CITY-WIDE DEVELOPMENT COST LEVY UPDATE BACKGROUND STUDY REPORT

HEMSON Consulting Ltd.
30 St. Patrick Street, Suite 1000
Toronto, ON, M5T 3A3

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1 INTRODUCTION

The City of Vancouver has been experiencing consistent growth and development over recent years, which places pressure on the City's infrastructure. Development Cost Levies (DCLs) are a primary financing tool used by the City to fund the growth-related capital projects that are needed to service development. The City has completed a comprehensive review of the City-wide DCL rate structure and calculation methodology.

In the context of DCLs or similar municipal fees, the reference to growth relates to any development that occurs within a municipality that has the effect of increasing the population and/or employment base, thus increasing demand placed on municipal infrastructure and servicing. Growth, or new development, should be responsible for paying its share of capital costs required to service the infrastructure and servicing investments required to service the development as the City grows overall.

This background study presents the results of the review to determine the required servicing works and associated capital costs attributable to new development that is forecast to occur in the City of Vancouver between 2017 and 2026. These development-related capital costs are recovered against residential and non-residential development on a uniform City-wide basis.

The study sets out the information and analysis upon which the proposed development cost levies are based.

Section 2 provides context with a discussion of the purpose of the review, an overview of the current DCL rate structure in Vancouver, and some information on the legislative and regulatory climate governing the process. It also briefly discusses other development-related charges levied in Vancouver by other authorities.

Section 3 outlines the study process that was undertaken in order to calculate new DCL rates and the resulting by-law to be brought forward to Council. The overall project timeline, key milestones, and consultation schedule is discussed.

Section 4 summarizes the recommendations that resulted from the best practices analysis phase of the study.

Section 5 presents a summary of the forecast of residential and non-residential development expected to occur across the City over a ten-year planning period, from 2017 to 2026.

Section 6 provides a discussion of financing growth concepts in Vancouver, including a summary of the calculation of applicable development cost levies and the resulting calculated charges by class and type of development based on the allocation of costs.

Sections 7 to 11 provide more detail for each eligible service category, including standards of municipal service delivery, the development-related capital projects, cost allocations and the resulting DCL rates calculated for each service.

Finally, **Section 12** discusses the recommended administration and implementation practices for the new DCL by-law, including exemptions, collection practices, crediting and regular reporting.

2 BACKGROUND

As the development and redevelopment of land occurs, the need to provide infrastructure and municipal servicing increases. Many factors influence the amount and type of capital investment required. The amount, type and location of development is critical in determining the nature and quantum of required capital investment. Other influential factors include: municipal standards and desired levels of service; the regulatory requirements of senior governments; topography; timing of development; available capacity already in place to service new development or redevelopment; demographic and socio-economic change; and the way in which municipalities plan for growth and the provision of services.

In addition to identifying the capital investments required to service development, a municipality must also determine how the infrastructure and facilities are to be provided and/or funded. This is a critical issue facing many of the faster growing jurisdictions across North America – who should pay for growth?

The intent of imposing fees on development to pay for the increased cost of municipal servicing is to maintain a city's livability while accommodating growth and ensuring that development does not lead to the erosion of municipal service provision for the existing population. In Vancouver, DCLs are fees paid by new development and are used to help finance the initial capital costs of new, expanded and upgraded facilities needed for growth.

Development cost levies in Vancouver are intended to meet the following criteria:

- Help maintain livability of the City;
- Based directly on growth-related capital costs of new development;
- Not have a negative economic impact or deter desired types of development;
- Not harm housing affordability;
- Be consistent with City policies;
- Distribute costs fairly among types of development and between DCLs and property taxes;
- Provide certainty and stability, be understandable, simple and transparent; and
- Be developed with informed input from all parties.

2.1 BACKGROUND AND PURPOSE OF THIS REVIEW

The *Vancouver Charter* allows the City of Vancouver to recover growth-related capital costs from new development. The City of Vancouver 2017 DCL Background Study is presented as part of a process to lead to the approval of a new City-wide DCL by-law in compliance with this legislation.

DCLs in Vancouver are one of the City's fiscal tools used to fund development-related infrastructure and the expansion of municipal servicing. The calculation and administration of DCLs is intended to advance the financial and policy planning priorities of Council, focused in the following areas:

- Parkland Acquisition & Development;
- Childcare;
- Replacement Housing;
- Transportation; and
- Utility Services- Water, Sewers & Drainage.

The last comprehensive review of the City of Vancouver's DCL rate was undertaken in 2003. This study was undertaken in order to re-examine the way in which the City expects to grow, and the capital works required to service that new development.

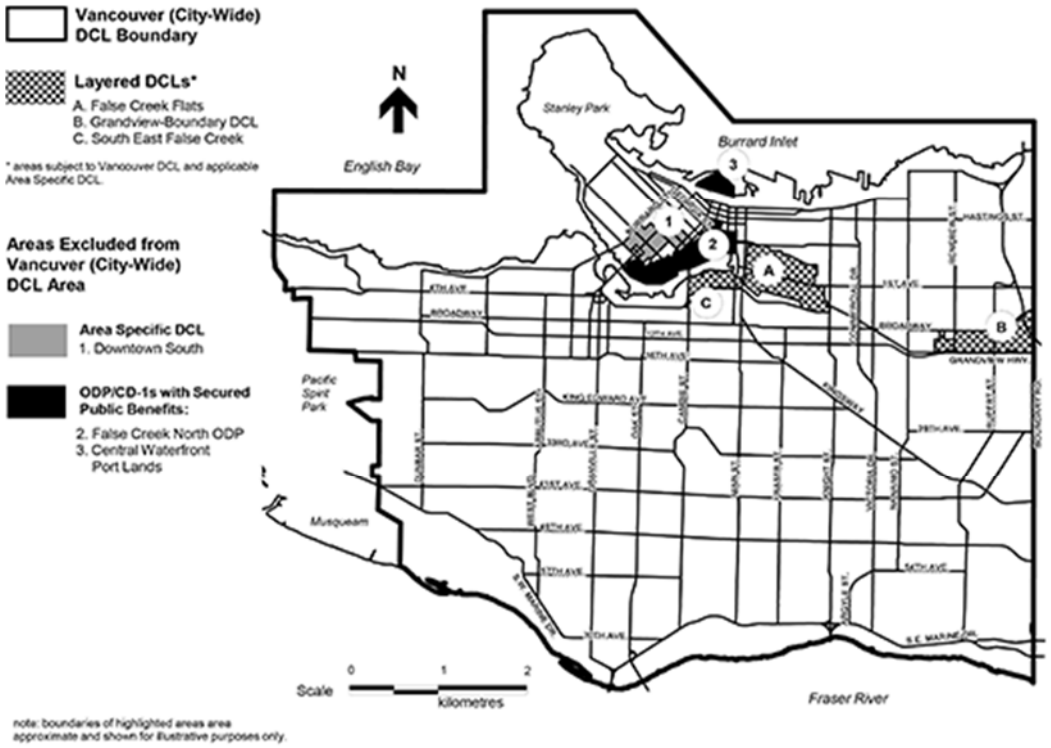
2.2 DCL RATE STRUCTURE IN VANCOUVER

The City currently levies three types of DCLs: City-Wide, Area-Specific and Layered. There are five DCL districts throughout the City, each with distinct growth-related infrastructure needs and DCL rates. These districts are shown below. All districts can be classified into three categories:

- City-wide DCL district: applies to most of the City;

- Area-specific DCL district: developments in this district are exempt from City-wide DCL but are subject to an area-specific DCL; and

- Layered DCL district: development in these districts are subject to both City-wide DCL and layered DCL.



Source: Vancouver.ca, 2016

The City-wide DCL was first introduced on an interim basis in 2000. Financing Growth policies were adopted by City Council in 2003 to help guide City-wide DCL and Community Amenity Contribution (CAC) policy implementation and ensure municipal service delivery was maintained as development continued to occur. In 2004, the City's Financing Growth Study was released, which identified approved policy choices about how to impose fees on new development that help pay for the new facilities and servicing necessitated by growth.

Since 2013, Council has made several decisions to incorporate a number of the Area-specific DCL districts as well as most excluded policy areas into the City-wide DCL district. This ongoing consolidation was done in attempts to simplify the DCL regime and streamline and modernize the way in which servicing needs attributed to development are addressed in Vancouver. These adjustments enable the City to deliver priority DCL-eligible projects across the city more expediently and recognize the true nature of the benefits derived from the municipal investment in infrastructure.

City-wide DCLs can be applied towards growth-related capital projects located in most parts of Vancouver's municipal boundary that service all new employees and residents, regardless of location. Levies collected under an area-specific DCL by-law must fund projects occurring within, and providing benefit to that specific district. Replacement housing projects are an exception, as they may be located outside an area-specific district boundary.

The City-wide DCL rate structure recovers the development-related costs for parks, housing engineering and childcare. The largest portion of the charge is allocated to parks, at 41% of the total rate. 32% of the charge is allocated to replacement housing, engineering receives 22% and childcare receives 5%. Under the current DCL regime, the City does not recover costs related to water or sewer utility servicing on a City-wide basis. Rather, these services are funded through area-specific charges and utility rates. The engineering infrastructure included in the City-wide rate recovers for development-related costs for roads and transportation infrastructure.

2.3 LEGISLATIVE AND REGULATORY BACKGROUND

The City of Vancouver is permitted to calculate and charge DCLs to new development to pay for the capital costs required to service growth. A series of governing legislation at the local and provincial level enables this practice.

2.3.1 Vancouver Charter

In 1990, the Province of British Columbia amended the *Vancouver Charter (s.523D)*, giving Council the authority to use DCLs to help fund eligible public amenities needed for growth in the City. DCLs are payable on most new development, including development through the rezoning of lands.

While the *Vancouver Charter* determines eligible projects, the City determines growth-related need and costs for these projects and whether or not to use DCL revenues for funding. The Charter prescribes services for which DCLs may be imposed. Statutory and discretionary exemptions are also outlined in the Charter as are rules regarding the waivers or reductions of DCLs in the delivery of affordable housing and preservation of heritage buildings.

2.3.2 Local Government Act

The DCC regime in British Columbia is largely governed by Part 14 of the province's *Local Government Act*, Division 19. All municipalities, with the exception of the City of Vancouver, are governed by this provincial legislation.

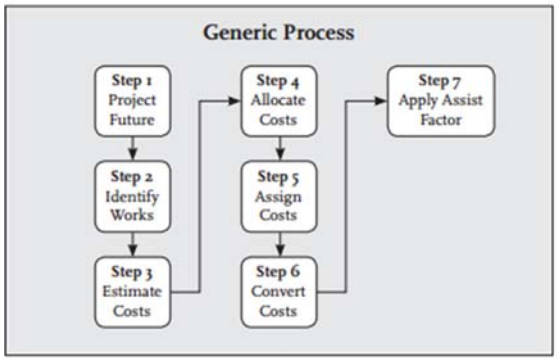
Section 559 of the LGA provides the legislative authority to implement a DCC by-law. Capital costs that will "service, directly or indirectly, the development for which the charge is being imposed" may be included in the DCC calculation (LGA, ss. 559(2)). Under the authority of the LGA, municipalities can recover for costs relating to "providing, constructing, altering or expanding sewage, water, drainage and highway facilities, other than off-street parking facilities" and "providing and improving park land" (LGA, ss. 559(1)(2)). Also eligible for recovery are the capital costs that relate to planning, engineering and legal costs directly related to the work for which a capital expense may be incurred.

Charges may vary based on defined areas; uses; classes of development; or different sizes or number of lots or units in a development. A local government may also waive or reduce DCCs for certain uses defined as eligible developments (i.e. non-profit housing, subdivision of small lots that are designed to have a low environmental impact) in accordance with the legislation (LGA, ss. 563(1)(2)).

2.3.3 DCC Best Practices Guide for British Columbia

Since the introduction of Development Cost Charges (DCCs), the British Columbia Provincial government has published several guides with suggested approaches to implementing development cost charges. For instance, the *DCC Guide for Elected Officials* and the *Development Cost Charge, Best Practices Guide* are intended to provide additional insight to the use of DCCs and advise on calculation and policy planning methodology. The City was actively involved in the preparation of these guides.

The *Development Cost Charge Best Practices Guide* is a provincial tool and advisory report intended to standardize the formulation and administration of DCC by-laws among local municipalities in British Columbia. The guide is based on the provisions of the *Local Government Act* (LGA).



While the methodology for calculating the charges may vary by municipality, generally there are seven sequential steps that are important in the DCC calculation, recommended in the *DCC Guide for Elected Officials* and as shown in the diagram.

2.4 DCLS LEVIED IN THE CITY OF VANCOUVER

2.4.1 City of Vancouver DCL By-laws

The City of Vancouver maintains two DCL by-laws for the City-wide and area-specific districts. By-law 9755 was passed in November 2008, most recently

consolidated in September 2015, and imposes City-wide DCLs for the services of sewer, water, drainage and highway facilities, parkland development, daycare facilities and replacement housing. Area-specific By-law 9418 was passed in February 2007 and outlines the rules surrounding ten area-specific DCLs recovering for the municipal services of highways, parks, day care facilities and replacement housing (depending on the area-specific district).

Figure 1 shows the current DCL rates imposed in the City of Vancouver as of September 30, 2016.

2.4.2 Regional Development Cost Charges (DCCs)

In addition to the City of Vancouver's DCLs, the City also collects a separate regional Development Cost Charge (DCC) on behalf of the Greater Vancouver Sewerage and Drainage District (GVS & DD) for expansion of sewerage facilities required by regional growth. The GVS & DD has two service areas in the City of Vancouver. There are different rates for each area and type of development:

	Vancouver Sewage Area	**Fraser Sewage Area**
Single Family Residential ($/unit)	$944	$1,731
Townhouse Residential ($/unit)	$826	$1,515
Apartment Residential ($/unit)	$590	$1,082
Non-Residential ($/square foot)	$0.443	$0.811

Figure 1: DCL Rates by Area (effective September 30, 2016)

		RESIDENTIAL AT OR BELOW 1.2 FSR AND LANEWAY HOUSE	RES IN DEVELOPMENT OVER 1.2 FSR, COMMERCIAL, AND MOST OTHER USES [1]	INDUSTRIAL [2]	DAY CARE	TEMPORARY BUILDINGS	SPECIFIC USES
City-wide	**Vancouver DCL**	$34.77/m^2 ($3.23/sf)	$149.73/m^2 ($13.91/sf)	$59.74/m^2 ($5.55/sf)	$10.00/Building Permit	$10.00/Building Permit	Parking garage: $1.08/m^2 ($0.10/sf) School: $5.49/m^2 ($0.51/sf) Community energy centre: $10.00/BU
Layered [3]	**False Creek Flats**	n/a	$63.39/m^2 ($5.89/sf)		$10.00/Building Permit	$10.00/Building Permit	Parking garage: $1.08/m^2 ($0.10/sf) School: $5.49/m^2 ($0.51/sf) Works Yard: $1.00/m^2 ($0.09/sf)
	Grandview-Boundary		$9.78/m^2 ($0.91/sf)	$39.14/m^2 ($3.64/sf)			Parking garage: $1.08/m^2 ($0.10/sf) School: $1.08/m^2 ($0.10/sf)
	South East False Creek		$206.21/m^2 ($19.16/sf)	$31.29/m^2 ($2.91/sf)	n/a		Parking garage: $1.08/m^2 ($0.10/sf) School: n/a Community energy centre: $10.00/BU
Area-specific *	**Downtown South**	n/a	$205.44/m^2 ($19.09/sf)	No industrial capacity	$10.00/Building Permit	$10.00/Building Permit	Parking garage: $1.08/m^2 ($0.10/sf) School: $5.49/m^2 ($0.51/sf)

*On July 7, 2015 City Council approved the replacement of 5 Area Specific DCL Districts (Burrard Slopes, Arbutus, Dundas/Wall, Cedar Cottage/Welwyn and Triangle West) with the Vancouver (City-wide) DCL. Council also approved the replacement of all DCL exempt areas (except for False Creek North ODP and Central Waterfront Port Lands) with the City-wide DCL. As part of this change, Council approved a one-year grace period from the date of DCL By-law enactment, meaning that new City-wide DCL rates took effect in these areas on July 21, 2016. New applications received in these areas on or after July 21, 2016 will be subject to City-wide DCL rates.

[1] All uses, except for those specified here, are subject to the Commercial-Residential DCL rate.
[2] Industrial is defined differently in the City-Wide, layered and area-specific areas -see bylaws for definitions.
[3] In the layered areas, DCLs apply ***in addition to*** City-Wide DCLs.

3 STUDY PROCESS

The City of Vancouver sought to undertake a comprehensive review of the City-wide DCL rate structure, calculation and implementation practices, as well as a re-examination of financing growth principles.

3.1 PROJECT TIMELINE

The study process was initiated in May 2016 and is to conclude with a by-law passage by Council in July 2017. The study process has included a number of phases, which are described below.

- **Best practices**: A best practices analysis was undertaken in order to examine the DCL calculation and implementation of other comparable municipalities across Canada. Financing growth practices were examined in the Cities of Toronto (Ontario), Surrey (British Columbia), Calgary (Alberta), Halifax (Nova Scotia) and San Francisco (California). All practices ranging from the way in which development is forecast, development of capital programs, cost allocation practices, rate calculation and by-law implementation were examined. A summary of best practice and series of recommendations were provided for each practice studied and five key recommendations were made. These recommendations are discussed further in Section 5 of this report.

- **Historical service levels:** This phase examined the ways in which municipal service has historically been delivered on a department-specific basis. The importance of service levels, both historic and planned, in determining the amount of the DCL is paramount in most municipalities. Municipal infrastructure planning and service provision generally follows the principle that services provided to accommodate growth should be in line with the level of service provided historically. For some services, it may also be appropriate to use a planned level of service to estimate infrastructure needs. The different service levels were examined and considered in the context of whether they should be adjusted in setting standards for the ways in which development is to be serviced in the future.

- **Capital program:** The Steering Committee and consultant worked extensively with department staff to assemble growth-related capital programs containing projects required to service development between 2017 and 2026. Projects were identified as well as their associated costs, growth-related shares, benefitting time period and

alternative funding sources. Every effort was made to align the project details to regular budgeting, master plans (if available) and the Capital Strategic Outlook. It is noted that this exercise did not consider, or quantify, direct or developer contributions or in-kind contributions from major projects.

- **Rate calculation:** This phase involved inputting all assumptions into a financial model and calculating development cost levies to be recommended to Council. A number of scenarios were examined, including differentiating rates by geographic area of the city, as well as adjustments to the timing of certain works.

- **Implementation:** This phase of the process will continue once the by-law is passed in July 2017. City staff will be tasked with maintaining and administering the by-law, and working with departmental staff to ensure that growth-related projects are funded by DCLs to the extent permitted by the legislation and as stipulated in the rate calculations in this background study. This process will continue until the by-law is updated, which is recommended to be with every capital plan following the passage of the 2017 update. It has been identified that this recommendation will require additional resources to implement and monitor the DCL framework, rates and capital program funding.

3.2 CONSULTATION WITH CITY STAFF

The study process was designed to engage City staff at key phases of the project. Three key working groups were engaged throughout the course of the assignment.

Steering Committee: This committee was composed of staff dedicated to financing growth policy. Staff from planning and finance were available to provide input at all phases of the study process, attend all meetings and consultation sessions, and to assist in the calculation of DCL rates.

Technical Team: Composed of representatives from all eligible service departments, the team was consulted at key phases of the study and responsible for developing the capital programs and providing project costs.

