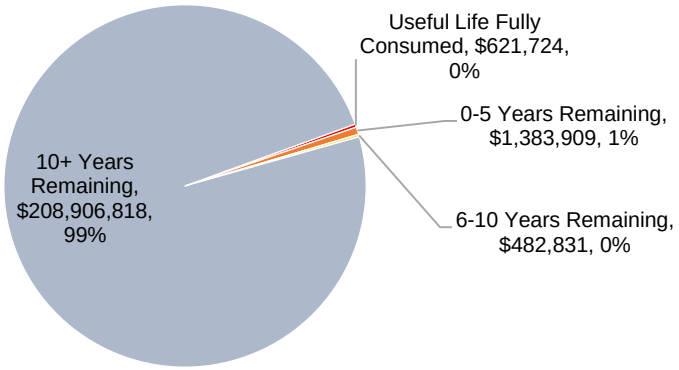
Figure 51 Sanitary System: Useful Life Frequency Distribution – By Asset Replacement Costs



Useful Life Consumed

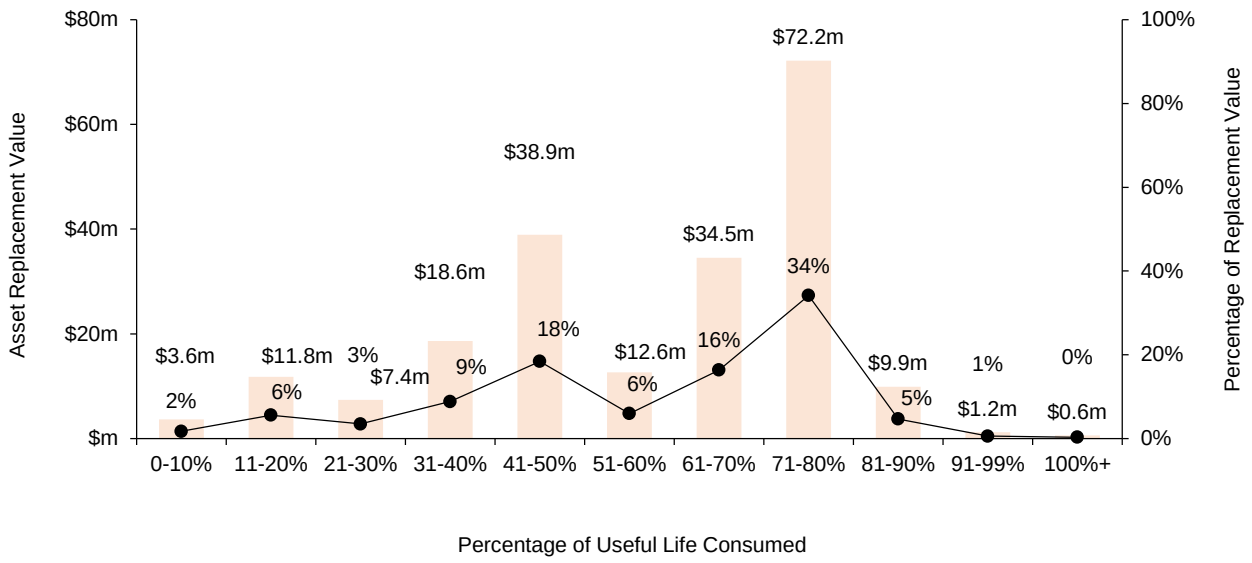
Figure 52 shows that, as of 2021, 99% of Sanitary assets, worth $209 million, have at least 10 years of service life remaining. Less than 1% remain in operation beyond their estimated useful life.

Figure 52 Sanitary System: Service Life Remaining in Years



For additional context, Figure 53 provides a more detailed summary of the percentage of useful life consumed for Sanitary assets. Although 99% of Sanitary assets have at least 10 years remaining, 62% are in the latter stages of lifecycle, having consumed at least 51% of their estimated useful life.

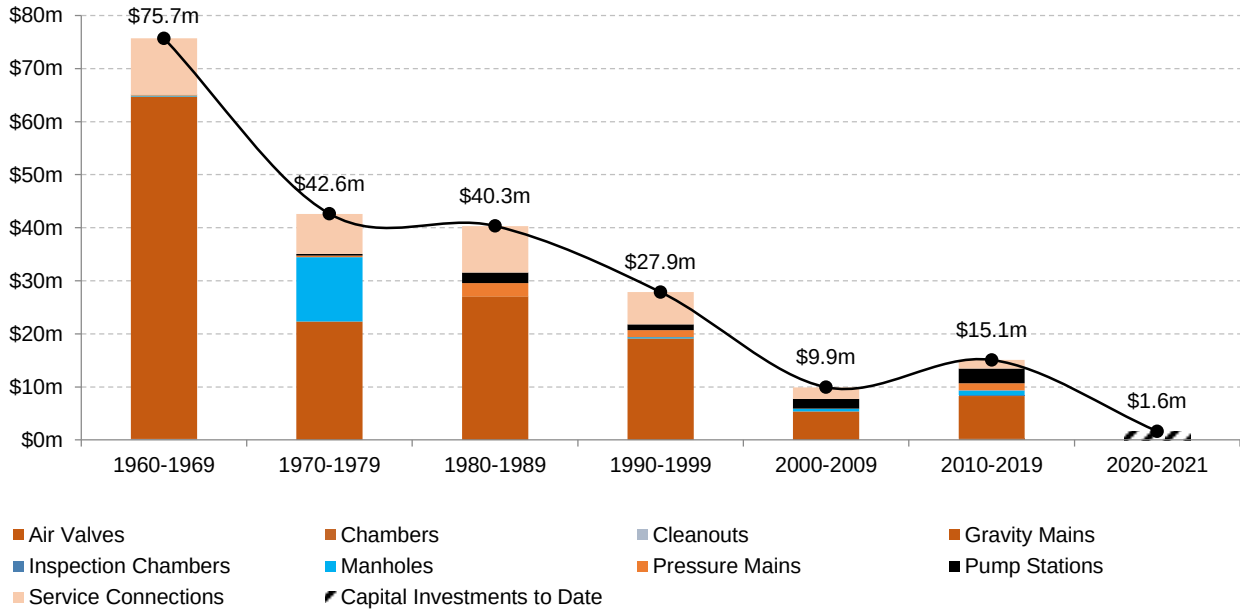
Figure 53 Sanitary System: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure 54 shows the level of investment the City of Port Coquitlam has made in its Sanitary assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community infrastructure needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Figure 54 Sanitary System: Historical Investments in Infrastructure



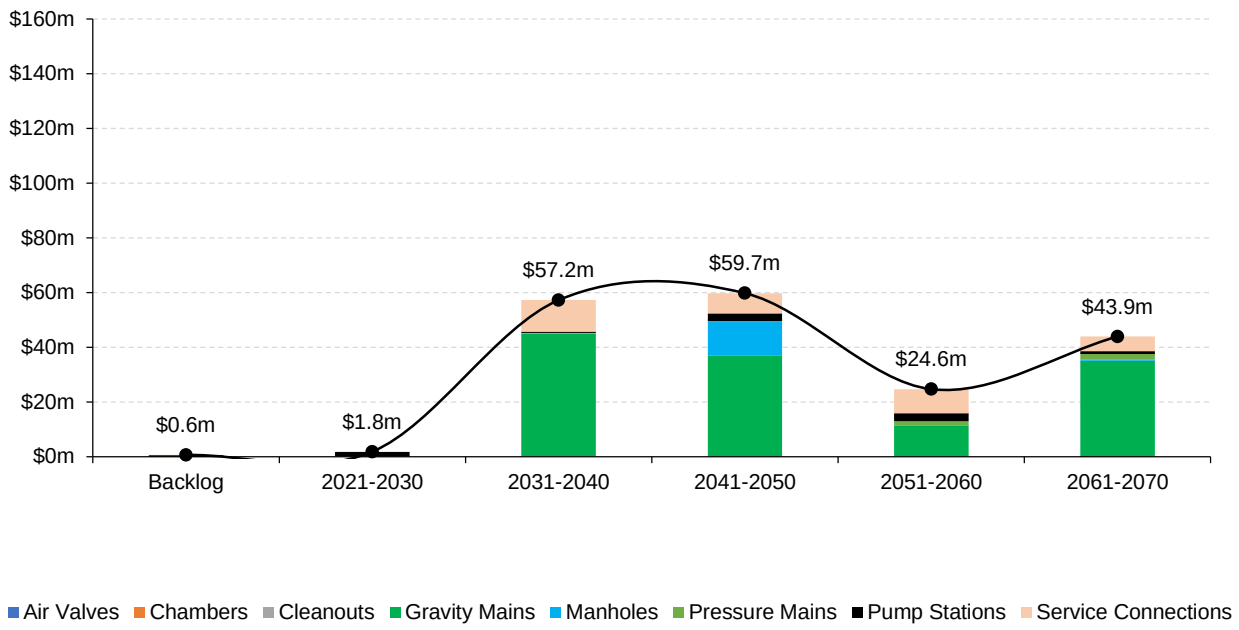
The City made the largest investments in its Sanitary system in the 1960s, a period of rapid population increase which would continue into the 1980s. Although investments in the Sanitary system have declined steadily over the last five six decades, underground linear assets have lengthy serviceable lives, often spanning 70+ years and do not require frequent replacements.

Forecasted Replacement Needs 2021-2070

Figure 55 illustrates the cyclical short-, medium- and long-term infrastructure replacement requirements for the City's various Sanitary System assets. As long-lasting underground assets reach the end of their useful life, the City may see replacement needs rise over the coming decades, peaking at $59.7 million between 2041-2050. The chart also shows a small backlog of $0.6 million for pump stations and service connections.

The chart also shows a Sanitary System age-based backlog of $0.6 million, comprising assets that have reached the end of their estimated useful life. However, a combination of CCTV condition analysis and age data as illustrated previously suggests that up to 35% of all Sanitary assets, with a current replacement value of nearly $74.8 million, may be candidates for immediate or short-term replacement. Age and field condition data should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 55 Sanitary System: Forecasted Replacement Needs

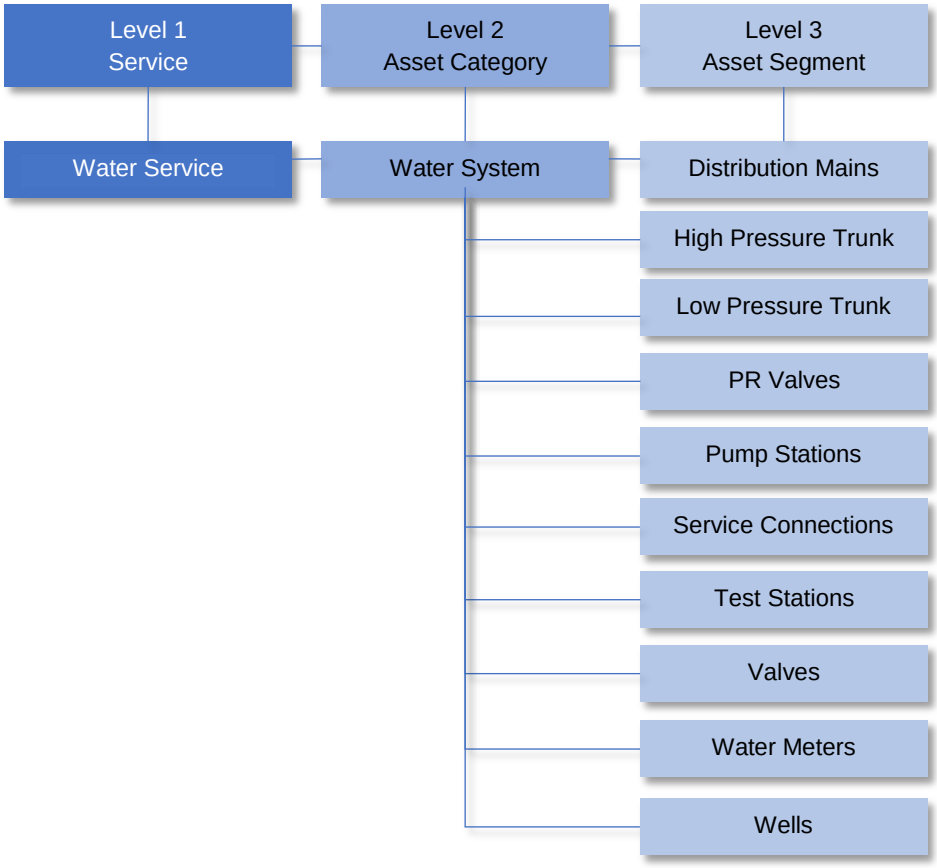


Water System

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels.

Figure 56 Water System: Asset Hierarchy and Segmentation



Asset Inventory and Valuation

Port Coquitlam's Water System inventory is managed in CityWide™, and comprises 203 kilometres of distribution mains, 113 kilometres of service connections, and the associated appurtenance. Table summarizes the City's Water System portfolio.

Using 2020 replacement cost estimates provided by staff, Port Coquitlam's Water System assets are valued at $258.6 million, or $11,888 per household. Linear assets comprise 95% of the system.

Table 6 Water System: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Primary Costing Method
Distribution Mains	$197,313,523	76%	202,889m	Cost per unit
Service Connections	$41,214,582	16%	113,020m	Cost per unit
High Pressure Trunk	$8,276,261	3%	6,922m	Cost per unit
Pressure Release Valves	$4,000,000	2%	45	Cost per unit
Low Pressure Trunk	$2,931,308	1%	2,446m	Cost per unit
Pump Stations	$2,570,864	1%	14	User defined
Valves	$1,285,388	<1%	447	Cost per unit
Water Meters	$824,430	<1%	22	User defined
Wells	$109,552	<1%	2	User defined
Test Station	$35,000	<1%	14	Cost per unit
Total	$258,560,908	100%		

Projected Asset Condition

Figure 57 summarizes the replacement cost-weighted, projected condition of the City's Fleet and Equipment assets as of 2021. Based on age data, 35% of assets, worth $90.7 million, are in poor to very poor condition, and may be candidates for replacement in the immediate or short-term. Similarly, assets in fair condition may require replacement in the medium term. Figure 58 details the condition of each asset segment.

Figure 57 Water System: Asset Condition – All Assets

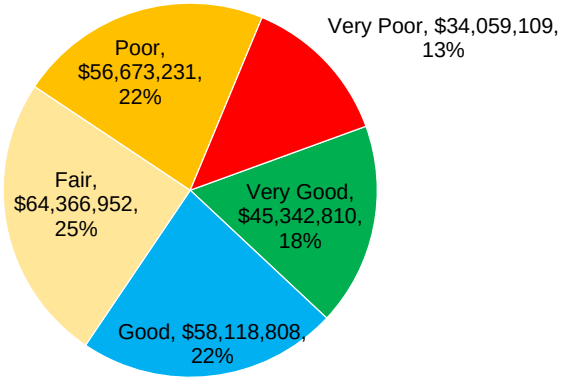
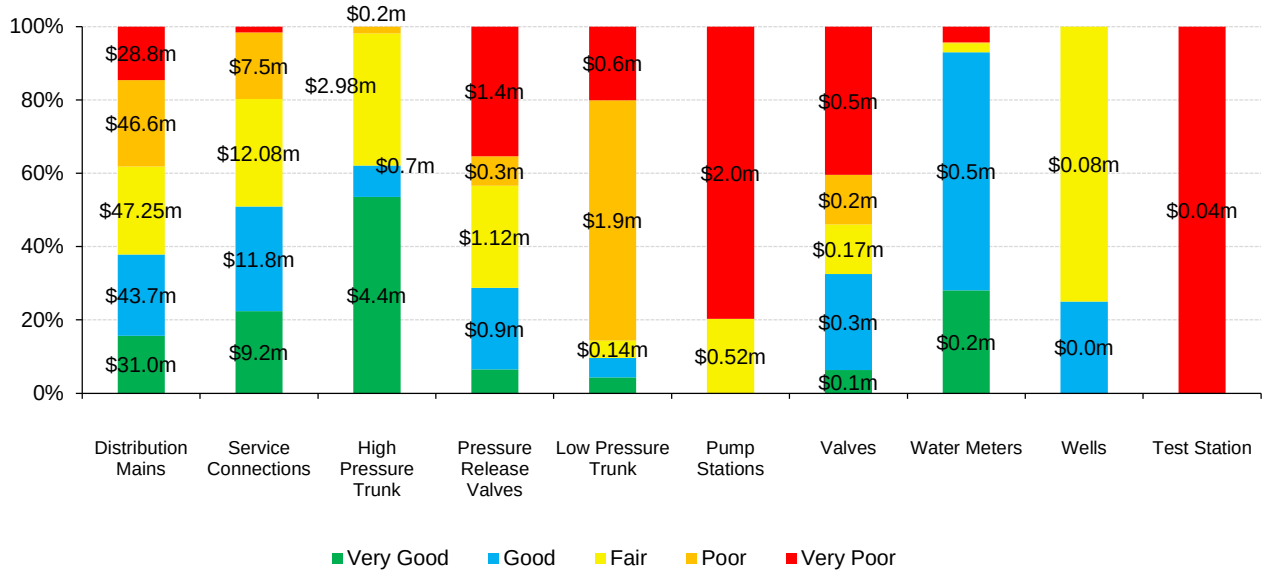


Figure 58 Water System: Asset Condition – By Segment



Condition assessments of water infrastructure can be prohibitively expensive and require service disruptions. In the absence of such data, age and break history can be a useful proxy for estimating condition. Age data suggests that 62% of distribution mains, 80% of service connections, and 98% of high pressure trunks are in fair or better condition. Although assets in fair condition may continue to provide service at an acceptable standard, they may deteriorate more rapidly as they approach the latter stages of their lifecycle.

Staff also provided watermain break history for 122 water main sections, 19 kilometres in length, and worth $17.3 million. Figure 59 shows that assets installed in 1965 account for a disproportionate number of breaks. In general, distribution mains installed since the 1970s experience comparable breaks.

Figure 59 Water System: Watermain Break History – By Installation Year

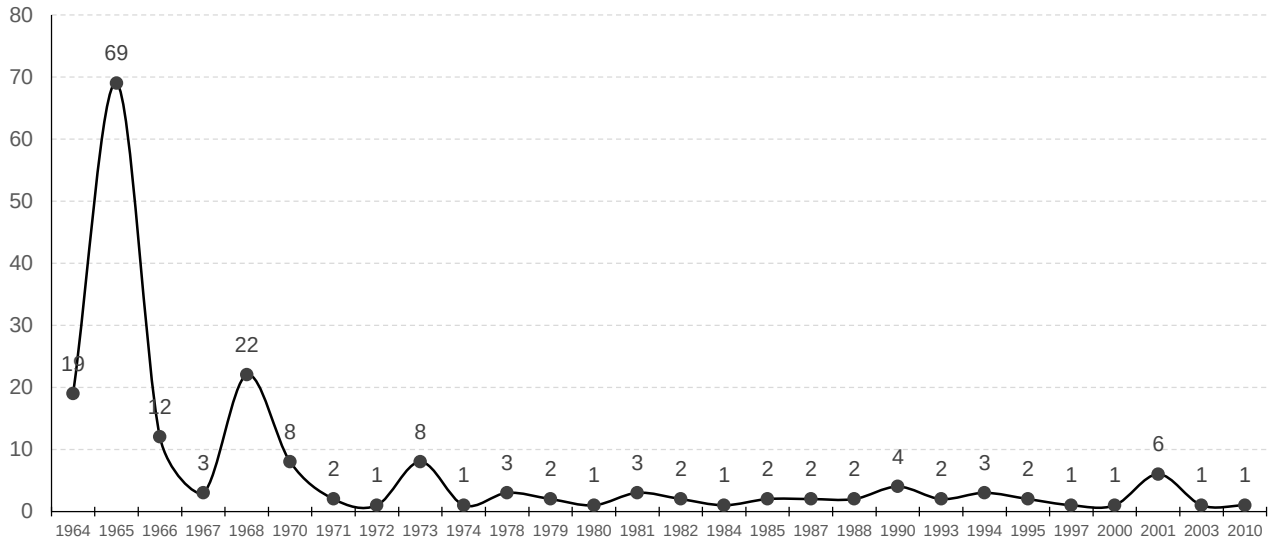


Table illustrates that of the 19km of distribution mains for which break history was provided, the percentage of breaks for each type of material is proportional to the length

Table 7 Water System: Watermain Break History – By Material

Pipe Material	Number of Breaks	Length (m)	Breaks per km	Percentage of Total Length	Percentage of Breaks
Cast Iron (CI)	141	14,369m	9.8	77%	75%
Ductile Iron (CI)	38	4,177m	9.1	21%	22%
PVC	5	489	10.2	3%	3%
Total	184	19,036m		100%	100%

Age Profile

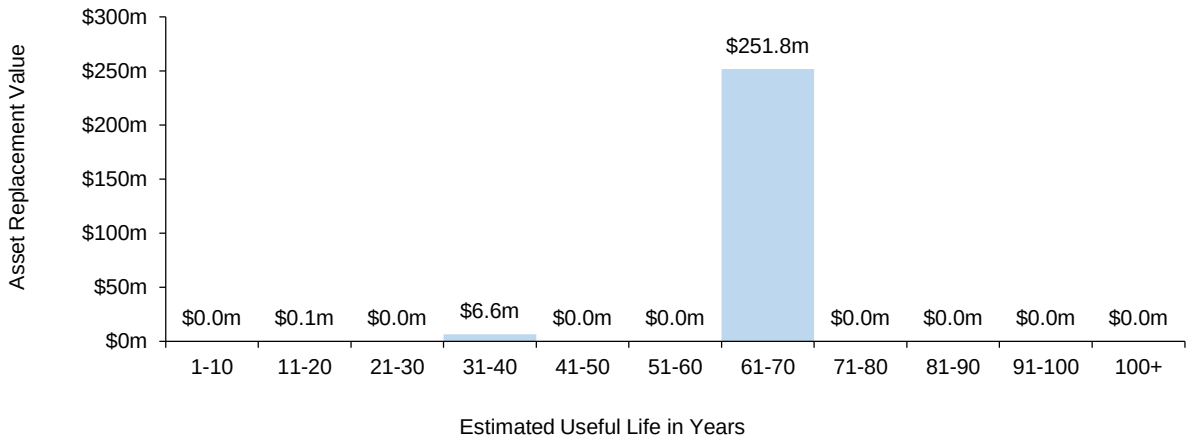
An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure and other capital assets can vary dramatically, from several years to many decades. For the City's Water System assets, EULs range from a minimum of 15 years for pressure release valves, to 70 years for distribution mains and service connections. The histogram in Figure illustrates the distribution of useful life across Water System assets using replacement costs. This data can be useful in developing asset replacement projections.

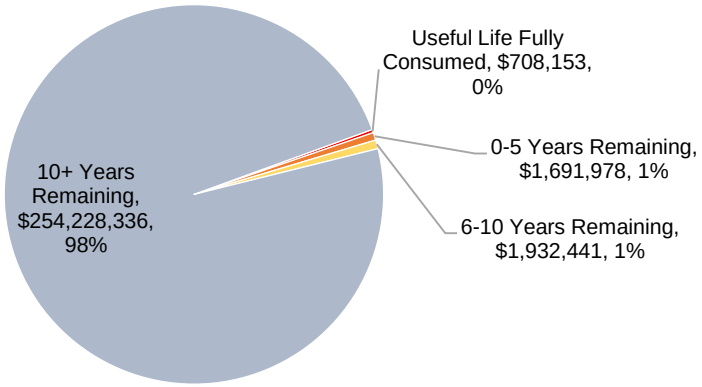
Figure 60 Water System: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

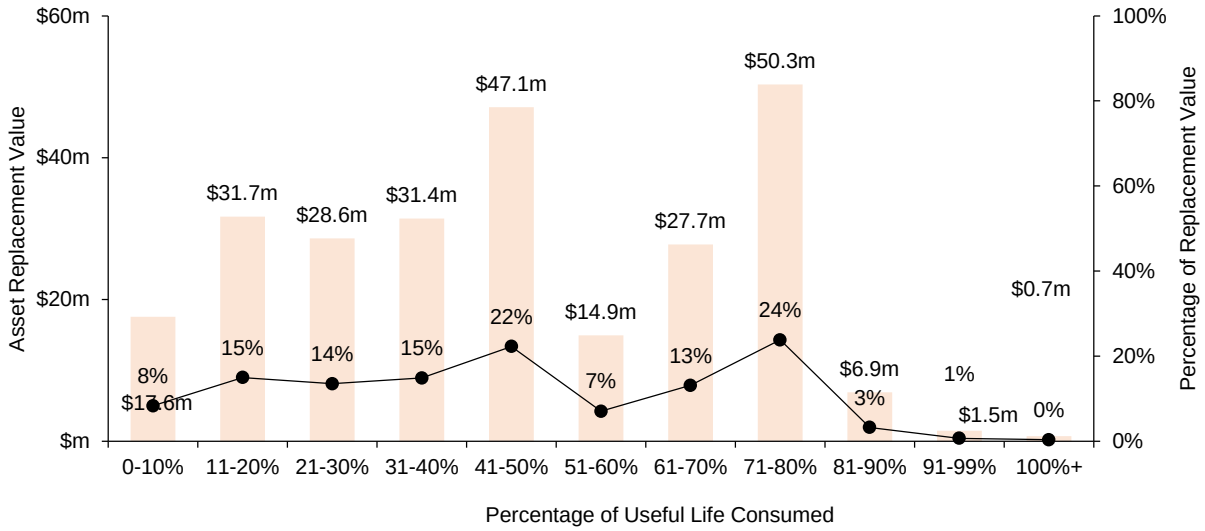
Figure shows that, as of 2021, 98% of Water System assets, worth $254.2 million have at least 10 years of useful life remaining.

Figure 61 Water System: Service Life Remaining in Years



Similar to sanitary infrastructure, although watermain data shows 98% still have at least a decade of serviceable life remaining, Figure shows that 48% of assets are in the latter stages of their lifecycle, having consumed at least 51% of their estimated useful life.

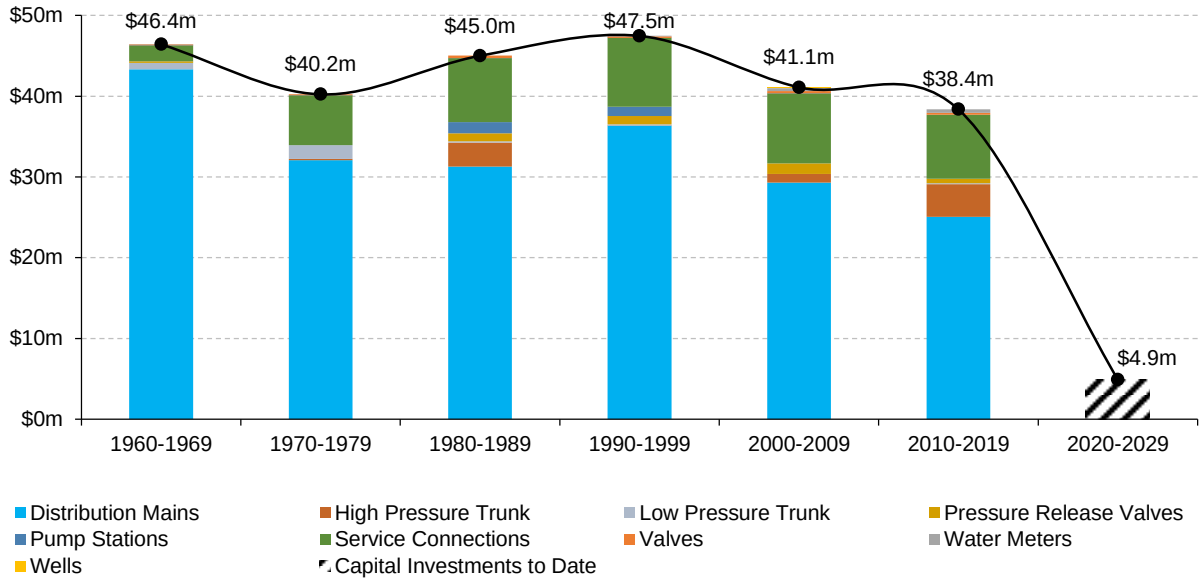
Figure 62 Water System: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure shows the level of investment the City of Port Coquitlam has made in its Water System assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs.

Figure 63 Water System: Historical Investments in Infrastructure



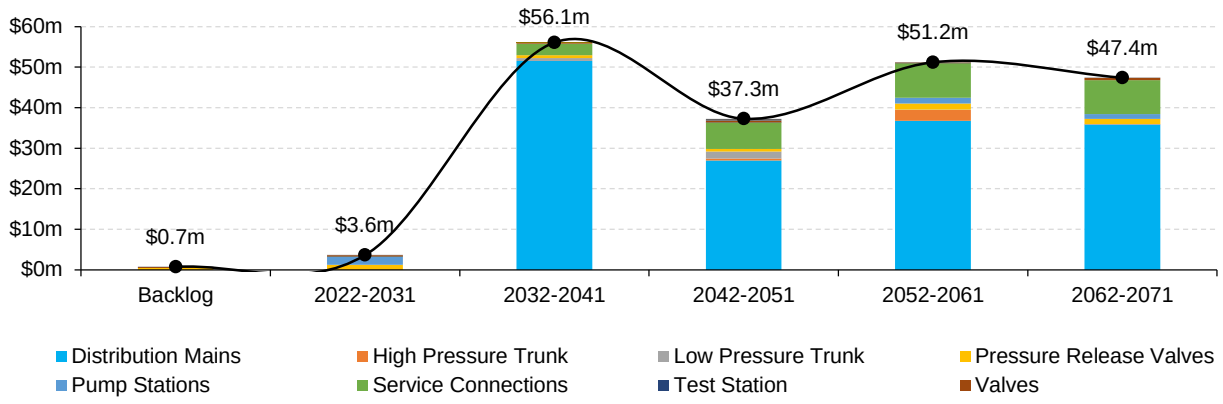
Port Coquitlam's investments in the City's water infrastructure have remained steady, averaging $43.1 million, or approximately 17% of its current Water system portfolio every decade between 1960 and 2019.

Forecasted Replacement Needs 2021-2070

Figure illustrates the short-, medium- and long-term replacement requirements for the City's Water System. Based only on age data, beginning 2031, substantial investments will be required in the City's linear water assets to meet replacement needs over the next several decades. Expenditures may average $46.7 million in each decade between 2031 and 2070.

The chart also shows a Water System age-based backlog of $0.7 million, comprising assets that have reached the end of their estimated useful life. However, the age-based condition analysis illustrated previously suggests that up to 35% of Water assets, with a current replacement value of nearly $91 million, may be candidates for immediate or short-term replacement because they are likely in poor or very poor condition.

Figure 64 Water System: Forecasted Replacement Needs



Cast Iron Mains Replacement Program

To ensure the highest standard of water quality for Port Coquitlam residents, the City's cast iron mains are being replaced proactively and strategically. Cast iron reduces the effectiveness of water treatment chlorination products and the mains are subject to corrosion from the same. Table summarizes these costs; a total of $9.6 million in replacement expenditures was allocated to cast iron main replacements over the four year period between 2019 and 2022. Replacements are coordinated with other capital projects (e.g., paving, and storm sewer or sanitary sewer capacity/condition upgrades) to economize spending and minimize disruption to residents.

Table 8 Water System: Cast Iron Mains Replacement Expenditures

Year	Expenditures
2019	$1,681, 092
2020	$3,691,800
2021	$3,065,000
2022	$2,801,091

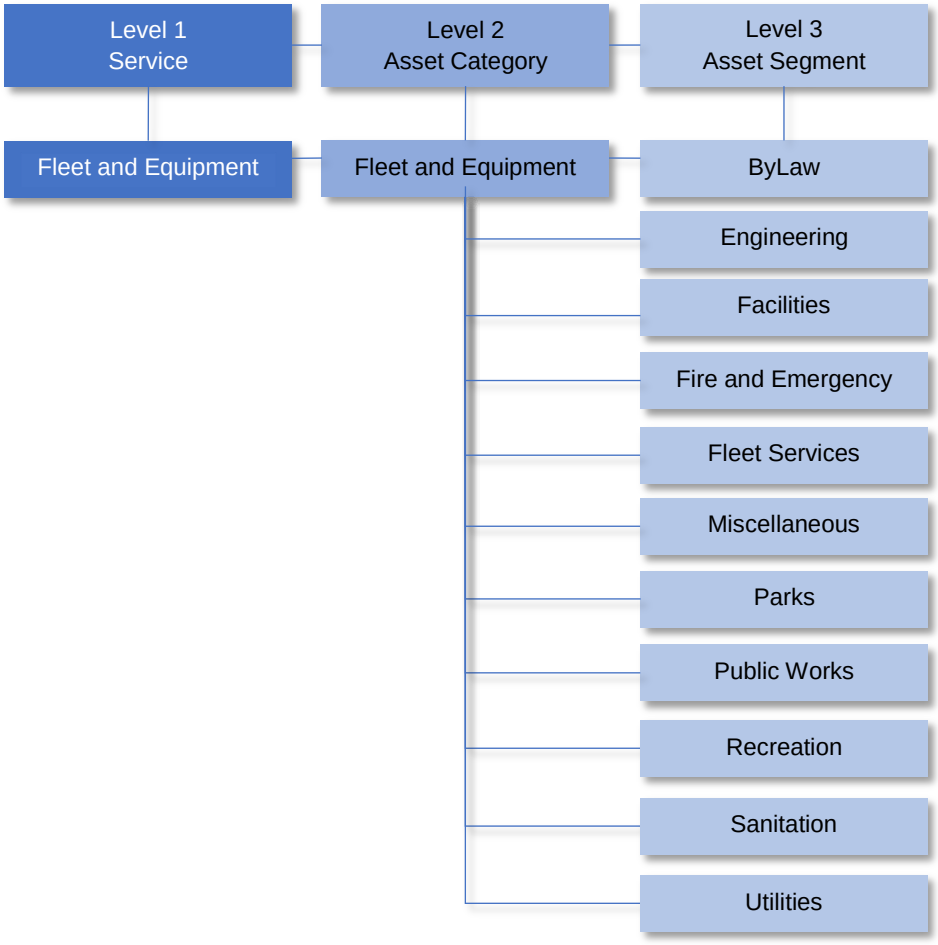
These replacements may take place mid-lifecycle, before assets reach the end of their useful life. In discussion with staff, an average of $2.5 million should be allocated each year specifically for the purpose of cast iron replacements

Fleet and Equipment

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels.

