Metro Vancouver Development Cost Charges:

Comparison of Potential Financial Impact on New Development of Metro Vancouver's Proposed DCC Rate Increases and Changes in Other Market Factors

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1.0 Introduction

1.1 Background

Metro Vancouver collects development cost charges (DCCs) from new residential and non-residential developments in the region to help pay for the new liquid waste and water infrastructure that is needed to provide services to the future occupants of these buildings.

Currently, Metro Vancouver has two separate DCC charges: a Liquid Waste DCC and a Water DCC. These existing DCCs only recover a share of the capital costs associated with new urban development. Metro Vancouver is considering changes to its Liquid Waste DCC rates and its Water DCC rates to recover a higher portion of the growth-related capital costs through DCCs. Metro Vancouver is also considering implementing a new DCC for Regional Parks.

In the absence of DCCs, funding for Metro Vancouver's liquid waste, water, and regional parks capital programs would need to come from a combination of long-term debt, contributions from the operating budget (e.g. utility/user fees), reserves, and external contributions (e.g. interagency and senior level government grants).

Metro Vancouver's objective in charging DCCs is to help ensure that new development in the region funds the capital costs of regional liquid waste, water, and park expansion projects required to serve the new development.

However, increased DCCs lead to increased project costs (in the absence of any reduction in other costs). Like any other cost increase, increased DCCs can lead to three different potential impacts:

- A reduction in development site land values if the increased cost can be passed back to landowners. This can occur when the value of a development site under its existing use (e.g. house, low density commercial building) is lower than the land value supported by redevelopment.
- An increase in the market price (sales prices or rents) of new units/floorspace. This can occur if the increased cost reduces the number of projects that are financially viable for development, creating downward pressure on the supply of new product in the market. Decreasing new supply in the face of continued demand will likely result in increased market prices for new (and existing) product.
- A reduction in profit margins for new projects. This can occur if the increased cost cannot be passed along to buyers/renters of the new space and cannot be passed back to landowners (e.g. if the site was already purchased).

The actual impact will depend on the dynamics of the market (e.g., supply of development sites, viability of new development, amount of new product). To determine which of these three outcomes should be expected (or which combination) due to the proposed Metro Vancouver DCC rate increases, it would be necessary to complete detailed financial analysis for a large sample of case study development projects throughout the region.

However, prior to completing detailed financial analysis for a large sample of case study sites in the region, as an input to consultation and engagement about the proposed rate increases, Metro Vancouver retained Coriolis Consulting to provide a high level evaluation of the potential financial impact of the proposed DCC rate increase in comparison to other key market variables that developers of new projects often face, such as:

- Hard construction cost changes (due to inflation).
- Changes in interest rates on construction financing.

- Revenue changes (unit sales prices or rents due to changes in demand and supply).

This report summarizes our approach and key findings. It focuses on residential development projects (not non-residential projects).

1.2 Professional Disclaimer

This document may contain estimates and forecasts of future growth and urban development prospects, estimates of the financial performance of possible future urban development projects, opinions regarding the likelihood of approval of development projects, and recommendations regarding development strategy or municipal policy. All such estimates, forecasts, opinions, and recommendations are based in part on forecasts and assumptions regarding population change, economic growth, policy, market conditions, development costs and other variables. The assumptions, estimates, forecasts, opinions, and recommendations are based on interpreting past trends, gauging current conditions, and making judgments about the future. As with all judgments concerning future trends and events, however, there is uncertainty and risk that conditions change or unanticipated circumstances occur such that actual events turn out differently than as anticipated in this document, which is intended to be used as a reasonable indicator of potential outcomes rather than as a precise prediction of future events.

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In no event shall Coriolis Consulting Corp. be liable to Metro Vancouver or any third party for any indirect, incidental, special, or consequential damages whatsoever, including lost revenues or profits.

2.0 Role of Metro Vancouver Development Cost Charges

Metro Vancouver's liquid waste infrastructure capital programs are "funded by a combination of long-term debt, contributions from the operating budget, some external (interagency and senior level government grant) contributions, and development cost charges (DCCs)."[1]

The existing liquid waste DCC rates reflect a 17.5% assist factor (i.e. 82.5% of *development-related* capital costs are funded through the DCC). Metro Vancouver proposes to adjust the liquid waste DCC rates over a three-year period to achieve a 1% assist factor by January 2027 (i.e. 99% of development-related liquid waste capital costs would be funded through the DCC).

