Inputs to TransLink's Proposed Inflationary Adjustment to the Regional Transportation DCC:

Financial Analysis and Revenue Forecasts

30 August 2023

Prepared for:
TransLink

By:

coriolis
CONSULTING CORP.

Table of Contents

1.0 Introduction

1.1 Background and Purpose

TransLink received legislative authorization in 2018 to levy a regional transportation Development Cost Charge (DCC). TransLink adopted the necessary bylaws to implement the DCC in 2018 and collections commenced in 2020. The intent of the DCC is to collect revenue from all urban development within the transportation service area (unless exempt by Provincial legislation, TransLink bylaw, or other legal instrument) to help pay for the capital costs of transportation infrastructure. During 2020 to 2022, TransLink's annual collections from the regional transportation DCC were in the range of approximately $20 million to $45 million per year.[1]

Under a regulation passed by the Province in June 2018 (*Ministerial Order No. M 231)*, Translink was permitted to make annual inflationary adjustments to the DCC rates commensurate with or less than the change in the Vancouver CPI for up to 4 years without requiring approval from the Inspector of Municipalities. The 4 year window is now over, and TransLink is considering an inflationary adjustment that would be effective as of January 1, 2024.[2] TransLink advised that the proposed new DCC rates will require approval from the Inspector of Municipalities.

As input to planning and implementing the proposed inflationary adjustment to its DCC rates, TransLink retained Coriolis Consulting Corp. to:

- Analyze the financial ability of new development projects in the region to absorb the proposed higher DCC rates. Increased DCCs could have a negative impact on the number of sites in the region that are financially attractive for redevelopment. If the supply of development sites is reduced, this could cause residential prices and/or commercial and industrial lease rates to rise, which is generally regarded as an undesirable outcome.
- Forecast average annual DCC revenues from 2024 to 2031 (i.e. an 8 year period from when the proposed new rate would come into effect to the end of the current Investment Plan[3]) based on recent development trends and the proposed higher DCC rates.

This report summarizes our work and conclusions.

1.2 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

[1] TransLink's DCC collections totaled $19.7 million in 2020, $44.8 million in 2021, and $40.3 million in 2022.

[2] TransLink adopted its initial DCC Bylaw on December 6, 2018, so the Ministerial Order allowed inflationary adjustments commensurate with or less than the change in the Vancouver CPI once per year between December 6, 2018 and December 6, 2022 without the need for Inspector approval. TransLink's initial DCC Bylaw set out a schedule of rates effective as of January 1, 2019, January 1, 2020, and January 1, 2021 and TransLink adopted an updated DCC Bylaw with rates effective January 1, 2022. The January 2022 rates are the current rates.

[3] TransLink's current plan is the "2022 Investment Plan", which was approved on May 26, 2022 and which spans 2022 to 2031.

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.

Nothing contained in this report, express or implied, shall confer rights or remedies upon, or create any contractual relationship with, or cause of action in favor of, any third party relying upon this document.

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

2.0 TransLink's Existing DCC Rates and Proposed New DCC Rates

Exhibit 1 shows the current regional transportation DCC rates. Exhibit 1 also shows the new DCC rates proposed to be effective as of January 1, 2024. The proposed new rates reflect an inflationary adjustment of 6.7148% to the current DCC rates.

The rates vary by type of development and apply throughout TransLink's service area (Metro Vancouver).[4]

Exhibit 1: Existing and Proposed Regional Transportation DCC Rates

	Current DCC Rates	Proposed New DCC Rates for Jan 1, 2024	Proposed Increase
Single family residential ($ per unit)	$2,993	$3,194	$201
Duplex/townhouse ($ per unit)	$2,485	$2,652	$167
Apartment ($ per unit)	$1,554	$1,658	$104
Retail/service ($ per square foot)	$1.26	$1.34	$0.08
Office ($ per square foot)	$1.01	$1.08	$0.07
Institutional ($ per square foot)	$0.50	$0.53	$0.03
Industrial ($ per square foot)	$0.30	$0.32	$0.02

Source: TransLink.

[4] There are some exceptions: certain types of development (e.g. secondary suites, coach/laneway houses, eligible affordable rental housing) do not pay the DCC and certain types of development (i.e. eligible student rental housing) pay a reduced rate.

3.0 Total Capital Costs of DCC-Eligible Regional Transportation Projects

TransLink is responsible for regional investments in rapid transit, bus transit, regional bridges, TransLink owned cycling facilities, and cost sharing with municipalities for some regional roads, cycling, and pedestrian works. TransLink's current (2022) Investment Plan includes all of these types of capital projects.

The legislation allows TransLink to apply the DCC revenues to eligible projects "to provide, construct, alter or expand assets, facilities and other real or personal property required for the regional transportation system", with some exceptions.

The 2022 Investment Plan includes a total of about $2.3 billion in DCC-eligible capital projects for the period from 2024 to 2031 (i.e. the timeframe after the increased DCC rate would come into effect), which the regional transportation DCC revenues will be used towards. The DCC revenues will only fund a small portion of these costs.

4.0 Land Economics and DCCs

New urban development (e.g. residential units, employment space) in part drives the need for expanded regional transportation infrastructure and, conversely, new urban development also benefits from improved regional transportation service in various ways (e.g. more locations may be attractive for high density development, there can be less demand for parking, and projects near transit may benefit from attracting buyers who want increased accessibility). There is a compelling rationale for the idea that new urban development should help pay for new regional transportation infrastructure. At the same time, there are concerns that increasing the cost of new construction, especially for housing, will push up prices, which is generally regarded as an undesirable outcome.

The market dynamics of DCCs are complex. Land is unique compared to other forms of capital. Labour, money, and materials can all move around based on where they will obtain the optimum value or return. Land cannot move, though, so its value is based on what it can be used for in its local market context.

In an urban region such as Metro Vancouver, properties have at least two candidates for what an appraiser would call the highest and best use, or the use that supports the highest land value in an open, competitive marketplace:

- *Value based on existing use*: One candidate is the amount that a user (e.g. a home owner, a business owner) or an investor would pay for the property to keep it in its present use (e.g. a single family house, an older low density rental apartment building, an older retail space, or a strip mall). This existing use supports a value based on what users or investors are willing to pay to keep and use the property as is (e.g. to live in, to run a business in, or to collect the rent from).
- *Land value under redevelopment*: The second candidate is the amount a developer is willing and able to pay to acquire the property, demolish the existing use, and profitably build something new, typically at a higher density. The amount a developer can pay depends on the market value of the completed new use and the cost of creating this new use.

When the value supported by the existing use exceeds the land value a developer can pay, the property generally remains as is. This is the case for many properties that appear as though they “ought” to be development sites, because some older low density commercial properties or older single detached homes in places zoned for higher density are simply more valuable in their current use than a developer can afford to pay for them based on redevelopment potential.

When the land value supported by the redevelopment of a site exceeds the value of the existing use, then redevelopment often occurs.

The land value supported by redevelopment can be determined by an approach called residual land value analysis (also known as pro forma analysis). This is a way of determining how much a developer can afford to pay for a particular site.

