GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT (GVS&DD) BOARD OF DIRECTORS

SPECIAL BOARD MEETING
Thursday, September 2, 2021
1:00 P.M.
28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia

Purpose: To consider an option to look at a 30-year amortization term for the North Shore's share of the North Shore Wastewater Treatment Plant Project only.

Membership and Votes

A G E N D A[1]

1. ADOPTION OF THE AGENDA

1. September 2, 2021 Special Meeting Agenda
That the GVS&DD Board adopt the agenda for its special meeting scheduled for September 2, 2021 as circulated.

2. PRESENTATION AND DISCUSSION

2.1. Debt Amortization Options for the North Shore Wastewater Treatment Plant *pg. 2*
Designated Speakers: Jerry Dobrovolny, Commissioner and Dean Rear, Chief Financial Officer/General Manager of Financial Services

3. ADJOURNMENT OR CONCLUSION
That the GVS&DD Board adjourn/conclude its special meeting of September 2, 2021.

[1] *Note: Recommendation is shown under each item, where applicable. All Directors vote unless otherwise noted.*

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To: GVS&DD Board of Directors

From: Dean Rear, General Manager/CFO, Financial Services

Date: August 25, 2021 Meeting Date: September 2, 2021

Subject: **Debt Amortization Options for the North Shore Wastewater Treatment Plant**

Attached for Board consideration is a background paper to support the Board Workshop discussion on options for the amortization of debt for the North Shore Wastewater Treatment Plant. The paper includes summary information on several topics including:

- Current Policy
- Metro Vancouver Borrowing in Practice
- Debt Amortization Periods for Other Entities
- Alternate Amortization Calculations for the North Shore Wastewater Treatment Plant

Attachments

1. Board Budget Workshop Background Paper – September 2, 2021

Board Budget Workshop
Background Paper

Debt Amortization Options for the North Shore Wastewater Treatment Plant

September 2, 2021

Prepared by: Financial Planning and Operations

4730 Kingsway, Burnaby, BC, V5H 0C6
www.metrovancouver.org

September 2021

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1.0 About Metro Vancouver

Metro Vancouver is a diverse organization that plans for and delivers regional-scale utility services. It also regulates air quality, plans for urban growth, manages a regional parks system and provides affordable housing.

The governance framework under which Metro Vancouver operates consists of four separate legal entities and each with specific legislation. These include:

- The Greater Vancouver Regional District (GVRD)
- The Greater Vancouver Water District (GVWD)
- The Greater Vancouver Sewerage and Drainage District (GVS&DD)
- Metro Vancouver Housing Corporation (MVHC)

Ensuring value is achieved for ratepayers over the long term requires an adherence to sound fiscal policies that balance equity, affordability, and continuous improvement through responsible fiscal management.

2.0 Introduction

During the April 8, 2021 Board Budget Workshop, the Board directed staff to fully evaluate a 30-year debt amortization for the North Shore Wastewater Treatment Plant. Further, at the May 28, 2021 meeting of the GVS&DD Board the following motion was passed:

> *That the GVS&DD Board:*
>
> *a) direct staff to consider an option to look at a 30-year amortization term for the North Shore's share of the North Shore Wastewater Treatment Plant Project only; and*
>
> *b) direct staff to organize a Board workshop on the amortization terms.*

This background paper provides information to help the Board consider debt amortization term options for funding the North Shore Wastewater Treatment Plant project.

A glossary providing definitions of terms used in this paper can be found at the end.

3.0 Current Policy

In 2018, the Metro Vancouver Board adopted a Financial Management Policy that established the principles to guide decision-making for funding operating and long-term capital expenditures for all four legal entities.

Objective of Current Policy:
To strike a balance between ratepayers "paying-as-you-go" with the need to secure long-term financing for expenditures that could otherwise create a significant financial burden and rate volatility for residents.

Current Requirements:
The current Financial Management Policy outlines three specific requirements that Metro Vancouver must adhere to with respect to debt:

- Long-term debenture financing will be amortized over 15 years
- Long-term debt funding will only be used to fund capital expenditures
- To maintain the proportionality of pay-as-you-go funding to annual capital expenditures, pay-as-you-go funding will be gradually increased over time such that the amount of annual revenues required to pay for debt service costs does not exceed 40 per cent.

