

# City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto

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## **Abstract:**

This paper examines the different ways public transit service providers and governments generate revenue through land value capture (LVC) tools in London, New York and Toronto. In this paper, LVC is examined as a levy that captures the betterment of land values caused by a government funded transit infrastructure project, specifically subway systems. LVC provides the public purse a mechanism to generate revenue from augmented land values attributable to their subway project, which is then allocated towards project debt repayment. The City of London applied the Business Rate Supplement (BRS) to non-residential properties coupled with a Community Infrastructure levy (CIL) on new developments to generate revenue for the Elizabeth Subway Line project. To pay for the extension of the Number 7 Subway Line the City of New York implemented a combination of; Payment in Lieu of Taxes (PILOT), Payment in Lieu of Mortgage Recording Tax (PILOMRT), Eastern Rail Yard Transferrable Development Rights (ERY TDR) and District Improvement Bonuses (DIB) throughout the Hudson Yards site. A portion of the City of Toronto's SmartTrack project will be funded through a municipal version of tax increment financing (TIF) based on TIF zones along the SmartTrack corridor. Each case study is evaluated based on LVC's ability to recuperate funding for project debt repayment and the effectiveness of facilitating new development surrounding a station stop.

A secondary research objective of this paper is an analysis of the legislation in each city, that allows for different land value capture mechanisms to be implemented. In 2009, the United Kingdom's Federal government passed the Business Rate Supplement Act, whereas, the State of New York passed the Municipal Redevelopment Law in 1984. The Ontario legislature gave Royal Assent to the Tax Increment Financing Act in 2006, but the province has yet to implement regulations for the legislation, rendering the legislation unusable. Through first person interviews I discover two potential reasons why Ontario's provincial cabinet never implemented regulations for Ontario's Tax Increment Financing Act (2006). My findings indicate that the Province of Ontario was unwilling to share revenue from the Education Tax Increment during the 2008 recession. Secondly, there was a lack of bureaucratic will to implement regulations for the Tax Increment Financing Act (2006) due to a change in Ministerial leadership. It is determined that the legislation, or lack thereof, is the greatest determinant if a value capture policy will be successful in capturing any increase in land value.

## Foreword:

A requirement for graduate students in the Masters of Environmental Studies program at York University is to secure a field placement related to their plan of study. The field experience is an opportunity for graduate students to pragmatically apply critical thinking systems towards real life scenarios. My first field placement took place over the summer of 2018, where I worked as a student policy planner on the Yonge Subway Extension. It was during my placement where I first encountered land value capture (LVC). During the 2018 summer, there was also a provincial election race that created a feeling of uncertainty if the Yonge Subway Extension would receive provincial funding. I came to understand LVC as a potential alternative funding source, potentially alleviating the reliance of government subsidies to fund portions public transit projects.

This major paper is a key component in completing my plan of study and Masters in Environmental Studies graduate program. The scope of my paper was purposely chosen to attain accreditation by the Ontario Professional Planners Institute (OPPI). My paper extensively examines how land value capture can be used as a quasi-land-use planning tool in two distinct ways; to generate revenue to fund transit infrastructure projects and secondly, to encourage development on underutilized land. I formulated my plan of study to explore how effective land value capture (LVC) mechanisms are at capturing the increases of property values that are a direct result of a publicly funded transit project. This research paper focuses on three individual case studies from London, New York and Toronto. I choose the city examples due to each example implementing a different type of LVC to fund a portion of their respective rail transit project.

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# 1. Introduction to Land Value Capture

Ontario provincial planning policies encourage development near transit stations to ensure public systems have adequate ridership. Ontario's Growth Plan for the Greater Golden Horseshoe (2017) requires areas surrounding subway stations to have a minimum density target of 200 residents and jobs per hectare. To achieve density targets, the built form surrounding subway stations often feature transit-oriented designs, i.e. high-density and mixed-use buildings, multi-modal transit connectivity and enhanced walkability (Atkinson-Palombo, 2010). The cost of a private housing unit in close proximity to a subway station demands an increased value due to enhanced connectivity and convenience (Nelson, 1999).

In this paper, I have selected three case studies of land value capture where transit infrastructure projects are government initiated and funded. These projects are taking place in the City of London (UK) New York City (US) and Toronto (Ontario). Despite the differences in contexts, planning systems and legal frameworks, there is an interesting statistical correlation where publicly funded transit projects are generating profits for private land developers at little to no cost for the developer. How can the governments hold developers accountable to pitch their fair share towards the capital and or maintenance costs of a publicly funded transit project? This paper investigates the use of different land value capture instruments as a means to recapture some of the increase in residential and commercial property values that are a direct result of a publicly funded transit project.

Two of the strongest examples that highlight the usefulness of land value capture are the cases of London, UK and New York, NY. In London, the Department for Transport (DfT), Greater London Authority (GLA) and Transport for London (TfL) implemented the business rate supplement (BRS) tax. Under the BRS mechanism, qualifying non-residential properties were charged a rateable value, the revenue attributed from the BRS aided in paying for a portion of the Elizabeth Line Subway extension. New York City implemented a tax policy 'payments in lieu of taxes (PILOT)', coupled with the sale of transferable development rights to fund the Line 7 Subway extension. Both London and New York cases exemplify the necessary legislation and planning policies that allowed land value capture mechanisms to flourish. In juxtaposition, the third case study displays a struggling version of land value capture in Ontario, Canada. The provincial government in Ontario introduced the Tax Increment Financing Act (2006), yet the

TIF Act (2006) does not have any legislative regulations. Without regulations, public agencies and local governments in Ontario are unable to use tax increment financing to fund portions of their respective capital project.

I evaluate the effectiveness of land value capture mechanisms based on two quantitative criteria: first, land value capture's ability to recuperate revenue for project debt repayment; and second, the effectiveness of facilitating new development surrounding a transit station stop. I also investigate and analyze the legislative mechanisms responsible for permitting land value capture policies in each city case. Tax-based land value capture mechanism's like tax-increment financing (TIF) or payment in lieu of taxes (PILOT) require legislative authority for their use (Alterman, 2012). Ontario's Tax Increment Financing Act (2006) does not have regulations, so there is no means for transit agencies or local governments to access the revenue of the education tax increment expected to occur as a result of a transit project. This was certainly the case for the Toronto-York Spadina Subway Extension, because the government of Ontario did not implement TIF regulations, the City of Toronto and York Region had to locate alternative project funding. The case study of Toronto exemplifies that legislation, or lack thereof, is the greatest determinant if a value capture policy will be successful in capturing any increase in land value.

My paper does provide a word of caution of the gentrifying effects of development and LVC. Land values must be augmented for LVC to effectively generate revenue, but research indicates that as local areas are transformed through intensified uses and increased dwelling costs, it can certainly lead to displacement and gentrification of local communities. Although gentrification and displacement are not within the scope of my paper I do acknowledge their inherent importance in city planning and necessity for future research.

### **Theories of Land Values and Tax**

Political economist Adam Smith wrote *The Wealth of Nations* in 1776, where he outlined the economic relationships responsible for augmented land rent values. Smith (1776) defines land rent as the price paid for the use of a land parcel, and argues the greatest achievable rent value a land owner can attain is the amount a tenant can afford to pay. Regardless of the condition of the land a rent is demanded by the landlord, however, land that received an improvement is eligible to collect a premium rent. One form of land improvement according to Smith (1776), is the integration of properties with local markets;

Land in the neighbourhood of a town gives a greater rent than land equally fertile in a distant part of the country. Though it may cost no more labour to cultivate the one than the other, it must always cost more to bring the produce of the distant land to market. (p.83)

Providing efficient access to city markets and pools of labour through improved infrastructure networks is essential for the augmentation of land rent values. This relationship is more evident than ever in 2019, as properties demand increased rents when in proximity to transit hubs that connect users to employment opportunities and markets.

Henry George (1879) wrote *Progress and Poverty*, which I perceive to be one of best explanations of how land taxes can mitigate land speculation. Speculation is occurring in present day Ontario, where private land developers are withholding the development of land until publicly funded transit investments are completed. The subway functions as an improvement to the property, allowing land developers to demand the highest land rent possible (SRRA, 2018). Mitigating speculation is important, George (1879) highlights that speculation can become detrimental to regional economies as, “speculation inflates land values, reduces wages and interest, and thereby checks production.” (p.99). In addition to George’s critique of speculation, it can potentially lead to sprawl. As speculators purchase surplus quantities of land, rent values increase and less expensive rent is sought in the peripheral zones of a region.

In 1817, David Ricardo wrote *On the Principles of Political Economy and Taxation*, where he argues that land has three inherent qualities; first, it is in fixed supply, second, it is not uniform in quality, and third, some parcels have a locational advantage over others (Ricardo, 1817). In alignment with Ricardo (1817), George (1879) notes that since land is in fixed supply, ownership of land has no value. Land values are augmented by merging ownership and productivity, but until someone purchases property for production, a parcel of land will continue to have no value (p.65). Producers, like farmers, are constantly competing to use land putting them at the mercy of the landowner who can increase the rent of the most productive land. Since land is in fixed supply, a land tax can mitigate land speculation while increasing competition among land owners;

Taxing land makes landowners pay more, it gives them no power to obtain more. For there is no way this can reduce the supply of land. On the contrary, it forces those who hold land on speculation to sell or rent for what they can get. (George, 1879, p.151)



George's (1879) assertion implies that land taxes increase competition amongst land owners resulting in more efficient use of land. The work of Adam Smith, David Ricardo and Henry George, highlight two key ideas why land value capture is not only feasible, but desirable;

- 1) Property improvements which improve accessibility to local or regional markets, demand increased rent values; and
- 2) Since land is in fixed supply, a land tax will not decrease supply, rather it can mitigate land speculation while encouraging development.

This theory is applicable in 2019, as tax-based land value capture mechanisms encourage developers to be as productive as possible on the land they own, making speculation less profitable. Indeed, recent literature indicates that LVC tools are an effective means of encouraging property owners to develop their land rather than withholding it for an increased future market value, mitigating land speculation (Rybeck, 2004). To this end, the next section will examine how public rail infrastructure can augment residential and commercial land values near station stops.

### **Land Value in Proximity to Public Rail Transit**

Public transit infrastructure, especially subways, can improve real-estate values. Planners, economists and academics are often contested when asked to delineate and agree upon the factors associated with public transit that improve land values. Literature on the subject suggest a multitude of attributes, such as;

- Proximity and accessibility to stations, distance and time;
- Property type effected, residential, commercial, industrial;
- Form of transit; LRT, Subway etc;
- Neighbourhood built form;
- Existing monetary indicators, absolute and rental prices;
- Local real-estate market performance.

In my opinion, proximity to transit is a factor that needs to be looked at carefully: if land values do not improve when in proximity to transit stations, then land value capture is not applicable. Research conducted by Armstrong (1994) demonstrates that commuter rail enhances residential property values: “single-family residences located in communities that have a commuter rail station have a market value that is approximately 6.7 percent greater than that of

residences in other communities.” (p.97). Similar results were mirrored in Wang’s (2010) research of residential property values within 1.5 km of a rapid transit line that is connected to a central business district. Wang’s findings indicate that the prices of residential real-estate within 0.5 km of a rapid transit station sought on average, a 7.2 % bump in property values (p.45). Evidence of residential property values increasing near rail transit could potentially be linked to a correlation amongst a property’s proximity to transit, which was originally put forth by Alonso (1964), Muth (1969) and Mills (1972), known as the Alonso-Muth-Mills (AMM) model (Higgins and Kanaroglou, 2016, p.612). The AMM model argues that new transit infrastructure will decrease transit costs for land surrounding a station, because the improvement of accessibility creates a locational advantage around transit. Locational advantage gives residents access to central business districts (CBD), local and global commodity markets, labour pools, employment, and entertainment facilities. Generating access to the above-mentioned areas results in people and businesses paying a premium for land near a transit station. The premise that real estate values increase near transit is also evident for commercial properties. Arthur Nelson’s (1999) research on office commercial real-estate pricing in midtown Atlanta showcases that values decrease by \$75 per square metre for every metre away from the center of a transit station. Proximity to rail stations provide a competitive advantage for commercial businesses by creating access to employee pools, which improve property values and encourage economic growth (Cohen and Brown, 2017).

Hess and Almeida (2007) measured rail proximity through straight-line and network distances. The straight-line distance, measured in feet, is the shortest possible straight line from a residential property to a rail station. Their research stipulated that residential properties within a half-mile radius of rail stations demand an additional \$2.31 for every foot closer to a light-rail station. Hess and Almeida’s second measurement of rail proximity delineates the commuter walking distance from a residential unit to a station, referred to as ‘network distance’. Under this modelling scenario, houses within a half-mile radius of transit-stations receive \$0.99 more per every foot closer to a light-rail station (Hess & Almeida, 2007, p.1057). Although the study is based on proximity to light rail stations located in Buffalo, New York, the results generally indicate that home owners are willing to pay more to be closer to a transit station by geographical distance. However, neighbourhood amenity characteristics that are often associated with transit-oriented design also demand an increased land rent value. Transit oriented design

features contain, “mix-used zoning, open and public spaces, amenity-rich neighbourhoods and pedestrian-oriented street design.” (Bartholomew and Ewing, 2011, p.622). A study by Mathur and Ferrell (2013) highlights that on average, residential home prices increase by 3.2% per every 50% reduction in distance from a home to a TOD area. Regardless of the property type, it appears that proximity of property to a transit station is key factor in the augmentation of property values.

### **Land Value Capture Policies**

To provide a clear context for this paper it is integral to define the term ‘value capture’. I apply the term ‘value capture’, to any policy mechanism that collects the betterment of land values resulting from public infrastructure investments or land use regulations. My definition of value capture is based on Rachelle Alterman’s (2012) description of ‘direct value capture’, which is a “legal obligation for landowners to contribute a share of their community-derived wealth to the public pocket.” (p.9). Alterman (2012) insightfully outlines two specific causes of betterment: 1) Development-based betterment, and 2) Infrastructure-based betterment. Development-based betterment is due to planning regulation decisions such as zoning that permit increased densities, resulting in increased values. Infrastructure-based betterment causes land values to rise through government funded infrastructure projects like subways (p.9). Both development-based and infrastructure-based examples will be examined in the later portion of this paper.

Value capture policies can be further categorized as development-based or taxation-based. Development-based approaches require a local government body or transportation authority to develop joint development arrangements to encourage private development near transit stations (Medda, 2012, p.158). A Metrolinx (2013) report titled *Metrolinx LVC Discussion Paper*, further delineates two sub-categories of development-based LVC policies. The first category shifts responsibility onto the transit provider for the delivery of a development. Such an approach is less popular amongst transit-providers as costs are susceptible to changing market conditions, real estate prices, and overall capability of a transit agency to spur development. Often times transit agencies are not organized to take on the developer role, as developing multibillion-dollar infrastructure projects places considerable risk on the public purse. The second category is a collaborative agreement amongst the transit provider and a private-developer, under this scenario the developer is not responsible for constructing a development.