Corporate Management Team: This project was sponsored by both the General Managers of Planning and Finance. The Corporate Management Team was consulted three times throughout the study process to communicate the findings of the best practices analysis and recommendations, ensure

continued support for the project and present preliminary calculated rates to arrive at a preferred scenario.

3.3 STAKEHOLDER ENGAGEMENT PROCESS

Development industry stakeholders were consulted at two key points in the study process. In November 2016, feedback was requested regarding the way in which DCLs should be calculated and administered. In June 2017, staff and its consultants presented to industry stakeholders a summary of the entire DCL process, including an explanation of preliminary DCL rates and new DCL rate categories. Throughout the month of June, staff were actively involved in discussions with development industry representatives on a variety of topics related to DCL rate phasing and capital program specifics.

3.4 ASSESSMENT OF IMPACT OF DCL RATE CHANGES

As part of the DCL review and update, the City retained Coriolis Consulting Corp. to undertake an assessment of the potential consequence or impact of DCL rate changes, arising from the review on the quantum, rate and location of development in the city. Coriolis has undertaken an evaluation of the financial ability of new development projects in the city to support increased DCL rates. An increased DCL rate could have a negative impact on the number of sites in the city that are financially attractive for redevelopment. If the supply of development sites is reduced, this could cause residential prices or commercial and industrial lease rates to rise, which is generally regarded as an undesirable outcome. It is understood that the Coriolis analysis maybe utilized to inform the implementation of new DCL rates.

4 PROJECT RECOMMENDATIONS

The City retained Hemson Consulting to provide input and best practices analysis research making recommendations for ways in which the City's financing growth practices could be improved. A range of Development Cost Levy practices from other municipalities were examined and compared to the approaches utilized by the City of Vancouver. From this review, several key recommendations have been identified for the City's consideration. The recommendations are summarized below.

1. Coordinate development forecast and capital planning

   A detailed forecast of the type, location and timing of anticipated development in any municipality is of critical importance when determining the infrastructure investment that will be required in the future and the way in which it might be funded. Linking a detailed development forecast to the capital budget provides several benefits. Firstly, the forecast allows staff to measure the service levels being provided to new development relative to existing service levels. Secondly, it ensures that development-related infrastructure is appropriately identified and timed so that future communities will be properly serviced. Finally, capital projects can be more easily divided into growth and non-growth categories, which can assist in the determination of the appropriate funding sources. There are currently some shortfalls in the transfer of forecast data to various departments, which creates a disconnect between the way in which the City will grow and the capital projects planned to service that growth. The City should incorporate development forecast information into capital planning exercises at the department level, not only for the purposes of calculating the development cost levies, but also for any capital budgeting.

2. Refine service level determination and DCL rate calculation methodology

   It is important for any municipality to understand the way in which services are provided to the population and employment base. This is particularly important from the perspective of growth, because a clear understanding and established standard of municipal service provision ensures that servicing is consistent as a municipality grows. Establishing and standardizing the way in which municipal services are provided sets a context for the way in which they should be provided into the future. This standardization also assists in budgeting exercises and serves as a reasonability test when identifying required projects.

3. Specify purpose of DCLs in relation to other sources of infrastructure funding

   In compiling the development-related capital programs and establishing infrastructure costs, it is crucial to identify and net off any alternative funding sources available to fund growth-related infrastructure. Alternative funding sources can come in a variety of different forms, including utility rates (engineered infrastructure), property taxes, senior government grants, donations and partnerships, CACs and conditions of development. Capital budgeting and infrastructure planning should be specific in identifying capital costs and all required deductions related to this alternative funding. This is important for the defensibility of the resulting development cost levies, as it is very important to ensure that funds are not collected from multiple sources to pay for the same costs. City staff is continuing to develop guidelines on using the various funding sources for development-related infrastructure. This will be an ongoing process which will require ongoing staff training and broader communication. These include DCLs, conditions of development and Community Amenity Contributions. Confirming the relationship of these funding sources and clearly establishing the purpose of each fiscal tool is recommended, and further explored in the Financing Frameworks report.

4. Formalize DCL study process

   The process required to examine the DCL regime, including forecast assumptions, capital infrastructure costs and by-law policy is a significant undertaking. An effective process is one that engages a number of municipal departments as well as Council (through an information session and a planned Council Meeting presentation), stakeholders and members of the public. Having a formalized process and requirement for regular updates allows interested members the opportunity to anticipate not only when, but the way in which reviews will take place. This results in consistency among analyses and transparency of the rate calculation, as all parties are informed as to how the calculations are done. The City of Vancouver currently has no mandated study process or timeline for review and it is recommended that a formalized procedure be established. It is recommended that the City continue to monitor DCLs on an annual basis and undertake updates with every capital plan.

5. Continue solid administration practices

   In an effort to preserve transparency in the administration of development cost levies, regular detailed reporting should always be done. Information regarding the amount and timing of DCL revenue collection, the way in which monies are spent, as well as annual indexing assumptions should be detailed in annual reports to Council. The information should be well

structured, transparent and easy to interpret by members of the public. The City of Vancouver currently produces very detailed reporting and serves as a municipal best practice in this regard. It has been identified that improvements could be made to the internal administration of the DCL reserves between staff in finance, planning and the departments delivering the growth-related infrastructure.

5 GROWTH PROJECTIONS

The anticipated residential and non-residential development in the City of Vancouver between 2017 and 2026 will increase demand on all municipal services. The City wishes to continue implementing DCLs to fund the development-related capital projects so that development continues to be serviced in a fiscally responsible manner.

Development cost levy calculations are rooted in a number of assumptions about the way in which a municipality is anticipated to grow. The first step in calculating a charge is to forecast the type and location of anticipated development against which the charges will apply. The City of Vancouver is the most populated municipality within the Metro Vancouver region. Development forecasting and policy planning for the region is outlined in *Metro Vancouver Regional Growth Strategy* (RGS), which establishes priority policies and objectives related to accommodating regional growth. The RGS contains population and employment targets to 2041 for Vancouver, which the City is committed to accommodating.

The City's Planning Department forecasts growth and development for the City utilizing a Development Capacity Model. The model is used to calculate the anticipated population and jobs for the RGS. The growth forecast used in the DCL Update Study leveraged the previous forecasting assumptions used in the RGS submission for the city. It is recognized that development in the City is highly dynamic and subject to changes which impacts on planning growth-related infrastructure needs.

For the purposes of the DCL Update Study, this growth forecast is updated to mid-year 2016 and reflects all policy plans, zones and in-stream development projects approved at that time. The growth forecast does not include policy plans approved since that time or policy plans that are currently underway at the time of this update (e.g. Cambie Corridor Phase 3, False Creek Flats, Broadway, viaducts, housing reset).

This section provides the basis for the development forecasts used in calculating the development charges, as well as a summary of the forecast results. A more detailed summary, including tables illustrating forecast results is provided in Appendix A.

5.1 RESIDENTIAL DEVELOPMENT PROJECTIONS

Development cost levies are charged to residential development as a fee per square foot of building Gross Floor Area (GFA). Therefore, for the residential forecast, a projection of both the population growth as well as additional residential GFA that will be built in the City.

The building space forecasts in this development cost levy study include forecasts for both net and gross GFA growth. For most planning purposes, net growth is considered; however, the City of Vancouver levies DCLs on new development based on the gross GFA. As such, the growth-related capital costs are applied to the gross GFA forecasts between 2017 and 2026 in order to calculate the DCL rate.

Table 1 provides a summary of the residential forecast for the ten-year planning period from 2017 to 2026. The forecasts were provided by neighborhood, however only the City-wide total is shown here as it is used in the calculation of City-wide DCLs.

As shown on Table 1, the City's overall population is expected to increase by approximately 63,600 people over the next ten years, reaching almost 696,900 people by 2026.

Over the ten-year planning period from 2017 to 2026, the total number of new residential units will increase by approximately 47,120, of which almost 90 per cent will be apartments. The net increase in residential GFA across the City over the planning period amounts to more than 37.4 million square feet of building space. DCLs in Vancouver are calculated and levied on gross GFA. As such the gross GFA figures are also included, and total more than 61.4 million square feet of residential space.

5.2 NON-RESIDENTIAL FORECAST

Development cost levies are also charged to non-residential development as a charge per square foot of GFA. As with the residential forecast, the non-residential forecast includes both a projection of employment growth as well as a projection of the additional non-residential floor space that will be built in the City.

The non-residential forecast projects an increase of approximately 39,900 employees to 2026. These additional employees will be accommodated in almost 13.5 million square feet of net new non-residential building space to 2026. The gross non-residential GFA growth over the ten-year planning period totals more than 18.5 million square feet, of which almost 70 per cent will be commercial floor space.

Table 1 also provides a summary of the non-residential development forecasts used in this analysis.

TABLE 1

CITY OF VANCOUVER
2017 DEVELOPMENT COST LEVY UPDATE
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
CITY-WIDE DEVELOPMENT FORECAST

City-wide Residential Growth Forecast	2016 Estimate	Ten-Year Planning Period	
		2017-2026 Growth	Total at 2026
Total Population Growth	*633,277*	*63,581*	*696,858*
Residential Unit Growth		*47,120*	
Single (Including Laneway Houses)		*4,072*	
Townhouse		*929*	
Apartment		*42,119*	
Residential Floor Area Net Growth (sq.ft.)		*37,420,650*	
Single (Including Laneway Houses)		*2,941,218*	
Townhouse		*814,234*	
Apartment		*33,665,198*	
Residential Floor Area Gross Growth (sq.ft.)		*61,426,975*	
Single		*20,988,332*	
Townhouse		*1,050,362*	
Apartment		*39,388,282*	

City-wide Non-Residential Growth Forecast	2016 Estimate	Ten-Year Planning Period	
		2017-2026 Growth	Total at 2026
Total Employment Growth	423,605	39,840	463,445
Non-Residential Floor Area Net Growth (sq.ft.)		13,492,948	
Commercial		*9,152,929*	
Industrial		*4,340,019*	
Non-Residential Floor Area Gross Growth (sq.ft.)		18,533,468	
Commercial		*12,631,042*	
Industrial		*5,902,426*	

5.3 GROSS FLOOR SPACE WEIGHTING FOR DCL RATE CALCULATIONS

There is a final adjustment to the gross floor space for the purpose of the DCL rate calculations. The demand for City services funded by DCLs are generally driven by population and employment increases while the charges are levied on added gross floor area. To reflect different FSR by unit type and differences in demand needs arising from ground-related units and higher density built form, the residential gross floor areas have been weighted for the purpose of the DCL calculations. These weighting factors are expressed in relation to the apartment units and the same factors are used to establish the differentiated residential rates.

A similar adjustment is made to the non-residential gross floor area to reflect different FSW by land use types and differences in demand needs arising from different employee types, the non-residential gross floor areas have been weighted for the purpose of the DCL calculations. These weighting factors are expressed in relation to the commercial floor space and the same factors are used to establish the differentiated non-residential rates.

Table 2 provides the equivalency factors and shows the calculations of the weighted gross floor area, as shown, the total weighted gross floor area is 61.12 million square meters. As note, the same residential and non-residential weighting factors are used to establish the differentiated residential rates. This approach ensures revenue neutrality for the City and equitability between the different land uses.

TABLE 2

CITY OF VANCOUVER
2017 DEVELOPMENT COST LEVY UPDATE
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL
WEIGHTED GROSS GFA FOR DCL CALCULATIONS

City-wide	Total Gross Floor Area1 (sq.ft)	Gross Floor Weighted to Apartment/Commercial Equivalent2	
		Equiv. Factor2	GFA (sq.ft.)3
Residential Floor Area Gross Growth	**61,426,975**		**44,787,400**
Single	*20,988,332*	0.232	4,873,900
Townhouse	*1,050,362*	0.500	525,200
Apartment	*39,388,282*	*1.000*	39,388,300
Non-Residential Floor Area Gross Growth	**18,533,468**		**16,332,600**
Commercial	*12,631,042*	*1.000*	12,631,000
Industrial			
Mixed Employment (light)	*3,836,577*	*0.750*	2,877,400
Industrial	*2,065,849*	*0.399*	824,200
Total Gross Floor Area	***79,960,443***		**61,120,000**

Notes

(1) Source: Table 1

(2) See Appendix A for discussion of the equalization of the gross floor area. The Equiv. Factors are also used to set the DCL rates by type of development.

(3) Weighted GFA rounded to the nearest hundred for the purpose of the DCL rate calculations.

6 FINANCING GROWTH IN VANCOUVER

Several key steps are required when calculating any development fee. However, specific circumstances arise in each municipality that must be reflected in the calculation. Therefore, the study has been tailored specifically for the City of Vancouver. The approach to the proposed development cost levies is focused on providing a reasonable alignment of development-related costs with the development that necessitates them. The study uses a City-wide approach for all services, which is consistent with past practice, and is deemed the best approach to align development-related costs and benefits.

6.1 RELATIONSHIP TO OTHER MUNICIPAL DOCUMENTS

The DCL study has been undertaken as part of a larger initiative to review financing growth policies at the City and to examine the way in which capital planning predicts and responds to the evolving needs of development. The inputs, assumptions, development forecasts and capital programs are consistent with the following legislation, plans and policies:

- Vancouver Charter;
- Vancouver's Financing Growth Report 2004;
- British Columbia Development Cost Charges Best Practices Guide;
- Capital Strategic Outlook (2015 – 2024);
- City of Vancouver DCL By-law 9755;
- City of Vancouver Zoning and Development By-law 3575 (2016);
- Vancouver's Housing and Homelessness Strategy 2012-2021;
- City of Vancouver Childcare Needs Calculator; and
- Transportation 2040.

6.2 DCL TIME FRAME

The DCL study is based on meeting the needs of development over a ten-year planning period, between 2017 and 2026, as it was determined to be a reasonable period upon which to base the capital programs for each service category, and estimate the future needs of development.

6.3 CITY-WIDE AND AREA-SPECIFIC DCL CHARGES

The City of Vancouver provides a wide range of services to the community it serves and has an extensive inventory of facilities, land, infrastructure, vehicles

and equipment. The *Vancouver Charter* provides municipalities with flexibility to designate the areas to which charges for eligible services will apply, based on the nature and location of the development necessitating the works. Development Cost Levies may apply to all lands in a municipality or to other designated development areas as specified in a municipal by-law.

DCLs in Vancouver are levied based on the Gross Floor Area (GFA) of a development. Rates vary by type of development – residential (at or below 1.2 FSR[1], laneway house or above 1.2 FSR), commercial, and industrial, and by DCL district. As outlined in s.523.D(13) of the *Vancouver Charter (Charter),* the DCL shall not exceed 10% of the value of the development, which is determined by the Building By-law. Payment is due at building permit issuance and the levy is calculated at the rate in effect on the date of issuance, unless in-stream rate protection applies.

The City of Vancouver levies both area-specific and City-wide DCLs. This background study and analysis is limited to update the City-wide charges only. No adjustments to the layered or area-specific charges are suggested or recommended as part of this study process. For all of the eligible services that the City provides City-wide, the full range of capital facilities, land, equipment and infrastructure is available throughout the City.

The following services are included in the City-wide development cost levy calculation:

- Parkland Acquisition & Development;
- Childcare;
- Replacement Housing
- Transportation; and
- Utility Services- Water, Sewers & Drainage.

These services form a reasonable basis upon which to plan and administer the City-wide development cost levies. The resulting DCL for these services is to be imposed against all development anywhere in the City. The Utility services of Sewer, Water and Storm water Drainage are new to the City-wide DCL regime, having been previously included in the area-specific charges only.

[1] *FSR refers to Floor Space Ratio and is a measure of built form density. The ratio is calculated based on the total floor area of a building relative to the size of land upon which it is located.*

6.4 DCL RECOVERABLE COSTS

A development-related capital forecast has been prepared by the City's departments as part of the present study. The forecast for each eligible service category identifies development-related projects and their gross and net costs, after allowing for capital grants, subsidies or other contributions as required by the *Vancouver Charter.* The capital forecast acts as the cornerstone upon which development cost levies are based.

For some projects in the development-related capital forecast, a portion of the project may confer benefits to existing residents and businesses in Vancouver. These portions of projects and their associated net costs are the funding responsibility of the City from non-DCL sources, such as property taxes and utility rates. The amount of City funding for such shares is also identified as part of the preparation of the capital forecast.

Table 3 provides a summary of the cost allocations for each service category. As shown, the total capital project costs for works required to service new development in Vancouver amount to $3.85 billion. A number of deductions have been made to remove costs not eligible for inclusion in the DCL calculation.

6.5 ALLOCATION OF COSTS

For each DCL eligible service category, the development-related costs of necessary infrastructure projects have been identified. The capital costs are allocated between existing and future development, and alternative funding sources are identified. Additionally, the forecasts have been prioritized to ensure that those projects that are required in the first five years of the planning period (2017-2021) are included in the DCL rate calculation. The allocation of costs has been done on a programmatic basis and applied to all costs included in the capital program.

As shown on Table 3, $1.17 billion in costs have been deducted as they are deemed to address existing needs, benefit to existing, and these costs have been removed from DCL rate funding consideration. The result is the net growth-related capital costs of $2.68 billion ($3.85 billion - $1.17 billion) which is deemed to capital infrastructure costs necessary to meet the increased needs arising from development over the period 2017 to 2026.

TABLE 3

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
SUMMARY OF OVERALL 10-YEAR CAPITAL PROGRAM 2017-2026

Service	Gross Project Costs ($000)	Benefit to Existing & Service Level Increase ($000)	Net Growth-Related Costs ($000)	Growth Costs Funded from Other Sources[1] ($000)	DCL Eligible Costs 2017-2026		
					Net DCL Eligible Costs ($000)	Less Municipal Assist[2] 1% ($000)	DCL Rate Supported 2017-2026 ($000)
1.0 Parks	$679,000.0	*$129,000.0*	*$550,000.0*	*$353,067.4*	*$196,932.6*	*$1,969.3*	$194,963.3
2.0 Childcare	$334,400.0	*$0.0*	*$334,400.0*	*$199,690.2*	*$134,709.8*	*$1,347.1*	$133,362.7
3.0 Housing	$950,000.0	*$0.0*	*$950,000.0*	*$569,201.5*	*$380,798.5*	*$3,808.0*	$376,990.6
4.0 Transportation	$1,304,000.0	*$670,000.0*	*$634,000.0*	*$365,883.2*	*$268,116.8*	*$2,681.2*	$265,435.6
5.0 Utility Services							
Water	*$10,587.6*	*$78.0*	*$10,509.6*	*$0.0*	*$10,509.6*	*$0.0*	*$10,509.6*
Sewer & Drainage	*$569,542.0*	*$371,000.0*	*$198,542.0*	*$119,083.3*	*$79,458.7*	*$899.7*	*$78,559.1*
Sub-Total Utilties	$580,129.6	$371,078.0	$209,051.6	$119,083.3	$89,968.3	$899.7	$89,068.7
TOTAL 10 YEAR CAPITAL PROGRAM	**$3,847,529.6**	**$1,170,078.0**	**$2,677,451.6**	**$1,606,925.5**	**$1,070,526.1**	**$10,705.3**	**$1,059,820.8**

Notes
1) Other Funding Sources Include: DCL Reserves, CACs, conditions of development, Senior Government grants, partners, City Capital and other.
2) Municipal Assist: has been set as a % of overall program level 2017-2026 funding needs. Utility services is treated as a single service area.

