



INVESTING IN OUR REGION
INVESTING IN OUR FUTURE



Investing in our region Investing in our future



Cover photo: The award-winning design of the new train shed roof at historic Union Station features a large glass atrium, providing daylight at platform level, and a visual connection from the station to the waterfront.



Glass panels are installed on Union Station's train shed roof.

Minister and Heads of Councils

The Honourable Glen R. Murray, M.P.P.
Minister of Transportation

Ms. Carol Layton
Deputy Minister of Transportation

Mr. Roger Anderson
Chair, Regional Municipality of Durham

His Worship Dave Barrow
Mayor, Town of Richmond Hill

His Worship the Honourable Maurizio Bevilacqua, P.C.
Mayor, City of Vaughan

His Worship Rick Bonnette
Mayor, Town of Halton Hills

His Worship Bob Bratina
Mayor, City of Hamilton

His Worship Rob Burton
Mayor, Town of Oakville

Mr. Gary Carr
Chair, Regional Municipality of Halton

His Worship W. Terry Clayton
Mayor, Township of Brock

His Worship Geoff Dawe
Mayor, Town of Aurora

His Worship Wayne Emmerson
Mayor, Town of Whitchurch-Stouffville

Her Worship Susan Fennell
Mayor, City of Brampton

Mr. Bill Fisch
Chair, Regional Municipality of York

His Worship Rob Ford
Mayor, City of Toronto

His Worship Adrian Foster
Mayor, Municipality of Clarington

His Worship Rick Goldring
Mayor, City of Burlington

His Worship Robert Grossi
Mayor, Town of Georgina

Her Worship Virginia Hackson
Mayor, Town of East Gwillimbury

His Worship John Henry
Mayor, City of Oshawa

Mr. Emil Kolb
Chair, Regional Municipality of Peel

His Worship Gordon Krantz
Mayor, Town of Milton

Her Worship Hazel McCallion, C.M.
Mayor, City of Mississauga

His Worship Chuck Mercier
Mayor, Township of Scugog

Her Worship Marolyn Morrison
Mayor, Town of Caledon

Her Worship Gerri Lynn O'Connor
Mayor, Township of Uxbridge

His Worship Steve Parish
Mayor, Town of Ajax

His Worship Steve Pellegrini
Mayor, Township of King

Her Worship Pat Perkins
Mayor, Town of Whitby

His Worship Dave Ryan
Mayor, City of Pickering

His Worship Frank Scarpitti
Mayor, City of Markham

His Worship Tony Van Bynen
Mayor, Town of Newmarket

This report addresses a challenge faced by the Greater Toronto and Hamilton Area: Growth in the region's population and economy has not been matched by growth and integration of its transit and transportation network. The consequence has been an overcrowded transit system, slowed commutes, increased greenhouse gas emissions and barriers to economic growth.

Metrolinx was given a clear mandate: To develop an Investment Strategy, including proposals for investment tools, to support the implementation of The Big Move – the transportation plan for the GTHA. This report contains our advice for this strategy, which includes recommendations for investment tools and for proposals to integrate transportation, growth and land use planning; maximize the value of public infrastructure investment; and optimize system and network efficiency.

The 24 recommendations were developed on the basis of thorough consultation with the public and stakeholders, including municipal governments, and upon extensive research into best practices employed in other urban regions around the world.

The report reaffirms The Big Move as the solution to our congestion challenges – challenges that threaten our quality of life and economic competitiveness. The Big Move includes First Wave projects that are already underway, thanks to \$16 billion in funding from the three levels of government (including over \$13 billion from the Province of Ontario). And it includes a series of Next Wave projects that depend upon an additional \$34 billion in funding. This would bring an efficient, integrated transit and transportation network that would benefit everyone in the region. Public transit users would benefit from a system of subway lines, rapid transit, and GO trains and buses to ensure smooth movement throughout the region. Drivers would benefit from more efficient use of roads and highways that would result from improved public transit choices. All residents of the region would benefit from the efficient movement of goods and people across the GTHA.

But these benefits depend upon funding – \$2 billion a year. The Investment Strategy addresses the question of how those resources would be most fairly and effectively raised.

The strategy calls for investment tools to be specifically dedicated to transit and transportation. That is the only way to ensure that the people of the GTHA can be given a plan for transit and transportation improvements they know will be carried out. Dedicated investment tools remove the uncertainty that comes from year-to-year budgeting; they ensure that the projects that are budgeted for are completed, on the schedule specified. The recommended investment tools – a one percentage point increase in the Harmonized Sales Tax, a five cent per litre regional fuel and gasoline tax, a business parking levy and development charges – provide the basis for a resilient and sustainable Investment Strategy. For a strategy that fairly distributes costs and benefits across population and business groups; shares in the costs and benefits of an improved transit and transportation system across the region; and supports our quality of life and economic growth. The strategy also recommends specific measures to build accountability and trust, including an irrevocable Transportation Trust Fund, and processes to ensure oversight of the collection, management and expenditure of the resources raised. This includes an increased role for the municipalities that make up the GTHA in nominating one-third of the citizen members of the Board of Metrolinx.

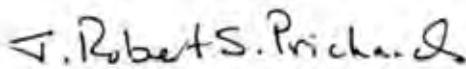
The Board of Metrolinx is confident that the Investment Strategy detailed in this report would ensure a modern transit and transportation system that meets the need of the people of this great region. We collectively submit it to the Ontario Minister of Transportation and the heads of council of the municipalities in the region, in fulfillment of our legislative requirement.

We, the directors of Metrolinx, make this report and its recommendations unanimously.

We are a diverse group of citizens - by background, experience, profession, gender, ethnicity, politics and much else. However, we are united in our commitment to advancing the GTHA as one of the world's great urban regions and believe in our judgment that getting transit and transportation right is an essential condition for the region's success.

We collectively urge you and the governments you represent - the Province and the thirty municipalities - to embrace our recommendations and allow our region to achieve its full potential as a world-leading place to live, work and raise our families with a quality of life second to none.

Sincerely,



J. Robert S. Prichard, Chair



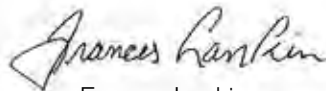
Richard Koroscil



Rose Patten



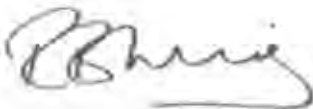
Stephen Smith, Vice-Chair



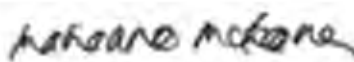
Frances Lankin



Bonnie Patterson



Rahul Bhardwaj



Marianne McKenna



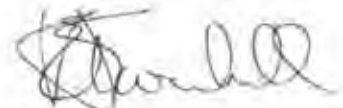
Howard Shearer



Janet Ecker



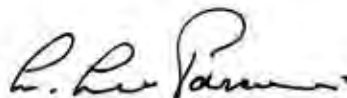
Nicholas Mutton



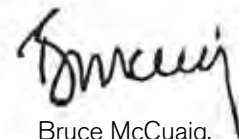
Douglas Turnbull



Joseph Halstead



Lee Parsons



Bruce McCuaig,
President & CEO



West Toronto Diamond grade separation under construction for GO Transit's Kitchener line and the UP Express.



Table of Contents

1.0	THE CHALLENGE AND HOW TO MEET IT	8
1.1	The Opportunities	8
1.2	The Challenge and How to Meet It	9
1.3	The Solution	10
1.4	Meeting the Need with Dedicated Investment Tools	11
1.5	Building Trust and Accountability	12
1.6	An Investment Strategy That Is More Than Investment Tools	12
2.0	A SOLUTION FOR THE GTHA, DEVELOPED BY THE GTHA	13
2.1	Learning About Global Best Practices	13
2.2	Extensive Technical Analysis	13
2.3	Our Commitment to the Public: Four Key Principles	14
2.4	Consultation: Developing a Made-in-the-GTHA Solution	14
2.4.1	The Big Conversation: Reaching Out, Listening In	15
2.4.2	An In-Depth Look: The Residents' Reference Panel	16
2.4.3	What We Heard	17
3.0	THE BIG MOVE AND THE NEXT WAVE	19
3.1	Setting Priorities for The Big Move	19
3.2	Establishing Priorities	20
3.3	Quick Wins to Get the GTHA Moving	23
3.4	First Wave: \$16 Billion in Big Move Transit Investments	23
3.4.1	Shovels in the Ground – First Wave Projects	25
3.5	The Next Wave: Its Economic and Transportation Impact	30
3.5.1	The Next Wave: What It Would Mean to GTHA Residents and the Economy	32
3.5.2	Keeping Next Wave Projects on Target	37
4.0	BUILDING TRUST AND ACCOUNTABILITY	38
4.1	The Need for Dedicated Tools	38
4.2	Metrolinx Governance: Ensuring Representation From Municipalities	41
4.3	Creating a Trust for Investment Strategy Funds	42
4.4	Public Engagement and Reporting	42
4.5	Review of the Investment Strategy	44
5.0	A ROLE FOR THE FEDERAL GOVERNMENT	45

6.0	THE INVESTMENT STRATEGY	47
6.1	Integrating Transportation, Growth and Land Use Planning	47
6.1.1	Transportation Planning Policy Statement	48
6.1.2	Land Value Capture	49
6.1.3	Publicly-Owned Land	50
6.2	Maximizing the Value of Public Infrastructure Investments	51
6.2.1	Connecting Locational Decisions	52
6.2.2	Project Delivery and Partnerships	52
6.2.3	Project Evaluation and Selection	53
6.3	Optimizing the Transit and Transportation System: Improving Efficiency and Pursuing Excellence	53
6.3.1	Benchmarking	54
6.3.2	Service and Fare Integration	54
6.3.3	Customer Experience	55
6.4	Dedicated Investment Tools	55
6.4.1	Allocating Investment Strategy Funds	55
6.4.2	Life Cycle Costs	57
6.4.3	Choosing The Right Tools	57
6.4.4	The Investment Tools	59
	6.4.4 (a) One Percentage Point Increase to the Harmonized Sales Tax	61
	6.4.4 (b) Regional Fuel and Gasoline Tax – 5 cents per litre	63
	6.4.4 (c) Business Parking Levy	66
	6.4.4 (d) Development Charges Amendments	69
6.4.5	Everyone Benefits Fairly – Everyone Pays Fairly	73
6.4.6	Impact on Households and Individuals	73
6.4.7	Impact on the Economy and the Region	74
6.4.8	Contributions Spread Fairly Across the Board	75
6.4.9	Putting the Four Principles of the Investment Strategy into Action	76
6.4.10	Timing of Implementation	76
6.4.11	Tools to Advance Policy Goals	77
7.0	IT'S TIME TO INVEST IN OUR FUTURE	80
8.0	SUMMARY OF RECOMMENDATIONS	81
9.0	ENDNOTES	85

APPENDIX LIST

Appendix A: AECOM/KPMG - Big Move Implementation Economics: Revenue Tool Profiles
Appendix B: Other Investment Tools Considered
Appendix C: The Big Conversation Public Roundtable Meeting Summary Report
Appendix D: Public and Stakeholder Input Received
Appendix E: Report of Residents' Reference Panel
Appendix F: Project Prioritization Report
Appendix G: Canada's Regional Transportation Authorities: Delivering Real Results for Canadians



GO Train passes over the Don Valley Parkway

THE TASK

“On or before June 1, 2013, the Corporation shall provide the Minister and the heads of the councils of the municipalities in the regional transportation area with a copy of the Corporation’s Investment Strategy, including proposals for revenue generation tools that may be used by the Province or the municipalities to support the implementation of the transportation plan for the regional transportation area.”

– *Metrolinx Act*

1.0 The Challenge and How to Meet It

The Greater Toronto and Hamilton Area (GTHA) is facing the consequences of its own success. As we have grown and prospered, our transit and transportation system has not kept pace. Like traffic in the GTHA, advances in our transportation network have largely been stuck in gridlock. It's time to get our region moving again with an Investment Strategy dedicated to specific transit and transportation projects that will support a more prosperous future for our region.

1.1 The Opportunities

The GTHA has enormous advantages that promise to open the door to a future of prosperity and growth. A dynamic economy, diverse population, talented workforce, and leading educational and health care institutions have helped the GTHA become one of the world's most attractive regions in which to live, work and invest, drawing more than 100,000 new residents every year – one of the fastest metropolitan growth rates in North America. Immigration provides much of the skilled labour and new ideas that drive our economy, and that diversity makes for an exciting place to live. An internationally recognized growth plan is helping to ensure that future population and job growth occurs where it is most efficiently accommodated – providing a blueprint for a 21st century of smart, balanced growth.

THE GREATER TORONTO AND HAMILTON AREA



Metrolinx's mandate area as defined by the *Metrolinx Act, 2006*

1.2 The Challenge and How to Meet It

Today, the GTHA is home to almost 6.6 million people – 81 percent more than in 1976. In fact, the GTHA ranks fourth behind only the metropolitan regions of New York City, Los Angeles and Chicago in rankings of Canada's and the United States' most populous urban regions. The region draws many people to share in its potential. The result? Our communities and economy are enhanced, but our transit and transportation systems are under severe strain.

Congestion is a growing and relentless threat to our region's economic performance, job creation and everyday quality of life. From the 1960s to the 1980s, 135 kilometres of rapid transit services were introduced per decade. This included both the TTC subway and the commuter rail operated by GO Transit. But during the 1990s, it all but ground to a halt. Despite significant investment and momentum over the past 10 years, the transit and transportation system has not caught up.

CROWDING ON TRANSIT HAS WORSENERD. Transit riders are getting squeezed as capacity struggles to keep up with demand. The Yonge Subway line carries 2,400 more people in the peak morning hour than it was designed to handle. Riders on that line routinely let two, even three trains pass them by before finding a space to squeeze onto the train. In the last decade, GO Transit's ridership has grown over 45 percent; during peak periods it operates at 125 percent capacity on some lines, and about 20 percent of customers can't get seats on their train. Bus lines are bursting at the seams. For example, bus routes on Hurontario Street in Mississauga carry over 20,000 people per day.

COMMUTES HAVE SLOWED. The average round trip commute time in the GTHA is 82 minutes, longer than almost any other region in North America.¹ For commuters, that adds up to the equivalent of almost a full extra day on the job over the course of a work week, stuck in traffic and away from family and friends. The region that works is becoming the region that's stuck on the way to work, on the way to school, to the enjoyable amenities and events the region offers, and in living life every day.