Undergoing this method requires a strong and voluntary partnership amongst the private and public sector, as both parties are mutually dependent amongst each other. The new transit service augments land values by improving connectivity, and the developer is given development rights on land surrounding the new transit line (Metrolinx, 2013, p.13). Examples of joint development mechanisms are highlighted by Cervero et al. (2004), they include; air-right development, ground-lease agreements, station interfacing programs and connection-fees. The goal of these approaches is to promote real-estate development in close proximity to transit stations benefiting both the public and private sector. Other benefits of development-based benefits are identified by Metrolinx (2013) which include the potential to raise more revenue than tax-based policies. Developers perceive LVC contributions as a signal that the project is generating increased profits (p.11-12).

Development-based capture policies have a few requirements necessary for their successful implementation. First, contributions must be agreed upon early on in the project, ideally prior to the rail-line and station locations being solidified. Doing so will create certainty around a potential development. A second requirement is that the private-sector must perceive a shortfall in project funding, if the project is believed to be fully funded by the public sector there will be a reluctance to contribute amongst the private sector to contribute to a LVC mechanism (Metrolinx, 2013).

Tax-based policies attempt to capture the augmented land values created by new transit infrastructure through levies and taxes on nearby development. The tax is aimed at properties that experience value uplift through increased accessibility to new infrastructure. The revenues attained through tax-based capture policies are subsequently redirected to offset the capital and operating expenses of an infrastructure project. Some examples of tax-based LVC include; special assessment districts, development charges, tax increment financing and land value taxes (Metrolinx, 2013). Answering to both David Ricardo and Henry George, tax-based tools can potentially mitigate land speculation. Land that is underdeveloped will be subject to a land tax, incentivizing developers to develop or increase densities on existing developments to prevent their land from standing idle (Medda, 2012). The implementation of tax zones can aid in fostering private sector investment. The private sector views special tax zones as an assurance that their tax contributions will assist in funding development throughout the area, providing an improved financial return.

Tax-based policies are an effective means of providing additional financial support to a project's implementation while reducing strain on the public purse and ensuring development occurs near new infrastructure. Implementing a tax-based LVC policy approach is not easy. One contested issue amongst the public and private partners is determining and agreeing on a property's taxable value following an infrastructure investment. Differentiating the value of land that is attributed from general increases and what is attributed to infrastructure improvements is difficult (Medda, 2012, p.159). In addition, tax-based LVC policies are unpopular amongst politicians, since LVC is perceived as an additional tax (Radzinski 2012). Additionally, the partial recuperation of increased land values through tax-based LVC can potentially exacerbate development outside of built-up areas resulting in sprawl. Residents living near transit investments may be unable to afford the levy or tax that accompanies new infrastructure, resulting in the displacement of citizens to areas outside of the tax zone (Jaramillo, 2000). A similar theory holds true for developers where developments are relocated outside of the tax zone, as a means of cost saving.

## **2. Research Design and Methodology**

The following projects were analyzed: Crossrail in London, United Kingdom; No. 7 Line Subway Extension & the Hudson Yards Development in New York, New York; and SmartTrack in Toronto, Ontario. Due to each project undertaking a different land value capture approach (i.e. tax-based, development-based, hybrid, or none) a comparative research approach provides an opportunity to analyze the effectiveness of different value capture methods. Each city example met the criteria of having a major transit infrastructure project that used a form of land value capture to finance a portion of the project or repay project debt. The research question guiding my paper seeks to determine the effectiveness of land value capture (LVC) at capturing revenue and encouraging development surrounding an infrastructure project. The following criteria was used to examine the effectiveness of land value capture:

- 1) Land Value Capture's ability to recuperate funding for project debt repayment;
  - Total revenue collected per annum via land value capture mechanism; and
  - Length of debt repayment process.
- 2) Effectiveness of facilitating new development surrounding a station stop:

- Examining on-site development features; type, size, unit quantity and pricing.

Research was conducted through mixed-method approach of secondary data to review transit-infrastructure projects that were partially or fully funded through land value capture mechanisms. The analysis and collation of quantitative data serves to identify the effectiveness of LVC with respect to achieving the financial and development criteria listed above. The quantitative financial data was retrieved through secondary research, and publicly available government documents for each specific infrastructure project, such as; annual government budget reports, government investment and indenture reports, schedules of debt and private sector audits. These reports provided key fiscal data for each year an LVC policy was in effect, the data was compiled and input onto an excel sheet, to perform basic, yet necessary calculations; such the annual and cumulative (to date) revenue per LVC method, debt accumulated on borrowed funding, and the length of debt repayment for each project. These calculations allowed me to evaluate the fiscal performance of different LVC methods in different cities against the criteria listed above.

Locating and evaluating the amount of redevelopment surrounding a station stop was done through the review of private sector development proposals, municipal planning documents, public-private partnership agreements, and advertisements for purchasing/rental information made available by land developers. Each city example took a different approach in regard to encouraging over-site development around a transit stop. In London, development came both privately and through public-private partnerships over a number of subway stations throughout London. The City of New York provided private developers, Oxford and Related Companies, an opportunity to purchase development rights throughout the Hudson Yards. The on-site development information is qualitative in nature and the analysis of secondary data showcased each development's type of use (residential, commercial, etc.), gross floor area, amenity space and other information relative to over-site development.

When I first began researching LVC cases for this paper I thought that the quantitative criteria listed above would provide a good indication of the effectiveness of capture mechanisms. Through my research, I uncovered that legislative frameworks are crucial for ensuring that land value capture mechanisms can be implemented and that private developers contribute to a project's cost. The three city cases exemplify how LVC legislation can assist in the success of a value capture scheme, whereas a lack of legislation can severely mitigate LVC enforceability.

First-person interviews were conducted with academics and provincial policy directors and advisors, to investigate why the Ontario provincial government never implemented regulations for the Tax Increment Financing Act (2006). Past provincial employees that worked on the Tax Increment Financing Act (2006) were unwilling to formally discuss the legislation, exacerbating the difficulty of uncovering any underlying political issues and influences that may have prevented the implementation of regulations. My first-person interviews uncovered two possible explanations as to why regulations were not implemented. I do acknowledge that unveiling the interests that sought to keep the Tax Increment Financing Act (2006) without regulations is an integral area for further research, however, it is beyond the scope of this study.

## **3.The Elizabeth Line - London, UK**

### **Elizabeth Line Project Scope**

In 1943, the County of London Plan was created by Patrick Abercrombie, a professor of planning at the University of London. The County Plan proposed solutions to London's growth, housing condition, employment problems, traffic and general city development (Jackson & Croome, 1962). In 1946, a railway plan was published by the Railway Committee/London Plan, proposing the undergrounding of rail lines, removal of railway bridges over the Thames and new subway lines providing greater connection to central London (Fergusson, 2001). The London Plan Working Party (1949) recommended the construction of the Victoria Line and Jubilee Line (Fergusson, 2001), although the Victoria Line was never constructed it would later be revisited in the Central London Rail Study, published in 1989 by the Department of Transport (Glaister & Travers, 2001). The study proposed a new underground subway connecting central London to the eastern and western neighborhoods. A private members bill outlining the scope of Crossrail was introduced to the United Kingdom Parliament in 1991 and was subsequently rejected in 1994 due to the bill not satisfying the committee (Select Committee on the Crossrail Bill, 2008).

In February 2005, the Crossrail Hybrid Bill was introduced to London's Parliament, and subsequently considered by the House of Commons and the House of Lords. The purpose of a hybrid bill was to grant Transport for London (TfL) authorization to begin preliminary design and engineering on the Elizabeth line. According to the City of London Corporation (2015), the Elizabeth line will, "make it easier for City businesses to move around London, as well as

increasing the number of people who are able to access employment destinations throughout London.” (p.4). The Elizabeth Line is currently Europe’s largest infrastructure project (Crossrail, 2018), and upon completion will be fully integrated with Transport for London’s existing rail system. The project is spearheaded by Crossrail Limited, a subsidiary of Transport for London (TfL) and jointly sponsored by the Department for Transport (Crossrail, 2018). By late 2018 the tunneled portion of the railway in central London was to be in operation, with total project completion expected by 2019.

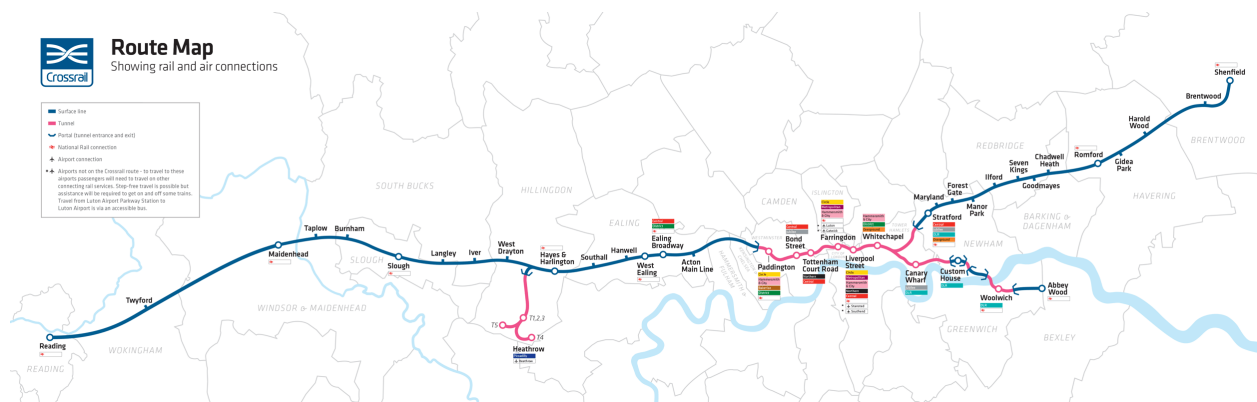


Figure 1 - Elizabeth Line Map (Crossrail, 2018)

According to the City of London Corporation (2015), the scope of the Elizabeth line is to enhance connectivity and efficiency throughout London. There will be over 100 km of new railway introduced, of which, 42 km will be excavated for tunneling (Crossrail, 2013). The project will span from Reading Station in the North West and Heathrow Airport in the South West, across the Greater London Area to Shenfield Station in the North East and Abbey Wood in the South East (*Figure 1*). Crossrail (2018) estimates that over 200 million annual passengers will board and travel along the Elizabeth Line annually. Improved ridership is accomplished by enhancing connectivity to different municipalities through the introduction of 41 station stops. Ten of the 41 new stations like; Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street, Whitechapel, Canary Wharf, Custom House, Woolwich and Abbey Wood will be entirely new stations, featuring over-site development (Crossrail, 2018). A project with such an ambitious scope comes with a big price tag, the GLA (2010) estimates the total cost of Crossrail to be £15.9 billion.



## **Local Market Analysis and Projections**

Transport for London (TfL), Future of London (FoL) and Crossrail Ltd. have retained a number of private consulting firms, such as; KPMG, GVA, JLL, Knight Frank, ARUP and Hampton's International to project the impact of the Elizabeth Line on residential and commercial property values. Despite differing approaches of analysis, all the studies predict improved property values in proximity to the Crossrail/Elizabeth line station stops. Table 1 highlights the major findings of the four different consultancy reports. CBRE found that dwellings prices near Crossrail Stations will see an annual increase of 2.5%, and properties in Central London are set to experience an increase of 20%. The report by JLL, *Crossrail: The Impact on London's Property Market* indicates that residential rental values will increase from 2014-2020, whereas Whitechapel, Woolwich, Ealing Broadway and West Drayton stations will experience new developments. Hamptons International research insightfully indicates that the quantity of sales and new development attributable to Elizabeth Line is continuously increasing, whereas Knight Frank research points towards the trend that properties within a 10-minute walk of Crossrail in Central London have increased in value.

*Table 1 - Property Market Performance Surrounding Crossrail Stations*

Consultancy Firm	Publication Title	Year of Publication	Generalized Finding/Projection
CBRE	Crossrail: The Impact on London's Property Market	2016	-House prices will increase on average 2.5% per year around Crossrail Stations. -Total increase of 13% over and above capital appreciation by the time Crossrail is fully operational. -Central London property values will see an overall increase around 20%.
JLL	Crossrail: Identifying Opportunities	January, 2015	-Crossrail residential rental value growth outperformance 2014-2020: Maximum 15%, Average 7%. -Stations expecting largest development: Whitechapel, Woolwich, Ealing Broadway, West Drayton.

Hamptons International	Linking Housing Markets: The effect of Crossrail on housing markets in London	March, 2014	-Housing sales within a mile of Crossrail stations grew by 21%, sales within 500 metres grew by 23%. -House prices within one mile rose by 34% from 2009, whereas prices within 500m rose 27%. -Since 2009 2 out of 5 new build sales were within a mile of a Crossrail station.
Knight Frank	Crossrail – Analysing property market performance along the Elizabeth line	2017	-From Q3 2014 to Q4 2016, properties within a 10-minute walk from Crossrail stations in central London rose by 6% while Knight Frank’s prime central London index dipped by 5.7%.

Sources: CBRE. (2016). *Crossrail: The Impact on London’s Property Market*, 2-3.

Jll. (2015). *Crossrail: Identifying Opportunities*, 1-4.

Hamptons International. (2014). *Linking Housing Markets: The effects of Crossrail on housing Markets in London*, 4-5.

Knight Frank LLP. (2017). *Crossrail Analysing Property Market Performance Along the Elizabeth Line*, 2-6.

In collaboration with Crossrail Ltd. (2018), real estate firm GVA projected the quantity of residential developments to be constructed within 1km of Crossrail stations from 2012-2026 (Table 2). Based on GVA’s findings the Elizabeth line will have a positive impact on the quantity and value of properties along the Elizabeth line, GVA (2012) states, “[Crossrail] is likely to support the existing strength of the market and enable growth trends to be maintained in the future.” (P.59). Such is not a new finding, Cervero (1994) states, “Residential development remains the one real estate bright spot...there may be opportunities and pressures for high-density residential development within walking distance of transit stations.” (p.92). The influx of new residential development and improved land values along the Elizabeth line is primarily due to the locational advantage provided through transit infrastructure, as people are willing to pay a premium for improved connectivity (Alonso, 1964).

Table 2 - Impact within 1km of an Elizabeth Line Station (GVA & Crossrail, 2018)

Impact Indicator	2012	2021	2026
Housing Development	Development of 57,000 new homes	Development of 90,599 new homes	Development of 180,000 new homes
Property Value Uplift	£5.5bn in additional value	£10.6bn in property values	£20.1bn total uplift in property values within 1km of a station

Commercial Development	3.25mn square metres of commercial space	4.44mn square metres of commercial space	N/A
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Important to note is that development patterns will not be uniform throughout the entirety of the Crossrail line. GVA & Crossrail (2018) point out that central areas of the line will outperform the eastern and western sections, until the line is fully operable. The built form of Central London is substantially different than peripheral eastern and western cities, resulting in increased development, “The City of London in particular represent substantial concentrations of office-based activity and employment in financial and business services, corporate occupiers and government occupiers.” (GVA & Crossrail, 2012, p.58). GVA forecasts the central activity zone which serve the United Kingdom’s international business activities (Mid Town, West End, The City of London, City Fringe and Canary Wharf), to demand the highest rental levels and values.

