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Land Value Capture Study

Paying for Transit-Oriented Communities



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Introduction

This study examines the track record to date and further potential to capture increased land value resulting from new transit infrastructure, such that proceeds can be used for the upfront capital costs and related infrastructure essential to the success of transit-oriented communities.

According to the OECD, land value capture is a policy approach that enables communities to tap into land value increases resulting from public policy and investment and reinvest them for community benefit. It is based on the premise that public investment should produce public value.

Land value capture covers a variety of techniques to take advantage of land value increases resulting from infrastructure investments and policy measures. These include dedicated property tax levies, development charges, density bonuses, direct benefit fees in designated areas to cover infrastructure costs, and tax increment financing, where a local government borrows against future tax revenues to be generated from development in a given area over a given period of time. It can also include a share of the direct revenues, to the extent that land rights are publicly owned and subsequently monetized.

Land value capture may have particular relevance for Canadian cities seeking to leverage and expand the benefits of major transit investment. Canadian cities are in the midst of the most significant transit infrastructure building boom in a generation.

Major rapid transit projects are being planned and constructed in Quebec City, Montreal, Ottawa, Toronto, Hamilton, Calgary, Edmonton and Vancouver.

These investments are still funded overwhelmingly through the tax base, even if some provinces such as Ontario and British Columbia rely – especially for major projects – on public-private partnerships for project delivery and often as well for operations.

Federal and provincial capital spending has grown significantly over the past 15 years. But a new post-COVID era of higher interest rates and slower growth may put new pressure on government balance sheets, especially after governments borrowed heavily during the pandemic to stabilize the economy and support the most heavily-impacted citizens.

Such potentially constrained circumstances make this paper timely, and the financial potential of land value capture (LVC) generally. This is especially the case given that Canada's infrastructure needs are hardly expected to ease in the coming decades given population growth, driven overwhelmingly by high immigration, and the benefit that well-conceived and designed infrastructure brings for inclusive growth, including in terms of reduced climate impacts.

Canadian governments -- federal, provincial and municipal -- should then be cognizant of how jurisdictions – both domestically and internationally -- are leaning to varying degrees on LVC for capital investments, reducing the weight on the tax base.

LVC mechanisms, while hardly a panacea in terms of funding solutions, also fit well with the increasingly complex development environment in which transit is being built. Governments expect transit to spark broad urban development, including much-needed housing, and are seeking the right policy means to encourage this.

Such transit investments, ideally, should catalyze, as part of a place-based urban strategy, development of complete communities that are dense and mixed use, and that feature affordable housing, employment opportunities and high-quality public services such as schools, recreation centres, libraries, daycares and parks. Community hubs that co-locate such public services are, as one important example, becoming a common core of transit-oriented communities.

Transit oriented communities have the potential to generate significant increases in land value, especially when accompanied by large increases in approved density to complement new rapid transit. This, in turn, can help to pay for public infrastructure through the right public policy mechanisms.

“Transit oriented communities have the potential to generate significant increases in land value, especially when accompanied by large increases in approved density to complement new rapid transit”

Land value capture is conceptually appealing as it enables governments to tap into the increased land value created through public infrastructure investments. Land value capture creates opportunities to leverage private capital to fund infrastructure that delivers public benefit. Beyond being simply a source of additional funding, LVC can unlock ways to finance up-front critical public infrastructure based on future revenues so that projects advance in a timelier way. Still, the mechanics, timeframes and risks associated with implementation can be complicated, and the amount of capital that can be raised through LVC mechanisms vary.



The purpose of this paper is to examine the practices and potential for transit-oriented land value capture in Canadian cities, and situate it within a global perspective. The paper focuses on market-driven, development-focused approaches to land value capture, which have been widely advocated but not necessarily implemented in Canadian public policy.

The paper begins by identifying the wide array of land value capture mechanisms, and by situating them within the Canadian legislative context. Second, it explores international examples of LVC. Third, it delves in more detail into the Canadian experience with LVC to highlight the types of models and the amounts of money raised in projects nationwide. Fourth, it uses publicly available data to benchmark the kinds of funds raised through market driven LVC tools.

Land value capture is sometimes presented as a “best practice” mechanism to raise major private funding to offset the need for public investment in transit infrastructure. In practice, the amounts of money raised through land value capture mechanisms are likely to be more modest relative to the high costs of major transit infrastructure investment. Nevertheless, it is worth pursuing, both as a strategy to raise critical funds for public transit and to support the realization of transit-oriented communities.

The paper concludes with observations about the role that governments, agencies and the private sector could play in advancing land value capture as a tool to fund the transit infrastructure that supports complete communities. The CIB, in particular, may be well-placed to play a leadership role in addressing two key barriers to LVC - the timing of funding and the allocation of risk - given its mandate and expertise.



**Enterprise Boulevard, Markham,
image courtesy of Municipal Affairs
and Housing Ontario (Flickr)**

Land Value Capture: The What and the Why

Description of Land Value Capture Mechanisms

For more than a decade, there has been a focus in Canadian cities on finding market-oriented approaches for the private sector to finance and fund critical public transit infrastructure. In the early 2010s, Canada's three largest cities, Toronto, Montreal and Vancouver, all commissioned reports on land value capture. The reports highlighted the dual benefits of LVC as a tool to raise funds from development to pay for costly transit investments as well as to support expansion of transit-oriented communities.

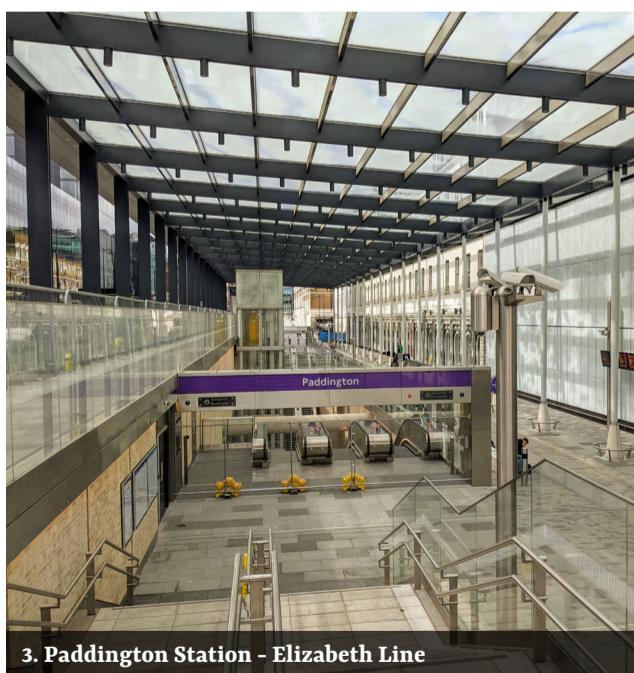
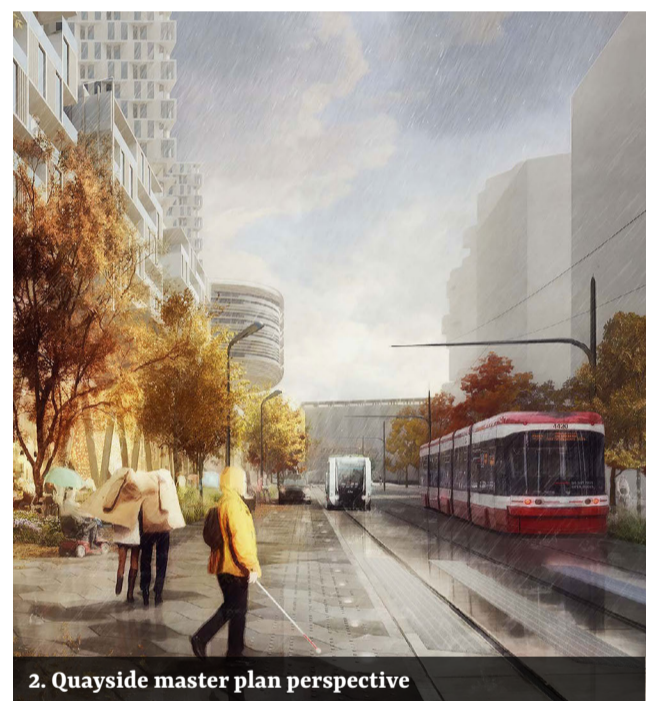
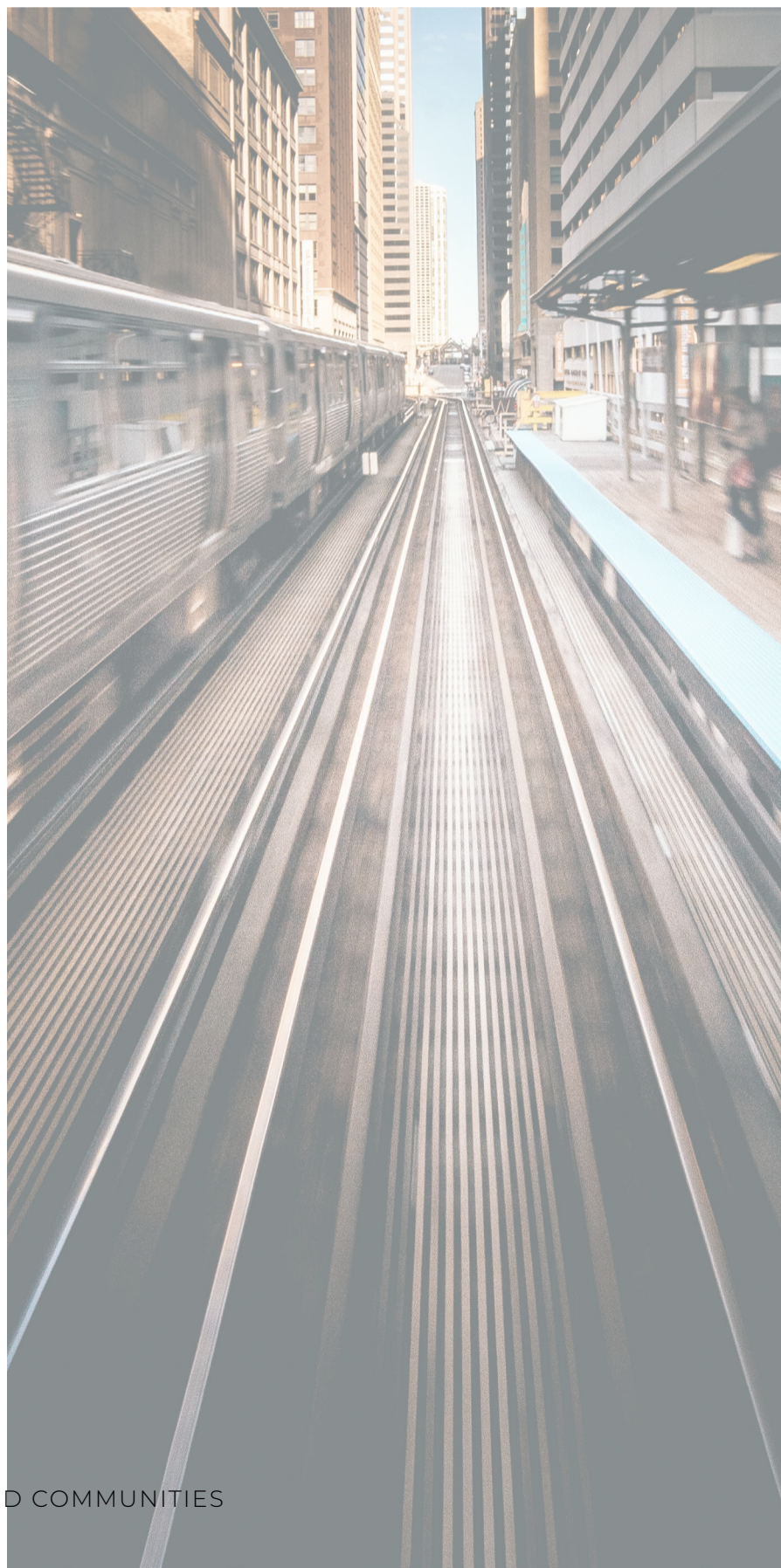
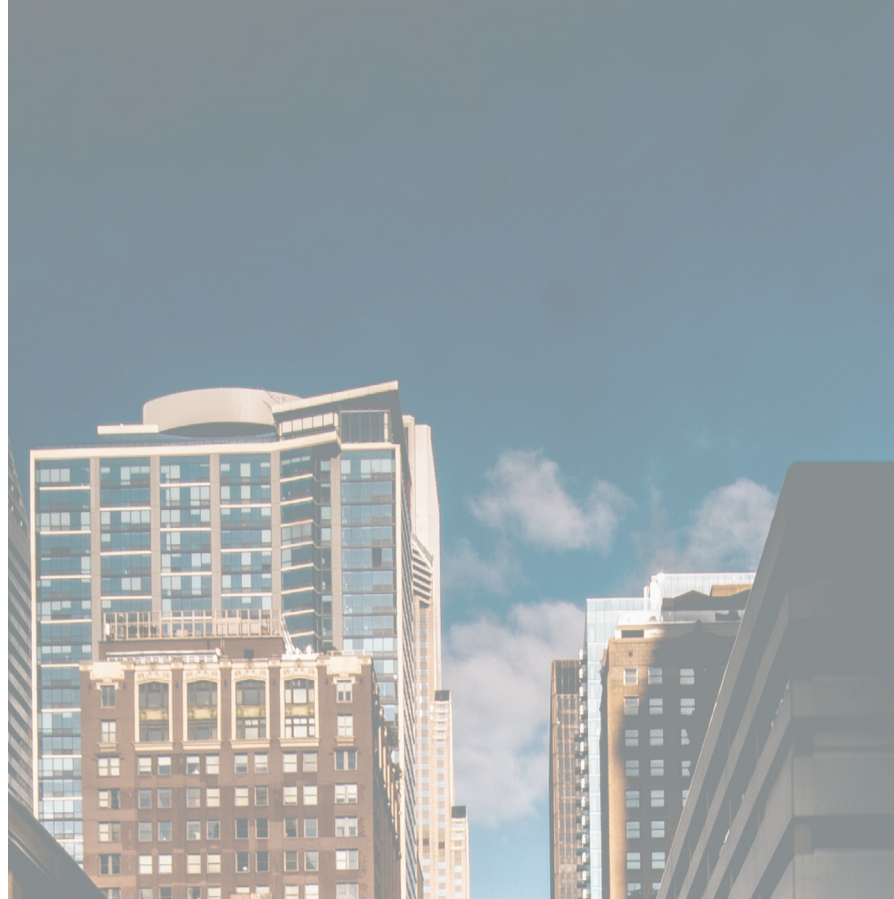


Figure 1. Examples of LVC mechanisms employed in various cities, image courtesy from left to right, top to bottom: 1) Metrolinx, Klokwerks, and SVN 2) Sidewalk Labs, Snohetta, and Heatherwick Studios 3) Wikimedia Commons 4) Translink and GBL Architects

In the years since, the policy focus on development-oriented approaches to land value capture has grown.

In Ontario, in 2018, Metrolinx released its market driven transit development strategy. The strategy calls for the development of transit-oriented communities, reducing the need for government funding of infrastructure by leveraging surplus lands and partnering with the private sector in joint developments. A 2020 report commissioned by Translink in Vancouver reaffirmed the goal of using LVC, and joint transit and land use development in particular, to raise funds and develop complete communities.

