Appendix B

City of Markham

Yonge North Subway Extension:

Funding Transit Investment and Land Value Capture

December 2021

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N. Barry Lyon Consultants Ltd.

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City of Markham

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Executive Summary

N. Barry Lyon Consultants Ltd. ("NBLC") has been retained by the City of Markham ("the City"') to provide real estate advisory services to assess the potential for land value uplift associated with the proposed Royal Orchard station along the Yonge North Subway Extension ('YNSE'). The City has also asked us to summarize transit funding options that have been utilized elsewhere in Canada in the past.

Transit Station Funding

Transit funding is largely provided through federal and provincial sources. To date, municipal funding components in Ontario have come from the tax base and development charges. There is, however, significant discussion on how developers, who yield land value benefits, could contribute to funding.

Transit providers have become increasingly open to providing new stations that are funded through alternative sources. In Ontario and British Columbia, there are several examples where a private developer has (or is negotiating) to fund a new station to benefit from the associated increase in development potential – and financial returns. Examples in the GTA include the Park Lawn, Woodbine and East Harbour Stations.

Where there are multiple benefiting landowners and more fragmented lot patterns such as the Royal Orchard station area, the challenge of co-ordinating owners is much greater. Where the transit service is provided by the Province, the complexity is greater as municipalities – especially lower-tier municipalities like the City of Markham – have limited opportunities to charge fees for services provided by senior levels of government.

Further exploring the available tools as part of a funding and financing strategy would help spread the burden of transit costs across a wider mix of groups, creating a more equitable approach that ensures that all who benefit from the investment are contributing.

Financial Analysis

There are two key factors to consider when assessing the impact of transit on the land surrounding a station, There are:

- The dramatically increased market appeal of the site due to the amenity and access of high order transit which results in greater demand, higher pricing, faster absorptions, and reduced parking requirements; and,

- The municipality's implementation of denser built form policies – or the developer's pursuit of increased density – that reflect a transit-oriented community.

In our conceptual example, we have demonstrated a land value uplift of up to 200% at the Royal Orchard station may be possible. While this analysis is meant to represent a prototypical development and a long list of factors can impact the land value from site-to-site, it is nonetheless significant and would be a direct result of the public investment made by the three levels of government funding the new transit project.

Conclusions and Next Steps

A number of municipalities in Canada have recognized the impact of their transit infrastructure decisions and have mobilized to capture some of the land value uplift that benefitting landowners are receiving as a means of funding the costs of transit construction.

Further detailed analysis outside of the scope of this report will be required by the City of Markham as they continue to explore funding options for the Royal Orchard station. Some of the key questions that need to be answered include the following:

- Can the City of Markham utilize any of the available funding tools independent of York Region to fund a new station? If not, is there a way to generate supplemental capital funding and flow additional revenue through the Region to pay for a station at Royal Orchard?
- Which funding options are most likely to deliver the necessary revenues within the required timelines?
- What is considered to be the benefitting area – is it the entire City of Markham, or just within a specific boundary around the station?
- How does the City of Vaughan fit into this given that the station will be located on the boundary of Vaughan and Markham, and Vaughan landowners would undoubtedly benefit?
- What is the likely cost of the new station and what would be the required municipal contribution (either at the Regional or local level, or both)?
- Are there any extraordinary costs that a developer might be exposed to in this location which might erode the magnitude of value uplift that should be expected?

Finally, community planning work will be required to gain a better understanding of the development potential around the station. Until this planning work is completed, the funding sources cannot be accurately forecasted, nor can the total value uplift that may be available to be captured.

1.0 Introduction

N. Barry Lyon Consultants Ltd. ("NBLC") has been retained by the City of Markham ('the City') to provide real estate advisory services related to land value uplift associated with the Yonge North Subway Extension ('YNSE').

Figure 1 illustrates the proposed Yonge North subway extension. There are currently four funded stations – Steeles, Clark, Bridge, and High Tech. Cummer/Drewry and Royal Orchard are identified as potential stations but are currently unfunded. Though it remains unfunded, the Royal Orchard subway station remains a priority for the City of Markham. The City is interested in exploring funding options for this station.

Figure 1: The proposed Yonge North Subway Extension

Source: Metrolinx

When a major public investment is made in new transit, it has significant impacts on the value of the lands surrounding a new station. This is especially true for subway investment. To this end, the City is interested in understanding the real estate and land value impacts that are likely to occur as a result of new transit investment at a potential Royal Orchard subway station. Understanding the incremental change in land value that results from public sector investment

provides a sense of what might be reasonably requested as part of a value capture exchange in order to fund the costs of the new station.

To this end, this report consists of two major areas of research:

- First, this report summarizes the impacts of transit on real estate and the funding and financing tools for public transit and land value capture mechanisms that have been used in Canada. This review examines tools beyond senior level government funding where municipalities might be considered as local contributors.
- Secondly, this report provides a high level assessment of the probable land value uplift that land owners might enjoy as a result of the transit investment at a new Royal Orchard station. This assessment utilizes a pro forma analysis to compare the 'as-is, where-is' value with that of a hypothetical transit-oriented development on the same site that benefits from improved marketability, faster absorption rates, higher pricing, and a reduced need for parking.

2.0 The Impact of Transit on Real Estate

Real estate markets are complex in nature and are impacted by a range of interrelated factors. This includes the nature and composition of population growth, macro-economic factors such as interest rates, and demographic influences. The characteristics of the community including its proximity to jobs, parks, schools and other amenities also have a heavy influence on the appeal of real estate markets. Among these, transportation and mobility links have always been an important consideration.

The increasing economic, environmental, and social costs attached to road congestion have been rapidly shifting market preferences. People and businesses are increasingly prioritizing access to transit as a key driver of investment decisions.

The declining interest in, and increased costs of, personal automobile use is also related to lifestyle choices. People are beginning to trade a larger home and long commute in exchange for walkable access to jobs, restaurants, retail and cultural amenities as they search for convenience and low-maintenance lifestyles. For seniors and young people – who do not need large homes – this is especially true. In the City of Markham, these groups are powerful market segments and will continue to be in the future.

While the ongoing COVID-19 pandemic has impacted lifestyle choices, with a large number of people choosing to move out of urban areas, NBLC believes that these transit-oriented locations will continue to be in high-demand long after the pandemic has subsided, particularly once urban locations bounce back with the return of office workers and post-secondary students.

The addition of new transit in a market area can help drive demand and increase pricing. However, the level of impact is different from market area to market area. This section provides a brief overview of the benefits of transit-oriented development, as well as details on when and how transit impacts real estate markets.

2.1 The Importance of Transit-Oriented Development (TOD)

Transit-oriented development refers to the creation of compact, walkable, pedestrian-oriented, mixed-use communities centred on transit stations. TOD offers a number of benefits, including but not limited to:

- Reduced reliance on personal automobiles, lower congestion, less road wear, and reduced greenhouse gas emissions;
- More affordable housing, not only through more efficient design, but also by reducing the transportation costs associated with historic patterns of suburban home ownership;
- Travel time savings;

- Improved safety;
- More efficient, sustainable development that reduces pressure for sprawl;
- Creation of walkable communities that accommodate more healthy lifestyles;
- Stimulation of office and commercial investment and associated job creation;
- Improved access to employment opportunities for lower income individuals by reducing the need for a vehicle; and,
- Increased land values.

In the context of the YNSE, the proposed stations have the potential to become focal points of local and regional transit services, improving resident access to the wider transit system.

2.2 When Does Transit Impact the Real Estate Market

Every transit station is located in a different market context. Development potential around each station and the impact of transit on the local real estate market varies due to differences in location, land uses, and type of transit. As such, growth will not occur equally across a transit line.

The following is an overview of what fundamentals are typically required for transit to have an impact on real estate markets:

- **Frequency, Reliability, Affordability:** The new transit service must be frequent and reliable. The TTC subway has the most significant impact on real estate in the GTA given the low cost, high frequency, and consistency in service levels.
- **Strong Market Fundamentals:** The area must have strong population growth potential as well as a positive economic context, including a favourable debt and job environment.
- **Positive Market Context:** The nature of the community and the associated commercial and public amenities – such as employment opportunities, retail, parks, community centres and schools – will have bearing on the marketability of the area to different market segments.
- **Development Economics:** The costs of development – including government fees – must be in line with market pricing.
- **Supportive Planning Framework:** A proactive planning framework, specifically zoning and official plan policies, can encourage greater investment to a transit corridor by removing obstacles and providing greater certainty to developers regarding acceptable built form and densities. Adequate infrastructure and development fees (parkland, development charges, etc.) that are not prohibitive are also key factors.
- **Available Development Sites:** While existing properties may be positively impacted, large value uplift in the form of new development can only occur if land or underutilized

development sites (soft sites) are also available. Natural, cultural, and built heritage can also complicate development potential of these properties.

2.3 How Does Transit Impact the Real Estate Market?

Transit typically has the ability to improve market demand and positively impact residential, office, and retail/service uses. For both residential and office uses, access to transit is usually highly valued. Even if occupants do not use transit, the ability to access transit, if required, has a significant impact on the appeal of these properties. In general, transit impacts the real estate market in several fundamental ways:

- Increases the value of existing land uses;
- Stimulates land use changes and captures associated market demand;
- Creates market demand to support land uses that may otherwise not occur – such as office uses – creating additional real estate impacts.

Investment in new transit first impacts the land uses that are already in place. There is a significant amount of research in this area, some of which is identified in Appendix B. The research on the topic indicates that the impact can vary widely.

2.3.1 Residential Real Estate

Lifestyle changes, demographics, and the financial, social and environmental costs of personal automobile use are working together to drive residential demand towards areas that offer access to high order transit.

In Toronto, we have observed comparable impacts as pricing has risen faster around transit stations than in the wider market. For example, resale home pricing within 750 metres of the recently completed (December 2017) Finch West subway station increased in value by 69% between 2013 and 2018, compared to 54% for the broader market. The increase in value for transit-oriented properties was 22% higher over this period, pointing to the increased value the market sees in the transit service.

While the presence of transit itself improves land values, the more significant impacts occur when new transit underpins a change in land use. The combined effect of increased market demand and land use planning changes can have a dramatic effect on land near a transit station.

The development activity surrounding the Burlington GO station is an interesting example of this effect. Opened in 1967, Burlington GO is located in an area originally designated for employment uses, with land trading at around $300,000 per acre in the late 1990's. Over the years, employment uses have diminished and been replaced by big box retail uses. In 2001, Wal-Mart purchased land directly west of the station for about $700,000 per acre. In 2017, the City Burlington began a

process to re-designate all of its GO Station areas for TOD purposes. With new Official Plan policies that allowed employment and retail uses to be redeveloped for high-density residential and mixed-uses, land values increased once more. In 2018, a former garden centre – consisting of about six acres of land to the east of the GO station and the aforementioned Wal-Mart property was sold for $42,000,000, or about $7,000,000 per acre.

2.3.2 Employment / Office Real Estate

How transit influences employment land markets is important as the tax and city building benefits of attracting new jobs to Markham will be fundamental to its growth.

Office uses, given their high employment densities, are particularly valuable, especially those that cater to technology, media, professional services, and related growth sectors. These businesses need to attract employees that can be highly transient and new investment is seeking vibrant, mixed-use developments that offer close live-work relationships. Access to transit is critical to attracting these tenants.

At the Vaughan Metropolitan Centre ('VMC'), both KPMG and PwC have made major office investments based on the Toronto-York Spadina Subway extension and a master plan that envisions an exciting blend of uses, including significant residential development.

Underscoring the importance transit plays in creating demand for employment, Cadillac Fairview negotiated funding for a new GO / SmartTrack Station at East Harbour in Downtown Toronto in support of a new mixed-use community on the 60-acres of land surrounding the future station that is expected to feature more than 10,000,000 sf of new office space and employ as many as 50,000 workers.

3.0 Land Value Uplift at Royal Orchard

The following section provides a high-level financial assessment of the potential level of land value uplift that landowners in close proximity to a future Royal Orchard subway station may benefit from as a result of new transit investment.

3.1 Methodology

To demonstrate the potential impact to land value that could be supported through the introduction of high order transit infrastructure, NBLC prepared a financial analysis using a residual land value methodology. The approach is forward looking and considers the impacts of pre and post-transit market assumptions in a new high-density residential development, as well as adjustments to building scale as informed through discussions with City of Markham staff.

The analysis is intended to be prototypical and cannot account for site-specific conditions that might impact value from one site to another. The analysis assumes a clean and serviced property, adjusting key variables in a developer pro forma model in order to highlight the influence that transit service can have.

We have considered three development options. Each option is assumed to consist of new condominium apartment development on the same 1.56 hectare property (land area based on guidance from City of Markham staff). The three scenarios are as follows:

- **Scenario 1:** Pre-transit land value of three condominium apartment buildings with an overall development density of 3.0 FSI;
- **Scenario 2:** Post-transit land value of three condominium apartment buildings with an overall development density of 3.0 FSI;
- **Scenario 3:** Post-transit land value of three condominium apartment buildings with an overall development density of 6.0 FSI.

These three scenarios allow us to compare the value uplift not only from the increased value associated with the transit investment, but also from the likelihood of changes to the development entitlements, allowing the developer to increase the overall density of the project.

Scenario 1 is assumed to start sales within two years (September 2023) while Scenarios 2 and 3 are assumed to start sales in September 2027 with a view to having the first phase completed by the time the subway extension opens in 2030. This has the effect of extending the development timelines of the transit scenarios, which is accounted for through discounting.

3.2 Residential Market Assumptions

NBLC has completed a scan of the condominium apartment market in Markham and other comparable communities in order to establish some key assumptions related to the residential inputs for the pro forma model. Our residential market assumptions for the pre and post-transit scenarios are displayed in the following table.

Table 1

Key Market Assumptions		
	Pre-Transit	**Post-Transit**
Price Per Square Foot (2021$)	$1,000	$1,200
Average Unit Size (sf)	725	700
Absorption Rate (sales/month)	15	30
Parking Ratio (per unit)	1.0	0.8
Parking Revenue (per space)	$50,000	$65,000

From a revenue perspective, we have assumed that the station area could see as much as a 20% increase to unit pricing on a per square foot basis. We believe that this is reasonable based on our view of achievable pricing in comparable subway locations.