Figure 65 Fleet and Equipment: Asset Hierarchy and Segmentation



Asset Inventory and Valuation

Port Coquitlam's Fleet and Equipment inventory is managed in CityWide™, and comprises 681 light, medium, and heavy machinery, equipment, and vehicles assets. Table summarizes the City's Fleet and Equipment portfolio.

Using 2020 replacement cost estimates provided by staff, Port Coquitlam's Fleet and Equipment assets infrastructure is valued at $30.4 million, or $1,400 per household. At 26%, Fire and Emergency Services comprises the largest share of the portfolio, based on replacement costs.

Table 9 Fleet and Equipment: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Primary Costing Method
Fire & Emergency Services	$7,995,600	26%	129	User defined
Public Works	$6,281,877	21%	156	User defined
Sanitation	$6,640,297	22%	18	User defined
Parks	$3,727,005	12%	171	User defined
Utilities	$2,670,205	9%	135	User defined
Facilities	$1,530,000	5%	16	User defined
Fleet Services	$651,750	2%	33	User defined
ByLaw	$345,000	1%	7	User defined
Engineering	$330,000	1%	7	User defined
Recreation	$215,000	1%	7	User defined
Miscellaneous	$57,467	0%	2	User defined
Total	$30,444,201	100%	681	

Projected Asset Condition

Figure summarizes the replacement cost-weighted, projected condition of the City's Fleet and Equipment assets as of 2021. Based on age data, 72% of assets, worth $22 million, are in poor to very poor condition, and may be candidates for immediate or short-term replacements. Figure details the condition of each asset segment.

Figure 66 Fleet and Equipment: Asset Condition – All Assets

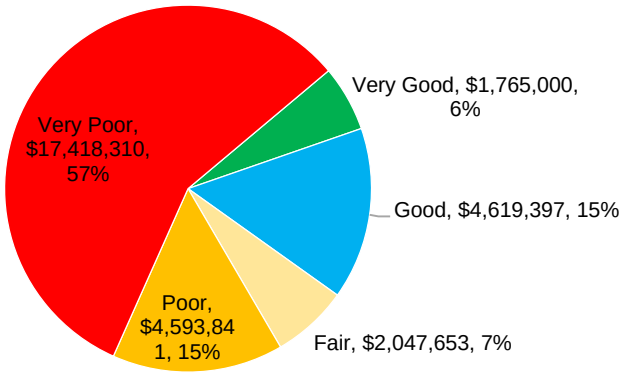
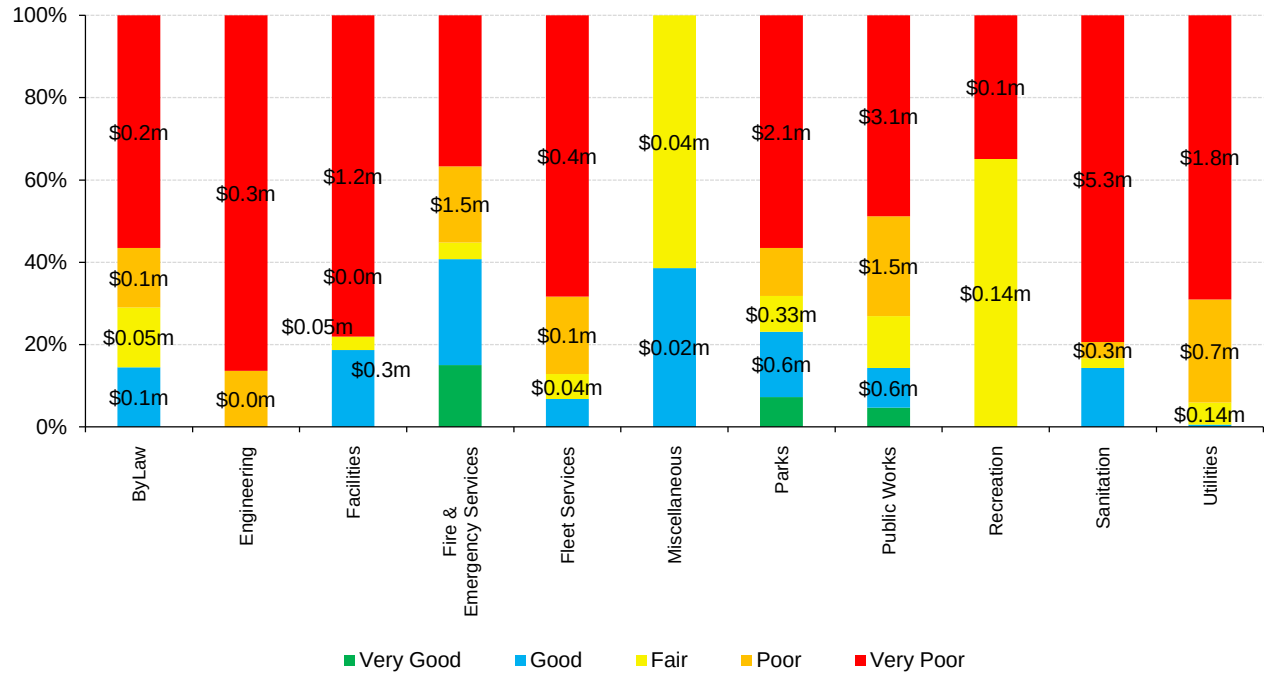


Figure 67 Fleet and Equipment: Asset Condition – By Segment



Age Profile

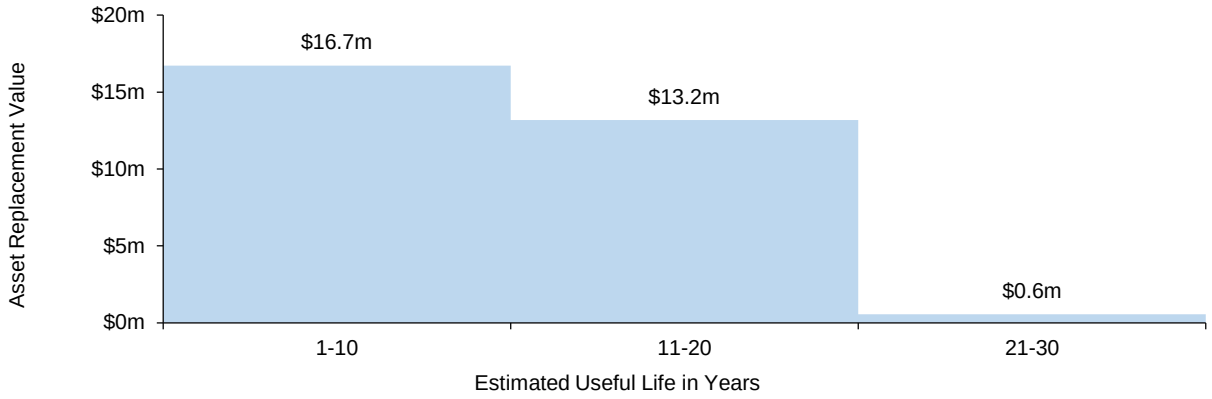
An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure and other capital assets can vary dramatically, from several years to many decades. For the City's Fleet and Equipment assets, EULs range from a minimum of 1 year to 30 years. The histogram in Figure illustrates the distribution of useful life across Fleet and Equipment assets using replacement costs. This data can be useful in developing asset replacement projections.

Figure 68 Fleet and Equipment: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

Figure shows that, as of 2021, 42% of Fleet and Equipment assets, worth $12.7 million, remain in operation beyond their estimated useful life. An additional 38% will reach the end of their design life in the next five years.

Figure 69 Fleet and Equipment: Service Life Remaining in Years

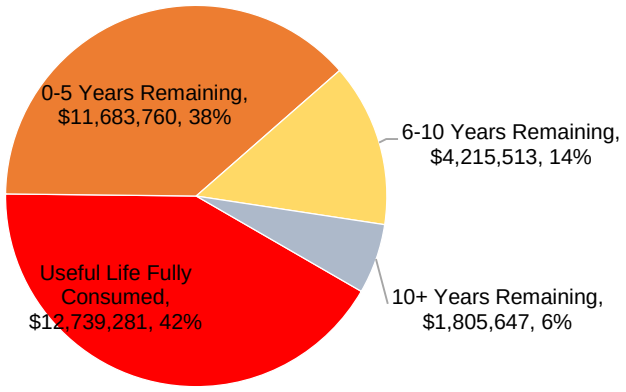
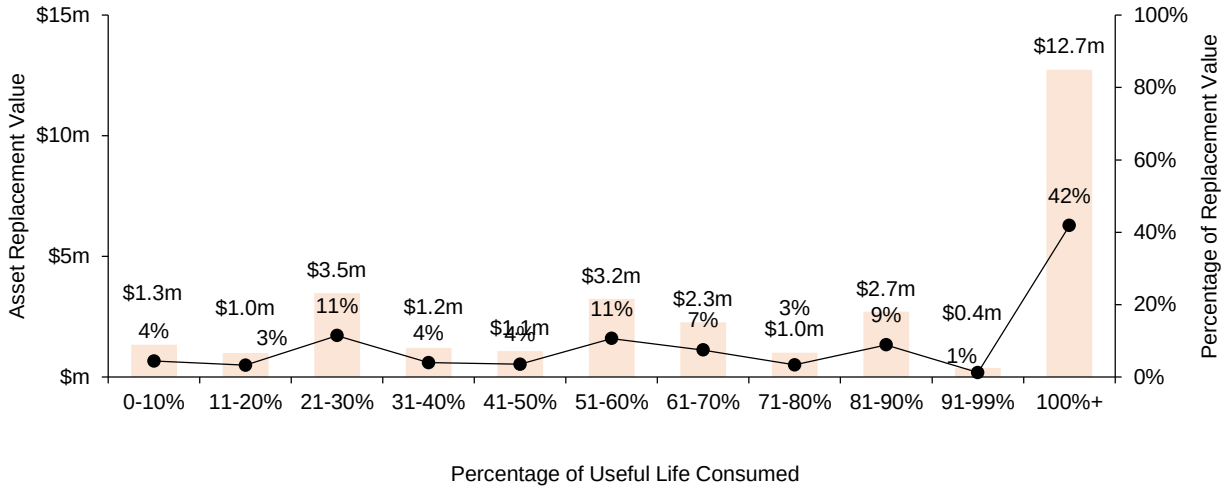


Figure shows that in addition to the 42% of assets that have already consumed at least 100% of their estimated useful life, nearly one third are in the latter stage of their lifecycle, having consumed at least 51% of their EULs.

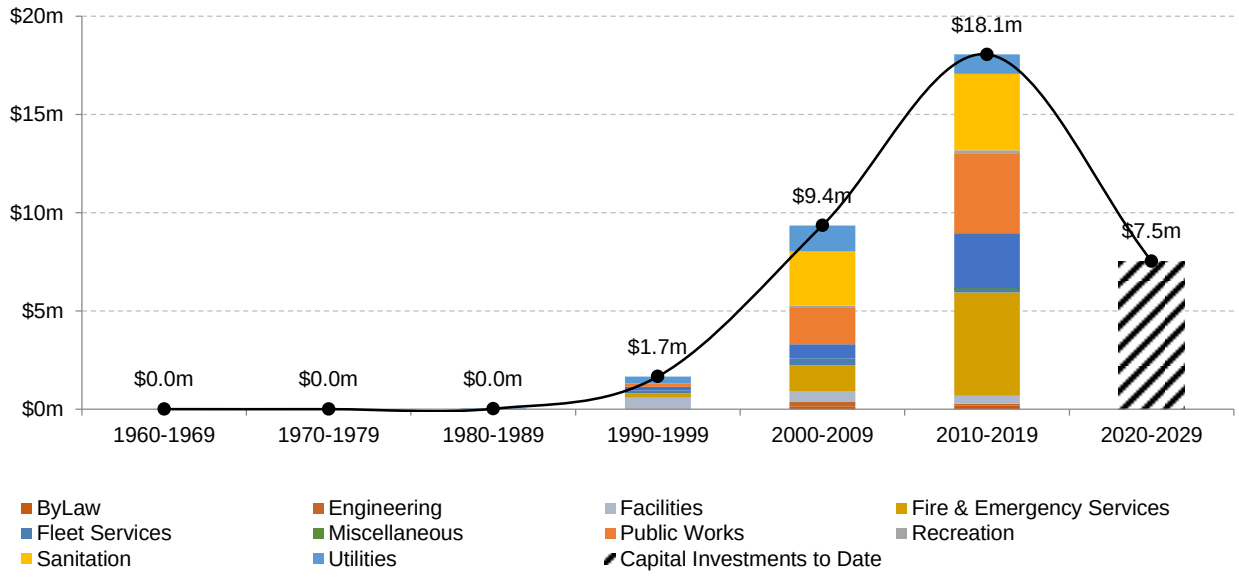
Figure 70 Fleet and Equipment: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure shows the level of investment the City of Port Coquitlam has made in its Fleet and Equipment assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. Although community needs and expectations can evolve significantly over decades, understanding past investment patterns can be informative in planning for future needs. The majority of assets were place in service within the last 10 years.

Figure 71 Fleet and Equipment: Historical Investments in Infrastructure

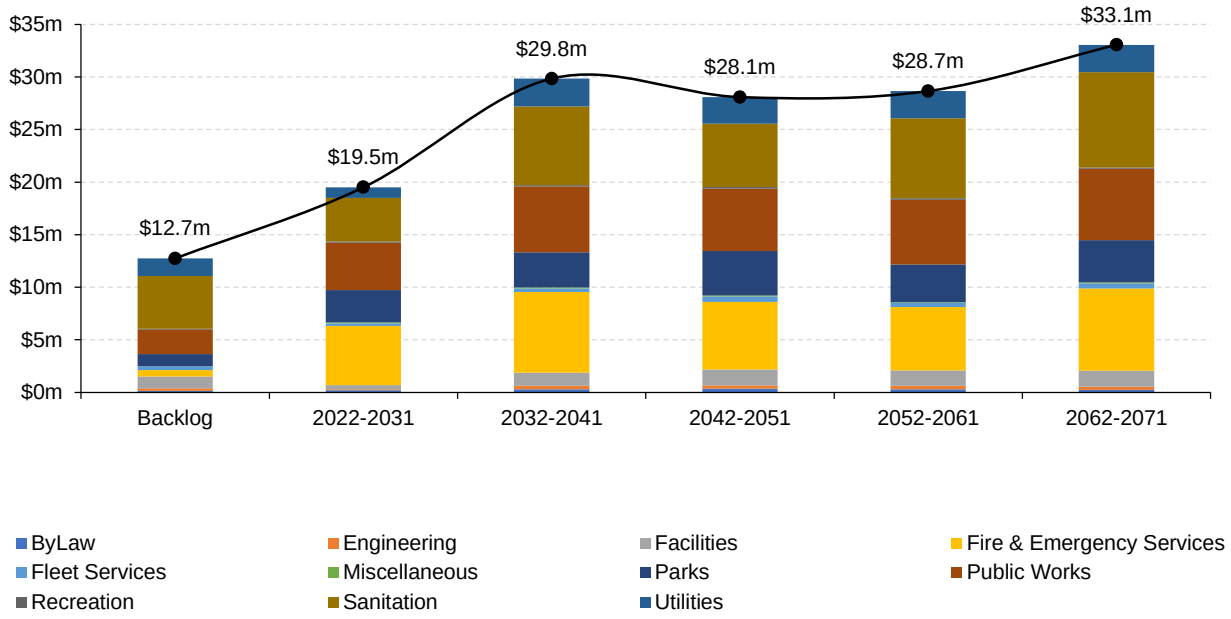


Forecasted Replacement Needs 2021-2070

Figure illustrates the short-, medium- and long-term replacement requirements for the City's Fleet and Equipment assets. Given their much shorter lifespans than built infrastructure assets, fleet, machinery, and equipment assets require more frequent renewal and replacement. Consistent investments, averaging $27.8 million will be required for each of the next five decades.

The chart also shows a Fleet and Equipment age-based backlog of $12.7 million, comprising assets that have reached the end of their estimated useful life. However, the condition analysis illustrated previously suggests that up to 72% of Fleet and Equipment assets, with a current replacement value of $22 million, may be candidates for immediate or short-term replacement because they are in poor or very poor condition. Both age and condition should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 72 Fleet and Equipment: Forecasted Replacement Needs

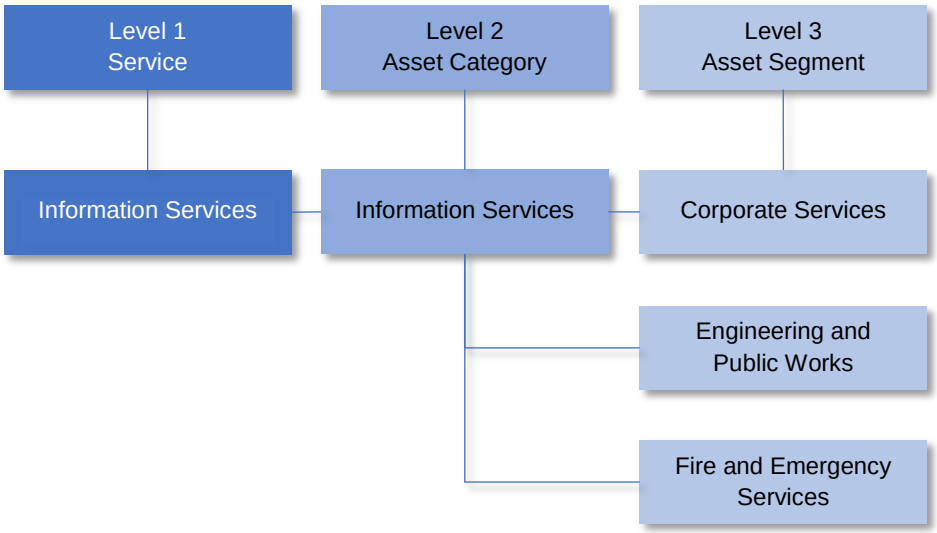


Information Services

Asset Hierarchy and Segmentation

Asset hierarchy explains the relationship between individual assets and their components, and a wider, more expansive network and system. How assets are grouped in a hierarchy structure can impact how data is interpreted. Assets were structured to support meaningful, efficient reporting and analysis. Most reports and analytics presented in this AMP are summarized at the Asset Segment and/or Asset Category Levels.

Figure 73 Information Services: Asset Hierarchy and Segmentation



Asset Inventory and Valuation

Port Coquitlam's Information Services inventory is managed in CityWide™, and comprises a variety of hardware, software, and other information technology equipment. Table summarizes the City's Information Services portfolio.

Using 2020 replacement cost estimates provided by staff, Port Coquitlam's Information Services assets are valued at $8.7 million, or $400 per household. Various hardware and software assets comprise more than 70% of the system, followed by the City's fibre optics network.

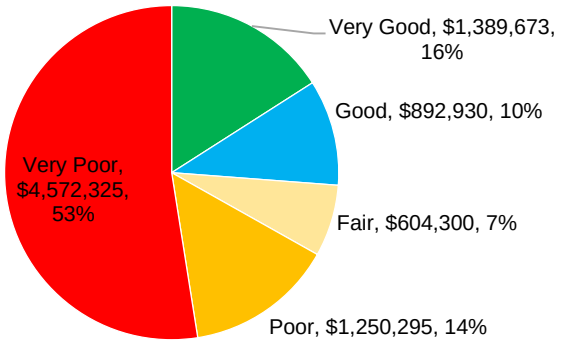
Table 10 Information Services: Inventory and Valuation

Segment	Replacement Cost	Percentage of Total	Quantity	Primary Costing Method
Corporate Services	$8,428,491	97%	1,637	User defined
Fibre Optics	$1,566,356	18%	203	User defined
Hardware	$3,604,912	41%	975	User defined
License	$620,382	7%	8	User defined
Software	$2,636,841	30%	451	User defined
Engineering & Public Works	$213,929	2%	8	User defined
Automated Survey Total Station	$41,385	<1%	1	User defined
Data Controller	$7,847	<1%	1	User defined
GPS Unit	$25,219	<1%	1	User defined
Sign Shop Printer	$30,729	<1%	1	User defined
Survey GPS Equipment	$21,567	<1%	1	User defined
Total Station	$32,368	<1%	1	User defined
Wide Format Printer	$54,814	<1%	2	User defined
Fire & Emergency Services	$47,008	1%	2	User defined
ITS Trainers Package	$14,842	<1%	1	User defined
Thermal Imaging Camera	$32,166	<1%	1	User defined
Total	$8,689,428	100%	1,647	

Projected Asset Condition

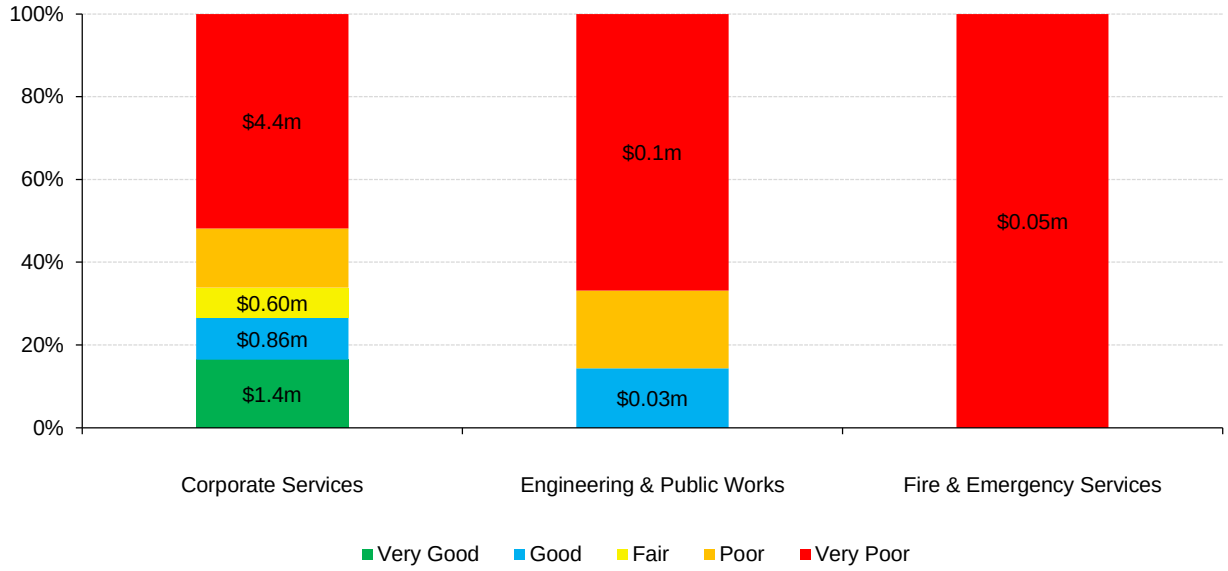
Figure summarizes the replacement cost-weighted, projected condition of the City's Information Services assets as of 2021. Based on age data, 67% of assets, worth $5.8 million, are in poor to very poor condition, and may be candidates for immediate or short-term replacement. Figure details the condition of each asset segment.

Figure 74 Information Services: Asset Condition – All Assets



Based on age data only, the majority of assets in each segment of Information Services is in poor to very poor condition.

Figure 75 Information Services: Asset Condition – By Segment



Age Profile

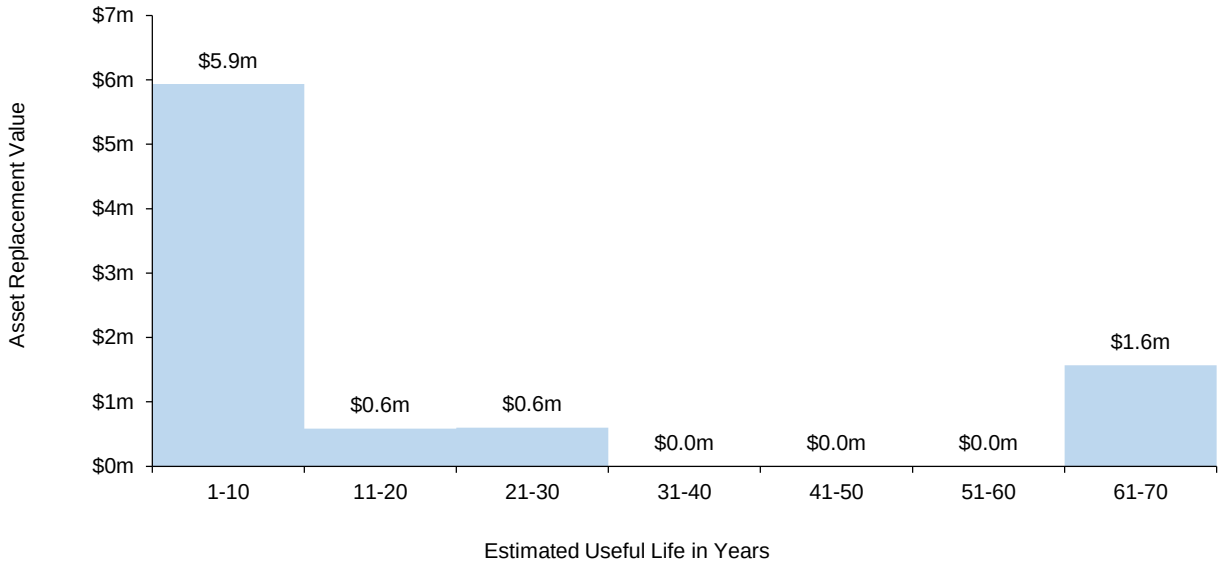
An asset's age profile comprises two key values: estimated useful life (EUL), or design life; and the percentage of EUL consumed. The EUL is the serviceable lifespan of an asset during which it can continue to fulfil its intended purpose and provide value to users, safely and efficiently. As assets age, their performance diminishes, often more rapidly as they approach the end of their design life.

In conjunction with condition data, an asset's age profile provides a more complete summary of the state of infrastructure. It can help identify assets that may be candidates for further review through condition assessment programs; inform the selection of optimal lifecycle strategies; and, improve planning for potential replacement spikes.

Estimated Useful Life

The useful life of infrastructure and other capital assets can vary dramatically, from several years to many decades. For the City's Information Services assets, EULs range from a low of 1 years for software, to a high of 70 years for the fibre optics network; most assets have an estimated useful life of 10 years or less. The histogram in Figure illustrates the distribution of useful life across Information Services assets using replacement costs. This data can be useful in developing asset replacement projections.

Figure 76 Information Services: Useful Life Frequency Distribution – By Replacement Costs



Useful Life Consumed

Figure shows that, as of 2021, 47% of Information Services assets, worth $4.1 million remain in operation beyond their estimated useful life; an additional 27% will reach the end of their useful life within the next five years.

Figure 77 Information Services: Service Life Remaining in Years

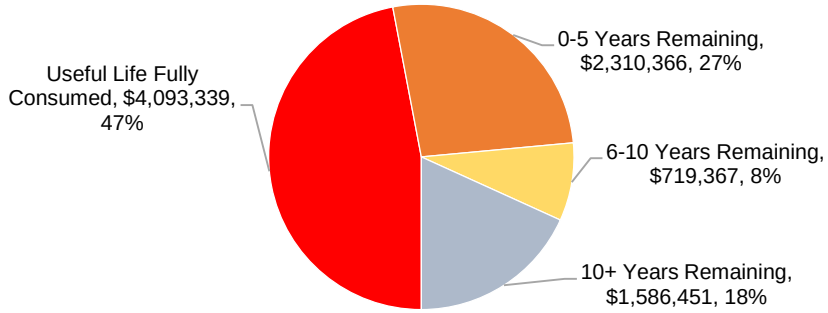
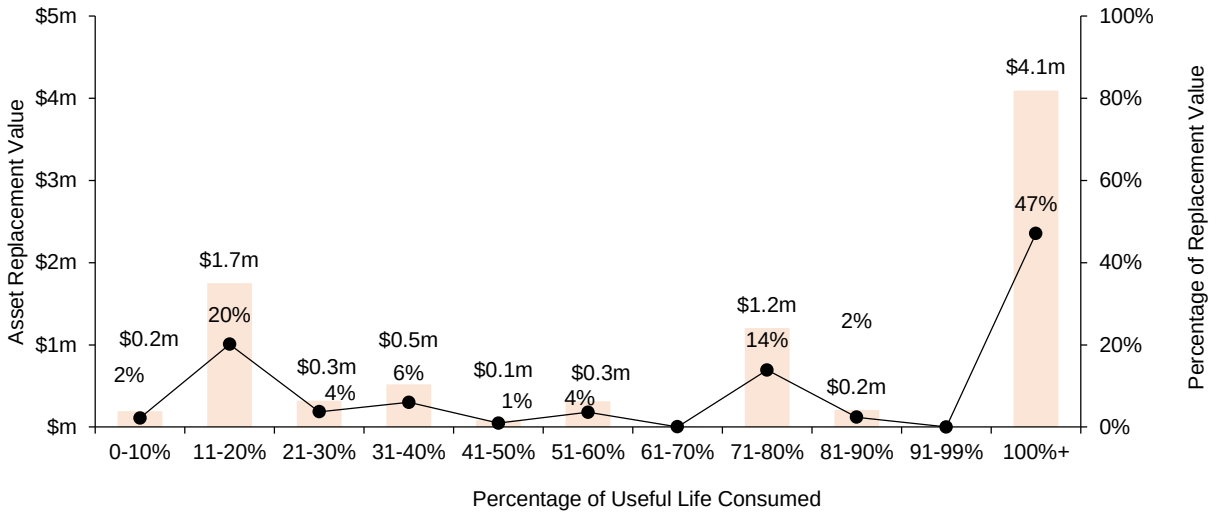


Figure shows that in addition to the 47% of assets that remain in operation beyond their useful life, an additional 20% are in the latter stages of their lifecycle.

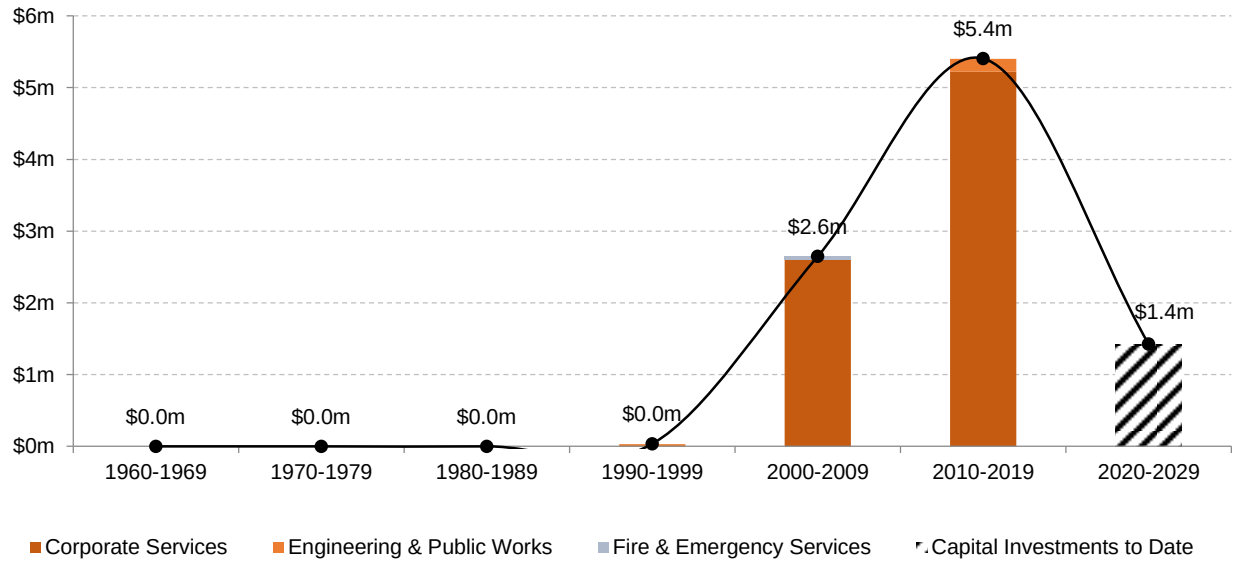
Figure 78 Information Services: Percentage of Useful Life Consumed



Historical Investments in Infrastructure

Figure shows the level of investment the City of Port Coquitlam has made in its Information Services assets since 1960. The data reflects only the City's current or active inventory; assets that have been disposed or decommissioned over time are not included. The City's Information Services portfolio primarily serves internal business support functions. The majority of the City's IT assets were placed in service between 2010 and 2019.