Metro Vancouver's water infrastructure capital programs are "funded by a combination of long-term debt, reserves, contributions from the operating budget, external (interagency) contributions"[2] and DCCs which help fund growth-related projects. The water capital program includes projects needed to meet the needs of a growing population, maintenance of aging infrastructure, upgrades to improve the resiliency of the regional water system, and projects to achieve goals such as climate change mitigation.

The existing water DCC rates reflect a 50% assist factor. Metro Vancouver proposes to adjust the water DCC rates over a three period to achieve a 1% assist factor by January 2027 (i.e. 99% of development-related water infrastructure capital costs would be funded through the DCC).

Metro Vancouver's parks capital program is currently "funded primarily by reserve funds."[3] Metro Vancouver proposes to establish a new regional parks DCC to help ensure that new development in the region helps fund the cost of major park development and parkland acquisition required to serve growth. As with its other DCCs, Metro Vancouver proposes to establish rates phased in over a three-year period that will achieve a 1% assist factor by January 2027 (i.e. 99% of development-related park development and acquisition capital costs would be funded through the DCC).

The infrastructure provided by Metro Vancouver is a critical part of supporting new urban development in the region so new development should help fund the growth-related costs. Therefore, Metro Vancouver's objective in charging DCCs is to help ensure that new development in the region funds or partially funds the capital costs of regional liquid waste, water, and park expansion projects required to serve new development.

In the absence of DCCs, funding for Metro Vancouver's liquid waste, water, and regional parks capital programs would need to come entirely from a combination of long-term debt, contributions from the operating budget (e.g. utility/user fees), reserves, and external contributions (e.g. interagency and senior level government grants).

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[1] Metro Vancouver, "Memorandum - 2023 - 2027 Financial Plan - Liquid Waste Services" from the General Manager, Liquid Waste Services, to the Liquid Waste Committee. September 28, 2022, page 6. Available online at: https://metrovancouver.org/about-us/Documents/financial-plan-standing-committee-reports-2027.pdf

[2] Metro Vancouver, "Memorandum - 2023 - 2027 Financial Plan - Water Services" from the General Manager, Water Services, to the Water Committee. September 27, 2022, page 5. Available online at: https://metrovancouver.org/about-us/Documents/financial-plan-standing-committee-reports-2027.pdf

[3] Metro Vancouver, "Memorandum - 2023 - 2027 Financial Plan - Regional Parks" from the General Manager, Parks and Environment and the Director, Regional Parks, to the Regional Parks Committee. October 6, 2022, page 5. Available online at: https://metrovancouver.org/about-us/Documents/financial-plan-standing-committee-reports-2027.pdf

3.0 Approach to Evaluation

Our evaluation included the following main steps:

1. Confirmed the proposed DCC rates with Metro Vancouver.
2. Reviewed key trends in regional market factors including changes in construction costs, interest rates, residential unit sales prices, and apartment unit rents over the past year.
3. Selected representative residential project case studies for our evaluation of possible financial impacts. We selected a case study for each of the following five types of projects:
   - Lowrise condominium apartment.
   - Highrise condominium apartment.
   - Townhouse project.
   - Single family house.
   - Lowrise rental apartment.
4. Modelled the financial performance of the hypothetical case study development projects to calculate:
   - The building value upon completion.
   - The likely building creation cost (the all-in costs, including hard costs, soft costs, DCCs, financing, other costs).
   - The likely land acquisition cost.
   - The calculated profit margin to the developer (revenues less costs).
5. Estimated the potential impact of the proposed Metro Vancouver DCC rate increases on:
   - Land values (if the increased DCC is passed back to landowners).
   - The calculated profit (if the increased cost is absorbed by the developer).
   - End unit prices (or rents) if the increased DCC results in higher unit prices or rents due to a reduced supply of new product.
6. Repeated the analysis in step 5 to estimate the potential impact of changes (based on the past 12 month change) in construction costs, construction financing rates, and market sales prices (or rents).
7. Compared the potential impact of the proposed changes in Metro Vancouver DCC rates with the impact of changes in the other key market variables on:
   - Land values (if the increased DCC is passed back to landowners).
   - The calculated profit (if the increased cost is absorbed by the developer).
   - End unit prices (or rents) if the increased DCC results in higher unit prices or rents due to a reduced supply of new housing product.