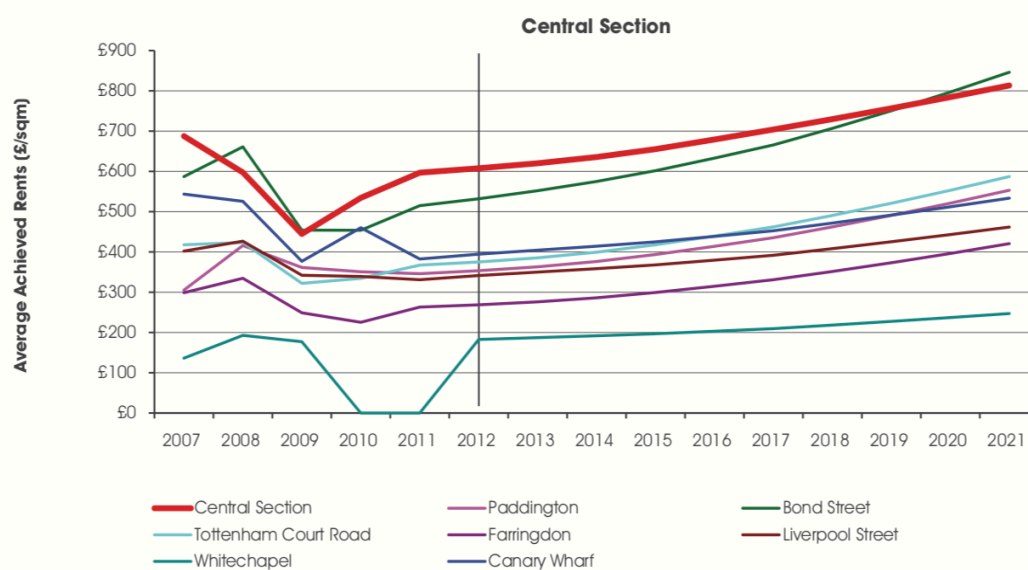


Figure 2 - Average Achieved Rents for Residences at Central Crossrail Stations (GVA & Crossrail, 2012)

In comparison, areas outside of the central area zone will experience lower office floorspace demand and generally lower rental and sale values (p.58). GVA and Crossrail LTD (2012) forecast that Bond Street will be the only station to outpace the central section average. Station areas such as Paddington, Tottenham Court Road and Farringdon will all see relative

improvements (*Figure 2*), partially due to the availability of large labour pools and enhanced direct international business relations.

Office space development is marginal in the west end of the Elizabeth line, property value projections display little to no change in the value of over and under-performing stations in the area. The east-end could potentially benefit by being the next-best option outside of central London, “the appeal of the closest locations to Central London that could offer a new commercial office price category could be significant. The provision of Crossrail services is therefore potentially very significant.” (GVA & Crossrail Ltd., 2012). Analysts predict that the peripheral office market of the Elizabeth line east and west, will begin to see drastic changes in property values beginning in 2020. Since 2008, Crossrail has had a substantial affect by encouraging development along the Elizabeth Line. According to GVA (2012) from 2013-2016 nearly 58% of planning rationales cited Crossrail as an influence for development, totalling an estimated 3.1 million m<sup>2</sup> of office floor space and 220, 000 m<sup>2</sup> of new shops and restaurants. By the year 2026, the total commercial value uplift attributed to Crossrail is an estimated £215 million, whereas residential uplift is estimated at £13 billion (GVA, 2012, p.8). The key takeaway for office performance on the Elizabeth line appears to be that Crossrail will strengthen existing well-performing office markets. Whereas, the east and west stations currently performing below benchmark levels will experience value uplift in the future as new office and residential spaces are constructed.

### **The Legislature**

The Department for Transport (DfT) and Transport for London (TfL) committed to a total funding envelope of £15.9 billion for the delivery of the Elizabeth line extension (Crossrail Ltd., 2018). The Business Rate Supplement Act (2009) was passed by both the House of Commons and House of Lords, receiving Royal Assent on July 2<sup>nd</sup>, 2009, officially becoming an act of Parliament (United Kingdom Parliament, 2009). The Business Rate Supplement Act (2009) was implemented to provide local authorities and the Greater London Authority, “power to impose a levy, to be called a “business rate supplement” (referred to in this Act as a “BRS”), on non-domestic ratepayers in its area.” (Business Rate Supplement Act 2009, S.1(1)). According to the BRS Act, the levying authority is defined as, “The Greater London Authority, a

county council in England, a district council for an area in England for which there is no county council and a county council or county borough in Wales.” (Business Rate Supplement Act 2009, S.2 (1)). Section 1 of the Business Rate Supplement Act (2009) stipulates that the BRS is used solely to raise money for projects which are proven to promote economic development. In addition, authorities which collect BRS revenue can only expend the money on “the project to which the BRS relates, and that the authority would not have incurred had it not imposed the BRS.” (Business Rate Supplement Act 2009, S.3 (1)). Certain administrative conditions with respect to community consultation and initial documentation must be met prior to imposing a BRS, which include the following;

- (a) it has published a document that sets out the proposal for the imposition of the BRS (an “initial prospectus”),
- (b) it has consulted the relevant persons on the proposal,
- (c) [a ballot] has been held and the imposition of the BRS approved, and
- (d) it has published a document that sets out the arrangements for the imposition of the BRS (a “final prospectus”). (Business Rate Supplement Act 2009, S.4)

The final prospectus provides in-depth explanations as to how a BRS will be implemented throughout the Greater London Area by outlining intricate details, like: project capital costs, project financing arrangements, BRS multiplier rates, and debt repayment timelines. Section 4 of the BRS Act introduces the additionality test and mayoral ballot, which are requirements prior to the imposition of the BRS. The additionality test is outlined in section 3(1) of the BRS, which specifies that an additionality test will commence to ensure BRS revenues are only used on the project to which BRS was intended for and costs the authority incurred due to an identified project. Section 7 (1) requires a mayoral ballot to be held if the Crossrail BRS will contribute to more than 1/3 of the project cost, and that the ballot is to be held prior to the implementation of a BRS. The additionality and ballot test are a safety valve to ensure overall support and financial viability prior to project commencement. The Mayor of London exempted the project from additionality and ballot testing, using Section 27(6) of the BRS Act which states, “Sections 3(1)(b), 7(1) and 10(7) do not apply to a BRS that the Greater London Authority proposes to impose, or imposes, in reliance on subsection (2) if the chargeable period of the BRS begins on or before 1 April 2011.” (Greater London Authority, 2010, p.47).

The GLA's analysis of Crossrail BRS determined that the supplement would fund less than one third of the total project cost. In addition, the project commenced prior to April 1, 2011 deadline, meaning neither the test nor ballot were required.

Since the levying authority is responsible for prescribing a rateable value condition for a hereditament, the legislation requires the levying authority to consult with persons liable to pay into the BRS. Legislation which encourages public consultation should be commended, Richard Smith (1973) argues that participatory planning processes contribute to adaptive and stable societal systems, while citizen participants allows the planning process to become a learning system (p.275). Public consultation can potentially play an important role throughout the Crossrail project, especially during BRS "revaluation years". During revaluation years, the GLA is able to readjust the BRS rateable value thresholds and multiplier rate, which can alter the quantity of ratepayers susceptible to the BRS fee. Section 14 (6) of the Business Rate Supplement Act states that the BRS multiplier rate for a financial year cannot exceed 0.02. If the BRS thresholds and rates were to become unaffordable for citizens, public consultation will become a powerful tool to voice concern and highlight necessary changes to the BRS.

### **The Business Rate Supplement**

On, April 1<sup>st</sup>, 2010 the Greater London Authority (GLA) implemented a business rate supplement (BRS) to finance £4.1 billion of the costs of the £14.8 billion funding envelope for the Elizabeth line extension (Crossrail, 2018). The Business Rate Supplement Act enables levying authorities to levy a betterment tax on non-domestic properties based on a rateable value set by the Greater London Authority. The BRS is collected throughout all 32 London boroughs and the Corporation of London. The final prospectus outlines that the first five years of the BRS (2010/2011-2014/2015) the levy will be set at 2 pence per pound on non-domestic properties that have a rateable value above £55,000. (Greater London Authority, 2010). For example, a non-domestic property with a rateable value of £100,000 would be subject to a BRS contribution of £2,000 each year until the rateable value is changed or the BRS program is complete. The GLA strategically choose a rateable threshold of £55,000, exempting 82% of non-domestic hereditaments from the BRS (Greater London Authority, 2010, p. 31), a way of 'easing' into the BRS. As mentioned earlier, there is a legislated requirement to periodically reevaluate rateable values and thresholds to adjust for market fluctuations and rate changes. The rateable values are

determined by the Valuation Office Agency (VAO), an agency of her Majesty's Revenue and Customs. The first revaluation came into effect on April 1, 2017, increasing the rateable value from £55,000 to £70,000, and the BRS multiplier is to remain the at 0.02 per pound (Crossrail, 2017). The new rateable value threshold exempted roughly 85% of non-domestic properties in London from the BRS in 2018-2019 (Crossrail, 2017).

As outlined in the Business Rate Supplement Act (2009), the Greater London Authority (GLA) was required to publish a final prospectus outlining how BRS revenues would be raised, and the conditions for their use. In January, 2010 the GLA published "Intention to levy a business rate supplement to finance the Greater London Authority's contribution to the Crossrail project, Final Prospectus". According to the final prospectus the Mayor of London, Transport for London (TfL) and the Greater London Authority (GLA) will contribute a cumulative funding sum of £7.1 billion. Project funding is broken down as follows: £1.9 billion contribution from TfL, £4.1 billion from the BRS, £600 million from the community infrastructure levies and an estimated £500 million from over-site development (Crossrail, 2018). As outlined by real-estate forecasts in the earlier section, the Elizabeth Line will augment property values, the BRS collects the betterment of land values. To define betterment in the Crossrail case, I apply Rachelle Alterman (2012) definition: "value rise is due to a specific government decision is directly caused by specific types of land-use regulatory decisions or by the execution of public infrastructure." (p.9). Through the augmented land values resulting from the Elizabeth Line, the BRS will pay off the £4.1 billion of borrowed funding, not the entire Crossrail project cost.

### **Business Rate Supplement Performance**

This research uses the following quantitative criteria to evaluate LVC mechanisms; total revenue collected per annum, and length of debt repayment. Table 3 was populated based on fiscal information derived from the Mayor of London's 'Annual Statement of Accounts' from 2010 through 2018. Each year the GLA's statement of accounts provides a section titled, "Business Rate Supplement Revenue Account", its purpose is to account for income raised from the BRS along with expenditures incurred from the project. The Crossrail BRS has performed exceptionally well, as of 2018 the total gross revenue attributable to the BRS was £1.83 billion. The BRS has provided a steady source of income, based on a non-residential rateable value of

£55,000, the BRS has averaged a gross annual income of £222.94 million per year. The largest spike in gross annual income occurred following when the non-residential rateable value determinant increased from £55,000 to £70,000. In 2017/2018 the £70,000 rateable value increased the gross annual income by £46.3 in comparison to 2016/2017 annual revenue, foreshadowing a promising future for BRS annual incomes.

*Table 3 - Value Raised via BRS (Mayor of London. (2010-2018). Annual Statement of Accounts.)*

Calendar Year	Non-Residential Rateable Value Determinant (Thousands)	Value Multiplier (Pence per Pound)	Gross Annual Income Raised Through BRS (Millions)	Interest Payable on Borrowed Funding (Millions)	Annual Scheduled Payment for Crossrail Construction Cost (Millions)
2010/2011	£ 55, 000	2p/£	£ 224.0	£ 31.1	£ 998.4
2011/2012	£ 55, 000	2p/£	£ 231.7	£ 58.3	£ 871.6
2012/2013	£ 55, 000	2p/£	£ 224.8	£ 79.8	£ 819
2013/2014	£ 55, 000	2p/£	£ 220.4	£ 107.6	£ 875
2014/2015	£ 55, 000	2p/£	£ 218.8	£ 121	£ 530
2015/2016	£ 55, 000	2p/£	£ 217.5	£ 117	£ 9
2016/2017	£ 55, 000	2p/£	£ 223.4	£ 116.4	Payment Complete
2017/2018	£ 70, 000	2p/£	£ 272.8	£ 115.4	Payment Complete
Total			£1,833.4	£747.6	£4,103

The Final Prospectus states the GLA would borrow £3.5 billion at an interest rate of 6%, coupled with a direct contribution of £600 million. After the Final Prospectus was published, the GLA was able to borrow £3.3 billion at a reduced interest rate of 3.6%. A reduction in borrowed principle required the GLA to increase their direct contribution to \$800 million. A reduction in interest rates plays an important role in mitigating the already high costs of debt servicing. In 2010/11 the GLA spent £31.1 million on debt servicing, whereas payments escalated to £115.4 in 2017/2018. To date a total sum of £747.6 million has been paid towards servicing the interest on the borrowed funds, however, the GLA has not made any repayments towards the principle sum of £3.3 billion. According to the Final Prospectus (2010), repayment on the principle is set to begin in 2018/2019, repayments should be completed within 24-31 years.

Although it does not account for a substantial portion of Crossrail funding, the community infrastructure levy (CIL) will provide £300 million for project funding from the private sector. The power to implement a CIL is provided to the mayor under the Planning Act



2008, a tool to collect money for infrastructure development. On February 29, 2012 the Mayor of London stated the CIL is to be applied to developments consented on or after April 1, 2012 and will be collected by London Boroughs upon the beginning of development. The boroughs of London are divided into three different zones, each zone requiring a different levy per square metre on a development. Premium zones like the City of London charges £50 per square metre, whereas zone 2 boroughs like Barnet, levy £35 per square metre and zone 3 boroughs such as Enfield charge £20 per square metre. (Greater London Authority, 2018). The CIL program accumulated an income of £109.2 million in 2017/18, albeit a slower year than 2016/17 which produced £146.7 million. As the Crossrail comes to completion, more development is expected to occur throughout all three zones, increasing total CIL contributions.

### **Over-Station Developments along the Elizabeth Line**

Public-Private partnerships and developer contributions have been an effective means of raising capital while simultaneously encouraging development along the line. The Crossrail Act (2008) outlines over-site development (OSD) initiatives as; secure planning consents for OSD within two years of the beginning of Crossrail construction, and implement reasonable endeavours to ensure construction is completed. It is projected that OSD will generate over £500 million through OSD agreements (Lindsay, 2018) (*Table 4*).