Figure 79 Information Services: Historical Investments in Infrastructure

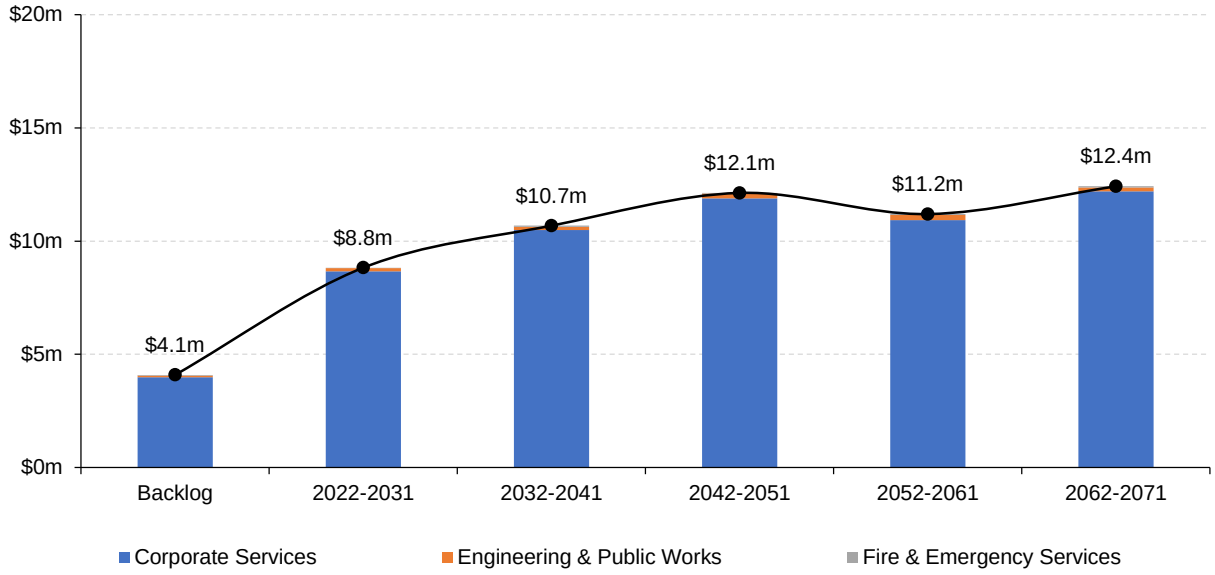


Forecasted Replacement Needs 2021-2070

Figure illustrates the short-, medium- and long-term replacement requirements for the City's Information Services assets. Replacement needs are expected to rise sharply beginning this decade, and persisting indefinitely; given their short lifespans, assets may require multiple cycles of replacement in any given decade.

The chart also shows an Information Services age-based backlog of $4.1 million, comprising assets that have reached the end of their estimated useful life. However, the condition analysis illustrated previously suggests that up 67% of Information Services assets, with a current replacement value of nearly $5.8 million, may be candidates for immediate or short-term replacement because they are likely in in poor or very poor condition. Both age and condition should be used to forecast replacement needs and refine capital expenditure estimates.

Figure 80 Information Services: Forecasted Replacement Needs



Asset Management at the City of Port Coquitlam

Internal Condition Assessment and Data Collection Guidelines

March 2020

Contents

Purpose of this Document

The City of Port Coquitlam is developing its asset management program in two phases. In Phase 1, it completed an Asset Management Strategy (December 2018), which provided staff with a roadmap to reach a higher state of asset management maturity. For Phase 2, the City has engaged PSD to produce asset management plans (AMP) for each of its eight service areas.

As part of this engagement, these condition assessment guidelines have been prepared for staff and are designed to serve as companion documents to PSD's data collection templates. They support the collection, update, and management of pertinent asset data, including—at minimum—replacement costs, estimated useful lives (EUL), in-service dates, and condition. Many additional attributes can be collected within the templates.

This critical process will help eliminate data gaps in the City's asset register and support more informed, and data-driven decision-making and long-term capital planning. In addition, general operational and maintenance requirements can also be captured in the templates and included in the City's short- and long-term capital budget, or its operations and maintenance budgets. Once completed, the data is then migrated into CityWide Asset Manager, the City's asset management application.

2023 Capital Methodology

RECOMMENDATION:

That Committee of Council approve reallocating a portion of the LTR (approximately $4.53M general, $892K water, $669K sanitary) in 2023 to the respective capital reserves for funding the capital plan, and

That the 2023 capital plan be prepared consistent with the 2017-2022 capital plans, utilizing the three project categories of neighbourhood rehabilitation, other rehabilitation and new.

PREVIOUS COUNCIL/COMMITTEE ACTION

On July 14, 2020, Committee of Council passed the following resolution:

2022 Capital Program Methodology

That Committee of Council approve reallocating a portion of the LTR (approximately $4.5M general, $890K water, $670K sanitary) in 2022 to the respective capital reserves for funding the capital plan, and

That the 2022 capital plan be prepared consistent with the 2017-2021 capital plans, utilizing the three categories of neighbourhood rehabilitation, other rehabilitation and new projects.

REPORT SUMMARY

This report seeks approval from Committee to prepare the 2023 Capital Plan with the same methodology as the past few years, including re-purposing a portion of the annual Long Term Reserve (LTR) contributions, and funding projects in three categories: neighbourhood rehabilitation, other rehabilitation, and new.

The recommended LTR reallocations are as follows: $4,453,100 for 2023 General LTR contributions, $892,400 for 2023 Water LTR contributions and $669,000 for 2023 Sewer LTR contributions be transferred to the general, water and sewer capital reserves to fund the 2023 Capital Program.

Provided that a further 1% continues to be added to the LTR in 2022 and 2023, the 2023 contributions to LTR after proposed reallocations would be $3.68M for General, $615k for Water, and $458k for Sewer. The estimated balances after contributions and interest would be approximately $14.1M for General, $5.5M for Water and $4.3M for Sewer.

Overall, this approach allows for the larger capital plan that has been successful in beginning to address the backlog of infrastructure projects, but also ensures the LTR reserves continue to grow to fund future capital needs.

BACKGROUND

Capital projects in the 2017-2022 capital plans were consolidated and sorted into three main categories:

1. **Neighbourhood Infrastructure Rehabilitation** – to fund the replacement or renewal of existing civil infrastructure, including roads, water, sewer, storm, and associated pump stations and culverts.

2. **Other Rehabilitation** – to fund all other capital renewal and replacement, prioritized corporately (such as facilities, parks, recreation, software etc).

3. **New** – to fund new assets, and in the long term will include the previously unfunded capital projects.

This format was introduced to focus on existing assets and reduce the city's infrastructure backlog (categories 1 and 2), compared to new initiatives (category 3). Prioritization of categories 1 and 2 is consistent with the policies in the city's Official Community Plan.

In order to prepare the 2023 capital plan, staff need to confirm now how much project funding is available. Many of the City's assets have reached or surpassed the end of their service lives and require replacement or rehabilitation. To address the backlog, capital plans since 2017 have re-purposed a portion of the annual LTR contributions to the annual capital program, which significantly increased the amount of work that could be funded. This funding was further supported through the depletion of reserve balances which had built up over time as a result of completing minimal capital work in previous years.

Asset Management Plans are currently in development and anticipated to be complete by the end of 2022, at which point the intent is to develop a Long Term Financial Plan to align annual reserve contributions with the capital expenditure requirements in the short and long term. However, in consideration of timing for the 2023 Capital budget preparation and approvals, staff is seeking approval from Committee to continue to re-purpose the LTR contributions to fund a larger capital program in order to continue to address the outstanding backlog of rehabilitation projects. Since 2010, when contributions to the LTRs were started, each year the annual contribution has been based on the prior year's amount plus an additional 1% of the prior year's taxation or utility levy. Since 2017, in order to achieve a higher volume of work, Council has approved a portion of the cumulative LTR contributions be repurposed to the Capital Reserves for immediate use. The

additional 1% increase to LTR contributions for 2022 has not yet been approved by Council, and will be considered as part of the 2022 operating budget deliberations.

DISCUSSION

The recommended LTR reallocations are as follows: $4,453,000 for 2022 General LTR contributions, $892,400 for 2022 Water LTR contributions and $669,000 for 2022 Sewer LTR contributions be transferred to the general, water and sewer capital reserves to fund the 2023 Capital Program. The reallocations are equivalent to the 2018 cumulative LTR contribution amounts and were set as such to allow the City to tackle the current infrastructure spike while still growing the LTR reserves to prepare for future spikes.

As seen in the following tables below, assuming that a further 1% continues to be added to the LTR in 2022 and 2023, the 2023 contributions to LTR after proposed reallocations would be $3.7M for General, $615k for Water, and $458k for Sewer. The estimated balances after contributions and interest would be approximately $14M for General, $5.4M for Water and $4.2M for Sewer.

Table 1: LT General Infrastructure Reserve

LT General Infrastructure Reserve

Year	Opening	Annual Allocation	Reallocate to General for Capital Plan	Other Transfers	Interest	Estimated General Fund LTR Balance
2021	5,586,255	6,380,100	(-4,453,100)		140,774	7,654,028
2022	7,654,028	7,114,510	(-4,453,100)		192,882	10,508,320
2023	10,508,320	7,870,951	(-4,453,100)		264,810	14,190,981
2024	14,190,981	8,650,087	(-4,453,100)		357,613	18,745,580

	Estimated 1% Increase	Net contribution to LTR General
2021	$734,410	2,067,774
2022	$756,442	2,854,291
2023	$779,135	3,682,661
2024	$802,509	4,554,599

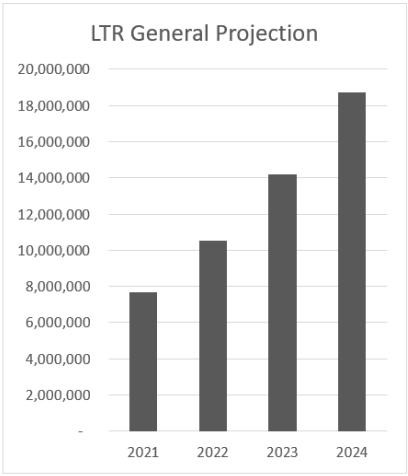


Table 2: LT Water Infrastructure Reserve

LT Water Infrastructure Reserve

Year	Opening	Annual Allocation	Reallocate to General for Capital Plan	Other Transfers	Interest	Estimated LTR Balance
2021	4,053,054	1,121,800	(-892,400)		102,137	4,384,591
2022	4,384,591	1,251,448	(-892,400)		110,492	4,854,131
2023	4,854,131	1,385,141	(-892,400)		122,324	5,469,196
2024	5,469,196	1,524,182	(-892,400)		137,824	6,238,802

	Estimated 1% Increase	Net contribution to LTR Water
2021	129,648	331,537
2022	133,693	469,540
2023	139,041	615,065
2024	144,603	769,606

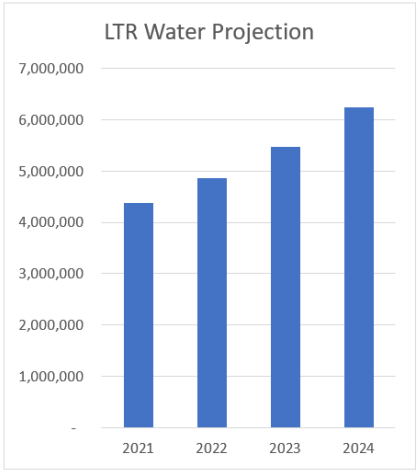
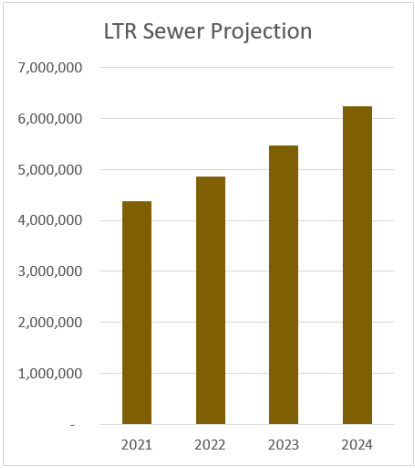


Table 3: LT Sewer Infrastructure Reserve

LT Sewer Infrastructure Reserve

Year	Opening	Annual Allocation	Reallocate to General for Capital Plan	Other Transfers	Interest	Estimated LTR Balance
2021	3,190,396	839,900	(-669,000)		80,398	3,441,694
2022	3,441,694	933,751	(-669,000)		86,731	3,793,175
2023	3,793,175	1,031,356	(-669,000)		95,588	4,251,119
2024	4,251,119	1,132,865	(-669,000)		107,128	4,822,113

	Estimated 1% Increase	Net contribution to LTR Sewer
2021	93,851	251,298
2022	97,605	351,482
2023	101,509	457,944
2024	105,570	570,993



The intent of the LTR is to save funds to address future funding gaps correlating to big infrastructure replacement years. Development of the City's asset management plans has identified that significant infrastructure investment spikes are on the horizon. The results are presented in the Asset Management Progress report to Council on May 25, 2021 summarizing the State of the Infrastructure report dated May 2021. The City is in the midst of the first investment spike for replacement of infrastructure constructed in the 1960's with the next major investment spike occurring in 15 to 20 years to replace infrastructure constructed in the 1980's. As was recognized in recent years, there is a need to replace infrastructure that has exceeded its service

life and is in poor condition now to stop the gap from growing. Additional funds will also need to be set aside in the LTR reserves for the next investment spike.

The asset management plans currently under development will help to better understand the combined amount of annual capital funding and long term reserve contributions required to address the existing backlog and maintain the City's infrastructure moving forward. The plans will provide further clarity regarding how much to spend on rehabilitation now and how much to save for later, as well as what to spend on new assets versus rehabilitation.

Table 4 below shows the value invested in each category in 2021 and 2022 which demonstrates significant infrastructure renewal in the City and was only possible by redirecting significant funds from the LTR to the capital reserves.

Table 4 – 2021 and 2022 Capital Investments

Category	2021	2022
Neighbourhood Rehabilitation	$ 13,285,000	$ 14,135,000
Other Rehabilitation	4,398,800	6,995,600
New	10,445,500	2,838,000
Total	**$28,129,300**	**$23,968,600**

If Committee does not wish to repurpose the portion of the contribution as recommended, the general capital funding available would be reduced by $4.5M and would mean significant cuts to the typical capital program that has been delivered since 2017. Reduced funding for the neighbourhood rehabilitation program would result in several roads and utilities in very poor condition not being replaced along with other rehabilitation projects like park playground replacements. Additionally, new infrastructure such as sidewalks, streetlights, traffic calming, pedestrian safety, and lane paving will be significantly limited or unfunded. Lastly, larger road projects such as Prairie Avenue and Kingsway Avenue represent large expenditures that would consume a considerable portion of a reduced budget.

It is therefore recommended that the approach outlined in this report be approved for development of the 2023 capital plan. This methodology will be reconsidered prior to preparation of the 2024 capital plan, informed by completion of the City's asset management plans and long term financial plan. With regards to the format of the capital plan and the three categories of neighbourhood rehabilitation, other rehabilitation and new projects, no changes are being recommended at this time.

FINANCIAL IMPLICATIONS

The proposed methodology will increase the amount of funding available to fund the 2023 capital plan, but will result in the LTR reserves growing at a slower pace. However, not transferring the funds will significantly reduce the funding available for the 2023 capital plan. A capital program with reduced funding at this time will result in a larger volume of infrastructure which has exceeded its service life and increases the risks of: failure (e.g. water main breaks), service level reductions (e.g. flooding), reactive and costly emergency repairs (e.g. culvert failures) and higher maintenance costs (e.g. pavement patching) while accumulating debt associated with outstanding infrastructure replacements which will still need to be addressed at a future date.

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Approve reallocation of a portion of the LTR (approximately $4.53M general, $892K water, $669K sanitary) in 2023 to the respective capital reserves for funding the capital plan, and direct staff to prepare the 2023 capital plan consistent with the 2017-2021 capital plans utilizing the three project categories of neighbourhood rehabilitation, other rehabilitation, and new.
	2	Approve a reduced portion of the LTR contributions as directed, and direct staff to prepare the plan utilizing the three project categories of neighbourhood rehabilitation, other rehabilitation, and new.
	3	Do not approve any allocation of the LTR contributions, and direct staff to prepare the plan utilizing the three project categories of neighbourhood rehabilitation, other rehabilitation, and new.

Lead author(s): Forrest Smith

Contributing author(s): Melony Burton, Kushal Pachchigar, Karen Grommada

Bear Hazard Update

RECOMMENDATION:

That Committee of Council endorse the 2020 Bear Hazard Assessment attached to this report and direct staff to prepare a Bear-Human Conflict Management Plan to identify and prioritize actions and strategies that address hazards outlined in the Bear Hazard Assessment at a cost of $25,000 to be funded from accumulated surplus and;

That the 2021 Financial Plan be amended accordingly.

PREVIOUS COUNCIL/COMMITTEE ACTION

On November 26, 2019 Council received a presentation from the BC Conservation Office requesting the City consider becoming a Bear Smart community.

On March 3, 2020 Council passed the following motion:

> *That Committee of Council approve:*
>
> *I. allocating $125,000 from the Cart Reserve to 2020 Cart and Lock replacement capital project to facilitate the distribution of 120L locks; and*
>
> *II. allocating $225,000 from the Cart Reserve to 2020 Cart and Lock replacement capital project to facilitate the distribution of 240L & 360L locks; and*
>
> *III. allocating $13,600 from accumulated surplus for a direct mail out to remaining homes which have not received a cart lock, and*
>
> *IV. allocating $8,000 from accumulated surplus to complete a bear hazard assessment Amending the financial plan accordingly; and*
>
> *That Committee of Council recommend Council give first three readings to Bylaw Notice Enforcement Amendment Bylaw No.4166, and Ticket Information Utilization Amendment Bylaw No. 4167, which will increase the Solid Waste Bylaw infractions for unsecured waste from a $150 fine per infraction to a $500 fine per infraction.*

REPORT SUMMARY

This report summarizes the City's current solid waste management practices relating to bear attractant mitigation and provides a summary of the recently completed Bear Hazard Assessment (BHA) completed by staff. The BHA identifies where bear-human conflicts are most prevalent in Port Coquitlam and recommends additional management efforts to reduce bear-human conflicts going

forward. This report concludes with the next steps and seeks Committee's endorsement of a Bear Hazard Management Plan.

BACKGROUND

Reducing bear-human conflicts has been a priority for the City of Port Coquitlam for more than a decade and the City is committed to continuing to work closely with City partners to be proactive in protecting the safety of both bears and residents. The City's approach centres around the core elements of successful bear programs, including: engineering, education and enforcement.

Engineering

In 2009, the City introduced bear regulations that required property owners/occupiers to secure their garbage/green waste and other bear and wildlife attractants with either an approved lock or to store within an enclosure such as a garage, and to set out their carts at the curb only at designated times on collection day. For those that have the option, storing in an enclosure or garage is preferred, particularly in areas of high bear activity.

In 2015, the City created and introduced its own locks for 240L and 360L garbage and green carts, and the locks were certified by the BC Wildlife Conservation Foundation. Unfortunately, the locks do not work for the 120L carts because the 120L carts lack the rigidity required for the City's lock design.

The 240L and 360L locks were distributed at no cost to all north-side homes receiving City waste services (approximately 6,500 homes), as well as south-side homes west of Shaughnessy Street (approximately 1,000 homes). The City's priority was to distribute locks to high bear prone areas.

In response to reported issues where bears were still able to breach the bins after repeated efforts, the City developed a third arm to enhance security, and distributed this on a pilot basis in 2019. The third arm was successful in addressing the issues, and is available by request.

In addition, on March 3, 2020 Committee of Council provided direction and budget to staff to facilitate the distribution of 120L cart locks. While there was an initial delay in procurement due to COVID-19; 120L cart locks have now been distributed upon request.

Moreover, as part of the 2020 budget deliberations, Council approved a service level increase to transition green waste collection to year-round weekly pickup. An anticipated benefit of this service level adjustment is improved odour control which will help minimize wildlife attraction.

Education and Enforcement:

Recognizing that changing human behaviour is the most effective way to keep bears away, public education on proper lock use, bear attractants and City regulations is an ongoing focus.

Education is the first step in the City's enforcement approach, which then escalates to warnings and penalties (such as fines or suspension of service) when necessary for repeat offences. To date,

bylaw enforcement has operated with a compliance focus, with periodic blitzes to address emerging problems.

Education and enforcement efforts have included:

- Collaboration with the provincial Conservation Office to identify hotspots for high bear activity and target for proactive joint enforcement efforts.
- Introduction of the ambassador outreach program in 2016, with public education and enforcement as key elements. Outreach topics include instructions on how to properly install waste cart locks and information on the City's waste stream.
- Consistent annual campaigns that distribute information to residents through avenues such as the City website, videos, frequent social media messaging, media coverage, print and online advertising, City publications including the calendar, booths at community events, pop-up education stands, door-to-door distribution and by mail.
- Periodic enforcement and education blitzes, with a focus on problem neighbourhoods that have low bylaw compliance and high bear activity. This includes waste cart audits, providing information and warning notices when necessary by mail or door-to-door, and fines for repeat offences.
- Involvement in the Northeast Sector Bear Committee that meets several times a year and includes the Conservation Office, RCMP, various cities and Wildlife BC.

The table below summarizes the numbers of tickets issued for unsecured carts or failure to manage bear attractants:

Year	Tickets Issued
2016	129
2017	96
2018	20
2019	45*
2020	100
2021	11**

*Joint and targeted enforcement in 2019 resulted in lower bylaw tickets being issued, as tickets were issued by conservation as they had higher fine amounts.

** Number of tickets issued January to May 2021

Bear Hazard Assessment:

In 2020, Committee of Council directed staff to Complete a Bear Hazard Assessment. This detailed assessment on bear interface risks unique to the City of Port Coquitlam is the first step towards achieving Bear Smart status and was completed in early 2021.

DISCUSSION

Abundant green space around and within Port Coquitlam provide excellent pathways for bears to enter populated areas in search of non-natural attractants found throughout the City. Because of this, and like many municipalities within the region, there is a history of conflicts between bears and people in Port Coquitlam. In the last five years, Conservation Officers received over 3,700 complaints about bears in Port Coquitlam. In that time, 21 bears were put down within the City as a result of bears becoming habituated to human presence. Habituation most often occurs when bears associate humans with food. This happens when people leave attractants such as garbage and green waste stored in a way that is easily accessible to bears. This can lead to dangerous interactions between bears and people.

Bear Hazard Assessment:

The purpose of the Bear Hazard Assessment is to identify hazards that cause bear-human conflict in Port Coquitlam as well as management options to reduce these hazards.

To understand the origin of the hazards that cause bear-human conflict, information on reported bear sightings was gathered and compared with identified habitat corridors, natural attractants (e.g. berry shrubs, fish-bearing streams), and a field survey of non-natural bear attractants (e.g. garbage, compost, fruit trees) found throughout Port Coquitlam.

High risk areas such as schools, commercial and agricultural areas, City parks and trails, and multi-residential complexes were assessed to identify attractants and hazards that create potential for bear-human conflict. Schools and parks were assessed in more detail and were each given a hazard rating of low, moderate, or high. During the assessment, it was found that many dumpsters are not adequately secured and many garbage cans around the City are not bear-resistant. Grease barrels behind restaurants were frequently observed to be unsecured. Many play areas at schools and parks are unfenced and located adjacent to unsecured attractants or greenbelts and most trails are located in habitat corridors and within the riparian zone. There are also berry producing crops that were observed on farmland in northeastern Port Coquitlam.

A suite of management options that may be implemented to reduce the potential for bear-human conflict were identified, including (but not limited to):

- increasing enforcement of bylaws that regulate the storage of bear attractants;
- moving all dumpsters and garbage cans away from play areas;
- posting bear warning signs at all park and trail entrances;
- installing fencing around play areas in parks and schools that have high hazard ratings;
- refraining from planting fruit trees around the city, especially near playgrounds and schools;

- managing vegetation at schools, parks, and along trails to ensure adequate sightlines;
- providing targeted garbage and green cart lock replacement for high risk areas;
- working with strata councils and waste collection services at multi-residential complexes to ensure all residents have adequate locking containers or have access to centralized, secured dumpsters;
- replacing unsecured barrel cans with bear-resistant cans throughout the City;
- replacing dumpsters that have plastic lids with bear-resistant dumpsters; and
- ensuring that restaurants have grease properly secured in bear-resistant barrels or enclosures.

Progression within the Bear Smart Program:

The Bear Smart community program is designed and run by the Ministry of Forests Lands and Natural Resources operations in partnership with British Columbia Conservation Foundation and the Union of British Columbia Municipalities. As noted on their website, it is a voluntary, preventative conservation measure that encourages communities, businesses and individuals to work together. The goal is to address the root causes of human-bear conflicts, thereby reducing the risks to human safety and private property, as well as the number of bears that have to be destroyed each year.

This program is based on a series of criteria that communities must achieve in order to be recognized as “Bear Smart”.

These criteria include:

1. Preparation of a bear hazard assessment
2. Preparation of a bear-human conflict management plan
3. Revised planning and decision-making
4. Implementation of a continuing education program
5. Development of a bear-proof municipal solid waste management system
6. Implementation of “Bear Smart” bylaws

Considering the solid waste management practices currently implemented by the City of Port Coquitlam, and recent completion of the Bear Hazard Assessment, the next step required to be certified as a “Bear Smart” community would be the preparation of a bear-human conflict management plan.

The objective of the bear-human conflict management plan is to take the insights gained from the Bear Hazard Assessment and use that information to develop education, engineering, and enforcement programs that will help reduce these conflicts. The “Bear Smart” Community Program Background Report (prepared for BC Ministry of Water, Land and Air Protection) will be used as a guide to set and achieve clear goals such as:

- identifying the level of commitment that the City has to the program,
- identifying the agencies, groups, or individuals responsible for addressing problems,
- determining steps to address each problem successfully,
- prioritizing action items and developing a time table to address each problem,
- conducting a cost estimate of proposed management actions.

Based on feedback from other Bear Smart communities, staff believe this work can be accomplished in house at a cost of $25,000. This scope of work is beyond current operational service levels and would require backfilling of staff assigned to this task. Accordingly, staff recommends this project form part of the Engineering and Public Works workplan plan for 2021, and that $25,000 be allocated from accumulated surplus for the study.

FINANCIAL IMPLICATIONS

Upon endorsement of the Bear Hazard Assessment, financial implications of management considerations will be brought forward to subsequent budget deliberations.

In order to proceed with the Bear Smart program, staff recommend proceeding with a Bear-Human Conflict Management Plan, staff believe this work can be completed in house at a cost of $25,000 and that this work be funded from accumulated surplus.

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	That Committee of Council endorse the 2020 Bear Hazard Assessment attached to this report and direct staff to prepare a Bear-Human Conflict Management Plan to identify and prioritize actions and strategies that address hazards outlined in the Bear Hazard Assessment at a cost of $25,000 to be funded from accumulated surplus.
	2	That Committee of Council endorse the 2020 Bear Hazard Assessment attached to this report.

ATTACHMENTS

Attachment 1: 2020 Bear Hazard Assessment

Lead author(s): Scott Walmsley

Bear Hazard Assessment for the City of Port Coquitlam 2020

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Summary

The City of Port Coquitlam has recognized the need to reduce bear-human conflicts in the community. This Bear Hazard Assessment is written for the City of Port Coquitlam in partial fulfillment of becoming a "Bear Smart" Community, designated by the Ministry of Environment and Climate Change Strategy. This assessment identifies areas where bear- human conflicts exist in Port Coquitlam, and where management efforts should be focused.

In the last five years (2016-2020), 26 bears have been put down in Port Coquitlam, as a result of bears becoming habituated to human presence. Habituation most often occurs when bears begin to associate humans with food. This happens when people leave attractants such as garbage and green waste stored in a way that is easily accessible to bears. The City currently has initiatives in place to manage these attractants. These initiatives include providing residents with garbage and green waste carts for a fee, with free cart locks to securely store their waste. Language was included in the Solid Waste Bylaw that requires property owners to store solid waste in wildlife resistant containers and to keep any attractant stored so that it is inaccessible to wildlife. A $500 fine is delivered to those who do not comply with the bylaw. This bylaw also requires property owners to remove fallen fruit off the ground, to pick fruit or berries upon ripening, keep beehives, bird feeders and petroleum products out of reach of wildlife, lock or keep outdoor refrigerators or freezers out of reach of wildlife, and keep wildlife attractants out of compost piles. The Ambassador program is another initiative that was developed in part to educate residents on the importance of securing their garbage and green waste from wildlife. The Ambassadors are staff who do public outreach and also inspect properties for violations of the Solid Waste Bylaw. Any infractions that are observed are referred to Bylaw Services for follow-up. Bylaw Services also educates new residents about properly securing wildlife attractants.

Information on reported bear sightings was collected from WildSafeBC's Wildlife Alert Reporting Program (WARP) mapping system. This system compiles all the calls received by RCMP, Bylaw Services, and the Conservation Officer Service's toll-free Report a Poacher and Polluter (RAPP) line onto a publicly accessible map with downloadable raw data. In the last five years, Conservation Officers received over 3700 complaints about bears in Port Coquitlam, with an average of about 750 calls per year. This information includes data collected within Port Coquitlam and up to 200 meters outside of City boundaries.

According to the data collected by WARP, garbage is the type of attractant that is most often identified when callers report bear sightings to the RAPP line. In the last five years, garbage was identified in over 1500 reported bear sightings, followed by fruit trees in 153 of reported sightings then compost at 127 of reported sightings. Based on this information, unsecured garbage is clearly the main source of conflict between bears and people in Port Coquitlam.

To identify patterns in bear activity, the information on reported bear sightings was compared with identified habitat corridors, natural attractants (eg. berry producing shrubs, fish-bearing streams), and a field survey of unnatural bear attractants found throughout Port Coquitlam. The field survey included mapping all City-owned bear-resistant garbage cans, City and commercially-owned non-bear-resistant garbage cans, all dumpsters and grease barrels, all

schools, trailheads, and parks, multi-residential housing garbage and green waste that is stored outdoors and not collected by City services, and fruit-bearing trees planted on City and school district property. Information such as single fruit trees on private property and attractants such as litter or illegal dumping was not collected during the survey.

High risk areas such as schools, commercial and agricultural areas, City parks and trails, and multi-residential complexes were assessed to determine hazards that create potential for bear-human conflict. Schools and parks were assessed in more detail and were each given a hazard rating of low, moderate, or high. During the assessment, it was found that many dumpsters are not adequately secured across all areas of the city and many garbage cans around the City are not bear-resistant. Grease barrels are frequently unsecured and located in the open behind restaurants, and grease can be found on the sides and ground around the barrels. Many play areas at schools and parks are unfenced and located adjacent to unsecured attractants or greenbelts and most trails are located in greenbelts and within the riparian zone. There are berry producing crops on farms in northeastern Port Coquitlam, however further investigation is required to determine the extent of these crops, to understand how bears are accessing the land, and to learn if farmers have taken any preventative steps to reduce conflicts with bears.

Examples of management options that may be implemented to reduce the potential for bear-human conflict in Port Coquitlam include adding language to bylaws about not feeding bears and other wildlife, and adding more details about picking fruit off trees, increasing focus on enforcing bylaws that regulate the storage of bear attractants, having bylaw services work with the Conservation Officer Service to make sure the Canadian Pacific Railway cleans up any spills in the railyard.

Examples of management options that may be implemented for schools, parks and trails include moving all dumpsters and garbage cans well away from play areas, posting bear warning signs at all park and trail entrances, installing fencing around play areas in parks and schools that have high hazard ratings, refraining from planting fruit trees around the city, especially near playgrounds and schools, cutting back berry producing shrubs on school grounds and near play areas in parks, and managing vegetation at schools, parks, and along trails to ensure adequate sightlines.

Examples of management options that may be implemented to reduce attractants include implementing a targeted cart lock replacement program for residents who are missing locks, reviewing and revising solid waste routings to target hot spot locations (ie. along greenbelts) as possible at the start of each route, working with strata councils and waste collection services at multi-residential complexes to have residents properly secure waste between collection days, replacing unsecured barrel cans with bear-resistant cans throughout the City, replacing dumpsters that have plastic lids with bear-resistant dumpsters, and ensuring that restaurants have grease properly secured in bear-resistant barrels or enclosures.

Most importantly, to achieve “Bear Smart” status, the City must further develop an education program that meets WildSafeBC standards to connect with residents and property owners about bear safety and eliminating bear attractants from their land.