Our assumptions for pricing are based on the following:

- Active condominium apartment projects in Markham, located away from high-order transit are selling in the range of $850 to $950 psf (as of July 2021). We would expect that a new project would be able to exceed these prices. This range of pricing has been noted in projects along the Yonge Street corridor (8188 Yonge) and a number of projects within or outside the Markham Centre area.
- Comparable transit-oriented locations within the '905' have active condominium apartment projects that are exceeding $1,100 psf. The most relevant to the YNSE would be the Vaughan Metropolitan Centre ('VMC'), which is served by a recently completed TTC subway station and is also located in York Region.
    - The VMC had four buildings totaling close to 2,500 units launch between September 2020 and April 2021, with pricing ranging from $1,050 to $1,150 psf. All four buildings were sold out within four months.
    - The newest launch in VMC is The Vincent (August 2021), which consists of two towers and is priced just under $1,200 psf. Initial sales are believed to be strong despite the elevated price point.

It is also justifiable from a market perspective to expect that absorption rates would increase with the introduction of new transit. Higher absorption rates are consistently demonstrated in transit-oriented locations compared to non-transit locations across the GTA. Our assumption for absorption rates in the transit case may even be considered conservative given the recent performance of new projects in the VMC.

We have also included a lower average unit size in the transit case than the base case. Smaller unit sizing is common at transit-oriented projects. As per square foot values increase, smaller unit sizing allows the developer to keep end-pricing at a more competitive and attainable level. Further, many buyers and renters are willing to trade off some square footage for a location that is well-served by transit, with walkable amenities nearby.

Finally, we have reduced the parking ratio in the post-transit scenarios. Typically, transit-oriented locations have lower parking ratios as the transit accessibility no longer necessitates all residents to have a car. In this case, we have reduced the parking ratio by 0.2 spaces per unit in the post-transit scenarios. This could be considered conservative given that several development applications in the VMC are proposing parking ratios as low as 0.4 spaces per unit today.

3.3 Findings

The analysis illustrates how the anticipated changes to market demand following the introduction of new subway service may impact the value of developable parcels within the immediate vicinity of the Royal Orchard station. The analysis presents three scenarios:

- Scenario 1 illustrates the potential value of a roughly four-acre development parcel prior to the introduction of the subway. Based on the assumptions used in this study that were developed in consultation with City staff, it is assumed that the development parcel could accommodate a development at 3.0 times density. The estimated value of this parcel is approximately $31,000,000 which is equivalent to $62 per sq. ft. GFA.
- Scenario 2 illustrates the potential value of the same parcel following the introduction of the subway.
    - This scenario includes changes to the revenue, unit sizes, absorption rate, and the quantity and price of parking. This scenario considers no change to the land use permissions. That is, the density is equivalent to before the subway is introduced.
    - The value of this parcel is estimated to double to approximately $66,000,000 which is equivalent to $130 per sq. ft. GFA. This dramatic increase in value is attributable to the significant increase in sales prices, unit characteristics, the faster pace of sales absorption, and a reduction in the amount of below grade parking area required.

- Scenario 3 illustrates the potential value of the site after the subway is introduced and the density is doubled from 3.0 to 6.0 times coverage.
    - We assume that the scale of buildings increases from mid-rise apartment buildings to high-rise apartment buildings which necessitates more expensive construction costs.
    - We find that the land value increases to $99,000,000 or $98 per sq. ft. GFA which is nearly 50% greater than the value as under Scenario 2 and 200% greater than the value supported without subway service.
    - The per sq. ft. value in Scenario 3 is somewhat lower than in Scenario 2 as the increased scale of the project contributes to higher construction costs and a longer sales and construction period, thereby increasing the period of time for the land value to be discounted back to present dollars.

Table 2, on the next page, highlights key statistics and findings of this order of magnitude review. Generally, there are two categories of change that are demonstrated as noted earlier in this report:

- The increase in land value realised based on adjustments that the market may sustain based on the demand profile associated with the introduction of new subway service (Scenario 2); and,
- An additional increase to land value realized based on the municipality's implementation of new built form policies – or the developer's pursuit of increased density – that reflect a transit-oriented community (Scenario 3).

Detailed information on the pro forma analysis can be found in Appendix C at the end of this report.

Table 2

Summary of Residual Land Value Analysis

Scenario	1 No Subway	2 Subway	3 Subway w/ Density Increase	
Key Variables				
Density	3.0	3.0	6.0	*FSI*
Res. Parking Ratio	0.9	0.7	0.7	*per res. Unit*
Avg. Unit Size	725	700	700	*sq. ft.*
Avg. Sale Price	$1,000	$1,200	$1,200	*per sq. ft.*
Parking Price	$50,000	$65,000	$65,000	*per stall*
Absorption Rate	15	30	30	*units per month*
Key Development Statistics				
Site Area	167,875	167,875	167,875	*sq. ft.*
Gross Floor Area	503,626	503,626	1,007,252	*sq. ft.*
Units	577	590	1,181	*units*
Parking Stalls	579	474	946	*parking stalls*
Summary of Residual Land Value Analysis				
Project Revenue (FV)	$ 493,000,000	$ 652,710,000	$ 1,330,030,000	
Development Cost Incl. Profit (FV)	$ (445,760,000)	$ (529,220,000)	$ (1,120,280,000)	
Residual Land Value (FV)	$ 47,240,000	$ 123,500,000	$ 209,760,000	
Discount Rate	7%	7%	7%	*per year*
Total Development Period	7	10	12	*years (rounded)*
Residual Land Value (PV)	**$31,470,000**	**$65,670,000**	**$98,880,000**	***total***
	$62	**$130**	**$98**	***per sq. ft.***

4.0 Land Value Capture

Land value capture ("LVC") is a way to capture the increase in the value of land and the associated development generated by the improved accessibility of transit.

As discussed in this report, transit has been found to increase property values for properties near transit. This increase in value can create a windfall for property owners or an 'unearned increment'. It is therefore frequently argued that the public sector should be able to capture all or a portion of this value created through their investment.

Figure 2 illustrates this concept, presenting the notion that the created value either remains with property owners or is captured by the public sector. The graph on the right illustrates that the value uplift that might be created by new transit infrastructure investment often will not happen at one moment in time, but rather will show a modest change when transit is announced, and increase exponentially towards the operation date or as market conditions evolve.

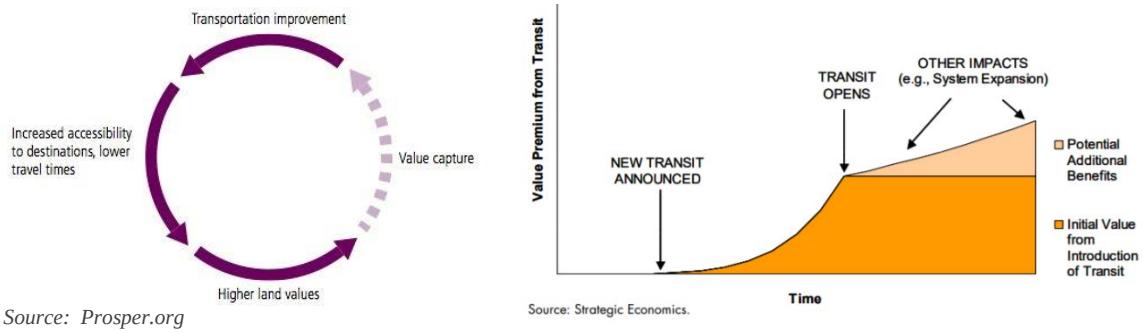
Land value uplift from new transit investment will occur in two ways:

- New development: New development, either residential or commercial, can result in significant value uplift as a result of the combined impact of increased market demand and an associated change of land use permissions; and
- Stable/existing properties: Properties along a transit corridor that are not redeveloped can experience an uplift in value as a result of transit investment.

Governments are becoming increasingly interested in land value capture as a means of capturing some of this uplift in order to fund and finance new transit infrastructure investment.

The next section in this report outlines the various tools that have been used to capture some or all of the uplift in land values in order to help fund new transit infrastructure.

Figure 2: LVC Theory (L) and the Value Uplift Curve Theory (R)



Source: Prosper.org

5.0 Funding and Financing Transit in Canada

Transit funding and financing are terms commonly used interchangeably, but they refer to different things. Funding refers to the sources of project revenue, including future revenue streams that will be used to repay the financing of the project over time. Funding addresses the question of who ultimately pays. Will, for example, transit be funded by benefiting user fees or the tax base? By one level of government, or a combination?

Financing refers to the financial mechanisms or tools used to raise the initial funds to pay for the construction of the project. Debt (including debentures and bonds) is the most common financing tool to raise the initial funds for a project, but there are other tools and structures that can be used depending on circumstances and level of participation and risk allocation between the public and private sector.

The following provides a summary of the approaches to funding and financing transit in Canada that have typically been used in the past, some of which can be utilized to capture land value uplift from transit investment. More detailed information can be found in Appendix A.

5.1 Funding Transit

The construction of new transit in Canada has traditionally relied on funding from multiple levels of government. While the proportion that each level of government pays varies from project to project, the Canadian Urban Transit Association notes that Provincial governments have traditionally covered the bulk of capital costs (67%), followed by municipal[1] (17%) and Federal governments (12%)[2]. These capital contributions may consist of revenues collected from property taxes, development charges, sales taxes, gas taxes, or corporate and personal income taxes[3], depending on the taxing powers of each level of government.

Each project tends to include a mix of funding sources. In many cases, the goal has been to share the burden of funding across three levels of government, with each level of government acting as a funding partner on the project.

Municipal governments, given the right revenue tools, can use their taxing powers and capital debt to finance transit projects. Funding sources for new transit varies from project to project and jurisdiction to jurisdiction. Based on where new high-order transit has been constructed in Canada, municipal contributions have primarily come from single and upper-tier municipalities. Lower-tier municipalities are typically not funding partners on new transit projects and therefore do not contribute revenues from charges or taxes towards transit projects, instead having the

[1] Includes all levels of municipal government

[2] Canadian Urban Transit Association – Alternative Funding for Canadian Transit Systems, 2015

[3] Ibid

revenues flow through the upper-tier municipality. This has been the case in York Region where, to date, the Regional Municipality has been the municipal funding partner for new transit projects.

The two most common funding sources used by municipal governments are development charges and property taxes. These two sources have the highest revenue potential amongst the available funding tools.

Development charges are fees collected from developers to help pay for the cost of infrastructure required to provide municipal services to new development, including transit. In some instances, an area-specific development charge is used by a municipality if there is a clear benefitting area, however, most transit development charges are municipal-wide.

Development charges have proven to be popular as public perception is generally positive given that they do not impact existing residents directly. However, they are subject to fluctuations in the market, higher charges can discourage investment in weak/marginal areas, and they only extract value from new development.

For the above reasons, the funding approach from municipalities often includes additional sources, including **property taxes**. Within the overall property tax rate, many municipalities set a specific transit tax rate – either for transit in general or for a specific transit project. Like development charges, transit taxes can also be municipal-wide, or can be applied as an area-specific charge. Future property tax revenues are also frequently used to finance debt for transit projects.

Increased property taxes are a proven funding and financing tool as they are relatively easy to implement and are not subject to market forces like development charges, making them a steady and predictable revenue source. An increase to property taxes also means that both new and existing uses are contributing to the cost of the new infrastructure. However, the direct impact of increased property taxes on residents makes them less popular with the general public than other options like development charges. For the most part, property owners already shoulder a significant funding load in many municipalities and increased property taxes make home ownership for them less affordable.

In addition to development charges and property taxes, there are a number of other tools that can also potentially be utilized by municipal governments to fund transit. However, these tools are either less common or less effective. These include:

- **Gas Tax Revenues:** The Federal government places $2 billion into their Gas Tax Fund annually and distributes it to provinces and territories who in turn distribute the funding to municipalities to support local infrastructure projects – including transit, among others. In Ontario, a provincial gas tax is also collected that is meant to fund transit specifically. Municipalities have the option to pool, bank, and borrow against this funding.

In the context of Markham, gas tax revenues are provided by the Province to York Region who would then determine how best to allocate the funds across the Region for a variety of priorities. However, the amount of gas tax revenues typically allocated to York Region is limited – totalling just $17,000,000 in 2021. These funds are also meant to contribute to more than just new transit investment. As such, they have limited potential for station funding at Royal Orchard.

- **Voluntary Funding Agreements:** The Development Charges Act allows for front-ending agreements between a municipality and a developer to contribute to the cost of construction of infrastructure. This type of funding approach is perceived positively by the public given that they do not impact residents directly. However, the list of permitted services for these agreements is limited and does not include transit, meaning any voluntary funding agreement for a new station would have to be between landowners and the transit provider (Metrolinx).

  In station areas where there is significant redevelopment potential and larger vacant land areas, these voluntary funding agreements are potentially powerful tools. However, where the lot fabric and ownership pattern is fragmented, it can be challenging. These types of agreements may also be less effective in weaker market areas where there is not enough value uplift from the new station and changes to entitlements to cover all or a significant amount of the cost of the new station.

  While the municipality cannot participate in a voluntary funding agreement for new transit, they could contribute to the agreement by acting as a facilitator or by making entitlements subject to a funding agreement.

- **Community Improvement Plans / Public Land Acquisition:** Community Improvement Plans ('CIP') are an effective tool under the Planning Act to identify areas where community renewal can occur through policies that allow for public assembly and acquisition of properties for specific renewal purposes. CIPs provide tools to solicit community support for planning objectives – one of which could be intensification around transit stations. While the land acquisition policies of CIPs have not been utilized for the purpose of transit development to our knowledge, they have been used for community amenities like public squares.

  In the context of transit-related acquisition, lands could be acquired around future transit stations with a long-term view of entitling them for intensification with residential or mixed-uses in the future. This would also provide the public sector with the land value uplift associated with the public transit investment. When the land is sold some time in the future, the proceeds from the land value uplift could be put towards funding the transit line.

While the above provides an overview of the list of tools that are generally available to municipalities, their availability for the City of Markham is likely limited. Firstly, in order to collect revenues for the purpose of funding transit infrastructure, the City needs to establish itself as a funding partner on the project. Second, if the City of Markham were to collect charges or taxes for a new transit station while the Region already collects for the same project, this could

lead to appeals on the grounds that Markham developers or residents are already paying their fair share through the Regional charges.