GREENHOUSE GAS EMISSIONS HAVE RISEN. Since 1990, Ontario's transportation sector has seen the largest increase in air pollution emissions of all major industry sectors. It is now responsible for over one-third of all provincial emissions – more than any other sector in the province. Road transportation is responsible for 77 percent of these emissions, three quarters of which stem from passenger vehicles.²

***The GTHA
“suffers from
traffic congestion
problems, poorly
integrated regional
transit services,
and relatively
underdeveloped
transport
infrastructure.”***

*-OECD Territorial
Review, 2010*



Taking the GO Train has become an increasingly crowded experience for many customers

THE REGION'S ECONOMY HAS SUFFERED. Congestion is estimated to cost GTHA residents about \$3.3 billion per year through time delays, vehicle costs and collisions. That works out to about \$1,619 per year for every household in the region. In addition, every year, \$2.7 billion worth of job-creating economic activity is lost to traffic congestion. The cost of congestion can be expected to rise to \$8 billion per year in time delay, vehicle costs, and collisions that impact all GTHA residents, and \$7 billion per year in job-creating economic activity by 2031, unless we take action.³ Increasingly, our future prosperity is trapped in traffic.

It's no wonder that transit and transportation has become the single biggest concern among GTHA residents. People across the region see and feel the problem every day – when they wait for buses, when they try to find a seat on the train, wait to transfer between transit systems, or idle in frustrating traffic jams.

In some ways, the GTHA is similar to a beautiful home: In good condition, in an excellent location, with access to abundant amenities – but plagued with faulty wiring at a time of rapidly increasing electricity use. When a homeowner faces that dilemma, the prudent response isn't to shrug and delay fixing the problem. The only practical response is to fix the wiring. The GTHA is in a comparable situation: It is time to fix our transit and transportation wiring. The GTHA is one of the greatest places in the world in which to live, but one key element is holding us back – an effective, integrated transit and transportation system.

1.3 The Solution

We have a plan to fix our congestion problem. Across the region, we have developed a shared understanding of what needs to be done. The solution is called The Big Move, a 25-year integrated transit and transportation plan. The plan lays out a multi-faceted strategy for creating an integrated regional transit and transportation network for the GTHA that focuses on the traveler experience. It was unanimously approved in 2008 after a comprehensive public engagement process by a board composed of elected representatives and private residents from across the region.

The Big Move is based on the delivery of specific transit and transportation infrastructure projects that, in turn, will deliver measurable improvements in moving people and goods across the GTHA. The plan would transform how we move around the region and how we create a healthier, more sustainable place to live, work and fulfill our human potential. The Big Move is integrated with the Growth Plan for the Greater Golden Horseshoe and the Greenbelt Plan to encourage smarter land use and development, optimize our investments in public infrastructure, and protect our air, water and natural heritage for future generations.

The transformation has already begun, with \$16 billion worth of transit expansion and improvements underway today – one of the largest transit construction programs in North America. These projects are designed to deliver everyday results for commuters.

But we can't afford to stop there, because the pressures of growth and congestion are relentless. And because these \$16 billion worth of First Wave projects only represent a portion of the overall Big Move plan that experts recommend for the GTHA.

The complete Big Move plan would create an efficient, integrated transit and transportation network that benefits everyone, regardless of how they use it.

Effective public transit helps motorists – by providing an alternative and keeping road traffic moving efficiently.

For example, GO trains carry the equivalent of 16 highway lanes of traffic during the average daily morning rush hour. A GO bus can do the work of 48 cars.

An efficient road system helps transit users – by providing a range of routes and facilitating movement of the goods they make and buy.

It is also fitting that the Investment Strategy asks for significant contributions from the GTHA business community, since businesses will also benefit from effective public transit and an efficient road system that bolsters the economy of the GTHA and creates economic opportunities. For businesses, it is about more than just relieving some

of the \$2.7 billion per year in economic costs caused by gridlock. An integrated regional transit and transportation network would allow businesses to more efficiently tap into the region's pool of skilled, talented workers. It would allow businesses to efficiently access the goods and services they need to compete. And it would help them to efficiently transport the goods and services they provide.

But an efficient transit and transportation system depends upon resources to allow it to grow to meet the needs of the population. For both motorists and transit users, we need to decide on the dedicated investment tools we require to deliver a pipeline of continuous transit and transportation projects that make up the Next Wave of Big Move priorities – a tangible, transformational \$34 billion package of region-wide projects that includes subway expansion, new light rail transit, bus rapid transit, GO system enhancement, local transit, local road improvements, and local highways.



“People are rearranging their lives to avoid traffic congestion.”

-Durham resident, at regional roundtable

More efficient goods movement is key economic benefit of The Big Move

1.4 Meeting the Need with Dedicated Investment Tools

To achieve the Next Wave projects and deliver the integrated, comprehensive transit and transportation system the GTHA needs, dedicated investments of \$2 billion a year are required. This reflects the capital construction costs of the projects, as well as the ongoing financing, maintenance and operational costs throughout their useful lives.

The public, stakeholders and municipalities have told us that the money we raise to fund these projects needs to be specifically dedicated to the Next Wave transit and transportation projects – making it absolutely clear to residents and employers that they can count on the plan being completed.

But building transit and transportation infrastructure of this magnitude takes time – years, not months. And as time passes, we cannot risk losing momentum. This requires dedicated investment tools, sufficient to meet the GTHA's transit and transportation needs. Only with these investment tools “locked in” and dedicated can the people of the GTHA be assured that funding for transit and transportation would be shielded from the year-to-year pressures of annual government budgeting, when other funding needs may arise. The region's residents need a clear path to a shared vision of efficient mobility.

Such dedicated funding would see the GTHA follow global best practices. Other large urban regions of the world – from London to Los Angeles – use dedicated investment tools rather than solely relying on traditional government funding that can be subject to change on a year-to-year basis.

1.5 Building Trust and Accountability

Ensuring all GTHA residents and businesses see a transparent process designed to get our region moving again is at the foundation of the Investment Strategy. Dedicated resources for transit and transportation must be accompanied by processes and procedures that ensure full accountability and transparency – regarding all aspects of how the resources are collected, managed and disbursed, and in the results that are achieved.

Ensuring the highest levels of accountability and transparency are key elements of the Investment Strategy, including third-party and public review of ongoing performance, and a mechanism such as a trust to oversee the collection, management and allocation of funds. The accountability process would also include a review of the strategy and its impact after 10 years. The investment tools would be dedicated specifically to the implementation of the Next Wave of projects, and would be subject to a fundamental review and reauthorization after 20 years to ensure they continue to meet the needs of the region.

Only by building trust and accountability can we achieve the broad-based support necessary for a long-term and dedicated investment program.

1.6 An Investment Strategy That Is More Than Investment Tools

The investment tools cannot stand alone. They are part of an overall Investment Strategy that would ensure the necessary resources yield the maximum impact, based on a foundation of excellence in planning, project selection, optimal use of existing resources, and accountability for results.

The decisions ahead of us are crucial to the future of the GTHA. We could choose to pause after the current \$16 billion investment is completed, and resume an ad hoc approach to transit expansion in our region. But the threat to our economic performance and quality of life is too great to take that risk. The alternative? To reaffirm our commitment to invest in a better future. We can move the Next Wave from concepts, plans and designs to real-life projects and services. With the recommendations contained in this strategy, the GTHA can build the high-performing transit and transportation system we need to live, work, grow – and reach our full potential as a region.

This Investment Strategy is designed to support a set of transit and transportation projects that comprise the Next Wave of The Big Move. The Investment Strategy is made up of four parts, with 24 accompanying recommendations:

1. Integrating Transportation, Growth, and Land Use Planning.
2. Maximizing the Value of Public Infrastructure Investment.
3. Optimizing System and Network Efficiency.
4. Dedicating New Revenue Sources for Transit and Transportation.

Building trust and accountability is inherent in all four parts of this comprehensive strategy.

Moreover, the Investment Strategy would help ensure that policies, processes and strategies are in place to support the selection of successful projects that are well-used, affordable and drive economic growth – a goal that our extensive consultation process told us was a priority among GTHA residents.

2.0 A Solution for the GTHA, Developed by the GTHA

2.1 Learning About Global Best Practices

It is important to get an initiative of this magnitude right, which is why the strategy and its investment tools reflect extensive research, including best practices from other jurisdictions, extensive technical analysis specific to the GTHA, and comprehensive consultation with the public, stakeholders and municipalities.

An independent global review was conducted of the best practices among leading regional transportation authorities. We learned that the GTHA is different from other world cities when it comes to transit and transportation infrastructure in one key respect. In places like Vancouver, New York City, Los Angeles, Chicago, London and Paris, dedicated investment tools have been put into place to support the long-term development of integrated transportation networks. The GTHA is unusual among its peers around the world in relying solely on government transfer payments to fund its transit and transportation system. In general, other leading regional transportation authorities around the world share four traits:

- They are empowered to implement regional transportation plans through dedicated investment tools.
- They have access to more than one investment tool alongside direct government funding.
- They demonstrate strong commercial discipline in project selection, operations and finance.
- They are accountable to the citizens they serve through a rigorous governance structure.

2.2 Extensive Technical Analysis

To understand how other jurisdictions' best practices could be applied in the GTHA, extensive technical analysis was conducted on a broad range of topics, including:

- The Big Move plan and subsequent project evaluation and implementation planning – informing the selection of the Next Wave projects to be funded by the Investment Strategy;
- All potential investment tools, to analyze and estimate their impact on the GTHA;
- The economy of the region and Province, to understand the economic impacts of making substantial infrastructure investment; and
- The capacity of the GTHA's engineering, construction and contracting industries, to evaluate their ability to deliver transit infrastructure at an increased pace.



2.3 Our Commitment to the Public: Four Key Principles

Public outreach demonstrated strong support among participants around four key principles:

1. **THE DEDICATION OF REVENUES TO SPECIFIC OUTCOMES:** At all times the public should be able to see exactly what they are paying for and have an assurance that funds are not diverted to other priorities.
2. **FAIRNESS:** The costs and benefits of the Investment Strategy should be distributed fairly across all population groups in all parts of the GTHA. Tools should be selected so that no one group pays too much or benefits too little.
3. **EQUITY ACROSS THE REGION:** All parts of the region should benefit from the investment in transit and transportation infrastructure. No community should be left behind.
4. **ACCOUNTABILITY AND TRANSPARENCY:** When implementing the Investment Strategy, tools and project delivery progress should be visible and the results publicly reported on a regular basis, including how funds are being collected, managed and spent.

These four principles have been applied throughout this report.

2.4 Consultation: Developing a Made-in-the-GTHA Solution

It is important that the Next Wave projects represent the needs of every corner of the GTHA, based on the distribution of existing and future population and employment growth. Metrolinx has set out to determine the views of the region on the Investment Strategy by:

- Presenting and participating in events across the region,
- Engaging GTHA municipalities and stakeholders,
- Hosting 12 public roundtable discussions throughout the region,
- Holding a Residents' Reference Panel which brought together 36 randomly selected residents from across the GTHA to take an in-depth look at the transit and transportation challenge and how to address it; and
- Providing an interactive website dedicated to The Big Move and the Investment Strategy.

These studies and consultations shaped a made-in-the-GTHA solution – informed by our region and made for our region. Consultations that were broad-reaching and inclusive were also a key underpinning of The Big Move. Such an undertaking cannot be accomplished unilaterally. It needs to be based on the collective will and fact-based needs of our entire region.



2.4.1 The Big Conversation: Reaching Out, Listening In

An effective transit and transportation system must meet the needs and values of the people it serves. To determine the views and concerns of the people of the Greater Toronto and Hamilton Area, Metrolinx undertook broad and comprehensive outreach across the GTHA over the past two years.

People told us they were clearly and vividly aware of the degree of congestion and its impact on them. Through various public and stakeholder engagement efforts, Metrolinx worked to familiarize residents of all parts of the GTHA on the region-wide extent and depth of the problem, the critical need for investment in transportation, and the fact there is a solution –The Big Move.

The consultation process took place between early 2011 and 2013, and included the following outreach initiatives:

- Meetings with municipal councils, community and business leaders to help familiarize them with Metrolinx's role. These meetings also introduced or refreshed their understanding of The Big Move and the Next Wave of projects, and led to discussions about how projects would benefit individual communities;
- Participation in more than 100 stakeholder or public events, many of which Metrolinx convened; and
- Bigmove.ca, a website launched last year with substantial, user-friendly information about the First Wave and Next Wave projects, along with comparative information about other cities and transportation systems.

Momentum grew in January and February of this year as almost 1,000 people attended 12 public roundtable events about The Big Move, the Next Wave, and possible funding options. An innovative Conversation Kit (available on bigmove.ca) provided accessible information about current and planned projects and background on how global cities have funded their transportation needs (see Appendix C for a full Public Roundtables report).

The Big Move Interactive Activity, available online and at kiosks across the GTHA, provides information about The Big Move and asks users to select the number of projects they would like to see built in the GTHA and the scale of various sampled investment tools to see the impacts of their investment choices.

Third-party stakeholders – most notably the Toronto Region Board of Trade, CivicAction, the Ontario Chamber of Commerce and Evergreen – advanced the conversation through public events, position papers and reports. Municipalities within the GTHA held their own consultations. For example, the City of Toronto sought the opinion of residents through its Feeling Congested initiative, which sponsored public meetings and panel sessions in Toronto communities and featured an online interactive tool.

In addition, mayors, senior municipal officials and staff members from the 30 municipalities that make up the Greater Toronto and Hamilton Area were consulted and informed on an ongoing basis.

A list of all of the stakeholders and members of the public who provided formal input to Metrolinx about the Investment Strategy can be found in Appendix D.



Public Roundtable in North York

2.4.2 An In-Depth Look: The Residents' Reference Panel

The roundtables and other events across the GTHA gave residents of the region a chance to have their say. But it was also valuable to take a randomly selected group of residents, representative of the entire GTHA by region and demographics, and do a “deep dive” – an extensive review over several days. This provided a good sense of the thinking of the people who need and would use the enhanced transit and transportation services. To get that in-depth look, Metrolinx created a volunteer “Residents' Reference Panel” to closely review the issue of transportation investment and provide their recommendations.

From a pool of 10,000 randomly selected residents, over 400 responded, and 36 were ultimately selected in a special draw in February to serve as panelists. Drivers and transit users were both represented. The 36 participants spent four intensive weekends learning about transportation in the GTHA and deliberating about different transit funding tools in use around the world.

