



Land Value Capture Discussion Paper

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LAND VALUE CAPTURE (LVC) DISCUSSION PAPER

Executive Summary

This paper discusses the potential of Land Value Capture (LVC) methods for the GTHA. It focuses on the application of LVC methods around transit stations. There is significant evidence to show that the improved connectivity supplied by new transit services generates increased land and development value. This is well recognized by the development industry. It seems fair and equitable that a proportion of this additional wealth, generated by the new transportation facility, should go to funding the transportation facility. The challenge is finding LVC methods that satisfy the needs of both the public and private sector and finding projects and places where it will work. This paper explains how this can be done.

The provision of a world class transit system for the GTHA is critical to maintaining its success as a world city. Such systems not only maintain the economic competitiveness of the city region but also help to create livable, sustainable communities. They also help reduce environmental damage through increasing the use of transit, walking and cycling thereby releasing capacity for essential users of the highway system. LVC methods can contribute important funding and financial sustainability to help provide improved transportation assets.

The paper describes a range of LVC methods, some development-based, some taxation-based, and some a combination of both, and gives examples of each from around the world. It goes on to state that LVC is a valuable tool for Metrolinx and the GTHA that will help to deliver a world class transit system for the city region, thereby maintaining the GTHA's global competitiveness and high quality of life.

The Metrolinx Investment Strategy, released May 27, 2013, suggests \$20 million as an annual revenue estimate from implementing an LVC strategy. This is a reasonable number and would represent a significant direct contribution from land value capture, particularly compared to what has been demonstrated in the GTHA in the recent past. However in light of what is possible, it should be considered a conservative estimate, and could be exceeded by a significant margin if an LVC program were to be aggressively pursued. It is noted that the indirect benefits of an LVC program represent even further public and private benefits, all pointing to a strong case to pursue LVC.

If LVC methods are to be used in the GTHA there are key actions that need to be delivered:

- Agree on objectives between key stakeholders
- Understand and capture value for all partners
- Develop governance and business models
- Protect the funds captured for the transit project
- Protect the independence of planning

- Protect confidentiality

There are also a number of challenges to be addressed by Metrolinx:

- Acceptance of the principle and the benefits of LVC
- A willingness to act
- Proactively seek collaboration between public and private sector stakeholders
- Potential incremental changes to policy and strategy
- Potential changes to the legal framework
- Potential changes to appraisal methods

Finally the paper concludes by listing some proposed next steps if it is decided to implement LVC methods in the GTHA and successfully secure and/or exceed the financial contribution target outlined in the Metrolinx Investment Strategy.

Introduction

This paper is an introduction to the concept of Land Value Capture (LVC). It explains what it is and the potential it brings to help fund public services. The paper focuses on LVC related to the increased value of land and development around transit stations and how some of this extra value can be captured to help fund transit and build a competitive and healthy city with a high quality of life for residents, businesses and visitors. The possible use of LVC as a transportation funding tool is referenced in the Metrolinx Investment Strategy, released on May 27, 2013.

What is LVC?

Land Value Capture (LVC) is a way to capture the increase in the value of land and development generated by the improved accessibility of transportation. Improved access has value which is reflected in land and property values just like property which has waterfront views. The focus of this discussion paper is the added value generated around transit stations.

LVC is not new

The concept of LVC is not new; in fact Canada was at the forefront of using LVC to fund its rail infrastructure. The Canadian Pacific Railway (CPR) was partly financed through giving development rights for a 48-mile wide corridor along the route to the promoters of the railway. It was the CPR that dictated both the shape and the location of cities in the new Canada based on capturing the increase in the value of the land around the railway stations to part fund the railway. In London, England the underground Metropolitan Line used the same principle; capturing land value uplift around the stations to generate the profits to fund the next section of line. This same principle can be used today for the benefit of all city residents and businesses in the GTHA.

LVC can generate new wealth and profits

The new Jubilee Line in London has been shown to have generated around £13 billion in total increased land and property value around the 10 stations between Stratford and Waterloo against a capital cost of £3.5 billion. Two reports have supported these figures. A report for Transport for London measured nearly £3 billion uplift around just two of the stations (Ref 1). It is estimated that about 10% of this total value was captured for the project, mainly from the Canary Wharf redevelopment.

A Nationwide survey in the UK in April 2012 showed that property prices within 500m of a railway station were 9% higher than similar properties away from the line. This figure was 7% in the 2010 survey (Ref 2).

A raft of surveys in North America show increases ranging from 0% to 120%. For example, a recent study in Montreal showed property increasing in value by 13% within 500m of a metro station, 10% within 1 km and 5% within 1.5 km (Ref 3).

Lastly, a study published in March 2013 in the USA by the National Association of Retailers and the Association of Public Transit Authorities, found that on average, across the study area, development around transit stations outperformed the region as a whole by 41.6%. Transit also had an effect on the resilience of property values which benefitted from transit that was well connected and had a higher frequency of service. Also households living around transit stations had better access to jobs and lower average transportation costs than the region as a whole (Ref 4).

There are many more examples around the world showing that transit increases the value of land and property around stations and how a well-designed and executed LVC strategy can ensure a significant portion of that value uplift is made available for the transit investment.

When and where does LVC work?

When people perceive value they are willing to pay for it. For example, people will often pay a premium to buy a house in a good local school catchment area or for an apartment with a lake view. In the same way, if a house has good access to where the residents want to go then that will attract a premium. This is known and accepted by the property market and development industry and there is a lot of data to back it up as evidenced by the examples above. It happens, it's additional and it's real money. In other words, the money is a reflection of the value created by the improved accessibility and the accessibility makes the land more productive; i.e. more valuable.

This uplift in value due to improved accessibility will vary depending on the local circumstances. For example, in the case of the Croydon LRT extension in south London the increase was negligible because the area already had

good public transport links (Ref 5). In other cases, however, where congestion is high and the improved access is transformational, the uplift can be substantial. A safe assumption is to use an estimated 10% uplift in land and property value within 1 km of a station provided it connects to where people want to go and the property market is growing. Research by Parsons Brinkerhoff suggests a range from 10% to 50% of capital value (Ref 6). This is new money, additional profit for the landowner or developer which only happens if the improved accessibility is provided.

It makes sense therefore that the extra profit generated by transit should be shared between the agency providing the transit, i.e. the taxpayer, and the people who own the land. It needs both players collaborating to make it work. This is especially relevant when demands for access are increasing and the supply of public money for infrastructure is under pressure. The majority of the increased value will come from within a 1 km radius of the transportation facility. The potential, therefore, to unlock this extra value through a partnership between the public and private sectors needs to be explored. This means that LVC requires collaboration between the private sector development community and the public sector that is largely responsible for the provision of transport.

If LVC is so good why is it not happening?

Part of the problem is that the current system is unable to easily release and subsequently capture this added value. This is because of the regulations and procedures put in place to ensure the independence of the planning process and fairness and transparency in spending public money, and because of developer confidentiality. From the public sector point of view it is neither possible nor desirable to give planning permissions on the back of promises from developers to fund infrastructure. From a private sector point of view it is difficult for developers to cooperate with each other due to confidentiality and the competitive nature of the development industry.

The new methods of implementing LVC seek to unlock this new wealth creation and overcome these issues whilst retaining confidentiality and public integrity. The rewards are substantial and the equity of sharing the generated wealth compelling. It seems more than fair that the funders of a new transit line, that creates new wealth and extra profits, receive a percentage of that increase. Thus there is a strong argument for a more equitable sharing between those who create the wealth and those who gain.