Given the above, a funding approach that flows through York Region may be a more straightforward option than the City of Markham seeking lower-tier-specific funding mechanisms. Additional research and legal review outside the scope of this assignment will be required on the nuances of municipal finance in order to determine whether the City of Markham has the ability to utilize any or all of these funding tools to contribute towards a new station at Royal Orchard.

5.2 Financing Transit

Funding sources contribute to the cost of a new transit project in two ways. First, cash contributions from current or pooled revenues can be used to provide a portion of the funding for a new transit line. However, the available cash associated with these revenue sources is not typically high enough to fund the entirety of the transit investment cost. Given this, future revenues associated with each of these funding sources can be used to finance debt – either traditional capital debt (via debentures and bonds) or privately financed debt – that is used to pay off the cost of the transit investment over an extended period of time.

- **Capital Debt / Debt Financing:** Most municipalities use capital debt to finance new transit investment. Capital debt is raised to cover spending that will pay for a long-term asset and smooth out the actual payments over the asset's lifespan. This debt is serviced with future revenues from the funding tools noted above. This is seen as an equitable approach given that the infrastructure is paid for by both current and future residents / users, rather than just current residents.

  Unlike senior levels of government, municipalities are required to amortize the principal borrowed over the term of debenture. In contrast, the Federal and Provincial governments are allowed to refinance their debt as it matures. Municipalities must also pay both the principal and interest on their capital debt, whereas senior levels of government are only required to pay the interest[4].

- **Private Financing:** An alternative to traditional capital debt is to seek a private sector partner to finance part or all of a project. Typically, when this approach is taken, the private sector partner takes on other project responsibilities starting with the design and construction of the transit project, but increasingly bundling financing, operations, and maintenance.

[4] City of Toronto – 2018 Issue Briefing: Capital Financing – Debenture Issuance and Credit Ratings

The financing provided by the private sector acts as a mortgage on the infrastructure that is paid off over time – typically 30 or more years. It is repaid with revenues from the above noted funding tools, giving the private sector partner a guaranteed long-term return.

Pairing a financing component with the design and construction portions of a transit project transfers some of the financial risk to the private sector partner and provides additional incentive to deliver the project on time and budget. Cost overruns are often charged to the private sector partner, with financial penalties for delays. While this is beneficial for the municipality, private financing costs can be higher than traditional debt financing sources available to government.

Finally, tax-increment financing ('TIF') is often brought up as a potential tool for funding new transit investment. The Province introduced legislation that has allowed for TIF's but has not produced any of the necessary regulations that guide their structure. However, there has been no pressure for the use of TIFs in Ontario, largely due to the more competitive lending rates from Infrastructure Ontario.

TIF also depends on the market responding in a positive manner, over a long period of time, as a result of the investment. There are many examples in the US where municipalities have used TIF's and have not received the expected financial returns necessary to pay the debt. The current COVID-19 crisis underscores the unpredictability of markets.

6.0 Conclusions and Next Steps

Our analysis demonstrates the order of magnitude land value uplift that is possible through the introduction of a new subway station. In our conceptual example, we have demonstrated a land value uplift as high as 200% at the Royal Orchard station. While this analysis is meant to represent a prototypical development and a long list of factors can impact the true value uplift from site-to-site, it is nonetheless significant and would be a direct result of the public investment made by the three levels of government funding the new transit project.

A number of municipalities in Canada have recognized the impact of their transit infrastructure decisions and have mobilized to capture some of the land value uplift that benefitting landowners are receiving as a means of funding the costs of transit construction.

While the total uplift from new transit investment is significant, it will be important to consider that it is likely unrealistic to expect that the entirety of this value uplift can be captured utilizing the value capture tools noted in this report.

Further detailed analysis outside of the scope of this report will be required to answer the following key questions:

- Can the City of Markham utilize any of the available funding tools independent of York Region? If not, is there a way to generate supplemental capital funding and flow additional revenue through the Region to pay for a station at Royal Orchard?
- Which funding options are most likely to deliver the revenues within the required timelines?
- What is considered to be the benefitting area – is it the entire City of Markham, or just within a specific boundary around the station?
- How does the City of Vaughan fit into this given that the station will be located on the boundary of Vaughan and Markham, and Vaughan landowners would undoubtedly benefit?
- What is the likely cost of the new station?
- What would be the required municipal contribution for the new station (either at the Regional or local level, or both)?
- Are there any extraordinary costs that a developer might be exposed to in this location which might erode the magnitude of value uplift that should be expected?

Finally, community planning work will be required to gain a better understanding of the development potential around the station. Until this planning work is completed, the funding sources cannot be accurately forecasted, nor can the total value uplift that may be available to be captured.

Appendix A: Transit Funding and Financing Approaches in Canada

Funding Transit

The following provides an overview of the key transit funding sources that are available in Canada. This includes commentary on the following:

- Contributions from senior levels of government;
- Development charges;
- Property taxes;
- Gas tax revenues;
- Funding agreements;
- Section 391 of the Municipal Act – Fees and Charges; and,
- Public acquisition of land.

The focus of the section is primarily on the latter five tools noted in the list above given that they are the ones that a municipality has control over. As part of this section, we provide some commentary on pros and cons of each of these options.

Contributions from Senior Levels of Government

Contributions from senior levels of governments are generally straight forward. However, the way they arrive varies from project to project (and government to government).

Some governments prefer to provide funds at the time of actual need. This approach is often taken during times of austerity when governments have less desire to part with funding until the last possible moment. This approach provides some additional risk – if the funding is not provided up front or placed in a trust, it could be altered in the future, or removed completely with a change in government.

The alternative to this is providing funds up front. This is done in times of surplus, with the funding being written off into trust funds or reserves (see information to come on the Toronto-York Spadina Subway Extension for more information). This provides more certainty that changes will not be made to funding levels if there is a change in government, and allows for potential interest gains from the trust funds.

Development Charges

Development charges are fees collected from developers, usually at the time of receiving a building permit, to help pay the cost of infrastructure required to provide municipal services to

new development. This includes transit, with municipalities including a line item with a specific charge for transit capital costs. In some instances, an area-specific development charge is used by a municipality if there is a clear benefitting area, however, most transit development charges are municipal-wide.

Transit fees collected through development charges are typically placed into a reserve and used when funding is required. This may entail a large cash payment towards funding a new transit line, or these revenues could be used to service debt that has been issued to finance a project.

Development charges have proven to be popular as a source of funding and financing in recent transit projects elsewhere in Canada, and public perception is likely to be positive given that they do not impact residents directly.

However, they do have a number of limitations that need to be considered:

- They are subject to fluctuations in the market. If demand declines, new development will as well, limiting the amount of development charges collected. For this reason, they are not as predictable of a funding source as property taxes.
- They only extract revenue from new development – meaning existing uses benefit from an uplift in value from transit without having to pay;
- Increased development costs could discourage investment in weak or marginal market areas; and,
- Development charges are typically paid at the time of building permit issuance, meaning there is likely to be a lag in time between when the transit investment occurs and receipt of revenue.

Property Taxes

Property tax is a tax paid on property by individuals or other legal entities such as corporations. The tax is based on the assessed value and use of the property and goes towards funding a wide range of municipal services including public education, police and fire services, libraries, water treatment, and transit.

Within the overall property tax rate, many municipalities set a specific transit tax rate. This ensures that a specific portion of the property tax revenue is set aside specifically for transit. Depending on the municipality, this transit tax revenue may be allocated to capital or operating costs – or a combination of both.

There are examples of municipalities implementing a tax increase for a specific project. This includes recent property tax increases in Toronto meant, originally, to fund the Scarborough Subway Extension. In the case of the Scarborough Subway Extension, the tax increase was also for a defined period of time (30 years), rather than in perpetuity.

Like development charges, transit taxes can be municipal-wide, or can be applied as an area-specific charge. Future property tax revenues are also frequently used to finance debt for transit projects.

Increased property taxes are a proven approach to funding and financing new transit projects. They are relatively easy to implement and are not subject to market forces like development charges, making them a steady and predictable revenue source.

An increase to property taxes also means that both new and existing uses – both of which benefit from new transit – are contributing to the cost of the new infrastructure. This property tax increase could be for a specific benefitting area, or for the entire community. There are also examples where the property tax increase is not in perpetuity, but rather for a defined period of time, which may make it more palatable from a political perspective.

However, the direct impact of increased property taxes on residents makes them less popular with the general public than other options like development charges. For the most part, property owners already shoulder a significant funding load in many municipalities and increased property taxes make home ownership for them less affordable.

City-Wide vs Area-Specific Charges

In most cases, a city-wide approach is taken to transit development charges and property taxes, as opposed to an area-specific approach. The reasons for this include:

- While the most visible benefits of transit occur close to transit stations in terms of local property values and investment activity, a broad set of economic, social and community benefits are realized at a much wider community scale.
- Growth triggered by transit investment creates spinoff growth, and associated infrastructure needs throughout the community;
- Area specific charges rely on the ability to determine benefitting areas which can be challenging for transit investment; and,
- The high cost of major infrastructure projects – such as new transit lines – requires a significant amount of funding / revenue. An area-specific charge may not generate enough new revenue to cover the financing costs of the project, or would require a more significant charge / tax increase.

Notwithstanding this, there are examples of municipalities utilizing area-specific charges – whether for property taxes or development charges – when the benefitting area of the project is obvious.

An approach that includes a varied charge or tax depending on geography is also an option whereby there is an increase across the entire municipality, with a higher charge within an area considered to receive the most benefit – say within the boundaries of an MTSA. This ensures that everyone is contributing something, but those who are likely to benefit the most carry a larger cost burden.

The City of Ottawa has taken an area-specific approach to both development charges and taxes for transit. Additional information with respect to Ottawa's approach is discussed in the sections to come.

Funding Agreements Between Landowners and Transit Provider

The Development Charges Act allows for front-ending agreements between a municipality and a developer or group of developers to contribute to the cost of construction of infrastructure up front. Through these agreements a refund is then provided to the developers that are providing these up-front costs over time, either through a development charge credit and/or payments from other beneficiaries of the new infrastructure that did not contribute at the outset.

However, the list of permitted services for these formal front-ending agreements between municipalities and landowners in the Development Charges Act is limited and does not include transit.

Given this, any voluntary funding agreement for a new station would have to be between landowners and the transit provider – in this case Metrolinx. The East Harbour Station on the edge of Downtown Toronto, which is proposed to include GO, SmartTrack and Ontario Line service, is a good example of this approach. In this situation, Cadillac Fairview will be funding the entire station cost. By doing so, they will be investing to improve the marketability of their lands. Similar approaches are being applied at the proposed Park Lawn and Woodbine GO stations

In station areas where there is significant redevelopment potential and larger vacant land areas, these voluntary funding agreements are potentially powerful tools. However, where the lot fabric and ownership pattern is very fragmented, this type of funding tool is challenging. These types of agreements may also be less effective in weaker market areas where there is not enough value uplift from the new station and changes to entitlements to cover all or a significant amount of the cost of the new station.

While the municipality cannot enter into a voluntary funding agreement with a landowner or group of landowners for the purpose of funding new transit, they could contribute to the agreement between the landowner(s) and the transit provider in the following two ways:

- Act as a facilitator between the major landowner(s) and the transit provider, helping to organize the group of landowners to work towards a common goal of station delivery; and,
- Make entitlements such as increased densities subject to a formal funding agreement for the new transit station between the landowner(s) and the transit provider. This is the case for the Park Lawn Station.

This type of funding approach is perceived positively by the public given that they do not impact residents directly. However, the municipality has less control in this situation compared to other tools that are within their purview.

Fees and Charges – Section 391 of the Municipal Act

While not yet utilized to fund transit, to our knowledge, we are aware that at least one jurisdiction in Ontario is exploring utilizing Section 391 of the Municipal Act as a means of implementing a specific transit fee or charge that could be utilized to fund/finance new stations. This section of the Municipal Act sets out what municipalities can impose fees and/or charges for, including:

- Services or activities provided or done by or on behalf of it;
- Costs payable by it for services or activities provided or done by or on behalf of any other municipality; and,
- The use of its property including property under its control.

Again, like the voluntary funding agreements, the challenge here is that the municipality does not own the station – so can they charge a fee related to the capital costs of its construction? This continues to be explored elsewhere, but there is some optimism that solutions may be found for this approach. This could include an approach where the municipality owns the land that the station is located on and leases it back to the transit provider, allowing a transit fee to potentially qualify under the third bullet point in the list above.

Gas Tax Revenues

Gas tax revenues are a less common funding source for new transit lines than development charges and property taxes, but they nevertheless have been used in a number of municipalities in recent years. Gas taxes are collected by the Federal and Provincial governments, along with a select number of municipalities, including Montreal, Vancouver, and Victoria.

The Federal government places $2 billion into their Gas Tax Fund annually and distributes it to provinces and territories who in turn flow the funding to municipalities to support local infrastructure projects ranging from transit to wastewater to roads and bridges. The provinces collect their own tax which is then added to the funding that is redistributed to the municipalities.

In Ontario, the provincial portion of the gas tax is meant to fund transit specifically. Municipalities have the option to pool, bank, and borrow against this funding.

As an example, Ontario provides municipalities with two cents per litre of provincial gas tax that is meant to go towards improving and expanding transit. In 2021, this meant more than $375 million distributed to 109 municipalities, with nearly half of this funding ($185 million) provided to the City of Toronto[5]. Additional revenue is available for the Federal Gas Tax Fund.

Gas tax revenues as a funding tool for transit have the least impact on residents and the development industry. However, they are also likely to have low revenue potential outside Toronto. As such, they will only be effective if they are one part of the overall funding toolbox. They will not have the same impact as development charges or property taxes.

In 2021, the Provincial gas tax contribution for York Region was less than $17,000,000. However, this funding would have to be distributed amongst the various lower-tier municipalities in York Region to fund a variety of priorities. This gas tax revenue has been growing on an annual basis, but it pales in comparison to what the other options have the potential to raise.

Gas tax revenues are also meant to contribute to transit in general, not just new transit investment, and the Federal contribution is provided for use on a wider range of infrastructure investments. It will be important to consider what projects may not be fully funded if these revenues are prioritized for a new station on the YNSE. Unlike development charges and property taxes, where rates can be boosted in order to increase annual revenues, we are not aware of any mechanism to increase the amount of gas tax revenues received annually.