4.0 Proposed DCC Rates

Exhibit 1 shows the existing Metro Vancouver DCC rates, the proposed Metro Vancouver DCC rates as of January 1, 2027, and the total change between the existing rates and proposed January 1, 2027 rates. The DCC rates vary by land use category (single family residential, townhouse, apartment, non-residential). Residential categories are charged per unit/dwelling, while non-residential developments are charged per square foot.

It should be noted that the liquid waste DCC varies across four separate sewerage areas in the region. The water DCC rates and the proposed regional park DCC rates have one fee structure across the entire region.

It should also be noted that Metro Vancouver proposes to phase in the increased DCC rates over a three-year period, with new rates as of January 1, 2025, January 1, 2026, and January 1, 2027. For our analysis, we focused on the total combined DCC rate increase being proposed (water, liquid waste, parks) to achieve a 1% assist factor (i.e. the change between the existing rates and the proposed January 1, 2027 rates), not the changes to the individual DCC rates.

Exhibit 1: Existing and Proposed Metro Vancouver DCC Rates

	Existing DCC rates				Proposed Jan 1, 2027 DCC Rates				**Change** from Existing DCC Rates to Jan 1, 2027 DCC Rates			
	Water	Liquid Waste	Park	Total	Water	Liquid Waste	Park	Total	Water	Liquid Waste	Park	Total Change
Vancouver Sewerage Area:												
Single Family Residential	$ 6,692	$ 3,335	none	$ 10,027	$ 19,714	$ 12,476	$ 1,943	$ 34,133	$ 13,022	$ 9,141	$ 1,943	$ 24,106
Townhouse	$ 5,696	$ 2,983	none	$ 8,679	$ 17,710	$ 11,400	$ 1,751	$ 30,861	$ 12,014	$ 8,417	$ 1,751	$ 22,182
Apartment	$ 4,261	$ 1,988	none	$ 6,249	$ 12,223	$ 7,484	$ 1,199	$ 20,906	$ 7,962	$ 5,496	$ 1,199	$ 14,657
Non Residential	$ 3.39	$ 1.63	none	$ 5.02	$ 9.54	$ 6.30	$ 0.94	$ 16.78	$ 6.15	$ 4.67	$ 0.94	$ 11.76
North Shore Sewerage Area:												
Single Family Residential	$ 6,692	$ 3,300	none	$ 9,992	$ 19,714	$ 11,557	$ 1,943	$ 33,214	$ 13,022	$ 8,257	$ 1,943	$ 23,221
Townhouse	$ 5,696	$ 2,786	none	$ 8,482	$ 17,710	$ 10,652	$ 1,751	$ 30,113	$ 12,014	$ 7,866	$ 1,751	$ 21,632
Apartment	$ 4,261	$ 2,030	none	$ 6,291	$ 12,223	$ 7,111	$ 1,199	$ 20,533	$ 7,962	$ 5,081	$ 1,199	$ 14,242
Non Residential	$ 3.39	$ 1.67	none	$ 5.06	$ 9.54	$ 5.92	$ 0.94	$ 16.40	$ 6.15	$ 4.25	$ 0.94	$ 11.34
Lulu Island West Sewerage Area:												
Single Family Residential	$ 6,692	$ 3,313	none	$ 10,005	$ 19,714	$ 6,855	$ 1,943	$ 28,512	$ 13,022	$ 3,542	$ 1,943	$ 18,506
Townhouse	$ 5,696	$ 2,756	none	$ 8,452	$ 17,710	$ 5,943	$ 1,751	$ 25,404	$ 12,014	$ 3,187	$ 1,751	$ 16,952
Apartment	$ 4,261	$ 2,042	none	$ 6,303	$ 12,223	$ 4,241	$ 1,199	$ 17,663	$ 7,962	$ 2,199	$ 1,199	$ 11,360
Non Residential	$ 3.39	$ 1.54	none	$ 4.93	$ 9.54	$ 3.08	$ 0.94	$ 13.56	$ 6.15	$ 1.54	$ 0.94	$ 8.63
Fraser Sewerage Area:												
Single Family Residential	$ 6,692	$ 6,254	none	$ 12,946	$ 19,714	$ 13,613	$ 1,943	$ 35,270	$ 13,022	$ 7,359	$ 1,943	$ 22,324
Townhouse	$ 5,696	$ 5,390	none	$ 11,086	$ 17,710	$ 11,914	$ 1,751	$ 31,375	$ 12,014	$ 6,524	$ 1,751	$ 20,289
Apartment	$ 4,261	$ 4,269	none	$ 8,530	$ 12,223	$ 8,686	$ 1,199	$ 22,108	$ 7,962	$ 4,417	$ 1,199	$ 13,578
Non Residential	$ 3.39	$ 3.30	none	$ 6.69	$ 9.54	$ 6.43	$ 0.94	$ 16.91	$ 6.15	$ 3.13	$ 0.94	$ 10.22