Don Riley is a commercial property developer and owner based in London who made millions of pounds from the building of the Jubilee Line Extension in south London. He owned a significant amount of property in a run-down part of Southwark that dramatically rose in value when the new underground line opened. The increase was due to the fact that Southwark was now connected to central London and the Financial City, Canary Wharf and Docklands, and City Airport. He wrote a book called “*Taken for a Ride*” in which he set out the gains in land and rental value generated around all the new stations from the building of the line. He had monitored these values over time. Although glad of the windfall generated, he powerfully argues that at least part of this wealth creation should return to the people who created it – i.e. the providers of the Jubilee Line - ultimately the taxpayers (Ref 7).

Why is LVC important and what are the benefits?

LVC is important for the GTHA for the following reasons:

- It helps economic growth to be achieved in an environmentally sustainable way.
- It helps build a more competitive city region and a higher quality of life for its residents and businesses.
- It helps build sustainable, healthier communities.
- It helps reduce the cost of living.
- It helps reduce congestion and pollution.

The growth of the GTHA

The GTHA has been economically very successful and is projected to experience further high growth over the next 20 years (Ref 9). The population is projected to increase by around 50% by 2031. This is phenomenal growth and underlines the attractiveness of the GTHA as a world economic center. This growth, however, brings serious problems. High growth needs to be matched to high quality mobility systems in order to maintain global competitiveness (Ref 8).

As cities develop, personal and business trips become more complex due to the increasing complexity of people’s lives and customers demanding more valued and personalized services. This trend can be seen throughout the world. At the same time as demand is increasing, spending requirements of government are coming under increasing pressure. In order, therefore, for the GTHA to maintain the balance between growth and the provision of enhanced mobility systems to meet those needs, new methods of financing need to be developed to support traditional funding streams. If the mobility systems of the GTHA do not keep pace with growth requirements, then congestion and

pollution will increase, affecting the competitive position of the GTHA on the global stage. This in turn will impact on the economy, the environment and the quality of life the city region offers. In order for any city to manage its growth and maintain its competitive position a high quality transit network is required to act as the backbone for other mobility systems.

There is no successful city in the world that has managed to solve its mobility needs based solely on the car. Many have tried and all have failed. This is because movement space is a finite and expensive resource. There are only a set amount of vehicles that can pass along a road in any given time. If a city's system is based on private car vehicle occupancy of just over one, then the space requirements cannot be provided without destroying the efficiency and attractiveness of the city. To maintain a balance between quality of life and movement, the city must maximize the productivity of its movement space – its roads, railways, etc. - and that means moving the maximum amount of people and goods along the movement corridors in any given time.

The most successful cities have developed this balanced approach based on high quality transit that maximizes productivity allowing essential private car and freight road users to gain the benefit of reduced congestion and pollution. This is why the funding of transit is critical to the future economic success of the GTHA. In this context, LVC can help both the up-front funding and the long-term financial sustainability of transportation investment.

The GTHA and Metrolinx have developed a strong land use and transportation policy framework that lays the foundation for a successful future. “*Places to Grow*” and “*The Big Move*” say all the right things and provide a good policy and strategy basis for delivery of what is needed (Ref 9). The Metrolinx Corporate Real Estate Policy also sets the right policy framework, but may need to evolve in order to match policies with the objective of maximizing LVC potential. This may lead to changes in organizational real estate policy, involvement in the market, and in the delivery of development projects. Planning and land use, transportation, and real estate policies need to complement each other and work together to maximize the potential of LVC. This may need to be supported by new delivery and governance systems to implement those policies and programs, such as the development of collaborative arrangements with the private sector and other public sector agencies. It should be noted that the Corporate Real Estate Policy does not prevent Metrolinx from getting started in capturing important LVC revenues, however, over time as LVC processes mature the Corporate Real Estate Policy may need to be updated to reflect the nature and breadth of the LVC-related activities Metrolinx is engaged in.

LVC helps to build more competitive and higher quality cities

The provision of sustainable, mixed use communities around transit stations brings a range of benefits over and above LVC funding. It is clear from the evidence that the uplift in the value of land and development around transit stations, due to the increased accessibility of a new transit line, can be substantial and is certainly worth trying to capture in order to help fund new transit lines. However, the provision of Transit Oriented Development (TOD)

around transit stations also increases transit ridership, and therefore the fare income of the transit line, and increases the viability of local services; improving the quality of life and attractiveness of the area and helping to build community. This focused development also reduces congestion for private and public road users, including the movement of freight. There are, therefore multiple benefits to pursuing a strategy of LVC application that go beyond funding for transit.

LVC helps to build sustainable, healthier communities

In order to maximize the potential for LVC there needs to be a clear link with land use planning, urbanization, building communities, and service locations. This is set out in *“Places to Grow”* and means that there needs to be planning policy and regulatory support at the municipal level for TOD around transit stations and the promotion of intensification around transit stations that supports communities and the services they need. This is highlighted by the *“Report on Metrolinx Land Use Planning Authority”* (Ref 10) that was presented to the Metrolinx Board in November 2011. The report examined the powers related to regulations and approvals for future development around existing anchor and gateway hubs and GO station sites with respect to final land use and density approval and compared them to existing Metrolinx powers. The report lists recommendations that need to be considered if mobility hubs that support sustainable developments and communities are to be delivered. This also needs to be tied in to a continuous project evaluation process that recognizes the benefit of LVC and sustainable communities and integrates with, and further builds on, the current appraisal methods.

Research shows that certain lifestyle trends, which are global, strengthen the potential of TOD and consequently the impact of LVC funding. Research in the TOD and Land Use Newsletter in New Jersey (Ref 11) shows that there is a trend for young professionals in their late 20s to mid-30s to value the quality of urban life and want to live near transit stations which helps generate that increased quality of life. Baby Boomers who are downsizing are also choosing Downtown accommodation and locations around transit stations.

There is also evidence that as fuel prices continue to rise houses with no connection to transit are more likely to suffer reductions in value than those Downtown or adjacent to a transit station. This was clearly seen in US cities during the last fuel crisis. Therefore, as congestion rises, the cost of fuel rises, and the importance of reliable sustainable mobility and quality of life increases, the relevance and importance of TOD and LVC opportunities will also increase. (Ref 15)

There are social changes going on as well in younger generations. Research shows that the percentage of young adults possessing an auto license is falling in North America, Europe and Australia. For example, the University of Michigan published data to show a 5% reduction in the percentage of 20-24 year olds having a license between 2004 and 2008 (Ref 12). These new generations did not grow up in an age where the car was king and the first thing any young person wanted to do was buy a cool car. They have been brought up in the information age and often do not see the need for a car in urban areas. It is more important to have the latest smart phone than a driving license. You can't social network driving a car! This will be particularly true of generation I – those born after 2002. For Generation Y, the millennials born between 1979 and 1995, use of transit has risen 40% according to a report from the Urban Land Institute – “*America in 2013: A ULI survey on views on housing, transportation and community*” (Ref 13).

In terms of lifestyle changes the Federal Highway Administration showed that the demand for compact housing within 0.5 mile of a transit station is expected to rise to more than 14.8 million households by 2025 from 6.2 million in 2000 (Ref 14).

There also needs to be an examination of how LVC could support the provision of transit to existing and proposed suburban commercial centers - linking these centers to residential areas, the Downtown, and other key centers such as employment or destination sites. It is more difficult to capture value uplift from existing development but one way this can be done is through reducing car parking and allowing intensification of the land use.