*Table 4 - Major Development Partnerships Near Crossrail Stations (Crossrail. (2013). Driving London Development)*

Station Name	Development Name	Developer	Type	# of Storeys	GFA (non-residential)	Residential # of Units	Status
Paddington Station	Paddington Triangle	Not Available	Office Space	15	320,000 ft <sup>2</sup>	Not Applicable	Proposed
Canary Wharf	Canary Wharf Station	Canary Wharf Group	Retail, Public Garden	4	97,000 ft <sup>2</sup>	Not Applicable	Completed
Bond Street West Station	65 Davies Street	Crossrail & Grosvenor	Office Space	6	115,000 ft <sup>2</sup>	Not Applicable	Planning Granted
Bond Street East Station	18-19 Hanover Street	Crossrail & Great Portland Estates (GPE)	Office, Retail, Residential	7	Office: 170,400 ft <sup>2</sup> Retail/Restaurant: 40,900 ft <sup>2</sup>	6 Residential Units 12,300 ft <sup>2</sup>	Planning Granted
Tottenham Court Road West	Dean Street Development	Crossrail as acting developer	Retail, Residential	N/A	Retail: 12,000 ft <sup>2</sup>	92 Residential Units 105,000 ft <sup>2</sup>	Under Construction
Tottenham Court Road East	1 Oxford Street	Derwent London	Office, Retail	8	Office: 209,000 ft <sup>2</sup>	Not Applicable	Planning Granted

					Retail: 36,000 ft <sup>2</sup> Theatre: 40,000 ft <sup>2</sup>		
Fisher Street	Fisher Street	Crossrail/TfL	Residential	8	Not Applicable	22 Residential Units 25,00 ft <sup>2</sup>	Under Construction
Farringdon West	Cardinal House	Cardinal Lysander	Commercial Office	7	138,000 ft <sup>2</sup>	Not Applicable	Under Construction
Farringdon East	Lindsey Street	Crossrail/TfL	Office	5	120,000 ft <sup>2</sup>	Not Applicable	Proposal
Liverpool Street West	101 Moorgate	Aviva	Office	6	88,000 ft <sup>2</sup>	Not Applicable	Planning Consent Granted
Liverpool Street East	1-14 Liverpool Street	Aviva	Office, Ground Level retail	9	256,000 ft <sup>2</sup>	Not Applicable	Application Pending
100 Liverpool Street	100 Liverpool Street	British Land	Office, Retail	9	515,000 ft <sup>2</sup>	Not Applicable	Under Construction
Whitechapel	Whitechapel Central	L&Q	Residential, Commercial	4-25	62,667 ft <sup>2</sup>	564 Units (149 Affordable)	Planning Consent Granted
Woolwich	Berkeley Homes	Berkeley Homes	Residential	8-23	490,000 ft <sup>2</sup>	5 Buildings - 394 Units (58 Affordable)	Planning Consent Granted

Commercial development agreements were put in place at:

- Bond Street Station (both entrances);
- Tottenham Court Road (East ticket hall);
- Farringdon (West ticket hall); and
- Liverpool Street (West ticket hall) (Crossrail, 2013).

Ian Lindsay (2018) on behalf of Crossrail, published a report titled, *Crossrail OSD Collaboration & Property Value Capture*, outlining how OSD development agreements functioned. The following excerpt outlines the purchasing, planning, development and sale of land through OSD agreements:

The Railway Promoter agrees to purchase the land in line with the ‘compulsory purchase compensation code’; The Landowner/promoter agree to jointly progress the OSD design so as to secure a planning consent in joint names; The Landowner/Developer’s design, planning, construction interface and other costs are covered by a consideration of the lower of 7.5% of total development costs or £6m. The Landowner has pre-emption right to buy back the development site at its enhanced market value and on a 125-year lease in

return for a 17.5% developer's priority return on costs with super-profit then shared equally (p.1)

The OSD program integrative nature was excellent in enhancing collaboration during the design and planning of developments. However, once a planning approval was given, Crossrail and the developer no longer shared the risk/reward for a development. This was caused by the development agreement shifting significant financial risk onto the developer, in exchange for land value only payments (Lindsay, 2018). Some developers choose to circumvent the OSD program, opting for a privatized development approach where all costs and risks are placed directly on the private sector.

Canary Wharf and Woolwich stations were constructed by the Canary Wharf Group and Berkeley Homes, respectively. Rather than pursuing their developments through an OSD development agreement, the developers took on additional risk by pursuing their development privately. Canary Wharf Group and Berkeley Homes developed their projects at their own cost, and then secured Crossrail access, integrating their new development directly to the Elizabeth line. On May 1<sup>st</sup> 2015, the Canary Wharf Group officially opened 97,000 ft<sup>2</sup> of retail space, along with a public garden. The developer was able to produce a fully functional OSD space three years prior to the opening of Canary Wharf subway station. Woolwich station was originally omitted from the Crossrail plan, after substantial citizen lobbying the station was reintroduced to the Crossrail scope. Station design for Woolwich was proving to become exceptionally expensive, in an effort to provide connectivity to their proposed development, Berkeley Homes offered to fund the construction costs of a station box. The Berkeley proposal was accepted by the government, requiring a contribution of land to facilitate the construction of a cut and cover station box. To assist in gathering revenues for the cost of the station box and expropriated land, local council permitted the developer to intensify the development above Woolwich station, resulting in a gross floor area of 490, 000 ft<sup>2</sup>, amongst five buildings for a total of 394 units, 58 of which are classified as affordable. According to Lindsay Ian (2018) the Canary Wharf and Berkeley Homes projects are projected to provide an additional £300 million for Crossrail.

The OSD initiative at Crossrail station stops has provided upwards of £500 worth of funding for the Crossrail project. In addition, OSD's have assisted in making use of once idle land, creating approximately 3.5 million ft<sup>2</sup> of office, retail and residential space, which is

projected to increase by 2021. Residential properties have also been positively impacted, the GVA (2018) projects that by 2021 Crossrail will generate approximately £10.6 billion to property values, along with roughly 90,000 new residences. Projections for 2026 indicate that residential property values will increase near £20 billion in value, along with the construction of 180,000 new residences (GVA 2018). The TfL played a remarkable role in ensuring that Crossrail OSD were located, designed and constructed to enhance integration with stations stops. In doing so, there was a substantial financial risk placed on the TfL. The program indicated that if OSD development profits were less than the cost of setting-up the OSD program, then TfL would be required to pay the difference. Development attributable to the Crossrail OSD program and the revenue generated for Crossrail costs appear to be growing at a strong rate, and to date TfL has not had to offset any shortfalls in program costs.

## **4. Number 7 Line Subway Extension/Hudson Yards - New York, New York**

### **Project Scope**

The Line 7 New York City Flushing subway line extension is a 1.5-mile rail expansion spanning the previous terminus Times Square, to a new station stop at 34<sup>th</sup> Street and Eleventh Avenue, known as the Hudson Yards (Metropolitan Transportation Authority, 2015). Expanding the Line 7 subway dates back to 1969, conceptualized by the Lindsay administration whom sought a subway extension would assist in encouraging the redevelopment of the far west side of Manhattan (Fisher, 2015). The Lindsay administration proposed funding the line 7 extension via state backed bonds, which would be financed through tax revenue on new developments along the line, the plan was ultimately cancelled due to voters rejecting a \$ 2.5 billion state bond issue (Witkin, 1971). Although the plan was cancelled, the idea of self-financing an infrastructure project through the sale of state-issued bonds would be revisited in the years to come.

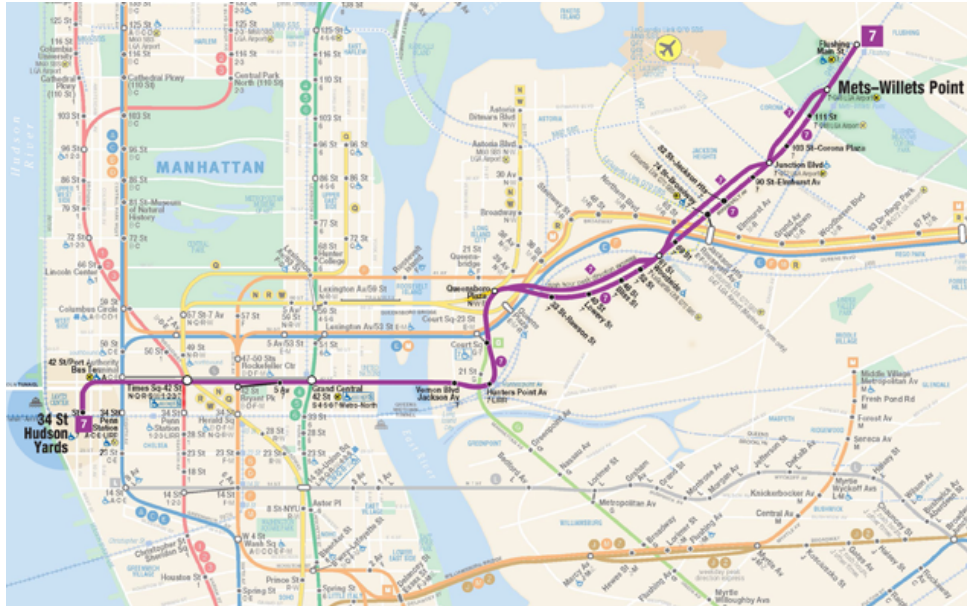


Figure 3 - Line 7 Extension (MTA, 2018)

The Line 7 expansion was once again reintroduced in 2005, coupled with a proposal for an Olympic stadium, both of which were considered integral pieces of infrastructure to secure the 2012 Summer Olympic games. Mayor Michael R. Bloomberg viewed the Olympic stadium as a regenerative tool to redevelop the industrial lands on the west side of Manhattan, Bloomberg argued, “Without it, we won’t have the catalyst for the growth of this neighborhood, and we’ll have to revise our plans to make up for it.” (Bagli & Cooper, 2005). The Bloomberg administration’s 2002 report title, “Preferred Direction” introduced an agenda to redevelop the Hudson Yards to allow for office, residential and commercial spaces. Despite Mayor Bloomberg eagerness to build the stadium, the funding initiative was out of New York City’s hands, rather it would be decided by the state. Albany Assembly leader Sheldon Silver, Governor George E. Pataki and Senate majority leader Joseph L. Bruno refused to support the \$2.2 billion stadium project, arguing the project would deprioritize the rebuilding of lower Manhattan following the events of September 11<sup>th</sup> 2001.

Although the Olympic stadium was never funded, the government of New York devised a new plan that would regenerate Manhattan’s west side, official known as; *No. 7 Extension – Hudson Yards Rezoning and Development Program*. The document presented an initiative to rezone the general area of; West 43<sup>rd</sup> Street on the North, Hudson River Park on the west, West 28<sup>th</sup> and West 30<sup>th</sup> to the south and Seventh and Eighth Avenues to the east (New York Department for City Planning, 2003). The 2003 rezoning plan for the Hudson Yards initially

allowed 28 million ft<sup>2</sup> of commercial space, approximately 12,600 residential units, and the extension of the No.7 Subway Line from its previous terminus of Times Square to a new terminus at Eleventh Avenue and West 34<sup>th</sup> street. (New York Department for City Planning, p.1, 2003). The New York City Planning Department and the MTA emphasized that the revitalization of the Hudson Yards would not be a success unless the line 7 subway was extended to the yards. The New York Planning Department (2003) provided 5 reasons outlining the necessity of the Line 7 extension:

- 1) Provides the capacity to support the anticipated new demand from residents, visitors, and retail and hotel workers.
- 2) Closest east-west subway in proximity to the Hudson Yards Area.
- 3) Possibility of extending the subway without interfering with other subway lines and stations.
- 4) Has existing connectivity to major transportation hubs in Manhattan and all of Midtown Manhattan's north-south subway lines.
- 5) Provides direct service between Hudson Yards and Queens.  
(New York City Planning Department, p.6, 2003)

The transit options for the Hudson Yards at the time would not sufficiently service the proposed densities of the fully built out Hudson Yards. From the initial conceptualization of the Line 7 extension, it was stated that the fiscal responsibility of the project would not fall on the MTA or the City of New York. The City proposed a unique method to pay for the project, whereas capital would be borrowed to finance the construction of the line, portions of the debt would be paid off through land value capture mechanisms.

### **Local Market Analysis**

The developers of the Hudson yards, Oxford Properties Group and the Related Companies retained a New York City-based consultancy, Appleseed, to provide an in-depth economic impact analysis of the proposed Hudson Yards development. The project is slated to be the largest private development in NYC's history, from 2012 to 2025, upwards of \$20 billion will be spent on the development and construction of the Hudson Yards (Appleseed, 2016). The Appleseed report estimates that direct and indirect project expenditures will total nearly \$17.1 billion (2018 dollars) by the time of project completion. Construction of the Yards will provide 98,360 person-years of employment, creating upwards of \$10.6 billion in wages and salaries, and \$25.6 billion in city-wide economic output (p.5). The construction impact associated with

the project from 2012 to 2025 will create 3,649 full-time-equivalent (FTE) jobs per annum, of which 2,767 jobs will be in construction and 882 will be in related industries (p.5). Cumulative salaries and wages paid to those working on the project amounts to \$505.1 million each year, averaging roughly \$138,000 per FTE job (p.11). As employers take tenancy, the Yards is estimated to employ 55,752 people on a FTE basis, cumulatively generating \$9.8 billion in income, averaging \$175,000 per FTE person (2018 dollars) (p.5). The timing of the project was also pivotal, shortly after the United States were recovering from the recession, the Yards proposal presented an opportunity to generate tremendous job opportunities throughout the City.

The estimated cumulative economic impact of the Hudson Yards on the City of New York is impressive, providing more than \$42.1 billion in annual output, approximately 123,303 FTE jobs with cumulative earnings totalling more than \$15.9 billion (2018 dollars) throughout NYC (p.5). The impact on city wide GDP is also a remarkable feat, when fully operable the companies located within the yards are set to contribute nearly \$18.9 billion (2018 dollars) annually towards New York City's GDP. This amounts to roughly 2.5 % of New York's citywide GDP, approximately \$338,130 per worker/annum (p.5). The City of New York will also profit through increased tax returns which can be reinvested to various initiatives throughout the City. Appleseed (2016) projects taxes paid by residents employed through the construction process of the Yards will generate \$237 million in tax revenues for the City. When the project is completed and full-time employees begin working in Yards, annual tax revenues are expected to increase to \$477 million (p.5). Considering the Yards began as a blighted industrial rail-yard on Manhattan's west side, the economic impact of the development is vital for the continuous growth of New York. First, more than 64% of New York City's office space are in buildings at least 50 years old (Related & Oxford, 2018), the Yards presents an inviting mixed-use community for well-paying employers to locate and maintain New York's competitive markets. Moreover, the site will provide more than 5,000 affordable residential units, a much-needed option considering the cost of housing in Manhattan.

### **The Legislature**

The legislative actions necessary to ensure the Hudson Yard project attracted development was a multi-step process. First, the Hudson Yard site required a complete rezoning to alleviate the site from its previous commercial and light industrial uses (Fisher, 2015, p.14).

The rezoning of the yards incentivized private development by allowing for high density commercial and residential uses. A rezoning alone was not adequate to kickstart the redevelopment of the Hudson Yards. The New York Planning Department (2003) brilliantly insisted that the Line 7 Subway Extension is the missing piece of infrastructure that would link the far west side to the rest of New York City. The Metropolitan Transit Authority and the State of New York did not view the Line 7 extension as a funding priority, both bodies argued that the City of New York should be responsible for its entire funding (Fisher, 2015). New York City agreed to fund the full cost of the Line 7 extension through different variations of tax-increment financing (TIF). The Committee on New York City Affairs (2007) highlighted that the rezoning of the Yards coupled with the Line 7 subway extension would spur development and generate enough revenue, to self-finance the Line 7 subway extension (p.357). Self-financing the extension would be done through the sale of state backed bonds and paid off through a mix of land value capture tools throughout the Yards.