Of the $2.68 billion in net growth-related costs $1.61 billion is proposed to be funded from other sources, as summarized:

Funding Source	Funding Amount ($M)
Existing Uncommitted DCL Reserves	$150.0 M
Senior Government Grants	$418.0 M
CACs	$219.0 M
Rezonings Conditions	TBD
Unfunded Share	$819.9 M
Total	**$1,606.9 M**

The following provides an overview discussion of the various funding sources. The technical appendices provide additional details for each service.

- Existing Uncommitted DCL Reserves: the City has $150 million in DCL reserves that have not be committed against specific projects and are therefore available for funding of growth-related infrastructure. Some types of infrastructure can "lag" the actual development of land and therefore there can be a gap between when DCLs are collected and when the capital infrastructure is constructed to meet the needs of development that has already occurred and paid DCLs. This is sometimes referred to as the "prior growth" share of the growth-related capital program; it is appropriate that the uncommitted DCL reserve monies be used to fund a share of the capital program. Of the $150 million in committed DCL reserves, the majority, $111.5 million, is within the Parks DCL reserve fund. More minor amounts are in Housing ($21.5 million), Transportation ($9.0 million), and Childcare ($8.0 million). As Utility service do not currently receive any City-wide DCL funding there are no uncommitted DCL reserves for water, sewer and drainage.

- Senior Government Grants: The City has assumed that the upper levels of government will provide $418 million in funding towards the identified growth-related capital program. Housing, at $380 million, is assumed to attract the highest level of senior government funding. It is anticipated that other services will receive small levels of senior government funding: Transportation $24 million, Parks $10 million and $4 million for Childcare. These monies are applied against the applicable projects and that share of funding is not carried forward into the DCL rate analysis.

- Community Amenity Contributions (CACs): In situations when a land-owner or developer is seeking a rezoning of lands to permit a higher level of density or intensification, the City is permitted to seek additional community amenity contributions in exchange for the approval of additional development rights. CACs are considered voluntary and can be in-kind or cash contributions. The intention of CACs is to help address the increased demands that may be placed on City facilities as a result of a rezoning (from new residents and/or employees), as well as mitigate the impacts of a rezoning on the surrounding community. The increased demands are above and beyond what might be funded from DCLs. The City has identified $219 million in CAC funding against the growth-related projects identified in the analysis. It is anticipated that additional CAC needs and revenues will be generated over the next ten-years as development specifics become identified.

- Rezoning Conditions: Rezoning Conditions are an important funding tool for the City and are crucial in ensuring that the impacts of increased density are addressed. These include providing higher levels of service to mitigate site-specific impacts of development, funding non-DCL eligible items (e.g. libraries and community centres), and funding 'local service' needs. Rezoning Conditions are high site, or application, specific and therefore have not been quantified as part of this analysis. The City will continue to use rezoning conditions to fund growth-related infrastructure however these recoveries should be viewed as incremental funding sources and do not overlap with costs proposed to be funded via DCLs.

- Unfunded Share: As noted on the funding summary table above, there is a significant "Unfunded Share", $820 million, of the $2.7 billion in net growth-related capital costs. It is anticipated that the City will need to use a full range of funding and financing tools to address the unfunded share of the growth-related capital program and will be addressed in the upcoming City Capital Plan.

The remaining costs of the net growth-related capital program amounts to $1.07 billion, which is considered fundable from City-wide DCLs. As required by the *Vancouver Charter*, the DCL fundable allocated costs have been reduced by a "municipal assist" factor. Under the *Charter* the City must assume a share of the growth-costs, the same requirement exists for other BC municipalities under the *Local Government Act.* The BC Ministry of Municipal Affairs' *DCC Best Practices Guide* gives some direction on this issue and indicates that even a 1% share meets the legislative requirement. As shown on Table 3, the municipal assist factor has been set at 1% or $10.7 million of the

$1.07 billion in DCL fundable costs. The municipal assist factor has been set at 1% because a large share of the growth-related costs, $841.8 million, still requires a source of funding, of which a share may come from City of Vancouver funded sources and would, therefore, be considered an additional municipal assist.

The remaining $1.06 billion is proposed to be funded from DCLs and this amount has been used to calculate new DCL rates. The following provides a summary of the DCL rate supported amounts by service:

Service	DCL Rate Funding ($ M)
Parks	$ 194.96 M
Childcare	$133.36 M
Replacement Housing	$376.99 M
Transportation	$265.44 M
Utility Services	$ 89.07 M
Total	**$1,059.82 M**

6.6 CALCULATION OF BASE DCL RATE

The growth-related capital program proposed to be funded by DCLs, $1,059.82 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

All Services DCL Rate Recovery Costs	**$1,059.82 million (A)**	
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base All Services DCL (A/D)	**$17.34/sf**	

Table 4 shows the base DCL Rate calculation for all services. The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown below.

TABLE 4

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
CALCULATION OF BASE DCL RATE

10 Year Increase in Weighted Gross Floor Area (sq.ft.)	61,120,000

Service	2017-2026 Net DCL Rate Supported ($000)	Calculated Base DCL Per Square Foot %	$/sf
1.0 Parks	$194,963.3	18%	$3.19
2.0 Childcare	$133,362.7	13%	$2.18
3.0 Housing	$376,990.6	36%	$6.17
4.0 Transportation	$265,435.6	25%	$4.34
5.0 Utility Services			
Water	*$10,509.6*	*1%*	*$0.17*
Sewer & Drainage	*$78,559.1*	*7%*	*$1.29*
Sub-Total Utility Services	$89,068.7	8%	$1.46
TOTAL CAPITAL PROGRAM	**$1,059,820.8**	**$17.34**	

Development Cost Levy Calculation – All Services		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$4.03 / sq.ft.
Medium Density Residential	0.50	$8.66 / sq.ft.
High Density Residential	1.00	$17.34 / sq.ft.
Industrial (Heavy)	0.40	$6.91 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$13.01 / sq.ft.
Commercial & Other	1.00	$17.34 / sq.ft.

The following sections of the Background Study describe and discuss the DCL rate calculation for each service.

7 PARKS DEVELOPMENT COST LEVIES

7.1 MUNICIPAL SERVICE DELIVERY

The Parks and Recreation branch of the City of Vancouver's Parks, Recreation and Culture department is overseen by an elected park board. The City provides a host of outdoor parks and recreation amenity space for residents, employees and visitors to enjoy. Within the city's boundaries, there are 240 municipal parks, including the 404-hectare Stanley Park right in the heart of the City as well as ten Oceanside beaches, one freshwater lake beach, and twenty-two kilometres of Seawall.

The *Vancouver Charter* permits the inclusion of capital costs related to:

a) Acquiring park and or reclaiming land as park land,

b) Providing fencing, landscaping, drainage and irrigation, trails, restrooms, changing rooms and playground and playing field equipment on park land. (523D, s.17.1)

7.2 PARKS GROWTH-RELATED CAPITAL PROGRAM

The Parks and Recreation department is currently undertaking an update to the Parks and Recreation Master Plan, which will identify future related needs related to growth and development in the city. For the purposes of the 2017 DCL update, the capital program and costing information included in the rate calculation is based on the Capital Strategic Outlook and other regular budgeting activities.

The ten-year parks capital program includes projects that fall within the following categories:

- Parkland acquisition;
- New park construction;
- Park renewals and upgrades;
- Outdoor recreation assets;
- Street trees and biodiversity assets; and
- Seawall and recreation pathways.

The Park Board has established a $679 million gross capital budget of which $550 million is to meet the needs of growth over the period 2017 to 2026. The

program would provide for approximately 19 ha of parkland acquisition, base development of over 30 ha of parks and additional capital expenditures for new park facilities and amenities. An overview of the program is provided below:

Forecast of Parkland Acquisition & Development 2017-2026			
Capital Expenditure Area	**Estimated (Ha)**	**Gross Cost Estimate ($M)**	**Growth-Related Cost ($M)**
Parkland Acquisition	19.2 Ha[1]	$330 M	$330 M
New Parks in Neigbourhoods			
Secure Waterfront Access			
Park Consolidation & Expansion			
Park Networking			
Park Development		$349 M	$220 M
New Park Construction	30+ Ha		
Park Upgrades, Facilities & Amenities in existing parks	N/A		
Urban Forestry & Biodiversity Initiatives	N/A		
Improvements to Seawall and Recreation Pathways	N/A		
TOTAL		**$679 M**	**$550 M**

Note[1]: The Park Board has additional parkland acquisition needs to meet the increased demands arising from development over the period 2017-2026; these additional needs will be achieved through in-kind CAC contribution from major development projects.

Of the $550 million growth-related capital $194.9 million is to be funded from DCLs over the period 2017-2026. Further details of the capital program are listed in Appendix B.

Funding of the Park Service 2017-2026 Development-related Capital Program		
Costs & Funding Sources	**Funding Allocation**	
	$M	%
Gross Project Capital Costs	**$679.0 M**	
Benefit to Existing & Service Level Increase	$129.0 M	19.0%
Net Growth-Related	**$550.0 M**	**81.0%**
Less Funding Sources		
Senior Government /Other Partners	$10.0 m	1.5%
CAC/Density Bonus/Incl. Housing	$60.0M	8.8%
Rezoning Conditions	N/A	0.0%
Available DCL Reserves	$111.5 M	16.4%
Net Potential DCL Recoverable	**$368.5 M**	**54.3%**
Less: Unfunded Share	$171.6M	25.3%
Less: Municipal Assist	$ 2.0 M	0.3%
DCL Rate Support (before exemptions & waivers)	**$194.9**	**28.7%**

7.3 PARKS DCL RATE CALCULATION

The DCL funded share of the growth-related net capital costs associated with the parks program total $194.9 million. This translates to a cost of $3.19 per square foot of new development that is to be levied on all new development in the City of Vancouver. Using the equivalency factors, the rates to be levied on each type of development for parks are calculated as follows:

Parks City-Wide DCL	
Low Density Residential	$0.74 / sq.ft.
Medium Density Residential	$1.59 / sq.ft.
High Density Residential	$3.19 / sq.ft.
Industrial	$1.27 / sq.ft.
Mixed Employment	$2.39 / sq.ft.
Commercial & Other	$3.19 / sq.ft.

8 CHILDCARE DEVELOPMENT COST LEVIES

8.1 MUNICIPAL SERVICE DELIVERY

The City of Vancouver works with the Province of British Columbia and other partners to provide childcare servicing to residents of Vancouver. The City works to:

- Partner with non-profit organizations to deliver quality, affordable, and accessible childcare;
- Facilitate the development of infrastructure to support integrated childcare services, including licensed group care and other family support services;
- Use financial tools to leverage facilities and land, and offset some operating costs; and
- Encourage senior governments to uphold their responsibility for childcare.

The *Vancouver Charter* permits the inclusion of capital costs related to:

> Establishing day care facilities in premises leased or owned, and acquiring property for such facilities. (523D, s.1)

8.2 CHILDCARE GROWTH-RELATED CAPITAL PROGRAM

The projects included in the childcare capital program were designed to accommodate the increased demands on the service imposed by development in the City. As growth occurs, and the population and employment base grows, additional childcare spaces must be made available. The number and type of spaces included in the programme are tied directly to the City's development forecast provided by planning.

The ten-year childcare capital program includes the development of childcare spaces in both independent facilities and in schools and community centres. The capital program distinguishes childcare spaces for children aged 0-4 years and 5-12 years old. Benefit to existing shares are identified, which relate to the replacement of some existing spaces through the redevelopment or relocation of certain facilities in the program.

The needs analysis identifies the provision of 4,169 new child spaces over the ten-year planning period of 2017-2026 at a gross cost of $334.4 million, as shown below:

Forecast of Additional Childcare Spaces 2017-2026		
Program Area & Type of Facility	**Number of Spaces**	**Gross Cost Estimate($M)**
Spaces for Ages 0-4		
Childcare Centres integrated with Civic Buildings (e.g. Community Centres)	457	$ 55.8 M
Childcare Centres integrated with Schools	621	$ 68.3 M
Childcare Centres integrated with Private Development (residential and/or commercial)	1,491	$196.3 M
Sub-Total Ages 0-4	**2,569**	**$320.4 M**
Spaces for Ages 5-12		
Renovations of Multi-Purpose Space at schools	1,200	$ 2.0 M
Newly Built Space at schools	400	$ 12.0 M
Sub-Total Ages 5-12	**1,600**	**$ 14.0 M**
TOTAL	**4,169**	**$334.4 M**

The total growth-related capital program costs amount to $334.4 million, as shown below, of which $133.4 million is identified for DCL funding. Further details of the capital program are listed in Appendix C.

Funding of the Childcare 2017-2026 Growth-related Capital Program		
Costs & Funding Sources	**Funding Allocation**	
	$M	%
Net Growth-Related Capital Costs	**$334.4 M**	
Less Funding Sources		
Senior Government /Other Partners	$4.0 M	1.2%
CAC/Density Bonus/Incl. Housing	$90.0M	26.9%
Rezoning Conditions	N/A	0.0%
Available DCL Reserves	$8.0 M	2.4%
Net Potential DCL Recoverable	**$232.4 M**	**69.5%**
Less: Unfunded Share	$97.7M	29.2%
Less: Municipal Assist	$ 1.3 M	0.4%
DCL Rate Support (before exemptions & waivers)	**$133.4**	**39.9%**

8.3 CHILDCARE DCL RATE CALCULATION

The prioritized growth-related net capital costs associated with the childcare program total $133.4 million. This translates to a cost of $2.18 per square foot of new development that is to be levied on all new development in the City of Vancouver. Using the equivalency factors, the rates to be levied on each type of development for childcare are calculated as follows:

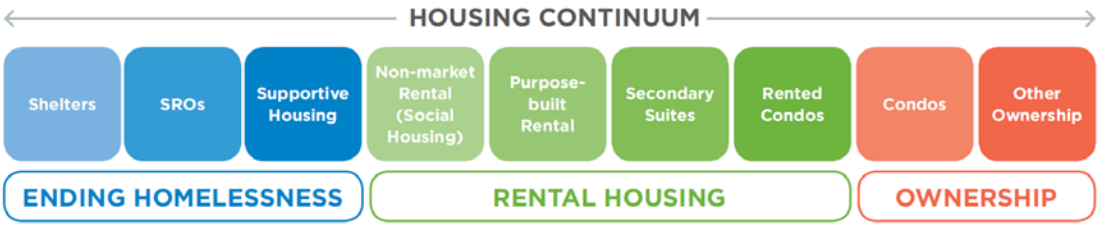
Childcare City-Wide DCL	
Low Density Residential	$0.51 / sq.ft.
Medium Density Residential	$1.09 / sq.ft.
High Density Residential	$2.18 / sq.ft.
Industrial	$0.87 / sq.ft.
Mixed Employment	$1.64 / sq.ft.
Commercial & Other	$2.18 / sq.ft.

9 REPLACEMENT HOUSING DEVELOPMENT COST LEVIES

9.1 MUNICIPAL SERVICE DELIVERY

The City of Vancouver Housing department is tasked with ensuring that a range of housing options are available to residents that are affordable, accessible, and suitable to a range of needs. The City offers housing affordability assistance to residents of Vancouver in a number of ways. The range of housing options available to residents of all income levels is referred to as the 'Housing Continuum', and the housing department is responsible for ensuring that options are available to people within every category.

The housing continuum, as outlined and discussed in the *Housing and Homelessness Strategy 2012-2021* (p.7) is as follows:



The *Vancouver Charter* permits the inclusion of capital costs related to:

> (2) Council may impose a development cost levy for the purpose of assisting in providing Replacement Housing in such a manner as it deems appropriate and assisting in providing such housing shall be deemed to be a capital project.
> (2.2) For the purposes of this section, Replacement Housing means housing which Council reasonably anticipates will, as a result of development in the area in which a development cost levy is imposed, be necessary to house persons displaced and unable to afford comparable accommodation in that area and, in anticipating the housing required, Council may look to development anticipated during a 20 year period commencing on the date the by-law imposing the development cost levy is imposed. (523D, s.2.1)

As such, costs related to providing affordable housing options for residents that are displaced as a result of development can be recovered in part through DCLs.

9.2 REPLACEMENT HOUSING GROWTH-RELATED CAPITAL PROGRAM

The projects included in the replacement housing capital program are designed to increase the supply of affordable housing and to replace those affordable units that are lost through redevelopment. As neighborhoods in Vancouver gentrify and property values increase, the number of units available to medium to low-income households diminish as well. DCLs are collected to contribute towards the construction of new affordable units to replace those lost through the redevelopment of the certain Vancouver areas.

The goals and objectives of the Housing department are outlined in the *Housing and Homelessness Strategy 2012-2021*, which identifies targets for additional units required. The projects in the capital program include the construction of 3,000 new units, which includes a contribution towards City-led projects and partnership equal to 2,000 units, contributions towards developer built projects, which will create 200 additional units, and contributions towards non-profit partner projects, which will result in 800 new units over the next ten years.

The total growth-related capital program costs amount to $950.0 million of which $377.0 million is to be funded from DCLs. Further details of the capital program are listed in Appendix D.

Funding of the Housing 2017-2026 Growth-related Capital Program		
Costs & Funding Sources	**Funding Allocation**	
	$M	%
Gross Growth-related Capital Costs	**$950 M**	
Less Funding Sources		
Senior Government /Other Partners	$380 M	40.0%
CAC/Density Bonus/Incl. Housing	$36 M	3.8%
Rezoning Conditions	N/A	0.0%
Available DCL Reserves	$21.5 M	2.3%
Net Potential DCL Recoverable	**$512.5**	**53.9%**
Less: Unfunded Share	$131.7 M	13.9%
Less: Municipal Assist	$ 3.8 M	0.4%
DCL Rate Support (before exemptions & waivers)	**$377.0**	**39.7%**

9.3 REPLACEMENT HOUSING DCL RATE CALCULATION

The prioritized growth-related net capital costs associated with the housing program total $377.0 million. This translates to a cost of $6.17 per square foot of new development that is to be levied on all new development in the City of Vancouver. Using the equivalency factors, the rates to be levied on each type of development for replacement housing are calculated as follows:

Replacement Housing City-Wide DCL	
Low Density Residential	$1.43 / sq.ft.
Medium Density Residential	$3.08 / sq.ft.
High Density Residential	$6.17 / sq.ft.
Industrial	$2.46 / sq.ft.
Mixed Employment	$4.63 / sq.ft.
Commercial & Other	$6.17 / sq.ft.

10 TRANSPORTATION DEVELOPMENT COST LEVIES

10.1 MUNICIPAL SERVICE DELIVERY

The City of Vancouver's Engineering Services are responsible for upgrading and maintaining the City's transportation infrastructure. The City works with other partners (such as TransLink and other Metro Vancouver municipalities) to build and maintain an integrated transportation system that moves people and goods throughout the City and region.

Development activity places increased demands on the transportation network in Vancouver, by adding additional people and employees that use various forms of transportation to get around. The department must plan and budget to accommodate the increasing use of the City's roads, sidewalks, bike lanes, parking options, and public transit. Ensuring intersections are safe and efficient, bridges are properly maintained, and pedestrian infrastructure is effective and accessible are all key components of properly servicing growth in Vancouver.

10.2 TRANSPORTATION GROWTH-RELATED CAPITAL PROGRAM

The ten-year capital needs identified to service growth in Vancouver from a transportation perspective are extensive. City staff has identified the growth-related transportation needs between 2017 and 2026 based on historical spending, known future major projects, community plan areas with defined transportation needs and the capital strategic outlook.