Other benefits

TOD around transit stations offers other benefits as well. There is a lot of research on comparative TOD cost of living versus car-oriented suburban living. This shows reductions in the cost of living for the TOD developments. This disparity can only increase in the future as the price of oil rises and congestion increases. Griffith University in Brisbane has developed oil dependency factors associated with car-oriented living showing the vulnerability of such housing to market prices (Ref 16).

TOD living also increases health levels as it encourages more walking and cycling. The density of residential units improves the viability of local shops and services which increases the vibrancy and commercial sustainability of the local area: a virtuous circle.

TOD development reduces the amount of kilometers travelled because of improved access to local services and other longer distance services by transit. This increases walking and cycling to local shops, offices and other

services and increases the efficiency of the infrastructure, both road and rail. Thus the cost of travel reduces and productivity increases. This is key to a successful, competitive city in the future and encourages the growth of a knowledge economy both within TOD areas and throughout the city region.

The Definition of LVC

There is a need for a clear definition of LVC in the context of this paper because it comes in many forms. It is self-evident from the name that LVC relates to capturing, in some way, an increase in land and property value but this raises some questions. Is the increase in value being measured due to a range of factors or only to increased accessibility generated by an improvement in the mobility services provided? If LVC is defined as value generated by improved mobility then the definition is more clearly focused. However, it could be argued that value generated from the granting of planning permissions, or from granting intensification of development around a transit facility is valid, and this widens the definition. Even if the definition is restricted to mobility effects, does this apply to all mobility or just to transit? It is important to define what we mean.

This discussion paper defines the application of LVC with respect to the increase in the value of land and property around transit stations caused by the transit service. Thus the paper focuses on LVC uplift from transit and on LVC funding for transit, a major need in the GTHA. Such an LVC definition does not mean that other forms of wealth generation cannot act in partnership with LVC uplift from transit. Indeed uplift from the granting of planning permission and land use intensification can provide additional funding and mutual benefits. Metrolinx can implement LVC now through collaboration with public and private sector partners using voluntary methods as explained later in this paper. Metrolinx has the additional advantage in that it owns land around potential transit stations so should be developing LVC methods in the future that can utilize these assets.

Existing LVC methods tend to focus on either specific developments or a general taxation or levy. The first is a development-based approach and the second a taxation-based approach. Most of the methods, however, include elements of both approaches and it is therefore often difficult to categorise them into one or the other. The Appendix details a number of case studies that demonstrate this spectrum of application, from the Edinburgh Rail Ltd method that is wholly development-based to the Columbian Valorization Tax that is wholly tax-based. The key point to note is that most LVC methods include elements of both depending on the local circumstances and the development patterns and potential. The following section highlights the main attributes of both LVC approaches.

Development-based methods

The most important attributes of development-based methods are that:

- They have the likely potential to raise significantly more money than any current examples of taxation-based solutions.

- They directly link LVC funding contributions to the project generating the increased profits. This direct link is attractive to developers and the public.
- LVC contributions need to be agreed on as early as possible. The largest gains are to be made in the initial stages of the development process before options are taken and site ownership transferred. Any agreed contributions at this stage can be accounted for in the development process that follows. As time goes by, and certainty increases, value is taken out as developers anticipate increases in land value around the new transit. Hence, LVC is best secured before the line and station locations are fixed.
- There needs to be a perceived shortfall in public funding for the project that is recognised by the private sector. If landowners and developers think that the new transit facility will be 100% funded by the public sector there will be reluctance to contribute to the funding through LVC gains. If they believe, however, that the public sector cannot or will not wholly fund it and the only way to secure the increased profits is to jointly fund it with the public sector then they will participate.
- Development-based methods are market driven and can be seen to have less dis-benefit than taxation-based solutions. These methods offer an alignment of interest for all stakeholders. For Metrolinx it offers a new source of funding additional to government funding, bringing more flexibility. It also shows Metrolinx to be financially responsible because the agency is then seen to be looking for alternate funding sources not reliant on increased taxation.

Development-based methods fall into two sub-categories – those where the transit provider is directly involved in delivery of the development and those where the transit provider works in partnership with the development industry but is not involved in the development delivery.

Examples of the first sub-category are the method used by the Mass Transit Railway Company (MTRC) in Hong Kong, the Japan Railway Construction Public Corporation (JRCC), and the Oerstadt project in Copenhagen. All of these examples are detailed in the Appendix. If Metrolinx actively participates in development-based methods, it gains more direct control and potentially greater reward. However, it requires development experience and expertise, as the commercial risks can be significant. These risks can be mitigated by hiring the right staff or procuring the right expertise. However, in the Oerstadt project in Copenhagen, where all the land was publically owned, the market changed, the transit cost was much higher than initially thought, and the projected development took much longer than expected (See Appendix).

Transit authorities are not traditionally set up for taking on the developer role and there are issues with respect to risk and the public purse. Land banking¹ is potentially attractive but also carries a considerable risk reward profile that

¹ Land banking is the practice of purchasing land that may not be ideal for development today but will be adjacent to in-demand transportation facilities or other attractive infrastructure in the future. This requires the purchaser to have sufficient liquid capital to spend on land purchase without expectation that the investment will begin to see returns in the short-term.

can sit uneasily in the public sector. Indeed there are those who argue that active participation in the development industry is not part of the public sector's role. However, this is different if the transit authority owns land around the transit line. If this is the case then the authority can be in a strong position to lever in appropriate development and joint development partnerships. As stated above, these risks need to be carefully evaluated and, if necessary, mitigated to minimize exposure for Metrolinx.

The second sub-category of development-based methods relies on a voluntary partnership with the private sector where each partner understands the business of the other and agrees to share the mutual benefit. This mutual benefit comes from the fact that Metrolinx provides the transit that generates uplift in value due to the improved connectivity, and the landowner/developer owns the land and development rights. Each party needs the other. A voluntary partnership is then formed where the increase in value due to the transit is equitably distributed between the developer/landowner and the transit provider to help build the transit that will generate the value.

Agreements on the appropriate form of contribution from the private sector are negotiated on a site-specific basis and will vary depending on the unique characteristics of both the site and the transit facility linkages. An example of this approach has been developed by Edinburgh Rail Ltd in Edinburgh, Scotland and is detailed in the Appendix. The advantage of voluntary development-based LVC methods is that they do not require any new legislation and work with the grain of the development industry. However, they only work where the private sector is convinced the transit facility cannot be fully funded by the public purse. This needs to be emphasized and shapes the projects chosen for LVC application.

Summary of the key attributes of development-based methods:

- Have the potential to raise significantly more LVC funding.
- Directly link those who benefit with those who contribute.
- Are best applied to new, fixed transit infrastructure.
- The funding potential is greater the earlier the methods are applied.
- The majority of LVC value is generated within a 1 kilometer circle of a transit station.
- There needs to be a perceived shortfall in public funding recognized by developers.
- Voluntary development-based methods require no new legislation; they can be applied now.
- They are market driven and are based on sharing extra value generated through the new transit provision.

Taxation-based methods

The other main category of LVC applications involves taxation-based methods. These try to capture the increase in value due to improved accessibility through various forms of taxes or levies on the completed developments. They can be applied to existing developments although this is more difficult. This category can take the form of Special Assessment Districts, Development Charges, Tax Increment Financing, Land Value Taxes, Impact Fees and other forms of roof tax/levies. All these methods are set out in detail in the report by Trillium Business Strategies Inc on “*Land value capture as a tool to finance public transit projects in Canada*” published in March 2009 (Ref 17).