The steps in residual land value analysis are as follows:

1. First, the total revenues related to building and selling (or leasing) a new project on a site are estimated.
2. Next, all product creation costs (except land) are deducted. These include construction costs, professional fees, financing, and all permit fees and levies.
3. Next, an allowance for developer profit is deducted, which is a target that is budgeted into the analysis rather than left to chance as whatever happens to remain after project completion. Market forces tend to produce market-wide consistency in target profit levels (i.e. if profits are too low, some participants will

leave the business, which over time will lead to higher prices and higher profits because the supply of new units will fall; if profits are high, some new participants will enter the business).

4. Finally, deducting all costs and targeted profit from revenue leaves the residual amount that a developer can afford to pay for land.

In a competitive marketplace, developers are "price-takers" for revenues and creation costs:

- They cannot simply add the cost of a new or increased DCC onto the asking prices for new floorspace. Adding a new or increased DCC onto the asking price would imply that purchasers are willing to pay more for space that is subject to DCCs than they would pay for comparable space in comparable neighbourhoods with lower (or no) DCCs. This does not happen because prices are set by the interaction between supply and demand. Unless there is a monopoly on a commodity, no supplier can unilaterally set price simply because costs are higher.
- Similarly, they cannot arbitrarily reduce other creation costs.

Development takes time, ties up capital, and involves risk, so developers need to achieve a level of profit that makes the business worthwhile. As noted above, developer profit margins are set by the competitive marketplace: there is a basement rate of profit set by the fact that developers would not be willing to undertake projects below some minimum threshold of profitability (and lenders are not likely to lend money for projects that are too "thin") and a ceiling rate set by competition from other developers (a developer who tries to extract too much profit will have to try to achieve higher unit prices than other similar projects, try to obtain labour or materials at less than market price, or try to buy development sites for less than market value, none of which are sustainable business strategies).

Therefore, a new or increased DCC reduces the residual amount that a developer can afford to pay for land. Said another way, developers will respond to a new or increased DCC by seeking to lower the bid price for development sites by an amount equal to the new or increased DCC. This is no different than how developers respond to a site that (for example) has soil contamination and needs remedial work. A developer would be willing to pay less for such a site, by an amount equal to the cost of soil remediation work needed to make the net cost of the site equivalent to comparable land with no soil contamination problems.

The key to understanding and anticipating the ultimate impact of a new or increased DCC, therefore, is to understand how the DCC is likely to affect the supply of land available for new development. The impact for each site will depend on the characteristics of individual properties, market conditions, the objectives of individual owners, and other factors, so it is the overall combined impact across the land market that determines the ultimate impact. There are three possible outcomes of an increased DCC:

- *A reduction in land values for redevelopment sites.* If a new or increased DCC lowers developers' bid price for land, but this price is still sufficiently higher than the value supported by the existing use, there is no impact on the housing or commercial/industrial market. Landowners still have an incentive to sell into the market (as the land value still exceeds the existing use value), developers can outbid users or investors who want the existing use, and new units and floorspace still flow to the market at the pace they would have before the new or increased DCC. Developers experience the same total project cost (albeit made up of different line items) as they would face without the new or increased DCC, the same amount of new development happens, and there is no reason for demand to change, so prices to consumers and profits for developers remain where they were before the new or increased DCC. The only impact is that land values for redevelopment sites are lower than they otherwise would have been.
- *An increase in the market price (sales prices or rents) of new buildings*. If the increased DCC (or any new cost) drives developers' bid price for redevelopment sites below the value supported by the existing use, developers will not be able to obtain development sites at the same pace as before the introduction of

the increased DCC (i.e. more sites will remain in their existing use and the supply of development sites will be reduced). If this reduction in the availability of development sites is large and widespread, the supply of new product will be reduced. If the pool of development sites and therefore the supply of new product is reduced, in the face of continued demand for housing or commercial/industrial space, this can lead to increased market prices for new (and existing) product.

- *A reduction in profit margins for new projects*. If the increased cost cannot be passed along to buyers/renters of the new space and cannot be passed back to landowners, the outcome can be a reduction in profit margins for new projects.

The financial analysis component of this work aims to inform TransLink about how the proposed inflationary adjustment to the regional transportation DCC is likely to affect the supply of land available for new development.

5.0 Financial Analysis

5.1 Methodology

An increased DCC leads to increased project construction costs and (as outlined in Section 4.0) any increase in development costs can lead to three different potential impacts:

a) *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.

b) *An increase in the market price (sales prices or rents) of new buildings*. 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.

c) *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.

To evaluate these different potential impacts, we analyzed the financial performance of hypothetical development projects at a range of case study sites throughout the region to determine whether or not the proposed increase in the regional transportation DCC rate will negatively impact the financial viability of new development at each case study site. In broad terms, the methodology included the following main steps:

1. *Selected case study sites*. 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 CAC or density bonus policies). The regional transportation DCC applies throughout the region. However, our analysis focuses primarily on locations in the region that tend to have comparatively low completed new project values because the viability of redevelopment in these types of locations is likely to be the most sensitive to changes in project costs. Therefore, if the proposed increased DCC rate impacts the viability of redevelopment, the impacts are most likely to be focused in the locations in the region that we selected.

   Exhibit 2 summarizes the case studies that were analyzed (17 in total). A description of each site and development scenario is also included in Section 5.2. These sites are all in locations that are good candidates for redevelopment, based on municipal policy and market interest. Any impact on these hypothetical projects from an increased DCC will be broadly indicative of the potential impact on similar types of redevelopment projects in these areas.

   Note that the case study financial analysis does not include institutional development, as it is not a market use. In addition, the case studies do not include stand-alone retail development, because stand-alone retail development rarely occurs in Metro Vancouver. However, retail is included in the mixed-use redevelopment case studies that we analyzed where policies require or encourage grade level commercial space.

Exhibit 2: Distribution of Case Studies by Location and Type of Development Project

Type of Development	Total # of Case Studies	Locations Analyzed
Single family	2	Coquitlam
Townhouse	3	Langley Township, Surrey
4 to 6 Storey Apartment and Mixed Use	3	Maple Ridge, North Delta, Surrey
Highrise Apartment and Mixed Use	3	Surrey, Langley City
Office	4	Coquitlam, Surrey, Richmond
Industrial	2	Pitt Meadows, Surrey
Total	17	n/a

2. *For each case study site, estimated its value based on its current use* (in most cases the sites are improved with single family houses or older lower density commercial or industrial buildings):

   a) For income producing properties (commercial, industrial), the existing use value is the capitalized value of the net income stream that could be generated by the existing improvements. This is the estimated value that an investor would be willing to pay for the property to retain the existing improvements and collect rent for the long term. This is the minimum price that a developer would need to pay for the site to acquire it for redevelopment purposes.

   b) For existing single family or rural/acreage properties, we estimated the value of the property as an existing residence. For residential properties that require assembly, we assume that the developer would also need to pay a 20% premium over existing value in order to create an incentive for the existing property owners to all sell simultaneously for redevelopment.