Community Improvement Plans – Public Land Acquisition and Value Capture

Community Improvement Plans ('CIP') are an effective tool under the Planning Act to identify areas where community renewal can occur through policies that allow for public assembly and acquisition of properties for specific renewal purposes.

CIPs provide tools to solicit community support for planning objectives in Ontario communities. One objective could be intensification around transit stations. While the property acquisition policies of CIPs have not typically been utilized for the purpose of transit development to our knowledge, they have been used for community amenities like public squares (example: Dundas Square in Toronto).

In the context of transit-related acquisition, lands could be acquired around future transit stations for the purpose of parking facilities, generating income in the short-term, with a long-term view of intensifying them with residential or mixed-uses in the future. This would also provide the

[5] Province of Ontario – Backgrounder: 2020-21 Gas Tax Funding by Municipality, January 14, 2021

public sector with the land value uplift associated with the public transit investment. When the land is sold some time in the future, the proceeds from the land value uplift could be put towards funding the transit line.

Land Acquisition and Value Capture

Finally, while not a traditional funding tool, public land acquisition is a strategy that can have positive long-term financial impacts. A CIP would help establish policies related to public land acquisition and disposition for the purpose of transit funding.

Where the opportunity arises, the City could consider acquiring and assembling lands around the transit stations prior to the extension being constructed. Public land acquisition is generally considered the best way to capture land value uplift associated with new transit investment, particularly if properties can be acquired at pre-transit values. Where the land parcel fabric is fragmented and needs consolidation to encourage reinvestment, the public acquisition of land may be especially valuable. Once lands are consolidated they may be used for interim uses such as commuter parking – which can provide income in the near-term – until the market demand is sufficient to allow the sale of land.

The limitation of a land acquisition strategy as a funding tool is that it a) creates additional costs in the near-term, and b) the financial impact from the uplift to the property's land value is not felt until years after the transit is likely to be completed and the land is sold. However, the benefits of acquisition are notable, making this strategy a worthy consideration. The value uplift created by the transit investment can be used towards funding or servicing debt in future years when the land is sold, or can be used to achieve other regional objectives such as the provision of affordable housing.

The feasibility of this tool can only be assessed as part of the transit area planning process.

Financing Transit

The following provides an overview of the two primary options for financing transit construction: debt financing and private financing.

Debt Financing

Given that most funding tools generate a limited amount of annual revenue for transit investment relative to the high price tag of new transit construction, most municipalities use capital debt to finance new transit investment. Capital debt is raised to cover spending that will pay for a long-term asset and smooth out the actual payments over the asset's lifespan. This debt is serviced with future revenues.

Funding projects with future revenues by taking on debt is also seen as an equitable approach given that the infrastructure is paid for by both current and future residents / users, rather than just current residents.

To limit exposure to future economic shocks and credit rating impacts, the Province of Ontario has set an upper limit of 25% for the ratio of annual debt payments to property tax income[6]. Some municipalities set their own upper limit below this 25% threshold. In Toronto, for example, Council has set an upper limit of 15%[7].

Capital debt is issued through debentures or municipal bonds. These debentures and bonds are purchased by banks, insurance companies, pension funds, other institutional investors, and private investors. These purchasers are primarily within the domestic capital market, though Canadian municipalities can issue bonds to foreign investors[8].

The City of Toronto, for example, is advised by a syndicate of major Canadian banks that arrange transactions to purchase debt at the most affordable rates. The bonds and debentures are typically issued through a financial institution who acts as a middleman between seller and buyer[9].

Unlike senior levels of government, municipalities are required to amortize the principal borrowed over the term of debenture. In contrast, the Federal and Provincial governments are allowed to refinance their debt as it matures. Municipalities must also pay both the principal and interest on their capital debt, whereas senior levels of government are only required to pay the interest[10].

Private Financing – Design-Build-Finance-Operate-Maintain Models

An alternative to traditional capital debt is to seek a private sector partner or partners to finance part or all of a project. Typically, when this approach is taken, the private sector partner also undertakes various levels of project responsibility starting with the design and construction of the transit project, but increasingly bundling financing, operating responsibilities, and even maintenance over a defined period of time. These arrangements have come to be known as 'Private-Public Partnerships' or a 'P3'.

Pairing a financing component with the design and construction portions of a transit project transfers some of the financial risk to the private sector partner and provides additional incentive

[6] Steve Munro – Property Taxes and Subway Financing, July 3, 2016
[7] Ibid.
[8] San Grewal - Is it bad for cities to be in debt? Not necessarily, Toronto Star, August 14, 2011
[9] Ibid.
[10] City of Toronto – 2018 Issue Briefing: Capital Financing – Debenture Issuance and Credit Ratings

for the Project Company to deliver the project on time and budget[11]. Cost overruns are often charged to the Project Company in these models, with financial penalties for delays.

The financing provided by the private sector partner or Project Company acts as a mortgage on the infrastructure that is paid off over an extended period of time – typically 30 or more years. It is repaid with revenues from development charges, property taxes, gas taxes, and/or transit fares. This gives the partner a guaranteed long-term return[12].

While the municipality benefits by transferring some of the financial risk to the private sector partner, along with receiving a guaranteed cost and delivery timeline (under a design-build-finance model), it is worth noting that private financing costs can be higher than for public debentures and bonds[13].

Examples of this approach have been undertaken in the City of Ottawa and City of Vancouver.

City of Toronto

The City of Toronto and surrounding Greater Toronto Area has the highest concentration of population in Canada. Given this, it makes sense that Toronto and the wider GTA attract a high proportion of Canadian transit funding and have a number of planned or under construction transit projects.

Notwithstanding this, transit planning in Toronto and the GTA has been very contentious over the past decade or more, with every new government – provincial or municipal – changing course and creating their own plan for transit network expansion. This has led to a lot of plans, with few new transit lines actually constructed in recent decades. In the past 15 years, a number of subway and LRT lines have been proposed in the City of Toronto, but just one extension has been completed – the Toronto-York Spadina Subway Extension ("TYSSE") – with one other project currently under construction (Eglinton Crosstown LRT).

Despite the lack of construction progress, the number of lines that have been planned over the years provides us with some insight into how transit has been or can be funded and financed.

In general, the City of Toronto has primarily used three mechanisms to fund transit projects:

- Contributions from senior levels of government;
- Development charge revenues; and,

[11] City of Ottawa Staff Report – Design, Build, Finance, and Maintenance of Ottawa's Light Rail Transit Project, December 4, 2012
[12] Steve Munro - "Alternative Financing" and the GTTA, December 1, 2007
[13] Infrastructure Ontario – Assessing Value for Money: A Guide to Infrastructure Ontario's Methodology, 2007

- Tax revenues, including the City Building Fund.

Transit-Related Development Charges

Toronto's development charges include two contributions to transit – one specifically for the TYSSE and one that is a general transit contribution[14]. While the TYSSE charge accounts for just 3.5% and 4.3% of residential and non-residential charges, the general transit contribution accounts for the highest percentage of any service funded through the City's development charges at approximately 34.6% for residential charges and 43.0% of non-residential charges. This general contribution goes into a reserve fund that is set aside for capital costs related to transit.

Regardless of the location of a new transit project, Toronto has, to this point, only utilized city-wide charges, rather than area-specific development charges for transit.

City Building Fund

Tax revenues are also a funding mechanism in Toronto with taxes allocated to specific projects (Scarborough Subway Extension) and to the City Building Fund – a general fund for transit and other major infrastructure investment.

The City Building Fund was introduced in 2015 and intended to help fund and finance major infrastructure projects – including affordable housing and transit. Revenues from the fund are expected to be used for both state of good repair costs, as well as for construction of new projects.

At the time of its announcement, the fund was to be financed through a 0.5% annual increase to property taxes over 5 years, starting in 2017. Each 0.5% increase was expected to yield an additional $13 million annually, reaching $65 million annually by the fifth year. When fully implemented, the City Building Fund was anticipated to cost the average property owner $65 per year[15].

In 2020, an additional levy was added to the City Building Fund in response to growing needs for infrastructure funding and the recent rejections of the Provincial government for other funding sources – including road tolls previously rejected by the Wynne government and the cancellation of increased gas tax revenues by the Ford government[16].

This additional levy added a 1.0% increase to the existing 0.5% levies for 2020 and 2021 (bringing the total increase to 1.5% annually), followed by 1.5% increases annually between 2022 and 2025. These increases add an additional $43 to the average property tax bill in 2020 and lead to a total

[14] Noted as "Transit (Balance)" in the Development Charge Rates.
[15] Toronto Star Editorial - Toronto's 'City Building Fund' is needed, December 2, 2015
[16] Nick Boisvert - 'We need billions': Tory pitches property tax hike to councillors, CBC News, December 11, 2019

increase of $326 annually when fully implemented in 2025[17]. Two-thirds of this revenue is expected to be earmarked for transit investment[18].

Recent Examples of Transit Funding in Toronto

The following provides information on funding approaches for two transit projects in Toronto – the recently completed Toronto-York Spadina Subway Extension, and the planned Scarborough Subway Extension.

Toronto-York Spadina Subway Extension

The Toronto-York Spadina Subway Extension ("TYSSE") is a six-stop, 8.6 kilometre extension of the University-Spadina subway line, from Sheppard West station (formerly Downsview Station) to the Vaughan Metropolitan Centre ("VMC") near Highway 7 and Jane Street. The extension began service in December 2017.

The total cost of the TYSSE was nearly $3.2 billion, with contributions coming from the following governments:

- Federal government: $697 million (22%);
- Ontario government: $974 million (31%);
- York Region: $606 million (19%); and,
- City of Toronto: $907 million (28%).

Provincial funding was held in the Move Ontario Trust. Placement in the trust prevented any changes to funding from future governments. The Province placed $870 million in the trust over 2006 and 2007, which was projected to grow to $1.059 billion. However, the 2008 financial crisis impacted the growth of this contribution, falling $85 million short of the original projection, a number that would have to be filled by the City of Toronto and York Region.

Originally budgeted at approximately $2.6 billion, the project ended up going $550 million over budget. Requests by the City of Toronto and York Region for federal and provincial help with cost overruns were denied in both 2015 and 2016.

As Table 6 notes, the City of Toronto was initially responsible for $526 million of the original budget. This was to be split between four funding mechanisms:

- $67 million from development charges (cash);

[17] Toronto Life - Q&A: John Tory said we could have nice things without paying higher taxes, February 4, 2020
[18] John Tory – City Building Fund Memorandum to Executive Committee, December 11, 2019

- $99 million from tax-increment financing;
- $16 million from the Strategic Infrastructure Reserve Fund; and,
- $344 million through the issuance of capital debt, serviced by future tax and development charge revenue.

The City's development charge contributions – via cash and debt – were aided by a change to the Development Charges Act in 2006 which allowed the City of Toronto to recover transit costs for the project based on approved transit expansion plans, rather than historical service levels. The amended Development Charges Act also ensured that the project would not be subject to pre-existing statutory requirements for a 10% reduction of capital costs, thereby enabling the City to recover a more appropriate share of growth-related capital costs through development charges[19]. This amendment was made at the time to specifically aid with financing for the TYSSE and has since been provided for all transit projects as of 2015.

Table 3

Funding Partner:	Original TYSSE Project Budget	March 26, 2015 Revised Project Budget	Anticipated Move Ontario Trust Shortfall	January 21, 2016 Incremental Project Reset Cost	January 21, 2016 Project Reset Budget	% of funding Original	% of funding Adjusted
	$millions						
Federal	$697	$697			$697	26.5%	21.9%
Provincial/Move Ontario Trust	$1,059*	$1,059*	($85)		$974	40.2%	30.6%
City of Toronto	**$526**	**$616**	**$51**	**$240**	**$907**	**20.0%**	**28.5%**
York Region	$352	$412	$34	$160	$606	13.3%	19.0%
Total	$2,634	$2,784		$400	$3,184	100.0%	
Sources of City Funding:							
Development Charges (pre-debt issuance)	*67*	67			67		
Tax increment Financing	*99*	*0*			*0*		
Strategic Infrastructure Reserve Fund	*16*	*115*			*115*		
Capital Financing Reserve Fund		*90*			*90*		
Debt (tax and DC supported)	*344*	344			635		

* including investment income as projected in 2007

Source: City of Toronto Staff Report – "Toronto-York Spadina Subway Extension – Schedule and Budget Reset", January 26, 2016

The City of Toronto implemented a project specific development charge for the TYSSE that was applied to all new development City-wide. As of November 2019, the charge ranges from $1,026 for a studio or one-bedroom apartment unit to $2,648 for a single-detached or semi-detached unit,

[19] City of Toronto Staff Report – Spadina Subway Extension Update, April 16, 2007

and $16.75 per square metre for non-residential uses, accounting for approximately 3.5% to 4.3% of the City's total development charge rate.

The initial $150 million cost overrun - $90 million (60%) of which the City of Toronto was responsible for – along with the Province of Ontario's failure to enable tax-increment financing regulations forced the City to adjust their funding approach in 2015, at the expense of their reserve funds. The $99 million originally earmarked to be funded by tax-increment financing was to be drawn from the Strategic Infrastructure Reserve Fund (bringing the total to $115 million), with the $90 million cost overrun to be drawn from the Capital Financing Reserve Fund.

As news of the Move Ontario Trust shortfall and additional $400 million cost overrun came to be in 2016, the City of Toronto was forced to adjust their funding approach again to cover the additional $291 million (60%) they were responsible for. In this case, the additional costs were financed through additional capital debt, bringing the total debt for the City of Toronto for the project to $635 million.

Scarborough Subway Extension

While the City of Toronto has seen transit plans change a number of times over the past decade, the Scarborough Subway Extension has been arguably the most contentious transit proposal, seeing at least five iterations of LRT or subway transit since 2010. Originally planned as an LRT line to replace the aging Scarborough RT and funded entirely by the Province of Ontario, Toronto City Council has fought over the transit line's future with several routes and station combinations proposed and/or approved over the past decade.

These changes have impacted costs and, in turn, the required funding from each level of government.