What macroeconomic data is considered for Metro Vancouver?

The financial operations within Metro Vancouver are complex. In addition to considering local economics and our own service levels, macroeconomic data must also be considered in order to ensure that Metro Vancouver mitigates its financial impacts on the rate payers over time. Key economic data includes:

- Interest rate assumptions
- Annual rate of return on investments
- Inflation on construction projects
- Regional growth

Dig Deeper

The Financial Management Policy can be found for review on the Board network web page at

https://directors.metrovancouver.org/resources/policies/Pages/default.aspx

4.0 Policy Reviews Underway

Metro Vancouver is undertaking a review of Board-level policies to ensure transparency and effective governance for financial management of the organization.

Financial policy reviews include:

- Updates to the current Financial Management Policy
- Consideration of additional policies on financial planning

This policy review work will include the financing practices of major utilities and those that develop rates in a rate-regulated environment. The major utilities —water, liquid waste, and solid waste — make up 84% of Metro Vancouver's operations. When ready, a full set of findings and recommendations will be provided for comment to the Regional Finance Advisory Committee. Updates will be provided to the Board through the Performance and Audit Committee and the Finance and Intergovernment Committee.

Amortization Overview
Amortization is the process of paying off debt, including principle and interest, over time. Typically, the longer period of amortization, the lower the annual payments but the higher overall interest over time. This tradeoff is the crux of the amortization debate. Generally speaking, larger dollar amounts are amortized over a longer period of time to balance annual affordability against interest costs (consider home mortgage periods vs vehicle loans).

Key findings from a literature review on amortization
- The current international trend is to use a debt amortization period of 15 to 20 years for public sector entities and 20 to 30 years for utilities.
- A shorter amortization period does not align with the average life of most large infrastructure assets, but once the debt is repaid, a shorter amortization period can support a plan to balance debt and fund reserves that will enable infrastructure replacement. Once the debt has matured, the funds used to repay the debt are redirected to the funding of reserves.
- Debt service levels for an organization should be defined within a financial management policy.
- There are a number of common metrics relative to the amount of debt that is considered appropriate for an organization. The following metrics are most commonly used in the municipal sector:
    - debt service costs should be 20% or less than total expenditures
    - 70% of debt is to be repaid within 15 years
    - the debt to pay-as-you go ratio should be 80/20
    - total variable rate debt should be 20% or less than total debt

5.0 Metro Vancouver Borrowing in Practice

With the size, duration and complexity of its capital program, Metro Vancouver is a "net" borrower, issuing debt for its respective entities based on requirements after other funding sources such as contributions to capital ("pay-as-you-go") or grants have been applied. Progress on capital projects and their related cash flow is monitored closely and the amount to borrow is determined based on meeting those cash flow needs. Metro Vancouver typically borrows twice per year through the Municipal Financing Authority of BC (MFA) as part of their spring and fall issues.

Because the debt funding is obtained in the form of a bond, payments for interest are made semi-annually, with payments into a sinking fund (the principal) commencing one year after issue. Therefore, the full cash flow impact of a borrowing is not fully felt until the year following the bond issue. Bond issues are typically for a 10-year term. This means that in a 15-year borrowing period, there is a rate reset for the final five years.

The debt servicing costs, including both the sinking fund (the principle) and interest are built into the overall budget for the borrowing entity (such as GVWD or GVS&DD). Typically, when bonds have matured, Metro Vancouver takes budget set aside for debt servicing and rolls it into the annual contribution to capital for "pay-as-you-go" funding. This reduces future borrowing needs and provides funding for annual maintenance and replacement costs for infrastructure.

From 2010 to 2020, there was a total of $559.2M rolled into the annual contribution to capital for "pay-as-you-go" funding to reduce future borrowing needs (see Table A). This will result in an estimated interest saving of $249.0M from 2010 to 2035.

The total contribution to capital is much higher than the total matured debt payment due to the contribution to capital being the *cumulative* matured debt payments. Once a bond has matured, funds historically utilized for debt servicing are redirected to fund annual contribution to capital. Any future bond maturities will have the debt servicing added to the base. This helps to build up the "pay-as-you-go" funding while managing the fluctuations to household impact from year to year.