The proposed combined DCC rate increases for residential projects are as follows:

- $18,506 to $24,106 per single family lot (depending on location).
- $16,952 to $22,182 per townhouse unit (depending on location.
- $11,360 to $14,657 per apartment unit (depending on location).

5.0 Types of Case Studies Analyzed

The financial performance of redevelopment varies throughout the region depending on a site's location, existing use and zoning (which influence existing value), proposed use, redevelopment density and other land use regulations (such as municipal DCCs and CAC or density bonus policies) so any impacts of increased Metro Vancouver DCCs will vary from project to project.

For this high level evaluation, we selected five sites to model the financial performance of hypothetical case study projects that are representative of a range of different types of residential projects that occur in Metro Vancouver (and that account for a large share of new development in the region). The sites selected are all in locations that are good candidates for redevelopment, based on municipal policy and market interest. Any impact on these hypothetical projects from increased Metro Vancouver DCCs will be broadly indicative of the potential impact on similar types of redevelopment projects.

The five case studies can be summarized as follows:

1. A new lowrise condominium apartment project in Coquitlam. This case study is located in Burquitlam and assumes 6-storey woodframe strata apartment development at a density of 2.3 FSR.
2. A new highrise condominium apartment project in Surrey. This case study is located in Surrey City Centre and assumes highrise strata apartment development at a density of 7.5 FSR.
3. A new strata townhouse project in Vancouver. This case study is located in Marpole and assumes a 3-storey townhouse project with underground parking at a density of 1.2 FSR.
4. A new single family house in Surrey. This case study is located in a hypothetical new 25 lot subdivision in South Surrey. The analysis focuses on one new single family home in the overall subdivision.
5. A new lowrise rental apartment project in Vancouver. This case study is located in East Vancouver and assumes 5-storey woodframe market rental apartment development at a density of 2.4 FSR.

6.0 Trends in Key Market Factors

To inform the component of the analysis that examines the impact of changes in key market factors on new development projects, we examined third party indicators of the changes for each of the variables over the past year or so in Metro Vancouver, including:

- Construction costs changes (by type) for the Vancouver CMA (Statistics Canada building construction price index).
- Construction financing costs (Bank of Canada).
- Residential sales prices (by type) in Metro Vancouver (Greater Vancouver Real Estate Board's Home Price Index).
- Rental apartment rent rates in the Vancouver CMA (CMHC).

The key findings are summarized in the following sections.

6.1 Construction Costs

Exhibit 2 shows the change in residential construction costs in Greater Vancouver by quarter from Q2 2022 to Q2 2023 (most recent available) based on Statistics Canada data.

Exhibit 2: Building Construction Price Index – Vancouver CMA

Vancouver Metropolitan Area	Q2 2022	Q2 2023	12 Month Change
Highrise Apartment Buildings	133.8	145.2	8.5%
Lowrise Apartment Buildings	148.4	158.8	7.0%
Townhouse	150.4	160.2	6.5%
Single Detached House	149.8	160.2	6.9%

Source: Statistics Canada Building Construction Price Index – base year = 2017.

Between Q2 2022 and Q2 2023, residential construction costs increased by between 6.5% and 8.5% depending on the type of project. This follows higher increases in the previous two years.

6.2 Construction Financing Rates

Developers of new projects rely on construction financing in order to proceed with a project. Construction financing is often linked to the prime rate. Since March 2022, the Bank of Canada has increased its policy rate nine times leading to increases in the prime rate.

As of September 2023, the prime rate is 7.2%. This is up 2.5 percentage points from September 2022 (and up 4.75 percentage points from early 2022). This has increased the cost of financing new projects.

6.3 Home Prices

The Real Estate Board of Greater Vancouver publishes a monthly index (Home Price Index – HPI) that tracks the value of a typical home by neighbourhood and by structure type (detached, townhouse, apartment).

Exhibit 3 shows the HPI data for Metro Vancouver from August 2022 to August 2023.