The methods usually require legislation, unless they take the form of a voluntary levy, such as within a Local Improvement District (LID) area where the residents and businesses have voted to pay a levy. They can be unpopular with the private sector and have been seen to result in suppressing or diverting development away from the taxation area. They can also be a blunt instrument trying to extract value where there is none, or missing large increases in value because they operate on fixed schedules of rates. They can act as a disincentive for development or favor development in more profitable areas of a town or city to the disadvantage of poorer areas. For example, there is evidence that when taxation districts are defined around transit stations to capture increased value, the developers either delay their plans, divert their efforts to other areas where it does not apply, or develop just outside the taxation boundary. This was seen in Dublin with respect to the LUAS rapid transit system and around the Sheppard Subway line in Toronto. Nevertheless, they can be used effectively and have been applied successfully around the world. The Appendix details examples.

Taxation-based systems are blunt instruments that don't always clearly articulate this direct link between investment and benefit. This means that it is more difficult to demonstrate the value chain between those who pay and those who gain. This can make it more difficult to deliver taxation-based methods.

The UK government has tried in the past to introduce a land and development tax but to date has been unsuccessful. Currently, UK local authorities are trying to introduce the Community Infrastructure Levy (CIL) and there are two schools of thought on the proposal. The first argues that development charges have failed four times since 1947, are wrong in principle and impose a drag on economic growth. The second accepts that a clear straightforward development charge could be a real benefit but changes need to be made to the current structure (Ref 18).

A combination of methods

As highlighted above, most LVC methods contain elements of both development-based methods and taxation-based methods. For example, it would be perfectly possible and proper to implement an LVC system based on the voluntary contributions of developers and implement a levy/impact fee/development charge as well. A key principle, however, is that LVC funding from increased value generated by transit can only be captured once. It must be made clear that any other charge, levy, or tax is related to other benefits, other land or property, e.g. existing development around transit, or to fund such things as local roads, local services, parks, etc. London Crossrail is an excellent example – the funding includes direct voluntary payments to the project as well as area-based charges, or taxes (i.e. the Community Infrastructure Levy), which are all contributing to the project. The business community has largely been supportive of these area-based taxes because Crossrail will help London continue to grow as a centre of business.

There are also other methods that have been used successfully that can fall into either category. For example, the selling of density rights used in some South American countries, the selling of air rights above stations, or sale and leaseback arrangements. There are many variations of LVC that can be explored once it has been decided in principle to use LVC methods.

The Metrolinx Investment Strategy recommends a combination of methods in the form of asset maximization through a development-based approach paired with the use of Development Charges in local municipalities.

What needs to happen in the GTHA to deliver LVC?

If LVC methods are to be used in the GTHA there are key actions that need to be delivered:

- Agree on objectives between key stakeholders
- Understand and capture value for all partners
- Develop new governance and business models
- Protect the funds captured
- Protect the independence of planning
- Protect confidentiality

Agree on objectives between key stakeholders

There is usually a tension between different sets of objectives. For example, there may be a conflict between maximizing LVC and the optimum number of transit stations to maximize operational efficiency, or between municipal educational, social, or environmental objectives, and maximizing TOD around transit stations. This is why an effective collaboration between all the key public sector players is essential, delivering an agreed set of objectives and

priorities for each LVC project. The collaboration can take many forms – voluntary, Special Purpose Vehicle, or statutory. The form of the partnership would be the subject of further discussions and analysis with the key partners.

Understand and capture value for all partners

In order to capture uplift in value in land and development due to new transit, the partners need to be clear on where the value is, how much it is, and who benefits. There also needs to be an understanding of the value for each key partner and how to capture it – i.e. for regional government, municipal government, private sector companies, and last but not least the individual consumer. A lack of collaboration results in reduced wealth creation. In the new world of increasing demand and reducing resources, there needs to be an equitable sharing of the wealth created to the mutual benefit of all concerned. In addition to the wealth generation potential of transit through increased connectivity, the landholdings of Metrolinx can be used in a collaborative way to act as a catalyst for sustainable development around transit stations, leveraging in private sector participation and funding, and creating new and exciting joint development proposals. Municipal participation in LVC can help unlock and leverage revenue at the local level to help advance transportation priorities and could set a precedent for use of new mechanisms by local governments to make financial contributions to transportation projects.

Develop new governance and business models

Achieving agreed objectives, identifying the value, and distributing that value in a fair and equitable way demands effective governance and business models – this is always a key issue. New governance and business models need to be developed to achieve LVC delivery and this will require the participation of a number of partners; including the various departments in Metrolinx, relevant departments at the City, Region, and Province, and with the various private sector companies.

There needs to be two levels of engagement. Firstly at the strategic level where general agreement to implement these LVC policies is secured, and secondly at the delivery level where the value is captured. Metrolinx has already identified LVC at the strategic level through identifying LVC in its Investment Strategy; a good start. Repeating and reinforcing of LVC as a strategic action would be helpful, while the key at this time is the second step, delivery. Metrolinx is well suited to bringing together the key players in both the public and private sectors. It has a region-wide remit, and is owned by the public sector but is managed by a Board comprising members drawn from the private sector – an interesting and innovative structure. Importantly, it is not directly responsible for local planning decisions. Metrolinx should act as the catalyst between key bodies; working with public sector agencies on the one hand and the private sector on the other.

The key thing for developers is that the money they have paid through the LVC process is secured for the purpose for which it was given. They are often willing to collaborate to achieve mutually agreed objectives but are less keen

on getting involved with the complexities of public sector governance. Demonstrated successes can help build confidence that the complexity is manageable and worth working through.

Protect the funds captured

One of the key issues with respect to any LVC project is the protection of funds raised for specific transport projects. Development-based methods have an advantage here in that any LVC funding can usually be linked directly to the project generating the increased funding. It is straightforward to show through, for example, a protected Trust Fund, that all monies raised for the project will be used for the project. This idea is contained within the Metrolinx Investment Strategy and should be strongly supported.

Protect the independence of planning

It is very important that the independence of planning is maintained at all times. For that reason, details of any voluntary contributions should be kept confidential to Metrolinx so that no undue pressure is brought to bear on any individual planning officer. However, it is perfectly in order for municipalities to know that LVC is involved in the project and to discuss in general the level of development and intensification around transit stations. It is also possible for the Trustees of the fund to verify the level of LVC agreements in the fund and the probability of them coming to pass with respect to gaining planning permission. One of the roles of the Trustees is to monitor whether sufficient LVC payments have been received and whether the conditions have been met, as the details of LVC agreements can vary. However, care must be taken to avoid undue influence on the planning process from the potential of large LVC payments. It is therefore advantageous that Metrolinx leads any LVC initiative, as it is not directly responsible for the regulatory planning process but is central to infrastructure provision.

The Trustees are there to act as independent keepers of the funds, receiving LVC funds from developers and disbursing them to the transit provider when required. They are able to verify the veracity and legality of the LVC agreements and the generated funds from them. They are not, however, a replacement for the professional skills and resources needed to deliver LVC methods and agreements.

Protect confidentiality

This is more of an issue for development-based methods where discussions take place with separate developers. There is always a tension between public scrutiny and freedom of information and respecting the confidentiality of development proposals. It is not so much an issue with taxation-based methods. In terms of gaining the support of the private sector for any LVC project it would be helpful to have that support at two levels; firstly to have the general support of the development industry for LVC methods being applied and even for advice as to where they should be applied and secondly to have the support of specific developers for specific projects. The form of the general support would be the subject of discussions with the private sector.

The detailed discussions about individual projects would have to be confidential to the specific partners. This is not new to the public sector as they deal with confidential reports all the time but the framework for this and the rules of engagement for both levels need to be clearly understood.