A wide array of LVC mechanisms are implemented in both Canadian and international contexts, with the choice depending on prevailing sensitivities, such as natural geographical settings, technical, political and administrative capacity, and market conditions (Medda, 2012).



LVC mechanisms, however, can be grouped under five broad classes: infrastructure levies; development charges; density bonuses; tax increment financing; and land acquisition, investment and disposition (Suzuki et al., 2015).

Infrastructure Levies

A tax or levy on landowners who stand to gain financially from a government investment in infrastructure. Infrastructure levies can either be geographically restricted to property owners within close proximity to an infrastructure investment, or they can be more generally applied to all landowners in a city.

Development Charges (DC)

This is an infrastructure cost-recovery mechanism, also known as Development Cost Charges and Development Cost Levies. DCs are fees collected from developers at the time of permit approvals to help pay for the cost of infrastructure required to provide municipal services tied to new developments, such as roads, transit, water and sewer infrastructure. It is commonly associated with the concept of growth-pays-for-growth.

Density Bonuses

Also described as “incentive zoning”, the benefits from this LVC mechanism are realized when developers provide certain desired features, design elements, or amenities in the locality in exchange for valuable increased density. Examples of these include affordable housing, sidewalk upgrades and heritage preservation.

Tax Increment Financing (TIF)

Developed in the U.S. and common in North America, TIF is commonly designed as a policy approach to revitalize depressed areas. This is essentially a manipulation of property taxes, where a TIF district is established for which bonds are issued to pay for specified infrastructure. With this mechanism, local governments borrow against expected future property tax revenues to fund infrastructure projects. Within the designated TIF district, increases in total property tax revenues, above an agreed baseline, are used to pay for the bonds allocated towards public investment. Importantly, in TIF arrangements it is typically the municipal government rather than private sector project proponents that borrow against future tax revenues.

Land Acquisition, Investment and Disposition

This broadly refers to active involvement in land and urban development processes through purchase or ownership of a large portfolio of land sale/lease, joint development, land readjustment, and/or through partnerships that take direct advantage of land value growth as a result of rezoning, market growth and/or new infrastructure.

Land Sale/Lease: Land value uplift is captured when land or its development rights, whose values have increased due to public investment, is sold to developers in return for an up-front payment, leasehold charge, or annual land rent payments through the term of the lease.

Joint Development: This refers to development projects, such as new transit station facilities and adjacent private properties, typically involving transit agencies and developers. The latter usually contributes with land or money to construction of the station, as their property values will increase due to the transit investment.

Land Readjustment: Here, landowners pool their land and contribute a portion of their land for sale to raise funds and partially defray public infrastructure development costs.

A number of actors and stakeholders are involved in implementation of LVC mechanisms. These include governments and government agencies (e.g., transit agencies), property owners and private developers. Governments establish the planning contexts (e.g., land use policies) which guide implementation of the various LVC mechanisms. Cooperation of property owners is needed, for instance, to pool land for infrastructure projects or to forgo portions of revenues and incomes as taxes. Private interests include financial risk takers with the expertise and capacity to develop real estate for profit.

The table below identifies the main actors involved in the LVC mechanisms identified.

	Government (including public agencies)	Property Owners	Private interests (e.g., developers)
Infrastructure Levies	X	X	
Development Charges	X		X
Density Bonuses	X		X
Tax Increment Financing	X	X	X
Land Acquisition, Investment and Disposition	X	X	X

Table 1. Main actors in land value capture mechanisms

Features of LVC Mechanisms

There are three key defining features of LVC mechanisms, namely,

1. Frequency of collection (WMCI, 2020)
2. Nature of implementation;
3. Geographic area (Metrolinx, 2013)

Frequency of collection refers to the classification of LVC mechanisms as either one-time or recurring. One-time LVC mechanisms are used to derive revenue from land value at a point in time, usually at a transaction or at a development milestone. Examples include property transfer taxes, density bonuses and development charges. Revenues from recurring LVC mechanisms, on the other hand, are collected at regular intervals (e.g., annually). These include TIFs, land leasing and annual infrastructure levies. By nature of their repeated collection, recurring LVC mechanisms have the potential to raise significantly more revenue over one-time collection mechanisms.

Nature of implementation: LVC mechanisms are broadly classified as either development-based or tax-based. Development-based mechanisms usually involve provision of new development or infrastructure, where local governments either have more direct control of development or voluntarily partner with private interests with an agreement to share mutual benefits. Density bonuses, joint developments, land acquisition and investments are typical examples of development-based mechanisms. These approaches also tend to be entrepreneurial and subject to negotiation, carried out on a case-by-case basis rather than through a prescribed formula. Tax-based mechanisms, on the other hand, are levies imposed on developments whose values are determined to be enhanced by public actions (e.g., construction of new roads). Examples include Special Assessment Districts, Development Charges, Tax Increment Financing, Land Value Taxes, Impact Fees and other forms of tax/levies. In tax-based mechanisms, rates and fees are set and apply equally to all applicable landholders.

Geographic Area: LVC mechanisms can be distinguished by whether they are geographically targeted to a single project or area, or apply to the city as a whole. Density bonuses, direct transportation benefiting taxes, tax increment financing, and joint development initiatives all apply to a single project or focused geographic area. Conversely, property tax levies and general development charges apply to a broader geographic area.

Emerging Insights from LVC Mechanisms

LVC mechanisms represent an innovative approach to finance the delivery of infrastructure projects. Given that they are already being applied, insights (both positive and negative) can be summarized.

REASONS TO PUSH FORWARD:

- **Generating more alternatives for funding infrastructure:** LVC adds to the range of revenue sources available to fund public infrastructure, and can enable governments to tap into future revenues to fund infrastructure today. This can accelerate the delivery and improve the results of planned projects.
- **Securing equitable and efficient infrastructure funding:** LVC mechanisms address inequities in existing funding approaches by creating mechanisms so that the beneficiaries of public infrastructure play a role in funding the investments.
- **Enhancing design and value of projects:** LVC mechanisms can be adopted to facilitate smart-growth objectives (resource-efficiency) through transit-oriented development.

ISSUES TO CONSIDER:

- **Administration costs, complexity and poor design:** Some LVC mechanisms may have high transactions costs, which can reduce or outweigh expected revenues. Also, planning officials require the capacity and a transparent process to negotiate positive LVC outcomes (e.g., TIF or joint development arrangements) with investors and private developers.
- **Accurately quantifying and attributing benefits:** Estimation of land value uplift may require specialized econometric expertise to prove the relationship between policy decisions, land value impacts, and appropriate beneficiaries. The accurate estimation of future LVC revenues is especially essential in models such as tax increment financing where borrowing is taking place against such future benefits.
- **Project delivery risks:** LVC implementation often requires multiple stakeholders. This is challenging when there is poor project coordination and/or conflicting project goals.
- **Market risk:** The amount and timing of revenues generated by land value capture mechanisms invariably depend on the strength of local property markets. Market risk influences a variety of LVC mechanisms, including developer interest in density bonuses, and the pace of absorption of new units, and therefore the collection of development charges and future property tax revenues.
- **Community and stakeholder concerns:** The concept of LVC can be poorly understood by the public, who may have concerns about potential impacts on real estate values, or in certain circles about “double taxation”. LVC mechanisms can also be seen to be encouraging development of hyper-density to raise revenue at the expense of building livable communities.
- **Political risk:** Politics can be deeply embedded in the implementation of LVC mechanisms. In jurisdictions like the UK and Hong Kong, political support has been critical to successful LVC implementation. However, changes in government or leadership can bring quick alterations to LVC arrangements, depending on legal arrangements. LVC-related developments can stretch over significant time periods, raising the potential for political change and, thus, raising uncertainty. The stakes can be raised even further if LVC mechanisms serve to maximize revenues (e.g. extreme high-density developments; undersized park space dedication) at the expense of community benefit.

Importantly, the risks associated with LVC are allocated and borne differently among the various partners depending on the LVC model. A summary of associated pros and cons of LVC application across different mechanisms is presented in the table below.

LVC Tool	Features	Pros	Cons
Development Charges	Paid by developers and owners of redevelopment land	<ul style="list-style-type: none"> • Developers pay less for land than they would have otherwise done • No negative impacts on project viability (growth pays for growth) • Provision of newly built infrastructure – enjoyed by users 	<ul style="list-style-type: none"> • If charges are too high, developers may not be able to complete land acquisition or may not be interested in neighborhood-friendly transit-oriented developments
Density Bonuses	Paid by developers in exchange for valuable density	<ul style="list-style-type: none"> • Provision of newly built infrastructure – enjoyed by users and surrounding community • Affordable housing benefits • Increased land values in proximity to new amenities and infrastructure • Developers earn additional profit through additional density • Associated benefits enjoyed without increase in overall tax burden 	<ul style="list-style-type: none"> • Criticized for not being sufficiently transparent • Can be lengthy, complex and unpredictable • Revenue stream can be unpredictable as it is tied to development demand.
Land acquisition, investment, and deposition	Land owners (in) directly involved in urban development	<ul style="list-style-type: none"> • Generates significant revenues • Land can be released at new market prices • Less reliance on other revenue sources including property taxes 	<ul style="list-style-type: none"> • Issues of potential gentrification • Requires significant upfront capital outlay • Expensive land premiums can hinder participation of private developers
Infrastructure Levies/Property Taxes (including TIF)	Levying a portion of increase in land values attributable to transit investments	<ul style="list-style-type: none"> • Source of periodic revenue to local governments • Can borrow against future revenue to accelerate infrastructure investments. 	<ul style="list-style-type: none"> • Large taxes reduce residential property values and the net operating incomes for landlords • Tax is un-related to ability to pay • TIFs are only effective where real estate markets are strong

Table 2. Pros and cons of each LVC mechanisms

Land Value Capture: The Canadian Legislative Context

LVC mechanisms have been applied to varying degrees in Canada, and with mixed results. This variety can be attributed to many factors that either support or constrain LVC implementation. (See the appendix for a detailed cross-Canada legislative scan.)

In Canada, responsibility for land use and infrastructure policy, planning and funding is fragmented among all orders of government and, within each government, among multiple departments/ministries and agencies. Across the country, land use planning is governed by provincial legislation. Provincial governments set the rules and frameworks for planning, growth and development, and the ways in which LVC mechanisms can be applied.

For instance, in Ontario and British Columbia, density bonuses are permitted, but the funds must be used for local amenities rather than citywide projects. Tax increment financing is permitted by provincial legislation in Alberta, Manitoba, and Ontario, but in Ontario it requires specific provincial approval and has not yet been used.

Municipalities are primarily responsible for implementation of the land use system and more specific LVC approaches. They create official plans in line with provincial policy and are directly responsible for zoning, development approvals and permits. Municipalities, then have a degree of discretion to establish land use plans and to set their own property tax and development charge regimes, provided they are consistent with the applicable provincial policy.

Municipalities are heavily dependent on property taxes and development related charges and fees as key sources of revenue. In international contexts, such as Germany, local government autonomy has been crucial to effective implementation of LVC mechanisms (Given & Reisman, 2019). However, in Canada, the powers of local governments are more proscribed by provincial government oversight and intervention. For instance, planning decisions made at the local level (e.g., development schemes, land acquisitions) may need approval from a ministerial portfolio. Provincial governments also use ministerial zoning orders to

take greater control of development decisions. And provincial governments such as Ontario and Quebec are becoming increasingly involved in designating LVC policies, such as joint development initiatives in Ontario and direct benefit taxes near a new transit line in Quebec.

Finally, the federal government plays a limited role in urban land use planning and land value capture. The federal government holds some prime large brownfield lands in cities across Canada through its departments and crown agencies, especially Canada Lands Co., and those are at various stages of redevelopment.

Otherwise, the federal government does not have jurisdiction over urban planning decisions or the taxation of land, nor does it lead the prioritization of urban transit projects. The federal government may incentivize the application of LVC in more indirect ways. It can encourage place-based urbanism and intense transit-oriented communities through its infrastructure and housing programs (and is displaying increasing signs of late that it is interested in doing just that). It can also develop national programs that support the roll out or expansion of LVC by municipalities and provinces.

The fragmented ecosystem of land ownership and urban land use policy can complicate the assembly of land and coordination of development. Unlike jurisdictions such as Hong Kong, with its State leasehold land tenure system, many prime areas adjacent to transit stations across Canada have fragmented ownership involving multiple public and private entities. This often makes it difficult to convene stakeholders to find common ground (literally and figuratively) and to chart a forward path to development (Siemiatycki & Fagan, 2021).

Land Value Capture in Action (International)

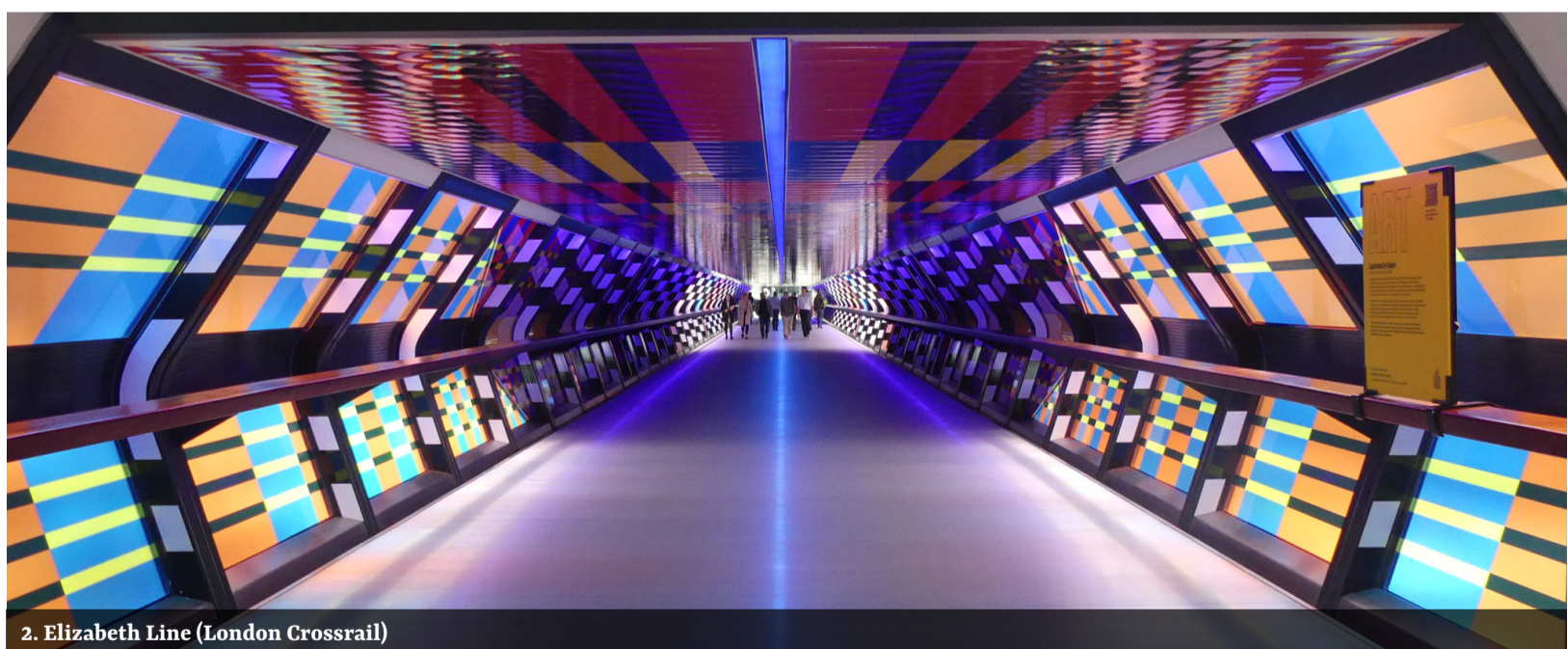


Figure 2. International examples of land value capture applications

There are many examples of LVC applications internationally, and some in a Canadian context too. LVC mechanisms have been implemented in the United States, Germany, Hong Kong, United Kingdom, Ethiopia, Australia, among others.