1.0 Introduction

Port Coquitlam is a city that encompasses a range of habitats including wetlands, rivers and streams, estuaries, second growth forests, and grasslands. The diversity of habitats supports a variety of animals including black bears. Port Coquitlam is fortunate to have green space in such abundance; however, these natural places provide excellent conduits for bears to enter populated areas, following the scent of attractants such as garbage, food waste, fruit trees, bird feeders, and livestock, in search of food. Because of this, the City of Port Coquitlam is exploring ways to reduce conflicts between bears and people to keep both its residents, and its bears safe.

Becoming designated as a "Bear Smart Community" by the Ministry of Environment and Climate Change Strategy is a proactive initiative to reduce bear-human conflicts in Port Coquitlam. Completing a Bear Hazard Assessment to identify where hazards exist and where management efforts should be focused is Phase 1 of the Bear Smart Community Program.

2.0 Goals and Objectives

The purpose of this bear hazard assessment is to examine conflicts between bears and people in Port Coquitlam by analyzing recorded bear sightings, habitat and movement corridors, natural and non-natural bear attractants, then to propose recommendations that will help Port Coquitlam become designated as "Bear Smart". Port Coquitlam's objectives are to reduce conflicts with bears, increase safety, reduce property damage, allocate more resources towards environmental education and sustainability, and to support its application for Bear Smart Community status. Using the "Bear Smart" Community Program: Background Report, developed by Davis *et al*, as a guide, this hazard assessment shows how Port Coquitlam can meet the criteria for Phase 1 of the Bear Smart Community Program. It describes the factors that contribute to bear-human conflicts and explains how the City can adapt in order to reduce these conflicts. The ultimate goals are to ensure the safety of people, the protection of property, and to reduce the number of bears that are destroyed in Port Coquitlam.

The hazard assessment contains the following information:

1. Discussion of natural and non-natural attractants in and adjacent to Port Coquitlam that identifies the following:
    - bear habitat within and adjacent to the City;
    - areas that have high risk for conflict with bears, such as schools, playgrounds, residential areas, parks and trails, and commercial areas;
    - features that may affect travel corridors of bears, including riparian areas, roads, urban edges, power lines, railway rights-of-way, and green spaces (areas with tree/shrub cover);
    - residential and commercial waste management, including parks and public spaces;
    - regional issues that may affect the success of achieving Bear Smart Community status;
    - gaps in the existing knowledge of bear use and bear-human conflict in the area.
2. A review of bear ecology and behaviour to explain why conflicts between bears and people occur.

3. A review of bear-human conflicts based on information provided by the Conservation Officer Service (COS), including discussion of:
    - areas considered to be high risk for bear-human conflict,
    - practices considered to be high risk for bear-human conflict, and
    - potential data limitations.
4. Recommendations for further assessment as well as strategies to reduce existing and potential bear-human conflict within the community.

3.0 Background

3.1 Study Area Description

The City of Port Coquitlam is situated in the Georgia Basin region of Southwestern British Columbia. It is roughly 30 kilometers east of Vancouver within the Metro Vancouver Regional District. It has an area of just over 29 square kilometers, is approximately 9.5 kilometers wide at its widest point, and has an elevation of between 2 m - 90 m. Lougheed Highway and the Canadian Pacific Railway Company (CP Rail) tracks and railyard cut across the City, creating a distinct "north" and "south" side of the community (City of Port Coquitlam, 2013). The Fraser River flows to the south, the Pitt River to the east, and the Coquitlam River to the west, and to the north lies Burke Mountain. The City of Coquitlam surrounds Port Coquitlam's northern and western perimeters. Across the Pitt River to the east lies the City of Pitt Meadows, and across the Fraser River to the south lies the City of Surrey (Fig. 1).

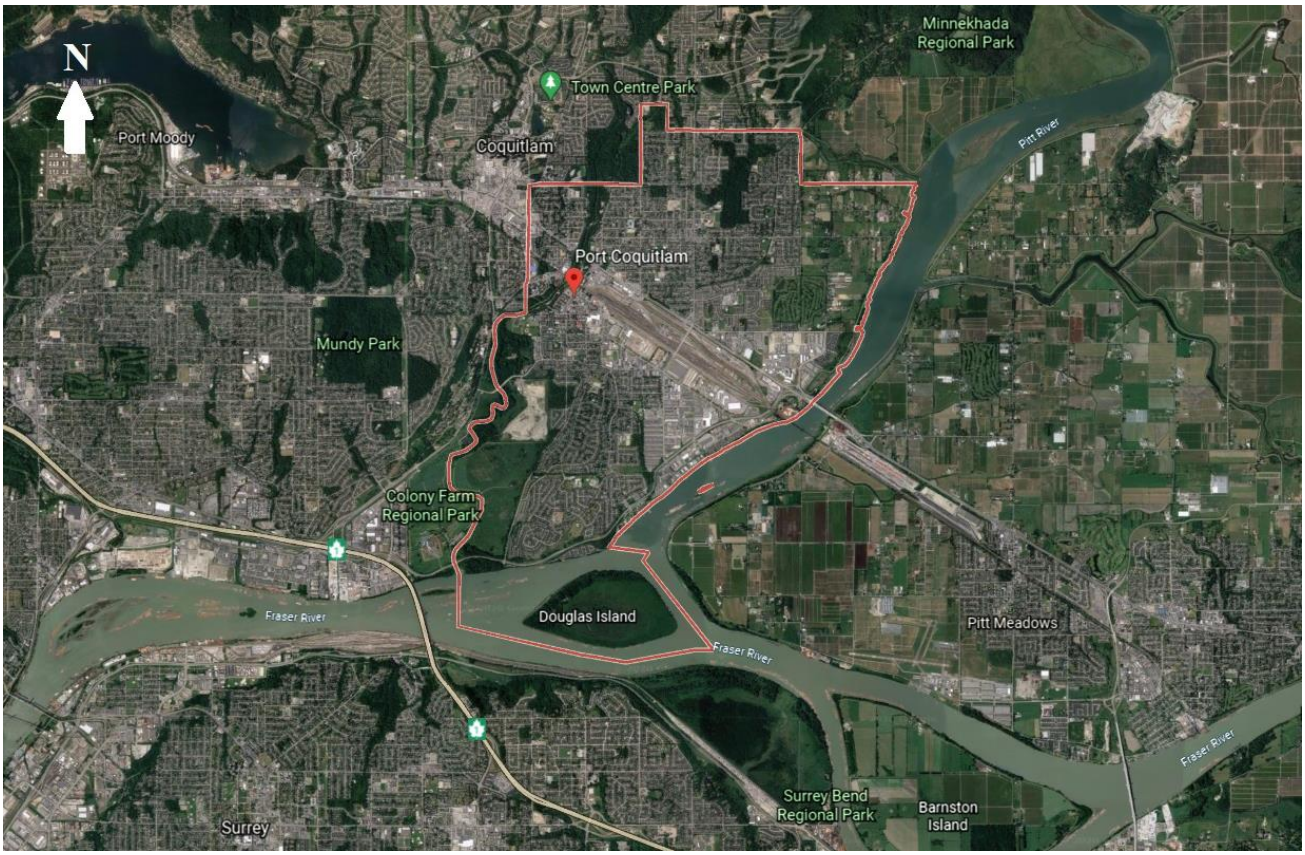

Figure 1. Map of Port Coquitlam (Google Earth).

3.2 Background and History

The Coast Salish people were the original inhabitants of Port Coquitlam and the surrounding area. The area was important for hunting, gathering, and fishing due to the abundant resources. In the mid-1800s, the first European settlers arrived and on March 7, 1913, the City of Port Coquitlam was incorporated. Just prior to this, CP Rail brought its freight yard and operations to the area which had a significant impact to the growth and development of the community. After the Second World War, the population saw a steady increase due to the establishment of industries and the availability of affordable land and housing. As of 2016, the population of Port Coquitlam was 58,612 (City of Port Coquitlam, 2013).

3.3 Ecological Description of the Study Area

Port Coquitlam is situated in the Dry Maritime Coastal Western Hemlock Subzone (CWHdm). The CWHdm occurs at low elevations on the mainland and immediately adjacent islands. This subzone has warm, relatively dry summers and moist, mild winters with little snowfall. Growing seasons are long, and feature only minor water deficits on zonal sites.

Forests in Port Coquitlam are mainly composed of Douglas-fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), bigleaf maple (*Acer macrophyllum*), black cottonwood (*Populus trichocarpa*), and red alder (*Alnus rubra*). Typical understory plants include salal (*Gaultheria shallon*), red huckleberry (*Vaccinium parvifolium*) trailing blackberry (*Rubus ursinus*), dull Oregon grape (*Mahonia nervosa*), vine maple (*acer circinatum*), sword fern (*Polystichum munitum*), salmonberry (*Rubus spectabilis*), thimbleberry (*Rubus parviflorus*), red osier dogwood (*Cornus sericea*), pacific crabapple (*Malus fusca*), devil's club (*Oplopanax horridus*), and the invasive Himalayan blackberry (*Rubus discolor*). These species provide excellent food and cover habitat for black-tailed deer, cougars, black bears, bobcats, coyotes and other mammals in Port Coquitlam (Green & Klinka, 1994)**.** Skunk cabbage, grasses, sedges, rushes, horsetails, and fungi are also common seasonal food sources in the City for black bears and other animals.

There are several salmon bearing watercourses in the City including the Coquitlam River, Hyde Creek, Maple Creek, Brown Creek, Watkins Creek, Smiling Creek, and Cedar Creek. Each of these streams eventually lead to the Pitt and Fraser Rivers (Fig. 2).

Northeastern Port Coquitlam and into Coquitlam is mainly composed of agricultural land (Fig. 3). This area, especially the blueberry fields, contains high value, non-natural attractants for bears. This combined with the lands close proximity to natural, high quality habitat means that bears are frequently found in this area during the growing season.

Within Port Coquitlam, there are 51 municipal parks, one nature reserve, a regional park and regional park reserve, a wildlife management area, and a trail network approximately 44 km long.

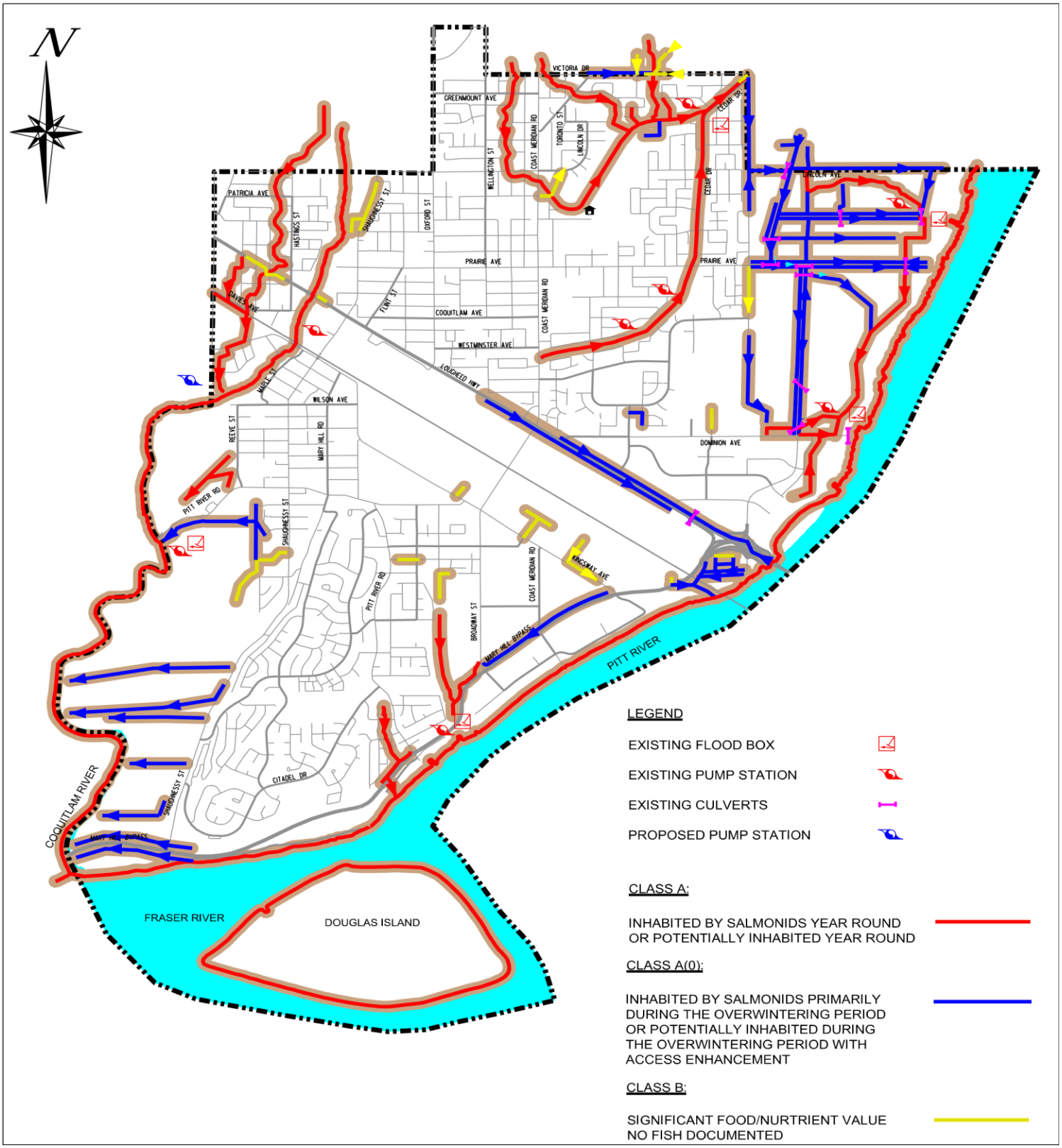

Figure 2. Map of fish bearing watercourses in Port Coquitlam. Brown shaded areas represent riparian corridors. The phrase "no fish documented" implies that fish presence is unknown due to lack of observation resulting from habitat characteristics such as stream gradient, fish access, and proximity to known fish-bearing waters (City of Port Coquitlam, 2013).

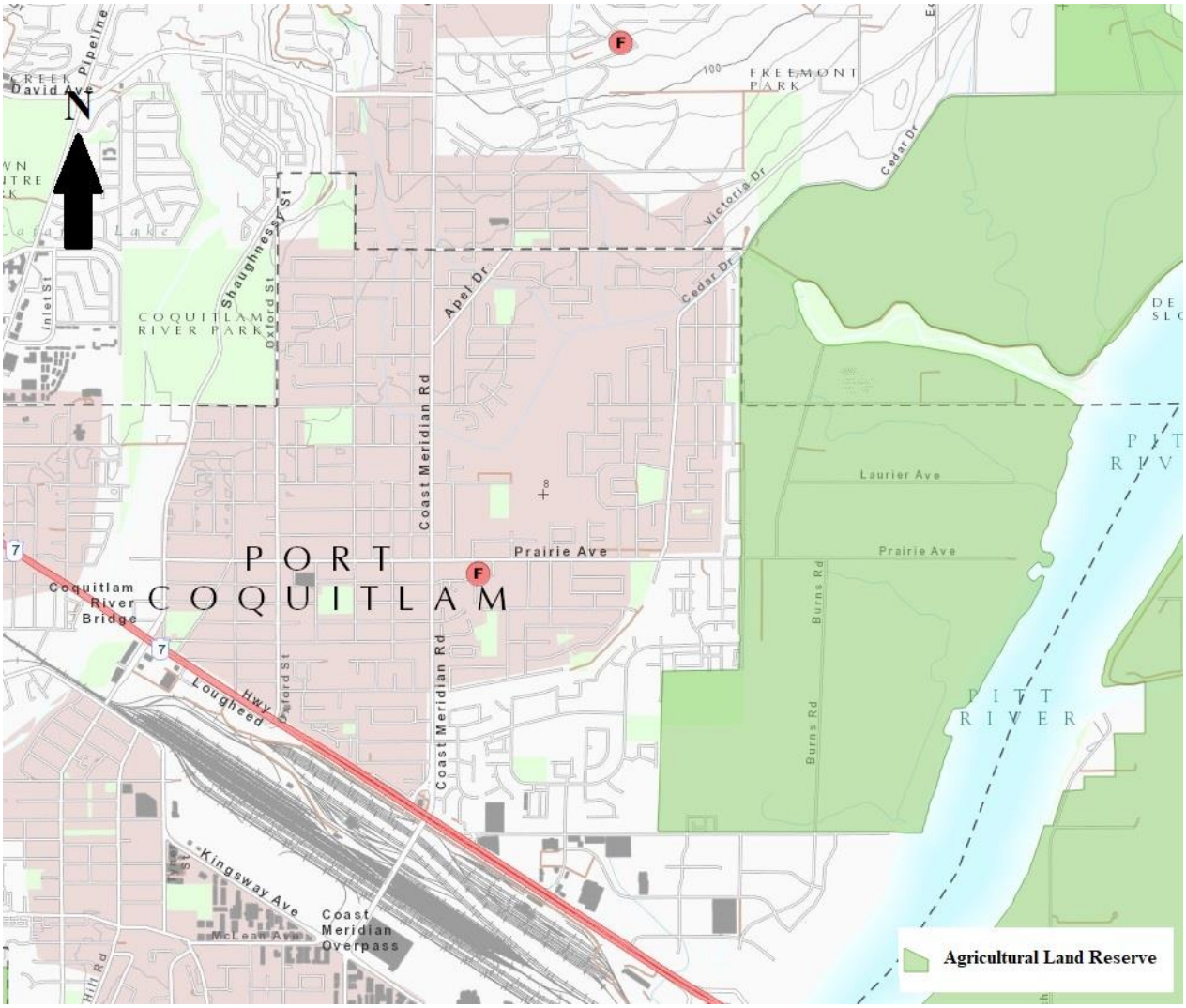

Figure 3. Map of agricultural land (dark green) in northeastern Port Coquitlam and into Coquitlam (Province of British Columbia, 2020).

3.4 Provincial and Regional Context

Several provincial and regional parks occur around the City of Port Coquitlam. North of Port Coquitlam from west to east lie Mount Seymour Provincial Park, Say Nuth Khaw Yum (Indian Arm) Provincial Park, Pinecone Burke Provincial Park, and Golden Ears Provincial Park. The south end of the Coquitlam River is a provincially protected Wildlife Management Area, as is the Pitt-Addington Marsh to the northeast of Port Coquitlam along the Pitt River and into Pitt Lake (Fig. 4).

Colony Farm Regional Park, Minnekhada Regional Park, the Pitt River Greenway, and Douglas Island, which is part of the Fraser Islands Regional Park Reserve, are all located in and around Port Coquitlam (Fig. 5).

The Kwikwetlem First Nations have dedicated land in Port Coquitlam, between Gates Park and Colony Farm Regional Park. This land also provides connectivity for bears to access the surrounding area.

These parks and wildlife management areas offer valuable habitat and travel corridors for wildlife, including black bears. Additionally, the Pitt, Coquitlam, and Fraser Rivers provide excellent connectivity for bears and other wildlife to travel between Port Coquitlam and many of these natural areas.

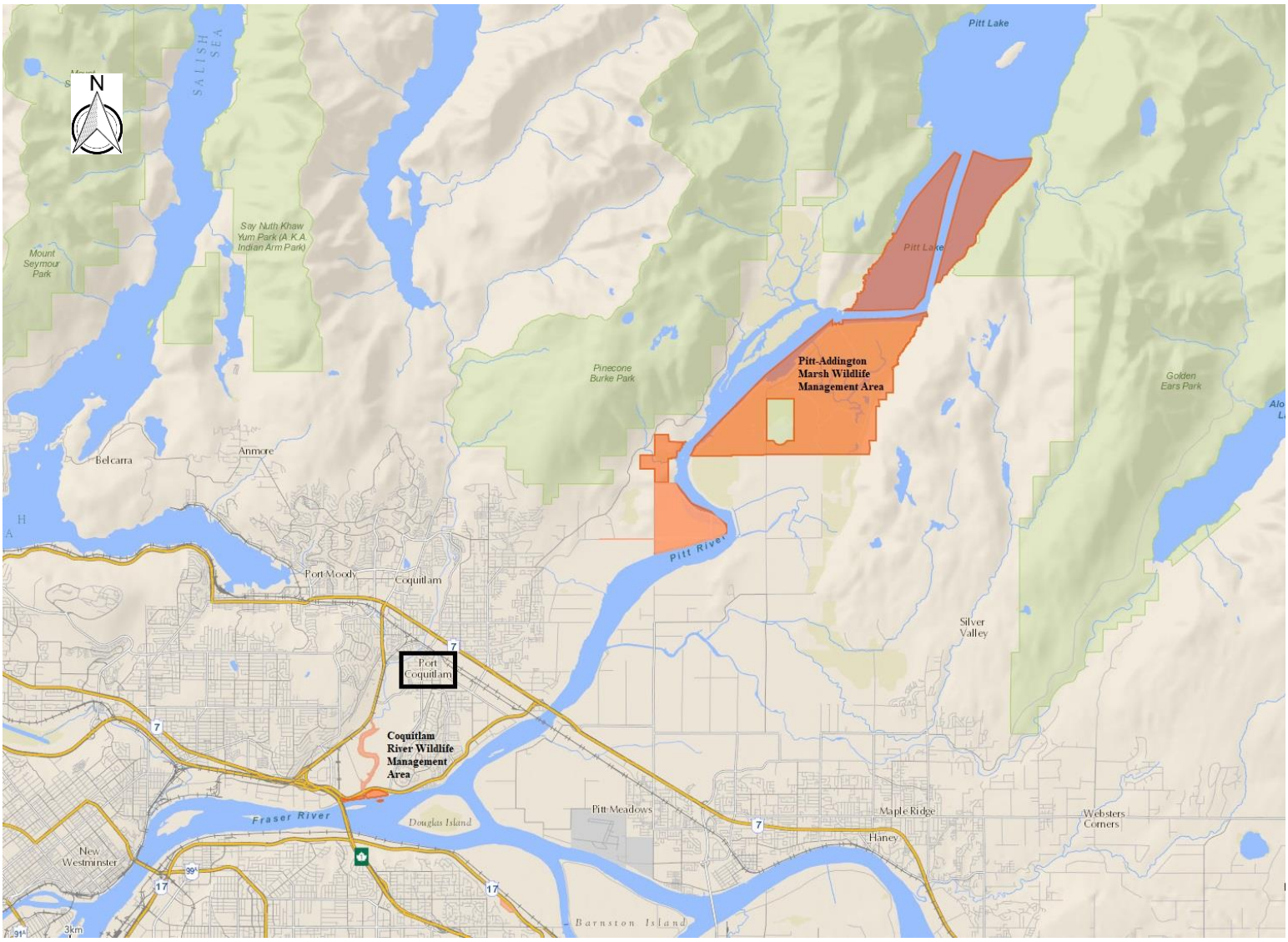

Figure 4. Map of provincial conservation lands near Port Coquitlam including Mount Seymour Provincial Park, Say Nuth Khaw Yum (Indian Arm) Provincial Park, Pinecone Burke Provincial Park, Golden Ears Provincial Park, Pitt-Addington Marsh Wildlife Management Area, and Coquitlam River Wildlife Management Area (Province of British Columbia, 2020).

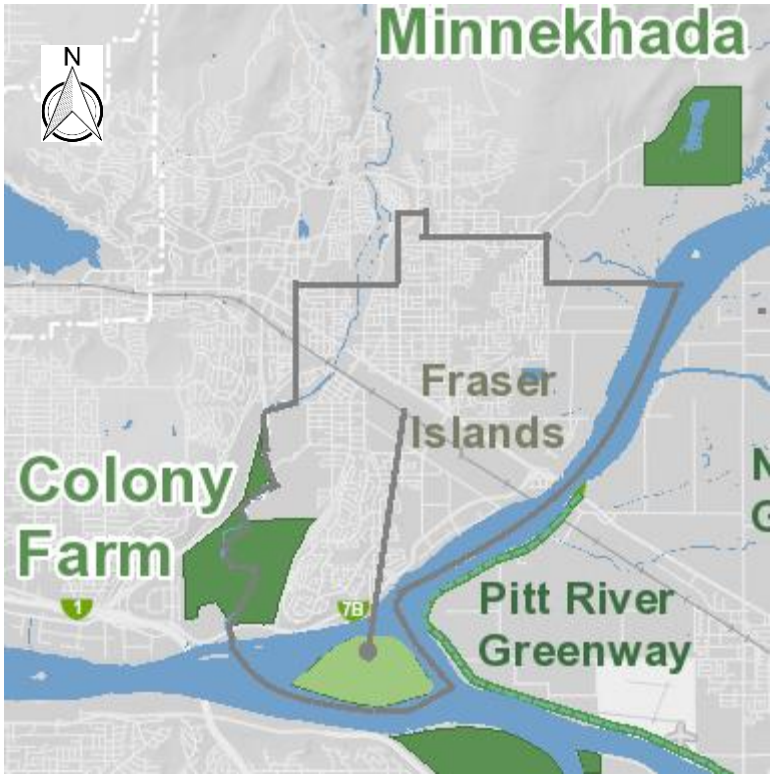

Figure 5. Regional Parks around the City of Port Coquitlam (Metro Vancouver, 2019).

4.0 Methods, and Data Limitations

4.1 Methods

The data was collected from BC's Report All Poachers and Polluters (RAPP) call line (1-877-952-7277). All the calls received by the Conservation Officer Service's toll-free line are entered into the WildSafeBC Wildlife Alert Reporting Program (WARP) mapping system. Information retrieved from this system include: Date, approximate location of the bear, encounter type (if the bear was aggressive, injured, food conditioned), attractant type (garbage, fruit trees, livestock, etc.), and outcome. A number of the calls are reported to the City of Port Coquitlam's public works department, or the police. These calls are forwarded to the COS and are included in the data.

Bear hazard data was collected by the author during the fall of 2020. Potential bear attractants were mapped within the City of Port Coquitlam using the ArcGIS Collector app on a tablet. The following information was collected and mapped:

- all City-owned secured (bear-resistant) garbage cans,
- all City and commercially-owned unsecured (non-bear-resistant) garbage cans,
- all dumpsters,
- all grease barrels,
- all schools, trailheads, and parks,
- multi-residential housing garbage that is stored outdoors and not collected by City services (including garbage and green waste cans, and dumpsters),
- fruit trees planted on City and school board property.

The following information was not collected:

- single fruit trees on private property (due to time constraints),
- attractants such as litter or illegal dumping

Many dumpsters, particularly in the commercial area around Fremont, and the apartments and condos in the downtown core have their dumpsters secured in enclosed outdoor structures. They were still mapped as attractants, however, as their smell is not contained within these structures.

The information collected from WARP and the bear hazard data were mapped by the City's GIS department and utilized in this report.

Research for this Bear Hazard Assessment included:

- review of background information on the City of Port Coquitlam's history, ecology, historic conflicts with wildlife, and City bylaws;
- review of bear ecology;
- review and analysis of reported bear conflicts provided by WildSafe BC's WARP mapping system and the COS;
- interviews with school district 43 representatives and City staff, and;
- field surveys of bear attractants found throughout the City.

Hazards that create potential for bear-human conflicts were assessed at high-risk sites such as schools, multi-residential complexes, commercial areas, and City parks and trails. This was done by reviewing information provided by WARP and the COS to determine high concentration areas for bear-human conflicts, reviewing research on bear ecology, and surveying attractants at the identified high-risk sites.

Port Coquitlam's bylaws and the Official Community Plan were reviewed to determine existing policies that help to reduce bear-human conflict and to learn if there are gaps that should be addressed.

Several Bear Hazard Assessments written for other jurisdictions in southwestern BC were reviewed, including Lions Bay (Paquet 2005), District of Squamish (Paquet & McCrory 2006), the North Shore (McCrory 2006), City of Port Moody (Paquet & McCrory 2019), City of Castlegar (Wallace, 2016), City of Port Alberni (Paquet 2007), Village of Cumberland (Barton 2018), and City of Coquitlam (Paquet 2007). The framework of these reports and the template outlined in the "Bear Smart" Community Program: Background Report was applied to this bear hazard assessment in order to meet the requirements of the Bear Smart Program. Personal communication with Vanessa Isnardy, and Heather Richardson with the British Columbia Conservation Foundation, Mike Badry, Chris Miller, Todd Hunter, with the Conservation Officer Service, Meg Toom and Dora Gunn, with the District of Squamish, Kurt Frei with the City of Port Moody, Christopher Mahoney, with the City of Coquitlam, and the staff of School District 43 were instrumental in developing this Bear Hazard Assessment.

4.2 Data Limitations

Data collected from the RAPP call line are manually entered into the WARP mapping system. As such, there is the potential for human error between the caller and the COS and again when entering the information into the system. These calls also likely represent only a small fraction of

conflicts that occur between bears and humans in Port Coquitlam because conflicts often go unreported.

Bear habitat and travel corridors were determined by reading maps and through field assessments of greenbelts, railway tracks, riparian corridors, parks, trails, roads, and powerlines. A more accurate depiction of bear habitat and travel corridors could be developed using Light Detection and Ranging (LIDAR) or Geographic Information System (GIS) modelling.

Bear hazard data collected in the field were limited by public access. Inaccessible areas include gated complexes and other private property (except what can be observed from City property).

5.0 Results and Discussion

5.1 History of Bear-human Conflicts

The abundant green spaces around and throughout Port Coquitlam provide excellent pathways for bears to enter populated areas in search of non-natural attractants found in residential, agricultural, and commercial areas, City parks and trails, and on school properties. Because of this, there is a history of conflicts between bears and people in Port Coquitlam. In 2016, a 10-year-old was critically injured after being mauled by a mother black bear who had a cub near Coquitlam River (Zeidler, 2016). In 2019, six bears were put down in two days in one neighbourhood after residents in that area continually failed to secure attractants on their properties (Cleugh & Strandberg, 2019). Again in 2019, a bear was euthanized after it was found denning in a cavity at the base of a bigleaf maple on school property in northern Port Coquitlam (Shannon, 2020). In 2020, a crowd of onlookers surrounded a tree that a bear had climbed in the downtown area. After the bear had climbed down, one of the onlookers allowed their dog to chase the bear into the bushes (Strandberg, 2020). Five bears have been destroyed so far in 2020, including a mother bear that was found trying to break open a sliding glass door of a resident's home (Labbé, 2020).

In 2019, a bear in Coquitlam was observed accessing a bird feeder on the second-story deck of a building (Strandberg, 2019). Earlier this year, two women were charged by bears on separate occasions in Port Moody (Labbé, 2020) and in Coquitlam, a black bear was filmed approaching a jogger on the Coquitlam Crunch trail. The bear can be seen reaching out and tapping the jogger on the knee before the jogger takes off running down the trail towards the onlookers (Pawson, 2020).

It is important to understand the travel habits of bears, the source of the attractants that bring them into contact with people, management efforts that are currently in place to control these attractants, and management efforts that should be developed or improved upon.

5.2 Black Bear Ecology and Behaviour

Black bears inhabit all forested regions of BC. They can be found within all biogeoclimatic zones and occupy a wide variety of habitats ranging from coastal estuaries to alpine meadows and a male's home range can be hundreds of square kilometers (Hatler, Nagorsen, & Beal, 2008). Black bears are relatively common and there are an estimated 120,000 to 150,000 animals in BC (WildSafeBC, 2020).

Black bears prefer mixed forested and shrubby areas. They are omnivorous and adapt easily to the relative abundance of food that is available during each season. They mainly consume vegetation but will feed on fish, and other wildlife (Stevens & Lofts, 1988).

In spring, black bears feed on the green vegetation found in wet meadows, riparian inclusions, and skunk cabbage swamps. Grasses, sedges, and horsetails are the most commonly selected spring food items of bears**.** In the summer, ripe berries (Fig. 6) and a variety of green herbaceous plants are their preferred diet (Stevens & Lofts, 1988). They will also scavenge, eat insects, and occasionally hunt small rodents and ungulates (Hatler, Nagorsen, & Beal, 2008). During fall, they begin to hunt or scavenge in streams as salmon return from the ocean to spawn. Black bears will consume large quantities of salmon in order to produce enough fat reserves needed through winter. If female bears do not have enough fat reserves going into winter, they will be unable to reproduce in the spring. They can consume up to 20,000 calories during this time (WildSafeBC, 2020).

Figure 6. Red elderberries growing in Birchwood Park, adjacent to Birchland Elementary School.

Black bears have an incredible sense of smell. They are known to be able to locate food by smell over one kilometer away (WildSafeBC, 2020). They quickly learn to recognize different sources of calorie-rich, non-natural foods such as garbage cans, barbeques, bird feeders, or outdoor freezers and these attractants become stored in their memory. Bear cubs learn behaviours from their mother during the time they are together. If the mother is observed foraging on garbage or if she shows a lack of fear of humans, her cubs will mirror these behaviours. Conflicts with bears often stem from a learned association between humans and food (Paquet & McCrory, 2019).

With the abundance of habitat surrounding Port Coquitlam, the large home range of black bears, their voracious appetite, and their strong sense of smell, it is easy to understand how a bear could find itself wandering down a city street in search of calorie-rich, non-natural foods when attractants such as garbage and compost are left unsecured.