In their report, the panel endorsed The Big Move and the importance of dedicated revenues, accountability and transparency, and called for leadership to tackle the need for investment to address our congestion challenges. They called for an increased funding role for the federal government and developed scenarios for funding. Specifically, sub-panels developed five investment scenarios, two of which were very similar and attracted the support of the majority of the panel. These two scenarios were composed of:

- A sales tax;
- A vehicle registration tax or fuel and gasoline tax; and
- A corporate income tax;
- Federal funding.

The full Residents' Reference Panel Report is attached as Appendix E.

Panelists worked conscientiously to understand the implications of their proposals for users, taxpayers and other beneficiaries alike.



Residents Reference Panel Participants

2.4.3 What We Heard

While one could not expect unanimity among the large number of participants in these consultation processes, the feedback indicated four consistent, top-line themes:

1. People recognize the problem and are impatient for a solution.

People see The Big Move as a long-overdue plan to overcome the challenges facing the region's transportation system. Participants across the region were frustrated with the level of congestion they face on highways, roads and public transit, and the negative impact of gridlock on family life, work obligations and health. The inadequacy of existing public transit systems is a common concern. Participants agreed that roads, highways, subways, trains and buses are straining to meet demand.

"Someone has to have a master plan that we can stand up for the next 20 years."

- York Region resident, at regional roundtable

2. People want reliable and frequent service.

Participants were looking for leadership among transit providers to collaborate and deliver improved levels of service, which are better integrated across the region. Participants looked forward to system improvements that would allow them to more easily coordinate their schedules, enjoy a wider range of transit options with more certainty and less stress, and to travel more efficiently and cost-effectively.

3. People want accountability and transparency throughout the process.

Participants wanted more information and updates about Metrolinx and The Big Move. People want to be engaged as the Investment Strategy is developed, delivered and executed. And they want to be kept informed about whether projects are on time and on budget. In many instances, people want measurable targets with independent monitoring in place to ensure they will be achieved.

4. People recognize the need to pay for an integrated, comprehensive network – but want to ensure that revenue raised will be dedicated to that goal.

Overall, participants understood that The Big Move requires significant investment over the next two decades and that we are making up for lost time. Many see value in The Big Move to all transportation and transit users. Participants generally expressed support for introducing new, multiple, dedicated investment tools that would bring the GTHA into line with other jurisdictions around the world. They recognized that existing government funds are not adequate, particularly given the need to reduce annual government deficits. People recognized that successful systems come with a price and they're willing to pay for it. But they also wanted to make sure that they see the benefits of their investment and wanted guarantees from government that any new money would be dedicated to improving transit and transportation, and designated and used specifically for that purpose. A commitment to using dedicated revenues explicitly to complete the Next Wave of The Big Move drew considerable approval.

"We're in this together. We're all going to benefit, so we all need to contribute."

- Halton Region resident, at regional roundtable



Participants share their thoughts at a roundtable in Oshawa



Assembly of tunnel boring machine for the Eglinton Crosstown LRT.



3.0 The Big Move and the Next Wave

3.1 Setting Priorities for The Big Move

The regional transportation plan – The Big Move – lays out a multi-faceted strategy for creating an integrated regional transit and transportation network for the GTHA that focuses on the traveler experience. Unanimously approved in 2008 by a board composed of elected representatives and private residents from across the region, The Big Move would – when completed – provide a seamless system across all modes of transportation and jurisdictions, offering residents and businesses efficient and attractive access to neighbourhoods, jobs and services.

The Big Move identifies 10 key strategies:

- Build a Comprehensive Regional Rapid Transit Network;
- Enhance and Expand Active Transportation;
- Improve the Efficiency of the Road and Highway Network;
- Create an Ambitious Transportation Demand Management Program;
- Create a Customer-First Transportation System;
- Implement an Integrated Transit Fare System;
- Build Communities that are Pedestrian, Cycling and Transit-Supportive;
- Plan for Universal Access;
- Improve Goods Movement Within the GTHA and With Adjacent Regions; and
- Commit to Continuous Improvement.

***“We need certainty
that The Big Move
is going to happen.”***

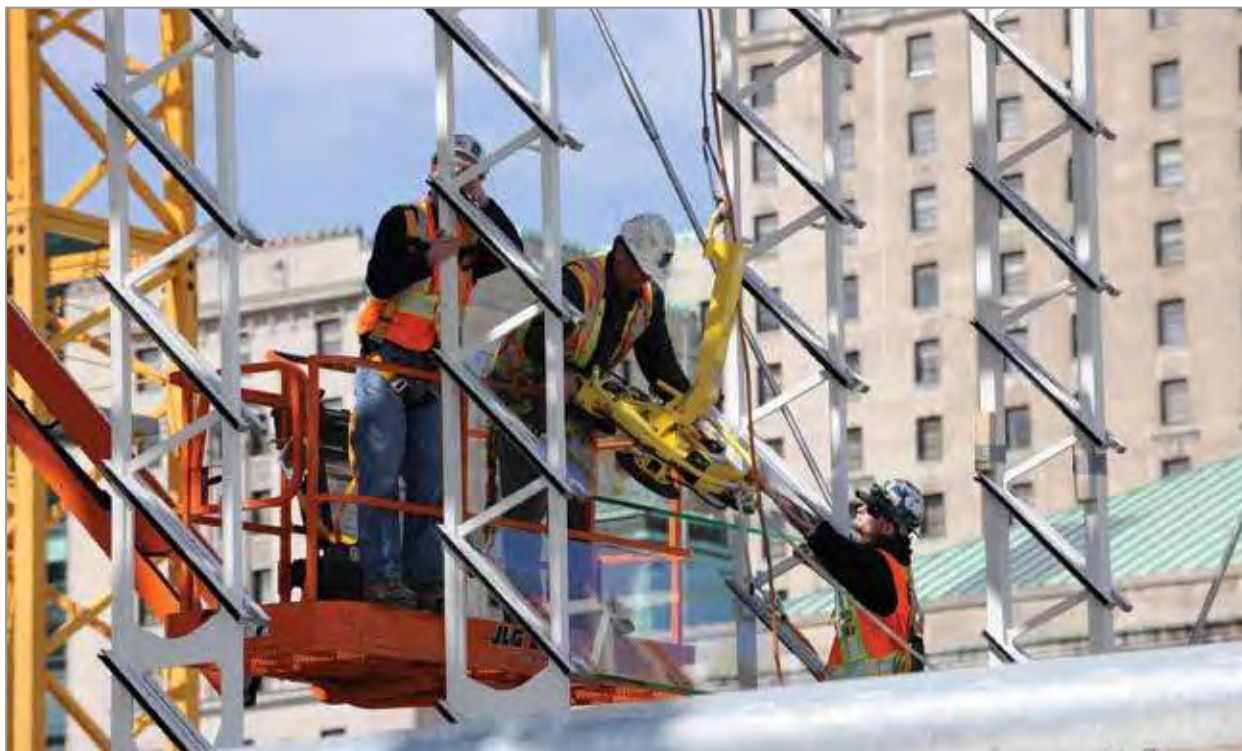
*-Peel Region resident
at regional roundtable*

This comprehensive approach to improved regional transportation includes supporting multi-modal transportation choice, the use of new technologies, integrated transit-oriented development and excellence in customer service. Together, these key strategies provide a long-term vision with the flexibility for nimble action as commuting needs and technologies change.

When fully implemented, The Big Move is targeted to:

- Reduce the average distance each person travels by car each day from 26 kilometres to 19 kilometres;
- Reduce the percentage of people travelling by car from 70 percent to 50 percent, shifting their choices to transit and other modes;
- Increase the percentage of people who live within two kilometres of rapid transit from 42 percent to 81 percent;
- Increase the percentage of people who use transit during the morning rush hour from 16.5 percent to 26.3 percent;
- Grow the total length of rapid transit services in the GTHA from 500 kilometres to 1,725 kilometres;
- Increase annual transit ridership from 546 million to 1.27 billion; and
- Reduce per person greenhouse gas emissions from passenger transportation by almost one-third.

Benefits to individuals and families would be significant, particularly for those who live or work in areas to be served by the 1,225 kilometres of new rapid transit. As an example, customers of the new Eglinton Crosstown LRT, currently under construction, will save up to 20 minutes in their commute, each way. This kind of benefit would be replicated along many of the GTHA's other busiest road corridors as new projects are completed and go into service.



Workers install glazing for the Union Station Train Shed Roof

3.2 Establishing Priorities

The Big Move projects were identified based on their ability to deliver both region-wide benefits and local improvements to mobility. All of the projects underwent extensive quantitative and qualitative analysis and were evaluated against a triple bottom-line vision: high quality of life, sustainable environment and a thriving economy.

The following criteria were utilized for evaluating projects in The Big Move:

A HIGH QUALITY OF LIFE THROUGH:

- Providing service to more youth, seniors and low-income populations;
- Creating better connections to other rapid transit, thereby shortening the distance between living and working; and
- Generating more ridership.

A THRIVING, SUSTAINABLE AND PROTECTED ENVIRONMENT THROUGH:

- Reducing greenhouse gas emissions; and
- Increasing the number of new transit riders, thereby reducing the number of single occupancy vehicles on roads and highways.

A PROSPEROUS AND COMPETITIVE ECONOMY THROUGH:

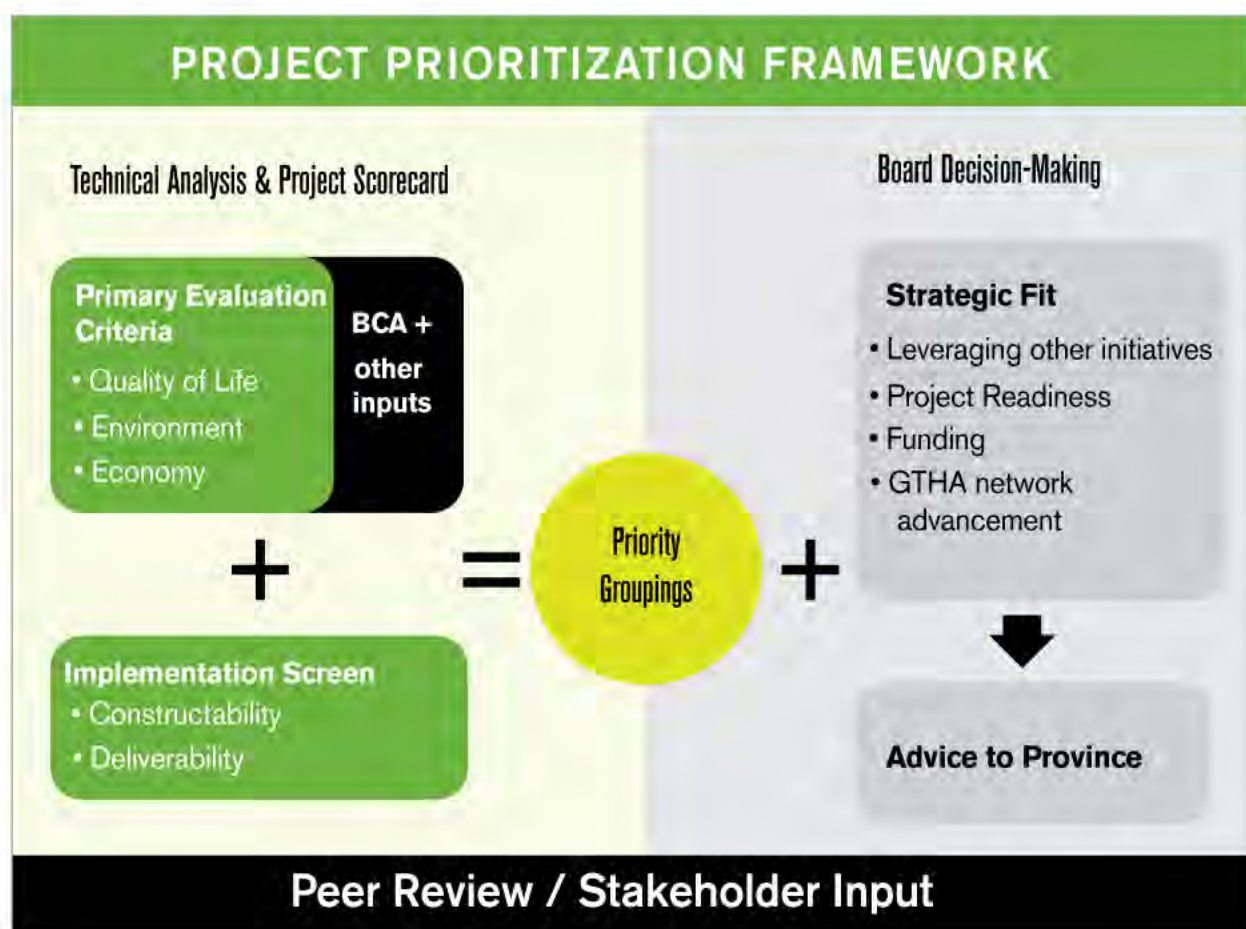
- Increasing employment as a result of building the projects and the long-term benefit of improved travel time, reduced traffic congestion and better access to jobs;
- Reducing capital cost per rider;
- Improving net operating cost ratios; and
- Generating savings in operating costs.

Over 60 transportation projects were identified in The Big Move for the immediate, medium and long term. The Greater Golden Horseshoe model, a state-of-the-art integrated land use and transportation modeling platform, was used to determine which projects should be included in the plan. Those projects that serve more immediate transit needs and have the highest impact were identified as Priority Projects. These Priority Projects have undergone further analysis, including a Benefits Case Analysis.

A Benefits Case Analysis (BCA) weighs the costs and benefits of different project alternatives regarding routing, technology and the extent of the project. This analysis provides further evaluation of the environmental, economic and social impacts. This assessment evaluates options for each project in terms of projected annual ridership, projected annual fare box revenue, jobs created during construction, jobs created during operations, travel time savings, vehicle operating costs, safety benefits, local air quality benefits, greenhouse gas reductions, benefit-cost ratio, long-term economic impact, and redevelopment potential, as well as capital and operating costs.