What are the challenges to the implementation of LVC?

The implementation of LVC methods in the GTHA will require the following challenges to be addressed:

- Acceptance of the principle of LVC and the benefits
- A willingness to change and to act
- Collaboration between public and private sector stakeholders
- Potential changes to policy and strategy
- Potential changes to the legal framework
- Potential changes to appraisal methods

Acceptance of the principle and the benefits of LVC

There needs to be an acceptance in principle from all the key players that LVC is a valuable tool that can contribute to the future funding of transit infrastructure and the long-term success of that infrastructure. There also needs to be an acceptance that LVC is not the panacea for all transport needs. It is important, and can add substantial funding to a project, but it will not work everywhere. There are situations where there is no uplift, the uplift to be reasonably captured is minimal, or the uplift is difficult to be captured so there needs to be an understanding of where it can be applied most effectively. This does not mean that projects should not go ahead if they cannot generate LVC funding, simply that LVC methods are not applicable in these cases.

A willingness to change and to act

The application of LVC methods often requires changing some traditional views and a willingness to work across non-traditional boundaries with partners who may have different values and objectives. However, the potential rewards for the city region and its people and businesses should make this attractive and acceptable. The willingness to change needs to be accompanied by a willingness to act. This requires delivery models to be developed in collaboration with the key stakeholders.

Collaboration between public and private sector stakeholders

Any successful LVC method requires collaboration and Metrolinx will need to develop strong working relationships with municipalities, senior levels of Government, and the private sector. This needs to work at two levels -

strategic forums and working arrangements related to specific projects and sites. This will require time and effort but will pay dividends in the future. There has to be recognition of each others' needs and an understanding of possibly different values and objectives. There needs to be an acceptance by both the public and private sectors that they need to work together to deliver effective LVC projects for the benefit of the citizens and businesses of the GTHA.

The public sector has to work with the market and understand its strengths and limitations. There also needs to be a willingness of the municipal planning authorities to allow and support, and preferably maximize, development around transit stations. The creation of critical mass around transit stations to ensure vibrant mixed-use centers is vital. This drives the whole process and delivers the benefits in terms of sustainable, high quality living and LVC funding.

The private sector has to understand the legislative, procurement and public good elements of government. In other words there needs to be collaboration between the key stakeholders to drive the creation of value and the subsequent appropriate capture of some benefit for all.

The success of this collaboration will depend on three things:

- Building mutual trust and understanding.
- Agreement on shared objectives and benefits.
- Agreement on the delivery mechanism.

The principle of LVC is usually acceptable to the private sector. The key issue is finding a delivery method that brings certainty, competitive equality and fairness. In other words there needs to be a method that captures and shares the extra profit in an equitable way, maintains the independence of the planning system, adheres to the rules and regulations of the public sector, and maintains competitive equality and the confidentiality of private sector partners. Competitive fairness is important so the method should be applied uniformly. This does not mean that the uplift will be valued and captured in the same way everywhere, but the principles and method of delivering LVC will be relatively consistent. However, since every site is unique and every development opportunity is unique, 100% consistency is very difficult to prove.

Support from senior levels of government is very helpful. For example, Government could require an LVC input wherever possible for all project submissions and/or agreements or approvals. It could also be stated that public funding for transit is tied to municipal support in terms of progressive TOD planning policies. In this context it is good that the concept of LVC is referenced in the Metrolinx Investment Strategy.

There will need to be new business models developed to deliver the LVC methods chosen. The form of these models will depend on the LVC method and the views and objectives of the partners. These models need to recognize the need for confidentiality whilst retaining the independence of the land-use planning process.

Potential changes to policy and strategy

LVC is implicated in the Metrolinx Investment Strategy as a potentially significant transportation investment tool. The Investment Strategy estimate of LVC generating an incremental, dedicated revenue stream of \$20 million per year is conservative but reasonable, however more could be achieved if LVC was pursued aggressively by government and government partners in collaboration with the private sector. The basis of this assertion can be thought of in two ways.

Firstly, the Investment Strategy proposes spending \$23 billion for large capital Next Wave transit projects over a period of less than 20 years. If these projects were built in 15 years then this would equate to a \$1.5 billion annual spend with \$20 million per annum or 1.3% of the total capital cost being paid for through LVC activities. If this was calculated on Net Present Value basis at current Government borrowing rates, then it would be 1.7%. If LVC captured 3.5% of the increased value, rather than the proposed 1.7% estimate then this equates to 2.5% of the total capital spend of \$23 billion. Comparing these percentages to those measured in the projects referenced above (Ref 1 to 4) shows that average land value uplift due to transit of between 5% and 10% is achievable; therefore anything below 5% is conservative.

However, the percentage of LVC depends more on the density of development around transit stations rather than the capital cost of the project hence another way of estimating the percentage of LVC generated from development around transit stations is to use the area and density of residential, commercial and leisure development proposed. This gives a direct link between the proposed development and the potential LVC uplift. It is impossible to generalize on the impact LVC could have because it is site and project specific and depends on the attitudes of public and private sector agencies. For example, it is possible that a small project involving a single transit station surrounded by significant development could generate sufficient LVC to pay for all of the capital costs. However, the percentage captured on very large projects is usually much smaller and could be in single figures depending on the volume and density of development allowed around the transit stations. This can be seen in the examples quoted in this report and the research referenced in the Appendix (Ref 1 to 4). It is inadvisable, therefore, to quote a general LVC target percentage as the percentage will be specific to the project and the development allowed, which can vary significantly.

There are three key points to be noted:

- Firstly, that the more development allowed within 1 km of transit stations, the more LVC funding can be secured and the higher the percentage of capital costs covered.
- Secondly, that this is new money and extra profit that will not materialise if the transit is not provided. Therefore it is equitable that this extra gain be shared between the parties creating that new wealth.
- Thirdly, LVC encourages intensification because this creates even more capital value and more revenue income from increased ridership, helping to build sustainable communities and supporting local services and better urban form.

An interesting exercise, that may support the Investment Strategy target as being conservative but achievable, would be to estimate the number of residential units and areas of commercial and leisure developments around proposed transit lines and take varying percentages of their value, say at 1 %, 5 % and 10%, to compare with the \$20 million per annum Investment Strategy target. These figures do not include the significant long-term value creation that is often lost in the short-term debates about transit provision. The long-term financial benefits of ridership, more efficient and valuable built form, and other benefits should be included in overall benefits as they will push land value capture returns higher.

Planning for LVC is an excellent test that will confirm if there is acknowledged value from transit from property developers - and therefore is a good test of risk as to whether or not additional development attributed to the additional transit provision is in fact generating intensification of demand and therefore increased LVC.

Potential changes to the legal framework

The application of LVC methods will raise legal questions, however, there is no reason under Canadian law that LVC cannot be used. The detailed procedures to deliver LVC will need to be developed.

LVC is potentially a policy and asset maximization tool. Metrolinx holds significant assets and is in the process of examining how these assets can be maximized for the benefit of Metrolinx and the city region. The focus of this work is on how to realize intensification and additional revenues from Metrolinx-owned property and on lands adjacent to Metrolinx-owned transportation corridor and station assets. Part of this examination should eventually include a review of current development and real estate policies to ensure that they are not restrictive with respect to the application of LVC methods. Indeed, they should positively help the introduction of such methods. Elsewhere in this paper it has been stated that while the current policies do not prevent the implementation of LVC, they likely restrict LVC

application on a broader basis that ultimately may need to be revised by Metrolinx if the initial LVC demonstration projects are successful.