5.3 Distribution of Bear Attractants in Port Coquitlam

There are 51 municipal parks, one nature reserve, a regional park and regional park reserve, and a wildlife management area in Port Coquitlam. Parks that are largely composed of tree/shrub cover such as Gates Park, Blakeburn Lagoons Park, Birchwood Park, Wellington Park, Greenmount Park, Hyde Creek Nature Reserve, Colony Farm Regional Park, and Coquitlam River Wildlife Management Area provide natural sources of food, security cover, and/or travel corridors for many wildlife species, including black bears.

The City has a trail network approximately 44 kilometers long, and roughly 32 kilometers of it exists within the riparian zone which is prime habitat for bears (Fig. 7). Port Coquitlam's longest and most popular trail, the Traboulay PoCo Trail, circumnavigates the City and is almost entirely within the riparian zone. Sections of this trail are adjacent to Hyde Creek, Coquitlam River, Fraser River, and Pitt River which are important travel corridors that allow bears to easily move in and out of Port Coquitlam from other areas of the mainland.

The main source of attractants around parks and trails tends to be consistent with a black bear's natural requirements for food and shelter but can also include garbage and green waste left behind by people. Bears can be seen regularly in many parks and trails during the spring and summer months as the lush vegetation grows and berries ripen, as well as in the fall when salmon swim upstream to spawn. Although attractants such as fish and berries are usually seen as natural, they are still considered to be sources of bear-human conflict because they occur in areas that are used by people.

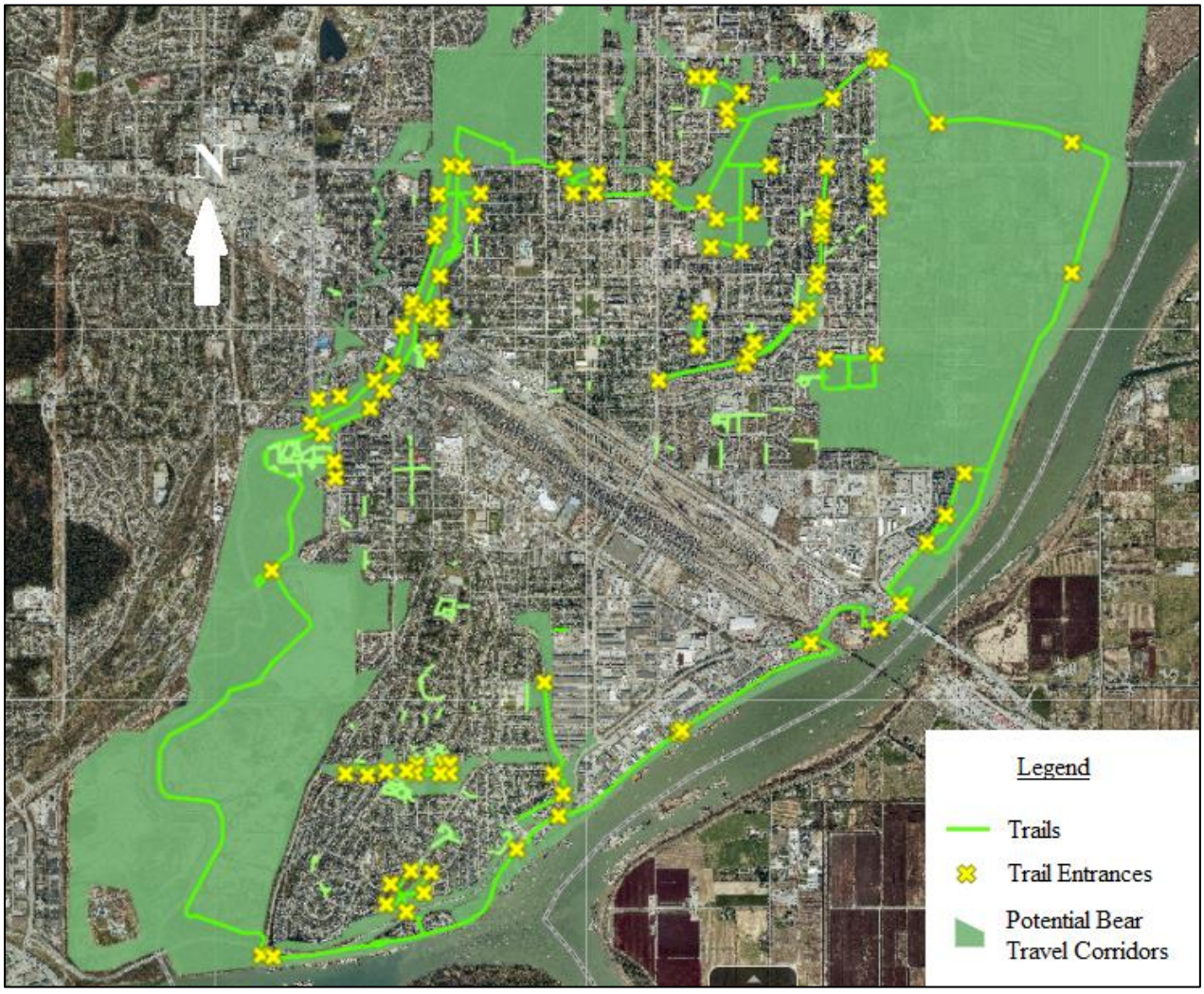

Figure 7. Map of Port Coquitlam's trail network. Yellow "x's" indicate trail entrances. Areas shaded in green indicate wildlife travel corridors such as streams, green spaces, and agricultural land.

Multiple schools and many residential, agricultural, and commercial areas are located directly adjacent to greenbelts and bear travel routes. Bears will travel through green spaces, streams, and

quiet residential streets in search of food, but they have also been seen using busy main roads such as Lougheed Highway and Mary Hill Bypass. Because of this, most areas of Port Coquitlam are accessible to black bears.

A conversation with Conservation Officers, Sgt. Todd Hunter and Officer Chris Miller, revealed that the bear-human conflict hotspots they have observed over the last several years include the blueberry fields to the northeast of Port Coquitlam and the CP railyard in the center of the City. In 2015, after the blueberry season had ended, bears appeared to head south from the farms, down the Pitt River and were observed entering the CP railyard. Here, they discovered large piles of spilled grain from broken rail cars. The bears would then travel into the community north of the yard, causing concerns there. Sgt. Hunter suspects that this continues to occur today. He explained that unsecured food (including industrial food waste bins), fruit trees, and unsecured garbage and green waste bins are also main sources of unnatural wildlife attractants found throughout the City (Hunter, 2020). Other bear attractants in Port Coquitlam include bird feeders, pets and pet food, barbeques, beehives, and livestock.

5.4 Records of Complaints to the BC Conservation Officer Service

Between January 2016 – October 2020, Conservation Officers received over 3700 complaints about bears in Port Coquitlam, with an average of about 750 calls per year (Wildsafe BC, 2020). This information includes data collected within Port Coquitlam and up to 200 meters outside of City boundaries. The number of complaints for 2016, 2017, 2018, 2019, and 2020 are shown in Table 1. The table also highlights the most active months for bears in each year.

Table 1. Total number of complaints received by month and year between Jan 1 2016 and Oct 23 2020 in and adjacent to Port Coquitlam.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Totals**
2016	5	4	7	30	42	26	51	177	374	156	57	21	**950**
2017	1	3	15	49	114	299	165	88	108	106	51	33	**1032**
2018	1	2	4	35	106	60	72	73	111	75	64	13	**616**
2019	1	5	1	11	51	85	124	64	135	147	44	3	**671**
2020	1	1	2	15	36	58	102	52	160	51	No Data	No Data	**478**
Totals	**9**	**15**	**29**	**140**	**349**	**528**	**514**	**454**	**888**	**535**	**216**	**70**	**3747**

Garbage is the type of attractant that is most often reported to the RAPP line. In the last five years, garbage has been reported over 1500 times, followed by fruit trees at 153 reports then compost at 127 reports (Table 2). Based on this information, unsecured garbage is clearly the main source of conflict between bears and people in Port Coquitlam.

Despite the high volume of calls to RAPP, Conservation Officers seldom “destroy” a bear. Out of the 3747 bears sightings that were reported in the last five years, conservation officers have

destroyed 26 bears in Port Coquitlam that displayed signs of habituation, and relocated five (Table 3).

Table 2. Number of bears observed interacting with each attractant type between Jan 1, 2016 – Oct 24, 2020 in and adjacent to Port Coquitlam.

	Garbage	Fruit Trees	Compost	Veg Garden	Bird Feeders	Freezer	Other	Pet / Pet Food	**Total**
2016	419	66	32	2	8	1	28	4	**560**
2017	409	31	33	6	16	5	27	5	**532**
2018	236	14	19	3	5	4	15	3	**299**
2019	285	24	30	1	8	1	14	3	**366**
2020	188	18	13	1	3	3	22	1	**249**
Category Total	**1537**	**153**	**127**	**13**	**40**	**14**	**106**	**16**	**2006**

Note: Some callers reported multiple attractant types, and some did not report any at all. "Other" refers to barbeques, vineyards, agriculture (including livestock/livestock feed), beehives, fish in streams, etc.

Table 3. Number of calls that resulted in intervention by COS between Jan 1 2016 – Oct. 24 2020 in and adjacent to Port Coquitlam.

	Destroyed by COS	Short Distance Relocation	**Total / Year**	**Total Calls / Year**
2016	2		**2**	**950**
2017	3	1	**4**	**1032**
2018	3	3	**6**	**616**
2019	5		**5**	**671**
2020	5	1	**6**	**478**
Total	**18**	**5**	**23**	**3747**

Note: one call in 2019 resulted in the destruction of four bears, so the actual number of bears destroyed that year was eight and the total number of bears put down over the last five years is 26.

5.5 Bear Hazard Assessment Maps

Most areas of Port Coquitlam are accessible to black bears, therefore in this assessment any unsecured natural and non-natural wildlife attractants found in and around parks, trails, and schools, as well as residential, agricultural, and commercial areas are considered to be potential sources of bear-human conflict. In the fall of 2020, a bear attractant survey was completed to determine the locations and densities of attractants found across all areas of the City (Fig. 8). This was used in conjunction with a map of reported bear sightings (Fig. 9) to identify patterns in bear activity throughout Port Coquitlam. A land use map is provided (Fig. 10) to give context to the areas where attractants and reported bear sightings are located.

The Map of Reported Bear Sightings and the Map of Bear Attractants illustrate that there is some correlation between the density of bear attractants and reported bear sightings. North of the railyard (as Sgt. Hunter and Officer Miller suggested), and the downtown core, the business sector adjacent to Lions Park, and several multi-residential complexes all have moderate to high densities of reported bear sightings. Unsurprisingly, proximity to green spaces appears to influence bear activity. Areas surrounding Hyde Creek Nature Reserve, along the Coquitlam River, and adjacent to Colony Farm Regional Park all have moderate to high densities of reported bear sightings.

Map of Reported Bear Sightings

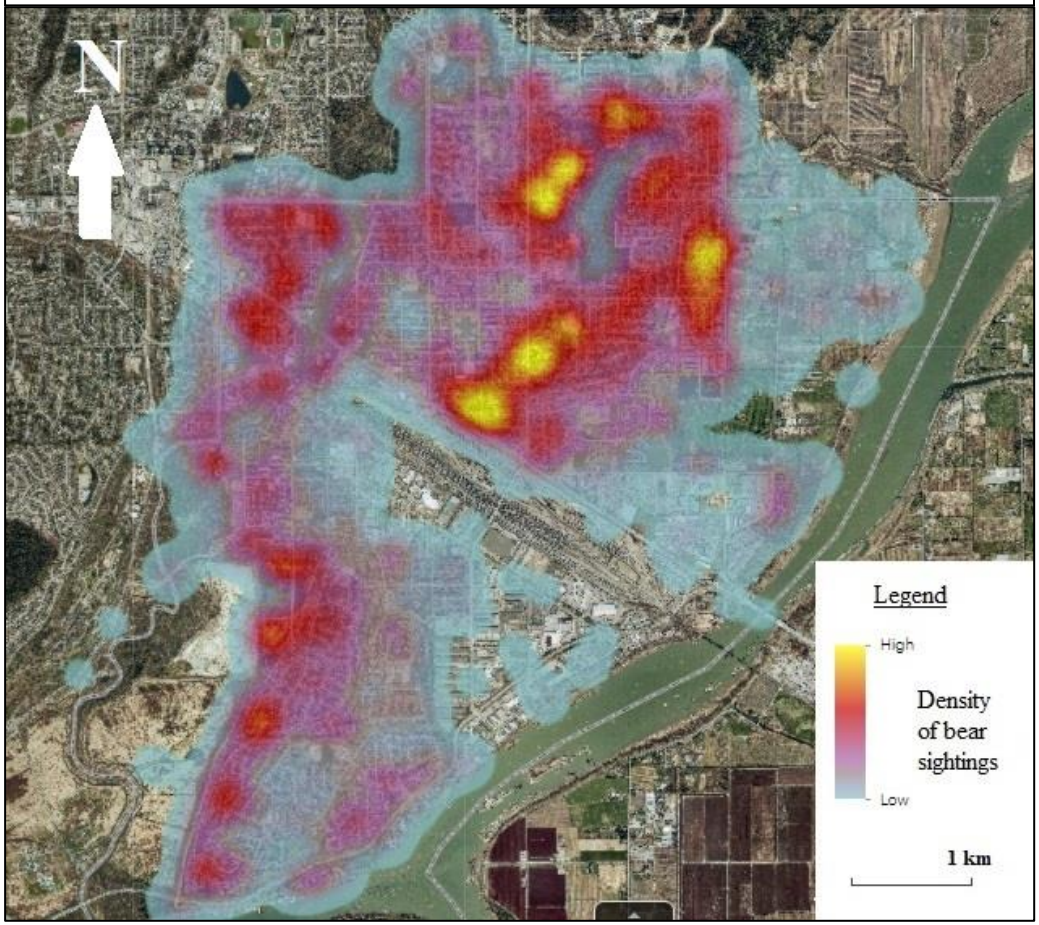

Figure 8. Map illustrating the density of reported bear sightings around Port Coquitlam. Areas shaded in yellow indicate high density of reported bear sightings and areas shaded in blue indicate relatively low density of reported bear sightings.

Map of Bear Attractants

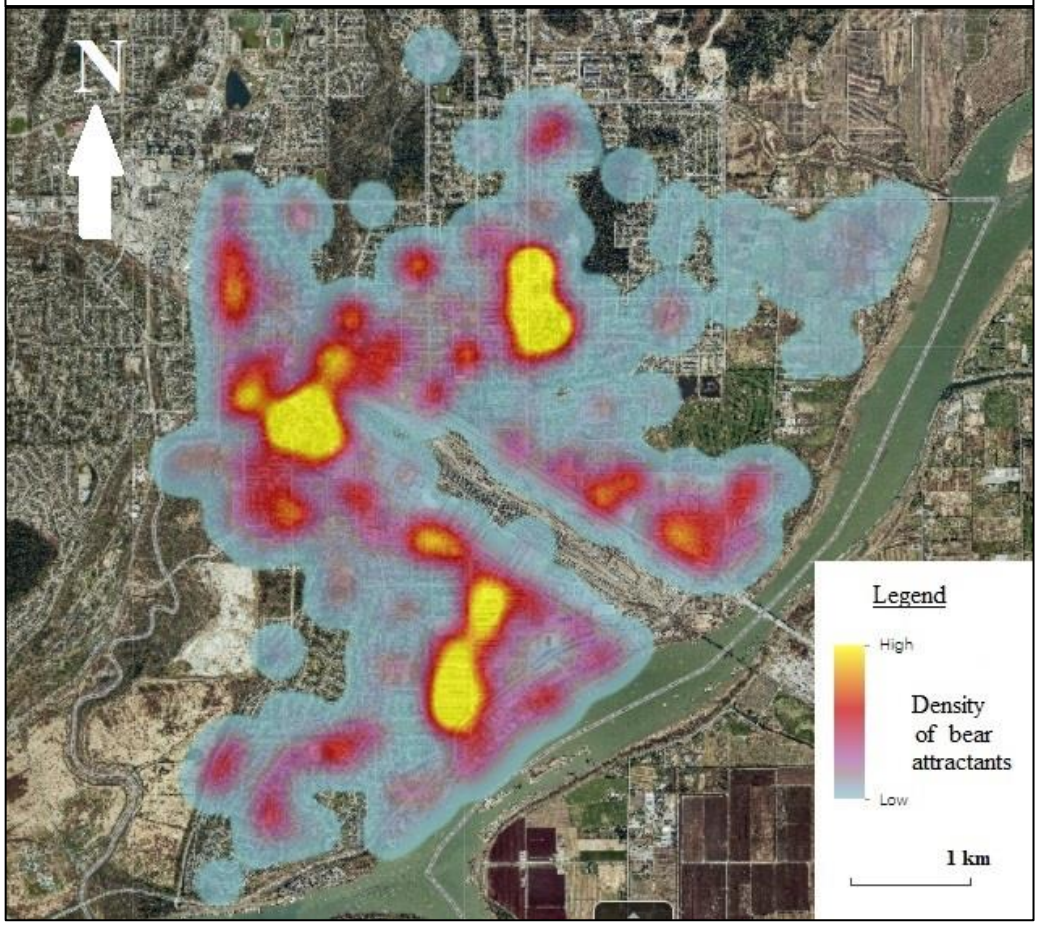

Figure 9. Map illustrating the density of non-natural attractants found throughout Port Coquitlam. Areas shaded in yellow indicate high density of non-natural attractants and areas shaded in blue indicate relatively low density of non-natural attractants.

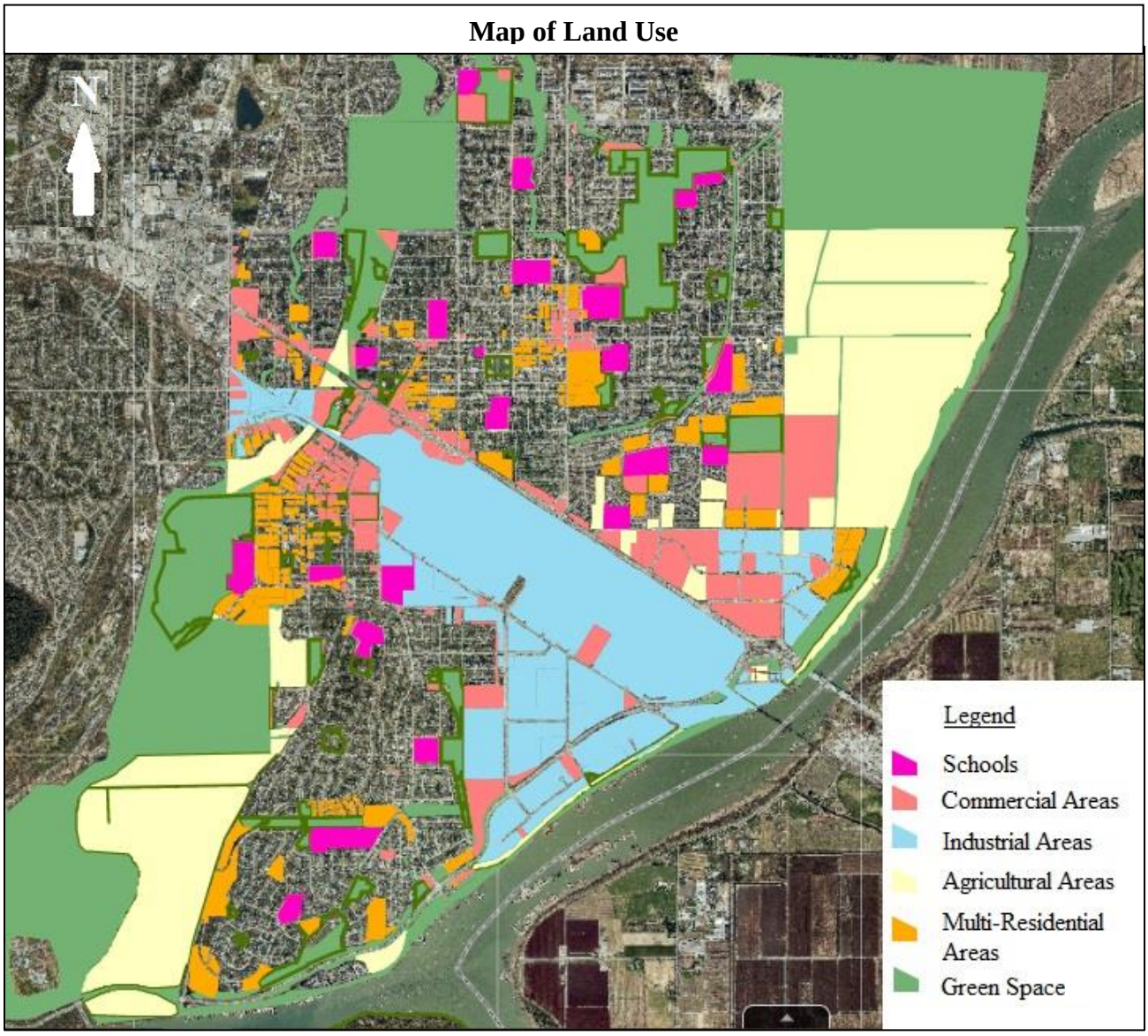

Figure 8. Map showing schools (pink), commercial areas (salmon), industrial areas (blue), agricultural areas (yellow), multi-residential areas (orange), and green space (green) throughout Port Coquitlam.

5.6 Current Management Efforts

5.6.1 Bylaws & Waste Management

The City of Port Coquitlam's Animal Control Bylaw (No. 3990) regulates beekeeping so that beehives are maintained to "deter and be inaccessible to wildlife" and the Property Maintenance Bylaw (No. 2945) prohibits depositing or throwing "bottles, broken glass or other rubbish in any open place". The Solid Waste Bylaw (No. 3900) requires residents and businesses to store solid waste in wildlife resistant containers or enclosures and to keep any attractant stored so that it is inaccessible to wildlife. Wildlife is defined in the bylaw as "birds and any mammals not normally domesticated, including but not limited to bears, cougars, coyotes, wolves, foxes, raccoons and skunks". For a fee, Port Coquitlam provides residents with recycle, green waste, and garbage carts in a selection of sizes ranging from 120 L, 240 L, and 360 L. In 2015, garbage and green waste cart locks were provided to residents for free by the City (Fig. 11). These locks were designed by Port Coquitlam City staff and were tested and certified to be bear-resistant by WildSafeBC in 2014 (WildSafeBC, 2021).

Figure 9 Garbage and green waste carts with locking mechanisms, provided by the City

In 2020, organics collection was increased from bi-weekly to weekly during fall-spring in an effort to reduce bear-human conflict. The Solid Waste Bylaw states that carts can be set out and unlocked between 5:30 am – 7:30 am on collection day and must be re-secured by 7:00 pm the same day. A fine of $500 per violation will be delivered to residents and businesses who do not comply with the bylaw. This bylaw also requires residents and businesses to:

- remove fallen fruit and pick fruit or berries upon ripening,

- keep beehives, bird feeders and petroleum products out of reach of wildlife,
- lock or keep outdoor refrigerators or freezers out of reach of wildlife, and
- keep wildlife attractants out of compost piles (composters are exempt).

These regulations are generally consistent with bear attractant regulations of other municipalities that have achieved "Bear Smart" status. Despite this, the vast majority of calls to the RAPP line involve reports of bears getting into garbage. During the survey of bear attractants in Port Coquitlam, many dumpsters, grease barrels, and residential carts were observed to be stored outdoors and unsecured. More enforcement of these bylaws may be necessary to increase compliance across the City.

5.6.2 Education

In 2016, the Ambassador program was introduced by the City to educate residents on the importance of securing their garbage and green waste from wildlife, and also on water restrictions, and proper waste sorting practices. This program has two staff members, one employed year-round, and the other during the summer months. The Ambassadors set up information booths in parks, at public events, and outside of grocery stores and marketplaces. Additionally, they frequently give informative presentations to schools and strata councils on bear safety, water use, and how to properly sort waste. They also respond to a call-in line when residents have questions about any of these issues, and sometimes meet residents in person to provide more information.

The Ambassadors also inspect properties for violations of the Solid Waste Bylaw, and those that do not appear to be using cart locks are referred to Bylaw Services for follow-up. Additionally, when new homeowners move to Port Coquitlam, Bylaw Services makes sure to inform them about properly securing wildlife attractants. After implementing these initiatives and making cart locks available to residents, there was a peak in the number of reported bear sightings in 2017, followed by a drop to nearly half the reported sightings in 2018 (Fig. 12).

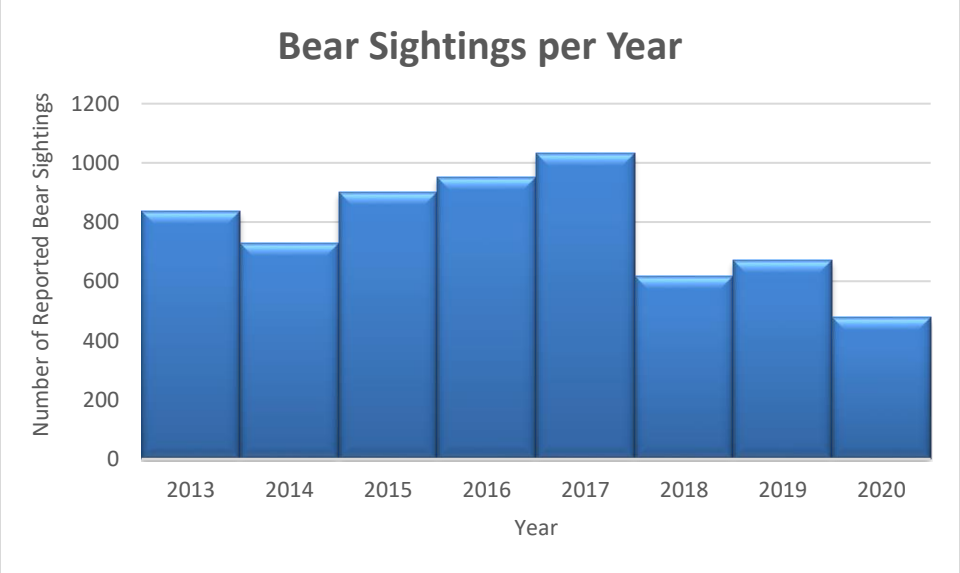

Figure 10. Number of bear sightings reported to COS per year between April 2013 - October 2020.

The current education program needs to be further developed and improved to meet the standard of the "Bear Smart" Community Program.

5.7 Assessing the Hazards

High-risk areas such as schools, commercial and agricultural areas, City parks and trails, and multi-residential complexes were assessed to determine hazards that create potential for bear-human conflict. As previously mentioned, schools and parks were assessed in greater detail than other high-risk areas in Port Coquitlam. This is evidently because children gather in play areas on school grounds and in parks, and they are often unaccompanied by an adult.

5.7.1 Schools

There are twelve elementary schools, five middle schools, two high schools, and five private schools in Port Coquitlam. Not all the schools are adjacent to natural areas; however, all have had bear sightings reported on or near school property in the last five years. Because schools are high risk areas, they were each assessed for hazards.

The Associate Director of Communications and Community Relations for School Distract 43, was contacted to ascertain what protocols are in place when bears are seen on or near school property. He explained that when a bear is seen on school premises or when community bear sightings are reported to a school, announcements are made and "Hold and Secure" protocols are initiated out of caution. Students are called in and kept inside until the bear has left the area. If a bear is seen near the end of the day, students are not allowed to walk home without an adult. If a bear is seen on school property, RCMP and COS is notified immediately.

The following is a summary of the hazard assessments for each School in Port Coquitlam. The full assessment can be found in Appendix 2.

Factors that were determined to increase the hazard rating in schools include:

- dumpsters with plastic lids (Fig. 13);
- play areas close to bear habitat or attractants, especially where sightlines are poor (unless adequate fencing is in place to discourage bears from entering the area), and;
- schools that have attractants located nearby that cause bears to cross school property to reach.

Ten schools received a high hazard rating, nine received a moderate hazard rating, and three received a low hazard rating.

Often, unsecured garbage cans and dumpsters were seen next to playgrounds which could be of concern, especially for schools adjacent to green spaces. Some schools next to wooded areas lack any fencing to discourage bears from accessing school property. Only one school had fruit trees on its premises, however, the principal was keen to have them removed as soon as possible. Several schools do have berry producing shrubs (mainly Himalayan blackberry) on their premises, though, and in a few areas, City trees that bear fruit have been planted on boulevards adjacent to schools.

Many dumpsters located at schools were observed to be unlocked and unsecured during site visits. This alone did not contribute towards their hazard rating, however, because most can be properly secured if staff are vigilant about locking the dumpsters after each use. Schools with dumpsters

that have plastic lids, even when locked, contribute towards their hazard rating because they are easily broken into by bears. Manufacturers such as Binpak and Wasteline Containers produce bear-resistant dumpsters that may prevent this from happening.

Figure 11. Bears can access dumpsters with plastic lids like this one, even when locked.

5.7.2 Residents

Although the Solid Waste Bylaw states that "No owner, occupier, or other person shall keep any attractant on their premises in such manner as to be accessible to wildlife", there is currently no bylaw that explicitly states that residents must pick up fallen fruit or pick fruit as they ripen, or prohibits the feeding of wildlife.

City of Coquitlam has a Wildlife and Vector Control Bylaw that states that "all fruit on trees or bushes [must] be harvested immediately upon ripening" and "fallen fruit from trees or bushes [must] be removed immediately". It also states that apart from bird feeders, "no person shall knowingly or willingly feed, or in any manner provide or furnish access to food or any other edible substance, to any wildlife". Bird feeders must be suspended in such a way as to be inaccessible by wildlife other than birds, according to this bylaw.

On all trails and in most parks, the City Port Coquitlam has provided bear-resistant "Hid-A-Bag" bins and staff routinely check and change the bags in these bins (Fig. 14). Many other areas around the City, however, have bins such as "Tri-Cans", and barrel and pole cans, (Fig. 15), which are not bear-resistant. This may send mixed messages to residents and business owners who are required to secure waste and other attractants in wildlife resistant containers. Figures 16 and 17 show the locations of all secured and unsecured City owned garbage bins around Port Coquitlam.

Figure 12. "Hid-a-Bag" garbage cans are found on trails and most parks throughout the City.

Figure 13. City owned "Tri-Can" (left), barrel (middle) and pole (right) cans found on streets throughout the City.

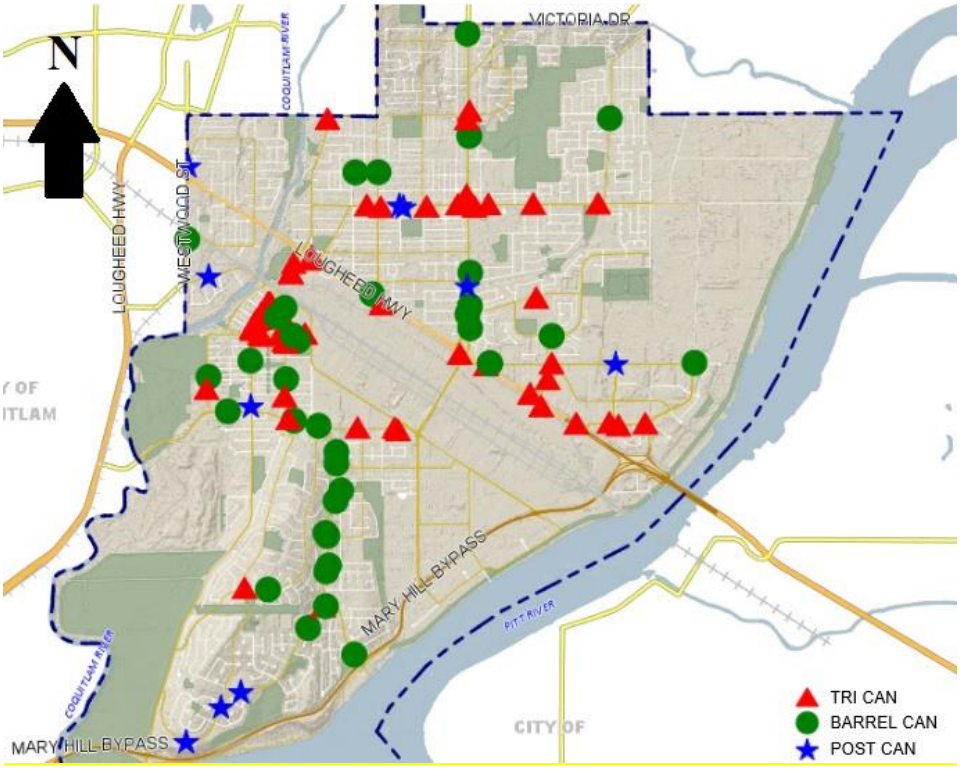

Figure 14. Locations of unsecured garbage bins that are maintained by City staff. Green circles indicate barrel cans, blue stars indicate pole cans, and red triangles indicate tri-cans.

Figure 15. Locations of City owned barrel cans (green) and Hid-A-Bag cans (red, burgundy) in downtown Port Coquitlam.