In 2010, Metrolinx utilized its Project Prioritization Framework to prioritize the remaining unfunded Priority Projects. Prioritization methodology uses inputs from the BCAs, such as projected ridership, job creation, travel time savings and costs, as well as information about the project's implementation potential and its strategic fit, to evaluate a project's contribution to the overall network. This is a further tool to inform project planning and implementation decisions based on the triple-bottom line. Undertaking rigorous prioritization is an important input to multi-year capital planning and project phasing for implementation.

Further details on the methodology are provided in Appendix F.





The UP Express's elevated guideway takes shape near Toronto Pearson International Airport

3.3 Quick Wins to Get the GTHA Moving

The first phase of transit expansion to implement The Big Move involved \$740 million in funding from the Province of Ontario to pay for 'Quick Win' projects – infrastructure projects that could be implemented relatively quickly to improve transportation. Many of these investments are in place now and making an impact across the GTHA. Key examples include the expansion of GO Transit's bus and rail fleet to carry more passengers, construction of new track in the GO rail network to provide the foundation for more service, new express and dedicated-lane bus service in Durham, Halton and York regions, and bike racks on virtually every bus operating in the GTHA. Additional benefits will be enjoyed by transit customers as projects like Automatic Train Control on the Yonge-University-Spadina subway line are completed. This will enable subway trains to run closer together – as little as 105 seconds apart – increasing maximum capacity possible on the line by approximately 30 percent. This means more frequent trains and less crowding.⁴



DRT Pulse, enhanced bus service launching in June 2013, was a Quick Win in Durham Region



The BikeLinx program, one of Metrolinx's Quick Wins, funded the installation of bike racks on buses

3.4 First Wave: \$16 Billion in Big Move Transit Investments

Today, we are in the midst of the largest transit expansion program in a generation, with \$16 billion of investment going to Big Move projects including the \$740 million in funding for the Quick Wins. The \$16 billion in funding was contributed by all orders of government, including more than \$13 billion from the Province of Ontario. Using the evidence-based approach described in section 3.2, The Big Move identified priority projects to be implemented in this early phase. These projects were designated based on their ability to strengthen transit and transportation in the GTHA by:

- Improving regional connectivity, substantially increasing capacity in key corridors; and
- Bringing new rapid transit services to under-served areas throughout the region.

52 km

LIGHT
RAIL
TRANSIT



8.6 km

NEW
SUBWAY
EXTENSION



59 km

NEW BUS
RAPID
TRANSIT



The projects included in The Big Move are important to small families, businesses, students, single parent homes, large families, tourists, commuters, drivers and truckers - we believe it is important to everyone!

-Report of Residents' Reference Panel

In the next few years, these projects will demonstrate concrete results. They help to shape significant advances in the regional transit and transportation network. For the first time, a subway service will extend beyond the City of Toronto. Rail service will be available between Pearson International Airport and Union Station. The Eglinton Crosstown will transport transit riders across the city up to 60 percent faster than current bus routes along Eglinton. Construction is underway on over 200 projects across the GO system to provide significant service expansion on both the rail and bus lines. Additional track and bus routes will provide more rush hour and off-peak services for a quickly growing ridership. The PRESTO transit fare card has been implemented on GO Transit and “905” transit agencies, with over 500,000 customers as of March, 2013, and will be fully implemented on the TTC by 2016 – providing seamless transit from a fare collection perspective while providing the opportunity to re-think our regional transit fare structures.

3.4.1 Shovels in the Ground – First Wave Projects

TORONTO-YORK SPADINA SUBWAY EXTENSION: The six-station underground subway extension from Downsview Station to Vaughan Metropolitan Centre replaces the shuttle bus connection from Downsview Station to York University that carries a daily average of 20,200 riders. It will be the first subway line to cross a municipal boundary in the region and will support significant new development. This project will be in-service in late 2016.



Toronto-York Spadina Subway Extension

EGLINTON CROSSTOWN LRT: The 19 kilometre Eglinton Crosstown – with more than 11 kilometres underground – will transport transit riders across the City of Toronto faster than the current bus routes along Eglinton. Beginning at Weston Road and ending at the Kennedy subway station, the new LRT will run on its own dedicated right-of-way and connect to 54 bus routes, 3 subway stations and GO Transit. This project will be in-service in 2020.

Phase 2 of the Eglinton Crosstown project would connect the Airport Corporate Centre area to the balance of the region's rapid transit system. Additional planning work is necessary to confirm the alignment, scope and timing of this project.



Eglinton Crosstown LRT

SCARBOROUGH RT: The Scarborough RT will be upgraded and extended to Sheppard Avenue to provide almost 10 kilometres of improvements. The upgrade of the existing RT line will involve the conversion to LRT technology, to match technology used on other new LRT lines in the city. The extension to Sheppard Avenue will provide an important connection of the Scarborough RT to the new Sheppard East LRT line. This project will be in-service in 2020.

FINCH WEST LRT: The Finch West LRT is one of four new light rail transit lines planned for the City of Toronto. The new 11 kilometre line will travel along Finch Avenue in its own dedicated lane from the planned Finch West subway station at Keele Street to Humber College and will provide rapid transit to neighbourhoods that need it the most. This project will be in-service in 2020.

SHEPPARD EAST LRT: The Sheppard East LRT is an almost 13 kilometre light rail transit line that will run along Sheppard Avenue from Don Mills Station to Morningside Avenue in its own dedicated lane. This LRT is one of the four new light rapid transit lines planned in the City of Toronto and will provide an important connection to the Sheppard Subway and new Scarborough RT. This project will be in-service in 2021.



Mississauga BRT

MISSISSAUGA BRT: With 18 kilometres of dedicated bus lanes running along Highway 403 and Eglinton Avenue in Mississauga, the BRT will lead to connections to the TTC subway system and employment hubs in the Square One area and in the Airport Corporate Centre. The first segment of this project will be in-service in 2013.

YORK REGION VIVANEXT RAPIDWAYS: With 41 kilometres of dedicated lanes for express bus service along Highway 7 and Yonge Street, this project will provide fast, reliable and comfortable service to residents of York Region. The first section of this project will be in-service in 2013; the last section will be in-service in 2018.



York Region VivaNext Rapidways



Union Pearson Express

THE UNION PEARSON EXPRESS: The Union Pearson Express is a direct rail link between Pearson International Airport and Union Station. Departing every 15 minutes, this 25-minute trip will include two stops at Weston and Bloor stations. It is estimated to remove 1.2 million airport-related car journeys from GTHA roads in 12 months of operation and serve 1.8 million passengers. This project will be in-service in 2015. The Union Pearson Express won Project of the Year at the 2013 Global AirRail Awards.

UNION STATION UPGRADES: Canada's busiest transportation hub will gain vastly expanded concourses, new PATH connections, and a second subway platform to provide better passenger circulation and room for further ridership growth, in addition to a new glass train shed. The Union Station upgrades will be completed in 2016. The atrium will be completed in 2014.



Union Station Revitalization



Union Station Track Upgrades

GO TRANSIT RAIL SERVICE EXPANSION: The Georgetown South Project involves track expansion and new underpasses and overpasses along the Kitchener rail corridor (previously the Georgetown corridor). These infrastructure improvements are required to accommodate two-way all-day service improvements, and support the new Union Pearson Express service. This increased level of service will be launched in 2015. Two-way, all-day service would also be extended to the new James Street North station in Hamilton, which is to open in 2015.

This long-needed revitalization of the transit and transportation system sets the stage for the Next Wave of regional transit projects.



Viaduct widening at the Humber River, part of GO Transit's Georgetown South Project

3.5 The Next Wave: Its Economic and Transportation Impact

The Next Wave of regional rapid transit projects represent many of the remaining unfunded Priority Projects identified in the analysis and consultation that developed The Big Move.

By 2031, these projects would result in an estimated \$110 billion to \$130 billion in growth to Ontario's GDP, creating 800,000-900,000 person years of construction and long term employment and growing government revenues by \$25 billion to \$30 billion – estimated to be approximately \$5 billion for municipal governments, \$13 billion for the provincial government, and \$12 billion for the federal government. ⁵ Funding is needed to deliver the projects that generate these benefits.

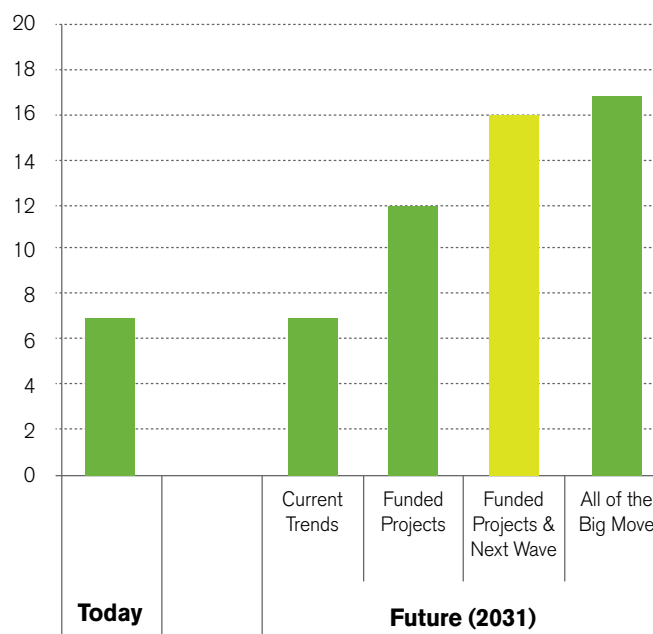


Together, the Next Wave projects would strengthen the regional network, further connecting various parts of the region, by optimizing the efficiency of the network and creating a whole that is greater than the sum of its parts. For example, the Hurontario-Main LRT would stitch together major transportation upgrades in the region, connecting three GO rail lines with upgraded two-way, all-day service and linking the Queen Street rapid transit in Brampton as well as the western leg of the York Region Viva service.

The Next Wave rapid transit projects have been planned in cooperation with municipalities to address their transit needs, as well as the needs of the region as a whole. Metrolinx continues to meet with community benefits organizations to discuss how local jobs and training programs can be optimized during the construction, operations and maintenance phases of The Big Move projects. Metrolinx will work with local and regional organizations to develop and implement strategies to ensure communities that are hosting the transit facilities realize not just the transportation benefits of the infrastructure, but also receive social and economic benefits from the investment that is being made.

With the implementation of the Next Wave, additional Urban Growth Centres in the GTHA will be served by transit throughout the day, making it possible for many more people to reverse commute to work, reach business meetings, and meet many more of their daily needs such as shopping and recreation by transit.

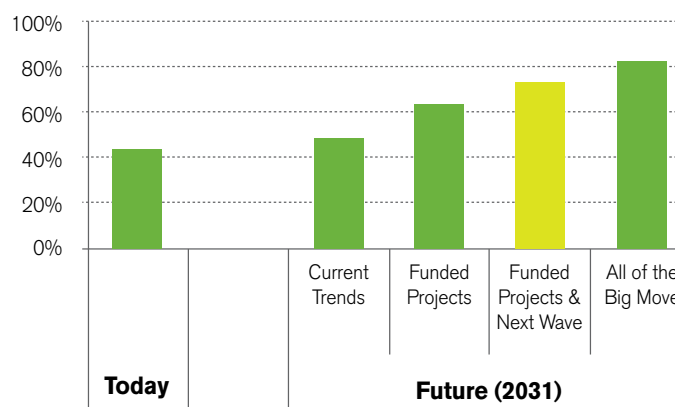
URBAN GROWTH CENTRES CONNECTED



With the Next Wave, many more homes and workplaces would be closer to rapid transit, making it easier for people to access rapid transit by walking, cycling, and local transit, and to use rapid transit for their journey to work. Upon completion of the projects, 72 percent of the GTHA's population would live within 2 kilometres of rapid transit service, an increase from 42 percent in 2001. And 76 percent of jobs in the GTHA would be located within 2 kilometres of rapid transit, up from 64 percent in 2001. Many more people than before would be able to walk to their workplaces from a rapid transit station.

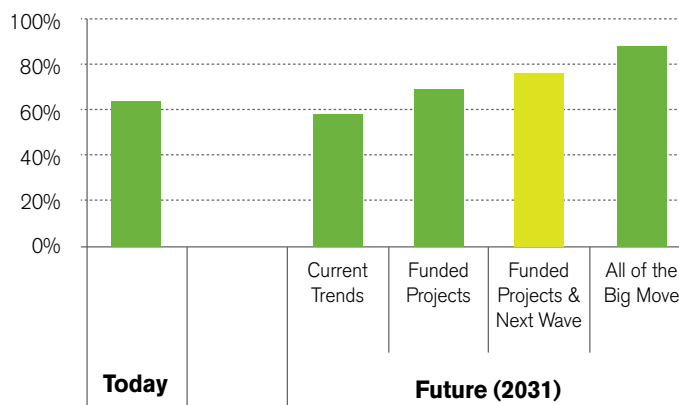
LIVING CLOSE TO RAPID TRANSIT

Percentage of population (2031) expected to live within 2km of rapid transit



WORKING CLOSE TO RAPID TRANSIT

Percentage of jobs (2031) expected to be within 2km of two-way-all-day rapid transit



3.5.1 The Next Wave: What It Would Mean to GTHA Residents and the Economy

In addition to the network benefits, the Next Wave rapid transit projects would each bring specific benefits to areas throughout the GTHA, and to transit riders and commuters in each of the corridors.

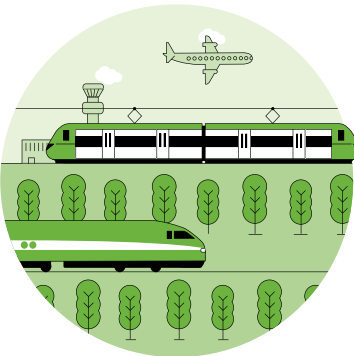
NEXT WAVE PROJECTS



Relief Line
Yonge North Subway Extension



Brampton Queen Street Rapid Transit
Dundas Street Bus Rapid Transit
Durham-Scarborough Bus Rapid Transit
Hamilton Light Rail Transit
Hurontario-Main Light Rail Transit



GO Rail Expansion
GO Lakeshore Express Rail Service - Phase 1
(including Electrification)
Electrification of GO Kitchener line
and Union Pearson Express



Local transit
Roads and highways
Active transportation & integration

RELIEF LINE: The line would provide relief to the Toronto's crowded transit system and provide residents with new rapid transit into the Toronto downtown. The new line could potentially run east-west, passing through the downtown core and connecting to the Bloor-Danforth and Yonge-University-Spadina subway lines. The Relief Line would also support major growth and development in York Region, by enabling additional ridership with the extension of the Yonge subway to Richmond Hill. This project would benefit more than 107 million riders in 2031. The Relief Line would create more direct rapid transit links to Toronto's business district and popular downtown attractions. Estimated cost: \$7.4 billion.