The ten-year growth-related transportation capital program includes projects that can be categorized as:

- Active Transportation Corridors
- Complete Streets
- False Creek Bridge Crossings
- Arbutus Greenway
- Sidewalk and Curb Ramps
- Millennium Line Broadway Extension Planning
- False Creek Flats EW Arterial
- Roads (Major, City, Local)
- Street Lighting
- Traffic Signals
- Bridge Works
- Safety Improvements

- Transit-Related Improvements (City share only)
- Ferry Docks
- Transportation Monitoring
- Railway-Roadway Grade Crossing Upgrades

The City's Streets and Transportation branches have established a $1.3 Billion capital plan of growth-related projects, of which $634 million is identified as being required to meet the transportation needs of growth over the period 2017 to 2026. The program has a specific focus on achieving core active transportation needs and goals, while continuing to invest in traditional road-related infrastructure.

DCL Eligible Growth-Related Transportation Capital Plan 2017-2026		
Capital Expenditure Area	**Gross Cost Estimate($M)**	**Growth-Related Estimate($M)**
Programs with DCL allocations		
Active Transportation Improvements	$253M	$163 M
False Creek Bridge Upgrades	$208 M	$ 72 M
Arbutus Greenway	$ 80 M	$ 52 M
Sidewalk and Curb Ramp	$ 27 M	$ 18 M
Millennium Line Broadway Extension Planning	$ 15 M	$ 10 M
False Creek Flats EW Arterial	$200 M	$130 M
Other Projects with growth components with no current DCL allocation, but expected to receive CAC Funding		
Complete Streets: Cambie Corridor	$ 27 M	$ 18 M
Complete Streets: Georgia Gateway	$ 4 M	$ 3 M
West End Community Plan: Active Transportation Improvements	$ 8 M	$ 5 M
Other Programs with growth components with no current DCL allocation		
Local Roads	$ 77 M	$ 34 M
Street Lighting	$174 M	$ 29 M
Traffic Signal	$ 67 M	$ 28 M
Safety Improvements	$ 35 M	$ 20 M
Other Programs (MRN, Transit, Monitoring, Railway)	$129 M	$ 52 M
TOTAL	**$1,304 M**	**$634 M**

Note: This does not include direct developer contributions from conditions of development on both major and minor projects.

Of the $1.3 billion capital program, only $265.4 million is proposed to be funded from DCLs; other sources of funding will be required to fully fund and deliver these projects. Further details of the capital program are listed in Appendix E.

Funding of Transportation Services 2017-2026 Growth-related Capital Program		
Costs & Funding Sources	**Funding Allocation**	
	$M	%
Gross Capital Costs	**$1,304.0 M**	
Less Benefit to Existing/Non-Growth	$ 670.0 M	51.4%
Net Growth-Related	**$ 634.0 M**	**48.6%**
Less Funding Sources		
Senior Government /Other Partners	$24.0 M	1.8%
CAC/Density Bonus/Incl. Housing	$33.0 M	2.5%
Conditions of Development	TBD	
Available DCL Reserves	$9.0 M	0.7%
Funding To Be Determined	189.0 M	14.5%
Net Potential DCL Recoverable	**$379.0**	**29.1%**
Less: Unfunded Share	$110.9 M	8.5%
Less: Municipal Assist	$ 2.7 M	0.2%
DCL Rate Support (before exemptions & waivers)	**$265.4**	**20.4%**

10.3 TRANSPORTATION DCL RATE CALCULATION

The prioritized growth-related net capital costs associated with the transportation program total $265.4 million. This translates to a cost of $4.34 per square foot of new development that is to be levied on all new development in the City of Vancouver. Using the equivalency factors, the rates to be levied on each type of development for transportation are calculated as follows:

Transportation City-Wide DCL	
Low Density Residential	$1.01 / sq.ft.
Medium Density Residential	$2.17 / sq.ft.
High Density Residential	$4.34 / sq.ft.
Industrial	$1.73 / sq.ft.
Mixed Employment	$3.26 / sq.ft.
Commercial & Other	$4.34 / sq.ft.

11 UTILITY SERVICES COST LEVIES

11.1 MUNICIPAL SERVICE DELIVERY

Utility services at the City of Vancouver include the provision of water distribution, sanitary sewers and storm water drainage needs, also referred to as green infrastructure.

The region of Metro Vancouver owns and operates the water source, treatment and regional water transmission system, while the City is responsible for local water distribution system to supply water to residents and businesses. The Water DCL addresses the water infrastructure that is the responsibility of the City of Vancouver, namely the local distribution system, including water mains and associated appurtenances.

The region of Metro Vancouver owns and operates the regional trunk sewers and major wastewater treatment plants while the City is responsible for the local sewers to collect sewage from residents and businesses. The Sewers and Drainage DCLs address the sewer infrastructure that is the responsibility of the City of Vancouver, namely the local collection system, sewer mains and storm water systems.

The Green Infrastructure Implementation Branch was staffed in March 2017 and is in the process of preparing a 30 year strategic implementation plan, portions of which will address drainage growth needs.

In addition to sanitary sewers, this technical appendix includes storm water drainage needs, also referred to as green infrastructure.

11.2 UTILITY SERVICES GROWTH-RELATED CAPITAL PROGRAM

The following section provides an overview of Utility Services growth-related capital program; the first part identifies the water service needs and the next section deals with sanitary sewers and drainage together. Further details of the capital program are listed in Appendix F.

Water Services

The City's Engineering department has established a $10.6 million capital budget to meet the City-wide water infrastructure needs eligible for DCL

funding arising from growth over the period 2017 to 2026. The City will experience other growth-related water servicing capital costs which will be funded through other mechanisms, including conditions of development agreements and other developer contributions.

Water Services DCL Eligible Growth-related Capital Plan 2017-2026				
Capital Expenditure Area	**Upgrade Length (km)**	**Capital Cost Estimate($M)**	**Benefit To Existing ($M)**	**Growth-Related Share ($M)**
Water Main Upgrades (Fire Flows)	5.4	$10.2 M	$0.0 M	$10.2 M
Alterations to Pressure Zone Boundaries		$ 0.1 M	$ 0.0 M	$ 0.1 M
Hydraulic Model & Analysis		$ 0.3 M	$ 0.1 M	$ 0.2 M
TOTAL WATER SERVICES		**$10.6 M**		**$10.5 M**

Of the $10.6 million in DCL eligible gross cost to provide the necessary water infrastructure to meet the increased need arising from development, $10.5 million, or 99.3%, has been included in the DCL rate calculations over the period 2017-2026. Fire protection is considered a life safety requirement for building occupancy and fire flow capacity upgrades provide little to no additional benefit to the existing customers. Therefore eligible upgrade requirements are funded 100% by DCL. Projections were based on expected fire flow rates for typical residential, commercial and industrial developments. There is potential for additional needs to arise unexpectedly if fire flow requirements of specific developments are greater than typical assumptions (ie. 6 storey wood frame buildings may have higher fire flow demands, but data on proposed building form were not available for this analysis. The project list may change depending on the actual location, scale and form of developments.

Sewers & Drainage

The City has a significant capital program to replace all combined sewers, which are those sanitary sewers that receive storm water runoff, by 2050. The sewer separation program address existing needs, yet the planning of appropriate sewer and drainage infrastructure sizing and capacity takes into consideration the needs arising from development. As such, a share of this program is considered growth-related and fundable from DCLs.

Development that occurs in separated areas can exceed the capacity of existing sewers. Development in these areas will result in the need to upgrade sewers; the associated capital costs and are considered fully growth-related and fundable from DCLs.

With respect to drainage, the City's current growth related drainage or "green infrastructure" projects have been identified as part of a 'quick start initiative' to simply begin the process to address gaps in the existing drainage system. The full requirements and costs of the green infrastructure rainwater drainage management strategy will be developed as part of a discrete planning process and integrated to complement the existing sewer drainage system. Growth-related drainage project lists will be updated periodically to reflect the system planning.

The City's Engineering department has established a $569.5 million gross capital budget of which $198.5 million is required to meet the sewer and drainage needs arising from growth over the period 2017 to 2026:

Sewers & Drainage Growth-related Capital Plan 2017-2026			
Capital Expenditure Area	**Upgrade Length (km)**	**Gross Cost Estimate ($M)**	**Growth-Related Share ($M)**
Sanitary Sewers Upgrades – by Quadrant			
Northeast	16.6	$ 36.0 M	$ 20.0 M
Northwest	5.6	$ 12.0 M	$ 7.0 M
Southeast	12.6	$ 30.0 M	$ 17.0 M
Southwest	3.5	$ 7.0 M	$ 4.0 M
Downtown	20.1	$ 45.5 M	$ 25.5 M
Policy Plan Areas outside Downtown	10.6	$ 25.5 M	$ 14.5M
Combined Sewers (10 Yr)	193	$368.0 M	$ 82.0M
Pump Stations		$ 27.0 M	$ 10.0 M
Hydraulic Model		$ 0.5 M	$ 0.5 M
Engineering Growth Studies		$ 1.3 M	$ 1.3 M
Sub-Total Sewers		**$552.8 M**	**$181.8 M**
Storm Water Drainage		**$ 16.7 M**	**$ 16.7 M**
TOTAL SEWERS & DRAINAGE		**$569.5 M**	**$198.5 M**

Of the $569.5 million in gross cost to provide the necessary sewer and drainage infrastructure to meet the increased need arising from development, $78.6 million, or 13.8%, has been included in the DCL rate calculations over the period 2017-2026.

Funding of the Sewer & Drainage 2017-2026 Growth-related Capital Program		
Costs & Funding Sources	**Funding Allocation**	
	$M	%
Gross Capital Costs	**$569.5 M**	
Less: Non-Growth/Benefit to Existing	$371.0 M	**65.1%**
Less Funding Sources		
Senior Government /Other Partners	$ 0.0 M	0.0%
CAC/Density Bonus/Incl. Housing	$ 0.0 M	
Rezoning Conditions	TBD	
Available DCL Reserves	N/A	
Net Potential DCL Recoverable	**$198.5 M**	**34.9%**
Less: Unfunded Share	119.1 M	20.9%
Less: Municipal Assist	$ 0.90 M	0.2%
DCL Rate Support (before exemptions & waivers)	**$ 78.6**	**13.8%**

11.3 UTILITY SERVICES DCL RATE CALCULATION

The Utility Services DCL funding of the water service, $10.5 million, and the $78.6 million, in sewer and drainage costs yields a total funding of $89.1 million. This translates to a cost of $1.46 per square foot of new development that is to be levied on all new development in the City of Vancouver. Using the equivalency factors, the rates to be levied on each type of development for transportation are calculated as follows:

Development Cost Levy Calculation		
Water & Sewers & Drainage City-Wide DCL		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$0.34 / sq.ft.
Medium Density Residential	0.50	$0.73 / sq.ft.
High Density Residential	1.00	$1.46 / sq.ft.
Industrial (Heavy)	0.40	$0.58 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$1.09 / sq.ft.
Commercial & Other	1.00	$1.46 / sq.ft.

12 DCL RATE SUMMARY AND IMPLEMENTATION

12.1 SUMMARY OF PROPOSED DCL RATES

The rate calculation as a general fee per square foot is shown on Table 4. The net prioritized costs for each service category are divided by the increase in both residential and non-residential GFA to derive a cost per square foot. As shown, the overall City-wide charge is calculated at $17.34 per square foot.

For both residential and non-residential development, the DCL to be charged is converted to a variable rate by development type based on equivalency factors, which are explained further in Section 6.

The calculated residential DCLs are shown on Table 5. The residential rate for low density built form is calculated at $4.03 per square foot. Low density refers to development with a Floor Space Ration (FSR) of 1.2 or less, or laneway houses. These are most often in the form of single and semi-detached housing. Medium density residential refers to units with an FSR between 1.2 and 1.5. This is a new category to be introduced to the City's DCL regime, and is anticipated to capture the forecast for stacked town house development. The calculated rate for medium density residential development is $8.66 per square foot. Higher density residential, largely apartment units with an FSR of above 1.5 will pay $17.34 per square foot of GFA.

The calculated non-residential City-wide DCLs are summarized on Table 6. Similar to the residential rates, the non-residential charges will vary by development type. The rate for heavy industrial is calculated at $6.91 per square foot. This category is relevant to the zoning district within which development is to occur. Mixed employment, also referred to as 'light industrial' is also a new category to be introduced to the DCL regime City-wide. The rate calculated for this category is $13.01 per square foot of GFA. Lastly, the charge for commercial development, or all other non-residential growth that does not fit within the industrial categories is $17.34 per square foot. It is important to note that staff are recommending that the non-residential rates, both commercial and industrial, not be increased and remain unchanged. This is more fully discussed below.

It is noted that the calculation of the development cost levies does not include any provision for exemptions – either statutory or discretionary, such as the treatment of affordable housing. Such legislative exemptions, or other

exemptions that Council may choose to provide, will result in loss of DCL revenue for the affected types of development. However, any such revenue loss may not be made up by offsetting increases in other portions of the calculated charge.

TABLE 5

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES
RESIDENTIAL DEVELOPMENT COST LEVIES

Service	Calculated Charge Per Square Foot	Residential Charge By Square Foot[1]			Percentage of Charge
		Low Density Residential *Below 1.2 FSR & Laneway*	Medium Density Residential *Beteween 1.2 and 1.5 FSR*	High Density Residential *Above 1.5 FSR*	
Parks	$3.19	$0.74	$1.59	$3.19	18.4%
Childcare	$2.18	$0.51	$1.09	$2.18	12.6%
Housing	$6.17	$1.43	$3.08	$6.17	35.6%
Transportation	$4.34	$1.01	$2.17	$4.34	25.0%
Utility Services					
Water	*$0.17*	*$0.04*	*$0.09*	*$0.17*	*1.0%*
Sewer & Drainage	*$1.29*	*$0.30*	*$0.64*	*$1.29*	*7.4%*
Sub-Total Utility Services	$1.46	$0.34	$0.73	$1.46	8.4%
TOTAL CHARGE PER SQ.FT.	**$17.34**	**$4.03**	**$8.66**	**$17.34**	**100.0%**
1) Based on Equivalent Factor Of:		0.232	0.500	1.000	

TABLE 6

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES
NON-RESIDENTIAL DEVELOPMENT COST LEVIES

Service	Calculated Charge Per Square Foot	Non-Residential Charge By Square Foot[1]			Percentage of Charge
		Industrial[2]	Mixed Employment[3]	Commercial & Other	
Parks	$3.19	$1.27	$2.39	$3.19	18.4%
Childcare	$2.18	$0.87	$1.64	$2.18	12.6%
Housing	$6.17	$2.46	$4.63	$6.17	35.6%
Transportation	$4.34	$1.73	$3.26	$4.34	25.0%
Utility Services	$0.00	$0.00	$0.00	$0.00	0.0%
Water	*$0.17*	*$0.07*	*$0.13*	*$0.17*	*1.0%*
Sewer & Drainage	*$1.29*	*$0.51*	*$0.96*	*$1.29*	*7.4%*
Sub-Total Utility Services	$1.46	$0.58	$1.09	$1.46	8.4%
TOTAL CHARGE PER SQ.FT.	**$17.34**	**$6.91**	**$13.01**	**$17.34**	**100.0%**
1) Based on Equivalent Factor Of:		0.399	0.750	1.000	

2) Industrial applies to I-2, M-1, M-1A, M-1B, M-2, MC-1, MC-2 zoning districts

3) Mixed Employment (Light Industrial) applies to IC-1, IC-2, IC-3, I-1, I-3 and I-4 zoning districts

12.2 COMPARISON WITH CURRENT RATES IN FORCE

Table 7 presents a comparison of the newly calculated residential and non-residential development cost levies with the City's current charges (as at September 30, 2016).

Overall, the calculated DCLs are approximately 25% higher than the current rates in force. A comparison is not shown for the new rate categories of medium density residential and mixed employment (light industrial) as the categories are new and do not have a current rate in force.

12.3 STAFF RECOMMENDATIONS

Staff is making recommendations, for Council's consideration, on the implementation of the new DCL By-law.

With respect to the newly calculated residential DCL rates the staff report includes the following for Council's consideration:

> *It is recommended that Council apply 50% of the rate increase effective September 30, 2017 and the remainder effective September 30, 2018. The amended rate for September 30, 2017 would be as follows:*
>
> *A. THAT Council approve the following for the Vancouver (City-wide) Development Cost Levy (DCL):*
>
> *a. Adjust DCL rates, to contribute towards growth costs recovered from new development:*
>
> *i. Higher Density Residential (above 1.5 FSR): From $13.91/square foot ($149.73/square metre) to $15.64/square foot ($168.35/square metre)*
>
> *ii. Lower Density Residential (at or below 1.2 FSR): From $3.23/square foot ($34.77/square metre) to $3.63/square foot ($39.07/square metre)*
>
> *With new DCL rates to be effective September 30, 2017.*

TABLE 7

CITY OF VANCOUVER
COMPARISON OF CURRENT AND CALCULATED
DCLS - CITY-WIDE

Development Type	Curent DCL Rates Charge / Sq.Ft.	Calculated DCL Rates Charge / Sq.Ft.	Difference in Charge	
Residential Development				
Low Density[1] *Below 1.2 FSR & Laneway*	$3.23	$4.03	$0.80	25%
Medium Density *Development between 1.2 & 1.5 FSR*	$0.00	$8.66	n/a	n/a
High Density *Development Above 1.5 FSR*[2]	$13.91	$17.34	$3.43	25%
Non-Residential Development				
Industrial[3]	$5.55	$6.91	$1.36	25%
Mixed Employment	$0.00	$13.01	n/a	n/a
Commercial & Other[2]	$13.91	$17.34	$3.43	25%

Rates effective September 30, 2016

1) Current rates based on residential development at or below 1.2 FSR & laneway houses
2) Current rate based on residential development over 1.2 FSR, commercial and most other uses
3) Current industrial DCL applied uniformally, within all applicable zones, against all types of industrial land uses.

The following provides a summary of the residential DCL rates if the staff recommendation is adopted.

Type of Residential Development	Current DCL ($/sq.ft.)	Recommend DCL Rates	
		Effective September 30, 2017	Effective September 30, 2018
Low Density *Below 1.2 FSR & Laneway*	$3.23	$3.63	$4.03
Medium Density *Between 1.2 FSR and 1.5 FSR*	N/A	$8.66	$8.66
High Density Above 1.5 FSR	$13.91	$15.64	$17.34

It is estimated that the DCL revenue loss arising from this recommendation will be upwards of $7.5 million during first year of the new by-law. These losses will require funding from other City revenue sources.

With respect to the non-residential DCLs, staff is recommending that the charges not be increased above current levels. Staff are recommending the introduction of a new rate category called “Mixed Employment (Light Industrial)” that would be levied on select industrial zoning districts that allow for increased amounts of general office in addition to industrial space.

The following provides a summary of the calculated and recommended non-residential DCLs.

Type of Non-Residential Development	Calculated DCL ($/sq.ft.)	Recommended DCL Effective September 30, 2017 ($/sq.ft.)
Industrial		
Mixed Employment (Light)[1]	$13.01	$10.44
Industrial[2]	$6.91	$5.55
Commercial	$17.34	$13.91

The “calculated DCL” rate is the full cost recovery of the non-residential DCL fundable costs shown in this study.

It is estimated that the DCL revenue loss arising from this recommendation will be upwards of $56 million over the ten-year planning period, or an average of

$5.6 million annually. These losses will require funding from other City revenue sources.

The following table provides a summary of the estimated DCL revenue losses arising from the above recommendations.