A survey of multi-residential complexes located throughout Port Coquitlam found that communities that are not covered by the City's waste collection services often do not have adequately secured waste (Fig. 18). This is particularly troublesome in areas with high bear activity. Officer Miller pointed out a garbage can in Meridian Village that had teeth marks on

them from black bears trying to access the garbage inside (Fig. 19). The garbage cans here were distributed by Metro Vancouver and are easily penetrated by bears. The houses in Meridian Village do not have space to secure these garbage cans between collection days, so they are stored outside in the open (Fig. 20).

Figure 16. Bears are capable of learning how to open these locking mechanisms to access the green waste inside.

Figure 17. Teeth marks on the lid of from bears attempting to open the bin.

Other complexes such as Twin Cedars, located between Lougheed Hwy, Imperial Ave, and St Michael St, have City provided garbage and green waste carts that are all secured with locks, though the houses here do not have enclosed garages to store the carts between collection days. Even though the carts are locked and bears are generally unable to get into them, the smell will still attract them to the area.

Figure 18. Unsecured garbage cans stored outside in Meridian Village, a multi-residential complex on the north side of Port Coquitlam.

Many complexes rely on centralized dumpsters for residents to dispose of waste, however, it is up to individuals to remember to secure and lock the dumpsters after each use. During the survey, numerous dumpsters were observed to be unlocked. Many dumpsters also have plastic lids, which as previously mentioned, are easily broken into by determined bears. Again, this is of particular concern in areas with high bear activity.

While surveying these areas, neighbouring detached residential homes with City provided garbage and green waste carts were frequently observed to be stored outside, without locks. These were not mapped due to time constraints.

5.7.3 Business & Agriculture

A survey of commercial and industrial areas found that dumpsters containing garbage or organic waste were often open or unlocked during business hours. Strong smells coming from these dumpsters, especially when left wide open, can draw wildlife looking for an easy meal. Similar to both schools and residential areas, many dumpsters in commercial areas have plastic lids that bears can break into.

The smell of grease barrels used by restaurants can also attract wildlife (Fig. 21). Many grease barrels observed during the survey were unsecured or non-bear-resistant. Even if employees are vigilante about keeping grease locked in bear-resistant grease barrels, spillage around the sides and on the ground surrounding the barrels may entice bears. Behind one restaurant adjacent to the Coquitlam River, Officer Miller pointed out prints from a greasy bear paw on the side of an open dumpster (Fig. 22) next to an unsecure grease barrel.

Figure 19. Example of a non-bear-resistant grease barrel (left) and a bear-resistant grease barrel (right) commonly found behind restaurants in Port Coquitlam.

Figure 20. Grease coated paw prints on the side of an unlocked dumpster behind a restaurant.

The industrial area along Broadways St in southern Port Coquitlam deserves mention. The businesses on the west side of Broadway St back onto the forest surrounding Brown Creek. This area has a high density of attractants but virtually no reported bear sightings. There is a 2 m tall chain link fence along the forest edge, though bears can easily scale this when motivated. There were also a number of openings observed in the fence that lead into the bush. Given the high density of attractants in this area and its close proximity to suitable bear habitat, it is likely that bears enter the commercial area at night when no one is around, or sightings are simply not reported. Similarly, the COS is aware of bears entering the CP railyard from Pitt River, however, the WARP website has no data showing that bears have ever been reported in the railyard.

A large portion of the farmland in Port Coquitlam appears to be dedicated to growing berry-producing crops. These crops are nutrient-rich, high-value food sources for bears. Livestock was also observed on several farms. Because of this, the density of bear attractants is far higher in the farmlands in northeastern Port Coquitlam than the Map of Bear Attractants in Figure 9 depicts. The Map of Reported Bear Sightings in Figure 8 also shows a low density of reported bear sightings in this area. This is likely also a misrepresentation of the actual number of bear sightings due to high density of attractants and the area's close proximity to suitable bear habitat. It is probable that bears are frequently seen on these farms but seldom reported.

Most farms appear to have some fencing but it was difficult to determine during the survey if the fences are adequate for preventing bears from entering the land. Further investigation is required to determine if and how bears are accessing farmland in Port Coquitlam.

5.7.4 Trails & Parks

All trails and parks in Port Coquitlam exclusively use bear-resistant "Hid-A-Bag" cans, except for:

- one barrel can in the playground at McLean Park,
- one barrel can at the picnic shelter at Castle Park,
- several open barrel cans located throughout Veteran's Park and the surrounding downtown core of Port Coquitlam (Fig. 17).

Although they are not all adjacent to green spaces, bear sightings have been reported near each of these areas.

Most of the parks within Port Coquitlam include play areas such as playgrounds and sport fields. These are considered high-risk areas. Bear sightings have been reported in or near every park in the City, so each one was assessed for hazards. There are signs warning users of bears at some park and trail entrances**,** however, many of them are deteriorated or are cluttered amongst an array of other signs (Fig. 23). Most park and trail entrances do not have any wildlife warning signs at all.

As mentioned earlier, the City has a trail network approximately 44 kilometers long, and roughly 32 kilometers of it exists within the riparian zone. On nearly all trails in the City, there is some level of risk of being confronted by a bear. This is especially true during the growing season, and during the salmon spawning season. It is important to manage the vegetation along trails within greenbelts in a way that gives trail users adequate sightlines. This will help prevent sudden encounters between trail users and bears.

The following is a summary of the hazard assessments for each park in Port Coquitlam. The full assessment can be found in Appendix 1.

Factors that increase the hazard rating in parks include:

- parks with playgrounds;
- parks with unsecured garbage cans (most parks contain one or more wildlife resistant garbage can);
- play areas (eg. playgrounds, sports fields, bike jumps, etc.) that have poor sightlines, and;

- play areas near bear attractants (berry-producing shrubs, fruit trees, unsecured garbage, riparian habitat, forested areas).

Out of 51 parks that were assessed, thirteen were given a high hazard rating, 22 were given moderate hazard ratings, and the remaining parks were given low hazard ratings. Many playgrounds are located near green spaces or had poor sightlines. Poor sightlines would make playground users less likely to see a bear walking towards them. Several parks around the City are situated adjacent to greenbelts that contain abundant berry producing shrubs. Although these shrubs are generally thought of as natural food sources, they increase the risk of conflict between park users and bears and should be managed in a way that discourages bears from entering the area.

Figure 21. An example of signage at the DeBoville Slough entrance to the PoCo Trail.

6.0 Management Options to Consider

During the assessment, numerous hazards that create the potential for bear-human conflict were identified across the City of Port Coquitlam. In order to mitigate these hazards and align with the Bear Smart Community Program, a suite of management options should be considered. The following are examples of management options that may be implemented to reduce the potential for bear-human conflict in Port Coquitlam:

6.1 Education

1. Further develop the Ambassador Program and include more focus on connecting with residents and property owners about bear safety and eliminating bear attractants from their land as well as informing them about City Bylaws relating to wildlife attractants. Educational initiatives may include:

- door-to-door education,
- events, activities, and public displays,
- school presentations,
- surveys to determine the success of the education program, and
- developing an annual report of the successes and failures of the educational program.

2. Develop a Bear Smart Stewardship Committee to lead, develop, and implement an education program, and to identify attractant and bear hotspots throughout the community. As outlined in the "Bear Smart" Community Program: Background Report, this committee may include members or representatives from:
    - City staff,
    - The Ministry of Environment and Climate Change Strategy,
    - Ministry of Forests, Lands, Natural Resource Operations and Rural Development
    - Metro Vancouver,
    - First Nations governments,
    - RCMP,
    - Waste management contractor,
    - Community stakeholders,
    - Naturalist clubs.
3. Have a City staff member receive Bear Smart Coordinator training by WildSafeBC to aid in the development of a work plan for the "Bear Smart" Community Program. Alternatively, sponsor the British Columbia Conservation Foundation to develop the work plan based on the WildSafeBC Program delivery model.
4. Adopt the WildSafeBC educational program.

6.2 Municipal Waste Management

5. Replace remaining unsecure barrel cans with bear-resistant cans on City property.
    - Lids of barrel cans that are stuck open should be repaired or swapped out with new lids in the meantime to reduce the smell.
6. Replace all City dumpsters that have plastic lids with bear-resistant dumpsters (such as those manufactured by Binpak and Wasteline Containers), and keep them locked at all times.
7. Provide targeted cart lock replacement for residents who are missing locks.
8. Review and revise solid waste routings to target hot spot locations (ie. along greenbelts) as possible at the start of each route.

6.3 Bylaws

9. Amend the Solid Waste Bylaw to include specific regulations on:
    - locking dumpsters after each use,
    - storing grease in bear-resistant barrels or in bear-resistant enclosures,
    - removing fruit immediately upon ripening or falling off fruit trees,
    - keeping beehives, bird feeders, petroleum products out of reach of wildlife,
    - locking or keeping outdoor refrigerators or freezers out of reach of wildlife, and

- keep wildlife attractants out of compost piles.

10. Including language in the Animal Control Bylaw that requires an electric fence to be installed around beehives.
11. Including and defining the term “wildlife” should be in the list of definitions in the Animal Control Bylaw.
12. Increasing enforcement efforts of bylaws that regulate the secure storage of bear attractants, specifically regarding:
    a. Residents failing to secure waste carts and other attractants,
    b. Residents failing to pick fruit off the ground around fruit trees,
    c. Multi-residential complexes, schools, and business owners failing to secure dumpsters, grease barrels, and other attractants.
13. Develop an enforcement strategy to ensure bylaws and enforcement efforts are effective.

6.4 Schools

Work with the School District to ensure the following actions are completed:

14. Replace all barrel cans with bear-resistant cans on school property.
15. Replace all School dumpsters that have plastic lids with bear-resistant dumpsters, and ensure they are locked at all times.
16. Establish consistent protocols on reporting bear sightings to the Conservation Officer Service.
17. Provide bear sighting and bear contact training.
18. Where possible, move dumpsters and garbage cans further away from play areas so they are not directly adjacent to the play areas. This may reduce the potential for conflict.
19. Collect garbage from cans daily (even when cans are not full) during seasons with high bear sightings to reduce smells that may attract bears.
20. Install fencing around play areas where necessary – particularly those in parks and schools with high hazard ratings.
21. Cut back Himalayan blackberry and other berry producing shrubs on school property.
22. Cut back any other shrubs and remove lower tree branches to improve sightlines and remove potential hiding places.

6.5 Multi-Residential Complexes

23. Work with strata councils, private waste collection services, and/or Metro Vancouver to ensure all residents have adequate locking containers or have access to centralized, secured dumpsters.
24. Require all multi-residential complexes that are not covered under City waste collection services to have bear-resistant containers and ensure that containers are properly secured prior to collection day.
25. Replace all dumpsters that have plastic lids with bear-resistant dumpsters, and keep them locked at all times.

6.6 Business & Agriculture

26. Ensure that business owners properly secure grease in bear-resistant barrels or enclosures.

27. Encourage business owners to replace all dumpsters that have plastic lids with bear-resistant dumpsters, and keep them locked at all times, especially businesses near greenbelts.
28. Work with COS to ensure that the Canadian Pacific Rail has a documented plan for immediate spill response.
29. Provide outreach to the farming community in conjunction with the Agriculture Land Commission to encourage the use of electric fence where necessary and that livestock feed and other attractants are properly secured.

6.7 Trails & Parks

30. Post bear/wildlife warning signs at all trail entrances and in parks with moderate to high hazard ratings.
31. Move garbage cans away from play areas.
32. Refrain from planting fruit and nut trees in parks and on boulevards, especially around playgrounds and schools.
33. Consider fencing play areas in parks with high hazard ratings.
34. Cut back Himalayan blackberry and other berry producing shrubs adjacent to play areas.
35. Cut back any other shrubs and remove lower tree branches in parks to ensure there are adequate sightlines within the park and to remove potential hiding places.
36. Manage vegetation on trails within greenbelts to ensure adequate sightlines.

7.0 Conclusion

Developing a Bear Hazard Assessment is one phase of becoming designated as a “Bear Smart Community”. The next phase is to develop a bear-human conflict management plan to identify actions and strategies that may be taken to address the hazards outlined in the Bear Hazard Assessment.

It is important to acknowledge that becoming a “Bear Smart” Community is a long-term commitment that involves collaboration across many jurisdictions and with many different stakeholders. Managing bear attractants is an ongoing process and is crucial to preventing bear-human conflicts in Port Coquitlam. Continuing to collect data on bear sightings and monitoring attractants around the City is imperative in understanding and eliminating potential sources of future conflicts. This will allow the City of Port Coquitlam to measure the success of the Bear Smart Community Program and to determine where the focus of future management efforts should occur.

There is considerable support and encouragement from other municipalities, stakeholders, and the provincial government to have Port Coquitlam added to the growing list of “Bear Smart” Communities. They have provided many useful resources that can help guide the City of Port Coquitlam, including the “Bear Smart” Community Program: Background Report, and bear-human conflict hazard and management plans developed by numerous municipalities in the region. These reports provide useful insights on how to achieve “Bear Smart” status and more importantly, how to reduce bear-human conflicts in the community.

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Appendices

Appendix 1: City Park Hazard Assessments

Appendix 2: School Hazard Assessments

Appendix 3: Solid Waste Bylaw (pages 1-4, 8-9)

Appendix 4: Animal Control Bylaw 3990 (pages 14-15)

Appendix 5: Property Maintenance Bylaw 2945 (pages 1-2)

Appendix 1: City Park Hazard Assessment

Park	Play Areas	Description	Hazard Rating
Birchland Park	Playground	Located across the street from Cascara Park, a small, forested area and a trail that runs parallel with Cedar Creek. This area has numerous reports of bear sightings. Birchland Park is small and is fenced in by the backyards of residential houses. Sightlines are poor, especially from the playground at the northwestern corner of the park There is a narrow corridor on the north and the south ends of the park, which are the only entrances/exits. There is one *Prunus* spp. and one *Malus* spp. tree on the east side of the park.	High
Cameron Park	Playground, sports field	Located in a residential neighbourhood across the street from Thompson Park. A small, forested area is located directly adjacent to the playground and field which provide a potential hiding place for bears. There are two mountain Ash trees and one *Rhamnus persica*.	High
Chelsea Park	Playground, unfenced off-leash dog area	Surrounded by the Hyde Creek Nature Reserve on the north and east sides, and residential neighbourhoods on the south and west sides. Black bears are seen frequently in this park and the surrounding area. The abutting forest contains high-value habitat and the vegetation growing around the perimeter of the park includes many berry producing plants that are known to attract bears. The playground is separated from the bush-line by a regularly groomed grass field; however sightlines are relatively poor. There are two *Sorbus* spp. trees near the playground.	High
Coutts Park	Playground, basketball court	This is a small park located near the top of Citadel Heights, surrounded by residential development. This area is close to Colony Farm Regional Park, however, and bear sightings are often reported nearby. About a third of the park is composed of Himalayan blackberry. When berries are ripe, they can be a high-valued food source for bears. The patch of blackberry is 10-15 meters to the west of the playing areas. Sightlines to the road where bears would likely enter from are poor.	High
Dominion Park	Playground	Located near the eastern edge of Port Coquitlam, bordering a roughly 9-hectare patch of high-value forest habitat along the Pitt River. The playground is directly adjacent to the bush line, giving park users poor sightlines north, east, or south of the play area.	High
Eastern Drive Park	Playground, sports courts	Located on Citadel Heights, adjacent to Skyline Park and the small, forested area of the Sandra Way Trails. The park is otherwise surrounded by residential development. Skyline Park provides connectivity from Eastern Drive Park and the adjacent forested area and to Colony Farm Regional Park. The tennis and basketball courts are completely enclosed by high fences, however the playground is unfenced and directly adjacent to the bush line.	High

Fox Park	Playground	Located between Kingsway Ave and Lougheed Hwy this park is in a residential area, surrounded by busy streets. It is connected to the Coquitlam river via the nearby CP Rail tracks and Davies Ave, though, and bear sightings are often reported in the area. The tree canopy was recently raised by City staff which has significantly improved sightlines for the playground. The Right of Way to the south of the park is one potential spot for bears to take refuge in. There are eleven *Prunus* spp. trees located throughout the park, including 6 located directly adjacent to the playground.	High
Kroeker Park	Playground	Located at the corner of Pitt River Road and Mary Hill Bypass. Although Mary Hill Bypass is a busy highway, it is directly adjacent to the Pitt and Fraser Rivers. Kroeker Park is surrounded by trees and shrubs, and has a small stream running through it. Bears traveling along the river likely cross the Mary Hill Bypass to investigate the park and surrounding area. The playground is close to the bush line, and escape routes are limited if a bear entered the park. There is one *Malus* spp. on the north end of the park.	High
Nacht Park	Playground	Located adjacent to Kwikwetlem First Nation land, which borders Colony Farm Regional Park. There is a low post and rail fence on the north side and the rest of the park is surrounded by a 1 m tall fence.	High
Settlers Skate Park	Skate park	Located adjacent to Eastern Drive Park, Settlers Park, Skyline Park, the Sandra Way Trails, and Hazel Trembath Elementary School. A patch of forest separates the skate park from Eastern Drive Park, with a considerable amount of Himalayan blackberries at the edge of the skate bowl. There is a fence surrounding the street side of the park, but not the bush line side. If a bear were to enter the park, escape route would be limited. .	High
Shaughnessy Bike Skills Park	Bike jumps & obstacles	Located adjacent to the PoCo Trail and the Coquitlam River. Forest surrounds the north, east and south sides of the bike park.	High
Wellington Park	Playground	Located in a residential neighbourhood, at the north end of the City close to Coquitlam River Park, a large, forested park surrounding part of the Coquitlam River. Wellington park is mostly forested with several crisscrossing trails and is nearly 5 ha in size. There is a playground at the edge of the forest.	High
Birchwood Park	N/A	Located in a residential area, adjacent to Birchland Elementary School. It is roughly 2 hectares of forested land with a small field at the southern entrance and a trail running to the north end where the school is located. This park is a commonly used pass-through route between neighbourhoods and for students walking to school. There is one cherry tree adjacent to the fence on the south side of the park.	Moderate
Blakeburn Park	Playground	Located directly north of Blakeburn Elementary School and west of Blakeburn Lagoons (where bears are often seen in the spring/summer). Residential development is to the north and to the west. Although there are often bear sightings at Blakeburn Lagoons Park, sightlines are exceptional from both	Moderate

		playgrounds in all directions.	
Blakeburn Lagoons Park	Viewing platforms	Located between residential neighbourhoods, Blakeburn Park and Elementary School, the Carnousty Golf Course, and agricultural land. The park consists of 1.6 km of looped walking trails with four viewing platforms looking over two lagoons. Bears are often seen by City staff here. Sightlines are poor in some areas of the park, including the viewing platforms.	Moderate
Cascara Park	N/A	Located adjacent to Cedar Creek, Cascara Trail, and the Greg Moore Trail. Bears sightings are often reported in this area. This park is a commonly used pass-through route between neighbourhoods, to access the Greg Moore Trail, and for students walking to school.	Moderate
Cedar Drive Park	Sports field	Located adjacent to the Greg Moore Trail and Cedar Creek, which are frequently used bear travel corridors. Bears are often seen in this area of Port Coquitlam due to its proximity to rural agricultural land and wildlife habitat/travel corridors. The west side of the park is fenced off by the backyards of residential houses. The north and south ends have low post and rail fences. The east side of the park is unfenced and is bordered by a buffer strip of shrubs and trees between the creek and the playing field. There is one *Malus* spp. at the northwestern side of the park.	Moderate
Cemetery	N/A	The Port Coquitlam Cemetary is located at the northern tip of the City and is between the forested Greenmount Park and Coquitlam River Park. Although a short chainlink fence surrounds the perimeter, black bears are commonly seen by staff throughout the spring and summer months in the Cemetary. They can be seen eating flowers that have been left at grave sites or looking for food in the lower field. Although sightlines are relatively good throughout the Cemetary.	Moderate
Citadel Landing Park	N/A	Located between the Fraser River and a residential complex that borders the Mary Hill Bypass. Bears use the river as a travel corridor and there is vegetative cover and berry producing shrubs such as Himalayan blackberry on the west and east ends of the park.	Moderate
Evergreen Park	Playground, sports field, sport courts	Located in a residential area, surrounded by houses. About two blocks east of the Hyde Creek Nature Reserve. Cedar Creek flows north/south on the east side of the park with a trail running parallel to it, between the creek and the soccer field. There is a 2 m tall chain link fence between the trail and the playing field/playground. Low hanging branches on trees between the washrooms and tennis/basketball courts create a poor sightline to the south of the playground. There is one *Sorbus* spp. at the north end of the park.	Moderate
Gates Park	Playground, sports field	This is Port Coquitlam's largest park and is located near downtown Port Coquitlam. The Coquitlam River flows along the northern and eastern perimeters and mixed deciduous forest surrounds all but the east and southeast sides of the park. The tennis courts and 6 out of the 9 fields are completely fenced. The	Moderate

		playground has good sightlines to the north and west, where bears are most likely to enter from. Chain link fences surrounding the tennis courts and soccer field block off most of the southern side of the playground. There are three *Prunus* spp., seven *Sorbus* spp., and five *Malus* spp. located throughout the park.	
Imperial Park	Playground	Located in the middle of a residential neighbourhood near Lougheed Highway and the CP railyard. Bears are frequently seen here, likely due to the area's proximity to the CP railyard. There are many large trees in this small park, however, the branches have been raised to allow for good sightlines.	Moderate
Kilmer Park	N/A	Located adjacent to Brown Creek and Ecole Kilmer Elementary School. The east side of the park is heavily forested and provides habitat for bears and other wildlife. This park is a commonly used pass-through route between neighbourhoods and for students walking to school.	Moderate
Lions Park	Playground, spray park, skate park, bike track	Located between Lougheed Hwy and Kingsway Ave, and the Coquitlam River and Shaughnessy St. Green space surrounding the Coquitlam River provide high-value habitat for bears, and they are often seen in this area. There are good sightlines from the playground, spray park, skate park, and bike track to the bush line. There are three *Sorbus* spp., nine *Prunus* spp., and one *Malus* spp, located throughout the park.	Moderate
Maple Street Off-leash Dog Park	Fenced dog park	Located downtown, adjacent to the PoCo Trail and Coquitlam River. Completely fenced.	Moderate
McLean Park	Playground, sports field	Located in a residential area, not adjacent to any green space, however bears have been reported in the area. There is an unsecured, decorative barrel can located in the playground area.	Moderate
Peace Park	Gazebo	Small grassy park located adjacent to the PoCo Trail and Pitt River on one side, and industrial development on the other. Bears likely use the PoCo trail, close to the park's gazebo as a travel corridor. Sightlines are excellent. There are eight *Prunus* spp. located throughout the park.	Moderate
Pinemont Park	Playground	Located in a residential area, near agricultural land and bear travel corridors. Park is surrounded by backyard wooden fences of residential houses. Bears are commonly seen in the area.	Moderate
Robert Hope Park	Playground, swimming pool	Located adjacent to Mary Hill Elementary School in the Citadel Heights area. Bears are commonly seen in this area due to its close proximity to Colony Farm Regional Park, and the undeveloped, forested Sitka Spruce Park. There are two *Rhamnus persica* and two *Prunus* spp. located around the swimming pool	Moderate
Routley Park	Playground, sport courts, swimming pool	Located in a residential area near Colony Farm Regional Park. Sightlines are generally good around playground, pool, and sports courts. There are however several places for wildlife to hide around the perimeter of the park.	Moderate

Settlers Park	Playground	Located in a residential neighbourhood, on Citadel Heights, adjacent to the Sandra Way Trail and Skyline Park. The first playground is at the southwestern corner of the park and is directly adjacent to a small patch of bushes that provide potential hiding places for wildlife. The second playground at the southeastern corner of the park has poor sightlines in all directions. There are five *Sorbus* spp. located adjacent to the western playground and one *Prunus* spp. located on the eastern side of the park.	Moderate
Shaughnessy Off-leash Dog Park	Fenced dog park	Located adjacent to the PoCo Trail and Coquitlam River. Completely fenced.	Moderate
Skyline Park	Unfenced dog park	Located on Citadel Heights, adjacent to Eastern Drive Park and Colony Farms Regional Park. This park has recently been designated as an unfenced, off-leash dog park. Bushes on the north and west sides of the park provide potential cover for wildlife to hide in.	Moderate
Sun Valley Park	Playground, sports field, swimming pool, spray park	Located adjacent to agricultural land and a tree-lined ditch that connects to the DeBoville Slough. All play areas have good sight lines. A short 1 m tall fence separates the park from the ditch.	Moderate
Thompson Park	Sports field	Located in a residential area, with commercial land at the southeastern border of the park. A narrow strip of forest connects this park with a forested area surrounding Brown Creek. Although the playing fields are mostly fenced, the south end of the park is bordered by dense forest that provides habitat and travel corridors for bears.	Moderate
Westwood Park	Tennis courts	Located in northwestern Port Coquitlam, at the edge of the forest adjacent to the Coquitlam River. Tennis courts are completely enclosed by a 3 m tall chain link fence.	Moderate
Veteran's Park	N/A	Located at the heart of the downtown core. This is a busy area surrounded by cafés, restaurants, City Hall, grocery stores, and busy streets. There are garbage cans that are not bear-resistant around the park.	Moderate
Aggie Park	Playground, swimming pool, sports field	Located near the busy intersection of Shaughnessy St and Lougheed Hwy. Sightlines are excellent around the park.	Low
Castle Park	Playground, spray park	This is a large park, located on Citadel Heights. The south and southeastern sides of the park are a mixture of cottonwood forest, shrubby vegetation, and grassy meadow. There is a considerable amount of Himalayan blackberry at the southern end of the park, which produce ripe berries in the summer. Although there have been no reports of black bears in the park, numerous residents have raised concerns to the City about coyotes here. The play area of the park is	Low

		separated from the southern end of the park by a large, groomed field. Sightlines are excellent in all directions of the playground and spray park. One barrel can adjacent to picnic shelter.	
Central Park	Sports field	Surrounded by development, there are no bear sightings reported in this park, though there are some reported nearby. There is a community garden at the south end of this park, however it is surrounded by a 2 m high chain link fence.	Low
Citadel Park	N/A	Located on Citadel Heights, in a residential area. This park is mainly composed of regularly manicured grass and small islands of shrubbery, including blackberry and juniper. The park is mainly used as a cut through route for residents walking to school or to the bus.	Low
Davison Park	N/A	Located adjacent to Apel Ave and Toronto St, this park is composed of a small patch of grass and a sidewalk. Although it is located across the street from the Hyde Creek Nature Reserve, it is mainly used as a cut through route for residents walking between neighbourhoods.	Low
Donald Walkway	N/A	Located in Downtown Port Coquitlam, this park is surrounded by busy streets. Bears are seldom reported in this area.	Low
Elks Park	Playground	Located in Downtown Port Coquitlam, this park is surrounded by busy streets. There is a fenced community garden in the southeast corner of the park. There are good sightlines around the playground. Bears are seldom reported in this area. There is one *Juglans regia* at the eastern end of the park, near the community garden.	Low
Granny Smith Park	None	Located at the heart of the downtown core. This park is composed of a small patch of grass and a garden. There is no other infrastructure that encourages visitation.	Low
Greenmount Park	None	An entirely forested park located at the northern end of Port Coquitlam and adjacent to Coquitlam River Park. There is no infrastructure that encourages visitation here.	Low
Fortress Park	Playground	Located at the top of Citadel Heights, this park has very little to offer bears. There are a few small trees, but otherwise no significant cover or food source. Sightlines are excellent.	Low
Hyde Creek Recreation Center	Playground, community center	Located at the main entrance to the Hyde Creek Nature Reserve. The Rec Center has an outdoor playground attached to the front of the building; however, it is completely fenced in.	Low
McMitchell Park	None	Located adjacent to Aggie Park at the corner of Lougheed and Shaughnessy. There is no infrastructure that encourages visitation.	Low
Rowland Park	Lacrosse box	Located on the corner of Wilson Ave and Mary Hill Rd. Lacrosse box is completely enclosed.	Low
Sheila	None	Located at the corner of Westwood St, and Kitchener Ave, adjacent to PoCo Place business plaza. There are two benches and a short pathway here but no	Low

Barrett Park		other infrastructure that encourages visitation.	
Sitka Spruce Park	None	A forested area adjacent to Shaughnessy St and Mary Hill Ln. There is no infrastructure that encourages visitation.	Low

Appendix 2: School Hazard Assessment

Schools	Description	Rating
BC Christian Academy (Private)	Located in the northeastern corner of Port Coquitlam, this school abuts the Hyde Creek Nature Reserve on the north and west sides of the property. There are two dumpsters, one cardboard and one garbage at the southwestern corner of the property. An unsecured green waste bin was observed nearby. No other garbage cans were observed outside. The playground is enclosed, however, the back field is unfenced and is surrounded by forest on the north and west sides.	High
Birchland Elementary School	Located adjacent to the forested Birchwood Park and Meridian Village on the north side of Port Coquitlam. .The school has three dumpsters with metal lids. There are two barrel cans, one of which is next to a playground, though the playgrounds have good sightlines. The school has a "pack it in, pack it out" policy and requests all students to take home any garbage that they bring to the school. Students are also required to eat any meals or snacks inside. The north and east sides of the school are sparsely forested, with a large patch of Himalayan blackberry in the northeastern corner of the park. Students are not allowed in this area unless accompanied by a teacher. The principal stated that bears are occasionally observed passing through school grounds from Birchwood Park or Meridian Village. Waste collection in Meridian Village is not covered by City services, and upon further inspection, most of the houses here do not have adequately secured garbage or green waste bins.	High
Castle Park Elementary School	Located on Citadel Heights, on Confederation Dr. and Citadel Dr. The school has three dumpsters, including one with a plastic lid, located next to the basketball court. There are five barrel cans located around the school, one of which is located next to the playground. A 1-2 m tall fence surrounds the entire perimeter of school property.	High
Cedar Drive Elementary School	Located adjacent to Cedar Creek and the Greg Moore Trail. Close to agricultural land and frequently used bear corridors. Bears are seen often in spring and fall, usually around the back field where there is a forested area containing a considerable amount of Himalayan blackberry. The school has three dumpsters, including one with a plastic lid. There are three open barrel cans located next to playgrounds. The north and south ends of school property are unfenced.	High
Central Community Elementary School	Located in downtown Port Coquitlam, not adjacent to any watercourses or green belts and surrounded by busy streets. Despite this, bears have been reported in the area. There are three dumpsters on school property. They all have metal lids, though they are all located adjacent to the northernmost playground. There is a City owned barrel can located next to the opening of the fence by the field east of the school, and five more district owned	High

	barrel cans located around the school's perimeter, including three that are adjacent to playgrounds. There are good lines of sight between classroom windows and the playing areas and a fence surrounding school property.	
Ecole Irvine Elementary School	Located in northern Port Coquitlam on Wellington Ave, just east of Coquitlam River Park. There is a creek running along the eastern perimeter of the school, and is surrounded by riparian vegetation. In September of 2019, an active bear den was located in the riparian habitat at the southeast corner of the property. The bear was habituated to humans and had to be destroyed by the COS. There is a 1-2 m tall fence that separates this vegetated area from the play areas. There is one small patch of Himalayan blackberry located next to one of the playgrounds at the northeast end of the school. The school has three dumpsters with metal lids, and no other garbage cans. The school has a "pack it in, pack it out" policy and requests all students to take home any garbage that they bring to the school. Students are also required to eat any meals or snacks inside. *Note: there is a new school being built on this property, so the entire layout of the property may change in subsequent years.	High
Ecole Kilmer Elementary School	Located on Knappen St. and Pooley Ave, adjacent to Brown Creek. The school has three dumpsters with metal lids, and no other garbage cans. There are four barrel cans, two of which are located adjacent to playgrounds. There is some Himalayan blackberry along the southern perimeter, and there is no fence separating the forested area surrounding Brown Creek from the eastern perimeter of the school. Sightlines around playgrounds are good.	High
Hazel Trembath Elementary School	Located on Citadel Heights, adjacent to Citadel Middle School and the Sandra Way Trails. There are three dumpsters with metal lids located in the parking lot. There are three barrel cans, two of which are adjacent to playgrounds. There is a fence on the eastern side of school property. Similar to Citadel Middle School, berry-producing bushes are abundant to the north of the school. Himalayan blackberry also grows behind the fence on the eastern side of the school.	High
Minnekhada Middle School	Located adjacent to the Hyde Creek Nature Reserve. The nature reserve borders the east side of school property and bears are often seen walking across the field. The school has five dumpsters, all with metal lids. All garbage cans are "Hid-A-Bag" cans. The lacrosse box is fenced, and there is a fence surrounding most of the basketball court. The sports field and other play areas are unfenced.	High
Westwood Elementary School	Located west of the Coquitlam River in northern Port Coquitlam. About half the property is forested with no fence between the school and the bush line. The school has three dumpsters, including one with a plastic lid. There are four barrel cans, two of which are next to playgrounds. There are an additional three barrel cans next to the preschool, though the play area of the preschool is surrounded by a fence.	High
Blakeburn Elementary School	Located on Riverside Drive, adjacent to Blakeburn Park and Blakeburn Lagoons Park. The south and east sides of the property are completely fenced, and there is a fence running along the north side of the field, east of the school. There are three dumpsters; one green waste, one recycling, and one garbage. One dumpster has a plastic lid. There	Moderate

	are no garbage cans on school property, as City owned "hid-a-bag" cans are used instead at Blakeburn Park. Sightlines are good in all play areas of the park.	
Citadel Middle School	Located on Citadel Heights, adjacent to the Sandra Way Trails where there are abundant berry-producing shrubs. Several Malus spp. are located on the east side of the school, and are accompanied by a plentiful crop of blackberries surrounding the field and the east and north sides of the school. Two dumpsters with plastic lids – one on the north side and one on the south side of the school. Three dumpsters with metal lids on the north side of the school All were unlocked at the time of visit. Several bear-resistant "Hid-A-Bag" cans were located around school property. One open barrel can located outside of a classroom that gets brought in each night. Basketball court near the dumpsters, and blackberries/apple trees. Other play areas enclosed in fence. Sport fields surrounded by Himalayan blackberry.	Moderate
Ecole Coquitlam River Elementary School	This school is located at the northernmost point in the City, adjacent to Coquitlam River Park and the forest surrounding the cemetery. The school has three dumpsters with metal lids, and no other garbage cans. The school has a "pack it in, pack it out" policy and requests all students to take home any garbage that they bring to the school. Students are also required to eat any meals or snacks inside. There are three playgrounds, two of which are adjacent to the forest. There is a 2 m tall fence surrounding the perimeter.	Moderate
Ecole Des Pionniers-De-Mallardville (Private)	Located on Patricia Ave, near the Hyde Creek Nature Reserve and Wellington Park. The school has three dumpsters with metal lids. Five barrel cans are located around the school perimeter. The principal stated that she has observed fruit trees at a neighbouring property, south of the school. There are also three City owned *Crataegus* spp. located on Wellington St. and a small patch of Himalayan blackberry located behind the portables at the south end of the school. There is a fence surrounding the perimeter of school property.	Moderate
Ecole Kwayhquitlam Middle School	Located on Flint St. and Prairie Ave., near the Coquitlam River. This school has four dumpsters, two with plastic lids. A fifth, privately owned dumpster, can be found in an alleyway at the southeast side of the school. Two "Hid-A-Bag" cans can be found on school property. Fences surround the play areas around the school. Bears are sometimes seen crossing the north side of school property to access fruit trees on neighbouring properties. There is also a row of thirteen City owned Malus spp. along Dorset Ave, at the north end of the school, as well as a City owned barrel can.	Moderate
Ecole Mary Hill Elementary School	Located on Citadel Heights, adjacent to Robert Hope Park. The school has 3 dumpsters with metal lids. There are two barrel bins; one next to the playground and one next to the basketball court. Sightlines are excellent around the play areas. The entire perimeter is fenced.	Moderate
Ecole Riverside Secondary School	Located on Reeve St. and Pitt River Rd, adjacent to Gates Park and the forest surrounding Coquitlam River. There is wetland habitat directly behind school property. The school has five dumpsters with metal lids, locked behind a tall fence. There is a basketball court adjacent to the forested area, though a tall fence surrounds its perimeter. There is a pathway behind the school, where you can look over the wetland. There is no fence to restrict wildlife from entering onto school grounds	Moderate