In simple terms, matching the cash flow timing to the service life of a large infrastructure asset is one way an organization can balance inter-generational equity for paying for that asset. When service capacity exceeds payment period, the asset may be paid for in advance of all citizens receiving benefit. The opposite is true when payment terms exceed the useful life of the asset.

TABLE A: CONTRIBUTION TO CAPITAL FOR "PAY-AS-YOU-GO" FUNDING

Total matured debt payments (2010-2020)	$76.7 million
Total contribution to capital cumulative (2010-2020)	$559.2 million
Total estimated interest savings (2010-2035)	$249.0 million

The Municipal Financing Authority of BC (MFA)

The MFA pools the borrowing and investment needs of BC communities through a collective structure and provides long-term financing, short-term financing, equipment financing, investment management, and other financial services to communities and public institutions in BC, including Metro Vancouver.

6.0 Debt Amortization Period Comparison

The average debt amortization period adopted by provincial authorities range between 13.4 and 29.4 years (see Table B).

Provinces that borrow on behalf of their utilities have a higher average term of 19.4 years compared to 16.8 years for those that do not include utilities. The terms vary significantly year over year, driven by the project and asset type. Hydro-Quebec, the only public utility in Canada that is formally backed by the province and issues its own debt, has an average debt term of 29.4 years, with annual average term ranging from 3.2 to 38.9 years.

The 15-year borrowing period for Metro Vancouver falls below the Municipal Financing Authority of BC's overall average debt term of 18.5 years. This average becomes 21.1 years if Metro Vancouver is excluded.

On the private sector side, a comparable utility is American Water Works which provides drinking water and waste water systems to approximately 14 million people in 46 US states. The company holds debt with terms ranging from 10 to 30 years, with a weighted average term around 20 years.

TABLE B: AVERAGE DEBT AMORTIZATION PERIOD ADOPTED BY PROVINCIAL AUTHORITIES

	2016	2017	2018	2019	2020	2021	Average
Provinces without utility borrowing							
Alberta	15.7	23.9	18.5	14.1	20.9	23.2	19.4
Nova Scotia	9.7	5.7	17.9	18.3	9.6	19.2	13.4
Ontario	17.3	16.9	15.5	18.1	14.9	16.8	16.6
Quebec	17.0	15.4	17.1	18.8	17.7	21.4	17.9
	15.0	15.5	17.3	17.3	15.8	20.2	16.8
Provinces that borrow on behalf of utilities							
British Columbia	15.6	25.7	22.6	13.8	16.6	19.5	19.0
Manitoba	17.1	23.6	16.9	27.1	22.5	31.6	23.1
New Brunswick	13.9	18.0	16.0	24.0	20.3	5.4	16.3
N&L	20.8	15.5	12.2	26.1	17.0	17.5	18.2
Saskatchewan	20.7	23.5	26.1	20.3	12.7	19.3	20.4
	17.6	21.3	18.8	22.2	17.8	18.7	19.4
Other Utility							
Hydro-Québec*	3.2	38.7	37.0	35.8	28.6	38.9	29.4
American Water Works	20.9	21.1	20.6	20.0	20.0	20.0	20.4
	12.1	29.9	28.8	27.9	24.3	29.4	24.9
MFA	17.9	18.6	16.2	19.8	20.0	18.2	18.5
MFA (Excluding Metro Vancouver)	20.0	20.6	18.2	21.9	24.5	21.2	21.1

*only public utility corporation fully guaranteed by the Province and is a debt issuer

7.0 Alternate Amortization Calculations for the North Shore Wastewater Treatment Plant Project

The graph and table below represent the estimated North Shore Wastewater Treatment Plant Project's household impact of alternate amortization scenarios on the North Shore Sewerage Area. The data below isolate only the North Shore Wastewater Treatment Plant's household impact on the North Shore Sewerage Area under amortization terms of 15, 20, 25, and 30 years calculated on a present value basis for comparability. These numbers differ from other household impact projections as this only includes the capital costs related to the North Shore Wastewater Treatment Plant on the North Shore Sewerage Area.