The original 2013 subway proposal was for a three-stop extension of the Bloor-Danforth subway line, with an estimated cost of $3.56 billion. The project was expected to be funded by three levels of government:

- Federal government: $660 million;
- Ontario government: $1.99 billion; and,
- City of Toronto: $910 million.

The City of Toronto's share of funding was proposed to come from $165 million in development charges and $745 million from capital debt, financed from a property tax increase.

Like the TYSSE, the City had originally planned to a have a city-wide SSE development charge to collect the $165 million contribution (see Table 7). The new charge would be rolled into the

Transit (Balance) portion of the development charge and represent a 10% to 11% increase to the overall development charge rates. It was expected to yield $20 million to $25 million per year, covering the entire $165 million contribution by 2022. A city-wide charge was again utilized rather than an area-specific charge given the difficulty of identifying the benefit area, as well as fears that the new charge could have a negative impact on the rate of development along the transit corridor, which would be counter to the City's planning objectives[20].

However, this SSE development charge was challenged by the Building Industry and Land Development Association ("BILD") in 2015. BILD appealed the charge to the Ontario Municipal Board on the basis that it was too high and that ridership numbers for the project were overstated, inflating the required development charge increase. The City and BILD came to a compromise, leading to a 10% reduction of the SSE development charge, and forcing the City to refund a portion of development charges that had already been issued prior to the appeal.

Table 4

Type	2013 DC Background Study Calculated Charge [1]	Calculated Scarborough Subway Charge [2]	Total Amended Charge	% Change
Residential Charge Per Unit				
Singles & Semis	$35,095	$3,357	$38,452	10%
Townhouses 2+ Bedrooms[3]	$29,559	$2,827	$32,386	10%
Townhouses 1 Bed and Bach.[3]	$21,113	$2,019	$23,132	10%
Apartments 2+ Bedrooms	$21,582	$2,064	$23,646	10%
Apartments 1 Bed and Bach.	$15,014	$1,436	$16,450	10%
Dwelling Room	$9,384	$897	$10,281	10%
Non-Residential Charge Per Square Metre[4]				
Adjusted Charge per Square Metre	$178.91	$20.55	$199.46	11%

(1) Calculated 2013 rates have been indexed
(2) Calculated SSE charge represents an additional rate applicable to the existing Transit DC
(3) "Multiple dwelling unit" category in the DC bylaw includes a row dwelling, duplex, triplex or a back to back townhouse unit
(4) Non-residential rates applicable to non-residential floor area located on the ground floor only

Source: Hemson Consulting Ltd – 2015 Development Charges Amendment Background Study: Transit Service Scarborough Subway Extension, April 7, 2015

The larger portion of the City's contribution to funding the subway extension was expected to be through capital debt, supported by future property tax revenues. The City of Toronto implemented

[20] City of Toronto Staff Report – Development Charges By-law Amendment – Scarborough Subway Extension, April 8, 2015

a property tax increase specifically for this project, creating a new line item on property owner's tax bills.

The tax increase for the SSE has been in place since 2014 and was proposed to be collected for a 30-year period to finance the extension. It consisted of a 0.5% increase in both 2014 and 2015, and a 0.6% increase in 2016 for a total 1.6% increase to tax bills. Upon full implementation, the tax increase was expected to account for an additional $41 per ownership household on average, yielding approximately $38 million per year to finance the $745 million contribution[21].

Since this 2013 proposal, the plans for the extension have changed, going from the original three-stop extension, to a single stop extension, and now back to a three-stop extension. However, the current proposal, as of April 2020, is expected to be funded primarily by the Province of Ontario.

The Provincial government announced in 2019, a plan to build four priority projects, totalling $28.5 billion. These four projects include the SSE, along with the Ontario Line (formerly known as the Downtown Relief Line), Yonge North subway extension to Richmond Hill, and the Eglinton Crosstown West extension to Pearson Airport.

While the Province has requested that the City contribute the $660 million that the Federal government had already provided for the SSE via the Canada Infrastructure Program Public Transit Infrastructure Fund Phase 2, the City is otherwise off the hook for contributing any additional funding to the SSE. This allows the City to redirect the $910 million that had been earmarked to the SSE to other projects or state of good repair costs for the existing network. Though development charge and property tax increases were undertaken specifically for the SSE, there is no plan to repeal these increases, instead using them for other transit priorities.

It is also worth noting that the Province's approach to the Ontario Line is the same as for the SSE. While the City will contribute the $3.15 billion that has already been provided to them from the Federal government for the project, there is no further expectation for funding from the City for the new line. In total, along with the $910 million that had been earmarked for the SSE, the City of Toronto is now free to use more than $5 billion that otherwise would have been allocated to the SSE and Downtown Relief Line for other transit projects and state of good repair costs.

Region of Waterloo

In June 2019, the ION LRT line began operation. This is the first high-order transit line in Waterloo Region and includes 19 stations along a 19 km route through the cities of Waterloo and Kitchener. A second phase of the LRT is planned, connecting the existing line to the City of Cambridge to the south. Bus Rapid Transit services the Phase 2 route in the meantime.

[21] Royson James – What Scarborough's Subway Means for Taxpayers, Toronto Star, October 11, 2013

The total cost of the first phase of the LRT line was originally budgeted at $818 million, with the final cost reaching $868 million[22]. The $50 million cost overrun was split between the Region of Waterloo and Province of Ontario. The final breakdown of funding was as follows:

- Federal government: $265 million;
- Ontario government: $325 million; and,
- Region of Waterloo: $278 million.

The Region of Waterloo's contribution is being financed through a property tax increase. Capital debt is being utilized to cover the costs, serviced by the increased property taxes.

In 2011, Regional Council approved the tax increase, consisting of a 1.2% annual increase from 2012 to 2018. At the same time, tax reductions were provided on other services to offset some of this increase. The reductions meant that the annual net increase averaged just 0.7%. For the average homeowner, this meant an increase to their property tax bill of $11 per year[23].

The tax increase was amended shortly after this initial approval, with increases of 1.5% in 2012 and 2013, 1.25% in 2014, 1.5% between 2015 and 2018, and a final 0.75% increase in 2019. At the same time, previously noted changes to the Development Charges Act in 2015 that broadened the scope of public transit development charges led the Region to amend their Regional Development Charges By-law to adjust their transit development charge rate to the maximum provided for in the legislation. The revenues from this higher development charge are now being used towards debt servicing related to the ION LRT[24].

In addition to financing the project, the property tax increase and revenue from fares will also go towards operations, maintenance, lifecycle, and other costs (electricity, project office, etc). Unlike in Toronto, where the TTC handles operations and maintenance, the Region of Waterloo entered into a public-private partnership with GrandLinq, a consortium that will operate and maintain the LRT system to meet the Region's performance and service standards[25].

This private-public partnership was for design-build-operate-maintain only, and did not include a financing component[26]. Given this, the project was financed by the Region of Waterloo through traditional capital debt as opposed to private financing.

City of Ottawa

[22] Region of Waterloo Staff Report – ION Project Budget Update, December 13, 2017
[23] Region of Waterloo – The Story of Rapid Transit in Waterloo Region
[24] Region of Waterloo Staff Report – ION Project Budget Update, December 13, 2017
[25] Region of Waterloo – The Story of Rapid Transit in Waterloo Region
[26] Keith Barrow - Three bidders vie for Waterloo LRT contract, International Railway Journal, December 18, 2013

The City of Ottawa currently operates a transit network that includes two LRT lines, along with bus routes. The first LRT line, known as the Trillium Line, was completed in 2001. In 2019, the City opened its second LRT line – the Confederation Line. Currently, there are plans to extend the Confederation Line east and westward, as well as extending the Trillium Line south towards the airport. The first phase of the Confederation Line is referred to as Stage 1, with the planned extensions referred to as Stage 2.

The primary funding sources for Ottawa's LRT lines has been the following:

- Contributions from Federal and Provincial governments;
- Federal and Provincial gas tax revenues;
- Development charge revenues;
- Transit tax levy; and,
- Capital and privately funded debt, serviced by the above revenues.

Table 8 provides an overview of the breakdown of funding sources for the Stage 2 LRT work that is currently being planned and/or constructed.

Table 5: Stage 2 LRT Funding Sources

	Cash $M	Debt $M	Other (Tax, Rate, PTIF) $M	Total $M
Federal and Provincial Grants	2,366			2,366
Other Revenue	35			35
Gas Taxes	382	562		944
Development Charges	194	771		965
Transit taxes		293		288
Non-Transit Funding (Bundled Projects)			59	59
Total	**2,977**	**1,626**	**59**	**4,657**

Source: City of Ottawa – Stage 2 Light Rail Transit Project Technical Briefing, February 22, 2019

Where Ottawa varies from the above noted approaches in Toronto and Waterloo Region, is through the use of area-specific taxes and charges, as well as the use of a Design-Build-Finance-Maintain private-public partnership model.

The following provides an overview of these key differences.

Area-Specific Taxes and Charges

The City of Ottawa has two area-specific charges – one a transit tax levy and the other an area-specific development charge. The following provides an overview of these two funding mechanisms.

City of Ottawa Transit Tax Levy

The City of Ottawa implemented a transit tax levy that varies based on location and level of transit service.

The City does not provide extensive service throughout the entire municipality like in the City of Toronto. As such, a varied taxation approach was chosen. The City has been divided into three transit zones – identified by full-service (Urban Transit Area), commuter service (Rural Transit Area A), and Para-Transpo service only (Rural Transit Area B).

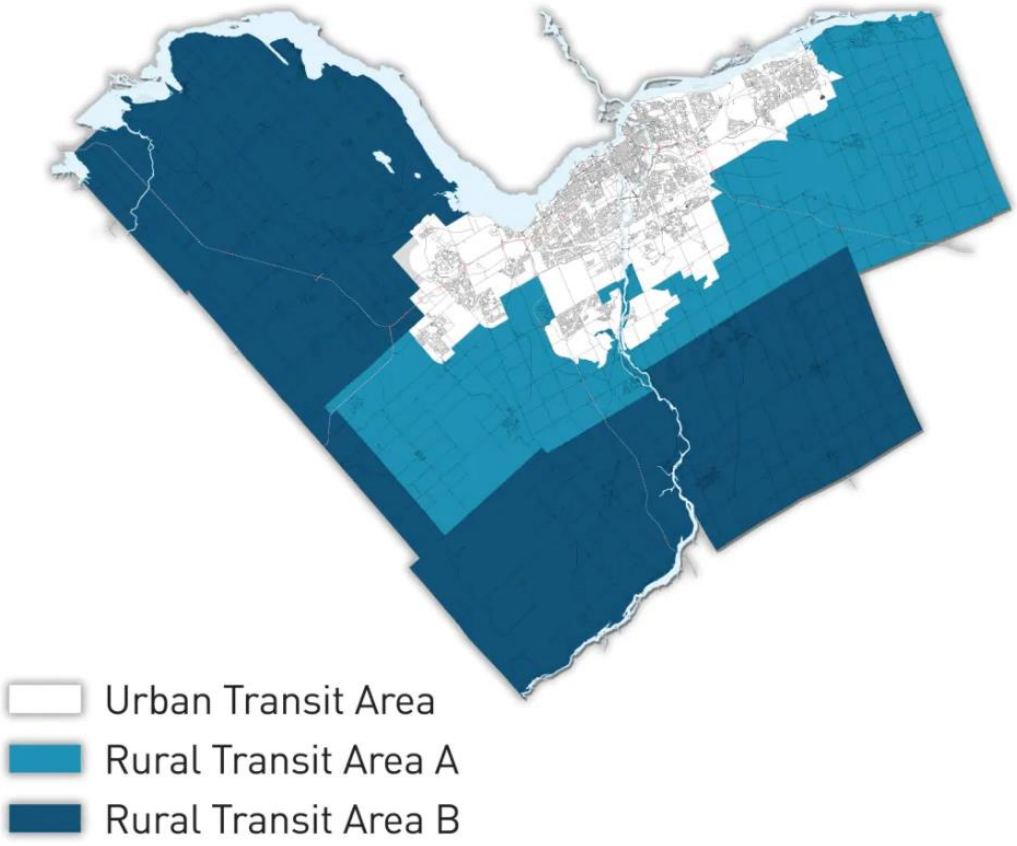
In 2020, the transit tax rates for these three zones are as follows, applied to property tax bills:

- Urban Transit Area: 0.15%;
- Rural Transit Area A: 0.046%; and,
- Rural Transit Area B: 0.013%.

Revenues from this tax levy are in the range of at least $80 million annually and are utilized for both capital and operating costs of transit[27]. The three zones are illustrated in Figure 2.