James Park Elementary School	Located between Westminster and Coquitlam Avenues on the north side of Port Coquitlam, near the railyard. The school has four dumpsters: two garbage, one organic, one recycling. Three dumpsters are located in parking lot next to the school and the fourth is adjacent to the preschool on the north end of the property. One dumpster has a plastic lid, all others have metal lids. There are four unsecured barrel cans located on school grounds, three of which are adjacent to playgrounds. Playgrounds have good sightlines. There is a 1-2 m tall fence on the north and south ends of the park. There are no fruit trees located on school property, however, on the north side there is a row of about fourteen City owned Malus spp., along Coquitlam Ave.	Moderate
Our Lady of the Assumption School (Private)	Located adjacent to the Coquitlam River, on Fraser Ave and Shaughnessy St. The school has one dumpster with a metal lid, two "Hid-A-Bag" cans, one barrel can, and approximately eight residential green waste and garbage carts. The Play areas are completely enclosed in a tall fence.	Moderate
Archbishop Carney Secondary School (Private)	Located on Dominion Ave., adjacent to agricultural land. The school has three dumpsters that stay locked. Entire perimeter is fenced. There are three barrel cans located around the building and a garbage/green waste/recycling can in the inner courtyard behind a tall gated fence.	Low
Ecole Pitt River Elementary School	Located on Pitt River Rd. and Tyner St., adjacent to industrial areas. There are five dumpsters, two with plastic lids. Three of the dumpsters are adjacent to a playground. There are two bear cans, and three barrel cans. The sport field is completely enclosed by a 2 m tall fence. No nearby wildlife habitat.	Low
Hope Lutheran School (Private)	Located adjacent to McLean Park, on York St. and Prairie Ave. This is a small property with an enclosed play area. There is one Prunus spp. on school property and a few others on Frey St. adjacent, to the school. No dumpsters were observed. Locked, green waste and garbage carts provided by the City are located behind the building.	Low
Terry Fox Secondary High School	Located in a residential area, a few blocks away from Cedar Creek, the CP railyard, and Blakeburn Lagoons. The school has seven dumpsters with metal lids and three bear cans.	Low

Appendix 3: Solid Waste Bylaw 3900 (pages 1-4, 8-9)

THE CORPORATION OF THE CITY OF PORT COQUITLAM

BYLAW NO. 3900

A bylaw to provide a system for the collection and disposal of Solid Waste and establishment of a scale of charges

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The Council of the City of Port Coquitlam enacts as follows:

1. **TITLE**
This Bylaw may be cited as the "Solid Waste Bylaw, 2015, No. 3900".

2. **DEFINITIONS**

In this Bylaw and the Schedules to it:

Attractant means any substance which could reasonably be expected to attract wildlife or does attract wildlife including but not limited to household refuse, kitchen waste, food products, beverage containers, barbecue grills, pet food, bird feed, diapers, grease barrels, fruit, salt, oil and other petroleum products and chemical products;

Automated Collection means the collection of solid waste using a specially designed vehicle with mechanical apparatus which empties a collection cart directly into the vehicle without requiring manual labour to empty the cart;

Caregiver means a person who provides extensive physical assistance for a fee (minimum of $150.00 per month) to an owner, or a spouse, parent or child of an owner provided that the person receiving the care is permanently disabled;

Collection Cart means a solid waste container for automated collection that is owned by the City and loaned to an owner who receives curbside collection as described in Section 4.2;

Collection Crew means any City employees and other persons authorized by the City to provide services under this Bylaw;

Contamination means the presence of hazardous waste or prohibited material, or mixing of any two or more of the following items or materials:

a) recyclable materials
b) garbage
c) yard waste and food scraps

Construction and Demolition Waste means all earth, debris, rocks, trees, stumps, building materials and anything else originating from the construction or demolition of buildings and structures;

Director of Engineering and Operations means the person holding the title "Director of Engineering and Operations" at the City of Port Coquitlam, or his/her designate;

Dwelling Unit means one or more rooms forming a single unit that is used or intended to be used as a residence and contains cooking, eating, sleeping, and sanitary facilities;

Extensive Physical Assistance means extensive physical assistance and care which is necessary in order to perform the functions of daily living in the home; for example, preparation of meals, personal care and hygiene. Extensive physical assistance does not include, for example:

a) assistance and supervision provided by a family member, regardless of whether this involves loss of income earning opportunities;
b) assistance with activities outside of the home, i.e. driving, grocery shopping or recreation;
c) home care provided by a provincial health care or social services government or government funded agency, including, but not limited to, caregivers;
d) assistance with home repairs and maintenance or yard work;

Food Scraps means meats, fish, bones, seafood shells, vegetable peelings and seeds, fruit peelings and seeds, eggshells, pasta, rice, baked goods, desserts, dairy, butter, sauces, food-soiled papers such as pizza boxes, ice cream cartons, paper plates and napkins, coffee grounds and coffee filters, tea bags and tea leaves, and similar products as approved for disposal by the City from time to time;

Garbage means waste other than food scraps/yard trimmings and recyclables but shall not include special waste, construction, demolition or land clearing waste, animal or human feces, animal carcasses or their parts, car parts, furniture, and other items the Director of Engineering and Operations or designate considers hazardous or unacceptable to the City's collection and disposal system;

Grandparent means a person who is the grandparent of the owner, who is related by blood, marriage or adoption;

Industrial, Commercial, Institutional (I.C.I.) unit means any building or part thereof used for a distinct and separate industrial, commercial or institutional use;

Land Clearing Waste means all earth, debris, rocks, trees, stumps and anything else originating from clearing land, landscaping or renovation activities;

Multi-Family Building means a building or part of a building used or intended to be used for three or more dwelling units, excluding townhouses;

Occupier means the person residing at the premises;

Parent means a person who is the father or mother of the owner, who is related by blood, marriage or adoption;

Permanently Disabled means a person with a permanent disability for which there is no remedial therapy available which would significantly lessen the disability; and which is sufficiently severe that in order to manage normal daily functioning in the home in which the person resides the person requires either extensive physical assistance; or structural modifications to the home;

Person includes an individual, corporation or partnership;

Physically Challenged means a person who has physical infirmities;

Premises means a dwelling unit or I.C.I. unit;

Principal Residence means the usual place where an individual makes his or her home and to which, whenever absent, the individual intends to return and, for clarity, no one can maintain two principal residences;

Recyclable Materials include paper & cardboard, plastics and metals and other items determined by the Director of Engineering and Operations from time to time based on the City's recycling facilities;

Scavenge means to separate or remove, without authorization from the Director of Engineering and Operations, materials from solid waste which has been set out for collection;

Solid Waste means garbage, food scraps/yard trimmings and recyclables;

Special Waste includes hazardous wastes, pathological wastes, explosives, radio-active material, security wastes, confidential documents, negotiable papers, medical wastes, and includes all wastes resulting from any industrial or manufacturing operations, the construction or demolition of buildings and structures, abandoned vehicles and parts thereof, dead animals, and all animal parts and agricultural wastes and any hazardous waste, or other prescribed substance, under contaminated sites legislation in the Province of British Columbia;

Suite means a dwelling unit that is ancillary and subordinate to another dwelling unit, such as a basement or attic suite;

Townhouse Complex means a building or buildings containing three or more strata – titled dwelling units, where each unit has a separate entrance at first–story level;

Yard Trimmings means weeds, plants, leaves, ashes, sawdust, grass, hedge and plant clippings, twigs; branches 3" or less in diameter and less than 40 inches long and may include Christmas trees free of tinsel and chemical sprays, cut to suit; but does not include land clearing waste;

Wildlife means birds and any mammals not normally domesticated, including but not limited to bears, cougars, coyotes, wolves, foxes, raccoons and skunks;

Wildlife Resistant Container means a solid waste container and device whose material and construction is of sufficient strength and design so as to prevent access by wildlife during storage and which has been accepted as such by the British Columbia Conservation Foundation;

Wildlife Resistant Enclosure means a fully enclosed structure consisting of walls, roof and door(s) w of sufficient design and strength so as to prevent access by wildlife, and for clarity, includes a garage, shed, or other structure that is inaccessible to wildlife.

3. COLLECTION AND DISPOSAL SYSTEM

3.1 Every owner and occupier of a parcel containing one dwelling unit or two dwelling units shall make use of the solid waste disposal services provided by the City under section 4.1.

3.2 Notwithstanding the foregoing, if the Director of Engineering and Operations considers that a parcel cannot be safely, efficiently and legally serviced, the Director of Engineering and Operations shall exclude that parcel from servicing under this Bylaw and, upon notice to the owner of the parcel, the parcel will not be permitted or required to receive the City's solid waste disposal services.

3.3 An owner of a parcel containing a multi-family building, townhouse or an I.C.I. unit may apply to use City services set out in Section 4.1 by submitting an application to the Director of Engineering & Operations.

The Director of Engineering and Operations shall accept the application if the Director of Engineering and Operations is satisfied that the parcel can be safely, efficiently and legally be serviced by the City's automated collection system. If accepted, the owner(s) shall be provided with carts generally in accordance to section 4.2, and pay fees set out in their Multi-family Service Contract or ICI Service Contract. The owner(s) shall, as a condition of the City actually collecting any solid waste from the parcel but without affecting the owner's obligation to pay such fees, comply with any terms and conditions imposed from time to time by the Director of Engineering & Operations in order to ensure that the City can safely, efficiently and legally service the parcel.

3.4 If an owner of a parcel containing a multi-family building, townhouse or I.C.I. unit receiving City's services in accordance with section 3.3 wishes to opt out of all such services, they shall notify the Director of Engineering & Operations in writing no later than November 30th proceeding the year when service is to cease. The service shall cease as of January 1st of the year following the November 30th deadline.

6. DUTIES OF OWNERS AND OCCUPIERS

6.1 Every owner and occupier of a parcel that receives City solid waste services shall:

a) deposit recyclable materials generated on the parcel into a recycling cart, and shall not deposit food scraps, yard trimmings, or garbage into a recycling cart;
b) deposit food scraps and yard trimmings generated on the parcel into a green waste cart, and shall not deposit recyclable materials or garbage into a green waste cart;
c) deposit garbage generated on the parcel into a garbage cart, and shall not deposit food scraps, yard trimmings, or recyclable materials into a garbage cart.
d) ensure that recyclable materials are clean and dry;
e) ensure that garbage and food scraps/yard trimmings collection carts are stored in wildlife resistant enclosures or the carts are made wildlife resistant as defined in this Bylaw;
f) ensure wildlife resistant containers that are stored outside on the parcel are locked, except when set out for collection as provided by this Bylaw;
g) maintain all collection carts supplied to the parcel in a clean and sanitary condition and clean up any spillage;
h) notify the Director of Engineering and Operations if a collection cart is damaged or a cart is stolen;
i) if a collection cart or wildlife resistant device is stolen or damaged due to the neglect of an owner or occupier (including, for certainty, where the owner or occupier fails to comply with sections 8.1(b) or (c)), reimburse the City for its costs of replacing or repairing the cart within 30 days of receipt of an invoice;
j) set out only the amount of waste that will fit into a collection cart with the lid closed and so as not to exceed the weight limit specified on the cart; and
k) comply with section 8.

6.2 Where the owner or occupier of a parcel that receives City solid waste services has not complied with any part of Section 6.1 or other relevant sections contained in this Bylaw, the City may at its discretion refuse to collect any or all solid waste from that parcel.

6.3 Every owner and occupier of a parcel that receives private solid waste services shall:

a) ensure that all garbage or other solid waste containing attractants intended for collection are stored in wildlife resistant containers or enclosures;
b) ensure that wildlife resistant containers that are stored outside on the parcel are locked, except when set out for collection as provided by this Bylaw;
c) maintain all solid waste containers in a clean and sanitary condition at all times;
d) deposit all solid waste generated on the parcel into the appropriate refuse containers;
e) not deposit any special waste into a solid waste container; and
f) immediately clean up spillage originating from solid waste containers.

3900
8

6.4 No owner, occupier, or other person shall keep any attractant on their premises in such manner as to be accessible to wildlife.

7. ACCESS TO PARCEL AND COLLECTION CARTS

7.1 The Director of Engineering and Operations, along with the City's Bylaw Enforcement Officer are appointed to administer or enforce the provisions of this Bylaw and is hereby authorized to enter upon at all reasonable times any parcel for the purposes of ascertaining whether the provisions of this Bylaw are being complied with.

7.2 The Director of Engineering and Operations and any collection crew are hereby authorized to enter upon any parcel for the purposes of providing the services contemplated under this Bylaw.

7.3 No person shall delay, hinder, obstruct, or prevent an employee, officer, or agent of the City from carrying out duties specified under Sections 7.1 or 7.2 of this Bylaw.

8. PLACEMENT OF COLLECTION CARTS

8.1 Every owner of a parcel and occupier of any premises on a parcel that receives services under this Bylaw:

a) shall keep on the parcel at all times the collection carts loaned to the parcel;
b) shall, on designated collection days between 5:30 a.m. and 7:30 a.m. and as close to 7:30 a.m. as practicable, move the collection carts supplied to the parcel to a collection location in accordance with the instructions of the Director of Engineering and Operations;
c) shall return all carts to their storage area no later than 7:00 p.m. on collection days;
d) shall ensure that all latching devices on wildlife resistant containers are unlatched by 7:30 a.m. on each designated collection day. Containers must be re-locked by 7:00 p.m. on collection day and kept locked until the following designated collection day; and
e) shall ensure all garbage and food scraps/yard trimmings collection carts are rendered inaccessible to wildlife by no later than 7:00 p.m. on each designated collection day.

8.2 Every owner and occupier of a parcel that receives private solid waste services:

a) shall ensure that all latching devices on wildlife resistant containers are unlatched and if applicable removed from carts no earlier than 5:30 a.m. on each designated collection day. Containers must be re-locked by 7:00 p.m. on collection day and kept locked until the following designated collection day; and
b) shall ensure all garbage and other solid waste containing attractants are rendered inaccessible to wildlife by no later than 7:00 p.m. on each designated collection day.

Appendix 4: Animal Control Bylaw 3990 (pages 14-15)

b) specifying on the form the residential address at which the animal will be kept; and
c) providing a letter from a qualified physician or psychiatrist evidencing that the animal is used for a disability-related need.

5) Upon receiving a completed application under section 16(4) the Bylaw Services Manager may, at the Bylaw Services Manager's discretion:

a) designate the animal an Emotional Support Animal;
b) designate the animal an Emotional Support Animal with such designation being subject to the owner fulfilling conditions that the Bylaw Services Manager deems necessary to mitigate the risk of disturbing noise, odour and other nuisances that arise from the keeping of the animal; or
c) reject the application.

6) It is a condition of every designation of an Emotional Support Animal that:

(a) the owner will only keep the Emotional Support Animal at the residential address stated on the application; and
(b) the designation cannot be transferred to another animal upon the death of the Emotional Support Animal or otherwise.

7) The Bylaw Services Manager may cancel the designation of an Emotional Support Animal if the owner fails to uphold a condition of the designation or otherwise contravenes this Bylaw.

8) a person may request:

(a) a change to the residential address at which an Emotional Support Animal will be kept; or
(b) to transfer the designation to a new animal;
by making a new application under this Bylaw.

17. **BEEKEEPING**

1) The use of land, buildings or other premises for beekeeping is subject to the provisions of the Zoning Bylaw No. 3630, as amended from time to time.

2) No person shall keep bees on their property except in an apiary registered under the *Bee Act* as amended from time to time.

3) Every person who owns, possesses or keeps bees and every person on whose property bees are kept shall:

a) provide an adequate water source to bees;

b) maintain the bees in such a condition so as to reasonably prevent undue swarming or aggressive behaviour; and

c) maintain the beehives so as to deter and be inaccessible to wildlife.

18. **OFFENCE**

1) Any person who contravenes any provision of this Bylaw commits an offence and shall be liable upon conviction to a fine of not more than $10,000 and not less than $200 plus any other penalty or order that may be imposed pursuant to the *Community Charter* or the *Offence Act*, including an order to pay the cost of prosecution.

2) Each day that a contravention of this Bylaw continues shall constitute a separate offence.

19. NOTICE

1) A notice that was issued under section 15 of Animal Control Bylaw, 2009, No. 3670 in relation to a Dog is deemed to be a notice under section 10.1 and a notice under section 10.11 of this Bylaw for that Dog.

20. **REPEAL**

1) The "Animal Control Bylaw, 2009, No. 3670" and the "City of Port Coquitlam Public Health Bylaw, 1969, No. 908" are repealed.

Read a first time by the Municipal Council this 13th day of June, 2017.

Read a second time by the Municipal Council this 13th day of June, 2017.

Read a third time by the Municipal Council this 13th day of June, 2017.

Rescinded third reading this 27th day of June, 2017.

Re-read a third time, as amended by the Municipal Council this 27th day of June, 2017.

Adopted by the Municipal Council of the City of Port Coquitlam this 11th day of July, 2017.

G.Moore _____
Mayor

G. Joseph _____
Corporate Officer

Appendix 5: Property Maintenance Bylaw 2945 (pages 1-2)

THE CORPORATION OF THE CITY OF PORT COQUITLAM

BYLAW NO. 2945

A Bylaw to establish required standards for the maintenance of real property and to prohibit littering.

Whereas Section 932 (g), (h), (h.1), (i), (k) and (l) of the Municipal Act empowers Council to enact regulations governing the appearance and maintenance of property;

Now therefore the Municipal Council of The Corporation of the City of Port Coquitlam, in open meeting assembled, enacts as follows:

1. This Bylaw may be cited for all purposes as the "Property Maintenance Bylaw, 1994, No. 2945".

2. In this Bylaw:

   "**Bylaw Enforcement Officer**" means every person employed by the City for the purpose of enforcement of the City's bylaws and includes the peace officers of the Royal Canadian Mounted Police.

   "**Building Inspector**" means every person employed as a building inspector or Director of Building Permits and Inspections.

   "**Unsightly**" includes but is not limited to:

   (a) an outdoor accumulation of building material on any property other than premises identified in a business licence for building material sales or storage, or premises where construction is in progress pursuant to a valid building permit;

   (b) an accumulation of motor vehicle parts or all or part of any motor vehicle which is not:

   (i) registered and licenced in accordance with the Motor Vehicle Act; or
   (ii)capable of movement under its own power; and

   (c) any accumulation of filth, discarded materials or rubbish of any kind, including but not limited to ashes, dead animals, paper, cardboard, tin cans, leaves, wood, bedding, furniture, crockery, glass, bags and appliances.

3. No owner or occupier of real property shall allow that property to become or remain unsightly.

4. No person shall cause or permit water, rubbish or noxious, offensive or unwholesome matter to collect or accumulate around their premises.

5. No person shall deposit or throw bottles, broken glass or other rubbish in any open place.

6. No person shall place graffiti on walls, fences or elsewhere on or adjacent to a public place.

7. Every owner and occupier of real property shall eliminate or reduce the emission of dust from that property into the atmosphere such that no airborne dust travels beyond any boundary of the property. Without limiting the generality of this section, during excavation or construction on property, dust shall be controlled by the application of water or other dust control agents.

8. Every owner and every occupier of real property shall:

   (a) remove from the property every unsightly accumulation of filth, discarded materials, rubbish or graffiti;

   (b) clear the property of brush, noxious weeds, wild grass and other untended growths; and

   (c) prevent infestation of caterpillars and other noxious or destructive insects and shall clear the property of such caterpillars and insects.

9. Where any person fails to comply with Section 8 of this Bylaw, the Bylaw Enforcement Officer or Building Inspector may give written notice to that person to comply within a specified time from the date of the notice, and in the event of failure to comply with the notice within the specified time, the City may by its employees or contractors, at reasonable times and in a reasonable manner, enter the property and remedy the offending conditions at the expense of the person who has failed to comply.

10. The cost of effecting removal pursuant to Section 9 of this bylaw shall be due and payable by the person in default immediately upon removal, and if such costs remain unpaid on December 31 in the year the removal was done, the costs shall be added to and form part of the taxes payable on the property as taxes in arrears.

11. Any Bylaw Enforcement Officer or Building Inspector may at all reasonable times enter on property to ascertain whether the regulations and directions of this bylaw are being observed.

12. If any portion of this bylaw is held to be invalid by a Court of competent jurisdiction, such invalidity shall not affect the validity of the remaining portions of this bylaw.

13. Any person who violates any of the provisions of this bylaw, or who neglects or refrains from doing anything required to be done by this bylaw, is guilty of an offence and on summary conviction therefor shall be liable to a fine not exceeding two thousand dollars ($2,000.00), and the costs of the prosecution and every day during which there is an infraction of this bylaw, shall constitute a separate offence.

2021 Q1 Financial Variance and Forecast Report

RECOMMENDATION:

None

REPORT SUMMARY

This report provides financial information about the City's operating activities for the first three months of 2021 and compares forecasted annual and actual first quarter results to the 2021 amended budget and the prior year.

The year-end ongoing operating forecast results include a negative revenue variance of $4,386,000 from budget to actual and a positive expense variance of $3,536,000 from budget to actual. The year-end forecasted net result of operating revenues after expenses is $20,448,000 ($849,000 less than budget). The primary driver of the variances is decreased revenues and expenses as a result of reduced Recreation programming and facility operations as a result of COVID-19, in addition to lower investment income than budgeted.

BACKGROUND

In order to provide Committee of Council an overview of the ongoing financial activities of the City, staff measure budget to actual revenue and expense performance while also forecasting expected annual operating results. This activity helps provide staff and Committee of Council appropriate oversight of the approved financial plan throughout a given time period.

The issues surrounding COVID-19 have been prominent around the world since early 2020. Provincial public health orders related to the pandemic have limited the City's ability to provide certain budgeted programs and services, both relating to revenues and expenses. The financial impacts of COVID-19 have largely been mitigated and managed by the City through the temporary closure of facilities and reducing certain expenses, primarily impacting the Recreation department. As a result, the 2021 Recreation forecasted results compared to budget show significantly reduced revenues and expenses.

On November 2, 2020, the provincial government advised that the City would be receiving a $5,622,000 Safe Restart Grant. This funding is intended to be used to ensure local governments can continue to deliver the services people depend on in their communities. Some of the funds were utilized in 2020 and the remaining balance is anticipated to be used in 2021 to offset lost sales of service and penalties and fines revenue and increased COVID-19 related expenses.

DISCUSSION

For 2021, budgeted operating revenues less expenditures were expected to generate $21,298,000 in funds for transferring to reserve accounts and to repay long term debt principle. Revenue reductions are forecast in the following areas: Recreation sale of service revenue as previously noted, lower investment income due to reduced rates of return in 2021, decreased contribution revenue due to lower major road network funding from Translink and lower penalty revenue due to the reduction of late penalties for 2021. Positive variances offsetting these reductions are permits and licenses fees trending higher than budget.

These reductions in revenue are offset to a degree by expense reductions in the Recreation department. Additional favourable budget to forecast expenses are projected in the Common Services and Development Services departments and the Water and Sewer utilities.

	2021 Budget	2021 Forecast	Budget Variance	Forecast as % of Budget	Actual Q1 results	Actual % of Budget
Operating Revenues	$114,358,191	$109,972,347	$(4,385,844)	96.16%	$22,712,363	19.86%
Operating Expenses	93,060,341	89,523,977	3,536,364	96.20%	15,373,081	16.52%
Excess of Revenue Over Expenses[1]	**$21,297,850**	**$20,448,370**	**$(849,480)**	**96.01%**	**$7,339,282**	**34.46%**

[1] Excess of revenues over operating expenses relates to funds collected to transfer to reserves and funds collected to pay off debt principle.

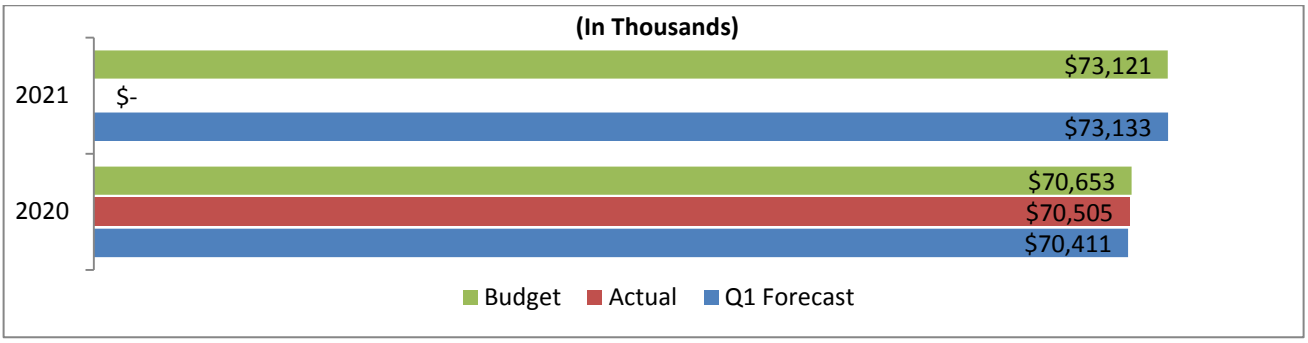
Revenues by Source

Total operating revenues for 2021 are forecasted at $109,972,000 and would result in a $4,386,000 or a 3.84% unfavourable variance from budget at year-end, largely the result of decreased Recreation sale of service revenue. Additionally, the rates of return on the City's investment balance has decreased compared to budget, the 2021 major road network funding to the City is expected to be lower than budget and the elimination of the first penalty for late property tax will lower the revenue compared to budget. Permits and licenses revenue is expected to be greater than planned due to building and development engineering activity being greater than anticipated..

Explanations have been provided for annual variances that vary from the budget by greater than $75,000 and 5%. These summaries also include supporting graphs which show 2021 and 2020 budget, Q1 actuals and forecasts for comparative purposes.

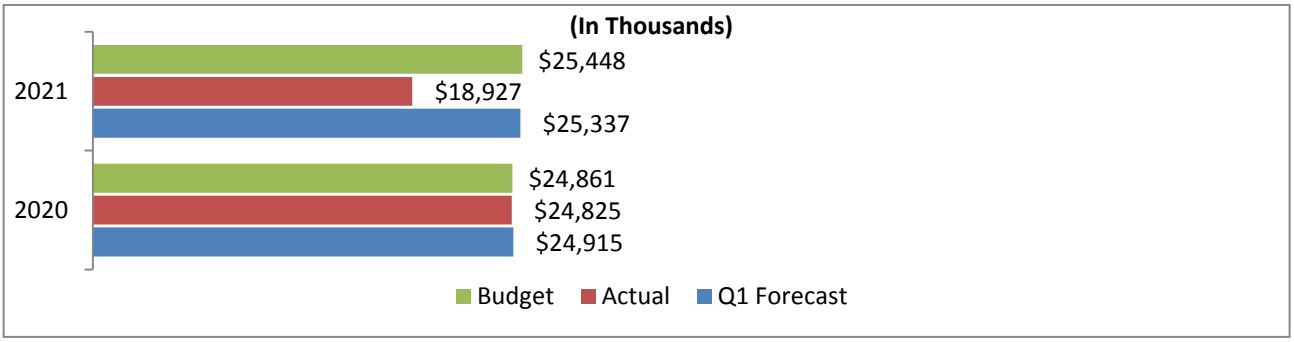
	2021 Budget	2021 Forecast	Budget Variance	Forecast as % of Budget	Actual Q1 results	Actual % of Budget
Taxation and Other Levies	$73,120,900	$73,132,700	$11,800	100.02%	$-	0.00%
Utility Charges	25,447,600	25,337,050	(110,550)	99.57%	18,926,649	74.37%
Sale of Services	7,831,491	4,607,057	(3,224,434)	58.83%	908,641	11.60%
Contributions	2,023,100	1,736,827	(286,273)	85.85%	260,060	12.85%
Permits and Licenses	2,707,500	2,974,260	266,760	109.85%	1,780,333	65.76%
Investment Income	2,578,300	1,679,305	(898,995)	65.13%	819,253	31.77%
Penalties and Fines	494,000	314,600	(179,400)	63.68%	-	0.00%
Other Revenue	155,300	190,548	35,248	122.70%	17,427	11.22%
Total Operating Revenue	**$114,358,191**	**$109,972,347**	**$(4,385,844)**	**96.16%**	**$22,712,363**	**19.86%**

Taxation and Other Levies



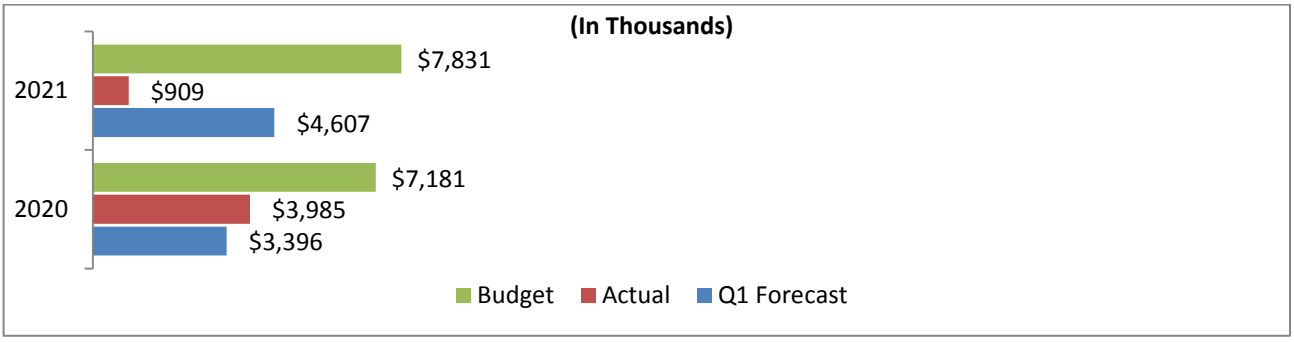
No significant variances anticipated.