Type of Development & Policy	Estimated DCL Revenue Loss ($M)		
	Ten-Year Total	Year 1	Annual 2nd Year+
Residential			
Phase-In	$ 7.5 M	$ 7.5 M	N/A
Non-Residential			
No Rate Increase	$56.0 M	$ 5.6 M	$ 5.6 M
Total	$63.5 M	$13.1 M	$ 5.6 M

Implementing the recommended DCL rates, allowing for the residential phase-in and no increase in the non-residential rates, will generate $930 million in DCL revenues over the next ten years. An increase of over $120 million in DCL revenues over the next ten years if the current rates did not increase. Allowing for annual indexing, the ten year revenues are estimated at $1.14 Billion, or $215 million higher than under the existing rates.

12.4 BY-LAW EXEMPTIONS AND RATE REDUCTIONS

The City of Vancouver, through the *Vancouver Charter* and the City's by-laws, exempt the following development from the payment of DCLs:

- Alterations to existing buildings where the total floor area is not increased;
- Social housing;
- Churches exempt from taxation;
- Renovations;
- Additions smaller than 500 square feet to existing buildings containing fewer than 4 residential units and no other use; and
- Small residential units of 29 square metres (312 square feet) or less.

The City of Vancouver will either reduce or waive DCLs on the construction of for-profit affordable housing, subject to certain terms and conditions of the development. The social housing exemption will apply to any development that falls within the DCL by-law definition of social housing. This applies to both

standalone social housing development, as well as those projects blended with other development types. All other elective or discretionary exemptions and waivers provided by the *Charter* are not employed in the City's by-law. As with all discounts, exemptions and waivers, the resulting lost revenue must be funded from other sources, which largely comes from the property tax base or utility fees, where applicable.

It is recommended that the exemptions and discounts in the existing by-law continue to be applied under the 2017 by-law update.

City staff are recommending extending DCL reductions at a rate of $10/building permit for the following uses in all DCL areas:

- artist studio
- community centre/neighborhood house
- library
- public authority use
- social service centre

Council currently offers reduced DCL rates for a limited number of uses: schools (K-12 curriculum); parking garages; community energy centres; and works yards.

Both non-profits and the city build their own, purpose-built facilities. These facilities have been subject to DCL rates since DCLs were first established in the city (e.g. in the City-wide DCL, non-profit and civic uses are currently charged $13.91/square foot). When the City-wide DCL was first established, Council was faced with a policy choice between offering all non-profits DCL relief or offering civic capital grants budget to determine where relief would be provided. Council decided not to give a blanket exemption to non-profits because it was found that they cover a wide range of uses, and many would not be eligible for a City grant or be seen as providing a City service. The Civic Grants process was seen as a way to provide a screening mechanism to assess which of the wide variety of non-profits serve City goals. Since this decision was made however, there has been limited funding available in the Civic Capital Grants to offset increasingly large DCL costs meaning that few benefited from DCL relief. Staff have reviewed the uses in the zoning and development by-law and have narrowed it to a select group of uses that non-profits aligned with Council priorities could benefit from. Staff have also reviewed planned civic facilities anticipated over the next 10 years and have generated a list of uses that will allow these facilities to proceed with a reduced

DCL rate. The rationale for reducing DCL rates for city-owned facilities is that they provide a public service for new residents and employees (e.g. community centres, libraries, cultural facilities, social service facilities).

12.5 COLLECTION OF CHARGES

Development cost levy payments are triggered by either a subdivision agreement or the issuance of a building permit. Fee-simple bare-land subdivision occurs infrequently in Vancouver. The vast majority of development in Vancouver is infill densification of existing parcels (that often are consolidated). When a development project is rezoned to increase units/density, DCLs are payable at the issuance of building permit, as recommended in the DCC Best Practices Guide. This practice is recommended to continue.

12.6 IN-STREAM APPLICATIONS & TRANSITION PERIOD

In order to ensure fairness to applications that have been submitted prior to the adoption of DCL By-law rate adjustments, in-stream rate protection is offered. Building permits issued within 12 months of a DCL By-law amendment are exempt from that DCL rate increase, provided there was a precursor application (rezoning, development permit or building permit application) that was in-stream on the date of that increase, and provided that:

- the applicant has submitted an application in a form satisfactory to the City; and
- the applicant has paid the applicable application fee to the City.

If a related building permit application is not issued within the 12-month period, the rate protection expires and new DCL rates take effect.

Section 523D (8.2 & 8.3) of the Vancouver Charter outlines the criteria that must be met in order for an application to qualify for in-stream protection.

12.7 DCL CREDITS AND AGREEMENTS

In attempt to provide servicing to a number of new developments within a geographic area, it is most efficient for a municipality to provide upgraded or oversized infrastructure to meet the needs of future development pre-

emptively, rather than undertake expansion works each time new development occurs. These upgraded or oversized infrastructure projects can be very costly and municipalities are limited in how much of the cost they are able to support in advance of funding sources, such as development fees.

Many local governments have the ability to enter into agreements with developers that require key infrastructure be delivered by the developer. This infrastructure, including roads, water, sewer and drainage works with enough capacity to service properties situated near the development is to be constructed and financed by the private sector and the oversized share returned from the municipality over time. The developer responsible for constructing the works is entitled to recover a portion of the costs from the owners of the properties, beyond their development, that will benefit from the works in the future. This can be done through development cost levy credits or waivers and latecomer agreements. Latecomer agreements are entered into with the developer and municipality where the project costs are identified, as well as the share that relates directly to their development. The share of the works (and associated costs) that will provide benefit to other future construction is therefore to be recovered through the latecomer agreement charges identified in the agreement. This is an efficient way to have key infrastructure constructed that is required to allow one development to proceed, but will also benefit future developments. This mechanism increases equitability amongst benefitting landowners, while managing the fiscal risk to the municipality.

Currently, the City of Vancouver is prohibited from entering into latecomer agreements. This has resulted in many circumstances where the initial development in a particular area is required to pay for the required servicing infrastructure, however the benefits derived from neighboring developments that follow are not financially recuperated. This then causes the City to upfront a lot of the costs or even completely finance the works. This method leads to inequitable distribution of project costs and leaves the City, or in some cases individual developers, assuming a lot of financial responsibility. The City would benefit from the use of this type of infrastructure funding agreement.

12.8 DCL MONITORING AND REPORTING

The City currently undertakes annual reporting on DCL revenues and expenditures. It is recommended that that this practice continue to ensure transparency and facilitates regular updates to the calculation.

APPENDIX A

DEVELOPMENT FORECAST

APPENDIX A

DEVELOPMENT FORECAST

This appendix provides details of the development forecast used to prepare the 2017 City-wide Development Cost Levy Update Background Study (DCL Update Study) for the City of Vancouver. The planning period being used for the DCL is the ten-year period of 2017 to 2026.

A. OVERVIEW AND BACKGROUND

The City of Vancouver is part of the Metro Vancouver Region. Metro Vancouver undertakes regional land use planning in partnership with 21 municipalities, one Electoral Area, and one Treaty First Nation. Regional land use planning strives to contain and structure growth coming to our region, protect important lands, and ensure the efficient provision of infrastructure (i.e. utilities, transit and community amenities). The Metro Board adopted regional Growth Strategy (RGS), titled “Metro Vancouver 2040 – Shaping our Future,” on July 29, 2011.

All municipalities in Metro Vancouver were required to submit a Regional Context Statement (RCS) within two years of the adoption of the RGS. The RCS demonstrates how the City's existing plans and policies support the goals, strategies and actions identified in the RGS. The RCS also includes population, dwelling and employment projections that show Vancouver's regional share of growth projections. If applicable, the RCS must also show how the City’s plans and policies will be made consistent with the RGS over time.

The City’s Planning Department forecasts growth and development for the City utilizing a Development Capacity Model. The model is used to calculate the anticipated population and jobs for the RGS. The growth forecast used in the DCL Update Study leveraged the previous forecasting assumptions used in the RGS submission for the city.

Overview of the Development Capacity Model Methodology

- Staff calculate capacity based on sites with development potential, and by using proven rates of redevelopment by zone.
- Directions from existing policy plans are included to project growth over a 30-35 year timeframe (e.g. 30 years of development in the Cambie Corridor Plan area and Mount Pleasant Plan area).

City's Development Capacity Model

- Projection for Regional Context Statement
- 30 year projection of population and employment growth
- Incorporates in-stream projects approved or in application (but not yet built)
- Based on proven rate of growth within existing zoning
- Includes approved neighbourhood and policy plans
- Constrained by existing policy (e.g. Rate of Change)
- Acknowledges limited redevelopment of strata

The model is updated on an ongoing basis to reflect changes in development applications, economic trends, Council policy and directions, and the full range of inputs identified above. The model has been used to estimate the amount, type and location of growth over the DCL update planning horizon of 2017-2026. Over the next ten years, it is forecast that population will increase by over 60,000 persons and employment will grow by close to 40,000. This appendix provides additional details on the growth forecast used in the DCL calculations.

For the purposes of the DCL Update Study, this growth forecast is updated to mid-year 2016 and reflects all policy plans, zones and in-stream development projects approved at that time. The growth forecast does not include policy plans approved since that time or policy plans that are currently underway at the time of this update (e.g. Cambie Corridor Phase 3, False Creek Flats, housing reset, viaducts, Broadway subway project, etc.).

B. RESIDENTIAL FORECAST: POPULATION AND DWELLING UNITS

1. Residential Population and Dwelling Units

Residential growth in Vancouver will continue to be dominated by high density apartments, through redevelopment and further intensification. Table 1 provides a summary of the ten-year forecast of population and dwelling units.

Table 1 Forecast of Population and Dwelling Units		
City-Wide Residential Forecast	**Ten-Year Planning Period 2017-2026 Growth**	
Population	**63,581**	
Unit Growth	**Number**	**%**
Singles (laneway housing)	4,072	9%
Townhouse	929	2%
Apartment	42,119	89%
Total Unit Growth	**47,120**	

Table 11 and Map 1, included at the end of this appendix, identifies the locational distribution of the population growth by local area.

2. Residential Floor Space Growth

The City of Vancouver calculates and levies residential DCLs on a gross floor area basis. Floor space estimates are derived from the City's Capacity Model. The model generates net additional floor space estimates based on the net increase in population and assumed floor space per resident (FSR) assumptions. The assumptions vary according to type of dwelling unit and are summarized on Table 2.

Table 2 Residential Floor Space per Person Assumptions	
Type of Dwelling Unit	**Floor Space Per Resident (sf/resident)**
Single Family	475
Laneway Housing	400
Townhouse	475
Apartment	600

The FSR assumption from Table 2 are applied against the forecast net population increase, by unit type, to yield a forecast of net additional floor space. The City however calculates and levies DCLs on a gross floor area basis. Gross floor space accounts for the replacement of pre-existing floor plus the addition of the net new floor space. The City estimates the amount of replaced floor space using assumptions based on City data and experience. The assumptions vary by unit type and are summarized on Table 3.

Table 3 Residential Floor Space Replacement Factors	
Type of Dwelling Unit	**Average % Replaced Floor Space**
Single Family (incl. Laneway)	61%
Townhouse	29%
Apartment	17%

The factors from Table 3 are applied against the forecast of net new space, by unit type, to yield the forecast of gross floor space. These calculations are summarized on Table 4.

Table 4 2017-2026 Residential Floor Space: Net & Gross			
Type of Dwelling Unit	**Total Net Floor Space (sf)**	**Net to Gross Factor**	**Total Gross Floor Space (sf)**
Single Family (incl. Laneway)	2,941,218**		20,988,332
Townhouse	814,234	1.29	1,050,362
Apartment	33,665,198	1.17	39,388,282
TOTAL	**37,420,650**		**61,426,975**

**Single family gross floor area forecast includes the replacement of houses at a rate of approximately 1% of total housing stock per year. The net increase in floor space that drives demand for additional service is primarily from the addition of laneway housing.

3. Residential Floor Space Weighting for DCL Rate Calculations

There is a final adjustment to the residential gross floor space for the purpose of the DCL rate calculations. The demand for City services funded by DCLs are generally driven by population and employment increases while the charges are levied on added gross floor area. To reflect different FSR by unit type and differences in demand needs arising from ground-related units and higher density built form, the residential gross floor areas have been weighted for the purpose of the DCL calculations. These weighting factors are expressed in relation to the apartment units and the same factors are used to establish the differentiated residential rates. This approach ensures revenue neutrality for the City. Table 5 provides a summary of the weighting calculations.

Table 5 2017-2026 Residential Floor Space Weighting for DCL Calculations			
Type of Dwelling Unit	**Total Gross Floor Space (sf)**	**Weighting Factor[1]**	**Total Gross Floor Space (sf)**
Single Family (incl. Laneway)	20,988,322	0.23	4,873,900
Townhouse	1,050,362	0.50	525,181
Apartment	39,388,282	1.00	39,388,282
TOTAL	**61,426,975**		**44,787,400**

Note[1]: Single Family weighting factor has been rounded.

C. NON-RESIDENTIAL FORECAST: EMPLOYMENT & FLOOR SPACE

1. Non-Residential Employment

It is forecast that Vancouver will continue to experience steady employment growth over the DCL planning period. Employment growth is forecast to be three-quarters commercial and one-quarter industrial/mixed employment. Table 6 provides a summary of the ten-year forecast of employment.

Table 6 Forecast of Employment		
City-Wide Employment Forecast	**Ten-Year Planning Period 2017-2026 Growth**	
Employment Type	**Added Employees**	**%**
Industrial & Mixed Employment	9,640	24%
Commercial & Other Uses	30,200	76%
Total Employment Growth	**39,840**	

Table 12 and Map 2, included at the end of this appendix, identifies the locational distribution of the employment growth by local planning area.

2. Non-Residential Floor Space Growth

The City of Vancouver calculates and levies non-residential DCLs on a gross floor area basis. Floor space estimates are derived from the City's Capacity Model. The model generates net additional floor space estimates based on the net increase in employment and assumed floor space per worker (FSW) assumptions. The assumptions vary according to type of non-residential land use as summarised on Table 7.

Table 7 Non-Residential Floor Space per Worker Assumptions	
Type of Land Use	**Floor Space Per Worker (sf/worker)**
Industrial/Mixed Employment	450
Commercial - Office	275
Commercial - Retail	320

The FSW assumption from Table 7 are applied against the forecast net employment increase, by land use type, to yield a forecast of net additional floor space. The City however calculates and levies DCLs on a gross floor area basis. Gross floor space accounts for the replacement of pre-existing floor plus the addition of the net new floor space. The City estimates the amount of replaced floor space using assumptions based on City data and experience. The assumptions vary by unit type and are summarized on Table 8.

Table 8 Non-Residential Floor Space Replacement Factors	
Type of Land Use	**Average % Replaced Floor Space**
Industrial/Mixed Employment	36%
Commercial	38%

The factors from Table 8 are applied against the forecast of net new space, by unit type, to yield the forecast of gross floor space. These calculations are summarized on Table 9.

Table 9 2017-2026 Non-Residential Floor Space: Net & Gross			
Type of Land Use	**Total Net Floor Space (sf)**	**Net to Gross Factor**	**Total Gross Floor Space (sf)**
Industrial	4,340,019	1.36	5,902,426
Commercial	9,152,929	1.38	12,631,042
TOTAL	**13,492,948**		**18,533,468**

3. Non-Residential Floor Space Weighting for DCL Rate Calculations

There is a final adjustment to the non-residential gross floor space for the purpose of the DCL rate calculations. The demand for City services funded by DCLs are generally driven by population and employment increases while the charges are levied on added gross floor area. To reflect different FSW by land use types and differences in demand needs arising from different employee types, the non-residential gross floor areas have been weighted for the purpose of the DCL calculations. These weighting factors are expressed in relation to the commercial floor space and the same factors are used to establish the differentiated non-residential rates. This approach ensures revenue neutrality for the City. Table 10 provides a summary of the weighting calculations.

Table 10
2017–2026 Non-Residential Floor Space Weighting for DCL Calculations

Type of Land Use	Total Gross Floor Space (sf)	Weighting Factor[1]	Total Gross Floor Space (sf)
Industrial	5,902,426		3,701,600
Mixed Employment (Light)	*3,836,575*	*0.75*	*2,877,400*
Heavy	*2,065,849*	*0.40*	*824,200*
Commercial & Other Uses	12,631,042	1.00	12,631,000
TOTAL	**18,533,468**		**16,332,600**

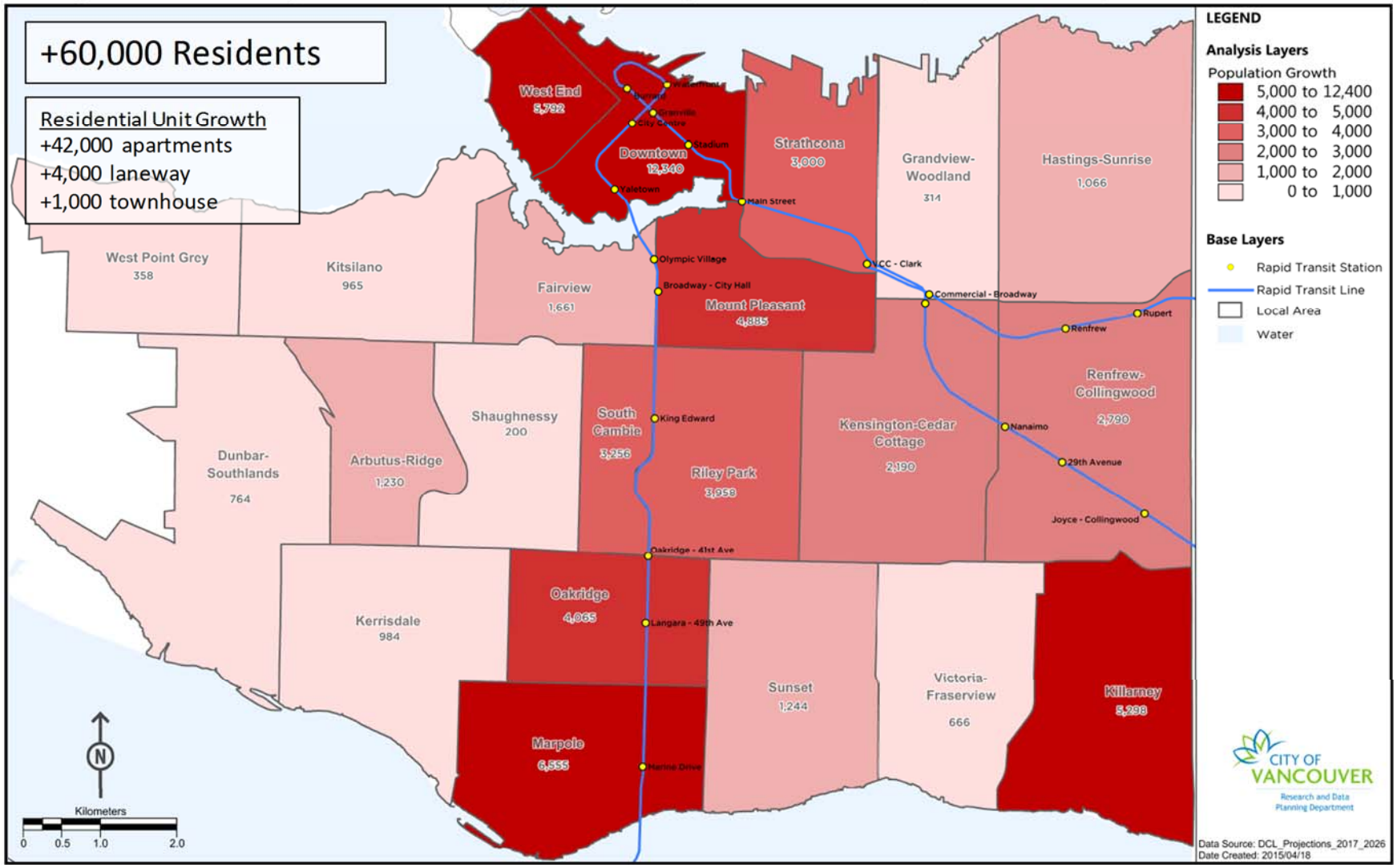
Note [1]: Industrial weighting factors has been rounded.