Potential changes to appraisal methods

Access has been traditionally measured in counting minutes/seconds saved by travellers – both car and transit – and the associated benefits that can be attributed to the reduction in travel time as a result of implementing a transit project. Metrolinx uses this method in its Benefits Case Analysis (BCA), and other planning and investment analysis activities. The application of LVC methods will require these appraisal methods to be augmented with LVC analysis. For example, LVC will take a more traditional real estate analysis and financial metrics/returns approach versus looking at appraisal that focuses primarily on time saving found in traditional transportation analysis. A BCA does a good job at present in assessing transportation projects; factoring in LVC could result in double counting or show the undervaluing of some transit schemes that generate substantial LVC value. Traditional transit appraisal methods often do not account for land value uplift (and potential capture scenarios) because land use and the associated implication of how changing or tying land use can affect how one should evaluate such transit investments.

Regional growth projections often guide planners to analyze an investment within a prescribed growth projection for an urban region. However, if you can show how increasing density on transit station land or the surrounding area can affect ridership and financial returns, because of the associated change in land use policy, this will influence the decision to make or not to make a transit investment (and how much effort is required to ensure intensification will occur). The only way to account for this is to show how real estate is directly tied into transit investment decisions. The advantage of LVC appraisal is that it is clearly seen to generate "real money" which can be used to provide better access and hence improved competitiveness, which in turn should support the financial performance of the transit and generate further benefits which can be accounted for in a variety of appraisal methods already in use.

The Next Steps

This discussion paper has explained what LVC is and has set out the potential benefits that it can bring to the GTHA. It also highlights the challenges and areas for action if LVC methods are to be used to help deliver high quality transit for people and businesses across the region. If Metrolinx decides to pursue a variety of different LVC methods, then an Implementation Plan needs to be developed. Metrolinx needs to clarify responsibilities within the existing staff structure and teams in order to deliver on these actions suggested below. However, to move this forward quickly, accountability for early actions could be delivered through the existing Investment Strategy and Project Evaluation team working closely with resources and expertise in Planning, Real Estate, and other Finance areas within Metrolinx. A working group or committee structure that ensures the resources, expertise, and

existing work related to LVC should be brought together to ensure maximum collaboration and impact.

Action 1: Metrolinx should publically commit to the implementation of LVC in the GTHA

There is no doubt from the evidence around the world that there is substantial additional wealth created around transit stations, by increased accessibility, if the market conditions are right and the transit is in the right place and going to the right destinations. In addition, the principle of LVC is generally accepted by the private sector. There is therefore a sound case for Metrolinx to pursue the application of LVC methods where appropriate.

There should be an early statement from Metrolinx stating that it wants to include LVC methods within its financial toolbox. To some extent this has already been stated in the Metrolinx Investment Strategy, but a strong statement endorsing this and expressing a willingness to work in collaboration with the private sector would be welcome and arguably essential, thus building on the Metrolinx Investment Strategy endorsement.

Action 2: Metrolinx should establish collaboration between public and private sector agencies

Metrolinx should establish relationships with the key players in the public and private sectors to gain support for LVC in the GTHA at both the strategic and local levels. At the strategic level this could involve a Metrolinx/private sector forum and a Metrolinx/public sector forum. Discussions will need to take place with respect to who the representatives are on each forum. The key benefits of these strategic forums are that general support for the principle is gained from the public and private sectors, and the support base is laid for collaboration at the individual project level. The local collaboration at the individual project level involving the relevant public and private sector stakeholders is essential. This collaboration could also benefit transportation planning, as Metrolinx will get direct input from developers as to what transit schemes they think add value and would generate LVC. This could include Project Development Committees, as used in some London projects like Canary Wharf, Battersea Power Station, and the Northern Line Extension.

To enable the collaboration process to start, Metrolinx should consider inviting key stakeholders to a round table event to discuss the form and delivery of these forums.

Action 3: Implement short-term demonstration projects

The best way to demonstrate the potential of LVC is to do it. The implementation of LVC should therefore start with short-term demonstration projects. These demonstration projects should include data collection, performance monitoring and evaluations of the benefits of LVC so that a database of local experience is built up for future business cases. Site plans, drawings and other information for these site projects would be collected. In

the longer term, Metrolinx will have to develop a site selection methodology, in collaboration with the private sector, so that a pipeline and timetabling of appropriate projects are identified. In some cases, Metrolinx may select the sites to be brought forward, however, to maximize the realisation of value from potential opportunities, the private sector should be bringing forward ideas too. In fact some of the opportunities will be more effectively advanced if they are private sector led while Metrolinx is fair and transparent about its criteria for participation.

In the short-term, Metrolinx should use the collaborative forums established under Action 2 to identify one or two demonstration projects. For these projects the LVC method used would have to be a development-based voluntary method because they need no new legislation, they work with the grain of the market and they can be delivered quickly.

The opportunities around uncommitted transit infrastructure, like the East Bayfront LRT, or additional new GO stations, are particularly attractive projects in this context.

There are also seemingly less attractive projects in this context but where value creation and value capture potential is still possible. For example, it is harder to capture LVC for committed infrastructure. In this case, however, additional value can be created through better connections or access than the committed infrastructure provides, or enhancements that increase the value of building through greater value per sq. ft. or greater density allowance. For example, the Eglinton Crosstown is a committed project but as long as there is some flexibility regarding exact station locations and/or access and design, there is some, albeit small, value creation and value capture potential.

Action 4: Implement the Metrolinx staff structure and processes to deliver LVC methods in the longer-term

Metrolinx will ultimately need to build and formalize a long-term delivery team, defining their roles and structure with a clear mandate and responsibilities for developing LVC methods and TODs around transit stations. Members of the team need to have a range of skills including the relevant experience and qualifications in real estate deal making and development delivery. Metrolinx also needs to establish an ownership/participation structure on a deal-by-deal basis, an operations/asset plan, and an Investment Committee. Staffing costs will be small relative to the value of pursuing a successful LVC program.

Action 5: Develop and establish guidelines and a site selection criteria framework

Metrolinx should establish development principles that will act as guidelines for all TOD and economic hub development. This will involve conducting due diligence, market research, demographic analysis and working with the development and private sector to build market intelligence. Since one of the benefits of using LVC is to monetize the value, a significant emphasis has to be placed on the financial returns and analysis.

This process will need to include specific development principles and guidance at the project level. This action will be done in partnership with the two forums established under Action 2.

It is important to be clear that the selection methodology doesn't mean that a private sector collaborator cannot bring forward a site that makes sense for LVC; rather, the private sector should be encouraged to do so. It should be for Metrolinx to create a clear, transparent set of criteria that is seen to be equitable and accessible and that will be used to assess and initially consider LVC opportunities.

Metrolinx should establish a site selection methodology that includes parameters like a shortfall in funding, the value opportunity of creating improved access to key locations, potential for TOD around the stations, a supportive planning regime, attractiveness to the market with respect to development, and a willingness from all the key stakeholders to support the project.

Metrolinx should develop an inventory of where significant development opportunities exist adjacent to existing or potential future transit. Metrolinx will need market expertise and/or feedback to help narrow the sites to be pursued, and will need to engage the community and the development sector. When the above actions are implemented it will then be possible to develop a pipeline and timetable for LVC projects where there is a) value to be pursued, and b) willing partners with which to create that value.

Action 6: Develop a working framework with the key public and private sector agencies

Metrolinx should establish a working framework with municipalities and/or cities and their respective planning departments to ensure lands surrounding transit stations can be re-designated for high density mixed-use and/or re-designate those transit station areas or corridors as urban growth centers where possible.