### **Rezoning the Hudson Yards**

From 1960 onwards, there has been little change to the zoning governing the Hudson Yard site. Prior to 2005, the area was predominantly low and medium density manufacturing with a few pockets of commercial use. According to the City of New York Planning Department, the most common zoning designation amongst the yards was major manufacturing designation referred to as M1-5, allowing a floor area ration (FAR) of 5.0. Commercial zones C6-2 and C6-4 with FAR's of 6.0 and 10.0 respectively were common throughout the site. The site was also home to a number of auxiliary transportation uses; Penn Station, Port Authority bus terminal, Lincoln Tunnel access roads and 26 acres of MTA rail yard (Fisher, 2015). The permitted FAR's and infrastructure uses mitigated private development and investment at the Hudson Yard Site.

On January 19, 2005 the City Council of New York voted to adopt the Hudson Yard Rezoning proposal. According to a New York City Planning Commission Report (2005) the benefits of the Hudson Yard rezoning would, "facilitate the expansion of Midtown's central business district, expand residential neighborhoods, and regulate development adjacent to new parks and open space and connections to a proposed expansion of the Number 7 Subway Line." (p.1). The zoning amendment establishes and amends a number of policy areas, such as; created the Special Hudson Yard District, modifies the policies of the Special Garment Center District and Special Clinton District and eliminates the Special Jacob K. Javits Center Convention



District. The new zoning amendment was designed to create a ‘bowl’ of regulated densities and heights on the perimeter of the Hudson yards, to slowly integrate the development with the existing built-form. The highest densities are placed along Eleventh Avenue and West 33<sup>rd</sup> Street, strategically located in close proximity to the Line 7 Subway stop and farthest from the medium density residential areas of the site (NYC Department of City Planning, 2005). The medium-density areas of the Hudson yards are nestled along Ninth Avenue to the west of the site. Relatively higher densities are layered on the west along Tenth Avenue, the south along West 34<sup>th</sup> Street, to the north along West 42<sup>nd</sup> Street and on the East where the Special Garment Center District is located (NY Department of City Planning, 2005, p.9).

Through the Special Hudson Yards District provisions of the zoning resolution, the New York City Department of City Planning implemented a policy that allow for payments in lieu of exceeding zoning densities, known as District Improvement Bonuses (DIB). DIB’s provide an opportunity for commercial and residential projects to exceed the base maximum floor area ratio (FAR) by making a DIB payment to the Hudson Yard District Improvement Fund. The zoning resolution originally set the DIB price at \$100 per square foot however, each year the New York City Department of City Planning is required to make an annual price adjustment. According to the NYC Department of City Planning (2019) the 2019 rate for DIB’s is set at \$132.51 per square foot. In addition, the City has also introduced the sale of Eastern Rail Yard Transferrable Development Rights (ERY TDRs), providing developers an opportunity to purchase the legal right to construct over-site developments on the Eastern Rail Yards. The process for purchasing ERY TDR’s requires development applications to be received and reviewed by the HYDC, and undergoing a value appraisal. Developers whom apply to the HYDC to purchase ERY TDR’s, are subject to the TDR pricing mechanism of 65% of the final appraised value per square foot. The TDR pricing mechanism is reviewed every three years to determine if adjustments are required (HYDC, 2013). Allowing developers to exceed zoning requirements in exchange for cash is vital for raising additional revenue to pay for the No. 7 Subway extension (HYDC, 2016).

### **Tax-Increment Financing Legislation**

Tax-Increment Financing (TIF) is a tax-based form of land value capture, which provides local governments an opportunity to generate revenue through increased tax revenue. According to the Committee on New York City Affairs (2007), capital projects in New York City receive the following government funding allowance; federal government (80%), state government

(15%) and the City of New York (5%) (p.356). Since the City of New York agreed to fund the full project cost of the No. 7 subway extension, TIF will play a key role in generating project funding. New York State legislated TIF in 1984 by passing the “Municipal Redevelopment Law” (Cerciello, 2005, p.104). The Municipal Redevelopment Law outlines the necessary project characteristics to implement TIF and/or PILOT financing. Section 970-B highlights that TIF can only be employed to redevelop what are determined to be ‘blighted areas’, defined by the New York State Legislature as; lands which have a predominance of buildings that are deteriorated and unsafe for occupancy. Blighted lands are generally economically unproductive, where the buildings and structures that occupy the lands require redevelopment to mitigate further deterioration that could jeopardize the economic well-being of its residents. (Municipal Redevelopment Law, 970-B). The City of New York determined the Hudson Yards fit within the states description of a ‘blighted’ area. Requiring the project to advance to the ‘Survey Area Study’ phase, which assesses the feasibility of redeveloping the subject lands. If the State and City of New York deem the project plan to be feasible, a redevelopment plan will be prepared as per Section 970-F, outlining the height, size and number of buildings, amount of open space, dwelling units available, environmental areas and neighbourhood impact assessments, among many other features. (Municipal Redevelopment Law, 970-F). The Municipal Redevelopment Law also requires public participation, as per section 970-H which requires a public hearing prior to plan adoption. Section 970-H (C) states that any persons whom objects to the proposed development plan, the existence of blight, legal boundaries of the plan, or the appropriateness of the prior proceedings, may appear at a sanctioned public meeting to advocate why the proposal should not be adopted by the legislative body (Municipal Redevelopment Law, 970-H(c)).

The legislative mechanism necessary to generate income to fund the No. 7 subway extension is found in section 970-O, “Tax Increment Bonds”. A municipality is authorized to issue tax increment bonds that are secured and payable through real property taxes, the repayment of tax increment bonds through property taxes will not be subordinate to any other debts carried by the municipality (Municipal Redevelopment Act, 970-O(a)), providing a sense of financial security for bond purchasers. A municipality is not legally entitled to issue bonds for any capital project except for the following uses:

- (i) acquisition of land;
- (ii) demolition and removal of buildings, structures and improvements and site preparation

- (iii) installation, construction or reconstruction of streets, walkways, docks, drainage, parking facilities, flood control facilities, water and sewer systems and other public utilities, parks and playgrounds;
- (iv) other public improvements or services integral to the redevelopment plan authorized by or for which a period of probable usefulness has been established by section 11.00 of the local finance law. Objects and purposes referred to in this subdivision shall be deemed to have the period of probable usefulness as provided for such objects and purposes by such section.

(Municipal Redevelopment Law 970-O (i))

The New York Industrial Development Agency (NYCIDA) amended the Uniform Tax Exemption Policy (UTEP) to provide financial assistance through the payment in lieu of taxes (PILOT) program. The Committee on New York City Affairs (2007) outlines that through PILOT, there is a required land transfer process amongst the NYCIDA and a property developer. Under the land transfer process, NYIDA purchases land from a developer for a token amount, effectively removing the land from the City of New York's property tax roll (p.359). Properties contributing PILOT payments must be exempt from real estate taxes for the length of their agreed upon timeline. When the payment cycle is complete the IDA returns the land to the developer for a token amount, marking the end of the PILOT program and placing the land back on the City's property tax roll. PILOT rates in the Hudson Yards are assessed on the same basis as real estate taxes, the length of the Hudson Yard PILOT program is estimated to last 19 years (The Committee on New York City Affairs, 2007).

In 2005, the City of New York created the Hudson Yard Infrastructure Corporation (HYIC) through the Senate of New York's not-for-profit corporation law (HYIC, 2008). The HYIC does not directly engage in development of the Hudson Yards, the HYIC purpose is self-described as, "the HYIC's operations consist of carrying out the requirements of its indenture, including collecting revenues, applying revenues to pay principal and interest on its bonds and disbursing bond proceeds to pay project costs." (p.2). The issuance of bonds would be paid off through the revenue collected by the HYIC throughout the Hudson Yards area via; payments in lieu of taxes (PILOT), payment in lieu of mortgage taxes, tax equivalent payments by the City, sale of development rights over the Eastern Railyard and density bonusing.

### **Land Value Capture's Performance at the Hudson Yards**

The HYIC issued the first set of Series A Revenue Bonds (FY07 Bonds) on December 21, 2006, for an amount of \$2 billion. The bonds are set to mature on February 15, 2047, with semi-annual interest payments beginning on August 15, 2007 (Hudson Yard Infrastructure Corporation, 2016, p.9). An additional \$1 billion of Series A Senior Revenue Bonds (FY12 Bonds) were issued on October 26, 2011 to assist in financing additional project costs. Similar to FY07 bonds, the FY12 bonds were term bonds with semi-annual interest payments set to begin on February 15, 2012, with a date of full maturity on February 15, 2047 (p.9). A policy clause set out in the ‘Second Trust Indenture’ (2017) stated that the HYIC was not obligated to make payment on bonds prior to maturity, or until the HYIC had substantial revenue flow to make such payments. However, FY07 bonds were paid off earlier than expected when a second indenture of Series A Subordinate Bonds were issued on May 30, 2017. The second indenture issued \$2.1 billion worth of bonds, along with \$33.3 million of Series B Subordinate Bonds, collectively referred to as FY17 Bonds. The revenue collected from FY17 bonds were applied to refund all of the FY07 bonds and \$391 million worth of FY12 bonds (p.9). The remaining \$609 million of FY12 bonds were amortized and will be paid off through sinking fund installments until 2047 (p.9). Paying off FY07 bonds prior to maturity allowed the HYIC to refinance their borrowed capital at a lower borrowing rate, saving millions in future debt financing payments. As of June 30<sup>th</sup>, 2017, the HYIC had roughly \$2.75 billion of outstanding bonds (HYIC, 2017), which are to be serviced by a mix of revenue sources at the Hudson Yards.

The HYIC (2008-2018) Annual Fiscal Report lists the corporation’s main revenue sources as; Interest Support Payments (ISP), Payment in lieu of taxes (PILOT), Tax Equivalency Payments (TEP), District Improvement Bonuses (DIB), Payments in lieu of mortgage recording tax (PILOMRT) and interest earned on unspent bond proceeds (p.23-24). Pertinent to the focus of this paper, the following analysis will exclusively focus on LVC specific revenue sources at the Hudson Yards, which are: PILOT, DIB and PILOMRT. Moreover, since the HYIC acquired a 50% interest stake of Eastern Rail Yard Transferable Development Rights (ERY TDR’s), the revenue generated through the sale of TDR’s will also be included. The following tables were composed from the Hudson Yard Infrastructure Corporation, Annual Fiscal Report from 2008 to 2018. The data provides valuable insight on the effectiveness LVC at recuperating revenue for project funding and debt financing.

As of June 30, 2018, District Improvement Bonuses (DIB) and Eastern Rail Yard Transferable Development Rights (ERY TDR) have cumulatively earned \$425, 669 million and \$2, 235 billion, respectively. DIB's and ERY TDR's allow private developers to purchase the right to construct buildings that exceed the permissible height, size and density as delineated by the Hudson Yard's zoning regulation. The annual fiscal average of DIB is roughly \$21 million whereas ERY TDR average approximately \$203 million. In 2015, the HYIC saw a \$183 million spike in DIB payments relative to 2014, representing the increased quantity of new developments throughout the Yards. ERY TDR's experienced an increase in 2014 due to the increased cost of purchasing TDR's, the HYIC had pledged to use all revenue and proceeds from the sale of TDR's to secure FY12 and FY17 bonds. In September 2017, the HYIC sold off the remainder of the ERY TDR's, however they are not listed as a revenue tool for the HYIC, rather they are explicitly used to service debt.

Table 5 - Hudson Yards LVC Revenue. (HYIC. (2008-2018). Annual Fiscal Report)

Fiscal Year	Revenue Source (Value in Thousands)			
	DIB	PILOMRT	PILOT	ERY TDR
2007	57,938	0	0	202,345
2008	6,930	0	0	208,152
2009	4,488	0	0	215,505
2010	0	0	0	224,404
2011	4,635	0	0	233,681
2012	2,951	0	0	242,958
2013	3,261	11,097	0	252,235
2014	10,827	13,873	0	261,513
2015	193,652	0	4,036	191,276
2016	45,183	22,496	4,969	99,367
2017	20,705	31,384	10,947	104,029
2018	75,099	17,782	31,710	0
<b>Total (Thousands)</b>	425,669	96,632	51,662	2,235,465

In the fiscal year 2014, the HYIC received its first PILOT payment, however the assessment was attributable to the following fiscal year, which is why Table 5 lists 2015 as the first fiscal year the HYIC received a PILOT payment. As of June 30, 2018, PILOT payments have averaged revenues of \$12.9 million per fiscal year. PILOT payments have also assisted Government funded assets, in 2015 \$4.7 million was collected through the application fees associated with PILOT payments. Every developer that entered into a PILOT agreement is required to enter into a PILOMRT, on average per fiscal year PILOMRT has generated \$16.1 million. For the fiscal year 2014-2015 the HYIC did not collect any revenue via PILOMRT, which was never formally explained in any HYIC documentation. As of June 30, 2018, PILOT and PILOMRT payments did not represent a substantial portion of HYIC revenue.

The HYIC 2019 Budget provides PILOT revenue projections for the next 4 fiscal years, as follows; 2019 at \$31.5 million, 2020 at \$70.3 million, 2021 at \$83.8 million and 2022 at \$86.7 million (p.1). The HYIC expects future PILOT revenues to provide a steady increase as developments within the project area are constructed and begin to take occupancy. Unfortunately, the HYIC 2019 Budget states, “Annual receipts of DIB, & PILOMRT payments has been unpredictable and thus we have not projected such receipts for FY 2019 through FY 2022. HYIC has been fully repaid for TDRs and thus is not entitled to any further receipts.” (p.1). At this time the performance data for PILOT and PILOMRT are inconclusive, future analysis is required to determine their future ability to generate revenue for the project. In contrast, ERY TDR’s and to some extent BID’s, have performed exceptionally with respect to generating profit for the HYIC. Their performance can be tracked back to Adam Smith’s (1776) theory that landlords demand a premium for land that received an improvement. As the Hudson Yard’s received new infrastructure, like the No.7 subway stop, up-dated zoning uses and a general redevelopment of the area, developers sought the land as more valuable. Fisher (2015), proposes that property brings more value when it is built to or exceeds maximum height and density allowances, which allowed the HYI to generate additional revenue through the sale of DIB’s and TDR’s.

The HYIC uses three governmental funds for its activities; a General Fund (GF), Debt Service Fund (DSF) and a Capital Project Fund (CPF). The DSF is used to pay interest on the principal debt, through PILOT, PILOMRT and DIB and TDR’s. Whereas the CPF issues bonds and provides funding for project expenditures. The most expensive capital cost for the project

was the No. 7 Subway Line extension, representing a cost of \$2.29 billion as of June 30, 2018. The Subway Extension Memorandum of Understanding amongst the HYIC, City of New York, HYDC and MTA states that the HYIC, HYDC and City would provide up to \$2.1 billion for the No.7 extension. Land acquisition and amenities also represented a substantial project expense, accruing a cumulative cost of \$713 million from fiscal years 2007 until 2018. The HYIC explains that the cost of the subway extension, land acquisition and amenities costs are expected to gradually diminish over the lifespan of the project, allowing capital to be allocated to debt servicing.