From August 2022 to August 2023, the HPI for homes in Metro Vancouver increased by 3.2% for detached homes, 3.8% for townhouse units, and 4.4% for apartment units.

The rate of increase has been higher during 2023 (to August).

Exhibit 3: Home Price Index – Metro Vancouver

Metro Vancouver	Aug 2022		Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	12 Month Change
Single Detached	363.5		336.6	342.0	347.7	356.8	363.3	370.3	374.3	375.3	3.2%
Townhouse	369.2		355.2	365.0	368.2	375.5	376.2	381.7	383.7	383.4	3.8%
Apartment	339.9		331.9	336.5	338.9	346.8	350.6	353.5	355.6	354.8	4.4%

Source: Greater Vancouver Real Estate Board.

6.4 Apartment Rents

Exhibit 4 shows the average rent rate for apartment units in the Vancouver CMA by building age between October 2021 and October 2022 as reported by CMHC.

Rents for apartment units in the Vancouver CMA increased by 7.6% per year over this time period in newer rental buildings (2005 and newer). The rate of increase was higher in the overall rental stock.

Exhibit 4: Apartment Rents – Vancouver CMA

Average Rent per Unit	October 2021	October 2022	12 Month Change
All Buildings	$ 1,537	$ 1,665	8.3%
2005 and New Buildings	$ 2,072	$ 2,230	7.6%

Source: CMHC.

More recent data from CMHC data is not available. However information and reports published on rental websites such as Rentals.ca and Liv.rent indicate rent rates have continued to increase at this rate (or faster) from October 2022 to August 2023.

6.5 Summary

Exhibit 5 summarizes the year over year (12 month) change in the market variables that we reviewed.

Exhibit 5: 12 Month Change in Market Variables

Variable	Directional Trend	Year over Year Change	Impact on Project Performance
Single Detached, Townhouse, and Apartment Home Prices	Increasing	3.2% to 4.4%	Positive
Newer Apartment Rents	Increasing	7.6%	Positive
Residential Construction Costs by unit type	Increasing	6.5% to 8.5%	Negative
Financing Costs	Increasing	2.5 percentage points	Negative

7.0 Financial Evaluation

7.1 Methodology

Increased DCCs lead to increased project construction costs. Any increase in development costs (not just DCCs) can lead to three different potential impacts:

- A reduction in development site land values if the increased cost can be passed back to landowners. This can occur when the value of a development site under its existing use (e.g. house, low density commercial building) is lower than the land value supported by redevelopment. In this case, property owners still have an incentive to sell for redevelopment at a reduced land value as the land value exceeds the value under existing use. However, if the additional DCC cost is large and it has a significant impact on land values, then this can change the highest and best use of a property from a redevelopment site into a holding property (which can reduce the number of sites that are attractive and available for development).
- A reduction in profit margins for new projects. This can occur if the increased cost cannot be passed to landowners (e.g. if the site has already been purchased or if the highest value of the site is based on its existing use not on the redevelopment land value) and if the increased cost cannot be passed along to the buyers/renters of the new space.
- An increase in the market price (sales prices or rents) of new units/floorspace. Market pricing is determined by supply and demand, not by project costs. So a developer cannot just pass increased costs along to buyers/renters. However, market prices can increase if the increased DCC reduces the number of projects that are financially viable for development, creating downward pressure on the supply of new product. Decreasing new supply in the face of continued demand will likely result in increased market prices for new (and existing) product.

The actual impact will depend on the dynamics of the market (e.g., supply of development sites, viability of new development, amount of new product). So, it is not possible to determine which of these three outcomes should be expected for the proposed Metro Vancouver DCC rate increases without completing detailed financial analysis for a large sample of cases study development projects throughout the region.

Therefore, for this high level evaluation, we estimated the potential impact of the proposed DCC rate increase at each of the five case studies for all three potential outcomes (i.e. possible impact on land values, profit margins, and end unit pricing).

Our evaluation included the following steps:

1. For each case study scenario, we modelled the financial performance of the hypothetical new development project based on the applicable allowable use and density (and other development regulations) at the site using residual land value analysis (proforma analysis). Residual land value analysis is a common method of estimating the land value supported by development. The steps include: estimating the revenue from selling (or renting) completed units, deducting all construction costs (hard and soft), and deducting a typical allowance for developer profit. The amount left over is the residual land value, which is the maximum amount a developer could afford to pay for the site and have a viable development project. Our analysis for each case study scenario incorporates other existing municipal and regional DCCs and any fixed rate local government Community Amenity Contributions (CACs) or density bonus contributions where applicable, as of August 2023.