TABLE C: AMORTIZATION SCENARIOS FOR THE NORTH SHORE SEWERAGE AREA

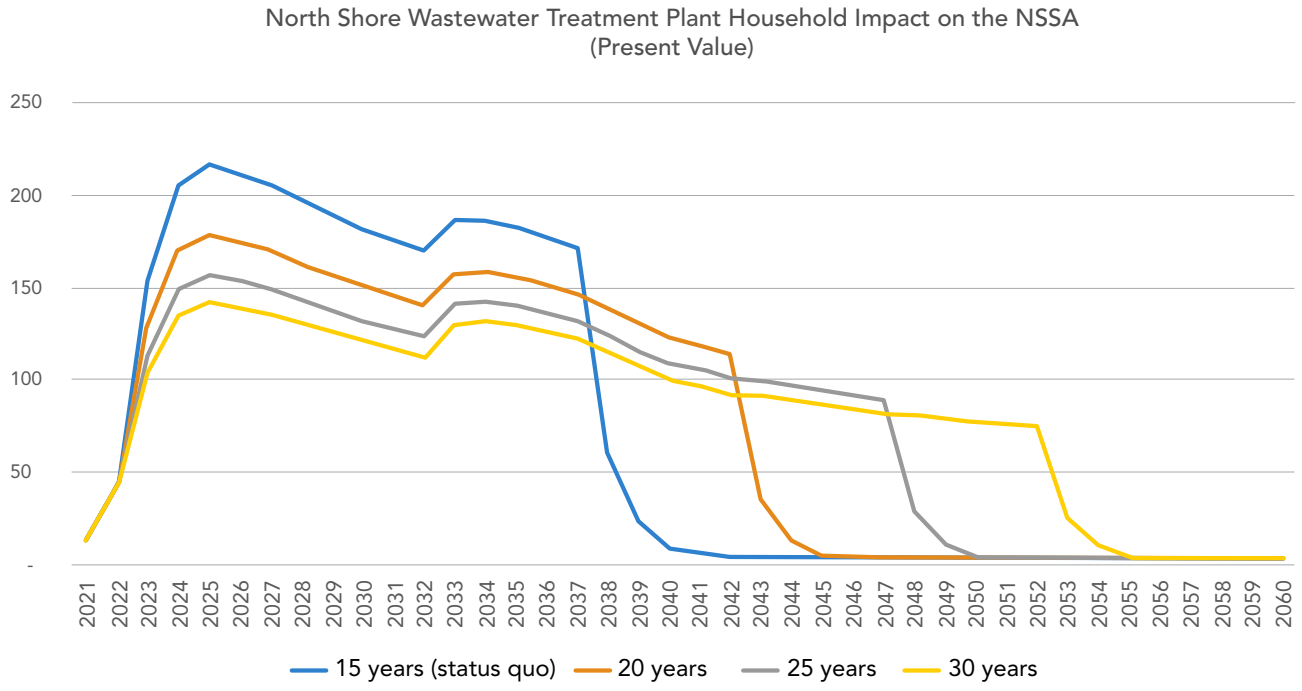

TABLE D: NORTH SHORE WASTEWATER TREATMENT PLANT'S HOUSEHOLD IMPACT ON THE NSSA – PRESENT VALUE

Amortization Term	2021	2030	2040	2050	2060	Total Interest (2021-2060)
15 Year	$14	$182	$9	-	-	$114.8 million
20 Year	$14	$151	$122	-	-	$160.6 million
25 Year	$14	$132	$109	$5	-	$208.8 million
30 Year	$14	$120	$100	$77	-	$259.5 million

How Average Household Impact is Calculated

Household impact is calculated based on the estimated residential portion of total levy divided by the projected number of households. There is more nuance to the actual billing, however, this gives us a good sense of how the average levy impact is affecting residents over time.

8.0 Glossary

Debt Amortization Term or Period: The number of years over which a debt obligation will be repaid.

Debenture or Bond: An unsecured loan certificate issued by a company, backed by general credit rather than by specified assets.

Capital Expenditures: Costs incurred for expanding, enhancing, upgrading and replacing infrastructure used in the delivery of services as well as the purchase of equipment. These are expenditures where the value is realized for multiple years. These expenditures are treated as assets where the realization of their value is charged to revenues proportionately over their useful life.

Operating Expenditures: The costs that are incurred consistently year to year in the delivery of services including labour costs and the day-to-day operations costs related to staff support, utilities, equipment usage, supplies and the ongoing maintenance of assets and infrastructure.

Contribution to Capital: The portion of the annual operating budget that is allocated to support the capital program.


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