YONGE NORTH SUBWAY EXTENSION: This extension would connect Toronto to the Richmond Hill/Langstaff Gateway urban growth centre. Easy, direct access to the TTC would be within the reach of an additional 200,000 people in York Region. The extension from Finch Station to Richmond Hill would add five new stations to the Yonge Street line and connect with Viva's Highway 7 and Yonge Street bus rapid transit lines and the Richmond Hill GO line. An extension of the Yonge subway line from Finch Station to Richmond Hill Centre would mean a transfer-free trip to downtown Toronto for people living at Yonge and Steeles, and Yonge and Highway 7. The extension would benefit 50 million riders in 2031. Estimated Cost: \$3.4 billion.

BRAMPTON QUEEN STREET RAPID TRANSIT: Queen Street Rapid Transit is a key component of Brampton's long-term vision for transportation. The new transit service would operate in its own dedicated lane, connecting downtown Brampton to York University and Vaughan Metropolitan Centre. It would offer faster and more reliable service than existing bus service. With new dedicated lanes, travel along Queen Street would become more reliable and 15 percent faster than current Züm service. Students travelling to York University will have a reliable travel alternative thereby avoiding getting stuck in an unexpected traffic jam. The new route would connect to the Kitchener GO line and the future Hurontario-Main LRT, benefiting 17 million riders in 2031. Estimated Cost: \$600 million.

DUNDAS STREET BUS RAPID TRANSIT: Dundas Street is a major east-west corridor in the GTHA and plays an important role in the movement of people through Burlington, Oakville, Mississauga and Toronto providing a direct route between Brant Street in the City of Burlington and Kipling subway station in the City of Toronto. The Dundas Street BRT would bring 40 kilometres of new transit to the western GTHA. It would provide one seamless transit rapidway connecting Toronto, Mississauga and Halton Region. The BRT would optimize the transit network by providing important connection to the Milton GO line, the Bloor-Danforth subway line and a new Hurontario-Main LRT. Access to the TTC's Bloor-Danforth subway line would be just a 20-minute trip from Hurontario Street in Mississauga. The new BRT would benefit 13 million riders in 2031. Estimated Cost: \$600 million.

DURHAM-SCARBOROUGH BUS RAPID TRANSIT: The Durham-Scarborough BRT would run along Highway 2, a primary transportation corridor in Durham that serves important destinations in the region and connects to the City of Toronto. The new BRT line would run east from the Scarborough Civic Centre, to downtown Oshawa. At Scarborough Civic Centre passengers will be able to connect to the rebuilt Scarborough RT and onwards to the TTC's Bloor-Danforth subway line. The Durham-Scarborough BRT would connect Pickering, Ajax, Whitby and Oshawa with a direct, seamless, convenient transit service and to other parts of the GTHA. With new dedicated bus rapid transit lanes along Highway 2, travelling from Pickering to Oshawa would be less than a 40-minute trip with more reliable service than today. The new BRT would benefit 18 million riders in 2031. Estimated Cost: \$500 million.



Hamilton LRT on King Street

HAMILTON LIGHT RAIL TRANSIT: Hamilton Light Rail Transit is part of a long-term vision to connect key destinations across the City of Hamilton. The new LRT line would travel along King and Main Streets from McMaster University to Eastgate Square and would build on the existing B-Line bus to provide faster and more efficient service. The project would provide significant time savings for passengers, resulting in a faster trip from McMaster University to Eastgate. The proposed route would benefit 8 million riders in 2031, and is an investment in the revitalization of Hamilton's downtown core. Estimated Cost: \$1 billion.

HURONTARIO-MAIN LIGHT RAIL TRANSIT: The Hurontario-Main LRT is part of the City of Mississauga and City of Brampton's vision for improved rapid transit to support their growth aspirations. The LRT would run along Hurontario and Main Streets, from Port Credit to downtown Brampton, improving upon existing bus service in the corridor. Currently, the trip between Port Credit and downtown Brampton takes more than an hour and requires riders to take two buses. The new LRT would provide significantly faster service – 38 minutes from Port Credit to downtown Brampton – and would also be more frequent and reliable. The new LRT would provide important connections to other transit in the area, including Brampton Queen Street bus service, the Mississauga BRT, serving the Airport Corporate Centre, the Dundas Street BRT and the Kitchener, Milton and Lakeshore West GO lines. The LRT would benefit 29 million riders in 2031. In addition, LRTs benefit all commuters – transit passengers and auto drivers alike – by significantly expanding the capacity of the road. A single car lane can carry 800 people per hour, but a two-car LRT in a dedicated lane carries 5,200. Estimated Cost: \$1.6 billion.



A vision for the future: Hurontario-Main LRT

GO TWO-WAY ALL-DAY SERVICE: The introduction of two-way all-day service on all GO rail lines in the GTHA would ensure that trains would run on a regular schedule throughout the day. This is an important step in changing the commuter rail system to a more frequent and convenient way to travel around the region. This improved service would unlock the development potential and strengthen employment centres across the region by making them more accessible throughout the day. Trains would operate in both directions during peak and off-peak times: morning, midday, in the evening, and on weekends. Passengers who currently rely on GO bus service for midday trips and reverse commutes would be able to take the train as well. The existing peak period services to Union Station would also be expanded significantly. Rush hour service into the downtown would be twice as frequent, allowing passengers to simply go to their station and hop on the train instead of following a schedule. These improvements would be provided on most sections of the Milton, Kitchener, Barrie, Richmond Hill and Stouffville lines. Together, these improvements would benefit 64 million riders in 2031. Estimated Cost: \$4.9 billion.

“A transit system that connects would benefit the whole region.”

-Halton Region resident, at regional roundtable

GO LAKESHORE EXPRESS RAIL SERVICE - PHASE 1 (INCLUDING ELECTRIFICATION): The first phase of this project would begin to transform GO Transit's backbone from Hamilton to Oshawa, serving major employment centres along the corridor. In addition, the line would be upgraded from Tier 4 diesel to electric propulsion. The electrification of the Lakeshore line would enable faster and more frequent service on the corridor. Coupled with increased service, passengers will have more travel options, allowing them to arrive at the station without consulting a schedule. It would enhance network efficiency by minimizing wait times and creating seamless transfers with other regional projects like the Hurontario-Main LRT. Travel time between Hamilton and Toronto would be approximately 10 minutes faster with electrified service. This new rail service would benefit 40 million riders in 2031. Estimated Cost: \$1.7 billion.

ELECTRIFICATION OF GO KITCHENER LINE AND THE UNION PEARSON EXPRESS: Both the Kitchener line and the Union Pearson Express are proposed for conversion from diesel to electric equipment. Upgrading to electric propulsion for these lines would mean faster travel times, which would improve the economic competitiveness of the region and potential for property value increases. The Kitchener corridor would also benefit from other service improvements such as higher frequencies and introduction of two-way, all-day service. Conversion to electric propulsion would result in lower annual operating costs for GO Transit. Estimated Cost: \$900 million.

The above are current estimates of the capital construction costs in 2014 dollars of the Next Wave projects. These estimates will need to be adjusted as project scope and phasing is finalized. For more information on the total life cycle capital and operating costs please reference section 6.4.2. of this report.

NEXT WAVE INVESTMENTS IN OTHER KEY ELEMENTS OF THE TRANSIT AND TRANSPORTATION SYSTEM: Up to 25 percent of the dedicated funding would be devoted to local roads and transit, improvements to the highway system and various other transportation initiatives through a Big Move Partnerships Initiative. For more information, refer to section 6.4.1.

NEXT WAVE PROJECTS: POTENTIAL PROJECT IMPLEMENTATION TIMELINES

PROJECT NAME	DESIGN AND ENVIRONMENTAL ASSESSMENT PERIOD (YEARS)	CONSTRUCTION PERIOD (YEARS)
Yonge North Subway Extension Relief Line	3 5	3 to 6 6
Hamilton LRT Hurontario-Main LRT	3 3	4 4
Brampton Queen Street RT ¹ Dundas Street BRT ¹ Durham-Scarborough BRT ¹	4 4 4	3 4 4
GO Two-Way, All-Day GO Milton Line - two-way, all-day to Meadowvale* GO Kitchener Line - two-way, all-day to Mt. Pleasant ² GO Barrie Line - two-way, all-day to East Gwillimbury GO Richmond Hill Line - two-way, all-day to Richmond Hill ³ * GO Stouffville Line - two-way, all-day to Mount Joy GO Lakeshore East Line - extension to Bowmanville	2 4-5 2 1 2 2-3	7 6 5 2 4 6
Lakeshore Express Rail Service-Phase 1 (including Electrification)	5	10 to 15
GO Kitchener line Electrification ⁴ UP Express Electrification	6 3	10 to 15 2

¹ Some segments of BRT projects could potentially open earlier subject to further engineering and operational studies

² Kitchener: feasibility of additional trackage through Brampton to be determined and railway requirements not yet known.

³ Richmond Hill: Assumes midday off-peak service supported by a passing track.

⁴ Extent of Kitchener Corridor electrification is to be determined. Corridor partially owned by CN and partially owned by GEXR

GO Projects Notes & Assumptions:

A. *Timing is subject to outcomes of negotiations with railways and could vary substantially

B. Not likely possible to undertake all GO projects simultaneously. Phasing details require further assessment.

Other Notes:

A. Assumes timely processing and approval of Environmental Assessments

B. Timelines do not account for any interdependencies amongst either Next Wave projects or currently funded projects

3.5.2 Keeping Next Wave Projects on Target

As Metrolinx advances The Big Move, work will continue to ensure that decisions are made based on the latest and most accurate data available. Projects will need to be refined and updated on a regular basis to meet the goals set out in the areas of quality of life, the environment and the economy. The *Metrolinx Act* already sets the standards for a rigorous, open and transparent process to evaluate amendments to The Big Move. This same process should be used to consider any adjustments to the Next Wave projects.

RECOMMENDATION 1:

To ensure continued progress in The Big Move, it is recommended that:

- a. Metrolinx continue to pursue the completion of First Wave rapid transit projects.
- b. All transit and transportation investment decisions made by Metrolinx, municipalities or other agencies for the use of funds generated by the Investment Strategy should be consistent with The Big Move.
- c. Metrolinx continue working with the Province of Ontario, municipalities and other agencies on planning, designing, building and operating a series of regional rapid transit projects, listed below, referred to as the Next Wave projects, described in Section 3.5.1:
 - Relief Line;
 - Yonge North Subway Extension;
 - Brampton's Queen Street Rapid Transit;
 - Hamilton Light Rail Transit;
 - Hurontario-Main Light Rail Transit;
 - Dundas Street Bus Rapid Transit;
 - Durham-Scarborough Bus Rapid Transit;
 - GO Two-Way, All-Day Service;
 - GO Lakeshore Express Rail Service – Phase 1 (including Electrification); and
 - Electrification of GO Transit Kitchener Line and Union Pearson Express.
- d. Metrolinx to continue working with the Province of Ontario and municipalities on the finalization of the scope and phasing of the Next Wave projects, and report back to the Metrolinx Board of Directors by June 2014. Any material changes to the Next Wave projects would require approval by the Metrolinx Board of Directors, following appropriate consultation and input from municipalities and the public, as required under the *Metrolinx Act*. Continued progress on Next Wave projects is subject to the availability of funding from this proposed Investment Strategy.
- e. Metrolinx continue working with communities and local and regional organizations to develop and implement strategies to take advantage of local jobs and training programs to provide community benefits for the areas that will be hosting the rapid transit infrastructure outlined in Recommendation 1(c) above.

RECOMMENDATION 2:

It is recommended that as part of its legislated review of the regional transportation plan, scheduled to begin in 2014 and be completed in 2016, Metrolinx fully integrate the recommendations of the Investment Strategy, including the Next Wave projects.

4.0 Building Trust and Accountability

Throughout our extensive consultations with the public, municipalities and stakeholders, one frequent and consistent message we heard was the need to address the public's concerns about trust and accountability. In other words, there is skepticism about the ability to get the job done, on time and on budget. It is critical to address these concerns upfront – and set out ways to build the public's trust and ensure the level of accountability they deserve.

4.1 The Need for Dedicated Tools

Building a modern transit and transportation system requires dedicated resources – sufficient to meet the region's needs, and tied directly to the specific goal of mobility throughout the region.

The traditional stop-and-start approach of funding transit and transportation has depended upon annual funding cycles, undermining the region's ability to meet its challenges in this area. Today, the scale of investment needed to achieve the GTHA's goals is too great to rely solely on traditional government funding. Extensive consultation and analysis shaped an integrated transit and transportation plan – The Big Move – designed to alleviate congestion and greatly enhance mobility throughout the region. Funding from the three levels of government has provided \$16 billion toward the First Wave of projects dedicated to that goal. We are now proposing \$34 billion in projects as part of the Next Wave to continue the task of creating the efficient transit and transportation system that the GTHA requires. Even with the level of dedicated funding outlined in this report, it would still be necessary for governments at all levels to continue to make investments in the transit and transportation system. This is critical, since if current investments in the existing system are reduced, Investment Strategy funds would make no practical difference to the speed or scale of expansion of the system. In addition, existing transit and transportation systems need to continue to be operated and maintained. It is also important to note that the Next Wave projects do not include every project in The Big Move. The Next Wave is just that – the next round of investments, to address our growth needs in the GTHA.

Panelists endorse The Big Move and are adamant that any revenue generated from new tools be strictly dedicated to transportation investments.