Table 6 - Hudson Yards Project Expenses (HYIC. (2007-2018). Annual Fiscal Report)

Fiscal Year	Expenses (Value in Thousands)						
	Subway Extension	Land Acquisition & Amenities	Transfer to HYDC	Payment to NYC TFA	Fiscal Year Bond Interest	Accrued Bond Interest Payable	Total Bonds Payable (Without Premium)
2007	37,553	70,964	6,168	0	46,542	51,458	2,000,000
2008	248,765	264,458	3,021	0	89,122	36,833	2,000,000
2009	391,913	43,868	5,214	0	87,576	36,833	2,000,000
2010	310,280	70,055	2,254	0	86,030	36,833	2,000,000
2011	275,609	69,269	3,198	0	85,652	36,833	2,000,000
2012	316,439	39,787	3,026	0	122,623	57,847	3,000,000
2013	325,414	18,884	1,980	0	140,393	57,847	3,000,000
2014	175,228	91,136	2,233	0	140,393	57,847	3,000,000
2015	107,412	9,956	1,343	129,359	129,359	57,847	3,000,000
2016	38,600	16,335	1,097	0	142,425	57,847	3,000,000
2017	35,847	14,105	674	112,793	129,526	21,181	2,750,760
2018	28,602	4,589	2,013	0	115,217	49,961	2,723,870
<b>Total (Thousands)</b>	2,291,662	713,406	32,221	242,152	1,314,858	559,167	2,723,870

As stated earlier, the HYIC issued three different bond indentures;

- 1) December 21, 2006 - FY07 bonds totalling \$2 billion (Series A);
- 2) October 26, 2011 – FY12 Bonds totalling \$1 billion (Series A);
- 3) May 30, 2017 – FY17 bonds totalling \$2.1 billion (Series A) and \$33.3 million (Series B).

Proceeds from the issuance of FY17 bonds were used to refund all of FY07 Bonds and \$391 million of FY12 bonds, requiring the remaining \$609 million of FY12 bonds to be serviced by 2047 through sinking fund installments. The HYIC (2018) outlines that the FY17 bond indenture allowed bonds to be financed at a lower rate, and to make payments to the NYC Transitional Finance Authority (NYC TFA) to defease a portion of HYIC debt. In December 2017, the HYIC allocated \$30.3 million of existing resources towards FY12 bonds, defeasing \$26.9 million of FY12 Series A Bonds. The remainder of outstanding bonds are charged at a premium fixed interest rate between 3% to 5.75% (HYIC, 2018). Accrued interest is the interest on a bond that has accumulated since the principal investment, in 2017, the HYIC saw the greatest decrease in accrued interest payable, due to the issuing of FY17 bonds, which reduced the accrued interest of FY07 and FY12 bonds. The HYIC 2018 Annual Fiscal Report outlines the contractual obligation for all bonds to be paid off by 2047. The debt servicing plan on bonds, principal costs and interest payments outlines the amount spent financing debt and the timeline until bonds are paid off. Over the next 28 year the HYIC (2018) estimates debt servicing will cost a total of \$5.213 billion, with approximately \$2.723 billion being spent on principal payments and \$2.489 billion allocated towards interest payments on first and second indenture bonds (*Table 7*).

*Table 7- Debt Servicing Plan (HYIC. (2018). Annual Fiscal Report)*

Years Ended June 30,	First Indenture Bonds		Second Indenture Bonds		Total		
	Principal	Interest	Principal	Interest	Principal	Interest	Debt Service
2019	\$ —	\$ 31,679	\$ —	\$ 100,571	\$ —	\$ 132,250	\$ 132,250
2020	—	31,679	—	100,571	—	132,250	132,250
2021	9,955	31,679	—	100,571	9,955	132,250	142,205
2022	10,500	31,137	42,690	100,571	53,190	131,708	184,898
2023	11,070	30,566	44,675	98,585	55,745	129,151	184,896
2024 to 2028	65,055	143,112	258,255	458,043	323,310	601,155	924,465
2029 to 2033	84,805	123,374	329,260	387,042	414,065	510,416	924,481
2034 to 2038	110,530	97,647	419,215	297,091	529,745	394,738	924,483
2039 to 2043	144,065	64,113	530,215	186,082	674,280	250,195	924,475
2044 to 2047	146,130	20,408	517,450	55,373	663,580	75,781	739,361
<b>Totals</b>	<u>\$ 582,110</u>	<u>\$ 605,394</u>	<u>\$ 2,141,760</u>	<u>\$ 1,884,500</u>	<u>\$ 2,723,870</u>	<u>\$ 2,489,894</u>	<u>\$ 5,213,764</u>

### **Development within the Hudson Yards**

On May 26<sup>th</sup>, 2010, a joint venture amongst the Related Companies and Oxford Properties Group was announced, marking their role in developing a number of buildings in the Hudson Yards. The Related Companies is a privately owned American based real estate firm,



whereas Oxford Properties Group functions as a real estate investment and development firm, an arm of the Ontario Municipal Employees Retirement System (OMERS). According to the MTA (2010) the Related Companies received development rights by the MTA in 2008, coupled with a binding site lease for 99 years. In May 2010, Related and Oxford entered a contractual agreement with the MTA for the development rights to 13 million square feet of space at the Hudson Yards. The MTA (2010) highlights that the joint venture will provide ground lease payments, coupled with a purchase option worth approximately \$1 billion. The Related and Oxford partnership played a crucial role in attaining private financing and investment for developments at the Yards. The Related Companies and Oxford Properties were able secure \$1.4 billion in equity and debt investments for 10 Hudson Yards in 2013 (Related & Oxford, 2013). In November, 2016 the Hudson Yards New York (2016) announced the closing of \$1.3 billion in investment funding for the condominium development at 15 Hudson Yards. A contributing factor that assisted the Related Companies and Oxford efforts to secure funding was largely due to government led planning policies. The rezoning of the Hudson Yards, district improvement bonuses and transferable development rights incentivized high density development which subsequently attracted billions in investments throughout the Hudson Yards (Hudson Yards New York, 2018).

*Table 8- Hudson Yard Development (Related Companies & Oxford, 2018)*

Development Name	Developer	Development Type	# of Storeys	GFA (non-residential)	Residential # of Units	Status
35 Hudson Yards	Related Company, Oxford Properties Group	Residential, Hotel, Retail	92	22, 000 ft <sup>2</sup> of Amenities 200 Hotel Rooms	143	Under Construction
15 Hudson Yards	Related Company	Residential	88	40, 000 ft <sup>2</sup> of Amenities	285	Under Construction
One Hudson Yards	Related Company	Residential	33	Not Applicable	178 (Rental)	Completed
Abington House	Related Company & Abington Properties	Residential	33	Not Applicable	386 (Rental)	Completed
10 Hudson Yards	Related Company, Oxford Properties Group	Office, Commercial, Street Retail	55	1.8 million ft <sup>2</sup>	Not Applicable	Completed
30 Hudson Yards	Related Company, Oxford	Office, Commercial	73	2.6 million ft <sup>2</sup>	Not Applicable	Under Construction

	Properties Group					
50 Hudson Yards	Related Company, Oxford Properties Group, Mitsui Fudosan	Office, Commercial	58	2.9 million ft <sup>2</sup>	Not Applicable	Under Construction
55 Hudson Yards	Related Company, Oxford Properties Group	Office, Commercial	40	1.3 million ft <sup>2</sup>	Not Applicable	Completed
The Shops & Restaurants at Hudson Yards	Related Company, Oxford Properties Group	Retail, Restaurant	7	1 million ft <sup>2</sup>	Not Applicable	Completed
The Shed Bloomberg Building	The Shed	Entertainment (Art & Culture)	6	200, 000 ft <sup>2</sup>	Not Applicable	Completed
Javits Convention Center	Empire State Development Corporation	Convention Center	4	840,000 ft <sup>2</sup>	Not Applicable	Completed
Public Square & Gardens	Related Company, Oxford Properties Group	Parks & Open Space	0	4.5 Acres	Not Applicable	Completed

Upon project completion in 2025, the Related Companies and Oxford (2018) indicate that the Hudson Yards will be home to more than 17 million square feet of commercial and office space, 4,000 residences, 14-acres of public and open space, over 100 shops and restaurants and a public school. The mix of retail, commercial and office tenants, play an important role in creating amenity space that draw in business, permanent residents, day-visits and tourism. The Shops and Restaurants at Hudson Yards list upwards of 25 cafes and restaurants and 47 retail stores. The shops feature global retail companies, like; Aritzia, Uniqlo, Lululemon, H&M, Coach, Neiman Marcus, Brooks Brothers, Dior and Luis Vuitton. The anchor tenants for the office space in the Hudson Yards also include a variety of multi-national companies such as, Boston Consulting Group, SAP, Side Walk Labs, Wells Fargo, CNN and HBO. Purchasing and leasing information provided by the Hudson Yards New York (2019) showcase the amount of office and retail floorspace purchased by various companies; Time Warner 1.5 million ft<sup>2</sup>, Coach 700,000 ft<sup>2</sup>, Wells Fargo 500, 000 ft<sup>2</sup>, KKR 343,000 ft<sup>2</sup>, and DNB with 44, 500 ft<sup>2</sup>. According to fourth quarter office leasing reports by, Avison & Young (2018) the Hudson Yards achieved an

impressive office leasing vacancy rate of 7.9%, outperforming the World Trade Center and Grand Central vacancy rates of 16.9% and 10.7%, respectively (p.5). Low-vacancy rates coupled with large office space purchases, showcase the important role the Hudson Yards will play as a future employment hub.

As of the first quarter of 2019, condominiums developments 15 and 35 Hudson yards were nearly completed and ready for occupancy. Residential rental buildings, the Abington House and One Hudson Yards, were deemed complete and ready for occupancy. 35 Hudson Yards is set to be one of the largest building's within the Yards, totalling 92 stories, featuring; 200 hotel rooms, 22,000 ft<sup>2</sup> of amenity space and 143 residences with prices upwards of \$5 million (Related, 2019). In comparison, 15 Hudson Yards is 88 stories, featuring 285 residences and over 40,000 ft<sup>2</sup> of amenity space. The Related Companies (2019) website for 35 Hudson Yards markets the residences as, "A 92-story limestone tower ... Grand two- to six-bedroom residences priced from approximately \$5 million starting on the 53rd floor, atop the flagship Equinox Hotel." (Related Companies, 2019). The Abington House offers approximately 386 luxury rental units where monthly rents for a 2-bedroom and 2 bath apartments range from \$6,940, upwards of \$9,550 (Related, 2019). According to Curbed New York (2018) approximately 400 units throughout the current phases of development at the Yards are to be 'affordable' units. A lottery is set to take place for the affordable units amongst New Yorkers earning 50-60% of the area median income, affordable rental rates range from \$858 a month for a studio up to \$1,350 a month for a two-bedroom (p.1).

Despite affordability concerns, the Hudson Yards Development has done a good job of providing public and open spaces for the community. The revitalization of the Public Square and Garden, introduced a total of 4.5 acres of open space to share amongst residents and the public. Other buildings like, 'The Shed' created more than 200,000 ft<sup>2</sup> of fine arts and entertainment space. The Shed features a state-of-the-art moveable wall and roof structure, allowing the event space to expand for additional room. The construction of 'The Vessel', a \$200 million, 150-foot-tall structure with over 2,500 steps, was placed in the centre of the Yards, functioning as place-making architecture. According to the Hudson Yards New York (2019) upon completion of the development in 2025, the Yards will generate roughly \$500 million in annual taxes for the City of New York, create over 55,000 jobs and more than 125,000 people will work, live and visit the Yards each day, a substantial improvement from what was once a blighted rail yard.

## 5. Land Value Capture in Toronto

### The Legislature, or Lack thereof

On December 20<sup>th</sup> 2006, the Ontario Legislature passed the Tax Increment Financing Act (2006), giving Ontario municipalities the power to use tax-increment financing to fund eligible projects. Section 1 of the Tax Increment Financing Act (2006) determines the following projects to be eligible for TIF;

- (a) the construction of municipal infrastructure or amenities to assist in,
  - (i) the redevelopment or intensification of previously developed areas, or
  - (ii) the development of an urban growth centre identified in a growth plan under the Places to Grow Act, 2005,
- (b) the environmental remediation of land in a previously developed area, or
- (c) the construction of a municipal public transit facility.

(Government of Ontario, Section 1, 2006)

Assuming a project meets the TIF criteria as delineated by the Government of Ontario, the next steps involve a feasibility study to identify specific project characteristics. Section 2 (2) requires the feasibility study to identify the proposed TIF district and the projected amount of expected tax increments. Property values can be augmented for a number of reasons, delineating the specific factors responsible for land value augmentation and the quantity which they improve land values is difficult. A well thought out policy of the legislation is found in, Section 2 (3) “Limitation, proposed tax increment finance district” of the Tax Increment Financing Act (2006), which limits the total amount of funds raised in a TIF district. Research by Greenbaum and Landers (2014) highlight that when TIF districts gain substantial revenue it is often at the expense of the municipality. By limiting a TIF district revenue to 1% of a municipalities total tax revenue, the legislation safeguards the economic performance of local municipalities.

The biggest draw for public agencies to implement the Ontario TIF Act (2006), is found in Section 2, “a municipality may apply to receive funding for a proposed project from the Crown in right of Ontario that is based on the education tax increments expected to occur as a result of the project” (Government of Ontario, Section 2, 2006). The education tax increment is defined as, “the tax increment in respect of taxes for school purposes or payments in lieu of taxes for school purposes” (Government of Ontario, 2006). Giving a public agency access to the education tax increment could potentially become one of the largest funding options for eligible projects.

The 2006 TIF legislation has never been used to fund a project, due to the fact that Ontario's TIF legislation never received regulations. The Province of Ontario e-law dictionary states that after a bill undergoes a third reading and is passed by the Legislative Assembly, it receives Royal Assent by the Lieutenant Governor, making it a law. Regulations are created to provide a rigid set of rules and details to implement the polices within the statute (Ontario, 2019). Ontario's 2006 Provincial Budget announced the Provinces intention to use the Tax Increment Financing Act (2006) as a pilot funding mechanism for the Toronto-York Spadina Subway Extension (TYSSE) and Toronto Waterfront. On April 6, 2007, the City of Toronto provided a report to the executive committee on the status of funding for the TYSSE. One of the funding conditions outlined in the report was that, "the Province of Ontario will enact legislation that would allow the City to avail itself of tax increment financing as a method of financing its share of Project capital costs;" (p.3). The report outlines that the City of Toronto was in the process of formulating regulations with the Ministry of Finance. In 2007 and 2011, the City of Toronto prepared a feasibility study as mandated by the 2006 TIF legislation, which forecasted the tax increment associated with the TYSSE. Both the Regional Municipality of York and the City of Toronto were eager to use TIF to fund a portion of the TYSSE (Found, 2018). The Regional Municipality of York published a confidential staff report on April 18<sup>th</sup>, 2016 titled "Toronto-York Spadina Subway Extension – Project Reset and Estimated Cost to Completion". The report distressfully states, "Given provincial inaction for almost a decade now, on enabling Toronto and York Region to access Tax Increment Financing, the City and York Region have now planned for alternate sources of funding" (p.7). It was clear that without regulations the TIF legislation was dead in the water.