CITY OF VANCOUVER
2017 DEVELOPMENT COST LEVY UPDATE

Table 11

Geography	2016 Population Estimates	2017-2026 (10 Year Forecast)								
		Population Growth	Residential Unit Growth				Residential Floor Area Net Growth			
			Single (LWH)	Townhouse	Apartment	Total	Single (LWH)	Townhouse	Apartment	Total
Arbutus Ridge	16,156	1,230	107	-	527	634	80,377	-	629,246	709,623
Downtown (including Stanley Park)	61,712	12,340	-	-	9,422	9,422	-	-	7,371,133	7,371,133
Dunbar-Southlands	20,589	764	197	-	237	434	136,426	-	257,160	393,586
Fairview	32,672	1,661	-	-	1,053	1,053	-	-	963,946	963,946
Grandview-Woodland	27,867	314	37	-	184	221	22,637	-	153,946	176,583
Hastings-Sunrise	34,756	1,066	517	-	245	762	341,255	-	231,273	572,528
Kensington-Cedar Cottage	49,497	2,190	423	137	892	1,452	291,086	127,561	813,661	1,232,308
Kerrisdale	15,741	984	47	-	551	598	36,386	-	525,846	562,232
Killarney	29,564	5,298	273	-	2,930	3,203	211,378	-	2,932,670	3,144,048
Kitsilano	42,432	965	123	-	446	569	80,766	-	456,778	537,544
Marpole	25,619	6,555	107	514	4,693	5,314	69,047	498,938	3,330,863	3,898,848
Mount Pleasant	31,455	4,885	-	-	3,445	3,445	-	-	2,916,687	2,916,687
Oakridge	13,155	4,065	120	-	4,379	4,499	98,638	-	2,315,114	2,413,752
Renfrew-Collingwood	52,430	2,790	507	278	1,289	2,074	338,236	187,735	1,086,593	1,612,564
Riley Park	22,497	3,958	307	-	2,475	2,782	209,675	-	2,125,924	2,335,599
Shaughnessy	8,914	200	30	-	112	142	23,658	-	80,597	104,255
South Cambie	8,425	3,256	100	-	1,978	2,078	67,560	-	1,871,308	1,938,868
Strathcona	13,241	3,000	-	-	2,557	2,557	-	-	1,692,220	1,692,220
Sunset	36,847	1,244	657	-	211	868	455,076	-	228,598	683,674
Victoria-Fraserview	31,265	666	399	-	-	399	390,015	-	(54,471)	335,544
West End	45,422	5,792	-	-	4,409	4,409	-	-	3,646,885	3,646,885
West Point Grey	13,021	358	123	-	82	205	88,998	-	89,225	178,223
Local Areas	**633,277**	**63,581**	**4,072**	**929**	**42,119**	**47,120**	**2,941,218**	**814,234**	**33,665,198**	**37,420,650**

Map 1: DCL Population Projections by Local Area (2017-2026)

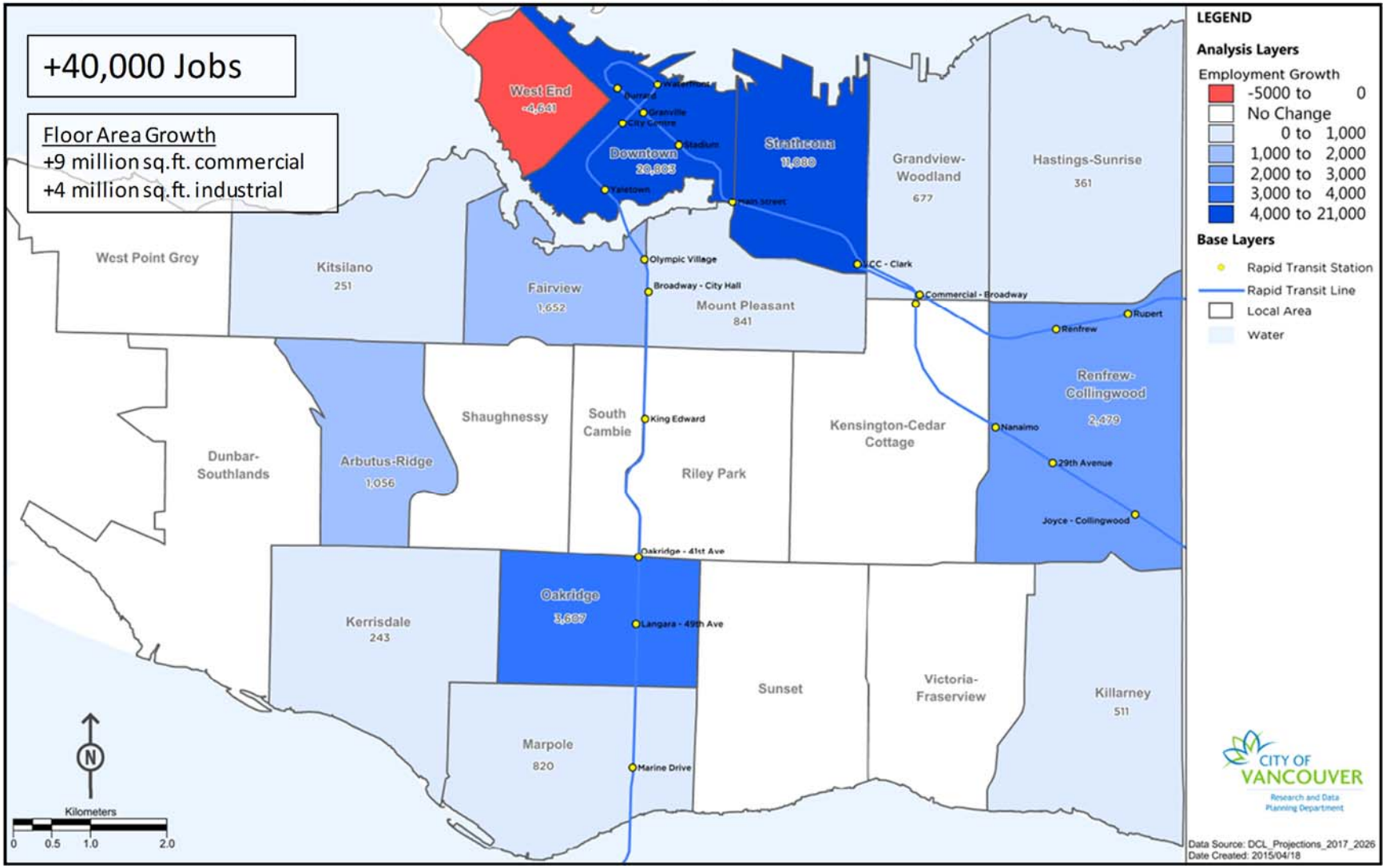


CITY OF VANCOUVER
2017 DEVELOPMENT COST LEVY UPDATE

Table 12

Geography	2016 Jobs Estimates	2017-2026 (10 Year Forecast)			
		Job Growth	Job Floor Area Growth		
			Commercial	Industrial	Total
Arbutus Ridge	3,852	1,056	348,400	-	348,400
Downtown (including Stanley Park)	157,671	20,803	5,720,721	-	5,720,721
Dunbar-Southlands	5,180	118	39,245	-	39,245
Fairview	47,360	1,652	412,147	20,825	432,972
Grandview-Woodland	13,987	677	7,779	215,673	223,452
Hastings-Sunrise	10,345	361	118,912	-	118,912
Kensington-Cedar Cottage	9,277	(35)	(12,190)	-	(12,190)
Kerrisdale	4,452	243	80,428	-	80,428
Killarney	3,908	511	168,496	-	168,496
Kitsilano	17,049	251	83,172	-	83,172
Marpole	15,821	820	35,702	235,184	270,886
Mount Pleasant	24,349	841	47,880	229,097	276,977
Oakridge	6,361	3,607	1,190,231	-	1,190,231
Renfrew-Collingwood	16,683	2,479	817,727	-	817,727
Riley Park	5,614	150	49,326	-	49,326
Shaughnessy	3,286	(7)	(2,311)	-	(2,311)
South Cambie	10,836	72	23,675	-	23,675
Strathcona	22,154	11,080	139,586	3,639,240	3,778,826
Sunset	9,621	(189)	(62,396)	-	(62,396)
Victoria-Fraserview	4,260	1	377	-	377
West End	26,551	(4,641)	(50,804)	-	(50,804)
West Point Grey	4,988	(10)	(3,174)	-	(3,174)
Local Areas	**423,605**	**39,840**	**9,152,929**	**4,340,019**	**13,492,948**

Map 2: DCL Employment Projections by Local Area (2017-2026)



APPENDIX B

PARKS

APPENDIX B

PARKS SERVICES TECHNICAL APPENDIX

OVERVIEW OF SERVICE

In Vancouver, Parks and Recreation Services are provided by the separately elected Vancouver Park Board. The Vancouver Park Board has exclusive possession, jurisdiction, and control over more than 230 public parks in Vancouver and a large public recreation system of community centres, pools, rinks, fitness centres, golf courses, street trees, marinas, playing fields, and more. The Park Board's mission is to provide, preserve, and advocate for parks and recreation services to benefit all people, communities, and the environment.

The Vancouver Charter allows the City to fund parkland acquisition and parkland development costs through DCLs. The Charter states that the following costs are eligible for DCL funding:

(a) Acquiring park and or reclaiming land as park land,

(b) Providing fencing, landscaping, drainage and irrigation, trails, restrooms, changing rooms and playground and playing field equipment on park land. (523D, s.17.1)

Since 2003, the Park Board has used DCL revenues to fund extensive park land acquisition and park development projects.

ESTABLISHING THE DEMAND FOR SERVICE

The Vancouver Park Board uses two key measures to establish the need for parks:

- Aim to add 1.1 hectares (2.75 acres) of neighbourhood parkland for every 1,000 new residents; and
- Ensure that every person lives within a 5 minute walk of a park, greenway, or other green space by 2020.

The Park Board is in the process of creating a Parks and Recreation Master Plan (due to be complete in 2018) that will establish a renewed need and standard for neighbourhood parkland per resident. The current standard (1.1

hectares of neighbourhood parkland for 1,000 new residents) is being used for the purposes of the DCL update but is recognized as difficult to achieve given the limited availability and high cost of land in Vancouver.

In addition, the Park Board has established key priorities in response to meeting needs of development:

- Add and secure waterfront parks;
- Add and expand parks in neighbourhoods experiencing growth; and
- Build out parks on both newly acquired lands, existing lands, and on major project sites.

The Park Board has established a $679 million gross capital budget, of which $550 million has been identified to meet the needs of growth over the period 2017 to 2026. The program would provide for approximately 19 ha of parkland acquisition, base development of over 30 ha of parks and additional capital expenditures for new park facilities and amenities. Table 1 provides an overview of the growth-related parks capital program.

Table 1

Forecast of Parkland Acquisition & Development 2017-2026

Capital Expenditure Area	Estimated (Ha)	Gross Cost Estimate ($M)	Growth-Related Cost ($M)
Parkland Acquisition	19.2 Ha[1]	$330 M	$330 M
New Parks in Neigbourhoods			
Secure Waterfront Access			
Park Consolidation & Expansion			
Park Networking			
Park Development		$349 M	$220 M
New Park Construction	30+ Ha		
Park Upgrades, Facilities & Amenities in existing parks	N/A		
Urban Forestry & Biodiversity Initiatives	N/A		
Improvements to Seawall and Recreation Pathways	N/A		
TOTAL		**$679 M**	**$550 M**

Note[1]: The Park Board has additional parkland acquisition needs to meet the increased demands arising from development over the period 2017-2026; these additional needs will be achieved through in-kind CAC contribution from major development projects.

DESCRIPTIVE OVERVIEW OF CAPITAL PROGRAM

The following provides a descriptive overview of the parks capital program, as provided by staff from the Park Board:

A. Priority Projects

i. Acquisitions:

Continue to strategically acquire lands to meet acquisition objectives.

- Waterfront access
- Habitat / Biodiversity (Protection and Enhancement)
- Population growth areas: East Fraserlands, Cambie Corridor, Marpole, Mount Pleasant, Downtown Eastside
- Address growth in areas with neighbourhood deficiencies (2.75 acres/1,000; 1.1ha/1,000)
- Park consolidation
- Park networking

ii. Park Development:

- New Park Construction (land not yet acquired)
  - e.g. Marpole, Downtown, Cambie mini-park
- New Park Construction (land already acquired)
  - e.g. Smithe/Richards, Burrard Slopes, Southeast False Creek, Fraser River Road Ends
- Major Projects Park Construction
  - e.g. Pearson Dogwood, Langara Gardens, Oakridge Centre, East Fraserland Parks, Little Mountain, Heather Lands, Northeast False Creek.
- Park Renewals/Upgrades
  - e.g. John Hendry Park, English Bay, Morton Park, Sunset Beach, Barclay Square, Locarno foreshore project, neighbourhood parks
- Outdoor Recreation Assets
  - Playgrounds, sports fields, including synthetic turf fields, track and field facility, water/spray parks, field houses, washrooms, outdoor pools, boating facilities, and dog off-leash areas.
- Street trees and Biodiversity Assets
- Seawall and Recreational Pathways
  - Cycling and pedestrian pathway improvements, universal access improvements, Stanley Park waterfront and seawall upgrades.
- Other large projects
  - E.g., Beaver Lake, piers and bridges.

CAPITAL PROGRAM & FUNDING ALLOCATIONS

The Park Board and the City have a variety of tools and sources available to fund the identified acquisition needs and construction costs of the development-related Parks capital program. Table 2 provides a summary of the capital program funding.

Table 2
Funding of the Park Service 2017-2026 Development-related Capital Program

Costs & Funding Sources	Funding Allocation	
	$M	%
Gross Project Capital Costs	**$679.0 M**	
Benefit to Existing & Service Level Increase	$129.0 M	19.0%
Net Growth-Related	**$550.0 M**	**81.0%**
Less Funding Sources		
Senior Government /Other Partners	$10.0 M	1.5%
CAC/Density Bonus/Incl. Housing	$60.0 M	8.8%
Rezoning Conditions	N/A	0.0%
Available DCL Reserves	$111.5 M	16.4%
Net Potential DCL Recoverable	**$368.5 M**	**54.3%**
Less: Unfunded Share	$171.6M	25.3%
Less: Municipal Assist	$ 2.0 M	0.3%
DCL Rate Support (before exemptions & waivers)	**$194.9 M**	**28.7%**

Of the $679.0 million in gross cost to deliver the parks program necessary to meet the increased need arising from development, $194.9 million, or 28.7%, has been included in the DCL rate calculations over the period 2017-2026.

Table 3 to this appendix provides additional details on the parks capital program.

APPENDIX B
TABLE 3

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
10-YEAR CAPITAL PROGRAM 2017-2026: PARKS

Parks Capital Program	Park Area	Total Gross Cost	Service Level Increase & Benefit to Exising	Net Growth-Related Costs	DCL Rate Funded 2017-2026
	(ha)	($000)	($000)	($000)	($000)
Parkland Aquistion1					
New parks in neighbourhoods e.g. Fairview, Mount Pleasant, Gr. Woodland					
Secure waterfront access					
Park Consolidation and Expansion					
Park Networking					
Sub-Total Parkland Acquistion	**19.2**	**$330,000.0**	**$0.0**	**$330,000.0**	**$116,978.0**
Park Development					
New Park Construction e.g. Nicola and Alberni, Smithe/Richards, Burrard Slopes	**30**				
Major Projects Park Construction e.g. Pearson Dogwood, Langara Gardens					
Park Upgrades e.g. John Hendry Park, English Bay, Morton Park					
Outdoor Recreation Assets e.g. Playgrounds, sports fields, including synthetic turf fields					
Street trees & Biodiversity Assets					
Seawall and Recreational Pathways					
Sub-Total Park Development	**30**	**$349,000.0**	**$129,000.0**	**$220,000.0**	**$77,985.3**
Total Parks		**$679,000.0**	**$129,000.0**	**$550,000.0**	**$194,963.3**

1)The Park Board has additional parkland acquisition needs, beyond the 13.6 ha, to meet the increased demands arising from development over the period 2017-2026; these additional needs will be achieved through in-kind CAC contribution from major development projects.

DCL RATE CALCULATION

The portion of the growth-related capital program proposed to be funding by DCLs, $194.9 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

Parks DCL Rate Recovery Costs	**$194.9 million (A)**	
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base Parks DCL (A/D)	**$3.19/sf**	

The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown on Table 4.

Table 4
Development Cost Levy Calculation

Parkland Acquisition & Development City-Wide DCL		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$0.74 / sq.ft.
Medium Density Residential	0.50	$1.59 / sq.ft.
High Density Residential	1.00	$3.19 / sq.ft.
Industrial (Heavy)	0.40	$1.27 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$2.39 / sq.ft.
Commercial & Other	1.00	$3.19 / sq.ft.

APPENDIX C

CHILDCARE

APPENDIX C

CHILDCARE SERVICES TECHNICAL APPENDIX

OVERVIEW OF SERVICE

Vancouver Council has shown strong support for the provision of childcare facilities and services across the City. The City and Council recognize that quality childcare and early learning opportunities help to foster healthy children and communities, and play a crucial role in the social and economic stability of our city. Working with our partners, the City plays a key role in planning, coordinating, and advocating for childcare and early learning programs.

Recognizing that childcare is a public amenity intended primarily to support working families, Council and staff:

- Partner with non-profit organizations to deliver quality, affordable, and accessible childcare;
- Facilitate the development of infrastructure to support integrated childcare services, including licensed group care and other family support services;
- Use financial tools to leverage facilities and land, and offset some operating costs; and
- Encourage senior governments to uphold their responsibility for childcare.

The City provides childcare spaces in a range of different buildings and facilities across the City. The provision of childcare spaces is broken down into two main types; Preschool, ages 0-4 and School Age, ages 5-12.

The City has a total of 1,715 preschool childcare spaces provided in 49 different buildings accounting for a total floor area of approximately 170,000 sq.ft. The capital construction value of these spaces is estimated at over $200 million ($118,000/space) excluding land costs.

The City's 535 school-age childcare spaces are provided in 12 different buildings and the space is typically multi-use as childcare functions are only part time. The capital construction value of these spaces is estimated at $26.75 million ($50,000/space) excluding land costs.

ESTABLISHING THE DEMAND FOR SERVICE

The City uses three methods to calculate demand for childcare spaces: the Childcare Calculator for new developments, a simple childcare space ratio to determine relative shortfall, and the Supply/Demand model based on a study by Mab Oloman (2010). The need for childcare spaces is driven by the amount of residential development, the forecasted age-profile of those in the childcare age ranges, and growth in employment (as not all employees that work in the City also reside in the City and therefore a segment of increased childcare need is not captured by residential growth and population changes).

The needs analysis identifies the provision of 4,169 new child spaces over the ten-year planning period of 2017-2026. Table 1 provides an overview of the proposed approach to delivering the 4,169 new and renewed childcare spaces.