*-Residents'
Reference Panel*

The \$2 billion per year from new investment tools would provide a stable revenue source to fund:

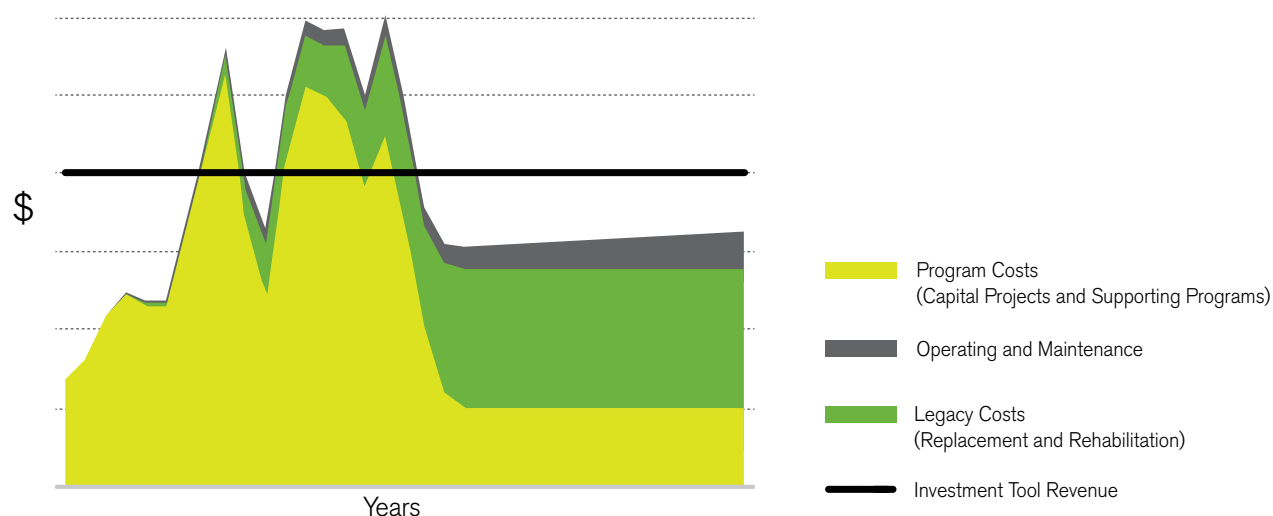
- Next Wave regional transit capital construction and financing costs, the ongoing life cycle costs of rehabilitation and replacement, and the Metrolinx share of operating and maintenance costs; and
- Other key elements of the transit and transportation system, including local roads and transit, highway system improvements and other transportation initiatives.

The chart on the next page conceptually shows how the \$2 billion per year revenue target would cover “all-in costs” of the Next Wave and other supporting transit and transportation infrastructure initiatives.

It demonstrates how capital and program costs would peak in certain years as projects ramp up, how legacy replacement and rehabilitation costs become the larger cost over the decades as infrastructure requires renewal, and operating and maintenance costs become part of the annual funding need once systems are in service.

ILLUSTRATIVE NEXT WAVE PROGRAMS - TOTAL EXPENDITURE PROFILE - ONE LIFE CYCLE

(not to scale)



In an era of strained government resources and competing public needs, sufficient funding cannot be counted on from existing general revenues. History makes it clear that reliance on transfer payments alone has not fostered the stable, long-term investment needed. Funding needs to be reliable, lifting decision-making and implementation above the shifting priorities of annual government funding cycles. Over the next two decades and more, it must be predictable and dependable; residents and businesses have a right to know they can count on projects being completed, in a specified time frame – and they can make important, and often job-related, decisions based on them.

The goal of ensuring consistent, dependable and sufficient resources can only be secured through the use of investment tools that are specifically dedicated to building the transit and transportation system that the GTHA needs.

The importance of dedicated investment tools for long-term development of an integrated transit and transportation system is not unique to the GTHA. In fact, it is the GTHA that is currently in an unusual position among leading urban regions of the world in relying solely on transfer payments from all levels of government to fund transit and transportation. Sales tax, for example, has become the fastest-growing source of revenue for transportation funding in California, and is used in New York City, Chicago, Houston and Minneapolis. In fact, Los Angeles ratepayers have voted three times in the past 25 years to raise sales taxes to finance and accelerate transportation projects and programs. Chicago's Regional Transportation Authority has a dedicated regional sales tax ranging from 0.75 - 1.25 percent, depending on the location.

Vancouver's regional transportation authority, TransLink, currently collects 17 cents per litre on all fuel sold in the Greater Vancouver Metropolitan Area, accounting for about one-quarter of the authority's total revenue.

Both New York and Paris have dedicated payroll taxes for transportation funding.

Montreal maintains a parking levy on non-residential off-street parking facilities, with revenues dedicated to public transit. In Australia, both Melbourne and Sydney use parking levies to fund transportation.

An auto insurance tax is used to fund transit in the Pittsburgh area. Drivers pay an additional license charge in Seattle and New York State to fund transportation. In Denmark, Singapore, and several U.S. states, owners pay a fee on new vehicles, with revenues dedicated to fund transportation.

As one of the world's most vital urban regions, the Greater Toronto and Hamilton Area needs the same dedicated resources to ensure our ability to fund the enhancements our region will need to provide an integrated, comprehensive transit and transportation system for the future.

People want assurances that they will see the benefits of dedicated investment in the form of improved mobility. Quite rightly, there is considerable support for the principle that – at all times – the public should be able to see exactly what they are paying for and how the resources are being utilized. That is another characteristic common to many regional transportation authorities around the world that are entrusted with dedicated investment revenue – they are accountable to the citizens they serve through a rigorous system.

The Investment Strategy for the GTHA proposes collecting and spending billions of dollars of public revenues on transit and transportation projects across the region. Putting in place policies and mechanisms to build trust and accountability is a priority, with specific policies recommended to ensure that progress is visible and results publicly reported on a regular basis – including on the collection, management and disbursement of funds.

Satisfying the public's right to accountability requires that several structures and practices be put in place.



A vision for the future of Hurontario Street with new light rail transit

4.2 Metrolinx Governance: Ensuring Representation From Municipalities

Continuously improving the governance of the overall regional transit and transportation system is an important part of building trust and accountability. Metrolinx, in its short life, has seen significant changes. Originally a small transportation planning authority when it was created in 2006, it has grown in scope and responsibility – first, with its merger with GO Transit in 2009, followed by the transfer of PRESTO from the Province of Ontario to Metrolinx in 2011, the creation of the Union Pearson Express, which will launch revenue service in early 2015, and most recently, taking on the delivery responsibility for the four LRT projects in the City of Toronto, the largest infrastructure program in North America at this time.

Decisions on the implementation of the Investment Strategy will change Metrolinx again, in terms of becoming responsible and accountable for overseeing an even-larger program of expanding the GTHA's transit and transportation system.

The governance of Metrolinx has also changed as the organization's role and mandate changed. The Metrolinx Board of Directors was originally largely composed of municipally-elected officials. There was also a separate Board of Directors responsible for GO Transit up until 2009, with a mix of municipal representatives and citizen members. With the merger of Metrolinx and GO Transit, a single Board of Directors was created, composed of up to 15 directors appointed by the Province of Ontario. The directors are all citizen members, drawn from a variety of backgrounds and experiences, and from different geographic areas. The focus is, and should continue to be, on a competency-based board, addressing the skills matrix developed by Metrolinx, as well as a gender balance and diversity representation.

As decisions are made on the recommendations contained in this Investment Strategy, consideration should be given to making adjustments to the composition of the Board of Directors, to create a stronger connection with municipalities in particular. To deliver transit and transportation projects in the region, Metrolinx needs a strong partnership with municipalities, since they are responsible for land use planning and the local roads and transit systems. Efforts to better integrate decision-making, as discussed elsewhere in this report, should extend into the governance of Metrolinx.

One way to help achieve this objective would be to allow municipalities to nominate up to six members to the Metrolinx Board of Directors. These nominees could be made collectively by the municipalities of the region, as opposed to assigning a specific number of nominees to particular municipalities. This would create an opportunity for the municipalities to come together as a group, to decide how to select nominees that would subsequently be appointed by the Province. This will be accommodated by increasing the Board to 18 members with the remaining 12 members of the Board, including the chair, vice-chair and chief executive officer, continuing to be appointees of the Province. As it does currently, the Province would consult with the Board of Directors on potential candidates, but reserve the final decision. All members, whether municipal or provincial nominees, should continue to be citizen appointments, consistent with the existing *Metrolinx Act*, which does not allow the appointment of elected or employed public officials to the Board.

RECOMMENDATION 3:

It is recommended that the Province of Ontario consider adjusting the composition of the Metrolinx Board of Directors, in order to provide municipalities in the Greater Toronto and Hamilton Area with the opportunity to nominate up to six citizen appointees to the Board.

4.3 Creating a Trust for Investment Strategy Funds

To ensure public confidence that all funds raised through the Investment Strategy are dedicated only for the purposes for which they were collected, it is proposed that the Province of Ontario create a Greater Toronto and Hamilton Area Transportation Trust Fund.

The Transportation Trust Fund would hold, invest and distribute trust proceeds, in a manner that is consistent with the delivery of the Next Wave projects and programs. The fund would be governed by a board of trustees which would release funds only upon the receipt of documentation certifying that the disbursement is related to one or more of the Next Wave projects or programs.

The trust would be irrevocable, with all monies distributed to the beneficiary of the trust, which would be Metrolinx. The trust would exist for at least 20 years, and at the end of the term, any remaining funds would be distributed to Metrolinx as the declared beneficiary, for GTHA transit and transportation projects.

The board would engage professional managers, such as the Ontario Financing Authority, to support their duties. An annual report would be prepared on the trust fund, on monies received and distributed during the year, as well as any investment decisions made. The Ontario Auditor-General or other party could be appointed as the auditor of the trust.

RECOMMENDATION 4:

It is recommended that the funds generated by the Investment Strategy be dedicated to the construction, financing, management and operation of transit and transportation infrastructure set out in this report. To this end, it is recommended that a Greater Toronto and Hamilton Area Transportation Trust Fund be established and governed by a board of trustees, for the management and distribution of the proceeds of the trust.

4.4 Public Engagement and Reporting

The purpose of The Big Move is to get our region moving again, to provide GTHA residents with a transit and transportation system that will improve their quality of life and provide more economic opportunities to them and to future generations. It would be, after all, a transit and transportation system for the people of the GTHA. They would have paid for it through the Investment Strategy. It is their system. That's why engagement with GTHA residents on a project-by-project basis as The Big Move is implemented is essential.

GO Transit, one of the divisions of Metrolinx, has already implemented a robust engagement program. For example, GO established in 2008 the Customer Service Advisory Committee (CSAC) to provide for ongoing public participation in customer service improvements. The committee, chaired by a Metrolinx Board member, consists of customers selected from customers' applications, most representing train or bus service corridors. These members of the public provide essential feedback to GO Transit. The CSAC provides consultation and advice related to customer service programs and initiatives, promotes dialogue and information exchange regarding key customer issues and assists in advising on policy issues from the customer perspective. There are many initiatives where the CSAC has contributed feedback and participated

We believe funds raised through new revenue tools must be directed to Metrolinx by legislation or other strong mechanisms for investment in public transportation infrastructure now and into the future.

-Report of Residents' Reference Panel

"I have always thought that an arm's length trust fund, away from the politicians and in the hands of independent trustees—such an independent trust would be a good start, accompanied by an annual audit by the auditor general who would tell the people, line by line, dollar by dollar, how much was collected and where it was invested."

– John Tory, Chair of CivicAction

in the development of key decisions including the Passenger Charter and key performance indicators; fare dispute resolution process; Union Station Revitalization Program and parking improvement plans.

This is one model of public engagement that can be reviewed for broader application with regard to projects.

Another model of engagement that is used within Metrolinx relates to the Georgetown South Project currently underway. Community offices are staffed by a dedicated community relations team that provides ongoing project information, responds to community concerns, and engages with the neighbourhood on specific projects and events. Significant examples of engagement include the creation of a Community Advisory Committee to help frame the terms of reference, shortlist and ultimately recommend the design for the new John Street pedestrian bridge in Weston.

In addition to its own annual reports, Metrolinx needs to increase its efforts to carry out and publish annual reviews of performance – including measurable objectives, risk assessments and international benchmarking – to pursue excellence in performance management.



John Street Pedestrian Bridge, designed in consultation with the Weston community as part of the Georgetown South Project

Metrolinx is committed to improving its mechanisms for reporting on the progress of overall programs and individual projects. Enhancements to existing mechanisms to engage communities on progress in delivering projects, including regular reporting on progress and the identification of major alterations or modifications to existing project timelines or costs need to be pursued. This information would be provided in clear, explanatory language, through channels easily accessible by residents of the GTHA.

Similar annual performance reviews of the Next Wave projects across the GTHA should be carried out on a project-by-project basis, including measurable objectives, risk assessments and international benchmarking. These reports should strive for excellence in performance management and should be published and posted publicly on the Metrolinx website.

In Los Angeles, the transit authority Metro has addressed this problem by creating a comprehensive “Project Tracker” website to keep track of transportation investments partially or fully funded through Measure R, a 0.5% sales tax increase voted into effect by residents. The website lists over 70 projects along with a brief description of each investment, the funding allocated to it as well as status of the project.

– Los Angeles Metro “Project Tracker”

RECOMMENDATION 5:

It is recommended that Metrolinx enhance its public engagement processes to model best practices and its reporting systems in order to establish robust and transparent public reporting on the delivery of projects, related to budget and schedule, the rationale or basis for any changes, and the concrete, specific results that are experienced as a result of the implementation of programs as a whole and specific projects.

4.5 Review of the Investment Strategy

Accountability and transparency also requires that the Investment Strategy be periodically reviewed to determine its effectiveness. In addition to annual performance assessments, a 10-year comprehensive review of the Investment Strategy should be undertaken to assess the economic, social and environmental impact of the recommended investment tools.

In addition, it is reasonable to expect that a more fundamental review and reauthorization of the Investment Strategy should be undertaken after 20 years. At that point, the Next Wave of projects will be nearing completion and some will be in service to the public. It would be appropriate to evaluate the future direction of the Investment Strategy at that time. Factors that would be considered include: What additional projects need to be constructed to address the needs of the region; what are the technological changes and trends that impacts our transit and transportation system; and, what is the right mix of investment tools for the future. Similar to this report, a renewed investment strategy would be submitted to the Province and GTHA municipalities for its consideration in 20 years.

In the 20-year review, it will be important to recognize that the Next Wave projects will provide service to the region for decades. Therefore, funding is required over the long term, not just for the initial construction period, to address financing, ongoing maintenance and upgrades, and operations once in revenue service, unless alternative sources are identified.

RECOMMENDATION 6:

It is recommended that the Investment Strategy be reviewed periodically, at least every 10 years, to confirm that it continues to be effective and reasonable in delivering a transit and transportation system for the Greater Toronto and Hamilton Area.

RECOMMENDATION 7:

It is recommended that after 20 years, the Investment Strategy be subject to a fundamental review and reauthorization to consider the future needs of the region and that an updated report be submitted by Metrolinx to the Province and GTHA municipalities.