2. We used the financial modelling to test five scenarios at each case study site:
   - Scenario 1 is the base case scenario which assumes the existing Metro Vancouver DCC rates, current construction costs, current financing rates, and current market unit values (or rents).
   - Scenario 2 tests the proposed increase to the Metro Vancouver DCC rates. All other assumptions are the same as in the base case.
   - Scenario 3 assumes increased construction costs (based on the 12 month change in costs). All other assumptions are the same as in the base case.
   - Scenario 4 tests increased construction financing rates (based on the 12 month change in the prime rate). All other assumptions are the same as in the base case.
   - Scenario 5 tests increased residential sales prices or rents (based on the 12 month change in market values). All other assumptions are the same as in the base case.
3. For each of the scenarios tested, we calculated the potential impact of the change on the:
   - Land values supported by redevelopment (assuming the impact is passed back to landowners).
   - Profit margins for new projects (assuming the change cannot be passed back to landowners or passed forward to end users and is instead absorbed by developers in the form of reduced profit margins).
   - End unit prices (assuming the change reduces the number of development sites available, which creates downward pressure on the supply of new product and, in the context of continued demand, can increase end unit prices).
4. We compared the potential impacts from the increased DCC rates (Scenario 2) on each potential variable that could be impacted (i.e. land values, profit margins, end unit prices) with the potential impact of changes due to the other key market variables (Scenarios 3 to 5).

7.2 Key Assumptions for Financial Scenarios

The revenue and costs for the base case scenarios vary across the five different case study sites due to the differences in product types and location in the region.

The key assumptions for the four different impact scenarios that we tested at each case study (Scenarios 2 to 5) are based on the proposed Metro Vancouver DCC rate increases or the latest 12 month change in each market variable as outlined in Section 6.0.

Exhibit 6 outlines the scenarios for each case study site and scenario.

Exhibit 6: Scenarios Tested for Each Case Study

	1. Base Case: Existing Combined Metro Van DCC Rate[4]	2. All Assumptions Same as in Base Case, but Increased Metro Vancouver DCC Rate[5]	3. All Assumptions Same as in Base Case, but Hard Construction Cost Increase	4. All Assumptions Same as in Base Case, but Construction Financing Interest Rate Increase[6]	5. All Assumptions Sames as in Base Case, but Unit Sales Price or Rent Increase
Lowrise Strata Apartment Case Study in Coquitlam (Fraser Sewerage Area)	$8,530 per unit	$22,108 per unit	+ 7.0%	+ 2.5 percentage points	+ 4.4%
Highrise Strata Apartment Case Study in Surrey (Fraser Sewerage Area)	$8,530 per unit	$22,108 per unit	+ 8.5%	+ 2.5 percentage points	+ 4.4%
Townhouse Case Study in Vancouver (Vancouver Sewerage Area)	$8,679 per unit	$30,861 per unit	+ 6.5%	+ 2.5 percentage points	+ 3.8%
Single Detached Case Study in Surrey (Fraser Sewerage Area)	$12,946 per lot	$35,270 per lot	+ 6.9%	+ 2.5 percentage points	+3.2%
Lowrise Rental Apartment Case Study in Vancouver (Vancouver Sewerage Area)	$6,249 per unit	$20,906 per unit	+ 7.0%	+ 2.5 percentage points	+ 7.6%

[4] This is the sum of Metro Vancouver's existing liquid waste DCC and existing water DCC rates applicable to the location of the case study site.

[5] The proposed Metro Vancouver DCC rate increases vary by sewerage area. Our analysis uses the proposed combined total Metro Vancouver DCC rate increase (liquid waste, water, and parks) for the specific location of each case study site.

[6] We did not analyze the impact of increased interest rates for take-out financing for a new rental project, just the impact of increased interest rates on construction financing. So our evaluation understates the overall combined impact of construction and take-out financing rates on rental projects.