Table 1

Forecast of Additional Childcare Spaces 2017-2026

Program Area & Type of Facility	Number of Spaces	Gross Cost Estimate($M)
Spaces for Ages 0-4		
Childcare Centres integrated with Civic Buildings (e.g. Community Centres)	457	$ 55.8 M
Childcare Centres integrated with Schools	621	$ 68.3 M
Childcare Centres integrated with Private Development (residential and/or commercial)	1,491	$196.3 M
Sub-Total Ages 0-4	**2,569**	**$320.4 M**
Spaces for Ages 5-12		
Renovations of Multi-Purpose Space at schools	1,200	$ 2.0 M
Newly Built Space at schools	400	$ 12.0 M
Sub-Total Ages 5-12	**1,600**	**$ 14.0 M**
TOTAL	**4,169**	**$334.4 M**

DESCRIPTIVE OVERVIEW OF CAPITAL PROGRAM

List of projects (identified priorities):

Childcare for 0-4 yrs old: ~2,569 spaces

- Achieved in residential/commercial projects: ~1,491 spaces
  - West End: Site-specific rezonings
  - False Creek Flats: Great Northern Way
  - Cambie Corridor: Dogwood-Pearson, Langara Gardens, Oakridge Transit Centre
  - Grandview Woodland: Site-specific rezonings
  - Other Locations to be determined

- Achieved at schools: ~621 spaces
  - Downtown: Coal Harbour
  - NE quadrant: School Site TBD
  - SE quadrant: East Fraser Lands
  - SW quadrant: David Lloyd George, School Site TBD
  - NW quadrant: School Site TBD
  - Other schools to be determined

- Achieved in civic facilities: ~457 spaces
  - Downtown: Gastown parkade
  - NE quadrant: Raycam Community Centre, Kensington CC, Hastings CC, Britannia CC
  - SE quadrant: West Fraser Lands
  - SW quadrant: Oakridge Community Centre, Marpole CC

Childcare for 5-12 yrs old: ~1,600 spaces

- Achieved in schools: ~1,600 spaces (locations TBD)
  - Renovations of Multipurpose school space: ~1,200 spaces
  - Newly built space: ~400 spaces

CAPITAL PROGRAM & FUNDING ALLOCATIONS

The City has a variety of tools and sources available to fund the construction of the capital program associated with funding the additional 4,169 growth-related childcare spaces. Table 2 provides a summary of the capital program funding.

Table 2
Funding of the Childcare 2017-2026 Growth-related Capital Program

Costs & Funding Sources	Funding Allocation	
	$M	%
Net Growth-Related Capital Costs	**$334.4 M**	
Less Funding Sources		
Senior Government /Other Partners	$4.0 M	1.2%
CAC/Density Bonus/Incl. Housing	$90.0M	26.9%
Rezoning Conditions	N/A	0.0%
Available DCL Reserves	$8.0 M	2.4%
Net Potential DCL Recoverable	**$232.4 M**	**69.5%**
Less: Unfunded Share	$97.7M	29.2%
Less: Municipal Assist	$ 1.3 M	0.4%
DCL Rate Support (before exemptions & waivers)	**$133.4**	**39.9%**

Of the $334.4 million in gross cost to provide the 4,169 childcare spaces to meet the increased need arising from development, $133.4 million, or 39.9%, has been included in the DCL rate calculations over the period 2017-2026.

Table 3 to this appendix provides additional details on the childcare capital program, growth-related shares and funding allocations.

APPENDIX C
TABLE 3

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
10-YEAR CAPITAL PROGRAM 2017-2026: CHILDCARE

Childcare Capital Program	Spaces[1]	Total Gross Cost	Service Level Increase & Benefit to Exising	Net Growth-Related Costs	DCL Rate Funded 2017-2026
	(#)	($000)	($000)	($000)	($000)
Spaces for Ages 0-4					
Civc Buildings (e.g. Community Centres)	457	$55,826.0	$0.0	$55,826.0	
Schools	621	$68,310.0	$0.0	$68,310.0	
Integrated into Private Developments	1,491	$196,233.0	$0.0	$196,233.0	
Sub-Total Spaces for Ages 0-4	**2,569**	**$320,369.0**	**$0.0**	**$320,369.0**	**$127,800.0**
Spaces for Ages 5-12					
Renonvations of multi-purpose space	1,200	$2,000.0	$0.0	$2,000.0	
Newly built space	400	$12,000.0	$0.0	$12,000.0	
Sub-Total Spaces for Ages 5-12	**1,600**	**$14,000.0**	**$0.0**	**$14,000.0**	**$5,562.7**
Total Childcare	**4,169**	**$334,369.0**	**$0.0**	**$334,369.0**	**$133,362.7**

Notes:
1) Childcare spaces shown are fully growth-related. The City will add additional spaces to address existing needs and those spaces, and associated costs are not reflected above.

DCL RATE CALCULATION

The portion of the growth-related capital program proposed to be funded by DCLs, $133.4 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

Childcare DCL Rate Recovery Costs	**$133.4 million**	**(A)**
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base Childcare DCL (A/D)	**$2.18/sf**	

The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown on Table 4.

Table 4
Development Cost Levy Calculation

Childcare City-Wide DCL		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$0.51 / sq.ft.
Medium Density Residential	0.50	$1.09 / sq.ft.
High Density Residential	1.00	$2.18 / sq.ft.
Industrial (Heavy)	0.40	$0.87 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$1.64 / sq.ft.
Commercial & Other	1.00	$2.18 / sq.ft.

APPENDIX D

REPLACEMENT HOUSING

APPENDIX D

REPLACEMENT HOUSING TECHNICAL APPENDIX

OVERVIEW OF SERVICE

For many years, Vancouver Council has strongly supported addressing the City's issues of homelessness and housing affordability. In 2011 the City completed, and Council adopted, Vancouver's Housing and Homelessness Strategy 2012-2021. The City has been actively increasing the supply of affordable housing and the replacement of affordable rental units lost through redevelopment.

The Vancouver Charter permits the inclusion of capital costs related to Replacement Housing as follows:

> (2) Council may impose a development cost levy for the purpose of assisting in providing Replacement Housing in such a manner as it deems appropriate and assisting in providing such housing shall be deemed to be a capital project.
>
> (2.2) For the purposes of this section, Replacement Housing means housing which Council reasonably anticipates will, as a result of development in the area in which a development cost levy is imposed, be necessary to house persons displaced and unable to afford comparable accommodation in that area and, in anticipating the housing required, Council may look to development anticipated during a 20 year period commencing on the date the by-law imposing the development cost levy is imposed. (523D, s.2.1)

As such, costs related to providing affordable housing options for residents that are displaced as a result of development can be recovered in part through DCLs.

In 2016, the City undertook extensive research that included local stakeholders and leaders, international housing experts, and the public to better understand the pressures on the current housing market and the issues local residents face. The proposed new Housing Vancouver strategy identified a number of priorities, including the following:

- Create more of the right type of housing;
- Creating housing based on what people can afford;

- Accommodate Vancouver's changing communities;
- Providing a diversity of housing in neighbourhoods across the city;
- Ensure a healthy rental market;
- Supporting security and protection for renters;
- Provide more City land to build new rental housing; and
- Building new rentals that are affordable to residents.

The 2012 to 2021 Housing Strategy and the most recent, and ongoing, research has informed the development of the capital needs arising from the anticipated development over the 2017-2026 DCL planning period.

ESTABLISHING THE DEMAND FOR SERVICE

The City's Housing and Homelessness Strategy (2012-2021), adopted by Council in 2011, identifies priority actions and targets to increase the supply of affordable housing. This Strategy targets the development of 5,000 new units of social housing and 2,900 units of supportive housing for a combined total of nearly 8,000 non-market units by 2021. Over the next ten years, it is estimated that there will be a demand for housing by 14,400 households earning less than $50,000, which is typically the income threshold for social housing.

It is estimated that 3,000 replacement housing units will be needed over the next ten years. This is based on anticipated redevelopments in existing community plan areas and historical trends outside these areas.

Table 1 provides an overview of the proposed approach to delivering the 3,000 replacement housing units.

Table 1

Forecast of Additional Housing Units 2017-2026

Method of Delivery	Number of Units	Gross Cost Estimate($M)
Contributions towards City-led projects & partnerships (land acquisition and construction)	2,000	$700M
Contributions towards non-profit partner projects	800	$ 200 M
Contributions towards Developer built projects (inclusionary policies & in-kind delivery)	200	$ 50 M
TOTAL	**3,000**	**$950 M**

DESCRIPTIVE OVERVIEW OF CAPITAL PROGRAM

The City delivers social housing in three ways: inclusionary policies, land/partnerships, and grants to non-profits. DCLs contribute to all three ways. Collected DCLs are also used to fund replacement housing across the City.

Delivery Method of Affordable Housing	Description	Role of DCLs
1. Inclusionary Policies & In-kind Delivery	20% Policy requires that developers of large sites set aside floor space or units for non-market development. Density bonus requires the delivery of social housing units in exchange for more density.	DCLs is a source of top-up funding for some projects delivered through inclusionary policies.
2. Land/Partnerships	The City provides land for the construction of social housing and contributes to the construction costs. These types of projects rely significantly on external funding (e.g. senior governments, financing, etc.).	DCLs primarily cover the cost of land purchases with some contribution towards construction costs to achieve affordability.
3. Grants to Partners	The City provides grants to non-profit societies that are redeveloping or renovating their social housing projects. Grants for new units vary according to unit type: $10K/singles; $20K/2-bdrm; $30K/3-bdrm. SRO Renovation Grants are $5K/room.	DCLs fund a significant proportion of these grants for NP to expand and improve their stock.

The City does not charge DCLs on projects that already deliver affordable housing, instead the city offers DCL exemptions and waivers for these projects. Social housing projects are exempt from paying DCLs. Rental housing can have DCLs waived, provided the rental housing is consistent with the definition of ‘for-profit affordable housing’ included in the DCL By-law.

CAPITAL PROGRAM & FUNDING ALLOCATIONS

The City has a variety of tools and sources available to fund the construction of 3,000 replacement housing units. Table 2 provides a summary of the capital program funding.

Table 2
Funding of the Housing 2017-2026 Growth-related Capital Program

Costs & Funding Sources	Funding Allocation	
	$M	%
Gross Growth-related Capital Costs	**$950 M**	
Less Funding Sources		
Senior Government /Other Partners	$380 M	40.0%
CAC/Density Bonus/Incl. Housing	$36 M	3.8%
Rezoning Conditions	N/A	0.0%
Available DCL Reserves	$21.5 M	2.3%
Net Potential DCL Recoverable	**$512.5**	**53.9%**
Less: Unfunded Share	$131.7 M	13.9%
Less: Municipal Assist	$ 3.8 M	0.4%
DCL Rate Support (before exemptions & waivers)	**$377.0**	**39.7%**

Of the $950 million in gross cost to provide the 3,000 replacement housing units, arising from impact of development, $377 million, or 39.7%, has been included in the DCL rate calculations over the period 2017-2026.

Table 3 to this appendix provides additional details on the replacement housing capital program, growth-related shares and funding allocations.

APPENDIX D
TABLE 3

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
10-YEAR CAPITAL PROGRAM 2017-2026: REPLACEMENT HOUSING

Replacement Housing Capital Program	Units	Total Gross Cost	Service Level Increase & Benefit to Exising	Net Growth-Related Costs	DCL Rate Funded 2017-2026
	(#)	($000)	($000)	($000)	($000)
Contributions towards City-led projects & partnerships (land and construction)	2,000	$700,000.0	$0.0	$700,000.0	$340,030.7
Contributions towards non-profit partner projects	800	$200,000.0	$0.0	$200,000.0	$21,119.9
Contributions towards Developer built projects (inclusionary policies & in-kind delivery)	200	$50,000.0	$0.0	$50,000.0	$15,839.9
Total Replacement Housing	**3,000**	**$950,000.0**	**$0.0**	**$950,000.0**	**$376,990.6**

DCL RATE CALCULATION

The portion of the growth-related capital program proposed to be funded by DCLs, $377 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

Housing Replacement DCL Rate Recovery Costs	**$377.0 million (A)**	
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base Housing Replacement DCL (A/D)	**$6.17/sf**	

The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown on Table 4.

Table 4

Development Cost Levy Calculation

Housing Replacement City-Wide DCL

Type of Development	Weighting Factor	DCL Rate
Low Density Residential	0.23	$1.43 / sq.ft.
Medium Density Residential	0.50	$3.08 / sq.ft.
High Density Residential	1.00	$6.17 / sq.ft.
Industrial (Heavy)	0.40	$2.46 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$4.63 / sq.ft.
Commercial & Other	1.00	$6.17 / sq.ft.

APPENDIX E

TRANSPORTATION

APPENDIX E

TRANSPORTATION SERVICES TECHNICAL APPENDIX

OVERVIEW OF SERVICE

The City of Vancouver's Engineering Services are responsible for upgrading and maintaining the City's transportation infrastructure. The City works with other partners, federally, provincially, and locally (such as TransLink and other Metro Vancouver municipalities) to build and maintain an integrated transportation system that moves people and goods throughout the City and region.

Mobility in Vancouver is guided by policies in Transportation 2040, a long-term strategic plan for the City that will help guide transportation and land use decisions and public investments for the years ahead. The plan supports "a thriving economy while increasing affordability; healthy citizens who are mobile in a safe, accessible, and vibrant city; and an enhanced natural environment that ensures a healthy future for people and the planet."

Active modes of transportation – that is, walking, cycling and rolling – are central to that vision for Vancouver. Public transit, private vehicles, and goods movement also have important roles to play, but this vision cannot be achieved without land use mix and destiny, infrastructure, and a culture that supports and encourages Vancouver residents to choose walking and cycling for more of their trips.

One of the central goals of Transportation 2040, supported by other City priorities and strategies, is **making two-thirds of all trips by foot, bike, or transit**. The 2040 Plan and the focus on active transportation is reflected in the growth-related capital program established for the DCL Update.

ESTABLISHING THE DEMAND FOR SERVICE

The City of Vancouver has been experiencing significant growth and development over recent years, which has placed significant pressures on the City's transportation infrastructure. The department must plan and budget to accommodate the increasing use of the City's roads, sidewalks, bike lanes, parking options, and public transit. Ensuring intersections are safe and efficient, bridges are properly maintained, and active transportation infrastructure is

effective and accessible are all key components of properly servicing growth in Vancouver.

As stated in Transportation 2040 Plan:

> The number of people living, working, and visiting the city is continuing to grow. This means more trips on finite road space—trips that cannot be accommodated by driving. We have made great progress in recent years, with motor vehicle volumes into the city and downtown declining despite significant growth in overall travel. The City's challenge is to maintain this trend, continuing to accommodate the trips that need to be made by motor vehicles while encouraging a shift toward more sustainable modes and improving overall quality of life

The City's Street and Transportation department has established a $1.3 Billion gross growth-related capital plan, of which $634 million is identified as being required to meet the transportation needs of growth over the period 2017 to 2026. The program has a specific focus on achieving active transportation needs and goals while continuing to invest in core traditional road-related infrastructure. Table 1 provides an overview of the growth-related transportation capital program.

Table 1

Transportation Growth-Related Capital Plan 2017-2026

Capital Expenditure Area	Gross Growth-Related Project Estimate($M)	Net Growth-Related Estimate($M)
Active Transportation Improvements	$253 M	$163 M
False Creek Bridge Upgrades	$208 M	$ 72 M
Arbutus Greenway	$ 80 M	$ 52 M
Sidewalk and Curb Ramp	$ 27 M	$ 18 M
Millennium Line Broadway Extension Planning	$ 15 M	$ 10 M
False Creek Flats EW Arterial	$200 M	$130 M
Complete Streets: Cambie Corridor	$ 27 M	$ 18 M
Complete Streets: Georgia Gateway	$ 4 M	$ 3 M
West End Community Plan: Active Transportation	$ 8 M	$ 5 M
Local Roads	$ 77 M	$ 34 M
Street Lighting	$174 M	$ 29 M
Traffic Signal	$ 67 M	$ 28 M
Safety Improvements	$ 35 M	$ 20 M
Other Programs	$129 M	$ 52 M
TOTAL	**$1,304.0 M**	**$634 M**

It is important to note there are other City Streets and Transportation projects that have been intentionally excluded from the $1.3B program because of assumed developer contributions. Examples of projects that have not been included are: public realm projects, parking projects, the Millennium Line Broadway Extension (other than a study component) and the Georgia Viaducts removal project, as well as project specific conditions of development.

DESCRIPTIVE OVERVIEW OF CAPITAL PROGRAM

The following provides a descriptive overview of the transportation growth-related capital program, as provided by City staff:

DCL Eligible Transportation & Streets System

As part of the DCL update, City staff has compiled a comprehensive list of all growth-related transportation projects planned for the next 10 years (2017-2026); the list was generated through methodologies consistent with the DCC Best Practices Guide (2005), Transportation 2040, and through engagement with all of the City‘s Transportation Branches. The objective of compiling this list was to monetize a flexible package of projects, which was subsequently used to develop an updated DCL program. In general, the transportation projects identified for inclusion shall service growth or service non-existing users.

Active Transportation and Complete Streets

The City wants to make walking safe, convenient, comfortable and delightful. This will be achieved by ensuring streets and sidewalks support a vibrant public life, healthy lifestyle and social connection. Priority will be given to routes with the highest existing or potential demand, filling in critical gaps in the network, improving high collision areas and making connections to key destinations such as schools, community centres, major transit stations and commercial high streets.

Active Transportation (AT) Corridors

DCL monies for AT Corridors will be based on the City's 5-Year Cycling Map. The 5-Year Cycling Map is reviewed and approved by Council on a yearly basis. As such, it is expected that priorities within the list will change as the map is updated. As of June 2017, the current AT Corridor priorities expected to receive DCL monies in the next 10 years are:

- Richards St;
- Drake St;
- 10th Avenue (sections of 10th Ave to be constructed within the next 5 years);
- 14th Avenue;
- Hudson St; and
- Commercial Drive.

AT Ped-Bike Signals needed to support the planned AT Corridors above are also included this category. Note: This does not include development-warranted traffic signals.

Note: This category does not include development-warranted traffic signals.

Community Plan Sidewalk and Cycling Improvements

DCL monies are expected to contribute towards the funding of AT improvements within the Downtown East Side, Marpole and Grandview Woodlands Community Plan areas. This does not include any traffic signals.

Note: This category does not include any traffic signals. Furthermore, improvements shall be a 'to-be-prioritized' subset of the Active Transportation projects from the aforementioned 30-year Community Plans.

Seawall Improvements

DCL monies are expected to contribute towards the funding for improvements to the Expo Deck, False Creek South, Coal Harbour and Waterfront Wharf.

Complete Streets

Complete Streets consists of improved walking facilities, enhanced bus stops, and all-ages-and-abilities (AAA) cycling. DCL monies are expected to contribute towards the funding of planned projects such as the Grandview Woodlands Complete Streets project and exploration of Complete Streets opportunities along the Broadway Corridor.

False Creek Bridge Crossings

DCL monies are expected to contribute towards the funding of improving the False Creek bridges for people walking and cycling, in coordination with required rehabilitation and upgrade efforts. Currently, planned improvements along the False Creek Bridge Crossings consist of:

- Adding/Upgrading active transportation links across False Creek Bridges
- Completion of the seismic upgrades (to the steel span) to Granville Street Bridge
- Rehabilitation to the Granville Street Bridge
- Seismic upgrades to the Cambie Street Bridge

Arbutus Greenway

DCL monies will contribute towards the funding of the Arbutus Greenway - a future, north-south transportation corridor that, once completed, will connect False Creek to the Fraser River. The greenway will be a high-quality corridor for walking, cycling, and other non-motorized modes of transportation.