   As long as redevelopment supports a higher land value than the value of the existing use, the site should be a financially viable redevelopment candidate.

3. *For each case study site, modelled the financial performance of a new development project* based on the applicable allowable use and density (and other development regulations) at the site using residual land value analysis. Residual land value analysis is a common method of estimating the land value by estimating the revenue from selling (or leasing) completed units or floorspace, 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. The financial performance of the assumed new development project was tested twice for each case study site:

   a) First, with the existing regional transportation DCC rate.

   b) Second, with the proposed new regional transportation DCC rate.

   The analysis incorporates other existing municipal and regional DCCs, any known planned changes to municipal DCC rates as of June 2023, and any fixed rate local government Community Amenity Contributions (CACs) or density bonus contributions where applicable. Projects that would be subject to negotiated CACs are not included in the evaluation as any negative impact created by an increased or new DCC could be off-set by a lower negotiated CAC value, so the viability of redevelopment should not be affected in these cases.

4. *Determined whether each scenario is financially viable*. For this we considered two measures:

   a) First, we calculated the difference between the value of the site in its current use and the land value of the site under redevelopment, with the existing regional transportation DCC and with the proposed new regional transportation DCC. If the redevelopment land value is higher than the existing use value, then the site is financially viable for redevelopment.

b) For scenarios where the land value is not higher than the existing use value, we examined the development profit margin (percentage of total project costs including land cost) assuming the developer acquired the property at its existing use value. By examining the calculated profit margin, we determined whether the scenario was likely viable (sufficient profit for a developer to be likely to proceed) or not viable.

5. *Calculated the potential impact of the proposed change to the regional transportation DCC on:*

   a) Land values supported by redevelopment. A reduction in development site land values 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.

   b) Profit margins for new projects. This may occur if the value of the site under its existing use is higher than the land value supported by redevelopment or if the developer acquired the site prior to the DCC rate increase.

6. *Evaluated whether the proposed change to the regional transportation DCC will have an impact on housing affordability.* This can occur 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 financial analysis contained in this report is based on market conditions and construction costs as of June 2023.

5.2 Case Study Sites and Scenarios

We analyzed 17 different case studies, including:

- Two single family subdivisions.
- Three townhouse development sites.
- Three 4 to 6 storey woodframe apartment (or mixed use) development sites.
- Three highrise concrete apartment (or mixed use) development sites.
- Four office development sites.
- Two industrial development sites.

The case study sites and development scenarios are described below.

Site 1: Single Family Subdivision – 2 Lots – Coquitlam

This site is an existing 8,700 square foot single family lot improved with an older house in Coquitlam. Planning policy supports rezoning and subdivision of this lot into two smaller single family lots.

Site 2: Single Family Subdivision – 8 Lots – Coquitlam

This site is a 45,000 square foot single family lot improved with an older house in Coquitlam. Planning policy supports rezoning and subdivision of this lot into eight smaller single family lots.

Site 3: Townhouse – Higher Density – North Surrey

This site is an assembly of two single family lots improved with older single family homes in North Surrey. The combined site size is about 24,000 square feet. Planning policy supports rezoning to allow townhouse

use at 30 units per acre. Our financial analysis assumes townhouse development at an overall density of 1.0 FSR[5] (30 units per acre).

Site 4: Townhouse – Lower Density – Langley Township

This site is a 46,000 square foot single family lot improved with an older home in the Township of Langley. Planning policy supports rezoning to allow townhouse use at 22 units per acre. Our financial analysis assumes townhouse development at an overall density of 0.75 FSR (22 units per acre).

Site 5: Townhouse – Lower Density – North Surrey

This site is a 43,000 square foot single family lot improved with an older home in North Surrey. Planning policy supports rezoning to allow townhouse use at 15 units per acre. Our financial analysis assumes townhouse development at an overall density of 0.75 FSR (15 units per acre).

Site 6: 6 Storey Apartment – North Surrey

This site is an assembly of five single family lots improved with older single family homes in North Surrey. The combined site size is about 41,000 square feet. Planning policy supports rezoning to allow apartment use. Our financial analysis assumes 6 storey woodframe apartment development at an overall density of 2.5 FSR.

Site 7: 4 to 6 Storey Mixed Use Apartment – North Delta

This site is an assembly of five single family lots improved with older single family homes in North Delta. The combined site size is about 36,000 square feet. Planning policy supports rezoning to allow mixed use commercial and apartment use. Our financial analysis assumes a 4 to 6 storey woodframe mixed use apartment and retail project at an overall density of 2.2 FSR.

Site 8: 4 Storey Apartment – Maple Ridge

This site is an assembly of three large single family lots improved with older single family homes in Maple Ridge. The combined site size is about 61,000 square feet. Planning policy supports rezoning to allow apartment use. Our financial analysis assumes 4 storey woodframe apartment development at an overall density of 1.9 FSR.

Site 9: Highrise Apartment – Surrey City Centre

This site is a 61,000 square foot commercial property in Surrey City Centre that is improved with an older single storey commercial building. Planning policy supports rezoning to allow high density mixed use commercial and apartment use. Our financial analysis assumes a highrise mixed use apartment and retail project at an overall density of 4.2 FSR.

Site 10: Highrise Apartment – Surrey City Centre

This site is a 21,000 square foot commercial property in Surrey City Centre that is improved with an older single storey commercial building. Planning policy supports rezoning to allow high density mixed use commercial and apartment use. Our financial analysis assumes a highrise mixed use apartment and retail project at an overall density of 9.0 FSR.

[5] FSR stands for Floor Space Ratio (sometimes referred to as FAR or Floor Area Ratio). This is a common measure of the maximum density permitted at a site in municipal zoning bylaws. An FSR of 2.0 would mean that the maximum permitted floorspace at a property is 2.0 times the size of the site. This could take a variety of building forms in terms of site coverage and number of storeys.

Site 11: Highrise Apartment – City of Langley

This site is a 51,000 square foot commercial property in the City of Langley that is improved with older low density commercial space. Planning policy supports rezoning to allow high density mixed use commercial and apartment use. Our financial analysis assumes a concrete mixed use apartment and retail project at an overall density of 5.5 FSR.

Site 12: Office – Richmond

This site is a 75,000 square foot commercial property in Richmond City Centre that is improved with older low density commercial space. Planning policy supports rezoning to allow high density commercial use. Our financial analysis assumes a highrise retail and office project at an overall density of 3.0 FSR. The analysis assumes the commercial space is sold as individual strata units as new office projects in this area have primarily been strata (not leasehold) in recent years.

Site 13: Office – Coquitlam

This site is a 16,000 square foot commercial property in Coquitlam City Centre that is improved with older low density commercial space. Planning policy supports rezoning to allow office use. Our financial analysis assumes a retail and office development at an overall density of 2.0 FSR. The analysis assumes the commercial space is sold as individual strata units as most new office projects in this area have been strata (not leasehold) in recent years.