1. Hong Kong Mass Transit Railway Corporation (MTRC): Rail Plus Real Estate Model
2. Elizabeth Line (London Crossrail): Direct Benefitting Area Charges
3. Northumberland Line - E-Rail Method (LVC Contribution Agreements)



Figure 3. MTRC Tsing Yi Station, image courtesy of the Wong Tung Group

1. Hong Kong Mass Transit Railway Corporation (MTRC): Rail Plus Real Estate Model

Hong Kong is widely acknowledged as the global leader in land value capture, enabled by the city's unique combination of constrained urban geography, immense density, high property prices, unique land ownership system, an entrepreneurial state, and a transit corporation with deep expertise in transit and development.

The Rail + Property Model is at the centre of the Mass Transit Railway Corporation's (MTRC) business model, capturing real estate income to finance the capital and operating costs of new railway lines. The basic mechanism involves public-private transactions and partnerships, aimed at reducing MTRC's exposure to the real estate market and related risks. This model has been adopted to develop several infrastructure projects in Hong Kong, including Tin Hau Station, Island Line and Kowloon Station, Airport Express.

In Hong Kong, land is owned by the State. In the Rail + Property model, the government grants development rights above and around stations to the MTRC at the full market price before the arrival of the rail infrastructure. The MTRC then acts as the master planner for the site, coordinating the infrastructure, services, and property development among stakeholders. The MTRC selects development partners through competitive tenders and negotiates to fund the construction of the properties. The MTRC has a variety of financial approaches which are used on a case specific basis, including land leases, taking lump sum up front payments for development rights, or agreeing to a share of the development profits.

Through this Rail + Property model, the MTRC generates sufficient revenue to fund transit project capital costs as well as operations and maintenance. The Hong Kong transit system carried an average 4.29 million riders per day in 2021 and, when combined with high density property development, the MTRC is one of the few urban transit systems in the world to generate an annual profit (Yau, 2022). In fact, in 2022, while MTRC ridership was below pre-pandemic levels, the corporation still generated a profit of HK\$4.73 billion through the first half of the year, bolstered by strong property development revenues (Yau, 2022).

At the same time, the MTRC does not simply aim to build anonymous forests of high-rise towers beside transit stations. In recent developments, the MTRC has been especially intentional in creating complete transit-oriented communities that include a wide mix of social and commercial uses alongside dense housing. In addition to community benefits, the mixed-use communities generate commercial real estate revenues for the MTRC. Overall, the Rail + Property model is fundamentally different from most LVC models, as it maintains a high level of control for the MTRC to plan the transit and real estate projects and to generate short and long term revenues (Suzuki et al., 2015).

In terms of risks associated with the Rail + Property model, the MTRC is vulnerable to declines in the city's real estate market, as development covers a significant share of the corporation's revenue. The MTRC also may have a conflicting corporate interest to create plans that emphasize density to maximize development revenues, rather than emphasizing the planning of complete communities. Nevertheless, to date the Rail + Property model has generated a diverse range of revenue sources (development revenues, fares, commercial leases) that have been resilient in the face of ridership drops caused by the pandemic, and the corporation has used its expertise to promote complete transit-oriented communities.

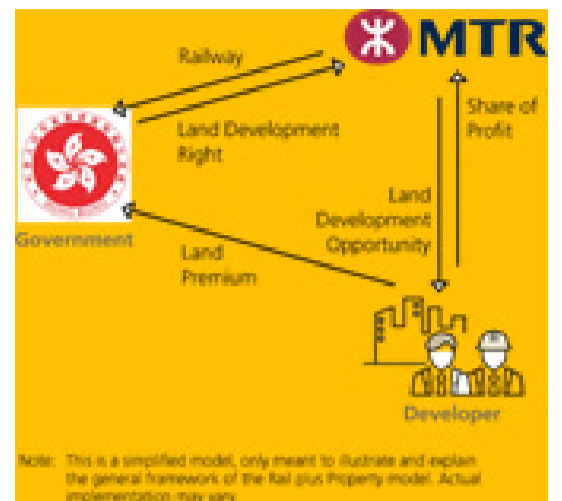


Figure 4. The MTRC Rail Plus Real Estate Model, image courtesy from the MTR Corporation Ltd.



Figure 5. Woolwich Station of the Elizabeth Line

2. Elizabeth Line (London Crossrail): Direct Benefitting Area Charges

The Elizabeth Line (formerly Crossrail) is one of Europe’s largest transportation projects. The line opened in May 2022, with full peak period service across the entire route to begin by May 2023. It is a major cross-London rail link developed to serve the entire region, including the West End, the City, and Canary Wharf and linking existing routes in the east to Heathrow Airport in the west.

The Elizabeth line is the most significant addition to London’s transport network in a generation, with 41 stops, including 10 newly built stations. The new railway is expected to reduce travel times, add passenger capacity, make the system more accessible, and foster economic growth (Crossrail Ltd, 2018).

Construction of the Elizabeth Line was made possible through an innovative programme of project financing and land value capture. It requires the Greater London Authority to fund £6.9 billion of the £18.8 billion project,

which is raised through contributions from London businesses, developers and other beneficiaries. The majority of the revenue is raised through tax-based levies rather than more market-oriented, development-based approaches. The relative contributions are highlighted below.

Funding and financing

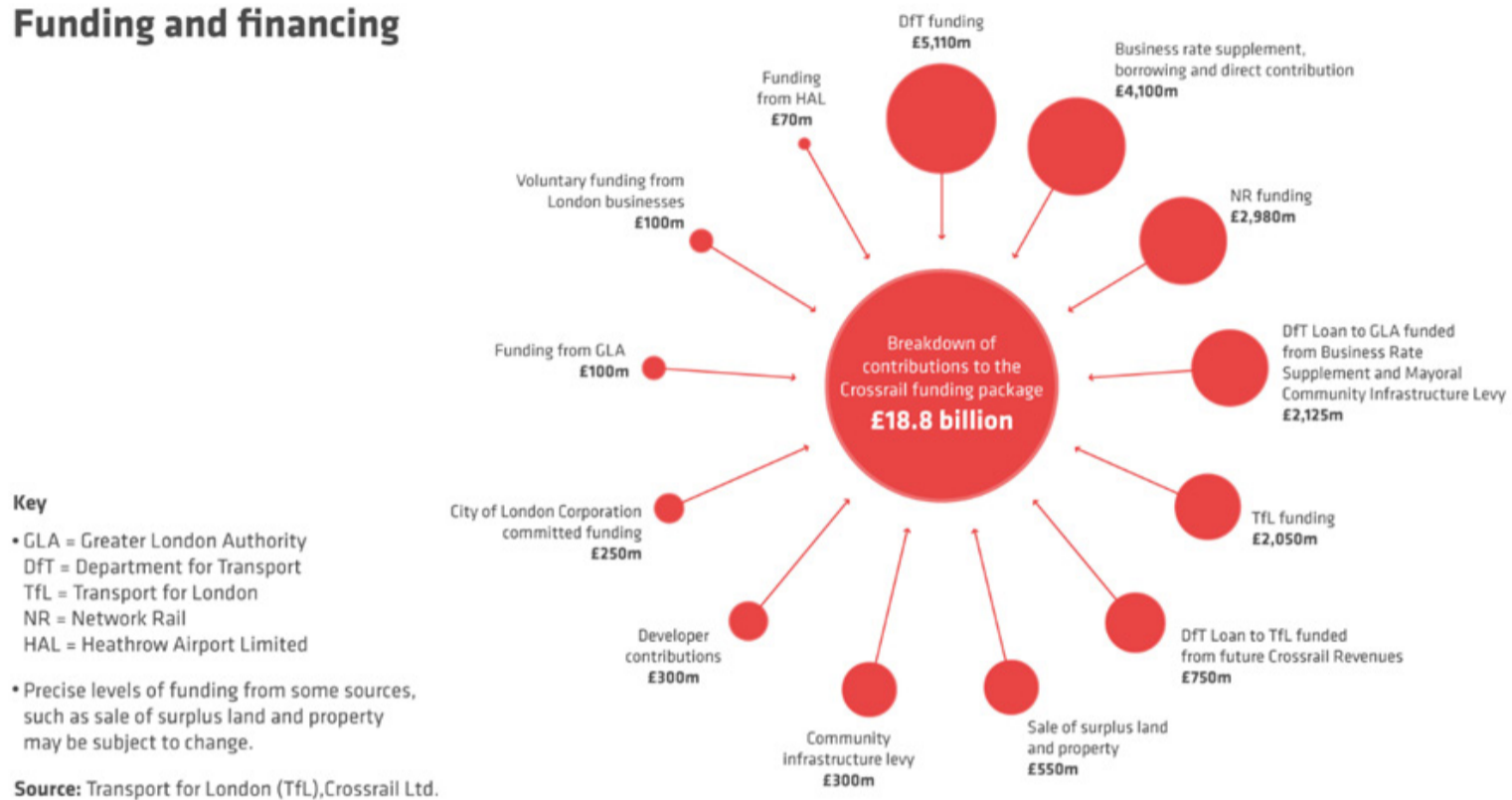


Figure 6. Funding and Financing model of the Elizabeth Line, image courtesy from Transport for London Crossrail Ltd.

BUSINESS COMMUNITY: BUSINESS RATE SUPPLEMENT (BRS)

The largest share of funding from land value capture for the Elizabeth Line comes from the introduction of a business rate supplement, a tax-based approach to land value capture. London introduced a two pence business rate supplement for non-residential properties with a ratable value over £55,000/annum (later increased to £70,000/annum). The threshold is intended to exempt smaller businesses and ensure that larger business that are better able to absorb the cost bear the load. Indeed, in 2022-2023, 85% of all non-business ratepayers were exempt from the Elizabeth Line BRS. The BRS is designed to support £4.1 billion of bond borrowing by the GLA, and the levy is to end once the bonds are fully repaid, which is forecast to be no later than 2041 (Greater London Authority, 2022).

While London introduced the BRS, a mechanism was still required to convert the expected long-term revenue stream from the BRS into upfront capital that could be invested to construct the project. London considered and ultimately rejected a more conventional TIF style financing approach, in which government-issued bonds would be repaid directly by BRS revenues. Such an approach would have transferred the risk of possible BRS revenue shortfalls to the bond investors but would have been less secure and come at considerably higher borrowing costs. Rather, with its large balance sheet capacity and strong credit rating, London secured more favourable interest rates by floating the bonds and bearing the revenue risk from the BRS not meeting expectations (Buck, 2017).

PROPERTY DEVELOPERS: SECTION 106 AGREEMENTS,
COMMUNITY INFRASTRUCTURE LEVY (CIL) AND
DEVELOPER CONTRIBUTIONS

In addition to the BRS, a variety of other mechanisms were introduced to capture some of the financial uplift generated by the Elizabeth Line to fund the project. First, in 2012, the Mayor of London introduced a Community Infrastructure Levy (CIL) on all new residential and commercial developments. The CIL is similar to development charges and is imposed by local authorities on both commercial and private residential developments. The rate applied varies from £20/sqm to £50/sqm depending on location. The CIL is intended to raise £300 million, after which it will be removed (Greater London Authority, 2016).

Second, local authorities continued to negotiate Section 106 agreements (a form of planning obligation payment) with developers for transit-oriented projects that would provide funding for the Elizabeth Line. It was expected that this development-based land value capture approach would contribute £300 million to the Elizabeth Line. However, a report from the Greater London Authority found that by 2016 the Community Infrastructure Fund, a tax based LVC mechanism, had raised three times more money than the Section 106 planning obligations, a development based LVC approach (Greater London Authority, 2016).



Figure 7. Heathrow Airport Train Station, image courtesy of Tom van Beveren, source: Flickr

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“The bulk of the direct benefitting funds for the Elizabeth Line were raised through tax-based LVC models such as levies and development charges, rather than more entrepreneurial approaches to development-based LVC.”

The Greater London Authority also used a variety of other market-oriented land value capture approaches. On prime, large-scale sites, developers made voluntary payments towards the Elizabeth Line in exchange for particular development rights. For instance, at Canary Wharf, a developer paid £150 million in exchange for the opportunity to develop residential and commercial spaces above the station. Surplus land and property was sold to raise £500 million for the project. And the private owners of Heathrow Airport also contributed £70 million as recognition that an improved train connection provided by the Elizabeth Line would increase the value of their asset, and could be recouped through landing charges.

Taken together, risks can be seen as accruing to the local government and developers in various ways, depending on the LVC mechanism. The bulk of the direct benefitting funds for the Elizabeth Line were raised through tax-based LVC models such as levies and development charges, rather than more entrepreneurial approaches to development-based LVC. The local government borrowed against future expected revenues from new levies and development fees, and bore the risk of potential shortfalls. On specific sites at locations throughout the city, developers made upfront financial contributions to the massive rail project and took the market risk on returns from future property developments. Overall, political will, community and business support and an innovative finance program that tapped into land value uplift in a diversified range of ways enabled the Elizabeth Line to proceed.

SOURCE: (BUCK, 2017)



Figure 8. Northumberland rail line route, image courtesy of E-Rail

3. Northumberland Line – E-Rail Method (LVC Contribution Agreements)

The reintroduction of passenger services on the Northumberland Line (NL) by the Northumberland County Council (NCC) aligns with key local and regional policy to promote economic growth across Northumberland, England. The line (formerly known as the Ashington, Blyth and Tyne line) closed to passengers in the 1960s. It was allocated £34m to commence early works by the Department for Transport (DfT), with 18 miles of track upgraded and six new stations (Longhorn, 2021). The new line is expected to open in 2024.

The LVC model for the Northumberland Line addresses the timing gap between when the large upfront capital outlay for the project is required, and when the revenue from land value uplift is generated over time (Hazel, 2021). In the model developed by E-Rail, the initial capital funding for the project comes directly from the government, with arrangements to secure long-term capital through LVC that will repay a portion of the initial government funding. Specifically, E-Rail secured contribution agreements

with landowners along the route. These LVC Contribution Agreements represent a share of the expected uplift in land values along the route and will pay back a portion of the initial public investment, thereby lowering the long-term burden on the tax-payer (Longhorn, 2021). Through this mechanism, E-Rail secured between 25% and 30% of the capital funding required for the NL.

DESCRIPTION AND APPLICATION OF THE E-RAIL METHOD (LVC CONTRIBUTION AGREEMENTS)

The E-Rail method is based on the principle that land and property within one km of a transit station increases in value due to planning approvals (e.g., housing stock increases in value on average by 20%). Presented with this “new money” (or uplift), there is a mutual advantage for both the transport provider and the landowner/developer to share in the increase.