Metrolinx should also establish a working framework with the development sector to ensure the maximum benefit from LVC for transit funding whilst ensuring a fair and equitable return for the private sector.

Both of these actions will use the partnerships and collaboration established through the two forums of Action 2. Metrolinx should also leverage off multi-stakeholder engagement/conference mechanisms to engage the market and community.

Action 7: Establish governance and business models to deliver LVC projects

Metrolinx will have to develop models of governance and business models to deliver LVC in the GTHA.

This is an inevitable consequence of deciding to implement LVC and will take time and require discussions with the key partners. There are case studies from around the world which will help, but they will need to be adapted to the GTHA situation. This action needs to be in collaboration with key public and private sector stakeholders.

Building on the momentum of the initial demonstration projects, it will become necessary to formalize and optimize the enterprise operation(s) of creating and leveraging LVC.

Action 8: Establish a pipeline and timetable for the long-term delivery of LVC projects in the GTHA

Metrolinx should produce a long-term pipeline and phased timetable for the delivery, monitoring and evaluation of LVC projects in the GTHA.

The actions proposed enable LVC to be delivered at sites across the GTHA. Each project will be different and may involve the application of different LVC methods. This will emerge from detailed project by project analysis. In developing a sophisticated, accountable, and transparent LVC delivery and evaluation program that respects commercial confidentiality, Metrolinx will continue to build the trust required to become a successful partner with both private and public sector partners. It should be made clear that this pipeline and timetable possesses a flexibility that will allow it to assess and, if appropriate include, new ideas and proposals from public and private sector partners.

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Appendix: Examples of LVC Methods

These case study examples give a range of LVC methods from the Edinburgh Rail Ltd that relies wholly on voluntary sharing of additional development profit to the Columbia Valorisation Tax which is a straightforward taxation LVC method. The examples demonstrate the range of combinations of development-based and taxation-based methods that are possible and the spectrum of LVC methods.

Edinburgh Rail Ltd

The Edinburgh Rail method of LVC is based on a voluntary partnership with developers and landowners. It negotiates Contribution Agreements (CAs) with developers around potential transit stations. These CAs are based on a sharing of the land value uplift between the developer and the transit provider. The funding generated by the method is placed in a protected Trust Fund linked exclusively to the transit project. It is a method that goes with the grain of the market and equitably shares the wealth created by the increased accessibility of the transit. It only works where there is development potential, the transit line opens up areas that people want to go to and the private sector is convinced there is not enough public funding to provide the transit.



Edinburgh Waverley main railway station, central Edinburgh

Source: <http://www.rail-news.com/2010/08/13/edinburgh-to-glasgow-improvements-programme-contracts-awarded/>

Oerstadt, Copenhagen

This was a joint venture between the Danish Government and the City of Copenhagen. The Government donated 310 hectares of land between the city and the airport and Oersund Bridge to Sweden. The idea was to fund a rapid transit rail system to the airport and bridge through capturing the increase in land value due to the improved accessibility of the rapid transit. This would pay for the capital costs. In addition, land taxes were planned to create a revenue stream capable of funding operational costs or re-paying loans required for the construction. A new development company was formed to deliver the project. Unfortunately, the rapid transit opened 3 years late and 800 million Euro over budget. This was attributed to poor timing with respect to the economy and a resulting lack of demand for the development. The resulting urban development is successful for many reasons, but this case study also provides lessons regarding the risk of development and transit system construction.



Oerstadt Development Transit, linking Oerstadt to Copenhagen and the airport

Source: http://www.nytimes.com/2012/03/06/business/energy-environment/in-new-copenhagen-suburbs-aim-is-sustainable-living.html?pagewanted=all&_r=0

Hong Kong Mass Transit Railway Company (MRTC)

The MRTC is a government-led public leasehold system. It allows the MRTC exclusive rights on long-term 50-70 year government-controlled land leases and associated development rights above and adjacent to the stations. The MRTC divides the large government leased parcels into smaller parcels that are offered to private sector developers within a competitive bidding process. The prices reflect the increased value due to the transit station. The MRTC is one of the few places in the world where a transit agency makes a profit. The profit largely comes from the success of real estate development that is realized as a result of the accessibility that comes with the provision of transit.



Hong Kong High-Speed Rail Terminus, north of the proposed West Kowloon Cultural District [Due for completion 2015]

Source: <http://factspod.blogspot.co.uk/2012/11/express-rail-link-hong-kong.html>

Japan Railway Construction Public Corporation (JRCC)

Tokyo's railway companies rely on land value capture models as a means of funding transit and generating profit. The approach is different to Hong Kong because they have not just built individual buildings but new towns on green field sites. Due to the economic downturn they have developed new revenue streams and approaches such as strategic partnerships and strategic infill development, such as urban shopping center development above and integrated with urban rail terminus stations. The JRCC is involved with rail projects that improved the urban environment at the same time. They also use a land readjustment method that sets aside land for the railway by substituting land acquired in advance by municipalities in an integrated development area.



Tokyo Metro, Kanto Region area

Source: <http://www.railway-technology.com/projects/tokyo-metro-kanto-japan/tokyo-metro-kanto-japan3.html>

Transgesco, Montreal

In 2004, the City of Montreal created Transgesco, a wholly owned subsidiary company that enables the transit corporation to form partnerships with private sector companies to ensure the strategic development of its full commercial potential. Five areas of activity had commercial potential – retail outlets around stations, transit user information, smart cards, wireless communications and marketing of STM expertise. In 2006, Transgesco formed two subsidiary companies – Metrocom S.E.C. to secure the rental, management and development of commercial areas in the metro system, and Metrovision S.E.C. to install a digital display network in metro stations. The various partnerships generated \$3.3 million profits in 2006.



Windsor Station, Montreal

Source: http://www.flickr.com/photos/nino_ary/8481482453/



Montreal Downtown

Source: <http://wallstreetmeeting.de/mos-2008/preview-aug-08-montreal-canada/>

Crossrail, London

This project is a good example of collaboration between the public and private sectors and a combination of development-based and taxation-based LVC funding. Crossrail realized between 3-5% of the £15B cost from joint ventures at stations, direct contributions and excess land sales post-construction. The project promoted TOD development, bringing in extra value from the private sector. They were able to demonstrate risk transfer to the private sector and also show the community that those who gained also contributed to the cost. For example, at Woolwich Station Berkeley Homes contributed £100 million. The joint venture produced a strong business case that showed that Crossrail helped create a competitive city, brought relief to other transit lines and brought 1.5 million people within 45 minutes of central London. There were also wider economic benefits defined.



Tottenham Court Road Station, part of Crossrail development Project

Source: http://news.bbc.co.uk/1/hi/in_pictures/7830869.stm

Canary Wharf Station, London

In the Docklands, London the private sector and not-for-profit business advocacy sectors have worked with the public sector to create discussion, tension, and collaboration that has generated rigorous business case development, accountability, and the delivery of successful transit projects in the city. In some cases, transportation projects and plans have been adjusted in response to private sector experience and expertise and significant public and private value has been created. For example, the Canary Wharf Group, the development and management company responsible for the Canary Wharf Estate, has directly engaged and funded consultants to research, plan and act as advocates for three generations of rapid transit, including Docklands Light Railway, the Jubilee Line Extension, and Crossrail. Canary Wharf Group made their own contributions to the rapid transit projects, including financial contributions and the assumption of risk. The Canary Wharf Group has collaborated with London First, a business coalition for policy and development and advocacy whose mission is to make London the best place in the world to do business. This was done to strengthen the business case through support from the private sector, and led to new taxes on development and businesses to pay for transit.