Site 14: Office – Surrey City Centre

This site is a 61,000 square foot commercial property in Surrey City Centre that is improved with an older single storey commercial building. Planning policy supports rezoning to allow high density commercial use. Our financial analysis assumes a highrise retail and office project at an overall density of 3.5 FSR. The analysis assumes the commercial space is sold as individual strata units as new office projects in this area have primarily been strata (not leasehold) in recent years.

Site 15: Office – Surrey City Centre

This site is a 21,000 square foot commercial property in Surrey City Centre that is improved with an older single storey commercial building. Planning policy supports rezoning to allow high density commercial use. Our financial analysis assumes a highrise retail and office project at an overall density of 9.0 FSR. The analysis assumes the commercial space is sold as individual strata units as most new office projects in this area have been strata (not leasehold) in recent years.

Site 16: Light Industrial – Surrey

This site is a 217,000 square foot rural property in the Campbell Heights area of Surrey that is improved with an older home and storage buildings. Planning policy supports rezoning to allow industrial use. Our financial analysis assumes a light industrial project at an overall density of 0.6 FSR. The analysis assumes the new industrial space is leasehold (not strata).

Site 17: Light Industrial – Pitt Meadows

This site is a 43,000 square foot industrial property in Pitt Meadows that is improved with an older low density building as well as outdoor storage. Our financial analysis assumes a light industrial project at an overall density of 0.6 FSR. Rezoning is not required. The analysis assumes the new industrial space is leasehold (not strata).

5.3 Results of the Financial Analysis

This section summarizes the results of the case study financial analysis. As previously noted, a total of 17 case studies were analyzed. The results of the financial analysis are summarized in Exhibit 3.

Exhibit 3 shows the following information for each case study site and redevelopment scenario:

- Case study number.
- Location.
- Description of redevelopment scenario.
- Description of the existing use.
- Whether the redevelopment scenario is financially viable under the current regional transportation DCC rates assuming the developer acquires the site for the higher of its existing use value or land value under the current DCC rate. For this, any scenario that generates a profit margin of 15% (on total costs) or more was categorized as viable. For these scenarios, an increased DCC can be passed back to the existing land owner as the land value significantly exceeds the value of the existing use. If the profit margin is between 10% and 15%, we categorized the scenario as likely viable. If the profit margin is less than 10%, we categorized the scenario as not likely viable.
- The estimated impact on supportable land value of the proposed increase in DCC rates.
- Whether the redevelopment scenario is financially viable under the proposed DCC rates (using the same categories as outlined above).
- The impact of the proposed DCC rates on the estimated profit margin from the redevelopment scenario if the land acquisition cost cannot be reduced (for example, if the site was already purchased).

Exhibit 3: Summary of Financial Analysis for Case Studies

Case Study Site	Location	Redevelopment Scenario	Existing Use	Is Project Viable as a Redevelopment Site at Existing DCC Rate?	Decrease in Supportable Land Value in Development Scenario due to Increase in DCC Rate	Is Project Viable as a Redevelopment Site at Proposed DCC Rate?	Decrease in Profit Margin Due to Increase in DCC if Land Cost Fixed (percentage points)
1	Coquitlam	2 lot subdivision	Single Family Lot	Yes	-0.012%	Yes	-0.011
2	Coquitlam	8 lot subdivision	Acreage Single Family Lot	Yes	-0.021%	Yes	-0.019
3	North Surrey	Townhouse at 1.0 FSR	Assembly of Single Family Lots	Likely	-0.066%	Likely	-0.019
4	Langley Township	Townhouse at 0.75 FSR	Acreage Single Family Lot	Yes	-0.103%	Yes	-0.023
5	North Surrey	Townhouse at 0.75 FSR	Acreage Single Family Lot	Yes	-0.061%	Yes	-0.017
6	Surrey City Centre	Lowrise woodframe strata at 2.5 FSR	Assembly of Single Family Lots	Likely	-0.124%	Likely	-0.023
7	North Delta	Lowrise mixed use strata at 2.2 FSR	Assembly of Single Family Lots	Not Likely	-0.126%	Not Likely	-0.017
8	Maple Ridge	Lowrise woodframe strata at 1.9 FSR	Assembly of Single Family Lots	Yes	-0.280%	Yes	-0.023
9	Surrey City Centre	Mixed-use concrete at 4.2 FSR	Older Commercial Property	Likely	-0.224%	Likely	-0.018
10	Surrey City Centre	Mixed-use concrete at 9.0 FSR	Older Commercial Property	Yes	-0.210%	Yes	-0.021
11	Langley City	Mixed-use concrete at 5.5 FAR	Older Commercial Property	Likely	-0.546%	Likely	-0.020
12	Richmond	Strata office at 3.0 FSR	Older Commercial Property	Likely	-0.126%	Likely	-0.011
13	Coquitlam	Strata office at 2.0 FSR	Older Commercial Property	Likely	-0.095%	Likely	-0.011
14	Surrey City Centre	Strata office at 3.5 FSR	Older Commercial Property	Likely	-0.126%	Likely	-0.011
15	Surrey City Centre	Strata office at 9.0 FSR	Older Commercial Property	Likely	-0.170%	Likely	-0.011
16	Campbell Heights	Light Industrial at 0.6 FSR	Rural Residential	Yes	-0.010%	Yes	-0.005
17	Pitt Meadows	Light Industrial at 0.6 FSR	Older Industrial/Storage	Likely	-0.009%	Likely	-0.004

Source: Coriolis Consulting Corp. based on market conditions and construction costs as of June 2023.

The key points from the analysis are as follows:

1. There are no changes to the financial viability of the case studies that we analyzed due to the proposed increase in the regional transportation DCC rates. Therefore, we would not expect any impact to the supply of new housing, commercial space, or industrial space due to the proposed increase in DCC rates.
2. For many of the scenarios we tested, the primary impact of the proposed DCC rate increase would be to decrease the land value of the site. However, any impacts on land values due to the proposed increase in DCC rates will be very small. Based on our case study analysis we would anticipate the following maximum impacts:
    - Between about 0.01% and 0.5% for residential (or mixed use) development sites, with the estimated impact at most sites in the 0.01% and 0.02% range.
    - Between about 0.1% and 0.2% for office development sites.
    - About 0.01% for industrial development sites.
3. If developers are not able to reduce land acquisition costs to off-set the impact of the increased DCC rates, the estimated impact of the proposed DCC rate increases on profit margins will be very small. We would expect the following maximum impacts on profit margins:
    - Between about 0.01 and 0.02 percentage points for residential (or mixed use) projects.
    - Between about 0.01 and 0.02 percentage points for office projects.
    - Less than 0.01 percentage point for industrial projects.
4. Other market factors will have a much larger impact on land values and profit margins than the proposed increase in the regional transportation DCC rates. For example, small changes in construction costs, financing rates, sales prices, rental rates, and vacancy rates will have much larger impacts on land values and profit margins than the proposed increase to the regional transportation DCC rates.

Overall, the analysis shows that the proposed inflationary adjustment to the regional transportation DCC is extremely small in the context of the costs of creating new development projects in Metro Vancouver. In all of the case studies analyzed, the financial analysis suggests that the additional cost will not have any meaningful impact on project viability or on the land value supported by redevelopment.