In an effort to uncover why no regulations were created, I conducted interviews with a variety of municipal tax experts. One interviewee was a former Director of Policy for the Minister of Finance, whom worked for previous Finance Ministers; Greg Sorbara (who introduced the TIF Act (2006)) and Dwight Duncan. The former Director of Policy perceived that TIF never received regulations for two reasons: an unwillingness for the province to share revenues from the education tax increment, and a lack of bureaucratic will. With respect to sharing revenues, Section 2 (1) of the Tax Increment Financing Act, 2006 outlines the allocation of funds from that education tax increment; "A municipality may apply to receive funding for a proposed project from the Crown in right of Ontario that is based on the education tax

increments expected to occur as a result of the project” (Government of Ontario, Section 2, 2006). The education tax increment was a decision of the 1998 Mike Harris Provincial government, known as ‘local service restructuring’. The province took over local school boards taxing power, replacing the local education property tax with a general provincial tax (Found, 2016). According to Adam Found (2016), “The provincial contribution is effectively a capital grant conditional on the fulfillment of projected infrastructure-induced increases in the assessment base of the TIF district.” (p.5). By giving municipalities access to the revenues acquired through the education tax increment for a specific project, additional capital would become available to offset some of the project costs, reducing the financial burden on local, provincial and federal governments.

I asked the former Policy Director, why they thought the province was reluctant to share revenues from the education tax increment with municipalities? Their response was, “I think there may have been a reluctance by the ministry [of finance] to give up revenue” (Lofsky, personal communication, April 15, 2019), a well-founded argument considering the economic performance following the recession. My interviewee outlined that from 2005 until 2007 the province of Ontario had a budget surplus, affirmed by the Ministry of Finance (2007), “in 2005–06 Ontario posted a surplus of \$0.3 billion, and the Public Accounts of Ontario confirm a \$2.3 billion surplus in 2006–07 – the government's second consecutive surplus” (p.1). Shortly after the TIF Act (2006) was passed in the legislature, the great recession hit Ontario, fostering a reluctance amongst policy makers to give municipalities access to the education tax increment. My interviewee stated; “they [the province] were looking for every penny they could find. It was around the financial crisis; the province was going deep into deficit at that time. It’s worth noting that prior to 2006/2007 there were three years of surplus, there was a little more flexibility in the province.” (Lofsky, personal communication, April 15, 2019). Despite a global recession, my interviewee acknowledges that allocating the revenue from the education tax increment would be a relatively minor cost for the province, “I didn’t think it would be that big of a deal it was relatively small loss of money especially in the earlier years [of TIF]” (Lofsky, personal communication, April 15, 2019). Since the revenue generated by TIF is relative to the amount that land values augment from a public project (Alterman, 2012), there is generally less development in a TIF zone during the early project years, resulting in lower TIF revenues. The government of Ontario may have overestimated the quantity of funds that would be allocated

from the education tax increment toward the Spadina Subway Extension. However, pursuing a fiscally conservative approach is understandable during one of Canada's biggest economic downturns.

Premier Dalton McGuinty appointed Greg Sorbara as the Minister of Finance, who held the position from October 23, 2003 to October 11, 2005, and again from May 23, 2006 until October 30, 2007 (Legislative Assembly of Ontario, 2019). In 2007, shortly after passing the TIF legislation, Minister Sorbara resigned from his role as finance Minister. The role was subsequently appointed to Dwight Duncan, who served as Finance Minister from October 30, 2007 until October 20, 2011 (Legislative Assembly of Ontario, 2019). My interviewee served as the Director of Policy for both Finance Ministers. I questioned why regulations were ever drafted for the 2006 Tax Increment Financing Act? He informed me that a possible reason for no regulations was due to a change in Ministerial leadership. Greg Sorbara was the front runner of the TIF act, introducing the act to the legislature in 2006 as, "a mechanism [TIF] that's been used in a variety of jurisdictions across North America ... to help fund subway construction and waterfront development (Sorbara, December 5, 2006). During our conversation, my interviewee stated, "I just don't think there was a lot of bureaucratic will to do it, once Greg Sorbara left, that's my view" (Lofsky, communication, April 15, 2019). Another interviewee I spoke to worked as a consultant who analyzed potential TIF revenue for the City of Toronto, when asked why regulations were not drafted they provided a response which mirrored the explanation provided by the former policy director. Both interviewees indicated that a ministerial change from Greg Sorbara to Dwight Duncan potentially altered the direction of the TIF legislation, as Minister Duncan had a less permissive view of using the education tax increment in comparison to Minister Sorbara. Both interviewees bring a well-founded perspective based on their experience of working with the elected officials at the provincial level. By no means do I intend to dismiss the valuable information provided by both interviewees, however, I do not have the means to validate the bureaucratic will of Finance Minister Duncan. The only people that can truly explain why the TIF Act (2006) never received regulations are Greg Sorbara and Dwight Duncan, and perhaps a few others. This is definitely a subject that requires further research to uncover underlying political interests and influences.

### **SmartTrack Project Scope**

John Tory introduced the SmartTrack rail concept during his 2014 mayoral campaign, arguing that the project would reduce vehicular gridlock and provide relief to the Yonge University Spadina line. The line would span from the Mississauga in the west end to Etobicoke in the east, and eventually terminate at Unionville in Markham. Johnathon Kay (2014) of the National Post highlights the new rail line would provide, “15-minute service from Pearson airport in the west up into Markham in the northeast - a 7-year, \$8-billion, 22-station construction project based largely around electrifying existing regional GO lines.” (Kay, 2014). Roughly 90% of the SmartTrack line would run on existing Go Transit Tracks, which was a well-timed decision given the announcement of the 2014 Provincial Liberal governments to electrify GoRail lines to provide all-day, two-way route services. Shortly after taking office as Mayor of Toronto, Tory’s SmartTrack plan was amended. Tory’s new plan sought to extend the Eglinton West LRT line, which would, “integrate SmartTrack/RER service on the Kitchener and Stouffville/Lakeshore East Go corridors with service frequencies of 6-10-minute peak service and 15-minute off-peak service at fourteen stations, which includes six new SmartTrack stations” (Ernst & Young, 2018, p.1). SmartTrack’s website outlines the location of the six new SmartTrack stations as the following: St. Clair-Old Weston, King-Liberty, East Harbour, Gerrard-Carlaw, Lawrence-Kennedy and Finch-Kennedy (SmartTrack, 2018). In early April 2018, City of Toronto Council approved \$1.463 billion in funding for the construction of the six SmartTrack stations. In November 2016, City of Toronto Council proposed funding SmartTrack through a combination of; Federal government contributions, Tax Increment Financing, development charges, property tax increases or equivalent sources of annual revenue. Because the TIF Act (2006) does not have regulations for its implementation, Mayor John Tory announced SmartTrack will partially be funded through a municipal version of TIF.





Figure 4 TIF Zones (City of Toronto, 2018)

There are sixteen ‘primary development’ areas along the SmartTrack corridor, six of which are located around new SmartTrack stations and ten around existing Go/RER stations (City of Toronto, 2018). The delineated TIF zones (*Figure 4*) are used to determine the incremental tax revenue associated with development near SmartTrack stations. The TIF zones are expected to experience increased development due to their proximity and integration with SmartTrack and Go/RER stations. City of Toronto Council published a report titled; 2019 Property Tax Rates and Related Matters (2019) stating, “15% of all commercial and residential tax revenue from assessment growth in the SmartTrack Zones in each year be allocated to the SmartTrack Funding Reserve Fund, less any reduction for tax increment grants that may be payable in these zones, for a period of 25 years.” (p.16). *Figure 5* showcases the City’s methodology in determining the net share of tax funds to be used towards SmartTrack. The net share of TIF tax allocated toward SmartTrack was based on a number of modelling exercises. The Strategic Regional Research Alliance (SRRA) estimates that roughly 40% of future development within SmartTrack areas will be a direct result of the project (SRRA, 2016). The City of Toronto Council Report (2019) determined that the increase in residential and non-residential excess tax revenue would average a tax growth of approximately 39% (p.8). The combination of future development rates and share of attributable tax growth was used to formulate the 15% share of TIF zone tax growth allocated to a project (*Figure 5*). City Council

is able to amend the current TIF rates should development surrounding SmartTrack stations underperform current projections.

All TIF Zone Future Tax Growth	100%
Share of TIF Zone Tax Growth Attributable to Smart Track stations	x 40%
Share of Attributable Tax Growth surplus to operating needs	x 39%
Net share of TIF Zone Tax Growth allocated to the project	= 15%

Figure 5 - Smart Track Funding Formula (City of Toronto, 2018)

The City of Toronto Council report (2019) states that in 2019 SmartTrack zones produced \$6, 233,113 in municipal revenue, resulting in \$934,967 being allocated towards the SmartTrack Funding Reserve Fund (XR1731) (p.17). Although the \$934,967 allocation does not seem like a large contribution in comparison to the New York and United Kingdom examples, it is important to remember Toronto TIF is accumulated at a 15% rate, relative to growth. Similar to the example of New York and the United Kingdom, as development increases within the project zone SmartTrack revenues will also increase. The City of Toronto Council Report (2019) estimates that over the next 25 years, TIF will provide \$292 million towards funding the SmartTrack project. An interesting dichotomy is apparent in Ontario's Provincial governance, and it directly relates to Tax Increment Financing. During Toronto's mayoral race in 2014, John Tory proposed using TIF to fund the SmartTrack project, Doug Ford dismissed TIF as a non-viable funding option (Moore, 2014). In 2019, Premier Ford announced a \$28.5 billion investment for public transit projects however, the Ford Progressive Conservatives have also promised to eradicate Ontario's budgetary deficit. Given the goal of a balanced budget, it begs the question if the Premier of Ontario and his government will revisit the TIF legislation to implement regulations.

## 6. A Potentially Harmful Tax

When property and land values increase, land value capture mechanisms become more lucrative. In the *Wealth of Nations*, Adam Smith (1776) argues that landlords can demand a premium for rent that has a received an improvement. In the current day, municipalities have the power to create and amend planning policies that can potentially augment property values. Crossrail in London initiated development projects with the private sector to create over-site developments above Crossrail Station stops. The City of New York implemented site specific

Zoning By-laws for the Hudson yards which allowed for increased densities and mixed-use development. In both London and New York, the announcement of new transit infrastructure augmented land values, spurring new development, however, little attention is paid to the gentrifying effects of land value capture.

In 2014, residential sales within a mile of Crossrail stations grew by 21% and house prices within 500 m of a Crossrail station increased by approximately 27% (Hamptons International, 2014). A report by Sarah Arnold (2017) of the Guardian, interviewed local London residents and asked if improved commute times and enhanced local economics validated the increase in housing prices. One interviewee from Stratford, London, responded that, “Stratford seemed like the ideal combination of transport connections, affordability and things to do. I’d like to buy here eventually, so I hope Crossrail won’t make that as unaffordable as it is everywhere else.” (p.1). As the flows of capital seek to redevelop and rehabilitate blighted areas in the search of profit (Smith, 1996) it is possible for the gentrifying effects of Crossrail to reach Stratford. The effects of gentrification are also being felt amongst commercial businesses. One of London’s first day time gay bars, ‘First Out Café’, will be closing down after 25 years of business. The café was unsuccessful in renegotiating its lease coupled with the fact that the surrounding area is undergoing redevelopment associated with Tottenham Road Court station (Bindel, 2011).

The New York times rightfully labelled the Hudson Yards project as a ‘playground for the 1%’ (New York Times, 2019). As highlighted in the previous section of this paper, unit affordability is not a strength of the Hudson Yards. The Abington House is one of the rental properties developed at the Yards, where a 2-bedroom and 2-bath apartment can cost from \$6,940 to \$9,550 a month (Related, 2019). Only 10% of the residential units available will be ‘affordable units’ (New York Times, 2019), residents who meet the affordability requirements apply to be entered into a raffle to purchase a unit. Maintaining the theme of a playground for the 1%, the condominium development 15 Hudson Yards, features separate entrances for luxury condominium owners and those whom live in affordable units (Paybarah, 2019). It is puzzling how the City of New York was able to rezone the entirety of the Yards to allow for luxurious towers, high-end shopping and restaurants, yet little action was taken to provide for more affordable units.

It was recently revealed by Matthew Haag (2019) of the New York Times, that a number of multi-national corporations were incentivized with millions of dollars' worth of tax credits in exchange for taking tenancy at the Yards. One of the tenants is BlackRock, which is the largest money management firm in the world, and in 2018 managed over \$5.98 trillion in assets and investments. The firm is eligible for \$25 million in state tax credits if they provide 700 jobs to the Hudson Yards (Haag, 2019). A job creation tax incentive of \$14 million was given to Warner Media, whereas L'Oreal was offered \$5.5 million. Although tax incentives in exchange for job creation are not a new phenomenon, it has two effects on the City of New York. Firstly, well-paying jobs found throughout other areas of New York are either being relocated or terminated to provide new opportunities at the Yards. Secondly, the tax incentives provided to Hudson Yard firms could be better used to provide affordable housing throughout the Yards or the City. The next phase of development at the Hudson Yards is titled, *The Western Yards*. Due to the inadequate quantity of affordable lease/own options at the current site, I recommend that the City of New York or the Department of Housing Preservation and Development be proactive in encouraging Oxford and Related Companies to provide a greater ratio of affordable units.

Solving affordability issues associated with land value capture is inherently difficult to combat. This is due to two reasons; transit investments are proven to augment land values. Secondly, if land values do not increase, then the success of land value capture is jeopardized. Land value capture can assist in preventing land speculation by taxing unproductive land however, it can also gentrify communities and displace local residents. Although solving issues of gentrification and displacement caused by LVC are outside of the scope of this paper, more research is required to uncover approaches to mitigate affordability issues.

## **7. Research Limitations**

There are a few limitations to my research paper, the first of which is the use of quantitative financial data. I sought to evaluate the effectiveness of different LVC approaches based on the total revenue collected per annum and the length of the debt repayment process for a given project. What I came to realize is that, analyzing the revenue generated by different land value capture mechanisms cannot adequately determine if a LVC policy was 'successful'. There are different and complex economic, physical and political characteristics in London, New York

and Toronto, which inevitably affect the revenue generated by different LVC approaches to varying degrees. Each city example implemented a different form of LVC such as BRS in London, PILOT in NYC and TIF in Toronto, and each transit project varied in cost, size and scope, resulting in different revenue.

One of the major achievements of my paper was uncovering why the Ontario Provincial government never implemented regulations for the Tax Increment Financing Act (2006). I was fortunate to conduct interviews with government policy advisors along with professors from the University of Toronto and Utrecht University. I do acknowledge a few limitations of first-person interviews; the first was the limited sample size of participants that were willing to discuss Ontario's Tax Increment Financing Act (2006). Through networking I was introduced to a number of current and previous staff members of the Ontario Public Service that either worked on the Tax Increment Financing Act (2006) or were staff members for the Liberal Provincial Government when the TIF legislation was introduced. I quickly came to learn that most public service staff were unwilling to share their experience of working on the Tax Increment Financing Act (2006), potentially indicating that there are underlying political pressures and lobby interests that influenced the legislation. Another limitation of my first-person interviews was that the arguments and statements provided as to why the Liberal Government never implemented regulations for the Tax Increment Financing Act (2006) were opinion based. Although I am convinced that their responses were truthful because their arguments corroborated each other's explanations, there is no way of fact checking the statements provided by my interviewees.