[27] City of Ottawa Staff Report – Design, Build, Finance, and Maintenance of Ottawa's Light Rail Transit Project, December 4, 2012

Figure 3: City of Ottawa transit zones

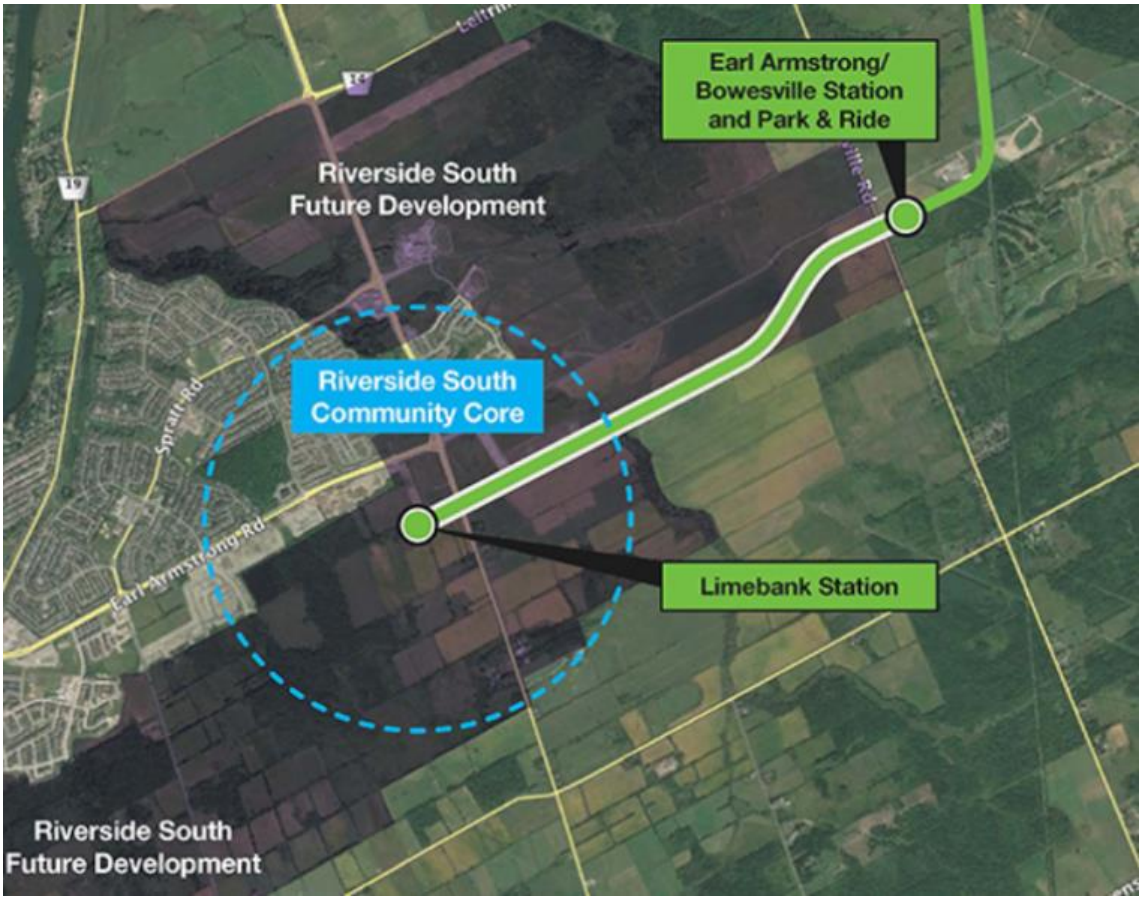


Source: Laura Osman - CBC Ottawa explains: What would it take to improve rural transit?, CBC News, October 9, 2018

Riverside South Area-Specific Development Charge

The City of Ottawa also has an area-specific development charge ("ASDC") for transit in the Riverside South area. The Trillium Line extension was initially planned to terminate at Earl Armstrong / Bowesville Station (see Figure 3). However, local developers in the Riverside South community recognized the value that a new LRT stop in their community would bring to future developments. As such, the benefitting developers from Riverside South entered into a voluntary agreement for an ASDC for the Riverside South community to help finance a further extension of this line to Limebank Road. In total, the ASDC is expected to cover $30 million of the $80 million Limebank extension cost, with the Provincial government agreeing to cover the remaining $50 million.

Figure 4: Riverside South Transit Area



Source: stage2lrt.ca

Upon securing the voluntary agreement with the benefitting developers, the City amended their Development Charge By-law in 2019. Given the timing of development charge payments, the City will be using debt (as part of the $771 million noted in Table 7) to finance the extension to Limebank Station, servicing the debt with the revenues from the ASDC. As of May 2019, the Riverside ASDC ranges from $888 for a dwelling room to $3,066 for a single or semi-detached unit.

Design-Build-Finance-Maintain Model

The City of Ottawa utilizes a design, build, finance, maintain ("DBFM") model – a type of public-private partnership (P3) – for Stage 1 and 2 projects. Under this model, the private sector designs, builds and finances a portion of the project, while also providing maintenance services under a long-term agreement, with the municipality maintaining ownership of the transit line.

In the case of Stage 1 LRT in Ottawa, the private partner consortium – known as the Rideau Transit Group – was responsible for $300 million of the $584 million in debt issued for the project. This private debt is expected to be serviced over the course of the 30-year maintenance and service

period, with the City providing payment to the Rideau Transit Group with revenues from development charges and provincial gas tax contributions.

City of Vancouver

The most recent transit project completed in the City of Vancouver was the Canada Line LRT. The 19 km, 16-station LRT line began operation in August 2009, three months ahead of schedule.

The total cost of the project was $2.2 billion, funded through the following sources:

- Federal government: $450 million;
- Provincial government: $435 million;
- Vancouver Airport Authority: $300 million;
- TransLink: $334 million;
- City of Vancouver: $29 million; and,
- Private consortium: $657 million.

Like in Ottawa, a P3 model was pursued, with the private sector designing, building, and partially financing the line, along with an agreement to operate and maintain the line for 35-years in exchange for a share of operating revenues. InTransitBC was the selected private sector proponent, a joint venture between SNC-Lavalin, bcIMC, and CDPQ. This consortium contributed the aforementioned $657 million in financing to the project[28].

The biggest difference between the funding approach to the Canada Line and the projects that we have outlined above is the low involvement of the City of Vancouver. This is a significant departure from the projects outlined in other jurisdictions where the local municipality was responsible for at least one-third of the funding. The reason for this difference is the presence of TransLink – the regional transportation provider. TransLink collects revenues from taxes and charges throughout the Metro Vancouver region (21 municipalities) and utilizes them, along with revenues from fares, for capital and operating costs.

The revenue tools used by TransLink are similar to what a municipality would normally use, including the following:

- Property tax (0.023%);

[28] canadaline.ca/aboutus

- Regional development charge ($1,200-$2,100 per unit / $0.30-$1.25 per sqm);
- Parking tax; and,
- Provincial and federal gas tax contributions.

There are two major differences with these revenue tools when comparing to Toronto, Waterloo, and Ottawa. First, they are applied on a regional scale, rather than a municipal one. This increases the potential revenue that can be generated – or reduces the required per capita contribution – but does require TransLink to balance the transit priorities of a larger region.

Second is the inclusion of the parking tax. This tax is a 24% levy on the sale of a parking right[29]. However, it is primarily used to fund road and transit operations, rather than fund new transit construction. Like the other municipalities we have highlighted, it is revenues from property taxes and development charges that are the most significant contributors to new transit funding and financing.

TransLink's presence shifts the onus for transit funding and planning from the local municipalities to the regional transportation body. Despite Metrolinx's involvement in Ontario, individual municipalities are still a key authority in terms of approving which new transit projects are built and how they will be funded and financed.

It is worth noting that a plebiscite was held in 2015 in Metro Vancouver in regards to a 0.5% sales tax that would have been directed to TransLink to fund transit infrastructure improvements and expansion. The sales tax would have generated $250 million annually for TransLink, however, it was rejected by 62% of the electorate[30].

Sales tax increases are challenging to implement even if the purpose is to fund major infrastructure like transit. Public perception and support is often low, though there are examples of other cities that have implemented a sales tax for transit purposes with significant public support. One recent example is Los Angeles where 67% of the electorate voted to implement a 30-year, 0.5% sales tax to fund transportation projects (transit and roads).

[29] TransLink – About the Parking Tax, translink.ca

[30] Frances Bula - Vancouver-region voters reject sales-tax hike to fund transit projects, Globe & Mail, July 2, 2015

Appendix B: Land Value Uplift Literature Summary

Property Value Appreciation from Transit						
Author	**Year**	**Title**	**City**	**Transit**	**Use**	**Uplift**
Higgins, Christopher D., & Kanaroglou, Pavlos S.	2015	Unbundling the Hedonic Price Effects of Rapid Transit and Transit-Oriented Development in Toronto	Toronto	Rapid Rail	Residential	Up to 21%
Dube, Jean et al.	2014	A Spatial Difference-in-Differences Estimator to Evaluate the Effect of Change in Public Mass Transit Systems on House Prices	Montreal	Rapid Rail	Residential	5.2%
The Center for Neighbourhood Technology	2013	The New Real Estate Mantra: Location Near Public Transportation	Various US Markets	All	Residential	30.0%-129.0%
Dube, Jean et al.	2013	Commuter Rail Accessibility and House Values: The Case of the Montreal South Shore	Montreal	Rapid Rail	Residential	3.0%-9.0%
Brandt, Sebastian & Maennig, Wolfgang	2012	The Impact of Rail Access on Condominium Prices in Hamburg	Hamburg	Rapid Rail	Condominium Apartments	4.6%
Dube, Jean et al.	2011	Economic Impact of a Supply Change in Mass Transit in Urban Areas: A Canadian Example	Quebec City	BRT	Residential	3.0%-7.0%
Duncan, M.	2011	The Impact of TOD on Housing Prices in San Diego, CA	San Diego	LRT	Condominium Apartments	6.0%-15.0%
Canadian Urban Institute	2010	Hamilton B-Line Value Uplift and Capture Study	Portland	LRT	Residential	10.6%
Hess, Daniel B. & Tangerina, Maria A.	2007	Impact of Proximity to Light Rail Rapid Transit on Station Area Property Values in Buffalo	Buffalo	LRT	Residential	4.0%-11.0%
Debrezion, G. et al.	2006	The Impact of Rail Transport on Real Estate Prices: An Empirical Analysis of the Dutch Housing Markets	Netherlands	Rapid Rail	Residential	19.0%-33.0%
Cervero, Robert	2004	Effects of Light and Commuter Rail Transit on Land Prices: Experienced in San Diego County	San Diego	LRT	Residential	17.0%
Cervero, Robert	2004	Effects of Light and Commuter Rail Transit on Land Prices: Experienced in San Diego County	Philadelphia	LRT	Residential	6.4%
Cervero, Robert	2004	Effects of Light and Commuter Rail Transit on Land Prices: Experienced in San Diego County	Atlanta	LRT	Commercial	0.0%
Garrett, Thomas A.	2004	Light Rail Transit in America: Policy Issues and Prospects for Economic Development	St. Louis	LRT	Single-Family Residential	32.0%
Weinstein, Bernard L. & Clower, Terry L.	2003	Assessment of DART LRT on Taxable Property Valuations and Transit-Oriented Development	Dallas	LRT	Residential	12.6%
Weinstein, Bernard L. & Clower, Terry L.	2003	Assessment of DART LRT on Taxable Property Valuations and Transit-Oriented Development	Dallas	LRT	Office	13.2%
Weinstein, Bernard L. & Clower, Terry L.	2003	Assessment of DART LRT on Taxable Property Valuations and Transit-Oriented Development	Dallas	LRT	Retail	-2.1%
Weinstein, Bernard L. & Clower, Terry L.	2003	Assessment of DART LRT on Taxable Property Valuations and Transit-Oriented Development	Dallas	LRT	Industrial	-8.5%
Cervero, Robert et al.	2002	Benefits of Proximity to Rail on Housing Markets: Experiences in Santa Clara County	Santa Clara	LRT	Rental Apartment	45.0%
Parsons & Brinkerhoff	2001	The Effect of Rail Transit on Property Values: A Summary of Studies	Boston	Rapid Rail	Single-Family Residential	6.7%
Cervero, Robert & Duncan, Michael	2001	Rail Transits Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara, California	Santa Clara	LRT	Commercial	23.0%
Cervero, Robert & Duncan, Michael	2001	Rail Transits Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara, California	Santa Clara	LRT	Retail	40.1%
Cervero, Robert & Duncan, Michael	2001	Rail Transits Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara, California	Santa Clara	LRT	Offices, Banks, Clinics	41.5%
Cervero, Robert & Duncan, Michael	2001	Rail Transits Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara, California	Santa Clara	LRT	Community Shopping Centre	1.1%
Cervero, Robert & Duncan, Michael	2001	Rail Transits Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara, California	Santa Clara	LRT	Neighbourhood Shopping Centre	5.6%
Cervero, Robert & Duncan, Michael	2001	Rail Transits Value-Added: Effects of Proximity to Light and Commuter Rail Transit on Commercial Land Values in Santa Clara, California	Santa Clara	LRT	Industrial	2.8%
Cervero, Robert et al.	2001	Land Value Impacts of Rail Transit Services in San Diego County	San Diego	LRT	Rental Apartment	0.0%-0.4%
Weinberger, R.	2001	Commercial Rents and Transportation Improvements	Santa Clara	LRT	Office	15.0%
Weinberger, R.	2001	Commercial Rents and Transportation Improvements: Case of Santa Clara County's Light Rail	Santa Clara	LRT	Commercial	15.0%
Sedway Group	1999	Regional Impact Study, Report Commissioned by the Bay Area Rapid Transit District	San Francisco	Rapid Rail	Rental Apartment	15.0%-26.0%
Chen, Hong et al.	1998	Measuring the Impact of Light Rail Systems on Single Family Home Values: An Hedonic Approach with GIS Application	Washington, DC	Rapid Rail	Single-Family Residential	10.5%
Diaz, Roderick B.	1997	Impacts of Light Rail Transit on Property Values	San Francisco	LRT	Residential	13.0%
Gruen, Aaron	1997	The Effect of CTA and METRA Stations on Residential Property Values	Chicago	Rapid Rail	Single-Family Residential	20.0%
Cervero, Robert	1996	California's Transit Village Movement	San Francisco	LRT	Residential	15.0%
Benjamin, John D. & Sirmin, G. Stacy	1996	Mass Transportation, Apartment Rent and Property Values	Washington, DC	Rapid Rail	Rental Apartment	7.5%
Landis, John et al.	1995	Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems	Sacramento	LRT	Single-Family Residential	6.2%
Landis, John et al.	1995	Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems	Santa Clara	LRT	Single-Family Residential	-10.8%
Landis, John et al.	1995	Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems	San Francisco	Rapid Rail	Retail	0.0%
Cervero, Robert et al.	1993	Assessing the Impacts of Urban Rail Transit on Local Real Estate Markets Using Quai-Experimental Comparisons	Washington, DC	Rapid Rail	Office	12.3%-19.6%
Cervero, Robert et al.	1993	Assessing the Impacts of Urban Rail Transit on Local Real Estate Markets Using Quai-Experimental Comparisons	Atlanta	Rapid Rail	Office	11.0-15.1%
Bernick, M. & Carroll, M.	1991	A Study of Housing Built Near Rail Transit Stations: Northern California	San Francisco	Rapid Rail	Rental Apartment	5.0%