5.4 Impact on Housing Affordability

One of the key questions to address as part of this analysis is whether the proposed increased DCC rates will have an impact on housing affordability.

The proposed regional transportation DCC rate increases would result in a very small increase to overall project costs for new housing projects in Metro Vancouver. Exhibit 4 illustrates the maximum impact that the proposed DCC rate increases would have on costs for typical residential projects in lower cost locations in Metro Vancouver.

Because the representative costs shown Exhibit 4 are for lower cost locations in the region, the estimated impact of the DCC rate increase is the maximum impact on total project costs (i.e. the DCC increase would be a proportionally smaller figure in a higher cost location). For example, the impact (as a percentage of total project costs) would be lower for projects in the central locations in the region (such as Vancouver, Burnaby, North Shore) where overall project costs are higher.

Exhibit 4: Impact of DCC Rate Increase on Residential Project Costs

	Current DCC Rate	Proposed DCC Rate	Proposed Increase	Representative Project Cost Including Land	Proposed DCC Rate Increase as % of Project Costs
Single family residential ($ per lot)	$2,993	$3,194	$201	$1,300,000	0.015%
Duplex/townhouse ($ per unit)	$2,485	$2,652	$167	$960,000	0.017%
Apartment ($ per unit)	$1,554	$1,658	$104	$550,000	0.019%

The estimated maximum impact of the proposed DCC rate increase is about 0.019% of current residential project costs. This is extremely small in the context of a new development project and will not affect the viability of new development projects, which was confirmed by the financial analysis outlined in Section 5.3.

Like any other predictable increase in project costs, the proposed increase in DCC rates should put downward pressure on development site land values. Therefore, the proposed increase in DCC rates should be off-set by a reduction in development site land values so that overall project costs (construction plus land) do not change.

However, even if this extra cost was passed along to an end unit purchaser, the increase in monthly mortgage costs would be very small. For example, the proposed increase in the regional transportation DCC rate for new apartment units is $104. If this was financed, it would result in an additional mortgage payment of about $0.62 per month (assuming a 5.25% interest rate and a 25 year amortization period). Other factors such as changes in construction costs, financing rates, and residential market values have a much greater impact on housing costs.

Overall, our analysis indicates that the proposed DCC rate increase will not have any meaningful impact on housing affordability.

5.5 Implications of Financial Analysis

The proposed increase in the regional transportation DCC rates are small in terms of both absolute dollars and as a percentage of overall project costs.

Therefore, our financial analysis indicates that there will be little or no impacts from the proposed DCC rate increases on:

- The financial viability of redevelopment.
- Land values for development sites.
- Profit margins for new development projects.
- Housing affordability.

6.0 DCC Revenue Forecast

6.1 Methodology

The DCC revenue forecasts are for the period from 2024 to 2031. As previously noted, this reflects an 8 year period from when the proposed new DCC rate would come into effect to the end of the current Investment Plan[6].

The DCC revenue forecasts were completed in three broad steps:

1. Estimate the anticipated average annual pace of development in the region by land use over the forecast period, based on historic trends and indicators about anticipated future growth. For the forecast of residential development, consider the portion to which the DCC does not apply (e.g. laneway houses, secondary suites) and the portion that should be assumed to be eligible affordable rental housing for which the DCC will be waived.
2. Apply the existing regional transportation DCC rates to the forecasts of average annual development by land use to generate an estimate of anticipated average annual DCC revenues *without the proposed inflationary adjustment*.
3. Apply the proposed new regional transportation DCC rates to the forecasts of average annual development by land use to generate an estimate of anticipated average annual DCC revenues *with the proposed inflationary adjustment*.

As demonstrated by TransLink's historic DCC collections, which ranged from approximately $20 million to $45 million per year during 2020 to 2022, the actual amount of DCC revenues collected each year will vary year-to-year based on the actual pace of development.

6.2 Forecast of Residential Development by Unit Type

The following factors were considered in estimating the average annual amount of residential development by unit type on which the regional transportation DCC will be collected over the forecast period:

- The annual number of single family, duplex/townhouse, and apartment units on which the regional transportation DCC has been collected since it was introduced.
- The pace of net new residential development in the region by type of unit over the past 5 to 10 years based on Canada Mortgage and Housing Corp (CMHC) housing starts data and demolitions data by type of unit from Metro Vancouver.
- The pace of residential development anticipated in the region in Metro Vancouver's Regional Growth Strategy (*Metro 2050*).
- The amount of residential development anticipated to be affordable rental housing that will not pay the regional transportation DCC.

[6] TransLink's current plan is the "2022 Investment Plan", which was approved on May 26, 2022 and which spans 2022 to 2031.

6.2.1 Historic Residential Development Trends Based on TransLink DCC Collections

Exhibit 5 summarizes the amount of residential development on which TransLink has collected the regional transportation DCC since it was introduced.

Over the three year period from 2020 to 2022, the regional transportation DCC was collected on:

- about 600 to 1,100 single family houses per year.
- about 2,400 to 4,000 duplex and townhouse units per year.
- about 8,100 to 17,800 apartment units per year. Apartment development was materially higher in 2021 and 2022 (after the global pandemic in 2020), with the DCC being collected on between about 16,200 and 17,800 apartment units per year in these two years.

Exhibit 5: Residential Development Statistics from TransLink's DCC Collections (# of units)

	2020	2021	2022	Average Annual Amount, 2020 to 2022
Single family:				
Total units reported*	867	1,092	580	846
Units that received a waiver	0	0	0	0
Units on which the DCC was collected	867	1,092	580	846
Duplex/townhouse:				
Total units reported*	2,361	4,043	2,674	3,026
Units that received a waiver	6	11	7	8
Units on which the DCC was collected	2,355	4,032	2,667	3,018
Apartment:				
Total units reported*	8,492	20,179	18,998	15,889
Units that received a waiver	345	2,410	2,811	1,855
Units on which the DCC was collected	8,147	17,769	16,187	14,034
Residential Total:				
Total units reported*	11,720	25,314	22,252	19,762
Units that received a waiver	351	2,421	2,818	1,863
Units on which the DCC was collected	11,369	22,893	19,434	17,899

Source: TransLink.
Note *: The total units reported is the sum of the number of units that received a waiver and the number of units on which the DCC was collected.

6.2.2 Historic Residential Development Trends Based on CMHC Housing Starts Data

Exhibit 6 summarizes total housing starts[7], demolitions, and net new housing starts (i.e. total starts less demolitions) in Metro Vancouver from 2013 to 2022 based on data from CMHC and Metro Vancouver.

Total net new housing starts in the region ranged from about 16,400 starts in 2013 to about 24,900 starts in 2019. Looking at the nine year period from 2013 to 2021 (i.e. holding aside 2022 because demolition data by

[7] CMHC defines a housing start as "the beginning of construction work on the building where the dwelling unit will be located" which can be either when "the concrete has been poured for the whole of the footing around the structure" or "an equivalent stage where a basement will not be part of the structure." The regional transportation DCC is payable to collection entities (local governments) at the same time as any municipal charges are due for a development project or at the time of subdivision or building permit approval.

housing type in the region is not yet available for 2022), net new housing starts averaged about 20,400 per year including about:

- 1,100 net new single family starts per year.
- 1,700 net new secondary suites per year.
- 600 net new laneway houses per year.
- 3,200 net new duplex/townhouse units per year.
- 13,800 net new apartment units per year.