## **8. Conclusion**

The examples of London and New York exemplify that land value capture mechanisms like the Business Rate Supplement (BRS) and Payment in Lieu of Taxes (PILOT), were effective at collecting revenue for their respective transit project. As of 2018 the total gross revenue from the BRS is approximately £1,833 billion, and the GLA estimates that the £4.1 debt to be repaid within 24-31 years. The Hudson Yards project and PILOT collections are currently in the early stages of revenue collection, the HYIC is projecting to collect roughly \$31.5 million in PILOT payments in 2019. PILOT payments are expected to increase to \$70.3 million in 2020, \$83.8 million in 2021 and \$86.7 million in 2022 (HYIC, 2018). The HYIC has a contractual obligation

to pay off bonds by 2047, a feasible goal based on current PILOT projections and revenue from transferable development rights.

Despite using different LVC policies, both cases exemplify similar characteristics necessary for LVC to succeed. First and foremost, a transit project assisted in augmenting land values. Over-site development in London and site-specific high density, mixed-use zoning in the Hudson Yards provided additional value to residential and commercial properties. Secondly, both London and New York have proper legislature that enabled the implementation of land value capture policies. The Business Rate Supplement Act was implemented at the Federal level in the United Kingdom, and the Municipal Redevelopment Act was passed by the State of New York. In contrast, the province of Ontario introduced the Tax Increment Financing Act in 2006, the bill subsequently received Royal Assent but never received regulations. First person interviews revealed that regulations for the TIF Act were not implemented for two potential reasons; a lack of bureaucratic-will when Minister Sorbara left the Ministry of Finance coupled with an unwillingness of the Province to share the revenue from the Education Tax Increment. Further research should seek to uncover the underlying influences and interests as to why the Province of Ontario never implemented regulations for the Tax Increment Financing Act (2006). While researching why there are no regulations for the TIF Act (2006) I reached out to former Ontario Premier, Dalton McGuinty and former Minister of Finance, Greg Sorbara, whom were kind enough to put me in touch with a few potential contacts. I quickly discovered that there is an unwillingness amongst past and previous provincial employees to openly discuss the topic, which remains to be the biggest obstacle for unveiling additional factors as to why regulations were not put in place.

Legislation for the Business Rate Supplement Act was passed by the United Kingdom Federal Government in 2009 to ensure the BRS could be used for the Elizabeth Line. The State of New York passed the Municipal Redevelopment Law in 1984, roughly 30 years prior to the inception of the Hudson Yards. Based on the case studies of London and New York, properly formulated legislature which mandates the use of different LVC mechanisms is required for LVC success. The City of Toronto has pursued a municipal version of tax increment financing to fund portion of the SmartTrack line. However, local transit agencies and municipalities would generate substantially more profit if they were given access to the Education Tax Increment as outlined in Ontario's TIF Act (2006). The silver lining for Ontario's TIF Act (2006) is that the

legislation has already received Royal Assent, time will tell if future provincial governments choose to implement regulations for the legislation.

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# 10. Appendix 1 – Personal Communications

Friendly, A. Personal Communication, April 3, 2019.

### Informed Consent Form

Date: April 2, 2019

Name of Participant: Abigail Friendly

Research Name: City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto.

Researcher: Alexander Sepe, [asepe@yorku.ca](mailto:asepe@yorku.ca) or [Alexander.sepe1@gmail.com](mailto:Alexander.sepe1@gmail.com), (416)-520-1484

**Purpose of the Research:** The research question guiding my query seeks to determine the effectiveness of land value capture (LVC) as a policy tool to capture revenue and encourage development near new infrastructure projects. A secondary interest my paper seeks to examine are the institutional mechanisms that govern LVC. This research like all MES Major Research will be published in YorkSpace and may be published on the FES website if nominated for the Outstanding Paper Series.

**What You Will Be Asked to Do in the Research:** You will participate in an interview comprising of 5 to 8 questions, approximated to take 30 to 45 minutes.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of any relationship you may have with the researcher(s), study staff, or York University, either now or in the future.

**Legal Rights and Signatures:**

I, Abigail Friendly, consent to participate in City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto, conducted by Alexander Sepe. I understand the nature of this study and wish to participate, I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

- I agree that my participation may be audio-recorded: Yes  No
- I agree that my participation may be video-recorded: Yes  No
- I agree to be identified by name: Yes  No
- I agree to be quoted by name: Yes  No
- I would like to receive a copy of the final research paper, at the following email address: [a.friendly@yuru1](mailto:a.friendly@yuru1)

▪ I agree to allow video and/or digital images or photographs in which I appear to be used in teaching, academic presentations and/or publications based on this research. I am aware that I may withdraw this consent at any time without penalty. Yes  No

Participant Signature 

Date April 3, 2019

Researcher Signature 

Date

**Risks and Discomforts:** We do not foresee any risks or discomfort resulting from your participation in the research. You have the right to not answer any particular questions.

**Benefits of the Research and Benefits to You:** The exploration of planning issues like Land Value Capture provide valuable insight for public agencies, different levels of government and the private sector, alike. Upon approval, a copy of my research paper can be provided to you, providing an opportunity for you to understand how your contribution assisted my research findings.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason. If you so decide, Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. If you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

**Confidentiality:** Unless you specifically give your permission by checking the boxes below, all information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research. Interview data will be audio recorded so it can be transcribed for better analysis. In addition hand written notes will also be taken. Your data will be safely stored in a locked facility and only research staff will have access to this information. Your data will be destroyed by January 1, 2020. Confidentiality will be provided to the fullest extent possible by law.

**Questions About the Research?** If you have questions about the research in general or about your role in the study, please feel free to contact my Supervisor, Dr. Luisa Solomayor either by telephone at (416)-736-2100 extension 22109 or by email [lsolomay@yorku.ca](mailto:lsolomay@yorku.ca). This research has been reviewed and approved by the FES Research Committee, on behalf of York University, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Office of Research Ethics, telephone 416-736-5914 or e-mail [ore@yorku.ca](mailto:ore@yorku.ca).

Lofsky, A. Personal Communication, April 15, 2019.

**Informed Consent Form**

Date: April 13, 2019

Name of Participant: Arthur Lofsky

Research Name: City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto.

Researcher: Alexander Sepp, [asepp@yorku.ca](mailto:asepp@yorku.ca) or [Alexander.sepp11@gmail.com](mailto:Alexander.sepp11@gmail.com), (416)-520-1494

**Purpose of the Research:** The research question guiding my query seeks to determine the effectiveness of land value capture (LVC) as a policy tool to capture revenue and encourage development near new infrastructure projects. A secondary interest my paper seeks to examine are the institutional mechanisms that govern LVC. This research like all MES Major Research will be published in YorkSpace and may be published on the FES website if nominated for the Outstanding Paper Series.

**What You Will Be Asked to Do in the Research:** You will participate in an interview comprising of 5 to 8 questions, approximated to take 30 to 45 minutes.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of any relationship you may have with the researcher(s), study staff, or York University, either now or in the future.

**Legal Rights and Signatures:**

I, Arthur Lofsky, consent to participate in City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto, a research project conducted by Alexander Sepp. I understand the nature of this study and I agree to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

- I agree that my participation may be audio-recorded: Yes  No
  - I agree that my participation may be video-recorded: Yes  No
  - I agree to be identified by name: Yes  No
  - I agree to be quoted by name: Yes  No
  - I would like to receive a copy of the final research paper, at the following email address: ALOFSKY@YORKU.CA
- I agree to allow video images and/or digital images or photographs in which I appear to be used in teaching, academic presentations and/or publications based on this research. I am aware that I may withdraw this consent at any time without penalty. Yes  No

Participant Signature

Date

Researcher Signature

Date

**Risks and Discomforts:** We do not foresee any risks or discomfort resulting from your participation in the research. You have the right to not answer any particular questions.

**Benefits of the Research and Benefits to You:** The exploration of planning issues like Land Value Capture provide valuable insight for public agencies, different levels of government and the private sector, alike. Upon approval, a copy of my research paper can be provided to you, providing an opportunity for you to understand how your contribution assisted my research findings.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. If you withdraw from the study, all associated data collected will be immediately destroyed whenever possible.

**Confidentiality:** Unless you specifically give your permission by checking the boxes below, all information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research. Interview data will be audio recorded so it can be used for better analysis. In addition, hand written notes will also be taken. Your data will be safely stored in a locked facility and only research staff will have access to this information. Your data will be destroyed by January 1, 2020. Confidentiality will be provided to the fullest extent possible by law.

**Questions About the Research?** If you have questions about the research in general or about your role in the study, please feel free to contact my Supervisor, Dr. Luisa Sotomayor either by telephone at (416)-736-2100 extension 22109 or by email [sotomayor@yorku.ca](mailto:sotomayor@yorku.ca). This research has been reviewed and approved by the FES Research Committee, on behalf of York University, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Office of Research Ethics, telephone 416-736-5914 or e-mail [ore@yorku.ca](mailto:ore@yorku.ca)

Revised 12/2018

Slack, E. Personal Communication, April 2, 2019.

**Informed Consent Form**

Date: April 2, 2019

Name of Participant: Enid Slack

Research Name: City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto.

Researcher: Alexander Sepe, [asepe@yorku.ca](mailto:asepe@yorku.ca) or [Alexander.sepe11@gmail.com](mailto:Alexander.sepe11@gmail.com), (416)-520-1484

**Purpose of the Research:** The research question guiding my query seeks to determine the effectiveness of land value capture (LVC) as a policy tool to capture revenue and encourage development near new infrastructure projects. A secondary interest my paper seeks to examine are the institutional mechanisms that govern LVC. This research like all MES Major Research will be published in YorkSpace and may be published on the FES website if nominated for the Outstanding Paper Series.

**What You Will Be Asked to Do in the Research:** You will participate in an interview comprising of 5 to 8 questions, approximated to take 30 to 45 minutes.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of any relationship you may have with the researcher(s), study staff, or York University, either now or in the future.

**Legal Rights and Signatures:**


I, (participant's name here), consent to participate in City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto, conducted by Alexander Sepe. I understand the nature of this study and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

- I agree that my participation may be audio-recorded: Yes  No
- I agree that my participation may be video-recorded: Yes  No
- I agree to be identified by name: Yes  No
- I agree to be quoted by name: Yes  No
- I would like to receive a copy of the final research paper, at the following email address: [Enid.Slack@yorku.ca](mailto:Enid.Slack@yorku.ca)

▪ I agree to allow video and/or digital images or photographs in which I appear to be used in teaching, academic presentations and/or publications based on this research. I am aware that I may withdraw this consent at any time without penalty. Yes  No

Participant Signature 

Date April 2, 2019

Researcher Signature 

Date April 7, 2019

**Risks and Discomforts:** We do not foresee any risks or discomfort resulting from your participation in the research. You have the right to not answer any particular questions.

**Benefits of the Research and Benefits to You:** The exploration of planning issues like Land Value Capture provide valuable insight for public agencies, different levels of government and the private sector, alike. Upon approval, a copy of my research paper can be provided to you, providing an opportunity for you to understand how your contribution assisted my research findings.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. If you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

**Confidentiality:** Unless you specifically give your permission by checking the boxes below, all information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research. Interview data will be audio recorded so it can be transcribed for better analysis. In addition hand written notes will also be taken. Your data will be safely stored in a locked facility and only research staff will have access to this information. Your data will be destroyed by January 1, 2020. Confidentiality will be provided to the fullest extent possible by law.

**Questions About the Research?** If you have questions about the research in general or about your role in the study, please feel free to contact my Supervisor, Dr. Luisa Solomayor either by telephone at (416)-736-2100 extension 22109 or by email [lsolomay@yorku.ca](mailto:lsolomay@yorku.ca). This research has been reviewed and approved by the FES Research Committee, on behalf of York University, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Office of Research Ethics, telephone 416-736-5914 or e-mail [ore@yorku.ca](mailto:ore@yorku.ca).

Tomlinson, T. Personal Communication, May 3, 2019.

**Informed Consent Form**

Date: April 13, 2019

Name of Participant: Peter Tomlinson

Research Name: City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto.

Researcher: Alexander Sepe, [asepe@yorku.ca](mailto:asepe@yorku.ca) or [Alexander.sepe11@gmail.com](mailto:Alexander.sepe11@gmail.com) (416)-520-1484

**Purpose of the Research:** The research question guiding my query seeks to determine the effectiveness of land value capture (LVC) as a policy tool to capture revenue and encourage development near new infrastructure projects. A secondary interest my paper seeks to examine are the institutional mechanisms that govern LVC. This research like all MESS Major Research will be published in YorkSpace and may be published on the FES website if nominated for the Outstanding Paper Series.

**What You Will Be Asked to Do in the Research:** You will participate in an interview comprising of 5 to 8 questions, approximated to take 30 to 45 minutes.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of any relationship you may have with the researcher(s), study staff, or York University, either now or in the future.

**Legal Rights and Signatures:**  
I, Peter Tomlinson consent to participate in City Planning with Land Value Capture: A Comparative Analysis of Capture Policies in New York, London and Toronto, conducted by Alexander Sepe. I understand the nature of this study and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

- I agree that my participation may be audio-recorded: Yes  No
- I agree that my participation may be video-recorded: Yes  No
- I agree to be identified by name: Yes  No  *As agreed*
- I agree to be quoted by name: Yes  No  *As agreed*
- I would like to receive a copy of the final research paper, at the following email address:

Peter Tomlinson @ Yorkers.ca  
• I agree to allow video and/or digital images or photographs in which I appear to be used in teaching, academic presentations and/or publications based on this research. I am aware that I may withdraw this consent at any time without penalty. Yes  No

*Peter Tomlinson*  
Participant Signature

May 3, 2019  
Date

*[Signature]*  
Researcher Signature

May 30, 2019  
Date

**Risks and Discomforts:** We do not foresee any risks or discomfort resulting from your participation in the research. You have the right to not answer any particular questions.

**Benefits of the Research and Benefits to You:** The exploration of planning issues like Land Value Capture provide valuable insight for public agencies, different levels of government and the private sector, alike. Upon approval a copy of my research paper can be provided to you, providing an opportunity for you to understand how your contribution assisted my research findings.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason. If you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. If you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

**Confidentiality:** Unless you specifically give your permission by checking the boxes below, all information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research. Interview data will be audio recorded so it can be transcribed for better analysis, in addition hand written notes will also be taken. Your data will be safely stored in a locked facility and only research staff will have access to this information. Your data will be destroyed by January 1, 2020. Confidentiality will be provided to the fullest extent possible by law.

**Questions About the Research?** If you have questions about the research in general or about your role in the study, please feel free to contact my Supervisor, Dr. Luisa Stomayor either by telephone at (416)-736-2100 extension 22109 or by email [stomayor@yorku.ca](mailto:stomayor@yorku.ca). This research has been reviewed and approved by the FES Research Committee on behalf of York University, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Office of Research Ethics, telephone 416-736-5914 or e-mail [ore@yorku.ca](mailto:ore@yorku.ca)