8.0 Summary of Findings

This section summarizes the results of the case study financial analysis. As previously noted, a total of five sites were analyzed with five scenarios for each site:

- Scenario 1 is the base case scenario that assumes the existing Metro Vancouver DCC rates, current construction costs, current financing rates, and current market unit values (or rents).
- Scenario 2 includes the proposed increases to the Metro Vancouver DCC rates. All other assumptions are the same as in the base case.
- Scenario 3 assumes increased construction costs (based on the most recent 12 month change for which data is available). All other assumptions are the same as in the base case.
- Scenario 4 assumes increased construction financing rates (based on the most recent 12 month change for which data is available). All other assumptions are the same as in the base case.
- Scenario 5 assumes increased residential sales prices or rents (based on the most recent 12 month change for which data is available). All other assumptions are the same as in the base case.

Exhibits 7 to 11 show the following for each case study site and each scenario:

- The location of the project and type of project.
- The estimated change in land value supported by the development scenario in comparison to the base case.
- The estimated profit margin (as a percentage of total project costs) assuming the land is acquired at the current base case market value (for example, if the site was already purchased or the property value is based on its existing use value not the land value supported by redevelopment).
- The approximate change in unit sales prices (or rents) in comparison to the base case if the additional project costs are passed along to end unit buyers or renters (for example, if a reduction in the supply of development sites results in higher unit prices/rents).

The figures in each exhibit for the estimated supportable land value and estimated unit prices (or rents) are expressed as an index with the base case index values set at 100%. Comparing the index figures for the other "impact" scenarios (Scenarios 2 to 5) with the base case indicates the percentage change from the base case.

The estimated profit margin figures are the profit as a percentage of total estimated project costs, so the changes represent percentage points.

Exhibit 7: Lowrise Coquitlam Strata Apartment Project

Lowrise Strata Apartment Project in Coquitlam	1. Base Case	2. Increased Metro Van DCC Rates	3. Increased Hard Costs	4. Increased Financing Rate	5. Increased Unit Values
Estimated Supportable Land Value	100.0%	88.6%	74.4%	88.7%	122.1%
Estimated Profit if Acquired at Current Land Value	15.0%	12.6%	9.8%	12.7%	19.7%
Approximate Unit Prices if Cost Impact is Passed Through to Buyers	100.0%	102.3%	105.1%	102.0%	104.4%

Exhibit 8: Highrise Surrey Strata Apartment Project

Highrise Strata Apartment Project in Surrey	1. Base Case	2. Increased Metro Van DCC Rates	3. Increased Hard Costs	4. Increased Financing Rate	5. Increased Unit Values
Estimated Supportable Land Value	100.0%	76.4%	34.7%	76.5%	141.1%
Estimated Profit if Acquired at Current Land Value	15.0%	12.3%	7.9%	12.3%	19.7%
Approximate Unit Prices if Cost Impact is Passed Through to Buyers	100.0%	102.6%	107.1%	102.1%	104.4%

Exhibit 9: Vancouver Townhouse Project

Townhouse Strata Apartment Project in Vancouver	1. Base Case	2. Increased Metro Van DCC Rates	3. Increased Hard Costs	4. Increased Financing Rate	5. Increased Unit Values
Estimated Supportable Land Value	100.0%	96.6%	93.3%	95.2%	108.6%
Estimated Profit if Acquired at Current Land Value	15.1%	13.5%	12.0%	12.9%	19.1%
Approximate Unit Prices if Cost Impact is Passed Through to Buyers	100.0%	101.5%	103.0%	101.7%	103.8%

Exhibit 10: Surrey Single Family House

Single Family House in Surrey	1. Base Case	2. Increased Metro Van DCC Rates	3. Increased Hard Costs	4. Increased Financing Rate	5. Increased Unit Values
Estimated Supportable Land Value	100%	96.8%	88.1%	95.4%	108.7%
Estimated Profit if Acquired at Current Land Value	15.0%	13.7%	10.3%	13.3%	18.6%
Approximate Unit Prices if Passed Through to Buyers	100%	101.3%	104.6%	101.4%	103.2%

Exhibit 11: Vancouver Lowrise Rental Apartment Project

Lowrise Rental Apartment Project in Vancouver	1. Base Case	2. Increased Metro Van DCC Rates	3. Increased Hard Costs	4. Increased Financing Rate	5. Increased Unit Values
Estimated Supportable Land Value	100.0%	91.1%	85.4%	93.5%	128.3%
Estimated Profit if Acquired at Current Land Value	10.0%	7.4%	5.8%	8.1%	18.2%
Approximate Rent if Cost Impact Passed is Through to Renters	100.0%	102.2%	103.5%	101.5%	107.6%

Exhibit 12 summarize the range of estimated impacts (from the base case) for each of the other scenarios that we tested. The biggest variation across scenarios is for the supportable land value estimates as some sites have comparatively low existing land values. An increased cost has a larger impact on the lower land value sites than the same cost increase on a higher land value site. The range in estimated impacts for the profit margin and end unit prices is much narrower.