Trends over the five year period from 2017 to 2021 are similar, with slightly higher net new apartment unit starts and therefore slightly higher net new total starts.

Exhibit 6: Net New Housing Starts by Type of Unit in Metro Vancouver, 2013 to 2022

												Average Annual Amount	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2013-2021	2017-2021
Starts:	Single detached	3,485	3,941	4,097	4,539	4,348	3,795	2,771	2,585	2,627	2,894	3,576	3,225
	Secondary suites	1,083	1,100	1,690	2,018	1,950	2,014	1,769	1,712	1,848	2,228	1,687	1,859
	Laneway houses	519	433	525	630	563	797	655	500	388	498	557	581
	Semi-detached (duplex)	510	508	486	430	409	420	530	636	648	1,038	509	529
	Row (triplex, townhouse)	2,373	2,719	2,512	3,398	3,386	2,504	2,864	2,628	2,903	2,265	2,810	2,857
	Apartment	10,726	10,511	11,553	16,899	15,548	13,874	19,552	14,310	17,599	17,060	14,508	16,177
	Total starts	18,696	19,212	20,863	27,914	26,204	23,404	28,141	22,371	26,013	25,983	23,646	25,227
Demolitions:	Single detached	2,054	2,544	3,182	3,145	2,907	2,577	1,722	1,700	2,600	n/a	2,492	2,301
	Secondary suites (a)	0	0	0	0	0	0	0	0	0	n/a	0	0
	Laneway houses (a)	0	0	0	0	0	0	0	0	0	n/a	0	0
	Semi-detached (duplex)	27	42	91	56	163	67	90	101	83	n/a	80	101
	Row (triplex, townhouse)	2	0	0	70	8	186	64	10	9	n/a	39	55
	Apartment	192	231	168	623	826	832	1,394	756	1,164	n/a	687	994
	Total demolitions	2,275	2,823	3,444	3,894	3,904	3,662	3,270	2,567	3,856	3,844	3,299	3,452
Net new:	Single detached	1,431	1,397	915	1,394	1,441	1,218	1,049	885	27	n/a	1,084	924
	Secondary suites	1,083	1,100	1,690	2,018	1,950	2,014	1,769	1,712	1,848	n/a	1,687	1,859
	Laneway houses	519	433	525	630	563	797	655	500	388	n/a	557	581
	Semi-detached (duplex)	483	466	395	374	246	353	440	535	565	n/a	429	428
	Row (triplex, townhouse)	2,371	2,719	2,512	3,328	3,378	2,318	2,800	2,618	2,894	n/a	2,771	2,802
	Apartment	10,534	10,280	11,385	16,276	14,722	13,042	18,158	13,554	16,435	n/a	13,821	15,182
	Total starts	16,421	16,389	17,419	24,020	22,300	19,742	24,871	19,804	22,157	22,139	20,347	21,775
	Total net new less secondary suites	14,819	14,856	15,204	21,372	19,787	16,931	22,447	17,592	19,921	n/a	18,103	19,336

Source: CMHC data summarized by Coriolis. Note a: Assumes no demolitions are secondary suites or laneway houses.

6.2.3 Residential Development Forecast in *Metro 2050*

Metro Vancouver's Regional Growth Strategy, *Metro 2050*, includes forecasts of dwelling unit growth in the region for ten year periods. The period that most closely matches the DCC revenue forecast period (2024 to 2031) is the ten year period from 2020 to 2030. During this timeframe, the Metro Vancouver projections anticipate growth of about 21,200 residential units per year (see Exhibit 7). This includes all types of housing (not just residential development to which the DCC applies). This is similar to the average number of net new housing starts in the region over the past decade.

Exhibit 7: Dwelling Unit Forecast for Metro Vancouver (Metro Vancouver's Regional Growth Strategy, *Metro 2050*)

	2020	2030	Projected Average Annual Growth, 2020 to 2030
Projected Metro Vancouver Dwelling Units	1,075,500	1,287,700	21,220

Source: Metro Vancouver, dwelling unit forecasts from the Regional Growth Strategy (*Metro 2050*).

6.2.4 Estimated Number of Units Not Paying the DCC

TransLink does not charge the DCC on secondary suites and laneway houses, so all of these units are assumed not to pay the DCC in the DCC revenue forecasts.

TransLink waives the DCC for eligible affordable rental housing projects and reduces the DCC by 50% for eligible student rental housing development.

We considered several indicators in determining a share of apartment development that should be assumed to qualify for the affordable housing waiver in the DCC revenue forecasts:

- Looking at TransLink's DCC revenue collections data (see Exhibit 5 in Section 6.2.1 above), in 2020 about 4% of apartment units qualified for the waiver, in 2021 about 12% of apartment units qualified for the waiver, and in 2022 about 15% of apartment units qualified for the waiver.
- Metro Vancouver's Regional Growth Strategy, *Metro 2050*, sets a "regional target that at least 15% of newly completed housing units built within all Urban Centres and Frequent Transit Development Areas combined, by the year 2050, be affordable rental housing units."[8]
- Housing affordability is a significant concern in the region. There will be increasing pressure for local, regional, provincial and federal governments to respond to the regional affordability challenge, so the number of affordable rental housing units (and their share of total) being built in the region is likely to increase.

For the DCC revenue forecasts, we assume that 15% of net new apartment development will be affordable rental housing that does not pay the DCC (which is similar to the 2021 and 2022 figures).

6.2.5 Forecast of Average Annual Residential Development for the DCC Revenue Forecasts

Based on the indicators reviewed in Sections 6.2.1 to 6.2.4, Exhibit 8 shows the residential development forecasts that are assumed in the DCC revenue forecasts.

Exhibit 8: Forecast of Average Annual Net New Residential Development in the Region that will Pay the DCC from 2024 to 2031

	Forecast of Average Annual Net New Residential Units in Metro Vancouver, 2024 to 2031	% Assumed to Pay the DCC	Average Annual Residential Development Forecast for the DCC Revenues Forecast
Single family houses	1,000 units	100%	1,000 units
Secondary suites/laneway houses	2,300 units	0%	0 units
Duplexes/townhouses	3,200 units	100%	3,200 units
Apartment	14,500 units	85%	12,300 units
Residential Total	21,000 units	n/a	16,500 units

Source: Coriolis.

[8] Metro Vancouver, "Metro 2050." February 2022, page 73.

6.3 Forecast of Retail/Service Development

The following factors were considered in estimating the average annual amount of retail/service development on which the regional transportation DCC will be collected over the forecast period:

- The annual amount of retail/service floorspace (in square feet) on which the regional transportation DCC has been collected since it was introduced.
- The annual amount of retail/service floorspace we would expect to be built in region over the forecast period based on typical retail/service floorspace per capita ratios and anticipated population growth in the region.