5.0 A Role for the Federal Government

The principal focus of this report is to examine and recommend a suite of dedicated investment tools for transit and transportation, but the federal government should also have an ongoing role in supporting urban transportation systems.

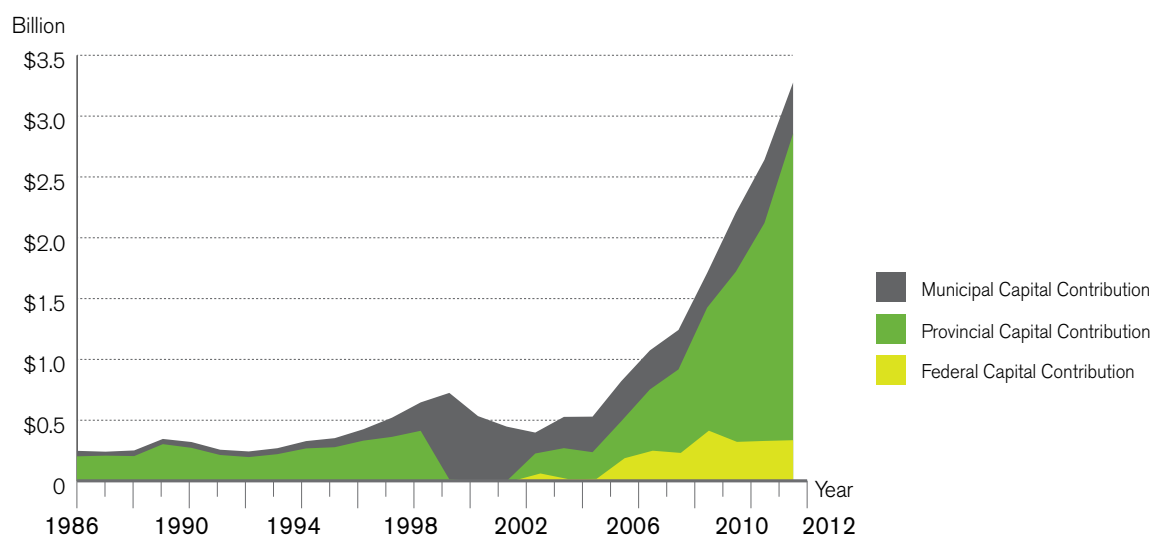
It is important to keep in mind that the federal government stands to receive a substantial share of the enhanced government revenues that would flow from these projects and their positive impact on the economy. By 2031, these projects would result in an estimated \$110 billion to \$130 billion in growth to Ontario's GDP, creating 800,000-900,000 person-years of construction and long term employment and growing government revenues by \$25 to \$30 billion – including \$12 billion for the federal government.⁶

A long-term vision for transportation infrastructure would establish the national policy basis for urban transit systems, and guide investment directed towards maintaining and expanding necessary systems.

All of Canada's communities contribute to our national economy and national life. But the growth of the nation's urban regions like the GTHA creates regional costs, especially transit and transportation costs. Addressing these costs is essential to keep our cities running as dependable engines of the national economy. That is why many countries make it a priority to give national support to urban transportation needs. In the United States, for example, transit capital investment is a partnership among all levels of government. In 2010, the U.S. federal government provided 41 percent of transit capital funding⁷, state governments 14 percent and local government and transit sources provided 45 percent.

In Canada, federal infrastructure funding to provinces, territories and municipalities has been increasing, since 2000, from less than \$1 billion a year to a peak of \$8.2 billion in 2010. As a point of comparison, however, in that same year, over \$20.2 billion was invested in municipal infrastructure in Ontario alone according to a 2012 report by the Province of Ontario. So while the increased investment by the federal government in infrastructure is welcomed, it represents a relatively small proportion of overall needs.⁸

CAPITAL FUNDING FOR TRANSIT IN THE GTHA SINCE 1986



The federal government has provided approximately 15 percent of capital funding for transit system expansion in the GTHA over the last decade through the Federal Gas Tax Fund and infrastructure programs like the Building Canada Fund. Sustained federal investment in Canada's largest urban transportation systems is also an investment in Canada's future, channeled through its major global gateways for business, trade, and immigration.

In 2011, the Gas Tax Fund was designated a permanent transfer program, providing greater certainty around funding allocations for local municipalities. However, other federal infrastructure funding has been allocated through shorter-term programs of less than 10 years in length, creating some level of uncertainty as to whether program funding would be renewed in the future. Current federal government programs are coming to an end, and changes have been announced in the 2013-14 federal budget.

While the *New Building Canada Plan* contains \$53.5 billion in funding to be spent over the next 10 years on provincial, territorial, and municipal infrastructure, there has not been a significant increase in federal participation for transportation funding. A National Transit Strategy should be long-term, predictable, and with clear guidelines for the kinds of projects that would be eligible for federal money. Metrolinx, AMT in Montreal, and TransLink from Vancouver have made a formal submission to the federal government on a framework and rationale for federal investment in Canada's three global city-regions. To see the submission, please refer to Appendix G.

In the event the federal government provides additional funding to transit and transportation, the Next Wave program can be delivered in a shorter span of time or additional projects from The Big Move can be brought forward, or improvements can be made in the state-of-good-repair of existing services, or the funding needed to be generated from the investment tools could be reduced.

RECOMMENDATION 8:

It is recommended that the federal government be requested to increase its commitment to implementing The Big Move. Particular consideration should be given to the adoption of a National Transit Strategy that would see the federal government contribute up to one-third of the capital costs of Next Wave transit and transportation infrastructure.

All panelists believe strongly that the federal government has a role to play and should make significant long-term funding commitments for these major infrastructure projects.

-Residents' Reference Panel



Employment created by transit investment generates significant revenue for the federal government

6.0 The Investment Strategy

Much of the discussion on the Investment Strategy has focused on the revenue tools that would be implemented to raise funds to deliver the infrastructure required for the future. There is no question this is a critical point, and will continue to be the focus of discussion. But an Investment Strategy is about more than raising revenues. It's about ways to grow a more livable, prosperous and sustainable region using a variety of tools and instruments.

The congestion the GTHA faces today stems from its success in attracting people and businesses. Our region's future prosperity, livability and economic competitiveness depend on building the regional transportation network we need. To do this, we require not just investment tools that ensure dedicated funding for new transportation projects – but also that land use policies, current operations of the transportation network and other public investments are aligned and in place to ensure projects deliver the maximum benefits to the region as a whole.

The essential components of the Investment Strategy for the GTHA include:

1. Integrating Transportation, Growth and Land Use Planning.
2. Maximizing the Value of Public Infrastructure Investments.
3. Optimizing the Transit and Transportation System by Improving Efficiency.
4. Putting in Place Dedicated Investment Tools.

The following sections address each of these areas in turn.

6.1 Integrating Transportation, Growth and Land Use Planning

The integration of transportation and land use planning is crucial for sustainable growth in the GTHA. A key goal has to be to ensure mobility that connects people to where they live, work and play. While great strides have been made with provincial, regional and local planning initiatives – examples include the Growth Plan for the Greater Golden Horseshoe, Mobility Hub Guidelines and the work of municipalities to update their official plans, secondary plans and zoning by-laws – there are still more opportunities to increase the integration of land use and transportation.

A case in point is the trip many GTHA residents take to work. A 2010 Statistics Canada report found that the average commute to work by public transit in the Greater Toronto Area, in general, takes 49 minutes, almost 70 percent longer than the average commute by car of 29 minutes.⁹ Of course, there are many examples where rapid transit, such as subway service or GO train service, provides a clear edge in a person's daily commute. But the fact remains that for the majority of residents – because of the location of their homes and their places of work, as well as the lack of rapid transit in many parts of the GTHA – taking the car remains their most practical choice.

One reason is the location over the past few decades of much of the region's new office development occurred in office parks away from rapid transit, and in many cases away from any transit at all.¹⁰ The result is that less than 5 percent of employees working in suburban areas take transit to work.¹¹ The harder it is to get to work by transit, the more people will have no choice but to drive.

What does this mean for planning for the future? Both land use and transportation authorities need to work more closely to match the location of population and employment growth with investments in transit and transportation infrastructure. There also needs to be a greater connection between the planning we undertake for communities and the transit and transportation services we provide, to better ensure that population growth, employment growth and the provision of transit and transportation aligns as closely as possible.



The new pedestrian bridge at Pickering GO Station connects office development to regional transit

6.1.1 Transportation Planning Policy Statement

A key tool to help bring about better alignment between land use and transportation is the development of a Transportation Planning Policy Statement by the Ontario Minister of Transportation under the *Metrolinx Act*. Section 31.1 of the legislation states that the Minister may issue a policy statement on matters related to transportation planning in the region. A policy statement would support increased integration between land use, growth and transportation policies by:

- Ensuring municipal planning decisions are consistent with The Big Move;
- Requiring that municipalities and Metrolinx work together in the development of transportation master plans for municipalities, communities and major developments;
- Providing for the integration of the planning for population and employment growth, as well as urban design standards that are transit-supportive; and
- Providing for effective planning for existing and future transit and transportation corridors.

Developing a policy statement would involve comprehensive public, municipal and stakeholder engagement, and having such an instrument would have significant benefits in providing for stronger integrated planning.

RECOMMENDATION 9:

It is recommended that the Minister of Transportation proceed with the development of a Transportation Planning Policy Statement under the provisions of the *Metrolinx Act*, to encourage greater integration of land use policies with The Big Move and investments in transit and transportation infrastructure.

6.1.2 Land Value Capture

The proposed Transportation Planning Policy Statement is valuable as a broad policy tool. But it is also important to tie land use and transportation closely together at the very local level. Again, there has been a lot of good work completed by municipalities and Metrolinx in this area. For example, Mobility Hub planning studies that Metrolinx has initiated in partnership with a variety of municipalities around the region provide the perfect opportunity to work with the local community to fully integrate planning for future land use and transportation. Fifty-one mobility hubs have been identified around the region.

The Next Wave regional transit projects are expected to increase the value of land near transit corridors and stations. That's because improved access to transit systems, offering faster connections to other parts of the region is a critical determinant of property values. Land Value Capture (LVC) is a tool that “captures” and dedicates part of this incremental increase to land value, through direct involvement in property development or joint ventures. These arrangements may be based on a sharing of costs or revenues -- or both -- between private developers and the transportation authority.

Other jurisdictions have achieved the benefits of LVC by creating a “virtuous cycle”:

- Developers make voluntary financial contributions to public infrastructure, such as a new rapid transit project or station, thereby helping to create a better transportation system with a direct capital cost savings to taxpayers.
- Developers in turn are able to build more density and achieve a stronger return on their investment (assuming municipal approval), because more people will want to live or locate their business close to the improved transit infrastructure.
- Development is in turn more oriented towards the rapid transit infrastructure, increasing the ridership, and long-term financial success and sustainability of the new service.
- More development and people making use of rapid transit infrastructure reduces the amount of automobile-based development that would have otherwise occurred away from transit. The negative impacts of growth – including sprawl, road congestion and vehicle emissions – are reduced.
- In turn, a greater proportion of trip origins and destinations across the region are supported by transit, making the entire region more transit-accessible and encouraging future development to occur closer to transit.

“A new Canada Line station at Capstan Way will be built through a unique new agreement between TransLink and the City of Richmond, with the cost of the station on the existing line being fully funded by development. The agreement will allow funding for the new station to be collected by the City from developers building new residential units in the Capstan Village area of Richmond’s City Centre. Once the estimated \$25 million required for the new station’s construction is collected—a process expected to take several years—the City will pass the funds to TransLink, who will have 30 months to build the new station.”

- City of Richmond News Release, May 2012

In order to maximize land value uplift and subsequent capture, changes to municipal zoning may be required. This will enable properties to achieve their highest value and best use of land. Through implementation of an LVC program, a new revenue stream can be established. This revenue stream would be linked to individual development opportunities meaning that it would vary in size from year to year. LVC is a tool worth pursuing to unlock private sector financial contributions, enhance collaboration and information sharing between the development community

and transportation providers to the benefits of all, and reduce the cost of developing public infrastructure and achieve smart growth objectives, recognizing the results will vary on a site-by-site basis.

Direct contributions after collaborative planning and infrastructure design for rapid transit has occurred at Canary Wharf in London, U.K. and on the U.S. east coast at Tyson's Corner – one of America's largest suburban employment hubs with 170,000 jobs, which will soon be linked to downtown Washington D.C with the extension of the Washington Metropolitan Area Transit Authority's Silver Line subway.¹²

While an annual estimate of \$20 million is in line with what other leading North American jurisdictions receive from land value capture, the benefit of this tool could be greater if integrated transportation planning and development occurs through collaboration involving the public and private sector. Metrolinx will work to achieve greater land value

Crossrail in London has reached an agreement with Berkeley homes, a large housing developer, to contribute and partner on the development of the Woolwich Crossrail Station. The contribution allows Berkeley Homes to have a station next to its development site, and build density over the station. The Crossrail project; which will provide faster journey times into Canary Wharf and Central London, benefits from the direct financial contribution and the added density which will provide ridership and fare revenue to support the line.

Canary Wharf Group has also agreed to work with Crossrail, to build the station at Canary Wharf. Crossrail reports a contribution of £150 million, but also notable is the risk transfer for Canary Wharf Group to design and build the station. - www.crossrail.co.uk

capture by strategically planning and advancing rapid transit projects. Land value capture strategies also provide incentives for the landowners in the vicinity to move ahead with their development plans, thereby increasing the speed at which the full value of the rapid transit investment is realized in commercial and residential development.

RECOMMENDATION 10:

It is recommended that Metrolinx work with municipalities and the land development industry to develop a land value capture strategy for the Next Wave of rapid transit projects, which also considers existing and under-construction rapid transit assets, to ensure an appropriate private-sector contribution towards the cost of stations and other infrastructure.