Canary Wharf station, Docklands, London

Source: <http://urbandesign.tfl.gov.uk/Design-Guidance/London-Rail/Crossrail/Station-Type/Within-development.aspx>

Hudson Yards, New York

The Hudson Yards is a 360 acre comprehensive proposal to realize the development potential of Manhattan's Far West Side. The project is currently in the initial stages of construction. The project includes extending the subway service, establishing a new open space network, zoning for appropriate densities and mixed-use, and creating a convention corridor. The financing plan involves capturing the incremental revenues from new commercial and residential development in the area to cover debt service on bonds that will be issued by the Hudson Yards Infrastructure Corporation (HYIC), a special purpose local development corporation. In effect, Hudson Yards is driving, through very significant contributions, the extension of the number 7 subway in New York City.



Hudson Yards Urban Regeneration Project, Manhattan, New York

Source: <http://luxuryrentalsmanhattan.com/blog-tags/hudson-yards-development-project>

TransLink, Vancouver

In March 2008, Translink launched a real estate division and plans to develop property as a way to generate funds for transit. Under the plan, Translink will purchase land along new transit routes and around stations and increase the value through intensification of land use zoning and partnerships with developers to create high-density commercial and residential developments. Estimates of the revenue stream are around \$30 million per year, over 5 years. It is interesting to note that after the opening of the SkyTrain in 1985, developers zoned in on the areas around the stations. A total of 7,870 houses were built within a 500m radius of stations between 1986 and 1996. In addition, commercial towers rose up around the stations. The uplift in value was not realized at that time but TransLink is now planning four transit villages to augment existing hubs creating attractive, compact, mixed-use communities centered around the transit stations.



Source: <http://www.ubcm.ca/EN/main/funding/gas-tax-fund/tier-3-strategic-priorities-fund.html>



SkyTrain, Surrey, Vancouver

Source: <http://forum.skyscraperpage.com/showthread.php?p=5375619>

Washington Metropolitan Area Transit Authority (WMATA)

The WMATA's joint development program began in the 1970's and became known for its in-house real estate expertise, profitable deals, and innovative deal structures. The program is delivered through property owned and/or controlled by the WMATA that is marketed to commercial and residential private developers with the objective of developing transit-oriented projects. Until the mid 2000's, the WMATA proactively purchased land adjacent to stations for joint development projects. The average annual gross revenue from their activities was more than \$6 million. In 2008, the WMATA adopted revised joint development policies that improved responsiveness to development opportunities and market conditions, promoting more cooperation between local planners and focusing on the long-term benefits of TOD.

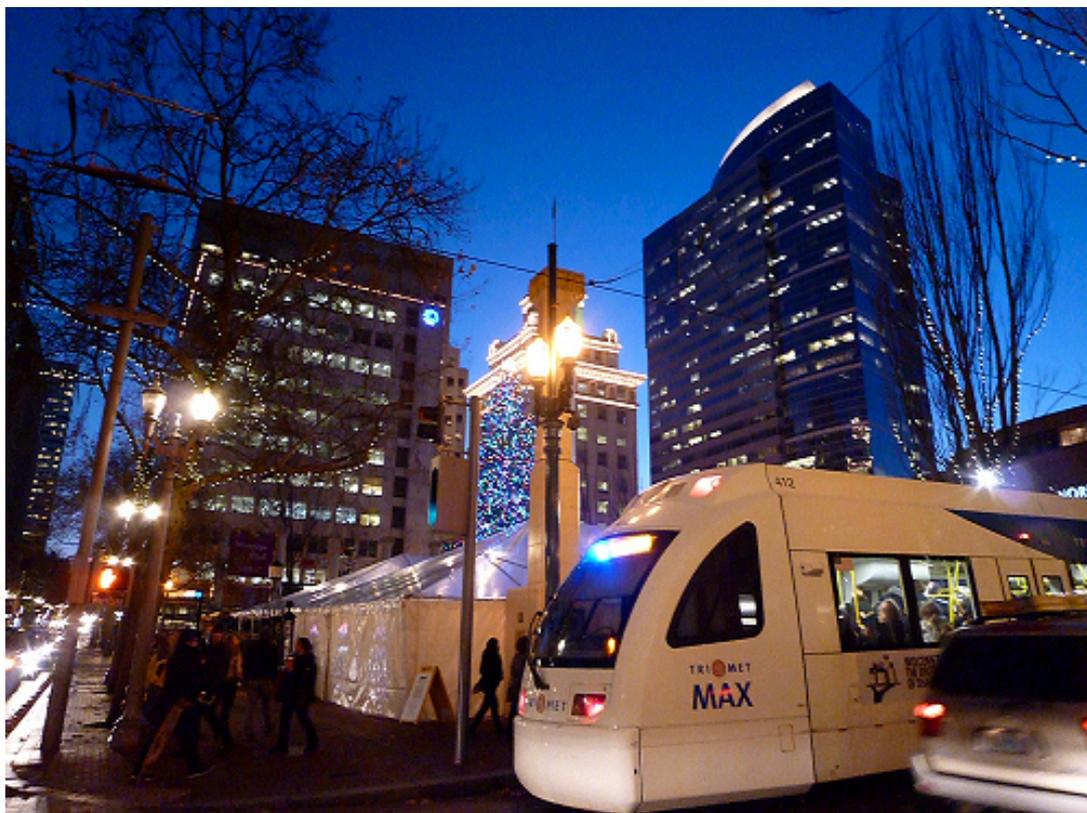


Prince George's Plaza Metrorail, WMATA

Source: http://ww2.gazette.net/stories/100507/businew40042_32360.shtml

Portland Oregon, MAX extension

In 1999, a joint development proposal was brought forward to fund a \$125 million extension of Portland's light rail system, MAX, to the airport. The stakeholders included the Port of Portland, the City of Portland, the Portland Development Commission, Tri-Met (the transit agency), and a private development company, Cascade Station Development Company. The private investors agreed to take responsibility for repayment of the \$28.2 million in bonds and in return they received an 85 year ground lease on 120 acres that included 2 of the 4 planned stations. The remainder of the funding came from the Port of Portland (\$28.3 million), the Tri-Met general fund (\$45.5 million) and the City of Portland (\$23.0 million from an urban renewal fund and TIF). Significant growth has occurred around Cascade Station since 2005.



The MAX light rail, part of Portland's TriMet mass transit network

Source: <http://findingfukuoka.com/2011/12/19/new-public-transit/>

Portland, Oregon Streetcar

The streetcar in Portland Oregon was funded by a Special Assessment District, Oregon Lottery-backed bonds, the Federal government, and advertising on the vehicles and stops. Two Local Improvement Districts (LIDs) were established to serve the Pearl District, a previously vacant, low-density neighborhood. The one-off levy from the LIDs combined with development and density increases raised 17% of the \$56 million required. The streetcar and the new intensified zoning transformed the area into one of the most in-demand real estate markets in the city.



Portland – Portland Oregon streetcar

Source: <http://www.stamfordadvocate.com/news/article/Stamford-light-rail-study-reviewed-by-city-363301.php>

Columbia Valorisation Tax

Public works in Columbia are funded by valorization taxes. This tax takes the form of an up-front tax that theoretically recovers the uplift in value resulting from direct public investments. The tax is based on a valuation of the properties before and after the works are undertaken and the rate is calculated using “benefit factors” based on land use classes. Over 50% of the main highway network in Bogota was funded using this method.



Bogota, Columbia

Source: <http://globalgastros.com/2013/is-it-safe-to-travel-to/>