Source: Aggregated research performed by NBLC

Appendix C: Detailed Pro Forma Information

City of Markham Yonge North Subway Extension Residual Land Value Analysis	Pre Subway 3.0 FSI	Land value prior to subway. Market condominium apartment project. No non-market housing or non-residential space.			Post Subway 3.0 FSI	Land value after subway. Market condominium apartment project. No non-market housing or non-residential space.			Post Subway 6.0 FSI	Land value after subway. Market condominium apartment project. No non-market housing or non-residential space.					Every reasonable effort has been taken to ensure that the information, analysis, conclusions, and recommendations in this report are accurate and timely. No responsibility for the information, analysis, conclusions, or recommendations is assumed by N. Barry Lyon Consultants Limited or any of its employees.
	Total	Building 1 Market Condos	Building 2 Market Condos	Building 3 Market Condos	Total	Building 1 Market Condos	Building 2 Market Condos	Building 3 Market Condos	Total	Building 1 Market Condos	Building 2 Market Condos	Building 3 Market Condos			
Project Statistics															*Comments*
Site Area	167,875	55,958	55,958	55,958	167,875	55,958	55,958	55,958	167,875	55,958	55,958	55,958	*sq. ft.*		
Building Height		6	6	6		6	6	6		20	20	20	*storeys*		*Estimate.*
Below Grade Parking Floors		2.0	1.7	1.7		1.6	1.4	1.4		3.2	2.8	2.9	*storeys below grade*		*Estimate. Below grade area divided by 75% of site area*
Gross Floor Area	503,626	167,875	167,875	167,875	503,626	167,875	167,875	167,875	1,007,252	335,751	335,751	335,751	*sq. ft.*		
% of Total GFA	100%	33%	33%	33%	100%	33%	33%	33%	100%	33%	33%	33%	%		*Calculated*
% Residential GFA by Building															
Floor Space Ratio	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	*GFA/Site Area*		
Below Grade Parking Area	246,075	82,025	82,025	82,025	201,450	68,000	65,450	68,000	402,050	135,575	130,900	135,575	*sq. ft.*		*Assumes 425 sq. ft. per stall*
% of Total Below Grade Parking	100%	33%	33%	33%	82%	28%	27%	28%	100%	34%	33%	34%	%		*Calculated*
Total Construction Area	749,701	249,900	249,900	249,900	705,076	235,875	233,325	235,875	1,409,302	471,326	466,651	471,326	*sq. ft.*		*GFA + Below Grade Area*
Net Floor Area	418,010	139,337	139,337	139,337	418,010	139,337	139,337	139,337	836,019	278,673	278,673	278,673	*sq. ft.*		
Efficiency Ratio	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	83%	*NFA/GFA*		
Resident Parking Ratio		0.90	0.90	0.90		0.70	0.70	0.70		0.70	0.70	0.70	*stalls per unit*		
Visitor Parking Ratio		0.10	0.10	0.10		0.10	0.10	0.10		0.10	0.10	0.10	*stalls per unit*		
Total Parking Ratio		1.00	1.00	1.00		0.80	0.80	0.80		0.80	0.80	0.80	*stalls per unit*		*Stalls per 1,000 net sq. ft. for non-residential*
Parking Stalls	579	193	193	193	474	160	154	160	946	319	308	319	*stalls*		*Rounded up to nearest stall*
Residential Unit Count															
Studio	58	19	19	19	59	20	19	20	118	40	38	40			
1 Bedroom	231	77	77	77	236	80	77	80	472	159	154	159			
2 Bedroom	231	77	77	77	236	80	77	80	472	159	154	159			
3 Bedroom	58	19	19	19	59	20	19	20	118	40	38	40			
Residential Units	577	192	192	192	590	199	192	199	1,181	398	385	398	*units*		*Refer to unit mix*
Average Unit Size															
Average		725	725	725		700	725	700		700	725	700			
Sale Prices															
Average		$ 1,000	$ 1,000	$ 1,000		$ 1,200	$ 1,200	$ 1,200		$ 1,200	$ 1,200	$ 1,200	*per sq. ft. net floor area*		
Project Timing Assumptions															
Absorption Rate		15	15	15		30	30	30		30	30	30	*sales or rentals per month*		
Cost Escalation		3%	3%	3%		3%	3%	3%		3%	3%	3%	*per year*		
Time to Prior to Land Sale		0	0	0		0	0	0		0	0	0	*months*		*Assumes all parcels zoned at once*
Time to Obtain Planning Approvals		24	24	24		72	24	24		72	24	24	*months*		
Total Time Before Sales Start		24	33	42		72	77	82		72	82	91			
Sales Period to 70% Sales		9	9	9		5	5	5		10	9	10	*months*		*Assumes buildings are marketed and built sequentially.*
Total Time Prior to Construction Start		33	42	51		77	82	87		82	91	101			
Construction Period		24	24	24		24	24	24		36	36	36	*months*		
Occupancy Period / Leasing Period		6	6	6		6	6	6		6	6	6	*months*		
Total Time to Completion		63	72	81		107	112	117		124	133	143	*months*		*Calculated*
Summary of Key Dates															
Project Start Date		September 2021	September 2021	September 2021		September 2021	September 2021	September 2021		September 2021	September 2021	September 2021			
Sales Start Date		September 2023	June 2024	March 2025		September 2027	February 2028	July 2028		September 2027	July 2028	April 2029			
Construction Start Date		June 2024	March 2025	December 2025		February 2028	July 2028	December 2028		July 2028	April 2029	February 2030			
Occupancy / Leasing Start Date		June 2026	March 2027	December 2027		February 2030	July 2030	December 2030		July 2031	April 2032	February 2033			
Completion / Stabilized Occupancy Date		December 2026	September 2027	June 2028		August 2030	January 2031	June 2031		January 2032	October 2032	August 2033			
Ownership Specific Assumptions															
Initial & Final Deposit		20%	20%	20%		20%	20%	20%		20%	20%	20%	*of unit price*		
Price Increase at Start & End of Construction		2%	2%	2%		2%	2%	2%		2%	2%	2%			
Market Revenue Inflator		3%	3%	3%		3%	3%	3%		3%	3%	3%			
Units Sold During Pre-Construction Presales		70%	70%	70%		70%	70%	70%		70%	70%	70%	*of units sold during pre-sales*		
Units Sold During Construction		20%	20%	20%		20%	20%	20%		20%	20%	20%	*of units sold during construction*		
Units Sold at Completion		10%	10%	10%		10%	10%	10%		10%	10%	10%	*of units sold at completion*		
Average Attained Price		$ 1,077	$ 1,102	$ 1,127		$ 1,453	$ 1,471	$ 1,490		$ 1,464	$ 1,499	$ 1,535	*avg. price per unit*		
Starting Price per Parking Stall		$ 50,000	$ 50,000	$ 50,000		$ 65,000	$ 65,000	$ 65,000		$ 65,000	$ 65,000	$ 65,000			
Attained Price per Parking Stall		$ 53,872	$ 55,096	$ 56,349		$ 78,708	$ 79,696	$ 80,698		$ 79,274	$ 81,215	$ 83,125			
Financing Assumptions															
Lender		Conventional	Conventional	Conventional		Conventional	Conventional	Conventional		Conventional	Conventional	Conventional			
Construction Loan Interest Rate		3.50%	3.50%	3.50%		3.50%	3.50%	3.50%		3.50%	3.50%	3.50%	*per year*		*Avg. yield on 10-year bond over past 5 years (~1.5%) + 200 bps*
Max. Loan to Cost Ratio		75%	75%	75%		75%	75%	75%		75%	75%	75%	*of costs excl. profit*		
Construction Loan Available	$ 246,011,493	$ 80,625,722	$ 82,051,956	$ 83,333,815	$ 298,460,197	$ 99,588,463	$ 98,882,457	$ 99,989,276	$ 605,989,475	$ 199,954,100	$ 200,825,677	$ 205,209,697			*Capped at max LTC, LTV or takeout debt capacity*
Avg. Draw Over Construction Period		60%	60%	60%		60%	60%	60%		60%	60%	60%			*For construction loan interest calculation*
Valuation Assumptions															
Discount Rate		7.00%	7.00%	7.00%		7.00%	7.00%	7.00%		7.00%	7.00%	7.00%	*per year*		

Revenue	Total				Total				Total						
Condominium Revenue	$ 460,694,310	$ 150,127,088	$ 153,538,924	$ 157,028,298	$ 615,057,193	$ 202,464,916	$ 205,008,413	$ 207,583,864	$ 1,253,326,512	$ 407,842,248	$ 417,827,390	$ 427,656,874			
Condominium Parking Revenue	$ 28,606,656	$ 9,322,090	$ 9,533,947	$ 9,750,619	$ 32,933,946	$ 10,965,283	$ 10,726,143	$ 11,242,520	$ 67,110,676	$ 22,088,300	$ 21,860,938	$ 23,161,439			
Interim Occupancy Charges															
Interest on the Unpaid Balance of the Purchase Price	$ 1,761,483	$ 574,017	$ 587,062	$ 600,404	$ 2,332,768	$ 768,349	$ 776,644	$ 787,775	$ 4,753,574	$ 1,547,750	$ 1,582,878	$ 1,622,946			
Property Taxes	$ 1,393,571	$ 454,125	$ 464,446	$ 475,001	$ 1,845,534	$ 607,868	$ 614,431	$ 623,236	$ 3,760,719	$ 1,224,479	$ 1,252,270	$ 1,283,969			
Projected Commone Expense Contribution	$ 541,740	$ 180,580	$ 180,580	$ 180,580	$ 541,740	$ 180,580	$ 180,580	$ 180,580	$ 1,083,481	$ 361,160	$ 361,160	$ 361,160			
TOTAL REVENUE	$ 492,997,761	$ 160,657,901	$ 164,304,959	$ 168,034,902	$ 652,711,182	$ 214,986,996	$ 217,306,211	$ 220,417,975	$ 1,330,034,962	$ 433,063,937	$ 442,884,637	$ 454,086,388			
per unit		$ 835,594	$ 854,563	$ 873,962		$ 1,080,208	$ 1,130,226	$ 1,107,496		$ 1,087,970	$ 1,151,738	$ 1,140,784			
per sq. ft.		$ 957	$ 979	$ 1,001		$ 1,281	$ 1,294	$ 1,313		$ 1,290	$ 1,319	$ 1,352			