Sidewalks

The sidewalk program provides for the construction of new or missing sidewalks for a safer, connected and more functional pedestrian network. Priority will be given to constructing sidewalks where there are higher levels of pedestrian activity, such as in commercial areas, transit routes, and pedestrian collector routes.

Millennium Line Broadway Extension Planning

Provision for a study for staff to plan for relocating above-ground infrastructure, upgrading pipes and connections to Active Transportation Links.

Curb Ramps

This program provides for the construction of new or missing pedestrian curb ramps for a safer, connected and functional pedestrian network. This program benefits many pedestrians including persons with disabilities, persons who use mobility aids, and persons with strollers and shopping trolleys. There has been an increase in the demand for curb ramps as the City endeavors to complete the sidewalk network for seamless travel throughout the pedestrian environment.

False Creek Flats EW Arterial

A grade-separation strategy was identified in 2008 to improve the safety and efficiency of moving people and goods across the rail corridor that connects the Port with the False Creek Flats railyards. The False Creek Flats EW Arterial Project includes an arterial overpass along a new route to replace the existing Prior/Venables Street crossing, and a grade-separated walking and cycling route along the Adanac Bikeway. DCL monies will contribute towards the funding of this project.

All of the individual projects identified for DCL funding are Transportation priorities as of June 2017. It is important to recognize that, individual projects will be subject to future reviews and prioritization by staff, City Council and the public, which may result in some funding between projects and categories being re-allocated (but same growth-related objectives still met). DCL funds will only assist towards the funding for these projects and programs; Other sources of funding (e.g. Capital, CAC, Partnerships, etc.) will be required to fully fund and deliver these projects.

CAPITAL PROGRAM & FUNDING ALLOCATIONS

The City has a variety of tools and sources available to fund the identified growth-related transportation capital program. The City will continue to utilize conditions of development and other developer contribution shares of the growth-related transportation infrastructure needs; especially those needs that

are localized and required for specific development. Table 2 provides a summary of the capital program funding.

Table 2
Funding of Transportation Services 2017-2026 Growth-Related Capital Program

Costs & Funding Sources	Funding Allocation	
	$M	%
Gross Capital Costs	**$1,304.0 M**	
Less Benefit to Existing/Non-Growth	$ 670.0 M	51.4%
Net Growth-Related	**$ 634.0 M**	**48.6%**
Less Funding Sources		
Senior Government /Other Partners	$24.0 M	1.8%
CAC/Density Bonus/Incl. Housing	$33.0M	2.5%
Conditions of Development	TBD	
Available DCL Reserves	$9.0 M	0.7%
Funding To Be Determined	$ 189.0 M	14.5%
Net Potential DCL Recoverable	**$379.0**	**29.1%**
Less: Unfunded Share	$110.9M	8.5%
Less: Municipal Assist	$ 2.7 M	0.2%
DCL Rate Support (before exemptions & waivers)	**$265.4**	**20.4%**

Of the $1.3 Billion in gross cost to deliver the transportation program necessary to meet the increased need arising from development, $265.4 million, or 20.4%, has been included in the DCL rate calculations over the period 2017-2026.

Table 3 provides additional details on the Transportation capital program.

APPENDIX E
TABLE 3

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
10-YEAR CAPITAL PROGRAM 2017-2026: TRANSPORTATION

Transportation Services	Total Gross Cost	Service Level Increase & Benefit to Exising	Net Growth-Related Costs	DCL Rate Funded 2017-2026
	($000)	($000)	($000)	($000)
Programs with DCL Recoveries				
Active Transportation and Complete Streets	$253,000.0	$90,000	$163,000.0	$101,000.0
False Creek Bridge Crossings	$208,000.0	$136,000	$72,000.0	$63,000.0
Arbutus Greenway	$80,000.0	$28,000	$52,000.0	$52,000.0
Sidewalks and Curb Ramps	$27,000.0	$9,000	$18,000.0	$17,000.0
Millennium Line Broadway Extension Planning	$15,000.0	$5,000	$10,000.0	
False Creek Flats	$200,000.0	$70,000	$130,000.0	$22,435.6
Sub-Total Programs with DCL Recoveries	**$783,000.0**	**$338,000.0**	**$445,000.0**	**$255,435.6**
Growth-Related Projects: No DCL Recovery will Require CAC Funding				
Complete Streets: Cambie Corridor	$27,000.0	$9,000	$18,000.0	$0.0
Complete Streets: Georgia Gateway	$4,000.0	$1,000	$3,000.0	$0.0
Westend Community Plan: Activie Transportation	$8,000.0	$3,000	$5,000.0	$0.0
Sub-Total Growth-Related Projects: No DCL Recovery will Require CAC Funding	**$39,000.0**	**$13,000.0**	**$26,000.0**	**$0.0**
Growth-Related Projects with No DCL Recoveries				
Local Roads Rehabilitation	$77,000.0	$43,000	$34,000.0	$0.0
Street Lighting	$174,000.0	$145,000	$29,000.0	$0.0
Traffic Signal Rehabilitation	$67,000.0	$39,000	$28,000.0	$0.0
Safety Improvements	$35,000.0	$15,000	$20,000.0	$0.0
Other (MRN, Transit, Monitoring, Railway, etc)	$129,000.0	$77,000	$52,000.0	$0.0
Sub-Total Growth-Related Projects with No DCL Recoveries	**$482,000.0**	**$319,000.0**	**$163,000.0**	**$0.0**
Total Transportation Services	**$1,304,000.0**	**$670,000.0**	**$634,000.0**	**$255,435.6**

DCL RATE CALCULATION

The portion of the growth-related capital program proposed to be funding by DCLs, $265.4 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

Transportation DCL Rate Recovery Costs	**$265.4 million (A)**	
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base Transportation DCL (A/D)	**$4.34/sf**	

The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown on Table 4.

Table 4

Development Cost Levy Calculation

Transportation City-Wide DCL

Type of Development	Weighting Factor	DCL Rate
Low Density Residential	0.23	$1.01 / sq.ft.
Medium Density Residential	0.50	$2.17 / sq.ft.
High Density Residential	1.00	$4.34 / sq.ft.
Industrial (Heavy)	0.40	$1.73 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$3.26 / sq.ft.
Commercial & Other	1.00	$4.34 / sq.ft.

APPENDIX F

WATER &

SEWERS & DRAINAGE

APPENDIX F

WATER SERVICES TECHNICAL APPENDIX

OVERVIEW OF SERVICE

The region of Metro Vancouver owns and operates the water source, treatment and regional water transmission system, while the City is responsible for local water distribution system to supply water to residents and businesses. The Water DCL addresses the water infrastructure that is the responsibility of the City of Vancouver, namely the local distribution system, including water mains and associated appurtenances.

ESTABLISHING THE DEMAND FOR SERVICE

Development activity, including redevelopment and intensification, places increased demand on the City's water infrastructure. The City's water distribution system requires upgrades and expansions to meet the needs of development. The City must maintain adequate pressure in the water distribution system while addressing the increase in water demand and fire flow needs arising from growth.

The City's Engineering department has established a $10.6 million capital budget to meet the City-wide water infrastructure needs eligible for DCL funding arising from growth over the period 2017 to 2026. Table 1 provides an overview of the DCL fundable growth-related water capital program.

Table 1

Water Services DCL Eligible Growth-related Capital Plan 2017-2026

Capital Expenditure Area	Upgrade Length (km)	Capital Cost Estimate($M)	Benefit To Existing ($M)	Growth-Related Share ($M)
Water Main Upgrades (Fire Flows)	5.4	$10.2 M	$0.0 M	$10.2 M
Alterations to Pressure Zone Boundaries		$ 0.1 M	$ 0.0 M	$ 0.1 M
Hydraulic Model & Analysis		$ 0.3 M	$ 0.1 M	$ 0.2 M
TOTAL WATER SERVICES		**$10.6 M**		**$10.5 M**

CAPITAL PROGRAM & FUNDING ALLOCATIONS

The City has a variety of tools and sources available to fund the identified growth-related water capital program. The City will continue to utilize conditions of development and other developer contribution a share of the growth-related water infrastructure needs; especially those needs that are localized and required for specific development. These works have not been included in the capital program provided herein. Table 2 provides a summary of the capital program funding.

Table 2
Funding of Water Services 2017-2026 DCL Eligible Growth-related Capital Program

Costs & Funding Sources	Funding Allocation	
	$M	%
DCL Eligible Growth-Related Capital Costs	**$10.5 M**	
Less Funding Sources		
Senior Government /Other Partners	$ 0.0 M	0.0%
CAC/Density Bonus/Incl. Housing	$ 0.0M	0.0%
Rezoning Conditions	$ 0.0M	0.0%
Available DCL Reserves	N/A	0.0%
Net Potential DCL Recoverable	**$10.5 M**	**100%**
Less City Support & Municipal Assist	$0.0M	0.0%
DCL Rate Support (before exemptions & waivers)	**$10.5**	**100%**

Of the $10.6 million in gross cost to provide the necessary water infrastructure to meet the increased need arising from development, $10.5 million, or 99.3%, has been included in the DCL rate calculations over the period 2017-2026. Fire protection is considered a life safety requirement for building occupancy and fire flow capacity upgrades provide little to no additional benefit to the existing customers. Therefore eligible upgrade requirements are funded 100% by DCL. Projections were based on expected fire flow rates for typical residential, commercial and industrial developments. There is potential for additional needs to arise unexpectedly if fire flow requirements of specific developments are greater than typical assumptions. The project list may change depending on the actual location, scale and form of developments.

Table 3 provides additional details on the water service growth-related capital program.

APPENDIX F
TABLE 3

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
10-YEAR CAPITAL PROGRAM 2017-2026: WATER SERVICES

Water Capital Program	Upgrade Length	Total Gross Cost	Service Level Increase & Benefit to Exising	Net Growth-Related Costs	DCL Rate Funded 2017-2026
	(m)	($000)	($000)	($000)	($000)
Water Main Upgrades, Fire Flows, by Quadrant of City					
Northeast	1,261.0	$2,269.8	$0	$2,269.8	$2,269.8
Northwest	1,645.0	$2,961.0	$0	$2,961.0	$2,961.0
Southeast	619.0	$1,114.2	$0	$1,114.2	$1,114.2
Southwest	1,902.0	$3,810.6	$0	$3,810.6	$3,810.6
Sub-Total Watermain Upgrades					
Alterations to Zone Boundaries to Address Growth Demands		$120.0	$0	$120.0	$120.0
Hydraulic Model & Analysis		$312.0	$78	$234.0	$234.0
Total Water Services		**$10,588**	**$78**	**$10,510**	**$10,510**

DCL RATE CALCULATION

The portion of the growth-related capital program proposed to be funded by DCLs, $10.5 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

Water DCL Rate Recovery Costs	**$10.5 million**	**(A)**
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base Water Service DCL (A/D)	**$0.17/sf**	

The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown on Table 4.

Table 4
Development Cost Levy Calculation

Water City-Wide DCL		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$0.04 / sq.ft.
Medium Density Residential	0.50	$0.09 / sq.ft.
High Density Residential	1.00	$0.17 / sq.ft.
Industrial (Heavy)	0.40	$0.07 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$0.13 / sq.ft.
Commercial & Other	1.00	$0.17 / sq.ft.

SEWERS AND DRAINAGE SERVICES

OVERVIEW OF SERVICE

The region of Metro Vancouver owns and operates the regional trunk sewers and major wastewater treatment plants while the City is responsible for the local sewers to collect sewage from residents and businesses. The Sewers and Drainage DCLs address the sewer infrastructure that is the responsibility of the City of Vancouver, namely the local collection system, sewer mains and storm water systems.

The City has a significant capital program to replace all combined sewers, which are those sanitary sewers that receive storm water runoff, by 2050. The sewer separation program address existing needs, yet the planning of appropriate sewer and drainage infrastructure sizing and capacity takes into consideration the needs arising from development. As such, a share of this program is considered growth-related and fundable from DCLs.

In addition to sanitary sewers, this technical appendix includes storm water drainage needs, also referred to as green infrastructure.

ESTABLISHING THE DEMAND FOR SERVICE

Development activity, including redevelopment and intensification, places increased demand on the City's sewers and impacts on drainage infrastructure. The City must plan and budget to accommodate the increase in sewage flows.

The Green Infrastructure Implementation Branch was staffed up in March 2017 and is in the process of preparing a 30 year strategic implementation plan, portions of which will address drainage growth needs. Current growth related drainage or "green infrastructure" projects have been identified as part of a 'quick start initiative' to simply begin the process to address gaps in the existing drainage system. The full requirements and costs of the green infrastructure rainwater drainage management strategy will be developed as part of a discrete planning process and integrated to complement the existing sewer drainage system. Growth-related drainage project lists will be updated periodically to reflect the system planning.

As of April 1, 2017, all rezoning applications must complete an Integrated Rainwater Management Plan as part of the development application process.

Standardized development requirements have not yet been established for green infrastructure and rezoning applications, however through further study, including a City-wide Integrated Rainwater Management Plan and the development of a specific Capital Program, these works will become known to staff and incorporated into these guidelines for recovery through off-site levies, development cost levies, and re-zoning conditions.

The City's Engineering department has established a $569.5 million gross capital budget of which $198.5 million is required to meet the sewer and drainage needs arising from growth over the period 2017 to 2026. Table 5 provides an overview of the growth-related sewer and drainage capital program.

Table 5

Sewers & Drainage Growth-related Capital Plan 2017-2026

Capital Expenditure Area	Upgrade Length (km)	Gross Cost Estimate ($M)	Growth-Related Share ($M)
Sanitary Sewers Upgrades – by Quadrant			
Northeast	16.6	$ 36.0 M	$ 20.0 M
Northwest	5.6	$ 12.0 M	$ 7.0 M
Southeast	12.6	$ 30.0 M	$ 17.0 M
Southwest	3.5	$ 7.0 M	$ 4.0 M
Downtown	20.1	$ 45.5 M	$ 25.5 M
Policy Plan Areas outside Downtown	10.6	$ 25.5M	$ 14.5M
Combined Sewers (10 Yr)	193	$368.0 M	$ 82.0M
Pump Stations		$ 27.0 M	$ 10.0 M
Hydraulic Model		$ 0.5 M	$ 0.5 M
Engineering Growth Studies		$ 1.3 M	$ 1.3 M
Sub-Total Sewers		**$552.8 M**	**$181.8 M**
Storm Water Drainage		**$ 16.7M**	**$ 16.7 M**
TOTAL SEWERS & DRAINAGE		**$569.5 M**	**$198.5 M**

CAPITAL PROGRAM & FUNDING ALLOCATIONS

The City has a variety of tools and sources available to fund the identified growth-related transportation capital program. It should be stressed the City

will continue to utilize conditions of development and other developer contribution a share of the growth-related sewer and drainage infrastructure needs; especially those needs that are localized and required for specific development. Table 6 provides a summary of the capital program funding.

Table 6
Funding of the Sewer & Drainage 2017-2026 Growth-related Capital Program

Costs & Funding Sources	**Funding Allocation**	
	$M	%
Gross Capital Costs	**$569.5 M**	
Less: Non-Growth/Benefit to Existing	$371.0 M	65.1%
Less Funding Sources		
Senior Government /Other Partners	$ 0.0 M	0.0%
CAC/Density Bonus/Incl. Housing	$ 0.0 M	
Rezoning Conditions	TBD	
Available DCL Reserves	N/A	
Net Potential DCL Recoverable	**$198.5 M**	**34.9%**
Less: Unfunded Share	$119.1 M	20.9%
Less: Municipal Assist	$ 0.90 M	0.2%
DCL Rate Support (before exemptions & waivers)	**$ 78.6**	**13.8%**

Of the $569.5 million in gross cost to provide the necessary sewer and drainage infrastructure to meet the increased need arising from development, $78.6 million, or 13.8%, has been included in the DCL rate calculations over the period 2017-2026.

Table 7 provides additional details on the sewer and drainage growth-related capital program.

APPENDIX F
TABLE 7

CITY OF VANCOUVER
DEVELOPMENT COST LEVIES UPDATE STUDY
10-YEAR CAPITAL PROGRAM 2017-2026: SEWERS & DRAINAGE

Sewer & Drainage Capital Program	Upgrade Length	Total Gross Cost	Service Level Increase & Benefit to Exising	Net Growth-Related Costs	DCL Rate Funded 2017-2026
	(km)	($000)	($000)	($000)	($000)
Sanitary Sewers by Quadrant of City					
Northeast	16.60	$36,000	$16,000	$20,000	$8,509
Northwest	5.60	$12,000	$5,000	$7,000	$3,191
Southeast	12.60	$30,000	$13,000	$17,000	$7,445
Southwest	3.50	$7,000	$3,000	$4,000	$2,127
Downtown	20.10	$45,500	$20,000	$25,500	$0
Policy Plan Areas outside of Downtown	10.60	$25,500	$11,000	$14,500	$0
Combined Sewers (10 Yr Separation Program)	193	$368,000	$286,000	$82,000	$36,164
Pump Stations		$27,000	$17,000	$10,000	$10,636
Hydraulic Model		$500	$0	$500	$532
Engineering Growth Studies		$1,300	$0	$1,300	$1,383
Sub-Total Sewers		***$552,800***	***$371,000***	***$181,800***	***$69,987***
Drainage Infrastructure System Planning					
City-Wide		$402	$0	$402	$402
Growth Areas					
Mt Pleasant- St George Rainway		$5,140	$0	$5,140	$2,570
Grandview Woodlands		$2,800	$0	$2,800	$1,400
Norquay Village		$2,800	$0	$2,800	$1,400
Marpole		$2,800	$0	$2,800	$1,400
Strathcona		$2,800	$0	$2,800	$1,400
Sub-Total Drainage		***$16,742***	***$0***	***$16,742***	***$8,572***
GRAND TOTAL: SEWERS AND DRAINAGE		**$569,542**	**$371,000**	**$198,542**	**$78,559**

DCL RATE CALCULATION

The portion of the growth-related capital program proposed to be funding by DCLs, $78.6 million, is divided by the weighted gross floor space forecast to arrive at the base DCL charge. The calculation of the base DCL charge is shown below:

Sewers & Drainage DCL Rate Recovery Costs	**$78.6 million (A)**	
DCL Weighted Gross Floor Area		
10 Year Increase in Non-Residential GFA	16,332,600	(B)
10 Year Increase in Residential GFA	44,787,400	(C)
Total Weighted Gross Floor Area	**61,120,000**	**(D= B+C)**
Base Sewers & Drainage DCL (A/D)	**$1.29/sf**	

The base charge is then multiplied by the weighting factors to arrive at the DCL charges by type of development. The calculations are shown on Table 8.

Table 8
Development Cost Levy Calculation

Sewers & Drainage City-Wide DCL		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$0.30 / sq.ft.
Medium Density Residential	0.50	$0.64 / sq.ft.
High Density Residential	1.00	$1.29 / sq.ft.
Industrial (Heavy)	0.40	$0.51 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$0.96 / sq.ft.
Commercial & Other	1.00	$1.29 / sq.ft.

Table 9 shows the base charge for water and sewers & drainage DCLs combined.

Table 9

Development Cost Levy Calculation

Water & Sewers & Drainage City-Wide DCL		
Type of Development	**Weighting Factor**	**DCL Rate**
Low Density Residential	0.23	$0.34 / sq.ft.
Medium Density Residential	0.50	$0.73 / sq.ft.
High Density Residential	1.00	$1.46 / sq.ft.
Industrial (Heavy)	0.40	$0.58 / sq.ft.
Mixed Employment (Light Industrial)	0.75	$1.09 / sq.ft.
Commercial & Other	1.00	$1.46 / sq.ft.