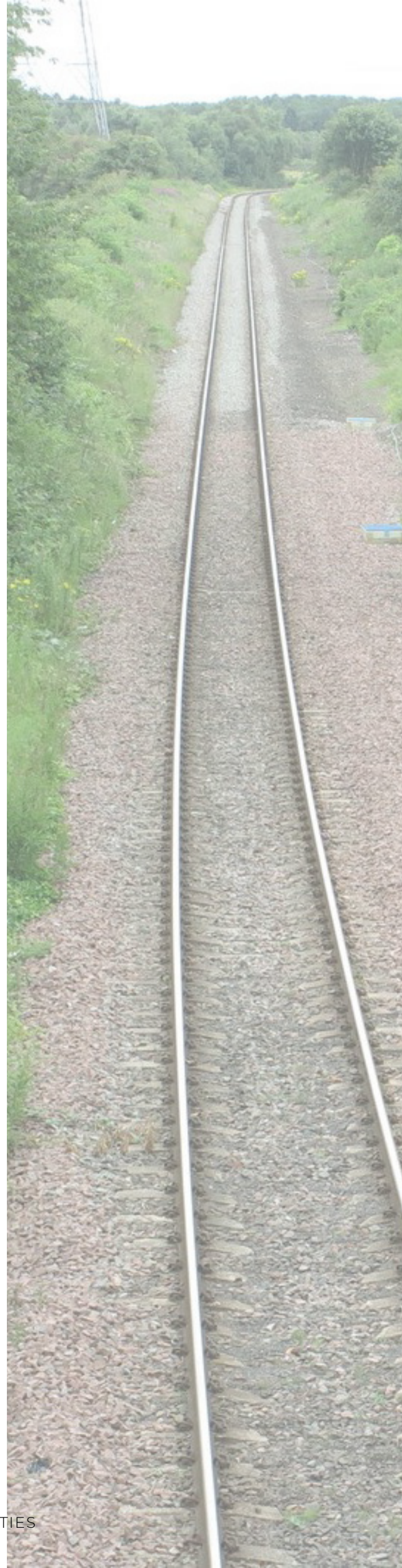
An independent value calculation was done regarding the NL plan to support the estimation of the likely uplift, and as part of the risk assessment process. This provided confidence, and encouraged land owners to contribute.

Importantly, LVC was considered during the early stages of planning. In 2014, an Initial Stage 1 report confirmed that the rail project would generate significant funding. This was followed by detailed discussions to identify potential contribution agreement opportunities and negotiating with land owners. Between mid-2019 and late 2020, numerous contribution agreements were signed, delivering a total of 21 sites with LVC secured. Thus, the entire process to structure, evaluate and gain approval for the LVC arrangement took six years.

The early consideration of LVC was critical. It established the opportunity for LVC in its formative stages, which increased the chances of the NL plan happening. It also maximized the opportunity for participation in LVC by landowners/developers.

With this LVC contribution approach, the government has made the initial outlay of funding for the capital costs of the project. A potential risk is that a soft property market or other dynamics related to the investment mean that land values do not rise as quickly as predicted. In this instance, government bears the financial risk that the LVC revenues generated are not as large as expected and would have to cover the shortfall from other funding sources.

SOURCE: (HAZEL, 2021)



Lessons Learned from International Examples

The three LVC examples are summarized now to highlight the following issues: 1) funding raised 2) process for implementation, 3) potential risks and 4) key actors. Key insights across these themes are also highlighted.

	MTRC, Hong Kong	Elizabeth Line, UK	Northumberland ABT Railway
Funding raised	<ul style="list-style-type: none"> HK\$171.8 billion (1980 - 2005) 	<ul style="list-style-type: none"> BRS: £4.2 billion by 2041 at the latest CIL: £300 million (rates: £20/sqm and £50/sqm) £300 million (Developer Contribution) 	<ul style="list-style-type: none"> 37% of capital cost
Process for implementation (Risk allocation)	<ul style="list-style-type: none"> Granting of development rights (at pre-rail prices) by the government MTRC finances significant costs during railway construction and operation Development costs and risks covered by private developers Early consideration of land value capture Revenue derived from property rental and management, commercial station business and property development (including residential and commercial ones) 	<ul style="list-style-type: none"> Borrowing against future revenues expected from beneficiaries (i.e., BRS and CIL), with Greater London Authority bearing the risk that revenues do not meet expectations Collaboration between public agencies, businesses, and property development companies Early consideration of land value capture 	<ul style="list-style-type: none"> Upfront funding of project by the Government (£166 million) LVC Contribution Agreements by landowners to offset capital cost Early consideration of land value capture
Potential Risks	<ul style="list-style-type: none"> Real estate investment risks Opportunity cost, to government, from low development-right costs given to the MTRC 	<ul style="list-style-type: none"> Greater London Authority bears the risk that BRS and CIL revenues do not meet projections Project risks (for developers) 	<ul style="list-style-type: none"> Unrealized revenues due to overestimated land value uplift
Key Actors	<ul style="list-style-type: none"> Government *MTRC Private developers 	<ul style="list-style-type: none"> Government *GLA *DfT *TfL Private developers Business Community 	<ul style="list-style-type: none"> Northumberland County Council Government DfT *E-Rail Limited Land owners
Notes:	<ul style="list-style-type: none"> *MTRC - MTRC led LVC implementation *GLA - Greater London Authority 	<ul style="list-style-type: none"> *DfT - Department for Transport *TfL - Transport for London 	

Table 3. Summary of lessons learned from international examples

Key Insights

- There is an initial challenge of converting expected future benefits/income streams to present-day cash to finance transit projects. Thus, upfront funds/bonds are borrowed or provided by the government and subsequently funded by revenues generated through LVC mechanisms
- Clarity in implementation processes plays a key role in successful delivery of transit-related infrastructure
- Early consideration of LVC (e.g., evaluation of land value uplift and subsequent securing of agreements) is important for business case certainty and the securing of risk
- Strong support of LVC mechanisms by all key players is vital and brought about through good overall relationships established through structured partnerships
- There should be recognition of transit-oriented infrastructure as a backbone of urban and regional development (i.e., smart-growth principles).
- Implemented LVC mechanisms should reflect specific spatial and local contexts, including real estate market conditions
- Several risks, including project and market risks, are inherent to LVC mechanisms.
- Development based LVC mechanisms that include upfront payments from developers in exchange for development rights and joint development agreements have been used to transfer property market and construction risk to the private sector. Where most successful, the public sector maintains control over community master planning and coordination of different land uses and stakeholders.

LVC in Action (Canada)

Canadian jurisdictions have also adopted LVC mechanisms to fund transit infrastructure. Indeed, LVC is not a new concept in Canada, having been used as one means to fund the transcontinental railway in the late 19th - 20th century. More recent Canadian experiences draw findings about the kinds of key players involved, the order of magnitude and the timing of revenues raised, and the risks associated with such deals.

Taxation-based LVC in Canada

Canadian jurisdictions generally have used taxation based LVC mechanisms to support transit projects through general property tax levies for specific infrastructure or through the collection of one-time development charges, or through public land sales.

In Greater Toronto, for instance, the City of Toronto implemented a dedicated 30-year property tax levy to fund its portion of the \$3.6 billion Scarborough subway extension. The City estimated that it would raise \$745 million to support the project (City of Toronto, 2013). To fund their share of the Toronto York Spadina Subway Extension (TYSSE), the City of Toronto and York Region each introduced a dedicated development charge on all new housing and commercial units. The one-time development charge fee is paid at the time that the building permit is issued and depends on the type of unit being developed. The TYSSE transit charge ranges from \$1,400 per unit for a small apartment to \$3,448 per single family home in York Region, and \$1,004 for small apartments to \$2,733 for single family homes in the City of Toronto. Again, it is not geographically targeted to those property taxpayers or developments that are direct beneficiaries by being close to the new infrastructure (City of Toronto, 2020).

In Montreal, a more targeted direct benefiting transportation tax has been implemented to fund a portion of the Réseau express métropolitain electric train system (REM), currently under construction. The REM funding model originally envisioned the developer partially paying for the project through land value capture of future property tax revenues near the transit stations, but this was scrapped in favour of a fixed \$512 million contribution from the regional

transit authority. The Province of Quebec then mandated that municipalities collect a tax of \$10 per square foot on all development activity within zones of 500m to one km from the 26 station areas on the new line, which was phased in over a three-year period starting in 2018. The tax applies to all commercial and residential renovations and new construction over a minimum size or cost threshold. It is required that the tax is collected by municipalities on behalf of the regional transportation authority (BOMA Quebec, 2018).

Critics of the geographically targeted transportation tax have argued that it is likely to be passed on by developers to the end users, raising prices and rents and thereby challenging the affordability of these transit-oriented communities (Marotte, 2018). At the same time, it bears noting the order of magnitude of the amount of money likely to be raised by the tax. Even if 51.2 million square feet of development took place within the transportation tax zone over time (covering the full amount of the \$512 million funding contribution), the tax would still cover just 7.4% of the REM project's \$6.9 billion capital costs. This is well shy of the estimate in a 2014 National Bank study that LVC could fund up to 35% of the REM project's capital costs (National Bank of Canada and George Hazel Consultancy, 2014).

In these LVC models, municipalities and provinces use existing tax collection mechanisms, and the rates of tax collected are determined by schedule rather than discretion or negotiation with developers. The public maintains a high level of control over the design and implementation of the transit project being delivered,

and the public bears the market risk that property-related revenues fall short of the funding committed to build the transit project.

It is also relevant to highlight two LVC mechanisms that are used to fund infrastructure and local placemaking initiatives but have not been used widely to finance major transit initiatives. Density bonusing is commonly utilized by municipalities across Canada, but provincial legislation typically mandates that the revenues generated must be used on local amenities like affordable housing and streetscape upgrades. It has not generally been applied to major transit infrastructure investments. And tax increment financing has been permitted by provincial law in Alberta and Manitoba and used to fund infrastructure that supports development in Calgary and Winnipeg, but not major transit projects (CMLC, accessed 2022; Province of Manitoba, 2018)*. In Ontario, provincial legislation was enacted in 2006 to permit tax increment financing, but it has never been deployed. In Vancouver, a 2020 report for Translink on land value capture as a source of revenue recommended against using TIF arrangements, on the grounds that it is more effective to borrow against the entire tax base rather than a smaller defined TIF zone in jurisdictions that do not have trouble with general borrowing (Coriolis Consulting Corp., Wollenburg Munro Consulting Inc., 2020).

The advantages of the current LVC approaches for transit infrastructure lie in their conceptual and administrative simplicity, their long-established presence and acceptance with key stakeholders, and the relative avoidance of political risk caused by long-term financial arrangements that may prove controversial and/or constrain future public policy decisions.

However, these typical Canadian approaches do not utilize the full range of LVC models applied in other jurisdictions, while governments ultimately bear the market risk that future development or tax revenues will not raise the predicted amount of funds to cover any upfront public borrowing. Canadian jurisdictions have not typically used more complex or development led LVC models, such as tax increment financing, joint development models, or commercial transactions (such as for private developers to build on top of transit stations in exchange for funding a portion of the station costs).

In recent years this has begun to change.

*To provide an indication of the scale of funding raised through TIF arrangements, in Calgary since 2007 the City has invested \$396 million in infrastructure in the large downtown east River District, unlocking nearly \$3 billion of investment in the area. It is estimated that the progressively increasing uplift in tax revenue collected over the course of the 40-year term of the TIF arrangement will be sufficient to fund the ongoing infrastructure investments and placemaking initiatives to complete the project.



Figure 9. Artistic rendering of Capstan Station, image courtesy of Translink and McFarlane Biggar Architects & Designers

CAPSTAN STATION, VANCOUVER: PAY-AS-YOU-GO

Capstan Station is a new infill transit station being added to the Canada Line rapid transit system in Richmond, British Columbia. As early as 2007, the station was scheduled to open shortly after the inauguration of the Canada Line in 2010. Funding was planned through an upfront contribution from a trio of developers as part of rezoning for a dense new community on a large adjacent lot. However, the developers pulled out as the deadline approached, arguing that the recession at the time made the upfront contribution to the station unfeasible.

In 2012, the City of Richmond reached a new agreement with the transit agency Translink and the developers to fund station construction. The municipality would collect a density bonus of roughly \$8,500 per unit from the 6,000-unit development, and transfer the funds to Translink to design and build the station. Construction was planned to begin when sufficient revenue was collected. The City originally expected it to take 15 years, to 2027, to collect the revenue and construct the station, and for development revenues to cover the entire cost of the station. However, strong development in the area accelerated the timeline to 12 years. Development revenues have funded \$31.5 million or 61% of the \$52 million station cost. The Capstan Station is under construction, with the opening scheduled for 2023 (Daily Hive, 2021; Translink, 2022).

A strength of the funding model applied to Capstan Station is that it raises private funding from the land value uplift for the transit infrastructure necessary to make the transit-oriented development successful, and that the public sector maintains control over the design and integration of the station into the surrounding community. In this case, the City of Richmond and Translink have ensured that the station is of a high design quality.

However, the pay-as-you-go approach of collecting private sector development revenue before building the station means that the project timing was tied to the shifting interests of the private developers and to the strength of the property market. In this case, it took over a decade longer than originally planned for the Capstan Station to be built. As well, while the Capstan Station development had many features that made it ideal for land value capture – a large site dependent on transit upgrades, a strong and sustained local property market, sophisticated developers, an engaged government partner – it is noteworthy that this LVC approach raised only \$32 million in nine years. This is not a large amount in the context of the high cost of building major public transit infrastructure.



Figure 10. Conceptual Rendering of Mimico GO Station, image courtesy of Metrolinx, Klokwerks, and SVN

MIMICO GO STATION: MARKET-DRIVEN DEVELOPMENT

For fifteen years, Greater Toronto's regional transit agency Metrolinx has sought to tap into LVC mechanisms to fund transit investments, particularly by partnering with private developers. The Mimico GO station redevelopment is an early example of the promise and peril of a market driven approach. The Mimico GO station was built in 1967 as one of the original stops on the provincially owned regional commuter rail system. It is in significant need of refurbishment and upgrading, including to meet contemporary accessibility standards.

In 2008, Metrolinx struck a memorandum of understanding with a private developer to build the city's first condominium project directly connected to a GO station at Mimico, along with 141 parking spaces underground. The project was lauded by politicians and planners as an innovative approach to private sector led transit-oriented development that brings housing closer to transit (Bridge, 2014; Urban Toronto, 2020). However, Metrolinx cancelled the deal in 2012 when the developer ran into financial difficulty. The condominium project proceeded, but it went into receivership five years later before completion.

In 2018, Metrolinx announced a more ambitious deal to redevelop the Mimico GO station through a partnership with a new private developer. Under the 2018 arrangement, the station upgrades are estimated to cost \$102 million, which Metrolinx will fund through

the sale of adjacent land that served as a bus terminal and sale of the value of the rights to develop above the station (CBC, 2018; Metrolinx, 2018). The selected developer owns other nearby lands, which are being planned as a large 2.3 million square foot transit-oriented community. In total, as announced, Metrolinx is to receive approximately \$44 of private investment in transit infrastructure per square foot of private property development (Landau, 2021). Metrolinx will remain in control of the station project timelines and station design. Four years after the public-private partnership was announced, the station upgrades and surrounding developments remain at the planning and design stage and construction has yet to begin.