6.3.1 Historic Retail/Service Development Based on TransLink DCC Collections

Exhibit 9 summarizes the amount of retail/service development on which TransLink has collected the regional transportation DCC since it was introduced. As shown, the DCC has been collected on between about 0.6 million and 1.1 million square feet of retail/service space per year over the past three years, with growth averaging 0.8 million square feet per year over this timeframe.

Exhibit 9: Retail/Service Development Statistics from TransLink's DCC Collections (# of square feet)

	2020	2021	2022	Average Annual Growth, 2020 to 2022
Retail/service floorspace on which the DCC was collected	813,889	1,093,171	636,075	847,712

Source: TransLink.

6.3.2 Anticipated Retail/Service Development Based on Forecasted Population Growth

Based on periodic analysis over the past 30 years, there has consistently tended to be about 40 square feet of retail/service space per capita in the region.

Population growth is expected to be in the range of about 44,000 to 53,000 people per year over the forecast period, based on growth projections in Metro Vancouver's Regional Growth Strategy (*Metro 2050*) and population projections by BC Stats (see Exhibits 10 and 11).

Exhibit 10: Population Forecast for Metro Vancouver (Metro Vancouver's Regional Growth Strategy, *Metro 2050*)

	2020	2030	Projected Average Annual Growth, 2020 to 2030
Projected Metro Vancouver Population	2,767,000	3,206,100	43,910

Source: Metro Vancouver, population forecasts from the Regional Growth Strategy (*Metro 2050*).

Exhibit 11: Population Forecast for Metro Vancouver (BC Stats)

	2024	2025	2026	2027	2028	2029	2030	2031	Projected Average Annual Growth, 2024 to 2031
Projected Metro Vancouver Population	2,970,109	3,023,996	3,076,506	3,129,788	3,183,552	3,237,191	3,290,536	3,343,513	53,343
Change from previous year	57,122	53,887	52,510	53,282	53,764	53,639	53,345	52,977	n/a

Source: BC Stats, online population projection application (last updated November 2022).

Applying a ratio of 40 square feet per capita to this anticipated population growth suggests average retail/service floorspace development of about 1.7 million to 2.1 million square feet per year in Metro Vancouver (see Exhibit 12).

Exhibit 12: Average Annual Retail/Service Floorspace Growth based on Typical Floorspace Per Capita Ratios and Forecasts of Regional Population Growth

	Amount
Anticipated average annual population growth during forecast period	44,000 to 53,000 people per year
Retail/service floorspace per capita ratio	40
Estimated average annual retail/service floorspace growth based on population growth	1,760,000 to 2,120,000 sq.ft. per year

Source: Coriolis.

TransLink's DCC revenue collections data suggests that recent retail/service floorspace growth has been lower than this. There are trends affecting the retail industry that may mean demand for physical retail/service space declines in the foreseeable future (e.g. online shopping, consolidation and adjustments in the retail sector, the rise of on-demand delivery that reduces the need for the amount of physical retail space). In addition, there is very little vacant land available for pure retail development in the region. So, the forecast based on typical per capita ratios could be considered high in the current context.

6.3.3 Forecast of Average Annual Retail/Service Floorspace Development for the DCC Revenue Forecasts

Based on the indicators summarized above, retail/service floorspace growth is assumed to average about 1.0 million to 1.5 million square feet per year for the DCC revenue forecasts for 2024 to 2031.

6.4 Forecast of Office Development

The forecasts of average annual office floorspace growth in the region for the DCC revenues forecast are based on an analysis of historic trends.

6.4.1 Historic Trends in Office Floorspace Development

Exhibits 13 and 14 show historic data about office floorspace growth in the region:

- Exhibit 13 summarizes the amount of office development on which TransLink has collected the regional transportation DCC since it was introduced. As shown, the DCC has been collected on between 1.0 million and 3.0 million office square feet per year over the past three years, with growth averaging 1.66 million square feet per year over this timeframe.
- Exhibit 14 summarizes our own internal office floorspace data for the region, which is based on tracking office building completions in Metro Vancouver each year. As shown, our database suggests that office floorspace growth in Metro Vancouver averaged 1.5 million square feet per year from 2012 to 2022 and was about the same in the past five years (i.e. averaging about 1.5 million square feet per year from 2017 to 2022).

Exhibit 13: Office Development Statistics from TransLink's DCC Collections (# of square feet)

	2020	2021	2022	Average Annual Growth, 2020 to 2022
Office floorspace on which the DCC was collected	1,046,812	977,233	2,956,809	1,660,285

Source: TransLink.

Exhibit 14: Office Floorspace Inventory in Metro Vancouver (Coriolis)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Average Annual Growth 2012 to 2022	Average Annual Growth 2017 to 2022
Total Office Floorspace Inventory	65,695,052	66,089,936	68,133,825	70,615,001	71,683,287	72,620,571	73,465,867	73,737,791	75,538,075	77,769,786	80,363,884	1,466,883	1,548,663
Change from previous year	731,878	394,884	2,043,889	2,481,176	1,068,286	937,284	845,296	271,924	1,800,284	2,231,711	2,594,098	n/a	n/a

Source: Coriolis internal database.

6.4.2 Forecast of Average Annual Office Floorspace Development for the DCC Revenue Forecasts

Taking these indicators into account, and acknowledging that the office market continues to face challenges due to post-pandemic trends related to hybrid work, the DCC revenue forecasts assume average annual office floorspace growth of about 1.0 million to 1.5 million square feet per year in the region from 2024 to 2031.

6.5 Forecast of Institutional Development

Exhibit 15 summarizes the amount of institutional development on which TransLink has collected the regional transportation DCC since it was introduced. As shown, the DCC has been collected on between about 0.9 million and 2.3 million square feet of institutional space per year over the past three years, with growth averaging 1.85 million square feet per year over this timeframe.

Institutional floorspace growth tends to vary widely from year to year, as it can be highly impacted by a small number of major projects.

The DCC revenue forecasts assume there will be an average of about 1.5 million square feet of institutional floorspace growth per year during the forecast period.

Exhibit 15: Institutional Development Statistics from TransLink's DCC Collections (# of square feet)

	2020	2021	2022	Average Annual Growth, 2020 to 2022
Institutional floorspace on which the DCC was collected	944,658	2,320,817	2,299,517	1,854,997

Source: Based on DCC revenue collections data from TransLink.

6.6 Forecast of Industrial Development

The forecasts of average annual industrial floorspace growth in the region for the DCC revenues forecast are based on an analysis of historic trends.

6.6.1 Historic Trends in Industrial Floorspace Development

Exhibits 16, 17, and 18 show historic data about industrial floorspace growth in the region:

- Exhibit 16 summarizes the amount of industrial development on which TransLink has collected the regional transportation DCC since it was introduced. As shown, the DCC has been collected on between 3.7 million to 5.8 million industrial square feet per year over the past three years, with growth averaging 5.0 million square feet per year over this timeframe.
- Exhibit 17 summarizes industrial floorspace data for the region from Colliers. As shown, Colliers reports that industrial floorspace growth in Metro Vancouver averaged 3.4 million square feet per year from 2012 to 2022, although industrial floorspace growth was higher in the past five years (averaging 3.7 million square feet per year from 2017 to 2022).