Utility Charges



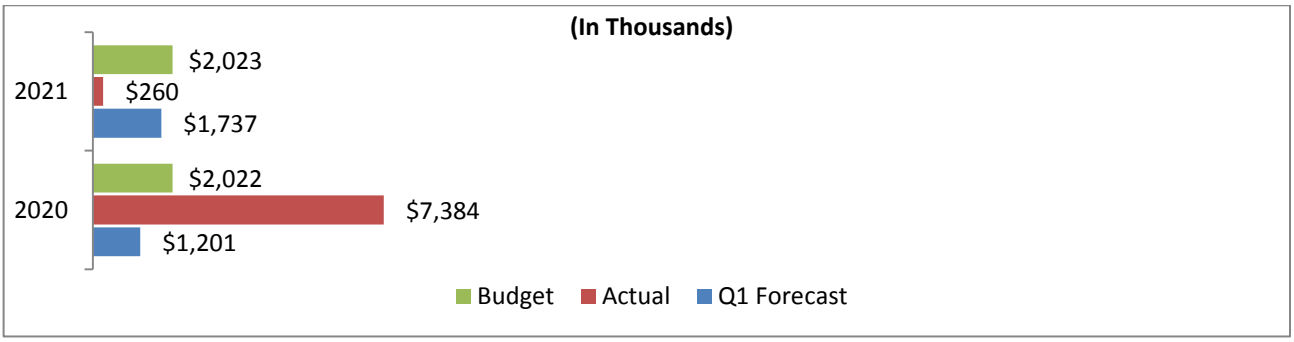
No significant variances anticipated.

Sales of Services



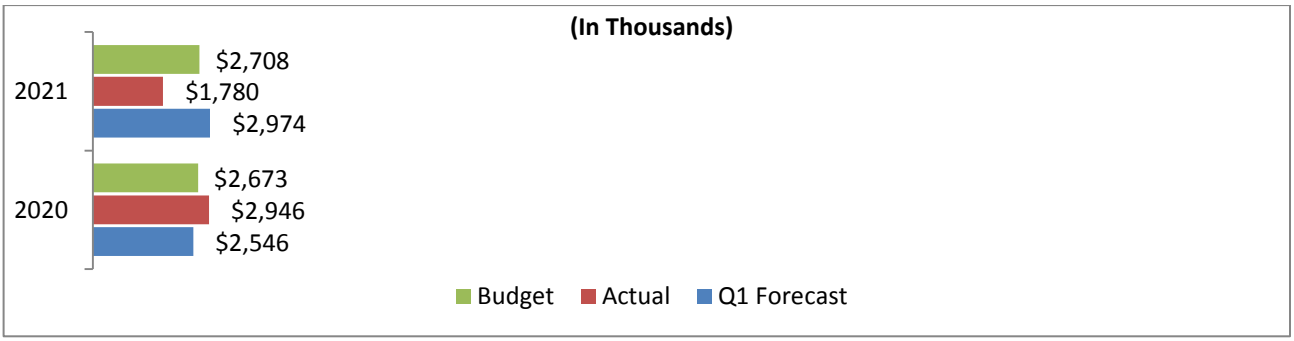
The unfavourable variance is primarily due to the pandemic driven facility closures and subsequent reductions in pre-COVID-19 programming at the City's recreation facilities. The Recreation department's 2021 revenue budget is $4,981,000 and Recreation revenue for 2021 is forecasted at $1,596,000.

Contributions



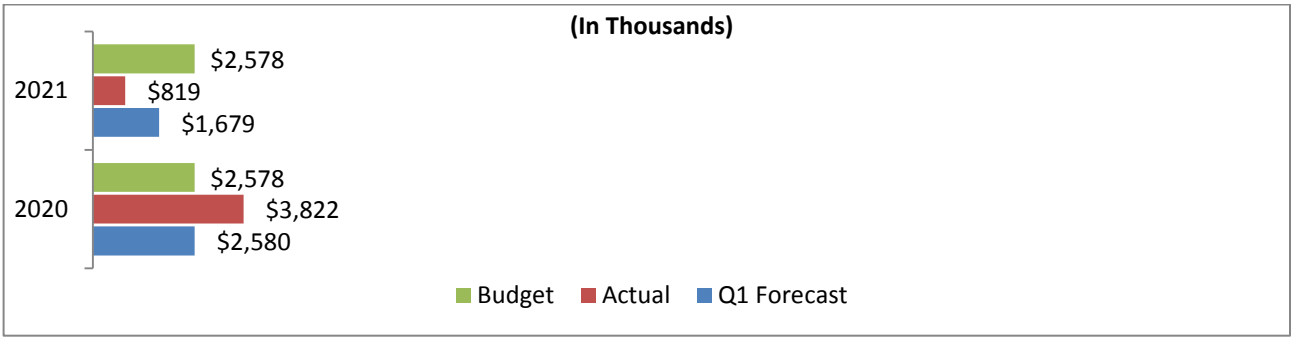
The unfavourable variance is the result of lower Translink contributions to the major road network (MRN) reserve compared to budget. In years where MRN operating costs exceed the annual TransLink contribution, the City can draw from the MRN reserve to fund these excess costs. As these funds are transferred to reserves for specified purposes, they do not impact the available surplus.

Permits and Licenses



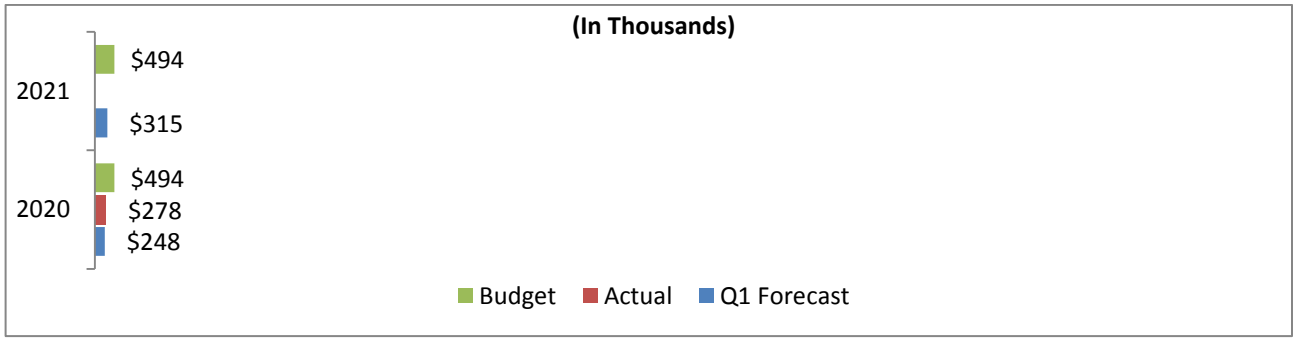
The positive variance is due to higher than expected building inspection fees ($266,000) and increased development engineering activity compared to budget ($15,500).

Investment Income



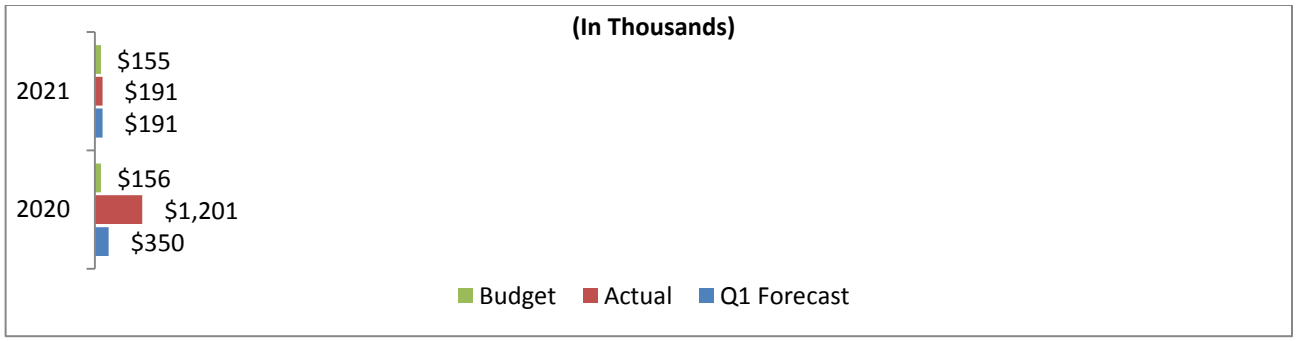
The unfavourable variance is due to the decrease in rates of return in the market due to the continuing effects of COVID-19. Additionally, it is anticipated that collection of property tax will be delayed as a result of the elimination of the first penalty on late payment, decreasing the City's investment asset base for a portion of the year.

Penalties and Fines



The unfavourable variance is due to the Council decision to eliminate the first 5% penalty on late property tax payments.

Other Revenue



The favourable variance is due to the receipt of restricted funds received into the parking reserve ($60,000) as a result of development applications. As these funds are transferred to reserves for specified purposes, they do not contribute to the available surplus.

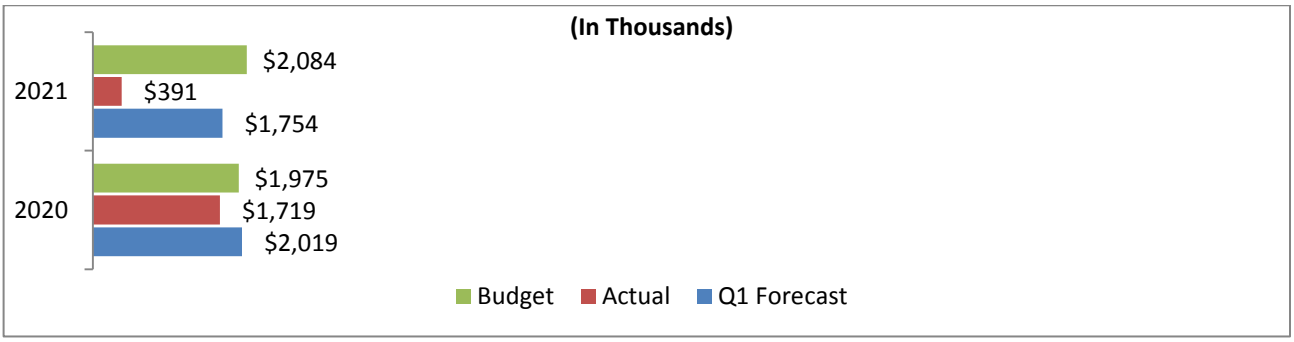
Expenses by Function

Overall, operating expenses are forecasted to be $3,536,000 less than budget for the year. The primary driver of the favourable variance is the reduction in Recreation department expenses related to the closure of recreation facilities and reduction in programming. Additional favourable budget to actual expense results are projected in the Common Services and Development Services departments and the Water and Sewer utilities. The expense reductions are partially offset by increased forecasted Fire and Emergency Services payroll costs and Engineering and Public Works expenses compared to budget.

Explanations have been provided on annual variances that vary from the budget by greater than $75,000 and 5%. These summaries also include supporting graphs which show 2021 budget, Q1 actuals and forecasts and 2020 budget, Q1 actuals and forecasts for comparative purposes.

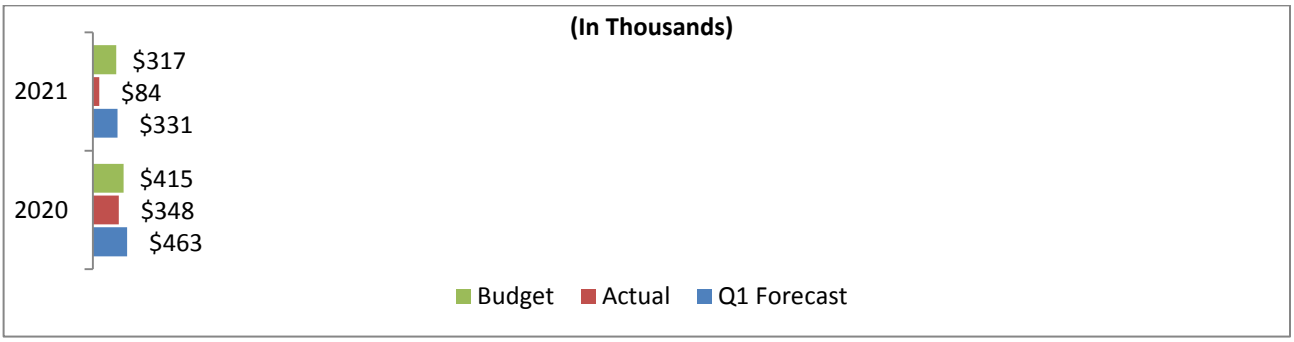
	2021 Budget	2021 Forecast	Budget Variance	Forecast as % of Budget	Actual Q1 results	Actual % of Budget
Common Services	$2,083,550	$1,753,581	329,969	84.16%	$390,721	18.75%
Office of the CAO	317,300	331,400	(14,100)	104.44%	83,945	26.46%
Corporate Support	4,549,650	4,519,560	30,090	99.34%	1,217,726	26.77%
Finance	2,379,000	2,360,734	18,266	99.23%	608,505	25.58%
Human Resources	1,188,250	1,170,670	17,580	98.52%	314,271	26.45%
Engineering & Public Works	10,275,831	10,390,520	(114,689)	101.12%	2,597,931	25.28%
Recreation	16,191,260	13,153,974	3,037,286	81.24%	2,489,984	15.38%
Police Services	16,555,300	16,555,300	-	100.00%	727,000	4.39%
Fire & Emergency Services	13,374,300	13,621,968	(247,668)	101.85%	3,223,989	24.11%
Development Services	3,614,000	3,560,520	53,480	98.52%	785,068	21.72%
Solid Waste Operations	4,464,300	4,457,800	6,500	99.85%	841,534	18.85%
Water Operations	10,028,200	9,683,100	345,100	96.56%	1,865,422	18.60%
Sanitary Sewer Operations	8,039,400	7,964,850	74,550	99.07%	226,985	2.82%
Total Operating Expenses	**$93,060,341**	**$89,523,977**	**$3,536,364**	**96.20%**	**$15,373,081**	**16.52%**

Common Services



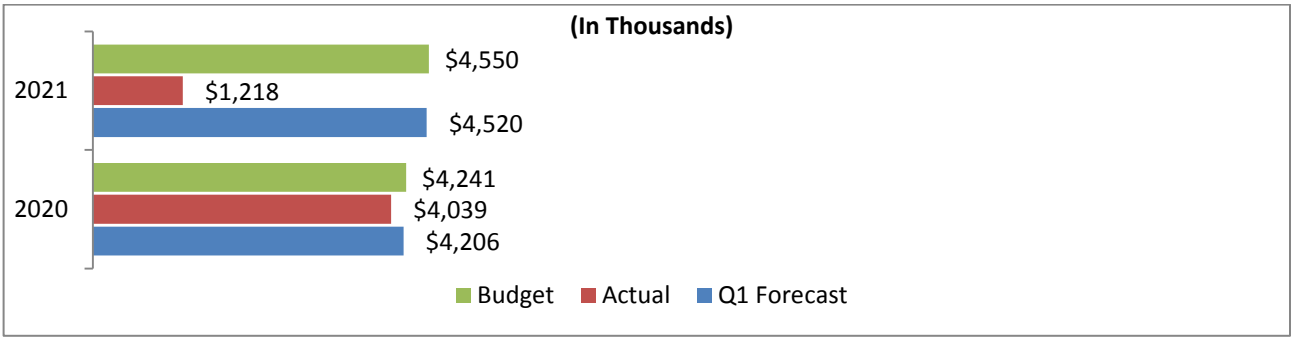
The favourable variance is due to the 2021 expected earnings on the principle payments the City has made on its debt which offset the annual interest expense.

Office of the CAO



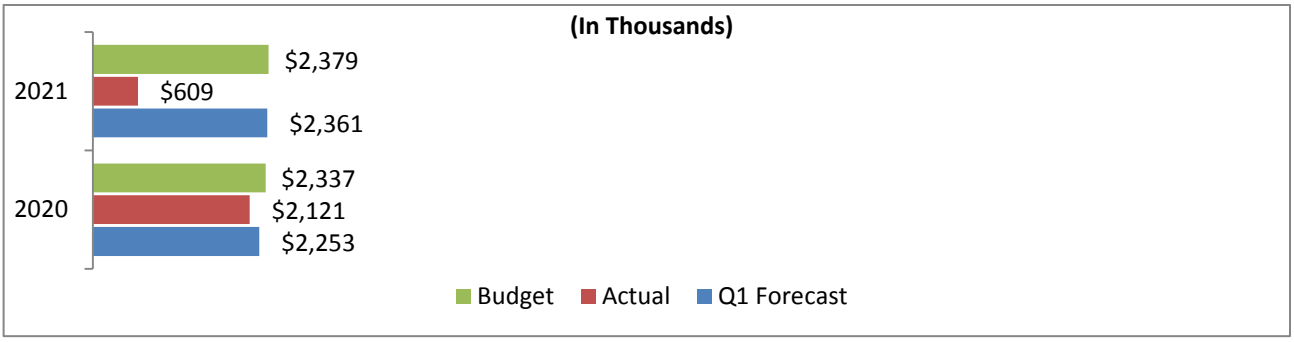
The unfavourable variance is due to the Community Ambassador program ($30,000) that was launched in the immediate aftermath of the COVID-19 pandemic to provide information in the city hall entrance both during the closure and during property tax payment time. Costs for this program were tracked through the CAO's office. The ambassadors were City staff redeployed from other departments, namely Recreation, that have had reduced staffing as a result of COVID 19. As a result, these were not 'new' costs, but rather costs transferred from elsewhere in the City's operations.

Community Safety & Corporate Support



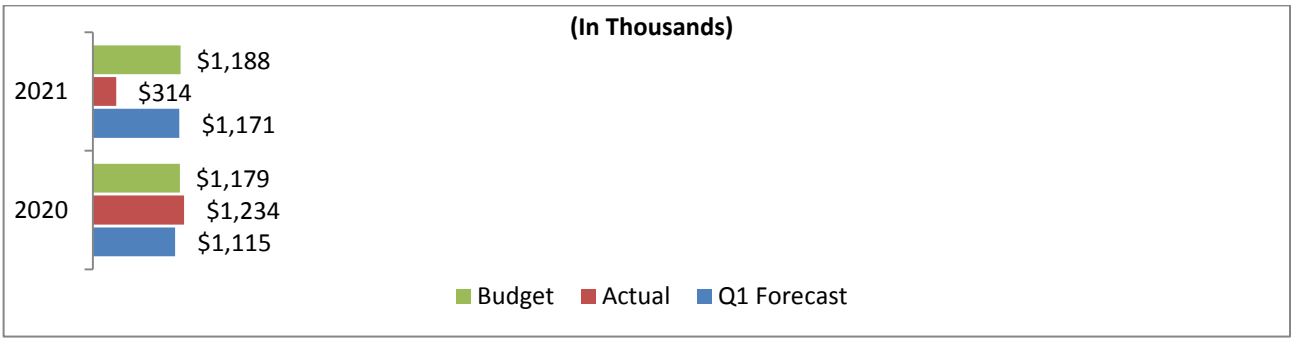
No significant variances anticipated.

Finance



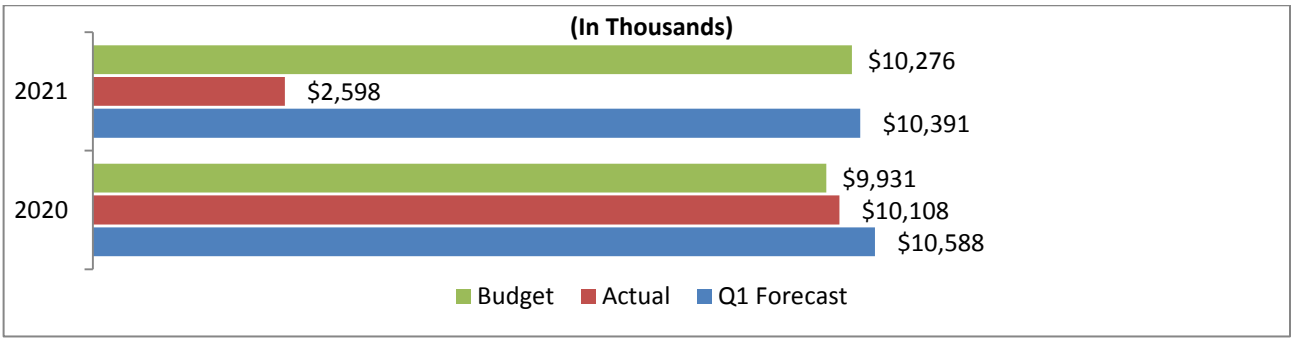
No significant variances anticipated.

Human Resources



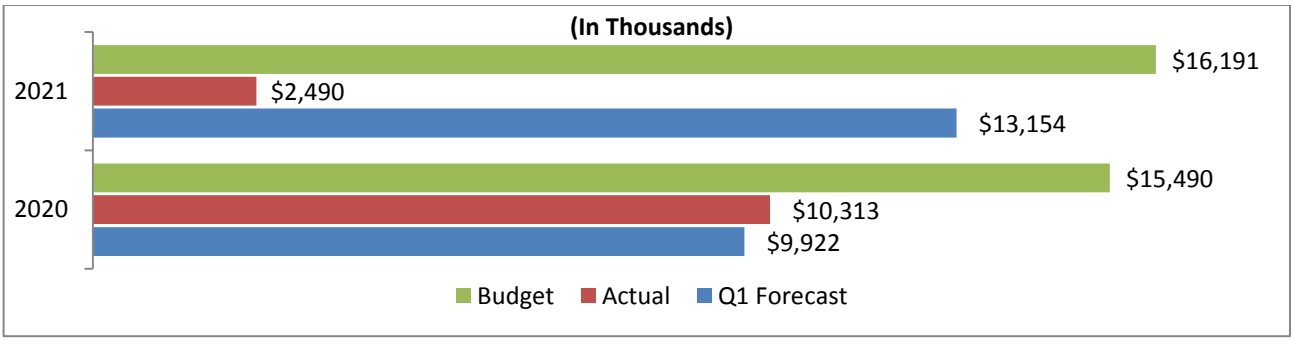
No significant variances anticipated.

Engineering and Public Works



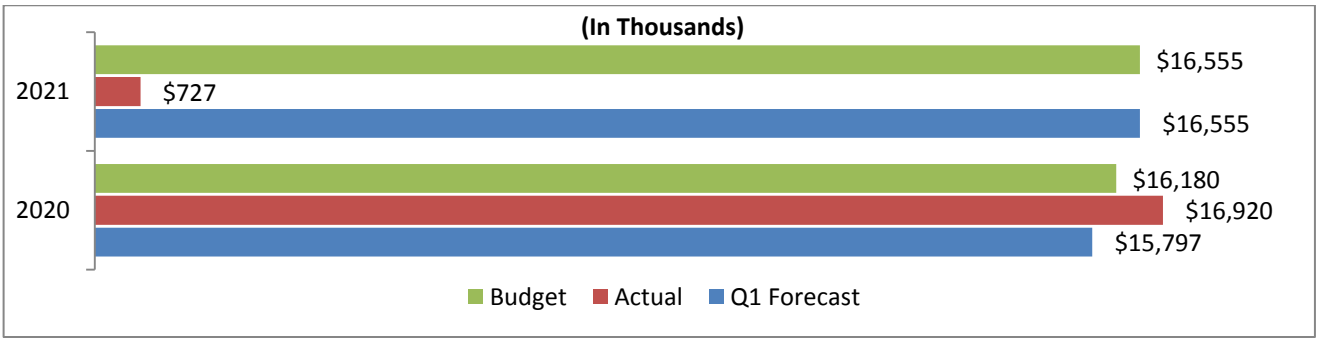
The unfavourable variance is mainly attributed to higher than anticipated forecasted interments at the Cemetery ($150,000). Increased Cemetery interment costs are offset by increased revenues. Additionally, there are certain actual costs greater than budget due to increased vegetation maintenance costs (inspections, pruning and removals) to sustain the health of the urban forest ($88,000). These unfavourable variances are offset by a number of smaller favourable variances within the department, including lower forecasted snow and ice removal costs as a result of a mild early 2021.

Recreation



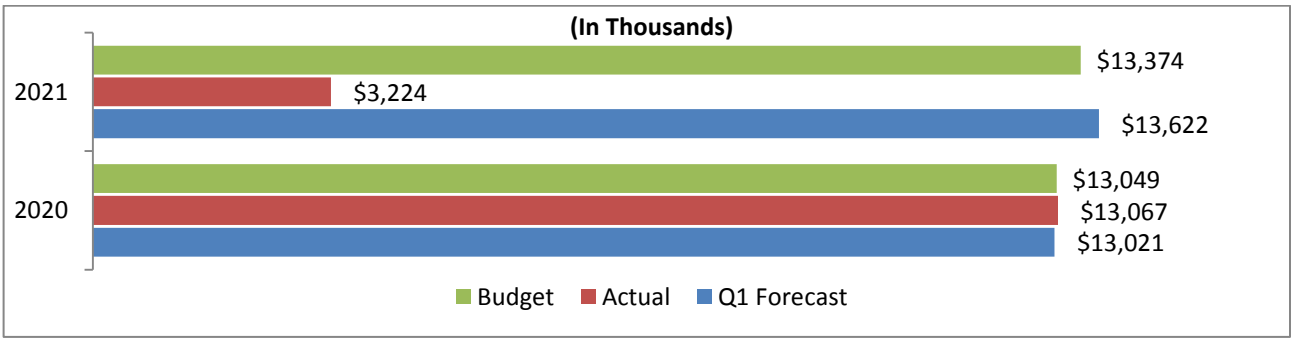
The significant favourable variance of $3,037,000 is due to the continued impact of closing the City's recreation facilities in the early spring of 2020 as a result of COVID-19. These closures are projected to result in significant reductions in costs as the majority of Recreation programming has been put on hold. It is expected that certain programs and facilities will restart over 2021, and that some areas of the Port Coquitlam Community Centre Phase 2 will open in the fall, which will increase expenses compared to 2020.

Police Services



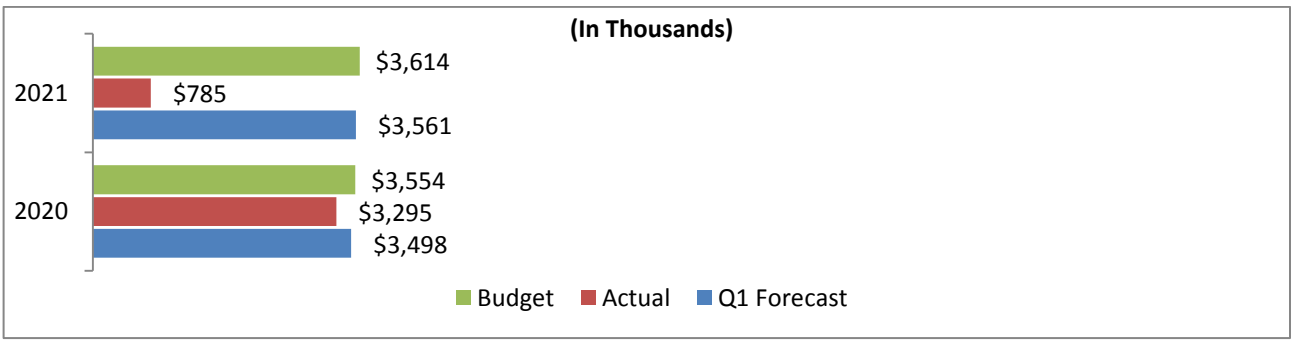
No significant variances anticipated.

Fire & Emergency Services



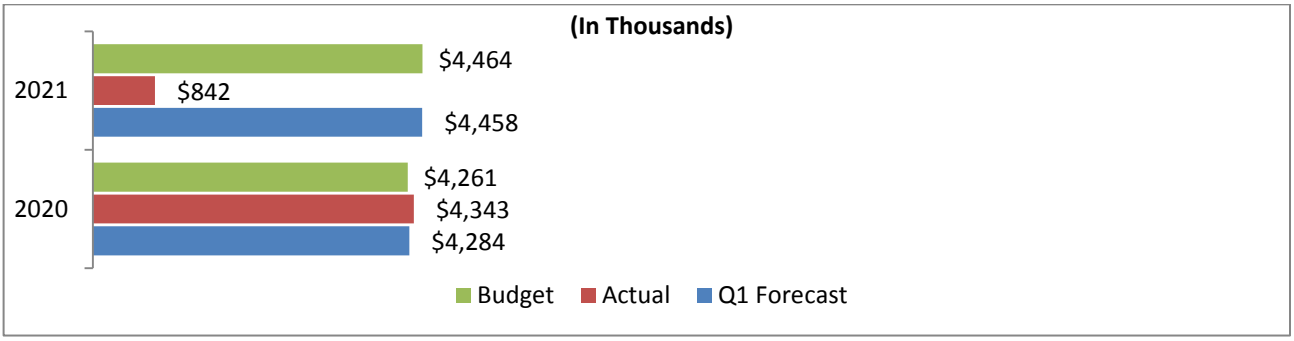
Forecasted negative variance due to the impact of COVID-19 on staffing required to maintain 24/7 operations.

Development Services



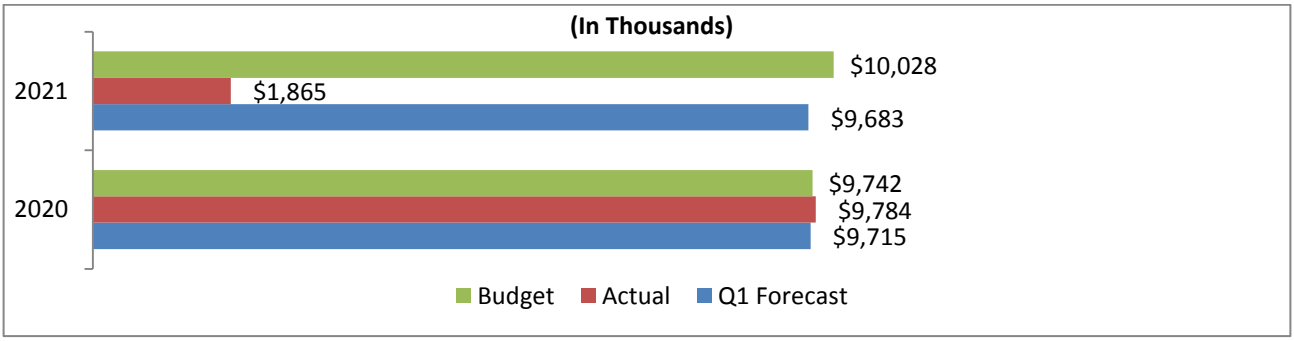
No significant variances anticipated.

Solid Waste Operations



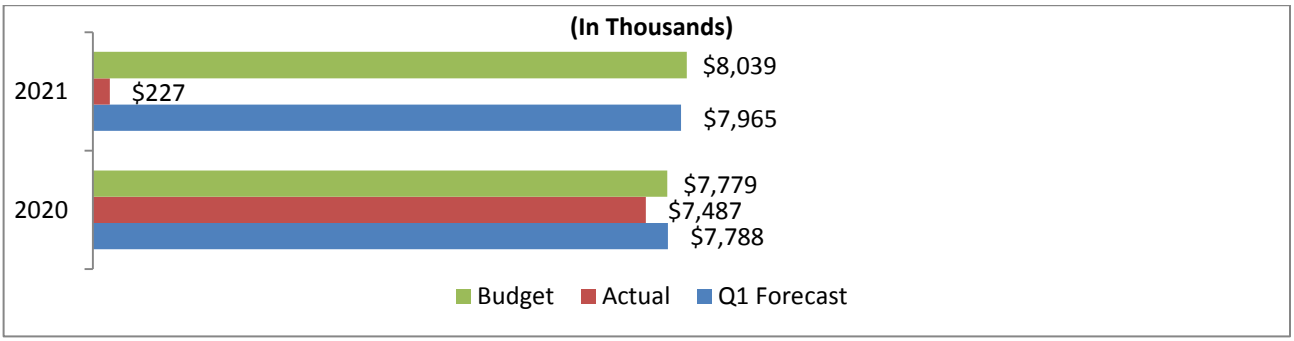
No significant variances anticipated.

Water Operations



No significant variances anticipated.

Sewer Operations



No significant variances anticipated.

FINANCIAL IMPLICATIONS

This report and the forecast information assume that City activities as of May 1, 2021 will continue for the remainder of 2021 with some expected Recreation department programming and facility reopening over the course of the year. With that assumption, the forecasted financial results project reductions in both revenues and expenses, and a projected net negative forecast to budget variance overall.

It is anticipated that with pools, parks and day camp operations being the focus of service delivery for the summer, and a more fulsome restart of recreation operations delayed to the fall, the decrease in sale of service revenue will be offset by decreased operating costs. As any additional restart plans are evaluated, their cost impacts will be considered along with the value of the service to the community, as well as potential funding sources. The balance of the Safe Restart Grant not utilized in 2020 may be transferred from reserve to offset any shortages.

Staff will continue to monitor ongoing operating results and revise forecasts as additional information is obtained, the impacts of the pandemic continue to be realized, and as restart plans are implemented.

In addition to the budget impacts of COVID-19, staff will be monitoring the cash flow impacts resulting from the elimination of the first property tax penalty.

Lead author(s): Chris Adams-Brush