The joint transit and real estate development deal has the potential to raise in the order of \$50-\$105 million in upfront private capital to fund public infrastructure, depending on the potential density and availability of adjacent publicly owned land for sale. However, the Mimico case also highlights that public-private partnerships for joint development can take a long time to plan and deliver if the projects go forward at all. Transit infrastructure development that is dependent on real estate deals introduces considerable unpredictability and market risk. Mimico station is still not upgraded with the attendant benefits on the surrounding community a full 14 years after Metrolinx struck its initial deal with a private developer for the site.

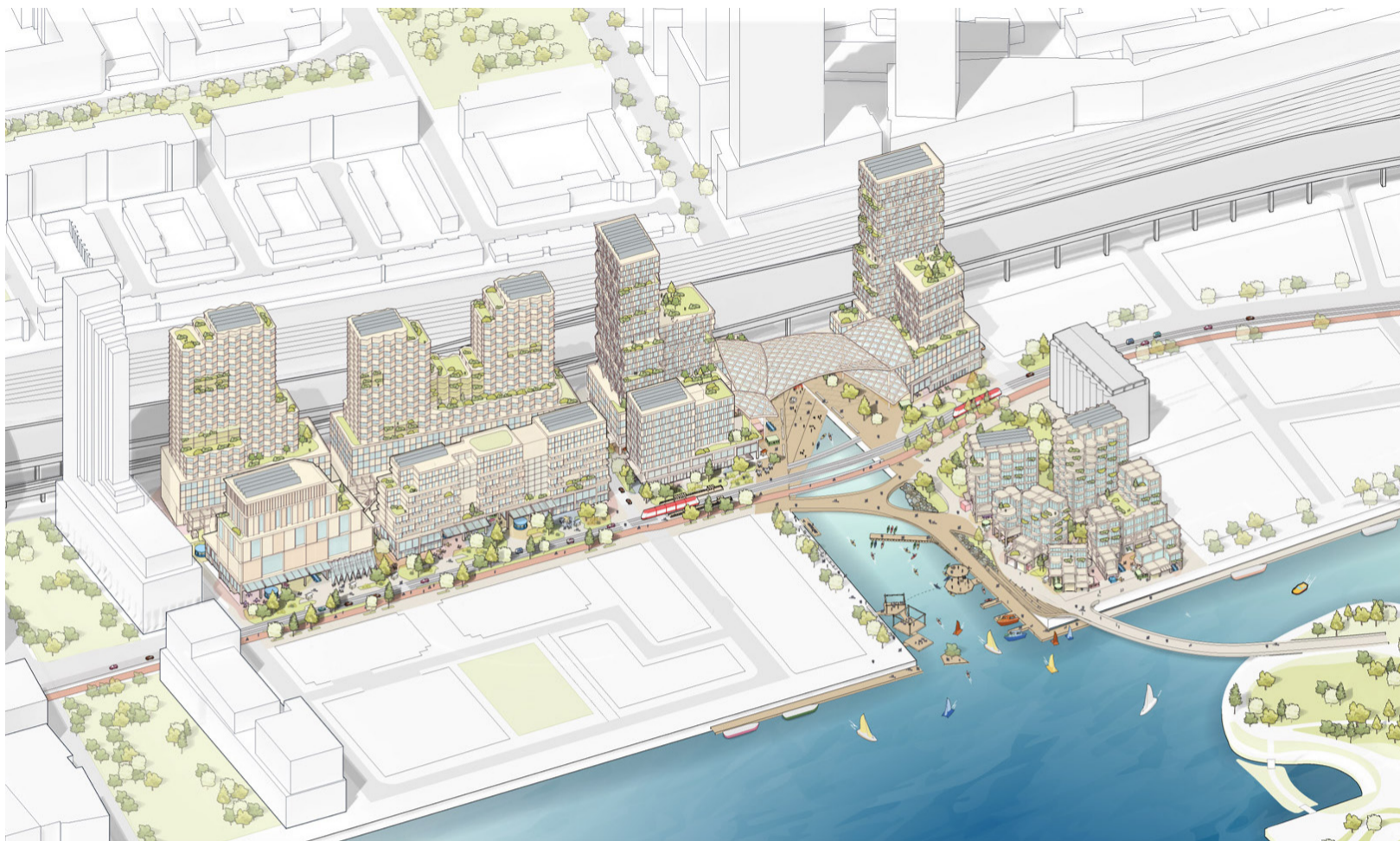


Figure 11. Conceptual Rendering of the Quayside master plan, image courtesy of Sidewalk Labs and Heatherwick Studio

SIDEWALK LABS: THE LIMITS OF A PRIVATE-SECTOR LED TIF

Perhaps the most ambitious and high-profile recent proposal for land value capture to fund transit infrastructure in Canada was put forward by Sidewalk Labs, the Google sibling company selected to initiate a massive smart city development on the Toronto Waterfront. In 2017, Sidewalk Labs was chosen by the public agency Waterfront Toronto to create a master development plan to rebuild a derelict, publicly owned site called Quayside on the city's eastern waterfront into an inclusive, mixed-use neighbourhood.

A key linchpin to unlock the Quayside development site and the massive surrounding Portlands area is improved transit connectivity. For years, a Waterfront East LRT was identified in public planning documents, but the \$1.2 billion project was unfunded and not prioritized. To jumpstart it, Sidewalk Labs proposed to underwrite a tax increment financing arrangement. In the media, it was reported that the company would fund construction of the new LRT line in exchange for a portion of future tax revenues and development charges in the Portlands.

The Sidewalk Labs CEO argued that, because the company was backed by a deep pocketed investor with patient capital, it could afford to finance the upfront cost of the LRT to accelerate the timeline, and to be paid back over time as development occurred

and tax revenues flowed (CBC, 2019). This was an unusual proposal, as TIF usually involves municipal governments issuing bonds to fund the upfront costs of infrastructure, rather than the private sector financing the initial capital investment against a claim to future tax revenues (The World Bank, 2015).

Tax Increment Financing is commonly used internationally. But, in Toronto, the Sidewalk Labs proposal that a private developer claim years of future tax revenue and development charges in the city's prized Portlands area was met with a cool political reaction. Moreover, as time passed and Sidewalk Labs' TIF proposal became more specific, the scale of the financial commitment shrank. When Sidewalk Labs released its draft master development plan in 2019, the firm proposed to invest \$100 million up front as "credit support" for a TIF model, leaving \$1.1 billion of public funding necessary to make the project viable (Sidewalk Labs, 2019). Ultimately, the Sidewalk Labs deal collapsed under the weight of swirling controversy about data privacy and corporate overreach. In 2020, the company pulled out, citing pandemic related challenges. Two years later, the Waterfront East LRT remains unfunded, even as commercial and residential development continues apace in the eastern waterfront area.

Public Land Sales

The sale of publicly owned land at or near transit stations has been identified increasingly as a strategy to raise funds for transit investment and to support the development of transit-oriented communities. The evidence shows that, with the exception of very large brownfield sites, individual property sales are likely to generate revenue in the tens of millions of dollars rather than hundreds of millions or even billions of dollars. The exact amount is impacted by a variety of factors, including municipal property values, location, sale timing, access to transit, site encumbrances and zoning (residential is far more valuable than office or commercial).

Prime publicly owned sites of a significant size that can be sold for development include surface bus terminals and park and ride lots adjacent to rapid transit stations, with the bus and parking facilities reintegrated into the new development as needed. Ownership of public lands also is often fragmented among different orders of government, and even among agencies and ministries, meaning coordination is needed but challenging.

RECENT LAND SALES HIGHLIGHT THE AMOUNT OF MONEY RAISED AND EXPERIENCES WITH THE SALE OF SURPLUS PUBLIC LAND NEAR TRANSIT.

- In 2014, Metrolinx sold the original central Toronto GO bus terminal, which sat on a sliver of downtown land beside Union Station, for \$30 million, and agreed to pay the new owner \$106 million to integrate a new GO Bus station into the base of the new major office complex that was to be built (Gupta, 2014).
- In 2015, the City of Toronto's real estate agency sold a 3.4-acre Toronto Transit Commission parking lot at York Mills subway station in northcentral Toronto for \$25 million. The developer proposed to build a seven-story, 480,000 square foot, mixed-use office, hotel and retail complex, meaning the site sold for \$52 per buildable square foot. The land sale price was likely suppressed because the zoning would not permit residential development. Despite the hot property market in the city since the land sale, the project has stalled, and there has been no development activity on the site.
- In 2016, Translink relocated its bus depot at 41st and Oak near the Canada Line rapid transit system and sold the 13.8-acre site for \$440 million. The transaction was structured so that the full amount would be paid to Translink by 2022, with proceeds re-invested in other transit projects. In advance of the sale, the City of Vancouver established a policy to permit the redevelopment of the site as primarily residential, including that 20% of the units be allocated for affordable housing. This preplanning regarding permitted land uses clearly influenced the price. The deal is one of the highest-priced land sales in B.C. history (Chan, 2016).
- In 2022, Metrolinx sold a 1.48 acre GO parking lot next to the Port Credit transit hub under construction in south Mississauga near Lake Ontario for \$64.5 million. The developer plans to build a high-rise mixed-use residential and retail building on the site, which has connections to the Lakeshore GO line, Hurontario LRT and Miway bus lines. The site was sold without any covenant requiring affordable housing or other community amenities. This enabled the provincial agency to maximize the land sale value and invest the proceeds in the transit infrastructure. The City of Mississauga will now apply municipal planning and zoning policy to determine the local community amenities that are realized through this development project.

Joint Transit and Development

Transit infrastructure and property development continue to, for the most part, be two separate planning and business activities in cities across Canada, despite frequent study of the Hong Kong joint development model. It is striking that most of the stations on new major rapid transit lines built in Toronto, Montreal and Vancouver over the past two decades are freestanding structures rather than being integrated into new building developments.

Construction of residential developments above transit stations has typically occurred after the original transit line is built as part of a separate development process, rather than being integrated into the original infrastructure construction procurement. A key reason that joint transit and development has not taken off in Canada is that it adds significant schedule and cost risks to infrastructure projects that are already highly complex. The firms that undertake infrastructure development and real estate development are not often the same, which can make integration even more challenging. Finally, in some instances such as the Toronto York Spadina Subway Extension, which opened in 2017, there was an explicit policy decision to build large, freestanding iconic station entrances that are not conducive to joint development.

In some recent transit projects, greater consideration has been given to the future potential to redevelop the air space above transit stations. In Vancouver, on the Canada Line, planning began in 2008 in advance of the system opening for a major mixed-use transit-oriented community that integrates the Marine Drive elevated Skytrain station. The first phase of the Marine Gateway development, which includes an office tower, 461 residential units, a major entertainment complex and public space, opened in 2016, seven years after the transit line opened (Marine Gateway, accessed 2022; ArchDaily, accessed 2022). As well, some underground stations in South Vancouver were designed and engineered to accommodate the extra weight of future buildings above. At King Edward Station in South Vancouver, for instance, the underground station box was designed to handle future construction of a three-story wood frame building on top. The eight-story concrete residential and retail building that opened in 2017 had to be carefully designed to support the weight (Chan, 2018).

In a further step to integrate transit infrastructure and land use development, Metrolinx and the provincial development agency Infrastructure Ontario are working together to advance the market driven transit development model earlier in the project planning process. In particular, Infrastructure Ontario is creating plans to build on the air rights above and lands adjacent to rapid transit stations on four subway lines being built in the GTAA. For key sites such as First Parliament on the Ontario Line and High-Tech Station in Richmond Hill on the Yonge Street subway extension, Infrastructure Ontario has released proposals for very dense, high-rise developments. These proposals have faced community opposition for the scale of development and for a lack of public amenities and park space. This highlights a potential risk: as transit agencies are encouraged to take a market driven approach to raise revenue from development, they may seek to maximize density at the expense of diversity of uses or high-quality design, characteristics that are critical to a successful transit-oriented community.

Finally, Translink received provincial authorization in 2022 to launch a for-profit development arm that will develop mixed use residential, office and commercial spaces near transit stations. This permits the transit agency to buy land near stations and partner with the public and private sectors to redevelop properties. This is a major step towards a Canadian jurisdiction emulating the Hong Kong joint development model, as Translink seeks to retain more of the profits from transit oriented development than was possible when the system has been more private sector led (Chan, 2022). A 2020 Translink commissioned report found that to raise \$25 million per year through joint development, the agency would have to bring to market around one million square feet of real estate development annually, or the equivalent of 800 residential units and a number of office buildings – a significant amount of development activity (Coriolis Consulting Corp and Wollenberg Munro Consulting, 2020).

LVC Revenue-Raising Potential

As the above examples highlight, market-oriented land value capture in Canada is gaining altitude as a tool to fund infrastructure investments in transit-oriented communities. But how much money can actually be raised through such market-oriented mechanisms for transit? And how much development is actually required to raise between \$100 million and \$1 billion to support infrastructure costs.

Publicly available data from past projects and land value capture systems provides some indication of the range of value captured or possible through LVC mechanisms for transit in Canada. The analysis shows that very large amounts of new development are required to raise significant revenues to fund large infrastructure investments.

For the purpose of this exercise, we will use \$10 per square foot at the low-end and \$48 per square foot at the high-end as hypothetical value capture benchmarks, collected either through targeted development charge levies, joint development initiatives, or negotiated density bonus contributions through rezoning. These benchmark LVC rates are drawn from recent experiences with development based LVC in Montreal, Toronto and Vancouver.* Also shown is the amount of revenue

generated through various public land sale scenarios in cities across Canada. These estimates are solely for illustrative purposes. Actual revenues raised will vary by market timing, city, and location within cities, depending on the value of the development opportunity.

The chart below shows estimates of the amount of development necessary to fund infrastructure costs of between \$100 million and \$1 billion using transit project specific development charges, density bonuses or negotiated public-private joint development deals.

As can be seen in the financial analysis and visualizations below, market-driven, development-based land value capture models require major amounts of density and development to raise over \$100 million. It is noteworthy that the amount of density required to raise over \$100 million varies significantly depending on the land value capture rate that is set.

For instance, it would take the development of five new 55 or 56 story buildings (7,500sq/ft per floor) within close proximity to a transit station to reach the 2.08 million square feet of development necessary to raise \$100 million, if the LVC rate is set

*Montreal has introduced a fixed \$10 per square foot transit tax charge on new developments in close proximity to transit stations along the new REM project; Metrolinx's joint development initiative at Mimico will raise approximately \$44 per square foot of development over the entire transit-oriented community project; Vancouver's Community Amenity Charge in South Vancouver raised an average of \$48 per square foot of additional negotiated density between 2016 and 2021.

at \$48 per square foot. Alternatively, if a midrise built form was followed, it would require the development of 58 twelve story buildings within close proximity to stations along a transit line to raise \$250 million, at an LVC rate of \$48 per square foot. If the LVC rate was set at \$10 per square foot, as in Montreal for the REM project, or something closer to the lower end of the range, the number of buildings required to raise significant amounts of revenue to fund transit infrastructure through LVC would be much higher.