It is important to note that the impacts shown in Exhibit 12 would likely not happen in isolation. Other market variables would also likely change at the same time. For example, the impact shown for land values due to construction cost increases would not materialize if market values for new units prices were also increasing simultaneously (which has generally been the case over the past few years).

Exhibit 12 – Summary of Change from the Base Case for Each Scenario Tested

Range of Impact for Scenarios Tested	2. Increased Metro Van DCC Rates	3. Increased Hard Costs	4. Increased Financing Rate	5. Increased Unit Values
Estimated Supportable Land Value	-3.2% to -23.6%	-6.7% to -65.3%	-4.6% to -23.5%	+8.3% to +41.1%
Estimated Profit if Acquired at Current Land Value	-1.3 to -2.7 percentage points	-3.1 to -7.1 percentage points	-1.7 to -2.7 percentage points	+3.2 to +4.7 percentage points
Approximate Price/Rent if Cost Impact Passed Through to Buyers/Renters	+1.3% to +2.6%	+3.0% to +7.1%	+1.4% to +2.1%	+3.2% to +7.6%

The key findings are as follows:

1. The impact of the proposed DCC rate increases on the estimated supportable land value for each site ranges from -3.2% to -23.6%. The latest 12 month change in financing rates has had a similar impact while the latest 12 month change in hard construction costs and unit values have had much larger impacts than the proposed Metro Vancouver DCC rate increases.
2. The impact of the proposed DCC rate increases on the estimated profit margin for each case study (if developers cannot pay less for land and cannot pass the cost increase on to end users) ranges from -1.3 percentage points to -2.7 percentage points. The latest 12 month change in financing rates has had a similar impact while the latest 12 month change in hard construction costs and unit values have had much larger impacts than the proposed Metro Vancouver DCC rate increases.
3. The impact of the proposed DCC rate increases on unit prices/rents (if the cost increases are passed along to end users) for each case study ranges from 1.3% to 2.6%. The latest 12 month change in financing rates has had a similar impact while the latest 12 month change in hard construction costs and unit values have had a much larger impact than the proposed Metro Vancouver DCC rate increase2.

9.0 Conclusions

The key points from our evaluation are as follows:

1. The infrastructure provided by Metro Vancouver is a critical part of supporting new urban development in the region so new development should help fund the growth related costs. In the absence of DCCs, funding for growth related costs associated with Metro Vancouver's liquid waste, water, and regional parks capital programs would need to come entirely from a combination of long-term debt, contributions from the operating budget (e.g. utility/user fees), reserves, and external contributions (e.g. interagency and senior level government grants).
2. The proposed Metro Vancouver DCC rate increases are significant and will add to the cost of new construction. Like any other cost increase, the increased DCCs will lead to one of three different potential impacts (or a combination):
   - A reduction in development site land values if the increased cost can be passed back to landowners. This can occur when the value of a development site under its existing use (e.g. house, low density commercial building) is lower than the land value supported by redevelopment.
   - An increase in the market price (sales prices or rents) of new units/floorspace. This can occur if the increased cost reduces the number of projects that are financially viable for development, creating downward pressure on the supply of new product in the market. Decreasing new supply in the face of continued demand will likely result in increased market prices for new (and existing) product.
   - A reduction in profit margins for new projects. This can occur if the increased cost cannot be passed along to buyers/renters of the new space and cannot be passed back to landowners.

   Which of these three outcomes (or combination) is most likely and the actual impact will depend on the dynamics of the market (e.g., supply of development sites, viability of new development, amount of new product), which requires detailed financial analysis for a large sample of case study development projects throughout the region.
3. The estimated potential financial impacts from the proposed increases to the Metro Vancouver DCC rates on land values, profit margins, or end unit prices are:
   - Similar to the impact from the latest 12 month change in financing rates.
   - Significantly less than the latest 12 month change in hard construction costs.
   - Significantly less than the latest 12 month change in unit prices (and rents).
4. Spreading the proposed DCC rate increases over three years (as proposed) will help mitigate any impacts and provide predictability to landowners and developers.