Development Costs	Total				Total				Total						
Hard Costs															
Above Grade Construction Cost															
Condominium Apartments - 8 Storeys	$ 150,825,011	$ 49,164,661	$ 50,266,768	$ 51,393,582	$ 166,423,606	$ 54,792,721	$ 55,471,731	$ 56,159,154	$ -	N/A	N/A	N/A	$ 270	*per sq. ft. GFA*	*Per Altus Group 2021 Canadian Cost Guide*
Condominium Apartments - 20 Storeys	$ -	N/A	N/A	N/A	$ -	N/A	N/A	N/A	$ 378,481,223	$ 123,270,512	$ 126,033,826	$ 129,176,885	$ 300	*per sq. ft. GFA*	*Per Altus Group 2021 Canadian Cost Guide*
Underground Parking Cost	$ 43,670,575	$ 14,235,364	$ 14,554,474	$ 14,880,737	$ 39,448,503	$ 13,152,281	$ 12,815,946	$ 13,480,276	$ 80,573,093	$ 26,547,317	$ 26,206,473	$ 27,819,303	$ 160	*per sq. ft. Below Grade*	*Per Altus Group 2021 Canadian Cost Guide*
On-Site Servicing	$ 831,884	$ 271,170	$ 277,249	$ 283,464	$ 917,919	$ 302,212	$ 305,957	$ 309,749	$ 939,391	$ 305,957	$ 312,816	$ 320,617	$ 750,000	*lump sum*	*Estimate*
Off-Site Servicing	$ 831,884	$ 271,170	$ 277,249	$ 283,464	$ 917,919	$ 302,212	$ 305,957	$ 309,749	$ 939,391	$ 305,957	$ 312,816	$ 320,617	$ 750,000	*lump sum*	*Estimate*
Hard Costs	$ 196,159,353	$ 63,942,366	$ 65,375,741	$ 66,841,247	$ 207,707,947	$ 68,549,427	$ 68,899,592	$ 70,258,928	$ 460,933,097	$ 150,429,744	$ 152,865,931	$ 157,637,422			
per sq. ft. GFA	$ 389	$ 381	$ 389	$ 398	$ 412	$ 408	$ 410	$ 419	$ 458	$ 448	$ 455	$ 470			
Consultants & Management															
Architect	$ 3,923,187	$ 1,278,847	$ 1,307,515	$ 1,336,825	$ 4,154,159	$ 1,370,989	$ 1,377,992	$ 1,405,179	$ 9,218,662	$ 3,008,595	$ 3,057,319	$ 3,152,748	2.0%	*of hard costs*	*Estimate*
Consultants	$ 4,903,984	$ 1,598,559	$ 1,634,394	$ 1,671,031	$ 5,192,699	$ 1,713,736	$ 1,722,490	$ 1,756,473	$ 11,523,327	$ 3,760,744	$ 3,821,648	$ 3,940,936	2.5%	*of hard costs*	*Estimate*
Construction Management	$ 4,903,984	$ 1,598,559	$ 1,634,394	$ 1,671,031	$ 5,192,699	$ 1,713,736	$ 1,722,490	$ 1,756,473	$ 11,523,327	$ 3,760,744	$ 3,821,648	$ 3,940,936	2.5%	*of hard costs*	*Estimate*
Development Management	$ 4,903,984	$ 1,598,559	$ 1,634,394	$ 1,671,031	$ 5,192,699	$ 1,713,736	$ 1,722,490	$ 1,756,473	$ 11,523,327	$ 3,760,744	$ 3,821,648	$ 3,940,936	2.5%	*of hard costs*	*Estimate*
Consultants & Management	$ 18,635,139	$ 6,074,525	$ 6,210,695	$ 6,349,918	$ 19,732,255	$ 6,512,196	$ 6,545,461	$ 6,674,598	$ 43,788,644	$ 14,290,826	$ 14,522,263	$ 14,975,555			
Other Soft Costs															
Insurance	$ 1,961,594	$ 639,424	$ 653,757	$ 668,412	$ 2,077,079	$ 685,494	$ 688,996	$ 702,589	$ 4,609,331	$ 1,504,297	$ 1,528,659	$ 1,576,374	1.0%	*of hard costs*	*Estimate*
Tarion Enrolment Fee	$ 878,828	$ 285,700	$ 296,564	$ 296,564	$ 1,063,955	$ 358,710	$ 346,534	$ 358,710	$ 2,127,910	$ 717,421	$ 693,068	$ 717,421			*Per Tarion*
Legal	$ 980,797	$ 319,712	$ 326,879	$ 334,206	$ 1,038,540	$ 342,747	$ 344,498	$ 351,295	$ 2,304,665	$ 752,149	$ 764,330	$ 788,187	0.5%	*of hard costs*	*Estimate*
Marketing	$ 4,903,984	$ 1,598,559	$ 1,634,394	$ 1,671,031	$ 5,192,699	$ 1,713,736	$ 1,722,490	$ 1,756,473	$ 11,523,327	$ 3,760,744	$ 3,821,648	$ 3,940,936	2.5%	*of hard costs*	*Estimate*
Sales Commissions	$ 19,719,910	$ 6,426,316	$ 6,572,198	$ 6,721,396	$ 26,108,447	$ 8,599,480	$ 8,692,248	$ 8,816,719	$ 53,201,398	$ 17,322,557	$ 17,715,385	$ 18,163,456	4.0%	*of revenue*	*Estimate*
Property Taxes	$ 1,176,980	$ 351,421	$ 395,249	$ 430,311	$ 3,734,587	$ 1,231,611	$ 1,249,496	$ 1,253,480	$ 6,668,405	$ 2,151,910	$ 2,237,441	$ 2,279,055	0.63%	*per year*	*Per City of Markham.*
Property Land Transfer Tax	$ 621,139	$ 211,523	$ 208,165	$ 201,450	$ 1,265,780	$ 436,476	$ 423,046	$ 406,258	$ 1,900,349	$ 658,071	$ 637,926	$ 604,351	2.00%	*of land value*	*Per Ministry of Finance*
Other Soft Costs	$ 30,243,231	$ 9,832,655	$ 10,087,206	$ 10,323,371	$ 40,481,087	$ 13,368,254	$ 13,467,308	$ 13,645,525	$ 82,335,386	$ 26,867,149	$ 27,398,458	$ 28,069,780			
Planning & Permit Fees															
Zoning By-Law Amendment	$ 55,204	$ 18,401	$ 18,401	$ 18,401	$ 55,204	$ 18,401	$ 18,401	$ 18,401	$ 55,204	$ 18,401	$ 18,401	$ 18,401	$ 55,204	*base fee*	*Prorated by GFA*
Site Plan Approval	$ 27,571	$ 9,190	$ 9,190	$ 9,190	$ 27,571	$ 9,190	$ 9,190	$ 9,190	$ 27,571	$ 9,190	$ 9,190	$ 9,190	$ 27,571	*base fee*	*Planning, urban design, engineering base fee. Prorated by GFA*
Unit Fee	$ 1,267,814	$ 422,605	$ 422,605	$ 422,605	$ 1,297,513	$ 437,454	$ 422,605	$ 437,454	$ 2,595,027	$ 874,908	$ 845,210	$ 874,908	$ 2,198	*per unit*	*Planning per unit fee. Prorated by GFA*
GFA Fee	$ 561,456	$ 187,152	$ 187,152	$ 187,152	$ 561,456	$ 187,152	$ 187,152	$ 187,152	$ 1,122,912	$ 374,304	$ 374,304	$ 374,304	$ 1.11	*per sq. ft. GFA*	*Urban design, engineering GFA fee. Prorated by GFA*
% of Cost Fee	$ 231,264	$ 75,385	$ 77,075	$ 78,803	$ 255,181	$ 84,015	$ 85,056	$ 86,110	$ 261,151	$ 85,056	$ 86,963	$ 89,132	13.9%	*of servicing costs*	*Engineering review fee. Prorated by GFA*
Plan of Subdivision	$ 51,901	$ 17,300	$ 17,300	$ 17,300	$ 51,901	$ 17,300	$ 17,300	$ 17,300	$ 51,901	$ 17,300	$ 17,300	$ 17,300	$ 51,901	*base fee*	*Planning, landscape review*
Per ha Fee	$ 34,061	$ 11,354	$ 11,354	$ 11,354	$ 34,061	$ 11,354	$ 11,354	$ 11,354	$ 34,061	$ 11,354	$ 11,354	$ 11,354	$ 21,790	*per ha*	*Planning, community planning review*
Plan of Condominium	$ 46,310	$ 15,437	$ 15,437	$ 15,437	$ 46,310	$ 15,437	$ 15,437	$ 15,437	$ 46,310	$ 15,437	$ 15,437	$ 15,437	$ 46,310	*base fee*	
Building Permit - Residential	$ 839,865	$ 279,955	$ 279,955	$ 279,955	$ 875,001	$ 315,092	$ 279,955	$ 279,955	$ 1,750,003	$ 630,183	$ 559,910	$ 559,910	$ 1.57	*per sq. ft. GFA*	*Multi-unit residential >6 storeys fee*
Miscellaneous Fees	$ 558,611	$ 182,091	$ 186,173	$ 190,347	$ 616,384	$ 202,936	$ 205,451	$ 207,997	$ 1,261,604	$ 410,902	$ 420,113	$ 430,590	$ 1.00	*per sq. ft. GFA*	*Estimate for Minor Variance, Revisions, Signs, Servicing, etc.*
Planning & Permit Fees	$ 3,674,057	$ 1,218,871	$ 1,224,642	$ 1,230,544	$ 3,820,583	$ 1,298,331	$ 1,251,901	$ 1,270,350	$ 7,205,743	$ 2,447,036	$ 2,358,181	$ 2,400,526			
Development Charges															
Apartments - Small Units (<700 sq. ft.)	$ 17,022,578	$ 5,548,876	$ 5,673,263	$ 5,800,439	$ 19,223,093	$ 6,401,371	$ 6,260,712	$ 6,561,010	$ 39,345,940	$ 12,961,399	$ 12,802,112	$ 13,582,430	$ 53,214	*per unit*	*Combined Town, Region & Education Rate*
Apartments - Large Units (<700 sq. ft.)	$ 22,343,614	$ 7,283,382	$ 7,446,651	$ 7,613,580	$ 25,231,981	$ 8,402,356	$ 8,217,728	$ 8,611,896	$ 51,644,966	$ 17,012,962	$ 16,803,884	$ 17,828,120	$ 69,848	*per unit*	*Combined Town, Region & Education Rate*
Parkland Dedication Fees	$ 7,638,136	$ 2,601,095	$ 2,559,808	$ 2,477,233	$ 15,929,419	$ 5,555,935	$ 5,202,190	$ 5,171,294	$ 23,914,047	$ 8,376,641	$ 7,844,572	$ 7,692,834			*Cash in lieu at 1 hectare per 500 units. Refer to land value below*
Community Benefits Charge	$ 1,242,278	$ 423,046	$ 416,331	$ 402,901	$ 2,531,560	$ 872,952	$ 846,092	$ 812,517	$ 3,800,698	$ 1,316,143	$ 1,275,853	$ 1,208,702	4.0%	*of land value*	*Estimate*
Development Charges	$ 48,246,605	$ 15,856,399	$ 16,096,053	$ 16,294,153	$ 62,916,053	$ 21,232,615	$ 20,526,721	$ 21,156,717	$ 118,705,651	$ 39,667,145	$ 38,726,420	$ 40,312,086			
Financing Costs															
Loan and Bank Charges	$ 2,460,115	$ 806,257	$ 820,520	$ 833,338	$ 2,984,602	$ 995,885	$ 988,825	$ 999,893	$ 6,059,895	$ 1,999,541	$ 2,008,257	$ 2,052,097	1.0%	*of loan value*	
Construction Loan Interest	$ 6,766,985	$ 2,217,754	$ 2,256,985	$ 2,292,245	$ 8,209,680	$ 2,739,358	$ 2,719,938	$ 2,750,383	$ 23,254,003	$ 7,672,960	$ 7,706,406	$ 7,874,637			*Refer to financing assumptions*
Financing Costs	$ 9,227,099	$ 3,024,011	$ 3,077,505	$ 3,125,583	$ 11,194,282	$ 3,735,243	$ 3,708,763	$ 3,750,276	$ 29,313,898	$ 9,672,501	$ 9,714,663	$ 9,926,734			
Tax															
HST Before Rebate	$ 56,716,557	$ 18,482,767	$ 18,902,340	$ 19,331,449	$ 75,090,667	$ 24,733,017	$ 24,999,830	$ 25,357,820	$ 153,012,872	$ 49,821,515	$ 50,951,330	$ 52,240,027	13%	*of greater of cost or rev*	*Included in price of unit*
HST Rebate	$ (13,689,147)	$ (4,563,049)	$ (4,563,049)	$ (4,563,049)	$ (14,009,375)	$ (4,723,163)	$ (4,563,049)	$ (4,723,163)	$ (27,999,850)	$ (9,440,026)	$ (9,119,798)	$ (9,440,026)			
Tax	$ 43,027,410	$ 13,919,718	$ 14,339,292	$ 14,768,400	$ 61,081,292	$ 20,009,854	$ 20,436,781	$ 20,634,657	$ 125,013,021	$ 40,381,489	$ 41,831,532	$ 42,800,001			
Contingency															
Soft Cost Contigency	$ 15,305,354	$ 4,992,618	$ 5,103,539	$ 5,209,197	$ 19,922,555	$ 6,615,649	$ 6,593,693	$ 6,713,212	$ 40,636,234	$ 13,332,615	$ 13,455,152	$ 13,848,468	10%	*of soft costs*	
Hard Cost Contingency	$ 19,615,935	$ 6,394,237	$ 6,537,574	$ 6,684,125	$ 20,770,795	$ 6,854,943	$ 6,889,959	$ 7,025,893	$ 46,093,310	$ 15,042,974	$ 15,286,593	$ 15,763,742	10%	*of hard costs*	
Contingency	$ 34,921,290	$ 11,386,855	$ 11,641,113	$ 11,893,322	$ 40,693,350	$ 13,470,592	$ 13,483,653	$ 13,739,105	$ 86,729,544	$ 28,375,589	$ 28,741,745	$ 29,612,210			
Total Development Cost - Excluding Land & Profit	**$ 384,134,185**	**$ 125,255,400**	**$ 128,052,247**	**$ 130,826,538**	**$ 447,626,848**	**$ 148,176,512**	**$ 148,320,179**	**$ 151,130,157**	**$ 954,024,985**	**$ 312,131,479**	**$ 316,159,194**	**$ 325,734,312**			
	$ 665,970	$ 651,463	$ 666,010	$ 680,439	$ 758,284	$ 744,517	$ 771,425	$ 759,357	$ 808,064	$ 784,156	$ 822,184	$ 818,330			
	$ 763	$ 746	$ 763	$ 779	$ 889	$ 883	$ 884	$ 900	$ 947	$ 930	$ 942	$ 970			
Profit															
Ownership Profit	$ 61,624,720	20,082,238	20,538,120	21,004,363	$ 81,588,898	26,873,374	27,163,276	27,552,247	$ 166,254,370	54,132,992	55,360,580	56,760,798	12.5%	*of revenue*	
Profit	$ 61,624,720	20,082,238	20,538,120	21,004,363	$ 81,588,898	26,873,374	27,163,276	27,552,247	$ 166,254,370	54,132,992	55,360,580	56,760,798			
Total Development Cost - Excluding Land	**$ 445,758,905**	**$ 145,337,637**	**$ 148,590,367**	**$ 151,830,901**	**$ 529,215,745**	**$ 175,049,886**	**$ 175,483,455**	**$ 178,682,404**	**$ 1,120,279,355**	**$ 366,264,471**	**$ 371,519,773**	**$ 382,495,111**			
per unit	$ 772,809	$ 755,912	$ 772,830	$ 789,684	$ 896,497	$ 879,543	$ 912,703	$ 897,794	$ 948,882	$ 920,153	$ 966,151	$ 960,928			
per sq. ft.	$ 885	$ 866	$ 885	$ 904	$ 1,051	$ 1,043	$ 1,045	$ 1,064	$ 1,112	$ 1,091	$ 1,107	$ 1,139			

Residual Land Value	Total				Total				Total				
Total Revenue	$ 492,997,761	$ 160,657,901	$ 164,304,959	$ 168,034,902	$ 652,711,182	$ 214,986,996	$ 217,306,211	$ 220,417,975	$ 1,330,034,962	$ 433,063,937	$ 442,884,637	$ 454,086,388	
Less: Total Development Costs Including Profit	$ (445,758,905)	$ (145,337,637)	$ (148,590,367)	$ (151,830,901)	$ (529,215,745)	$ (175,049,886)	$ (175,483,455)	$ (178,682,404)	$ (1,120,279,355)	$ (366,264,471)	$ (371,519,773)	$ (382,495,111)	
Residual Land Value (FV)	$ 47,238,857	$ 15,320,263	$ 15,714,592	$ 16,204,001	$ 123,495,437	$ 39,937,109	$ 41,822,756	$ 41,735,571	$ 209,755,607	$ 66,799,466	$ 71,364,863	$ 71,591,277	
Discount Rate		7%	7%	7%		7%	7%	7%		7%	7%	7%	*Refer to valuation assumptions*
Time from Permit to Completion		2.5	2.5	2.5		2.5	2.5	2.5		3.5	3.5	3.5 *years*	
Residual Land Value at Time of Permit (FV)	$ 39,887,786	$ 12,936,202	$ 13,269,167	$ 13,682,417	$ 104,277,705	$ 33,722,300	$ 35,314,512	$ 35,240,894	$ 165,527,576	$ 52,714,461	$ 56,317,221	$ 56,495,894	
per sq. ft.	$ 79	$ 77	$ 79	$ 82	$ 207	$ 201	$ 210	$ 210	$ 164	$ 157	$ 168	$ 168	
Time from Land Sale to Completion		5.3	6.0	6.8		8.9	9.3	9.8		10.3	11.1	11.9	*Includes developer profit*
Residual Land Value at Time of Sale	**$ 31,474,401**	**$ 10,739,929**	**$ 10,471,296**	**$ 10,263,176**	**$ 65,665,632**	**$ 21,845,967**	**$ 22,241,499**	**$ 21,578,166**	**$ 98,881,615**	**$ 33,200,194**	**$ 33,714,307**	**$ 31,967,114**	
per sq. ft.	$ 62	$ 64	$ 62	$ 61	$ 130	$ 130	$ 132	$ 129	$ 98	$ 99	$ 100	$ 95	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