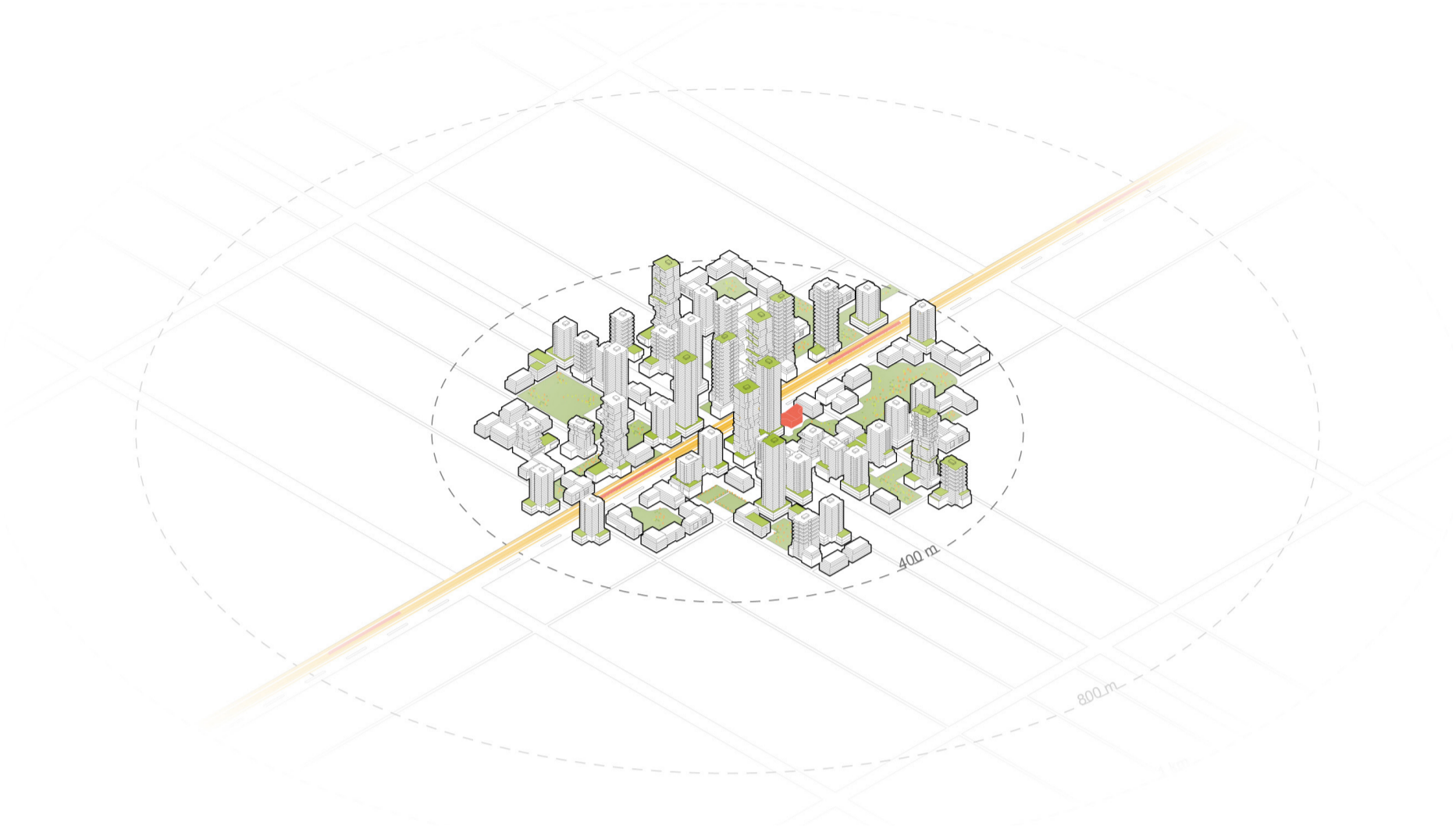
Development based LVC is a useful tool for private funding of individual stations, unlocking sites with significant development opportunity. It is also a

useful tool to fund a small percentage of the overall construction cost of a new transit line.

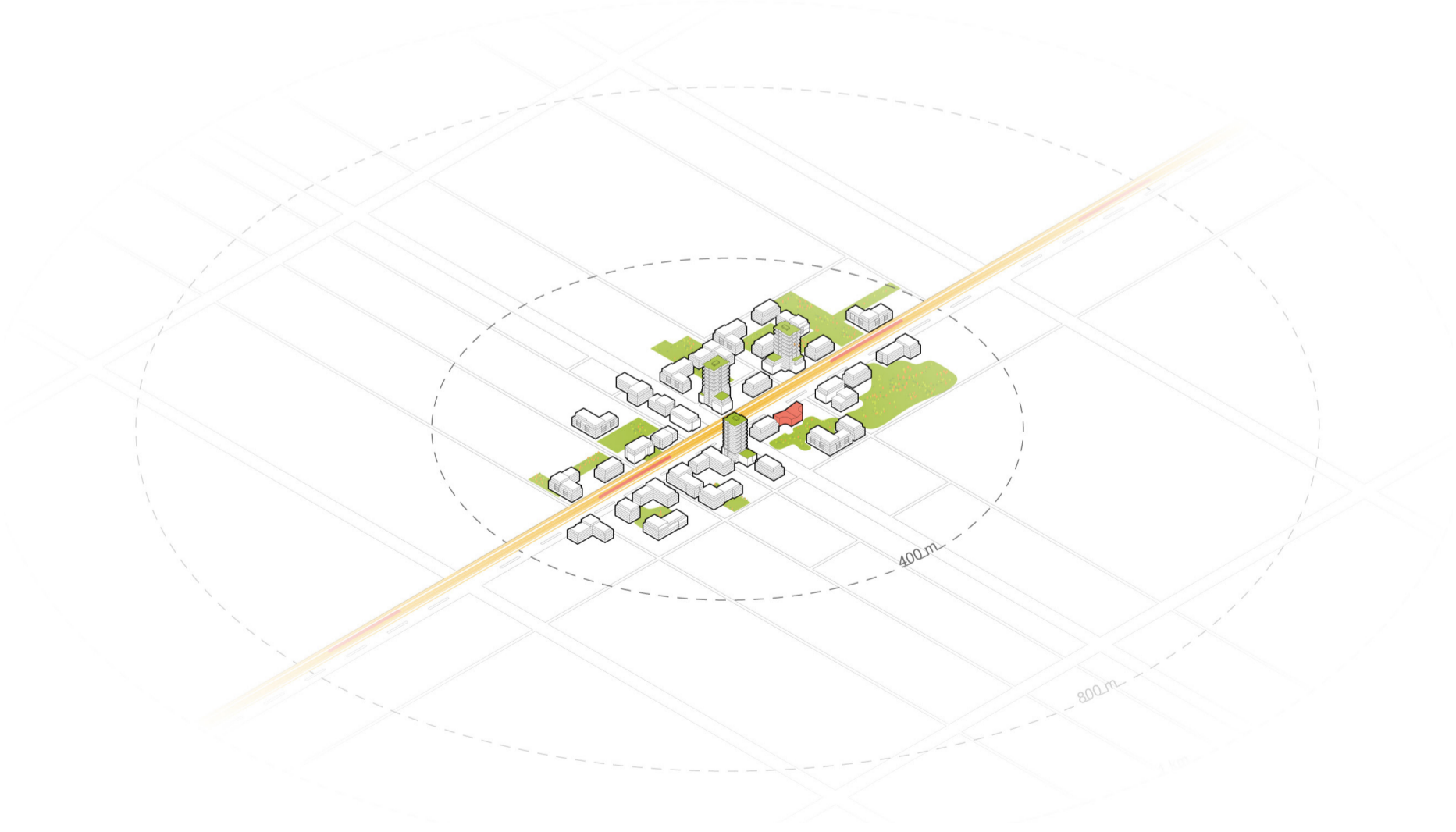
To be most viable, however, sites must be large, in areas suitable for increased density and where there is a strong real estate market for dense transit-oriented properties and the political support to win approvals. In Canada, where recent rapid transit projects can cost upwards of \$4 billion, or even over \$10 billion in the high-profile instance of the Ontario Line, it is likely that funds arising from market driven LVC will make up only a limited portion of the overall capital budget – limited but hardly negligible.

Development Setting	Transit Investment Need	Transit Investment Cost	Amount of Development needed at \$10 LVC/sq.ft.	Amount of Development needed at \$48 LVC/sq.ft.
Large brownfield site	Fund new above ground station on existing rail line	\$100 million	10 million	2.08 million
Large brownfield site	Fund new underground station on existing rail line	\$250 million	25 million	5.2 million
Rapid transit corridor with 20 stations	Fund \$500 million of new rapid transit line cost through LVC	\$500 million	50 million	10.4 million
Existing publicly-owned rail yard with development overbuild potential	Fund \$750 million steel deck to enable development on publicly owned land	\$750 million	75 million	15.62 million

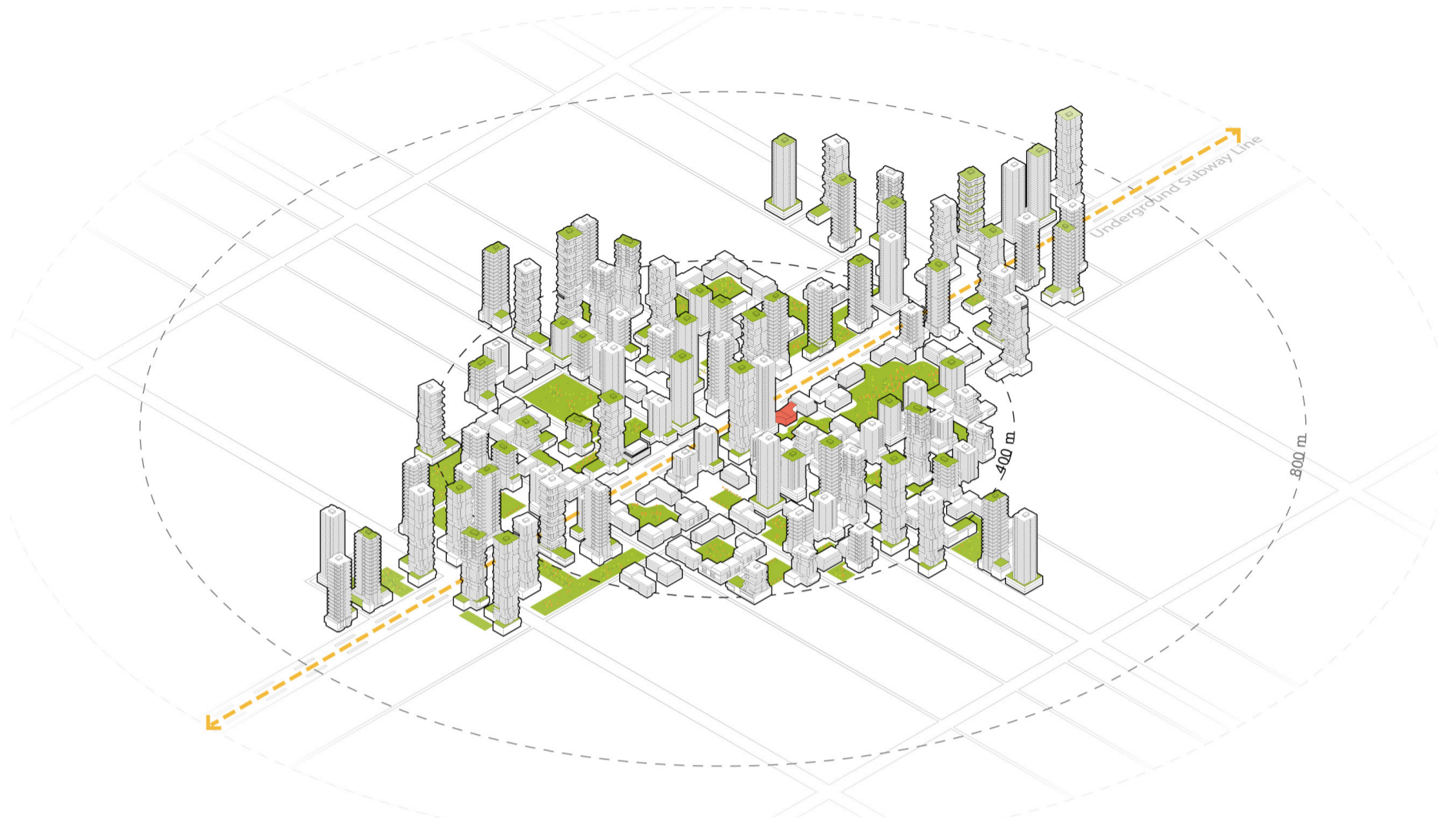
Table 4. Development need in various development settings and LVC/sq.ft.



Large Brownfield Site
100 million fund new above ground station on existing rail line at 10\$ LVC/Sqft

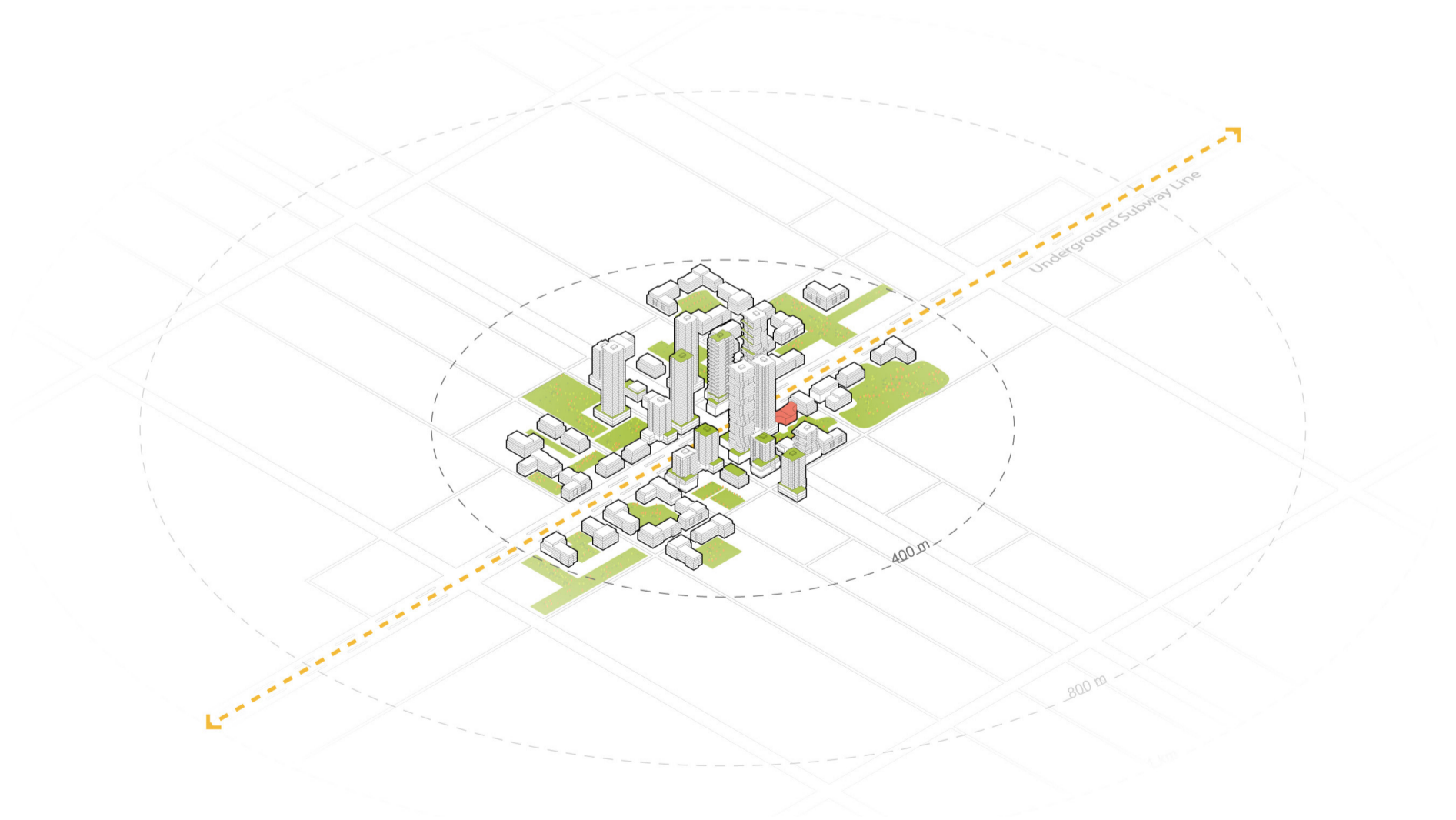


Large Brownfield Site
100 million fund new above ground station on existing rail line at 48\$ LVC/Sqft