- Exhibit 18 summarizes industrial floorspace data for the region from Cushman Wakefield. As shown, Cushman Wakefield reports that industrial floorspace growth in Metro Vancouver averaged 3.6 million square feet per year from 2012 to 2022, although industrial floorspace growth was higher in the past five years (averaging 4.4 million square feet per year from 2017 to 2022).

Exhibit 16: Industrial Development Statistics from TransLink's DCC Collections (# of square feet)

	2020	2021	2022	Average Annual Growth, 2020 to 2022
Industrial floorspace on which the DCC was collected	3,721,365	5,491,847	5,799,851	5,004,354

Source: TransLink.

Exhibit 17: Industrial Floorspace Inventory in Metro Vancouver (Colliers)

												Average Annual Growth	
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2022	2017 to 2022
Total Industrial Inventory	174,134,329	176,290,759	181,393,126	184,468,109	187,084,637	190,030,432	193,694,844	197,439,519	201,548,025	204,379,942	208,516,434	3,438,211	3,697,200
Change from previous year	n/a	2,156,430	5,102,367	3,074,983	2,616,528	2,945,795	3,664,412	3,744,675	4,108,506	2,831,917	4,136,492	n/a	n/a

Source: Colliers Industrial Market Reports (Q4 reports for each year).

Exhibit 18: Industrial Floorspace Inventory in Metro Vancouver (Cushman & Wakefield)

												Average Annual Growth	
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2012 to 2022	2017 to 2022
Total Industrial Inventory	184,323,098	186,998,780	189,543,936	192,113,435	194,997,713	198,607,384	201,885,457	205,820,693	209,769,323	213,928,602	220,400,872	3,607,777	4,358,698
Change from previous year	n/a	2,675,682	2,545,156	2,569,499	2,884,278	3,609,671	3,278,073	3,935,236	3,948,630	4,159,279	6,472,270	n/a	n/a

Source: Cushman & Wakefield Industrial Market Reports (Q4 reports for each year).

6.6.2 Forecast of Average Annual Industrial Floorspace Development for the DCC Revenue Forecasts

Based on the indicators of historic growth trends and taking into account that the supply of vacant industrial land in Metro Vancouver is declining, the DCC revenue forecasts assume average annual industrial floorspace growth of 3.5 million square feet per year from 2024 to 2031.

6.7 Summary of Development Forecast for the DCC Revenue Estimates

Exhibit 19 summarizes the average annual net new development forecasts by land use that are incorporated into the DCC revenues forecast in the following section.

Exhibit 19: Summary of 2024 to 2031 Average Annual Net Development Forecast by Land Use for the DCC Revenues Forecast

	Forecast of Average Annual Development in Metro Vancouver, 2024 to 2031	% Assumed to Pay the DCC	Forecast of Average Annual Development for the DCC Revenues Forecast, 2024 to 2031
Residential (units):			
Single family houses	1,000 units	100%	1,000 units
Secondary suites/laneway houses	2,300 units	0%	0 units
Duplexes/townhouses	3,200 units	100%	3,200 units
Apartment	14,500 units	85%	12,300 units
Residential Total	*21,000 units*	*n/a*	*16,500 units*
Non-Residential (sq.ft.):			
Retail/service	1,000,000 to 1,500,000 sq.ft.	100%	1,000,000 to 1,500,000 sq.ft.
Office	1,000,000 to 1,500,000 sq.ft.	100%	1,000,000 to 1,500,000 sq.ft.
Institutional	1,500,000 sq.ft.	100%	1,500,000 sq.ft.
Industrial	3,500,000 sq.ft.	100%	3,500,000 sq.ft.
Non-Residential Total	*7,000,000 to 8,000,000 sq.ft.*	*100%*	*7,000,000 to 8,000,000 sq.ft.*

6.8 Forecast of Average Annual DCC Revenue for 2024 to 2031

The objective of these DCC revenue forecasts is to estimate the potential change in average annual DCC revenues associated with the proposed inflationary adjustment to the DCC rates that would be effective as of January 1, 2024. So, the forecasts do not factor in any other possible future inflationary (or other) adjustments to the DCC rates during the forecast period.

Exhibit 20 combines the existing DCC rates and the development forecast from Exhibit 19 to produce an average annual estimate of potential revenues from the DCC without factoring in the proposed inflationary adjustment to the rates. As shown, average annual DCC revenues are expected to be on the order of about $34 million to $35 million per year between 2024 and 2031, based on the existing DCC rates.

Exhibit 21 combines the proposed DCC rates and the development forecast from Exhibit 19 to produce an average annual estimate of potential revenues from the DCC *with the proposed inflationary adjustment*. As shown, average annual DCC revenues are expected to be on the order of about $36 million to $38 million per year on average between 2024 and 2031 with the proposed inflationary adjustment.

This suggests that the proposed inflationary adjustment will increase TransLink's revenues from the DCC by about $2.3 million per year over the forecast period compared to forecasted revenues under the existing DCC rates.

Exhibit 20: DCC Revenues Forecast **- Existing DCC Rates**

	Forecast of Average Annual DCC Revenues from 2024 to 2031	Forecast of Total DCC Revenues from 2024 to 2031 (8 year sum)
Residential:		
Single family	$3.0 million	$24 million
Secondary suites/laneway houses	$0.0 million	$0 million
Duplex/townhouse units	$8.0 million	$64 million
Apartment units	$19.1 million	$153 million
Residential total	*$30.1 million*	*$240 million*
Non-Residential:		
Retail/service	$1.3 million to $1.9 million	$10 million to $15 million
Office	$1.0 million to $1.5 million	$8 million to $12 million
Institutional	$0.8 million	$6 million
Industrial	$1.1 million	$8 million
Non-residential total	*$4.1 million to $5.2 million*	*$33 million to $42 million*
Total:		
Total	$34.1 million to $35.3 million	$273 million to $282 million

Exhibit 21: DCC Revenues Forecast **- Proposed DCC Rates**

	Forecast of Average Annual DCC Revenues from 2024 to 2031	Forecast of Total DCC Revenues from 2024 to 2031 (8 year sum)
Residential:		
Single family	$3.2 million	$26 million
Secondary suites/laneway houses	$0.0 million	$0 million
Duplex/townhouse units	$8.5 million	$68 million
Apartment units	$20.4 million	$163 million
Residential total	*$32.1 million*	*$257 million*
Non-Residential:		
Retail/service	$1.3 million to $2.0 million	$11 million to $16 million
Office	$1.1 million to $1.6 million	$9 million to $13 million
Institutional	$0.8 million	$6 million
Industrial	$1.1 million	$9 million
Non-residential total	*$4.3 million to $5.5 million*	*$35 million to $45 million*
Total:		
Total	$36.4 million to $37.6 million	$291 million to $301 million