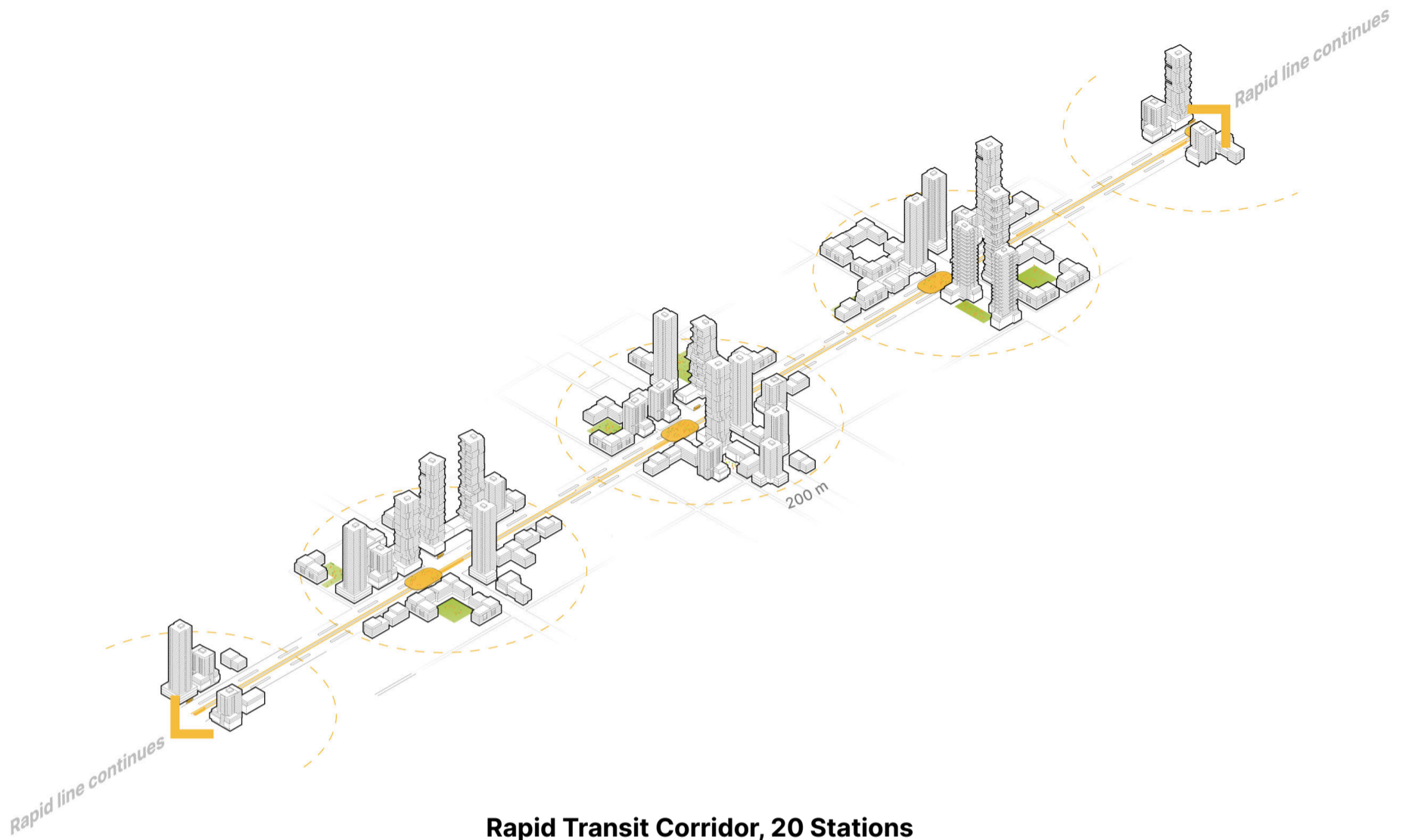
Large Brownfield Site

250 million fund new underground station on existing rail line
at 10\$ LVC/Sqft

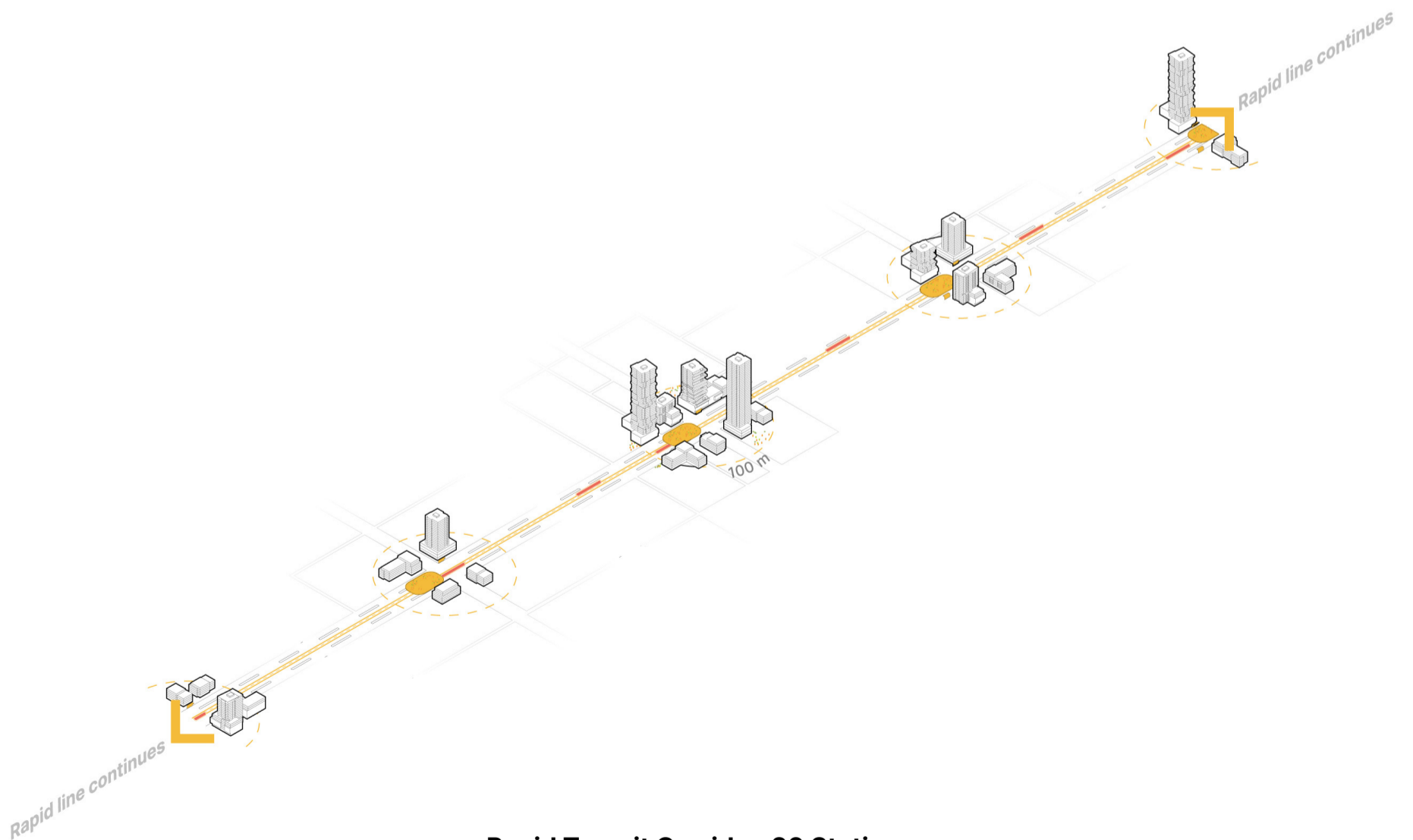


Large Brownfield Site

250 million fund new underground station on existing rail line
at 48\$ LVC/Sqft



Rapid Transit Corridor, 20 Stations
500 million fund of new rapid transit line cost through LVC
at 10\$ LVC/Sqft



Rapid Transit Corridor, 20 Stations
500 million fund of new rapid transit line cost through LVC
at 48\$ LVC/Sqft

The next chart below shows estimates of raw land costs for cities across Canada, based on the amount of development that could be built on each site. The figures provide an indication of the amount of money that could be generated by selling publicly owned land. Land near transit typically sells at a premium, and as such it is likely that prices for publicly owned sites in close proximity to transit stations will sell at the higher end of the price range. The figures are produced by Altus and are from 2019; property prices have increased since then, and as such these figures are provided for illustrative purposes.

The data shows that in most property markets across Canada, public land sales are likely to raise relatively small amounts of money compared to the high cost of transit infrastructure. It would take a large number of sales of small publicly owned properties near transit to raise a materially significant amount of private revenue in the context of a multi-billion transit project.

In all urban markets with the exception of Vancouver and Toronto, even 20 small publicly owned site sales

would raise less than \$200 million. For mid-sized sites that can accommodate 500,000 square feet of private development, 10 sales of publicly owned sites along the route would generate between \$125 and \$225 million in Calgary, between \$275 and \$450 million in Ottawa, between \$250 million and \$1.12 billion in Toronto, and between \$475 million and \$1.63 billion in Vancouver. The sale of a single very large public property with development potential of 1.5 million square feet could generate upwards of \$400 million in Vancouver (as was the case with the previously-mentioned sale of the Oakridge Translink bus depot in 2016), or over \$300 million in Toronto. In other Canadian cities the amount raised would likely be lower.

Of course, the amount of profit for the public agency from a property sale depends on many factors as mentioned earlier. The timing of the revenues from land sales are likely to be spread over time rather than all at the beginning of a transit project, as well, as the market rate for transit-oriented land will be higher if not all sold at the same time.

Public Land Setting	Vancouver \$95-\$325 per buildable square foot	Calgary \$25-\$45 per buildable square foot	Edmonton \$30-\$50 per buildable square foot	Greater Toronto Area \$50-\$225 per buildable square foot	Ottawa \$55-\$90 per buildable square foot	Montreal \$55-\$85 per buildable square foot
Site for 100,000 square foot development	\$9.5m-\$32.5m	\$2.5m-\$4.5m	\$3m-\$5m	\$5m-\$22.5m	\$5.5m-9m	\$5.5m-\$8.5m
Site for 500,000 square foot development	\$47.5m-162.5m	\$12.5m-\$22.5m	\$15m-\$25m	\$25m-\$112m	\$27.5m-\$45m	\$27.5m-\$42.5m
Site for 1.5 million square foot master-planned development	\$142.5m to \$487.5m	\$37.5m-\$67.5m	\$45m-\$75m	\$75m-\$337.5m	\$82.5m-\$135m	\$82.5m-\$127.5m

Table 5. Approximate value of land sale in Canadian Cities, Based on 2019 prices (Altus)



Figure 12. Perspective rendering of the East Harbour development plan, image courtesy of Cadillac Fairview and Adamson Associates Architects

“There are instances in which development on a much larger scale may bring in revenues above and beyond what’s set out in the chart. But these instances are likely to be rare, in Canada at least ”

There are instances in which development on a much larger scale may bring in revenues above and beyond what’s set out in the chart. But these instances are likely to be rare, in Canada at least. One example is the East Harbour site, a very large brownfield site in the eastern downtown of Toronto. The developer proposes to build 13 million square feet of mixed-use development with a combination of office, residential, community and green spaces. Metrolinx is applying its market-oriented transit development approach to privately fund the transit hub on the site, while the City of Toronto is seeking to raise revenues from development charges and has negotiated density bonuses as part of the rezoning to fund community amenities. Still, a significant share of the development at East Harbour is office space based on City of Toronto land use policy for the site, which does not generate as high revenues as residential development.

(In New York City, the Hudson Yards project is the most expensive property development in U.S. history. The 25-acre project will be comprised of 18 million square feet of luxury mixed use residential, office and retail development built on top of an operating rail yard on a \$1 billion privately funded steel deck (The New York Times, 2019).)

General Observations

After decades of transit underinvestment, governments across Canada are allocating billions of dollars to expansion. This is positive, provided that the funds are spent on high priority projects, that the projects are well-executed and that accompanying land use policy encourages transit-oriented communities. Major transit projects, defined as those costing over a billion dollars, typically draw on funding from multiple orders of government and from other funding sources. Land value capture is a tool that is widely used by municipalities and transit agencies to fund a portion of transit infrastructure investment costs and other local amenities.

The research presented in this paper highlights important insights about the application of land value capture, particularly market-oriented LVC approaches, to finance transit investments.

1. It is often commented that Canada has not used land value capture widely to fund transit infrastructure. In fact, LVC has been used increasingly, especially in recent years, but it is typically through tax-based approaches that may not be viewed as LVC in the narrow sense, rather than the more entrepreneurial development-oriented market approaches.

Dedicated transit project-specific property tax levies on the entire tax base and transit-project specific development charges on all new building in a city have been used to fund transit infrastructure projects. These tax-based LVC models are policy based, regularly scheduled and applied based on a formula, rather than entrepreneurial deals involving individual private sector partners on a case-by-case basis. These broad-based LVC taxes can raise significant amounts of money over time, and municipal governments have taken on general borrowing against these future tax revenues to fund the upfront costs of their transit commitments.

2. For large transit infrastructure projects, market driven, negotiated, development-based land value capture generally makes up a limited share of the total funding package. The exception is Hong Kong, which has a different land ownership system than in North America. With the London Crossrail, for instance, development driven LVC approaches are planned to contribute £950 million to the cost of the project, a significant sum of money, but still only a limited portion of the total funding envelope of £18.8 billion. Increasing revenues from negotiated development-based land value capture mechanisms would require governments to move up the value chain and become more actively involved in property development, where there is both more financial reward and more risk.
3. Municipalities and, increasingly, urban transit agencies, are the primary government actors involved in land value capture in Canada. This is enabled through provincial policy that sets out the parameters for development charges, discretionary density bonus systems and tax increment financing. Transit agencies increasingly have created market-oriented development policies for the sale and redevelopment of transit lands, and for partnerships with private sector developers.
4. Density bonus systems are used widely by municipalities across Canada to capture some of the value generated through rezoning that permits increases in buildable density, but not to fund major transit projects. Provincial legislation typically requires that density bonuses and community amenity charges are used to fund local infrastructure, and the types of amenities have usually focused on affordable housing, streetscape improvements, parks and public art. Attempts to make major transit infrastructure another amenity that can be funded through density bonuses likely would compete and potentially crowd out a municipal funding stream used for local amenities. Municipalities have been strongly opposed to such measures.



5. Provincial legislation and policy guidance are in place to permit tax increment financing in a number of jurisdictions, including Alberta, Manitoba and Ontario. But it has not been used to date to fund the upfront cost of a major Canadian transit project in exchange for a portion of future property tax and development charge revenues. (Tax increment financing typically involves municipalities borrowing against future incremental tax revenues on a designated site where they control the zoning, permitting and approvals, rather than a private sector party which would have little control over these key project drivers.)
6. Guided by policy objectives to raise capital to fund transit infrastructure and foster transit-oriented communities, there have been recently a number of entrepreneurial deals struck by transit agencies in Canada for the private sector to fund capital costs of transit investments, offset by real estate revenues.
 - To raise substantial funds, the market-oriented development model of LVC requires sites with the potential for large amounts of development. Sites that can house a limited number of modest sized buildings, for example, do not now generate sufficient surplus revenue through land value uplift to make a major dent in funding major transit infrastructure upgrades.
 - In Canada the amount of money raised from entrepreneurial LVC deals, including joint development and surplus land sales, have tended to range from **\$30 million to \$110 million**. Only the largest transit-oriented land sales in the most expensive property markets in the country have raised more money.
 - Entrepreneurial LVC deals have been used to fund the entire cost of new transit stations ranging from \$30-\$110 million. These arrangements have tended to take place in instances where a relatively small capital investment in a new or upgraded surface or elevated transit station can unlock a significant development opportunity.
 - LVC deals have been structured so that developers either fund upfront capital costs of transit infrastructure and recoup their investment as future development revenues are generated or do so on a pay-as-you-go model where development charges are collected until there is sufficient funding to build.
7. Transit infrastructure and property development continue to be separate planning and business activities in cities across Canada. It is striking that most of the off-street stations on new major rapid transit lines built in Toronto, Montreal and Vancouver are freestanding structures rather than integrated into new building developments up above. Only recently are more systematic efforts taking place to undertake joint transit and development initiatives.



8. Real estate deals are, of course, inherently risky. Structuring and executing entrepreneurial development deals to fund transit can be a lengthy process that is exposed to property market and commercial forces. Even in strong property markets with public sector organizations that have skilled real estate teams, transit-oriented development deals are complex and have in some cases stalled.
9. LVC models that aim to maximize the amount of revenue generated from increased land values and development interest around transit stations risk spurring unbalanced gentrification. As new transit projects are being built across Canada to serve communities that have historically had poor transit access, special attention and meaningful community engagement is required to ensure that balanced development can take place without prompting widespread displacement.
10. Public institutions with long-term time horizons, such as the Canada Infrastructure Bank, could play a key role in advancing socially responsible land value capture to fund critical transit infrastructure. By investing up front in the capital costs of transit stations and associated infrastructure at key locations where significant development is possible, public institutions like the CIB could accelerate integrated infrastructure that is at the core of complete communities and be partially or fully repaid over time through private development revenues. Such an approach leverages the investment of public capital to address challenges that have stymied development-based land value capture in the past, including the mismatched timing of costs and revenues, risk allocation, and the high cost of private capital.



Conclusions and Implications for LVC in Canada

The research presented in this paper provides insights regarding potential opportunities to expand the use of LVC tools to finance transit infrastructure and accompanying transit-oriented communities in Canada. The research shows that LVC is not a golden goose that on its own will raise enough money to pay for multi-billion-dollar transit mega-projects. However, LVC can be an important transit financing tool that supports strong city building objectives. LVC can optimize public real estate holdings, front end the timing of revenues to fund capital investments, and share risks and rewards associated with infrastructure and real estate projects.

Land value capture delivers the best results when it is an approach to raise revenue and support development of transit-oriented communities. In ideal circumstances, the goals of an LVC program are financial reward and encouragement of place-based city building. The incentives are aligned such that the selected financing tool encourages dense, well-designed communities with a mix of residential unit types, public services, parks and commercial spaces in close proximity to transit infrastructure.

This study has broad implications for transit providers, municipalities and public agencies and for investors like the CIB which have a mandate to advance socially beneficial projects that can proceed on commercial terms.

For transit agencies and municipalities, there is an opportunity to reposition development-based land value capture and joint real estate development from an afterthought to a core part of the business of planning for and providing public transit. The motivation for such a move is enlightened self-interest. In addition to raising development related revenue that can be allocated to transit projects, the encouragement of dense complete communities near transit stations creates a virtuous cycle by bringing more users closer to transit and, thus, boosting system ridership. As examples, transit agencies in Vancouver and Toronto have taken steps to leverage joint development and land value capture and make them core to their transit agency mandates.

As development-based approaches to LVC become more widely used in Canada following on international experience, there is a role for a wide variety of public agencies and impact investors that invest in infrastructure and housing to become involved to accelerate their objectives and to enhance the public interest.

The role for public sector investors like the CIB or other impact investors is to share risk (and reward) with the private sector, to front end public capital where a solid business case can be made for repayment with private development revenues, and to provide subsidies that purchase public benefit like increases in affordable housing units in a development project.

Such arrangements move governments up the urban development value chain, where they become more deeply involved in both the rewards and the risks of development.

In cases such as Capstan Station, for example, where developers were unwilling to pay upfront to develop the station, public impact investors such as the CIB might well play a meaningful role in bridging the timing gap by advancing financing to the project to be recouped through future development revenues. The social value of the development project could be further boosted if the Canada Mortgage and Housing Corporation and provincial housing agencies like BC Housing then offered low interest loans or grants in exchange for including higher affordable housing unit counts in the development near transit stations. In this way, a public benefit is achieved by accelerating the development of a new transit station by bringing together the resources of multiple branches of government and their agencies, with the station ultimately funded by private development revenues.

Indeed, there may be larger scale, more ambitious and/or riskier joint development arrangements where the CIB and other impact investors could play a role in financing the upfront infrastructure costs to unlock development revenues and support the creation of transit-oriented communities.

Examples to explore include: financing the initial infrastructure costs to enable redevelopment on top of a bundle of single-storey transit stations in prime locations (e.g. Bloor-Danforth subway line stations; Eglinton Crosstown stations; Canada Line stations in South Vancouver); financing the up-front

costs of a Hudson Yards-style steel deck over large transit maintenance yards in the few locations in Canada (e.g. the Davisville TTC yard) where it makes economic sense to build new communities at scale up above; publicly financing part of projects such as the Waterfront LRT in a TIF type arrangement that accelerates development of key large-scale sites such as the Port Lands.

Critically, each of these ideas builds on existing proposals that, in some cases, have been in the policy milieu for years (or even decades) but have not been realized. The CIB could either invest in these transit projects on its own, although this might be outside its legislative scope, or, more likely, co-invest in the infrastructure component of the project alongside private and institutional investors.

As highlighted above, development based LVC is a risky undertaking that exposes public sector participants to increased real estate market and commercial risk. The risk may well be worth the reward but in circumscribed instances.

To participate in LVC in the transit sector, transit agencies, municipalities and public investors like the CIB need to ensure that they have the technical capacity to carry out complex LVC and joint development projects. They must also ensure that there is close collaboration among all the parties involved. The CIB, given its establishment as an agency designed to spark and support more sophisticated forms of infrastructure development, may well be in a position to spearhead this process, where the financial circumstances warrant.

Appendix

Alberta

The Municipal Government Act is the primary legislation that guides land use planning in the province. Others include the 2009 Alberta Land Stewardship Act (ALSA) and its Land Use Framework (LUF). Strategies enshrined in Alberta's planning framework include the promotion of efficient use of land to reduce the footprint of human activities. However, Alberta's land use planning framework currently faces certain challenges. In 2007, seven new land-use regions were created with a regional plan to be established for each region to integrate provincial policies at the regional level, to set out regional land-use objectives and to provide the context for land-use decision-making within each region. So far, only two regions have approved regional plans (Land Use Planning Hub, 2020). As such, there are potential issues and gaps in the LUF. There are related implementation, knowledge, scalar and structural gaps. Subsequently, municipalities in Alberta have been described as lacking a meaningful presence throughout the regional planning process (Alberta Centre for Sustainable Rural Communities, n.d.).

British Columbia

The Local Government Act is the primary land use legislation in B.C. This legislation strongly encourages a regional approach to planning. The planning system in B.C works well at the municipal/local levels, where communities plan for growth and other changes within their boundaries. However, there is a lack of coordination among municipalities and regional districts on issues that cross boundaries. There are also unclear and unreliable links with the provincial ministries whose resources are needed to carry out planning projects (British Columbia, 2006).

The existing land use plans cover over 90% of provincial public land. However, given the pressures on land and resource management, B.C.'s government is implementing modernized land use planning whereby it is carried out in a partnership between the B.C government and Indigenous governments, and in collaboration with local governments. This new approach aims to support past planning and ongoing stewardship initiatives, and to capitalize on new opportunities in response to emerging challenges in the management of B.C.'s public lands and natural resources (British Columbia, 2021).

Manitoba

The province, through the Planning Act and the City of Winnipeg Charter, sets the legislative framework for land use planning in Manitoba. This is further supported by a Provincial Planning Regulation which establishes a defined direction to guide planning and development in the province. Manitoba's policy statements encourage integration of land use and transportation planning that supports transit-oriented development. Also, in terms of LVC mechanisms, the province has announced a new framework for Tax Increment Financing. This framework aims to leverage private-sector investments, foster a more transparent process, and ensure a return of investments for Manitobans at a minimal risk to the province (Province of Manitoba, 2018).

New Brunswick

The primary legislative framework for land use planning in New Brunswick is the Community Planning Act. This act mandates the creation of a statement of provincial interests, though no statements of interests have yet been established. In New Brunswick, over 60% of the land mass has no plan to regulate and control land use. There is no proper framework to guide a wide range of land issues at the regional and local levels; the lack of provincially-guided interests has created inconsistent land use regulation (New Brunswick Association of Planners, 2016). Regional planning in the province is to be done as follows: Regional plans are developed by regional service commissions, approved by the Minister of Environment and Local Government, and adopted as regulations by the Lieutenant-Governor in Council. The regional plans outline the interests and priorities concerning land use planning and development in the region. But there are now no regional plans in New Brunswick (New Brunswick Association of Planners, 2016). The lack of a clear planning framework may constrain the delivery of transit-related infrastructure, as well as implementation of LVC mechanisms.

Newfoundland and Labrador

Planning is regulated by the Urban and Rural Planning Act (2000). There is also a Land Use Policy for Flood Risk Areas to mitigate risks associated with floods. Additionally, there is municipal legislation, e.g., the Municipalities Act (1999), which provides authority to cities, towns and local service districts to act as local government. The municipal legislation has been described as prescriptive and not permissive. In recent times, there have been calls for the existing legislation to extend the scope of municipal powers (e.g., municipalities should be able to buy and sell land without ministerial approval) and also to provide more clarity about the roles and responsibilities of each order of government (Province of Newfoundland and Labrador, 2018).

Nova Scotia

Primary land use legislation in Nova Scotia are the Municipal Government Act (1998) and the Statements of Provincial Interest Regulation (2013). The latter recognizes the importance of the province's land and water resources and future growth of communities, as well as guides provincial and municipal governments in making sound decisions regarding land use (i.e., encouraging high density developments and discouraging urban sprawl). In 2013, the province launched its Sustainable Transportation Strategy. It aims to provide Nova Scotians with choices regarding mobility and consists of five main elements, including guiding principles, provincial leadership, and sustainable transportation networks (Province of Nova Scotia, 2013). A key part of this strategy is the Urban and Rural Planning Network. It aims to support municipalities that are integrating transit-oriented development and walkable communities into their overall planning. The objective of this network is also to identify key transportation centers across Nova Scotia and integrate public and community transit, active transportation, and supportive land uses within and between these centers (Province of Nova Scotia, 2013).

Ontario

The primary land use frameworks in Ontario are the Planning Act (1980) and the Provincial Policy Statement (2020). Ontario's framework is robust. The provincial government is bound by these policies and all decisions by the Minister and planning authorities must be consistent with the Provincial Policy Statement (including Official Plans). Additionally, they must be reviewed and updated every five years, which often triggers Municipal Plan updates to ensure local legislation is consistent with provincial policy. This rigorous framework aims to ensure Ontario's land use regulations are up-to-date, especially at the local level.

The provincial government has become increasingly focused on the creation of transit-oriented developments. Aside from a Growth Plan (2006) that provides a framework for where and how the Greater Golden Horseshoe will grow, there are recent provincial plans that support transit-oriented communities. One is the Transit-Oriented Communities Act (2020). This gives the provincial government the ability to designate transit-oriented community lands, and gives it greater powers and faster processes regarding land expropriations for priority transit projects. A second is the Building Transit Faster Act (2020). Its purpose is to expedite delivery of transit projects of provincial significance by removing barriers and streamlining processes while also enhancing coordination and fair engagement with public and private sector stakeholders.

Prince Edwards Island

Land use planning in PEI is regulated by the Planning Act (1998). Other laws that govern land in PEI include the Land Identification Program (LIP), which prevents the development of land identified for non-development use. The general intent of the LIP is to protect and to preserve resource lands from being sub-divided or developed for commercial or industrial use and to protect against land speculation. PEI has been described as experiencing a low rate of local planning outside of the major population centers (New Brunswick Association of Planners, 2016). There is no provincial land use policy to set the direction for how land is to be used and how development should take place. Additionally, no individual can own more than 1,000 acres of land and no corporation can own more than 3,000 acres of land in the province (Government of Prince Edward Island, 2015).

Quebec

Land use planning in Quebec is regulated by the Land Use Planning and Development Act (1982), and the Sustainable Regional and Local Land Use Planning Act. In Quebec, the provincial government manages the development of public land by allocating land rights to private citizens and corporations for different projects, in accordance with applicable laws and regulations, including public land use plans and regional plans for public land development. The regulation of public land in Quebec is vital as it makes up 92% of the province's area. Prepared by the administrative regions, the public land use plans set out the government's orientation for the use and protection of public land (Government of Quebec, 2021). The Sustainable Regional and Local Land Use Planning Act establishes a land use planning and development region for Quebec, as well as confirms the responsibilities of the provincial government, metropolitan communities, regional county municipalities, and local municipalities with respect to land use planning.

Saskatchewan

The Planning and Development Act (2007) legislates land use planning in Saskatchewan. This is supported by the Statements of Provincial Interest Regulations (2012) to support coordinated planning and development efforts. The provincial interest statements link provincial and municipal objectives for land use planning and, as a result, directly affect the use of land and impact community development, economic growth and environmental stewardship (Saskatchewan, 2012).

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