6.1.3 Publicly-Owned Land

It is also important that Metrolinx and other public authorities (including municipalities and their agencies) carefully consider the use of publicly-owned land in the vicinity of transit stations, to determine if there are opportunities to leverage these properties to maximize the use of the transit system. Transportation authorities in other regions, such as Washington, D.C., have partnered with private developers to develop their landholdings, generating \$15 million – \$20 million on an annual basis for that region. Metrolinx should continue to work with local municipalities and organizations like Infrastructure Ontario and Build Toronto, to identify opportunities to provide for transit-oriented development of publicly-owned property. Metrolinx's Mobility Hub Guidelines establish a baseline for transit-oriented development around transit stations, thereby optimizing infrastructure investments to create a liveable, competitive, and environmentally sustainable urban region. Focusing growth and development around these stations allows more people to live and work near transit services, and makes more destinations accessible by transit. Transit stations are the key point of contact between the traveller, the transit system and land use, so they have a significant impact on the overall experience. A well designed transit station can help travellers feel comfortable, relaxed, informed and appreciated. They can be dynamic places with mixed uses where people can live, work and play.



Concept plan from Midtown Oakville Mobility Hub Study

Metrolinx has already completed planning for several Mobility Hubs including those at Midtown Oakville and Cooksville. In both cases large publicly-owned parcels of land are being transformed with proposals for road networks that would subdivide and rearrange these existing blocks into a number of new parcels which, over time, could be redeveloped to create a dynamic, pedestrian-friendly, mixed-use community. The new parcels created are large enough to support mixed-use development but small enough to ensure a range of built form and a comfortable pedestrian environment.

In Vancouver, TransLink expects to generate \$150 to \$200 million in land development-related revenues, not including land sales, over the next decade.

RECOMMENDATION 11:

It is recommended that Metrolinx, in conjunction with the Province of Ontario, municipalities and their respective agencies, use transit and transportation projects to increase the quality of the urban environment through design excellence, the support of transit-oriented development, as well as maximizing value through the management of publicly-owned property along rapid transit lines.

6.2 Maximizing the Value of Public Infrastructure Investments

With transit and transportation so important to the GTHA's future and resources so limited, it is crucial to get a full dollar's value for every dollar spent. Doing so requires that the impact on transit and transportation be taken into account when locating public institutions and facilities, the building of partnerships with the private sector, continuing to improve the quality and scope of project evaluation and analysis, pursuing new ways to improve project efficiencies, and creating new public reporting mechanisms and instruments. Taken together, these initiatives can significantly increase the return-on-investment of not just transit and transportation infrastructure, but other public investments in infrastructure and facilities.

6.2.1 Connecting Locational Decisions

Government and their agencies at all levels play a significant role in shaping our communities through the investment decisions they make – whether it involves the location of a city hall, a community college, a hospital, or linear infrastructure that services our communities, such as water and sewer infrastructure. It is natural that there is a tendency to emphasize the functional requirements of a particular facility or piece of infrastructure when making locational decisions. But it is important to also think about how the infrastructure or facility fits into the broader community or meets a variety of goals and objectives, especially as public facilities can become significant focal points for employment or a community. Not all facilities or infrastructure can be located along rapid transit corridors, but it is important that public agencies show leadership in considering appropriate opportunities to place infrastructure and facilities in locations that match land use and transportation aspirations.

RECOMMENDATION 12:

It is recommended that all public agencies give consideration to planning public infrastructure and facilities for locations that support the land use, transit and transportation policies of the Growth Plan for the Greater Golden Horseshoe and The Big Move. Particular consideration should be given to facilities that are large employment generators or significant focal points for communities, such as government services, hospitals, post-secondary institutions, justice facilities and other major trip generators, and ensure that the costs of providing transit and transportation services are considered in deciding on the location of facilities and infrastructure.

6.2.2 Project Delivery and Partnerships

The most cost-effective and efficient delivery methods should be used in implementing the Next Wave transit projects. Metrolinx is committed to efficient and effective delivery of all projects through open, competitive and transparent procurement processes. Another step that could be taken is to evaluate projects with a construction value of over \$50 million, to determine what delivery method ensures the greatest value for the taxpayer dollar. One of the most efficient methods for doing that is through the Ontario Government's *Building Together Plan*, by using Alternative Financing and Procurement (AFP). By using this method, the Province has found that it can protect the public interest and ensure public ownership of core assets, while leveraging the private sector's skills and knowledge in financing, project management, and budget and risk management. In all cases, though, it is critical that a comprehensive value-for-money analysis is completed in order to identify the appropriate delivery method. The \$50 million threshold was selected since it is on the higher value projects that the benefits of AFP can be realized.

It is important to keep in mind that the private sector can play an important role in projects to drive on-time and on budget delivery and to bring innovation to the table. Through using the AFP model in the right cases, the objective should be to improve project outcomes, particularly in areas like delivery to schedule and budget. Sufficient funding needs to be provided by users of infrastructure or through investment tools to pay the private sector for the costs associated with a project. Examples of using the AFP model in the transportation sector are growing, with projects like the Herb Gray Parkway in Windsor, the Confederation LRT line in Ottawa, parts of the Union Pearson Express project in the GTHA and, more recently, the Eglinton Crosstown LRT. In Vancouver, TransLink delivered the highly successful Canada Line project in time for the 2010 Winter Olympics through a partnership with the private sector and other government partners. The private sector invested \$720 million, about one third of the project's cost, to be recovered through future payments.

RECOMMENDATION 13:

It is recommended that all Next Wave projects with a construction value of more than \$50 million be evaluated to determine whether they could be delivered through Alternative Financing and Procurement, using Infrastructure Ontario, to ensure service delivery that is on budget and on schedule.

6.2.3 Project Evaluation and Selection

Transit and transportation projects should be evaluated through an open, transparent and evidence-based process that considers transportation, economic, social and environmental benefits and costs. Using this kind of process builds confidence that the right projects are being selected for delivery at the right time and in the right sequence.

As described in section 3.2 of this report, Metrolinx undertakes a Benefits Case Analysis on all major rapid transit infrastructures and applies an evidence-based prioritization framework to establish project priority. Since 2008, approximately \$20 billion worth of proposed Metrolinx projects have gone through this process. The Metrolinx Benefits Case Analysis (BCA) and prioritization framework is an approach for holistic project evaluation, with its triple bottom-line view, assessing:

- Economic benefits: Project cost, travel time savings, impacts on GDP and employment, land development opportunities;
- Environmental benefits: Greenhouse gas emissions and other environmental factors; and
- Social and community benefits: Land use, health, safety, design excellence and accessibility.

Ongoing commitment to continuous improvements will inspire further enhancement of this process.

To achieve this, Metrolinx needs to increase its focus on benefit case analysis, value planning and prioritization modeling, by ensuring:

- Emphasis is placed on strong data inputs on existing and future ridership forecasts;
- Collaborating with municipalities to carefully consider future development trends;
- Effective forecasting of future economic activity that results from the development of transit and transportation infrastructure; and
- The identification of potential staging strategies and opportunities to work with public and private partners to magnify the benefit of transit and transportation projects.

RECOMMENDATION 14:

It is recommended that Metrolinx, working in conjunction with the Province of Ontario, municipalities and their respective agencies, build on, expand and enhance our collective capacity to undertake world-leading evidence-based project evaluation and selection processes for the delivery of regional rapid transit projects, as well as other transit and transportation projects.

6.3 Optimizing the Transit and Transportation System: Improving Efficiency and Pursuing Excellence

Citizens have invested billions of dollars to improve the efficiency and the effectiveness of our transit and transportation system. Metrolinx and other transportation agencies have to deliver the strongest return-on-investment possible to ensure that services are integrated as people move from one mode or service to another. All transit and transportation agencies have to work to get more out of the existing systems.

We need to benchmark and report on the performance of our systems, in comparison to similar systems across Canada, North America and around the world. Improvements should be pursued to the experience of transit customers as they cross municipal boundaries or transfer from one transit authority to another. Efforts should be made to improve the customer experience, recognizing that people have choices, and we want transit to be the preferred choice of the public. We also need to optimize our business processes, such as how we procure transit equipment and services, where it makes sense, to get the most value for the management of the transit system.

6.3.1 Benchmarking

As the adage goes, what you don't measure, you can't manage. Sound measurement is crucial in ensuring that we are making the right decisions for operations and expansion, and for building confidence in the system by making it an increasingly important priority. With ten different transit agencies around the GTHA, this can be challenging, with different approaches to collecting information and reporting on results. This can make comparisons between operators difficult, and collecting regional statistics on performance a challenge. In the United States, all transit agencies that receive funding from the Federal Transit Administration must report their services and costs in a standardized format, making analysis more straight-forward.

On-time performance for the GO Train network hit 97% in March, a new high for the organization that demonstrates the ongoing commitment to this crucial part of the Passenger Charter.

The Canadian Urban Transit Association and the Ontario Public Transit Association have made considerable leaps forward in this area, collating consistent data on transit agencies across Canada. Working together to develop a common approach to reporting is a good first step. Confirming the key performance measures that are important to the region as a whole is another important element. And comparing outcomes to other transit agencies is another way to build confidence in the transit system as a whole.

RECOMMENDATION 15:

It is recommended that Metrolinx work with transit authorities in the GTHA to build and improve upon a common approach to reporting on performance, so that information can be consolidated for the region as a whole and benchmarked with other systems.

6.3.2 Service and Fare Integration

Significant steps have been made to improve services between the 10 transit agencies within the GTHA. This has resulted in improved customer service between local transit services and between GO Transit and municipal services. However, a common message that emerged during public roundtables is that all transit agencies still have more work to do to make it as easy as possible for customers to navigate the overall transit system. Integrated traveler information systems are an example, to allow customers “one-stop” shopping to get information on the optimal routing when using multiple transit agencies. Beyond information provision is the actual scheduling of services, so that customers can see that transit authorities are doing everything that they can to integrate schedules, for example, between routes that connect with each other.

Fare integration continues to arise frequently in discussion with riders. While there are various forms and levels of fare integration between GO Transit and the “905” transit agencies, fare integration with the TTC has only just begun. The PRESTO fare card provides a great opportunity to move to a more integrated region-wide fare policy. PRESTO is now fully deployed on GO Transit and the “905” transit agencies, and there is an agreement to deploy PRESTO across the TTC, with substantial completion scheduled for 2016. In fact, the plan is to start deployment, beyond the existing 14 TTC subway stations where PRESTO is currently in place, with the new TTC streetcars that will begin revenue service in 2014. Metrolinx and the local transit authorities should begin the work in 2014 to develop a strategy to improve the level of fare integration across the GTHA.



RECOMMENDATION 16:

It is recommended that Metrolinx and the local transit authorities:

- a. Continue to take steps to improve the level of service integration across the GTHA, in order to enhance the customer experience. To this end, a GTHA Regional Service Integration Plan should be developed, with measurable deliverables, for completion in 2014, with implementation to follow.
- b. Initiate work no later than 2014 on the development of a GTHA Regional Fare Integration Plan, identifying short and long term strategies, with measurable deliverables, that will be pursued.

6.3.3 Customer Experience

GO Transit and, more recently, the TTC have developed and implemented Passenger Charters, to outline the commitment of the organizations towards improving the customer experience. These represent significant commitments by these agencies and, in the case of GO Transit, where the Charter has been in place for a longer period of time, have resulted in measurable improvement in the customer experience.



What makes these kinds of systems come alive for customers is the identification of measurable commitments and regular reporting on results in meeting those commitments. This is a key lesson from the GO Transit experience, where actual performance is routinely posted publicly on how the agency is meeting its promises to its customers. Sharing information and best practices among the transit authorities is an important part of pursuing continuous improvement.

RECOMMENDATION 17:

It is recommended that Metrolinx and the local transit authorities work together to share best practices on continuous improvement in customer service, in order to improve customer service and experience, and to develop common reporting mechanisms, where appropriate. All transit authorities in the region should move to develop a passenger charter or similar document, and to report publicly on progress and performance, and this kind of reporting should be a condition for the receipt of any funding through the Investment Strategy.

6.4 Dedicated Investment Tools

This section puts forward and explains the Metrolinx proposal for recommended investment tools for transit and transportation in the Greater Toronto and Hamilton Area, based on the analysis of best practices of other jurisdictions around the world, input received from the public, municipalities and stakeholders, and the application of the principles and selection criteria established for our review process. But before setting out the recommended tools, it is necessary to first outline our recommendations on how the funds generated by the Investment Strategy could be allocated to develop a comprehensive and integrated transit and transportation system.

6.4.1 Allocating Investment Strategy Funds

Major investments in regional transit projects are crucial to the future of transit and transportation in the GTHA, and it is recommended that approximately 75 percent of the resources raised through the Investment Strategy go to that purpose. On an annual program of \$2 billion, this means about \$1.5 billion per year would be available to support the delivery of regional transit projects. These funds would be used to address the capital construction costs of the Next Wave projects, financing costs, and, once they are in revenue service, lifecycle maintenance costs and the Metrolinx share of operating costs.

“I don’t know why we don’t insist on the revenue generating capacity other major cities have.”

-Durham Region resident, at regional roundtable

But it is also important to support other key elements of the transit and transportation system – local roads and transit, improvements to the highway system and various other transportation initiatives. That is why it is recommended that up to 25 percent of the dedicated funding, equivalent to a maximum of \$500 million on an annual basis, be devoted to these other elements of the transportation and transit system through a Big Move Partnerships Initiative. A seamless system depends on all of the pieces working and fitting together.

A proportion of these funds – up to 15 percent – would be allocated on a matching funds basis to municipalities to support local transit, roads and bridges. This would be distributed based on the value of the projects and programs put forward by municipalities and their alignment to The Big Move. On the transit side of the equation, municipalities could use the funds to support the growth of their existing transit system. Eligible capital and

operating costs for new or enhanced services, matched dollar-for-dollar by a corresponding investment from the local municipality, could be supported by these funds.

Similarly, municipalities could use these funds for local roads and bridges, again matched on a dollar-for-dollar basis by the municipality, to expand or renew municipal roads and bridges.

This funding recognizes the critical importance of municipal transportation and transit systems to move people and goods, and the reality that every trip begins or ends on a local part of the transportation system – the reason addressing the “first mile” and the “last mile” of transit trips is a crucial part of delivering an effective system. In addition, there are important local transit projects that do not appear on the Next Wave list because they are not regional in scale, but deserve funding support.

An allocation model, including performance, and accountability outcomes, should be developed in consultation with stakeholders to ensure that all funding adds to existing municipal baseline commitments to support local transit and transportation priorities, rather than replacing funds already earmarked for that purpose.

The Investment Strategy would also allocate up to 5 percent of its funds for strategic and targeted improvements to area controlled access highways, such as High Occupancy Vehicle and High Occupancy Toll Lane expansion. In addition, specific bottlenecks could be addressed, and initiatives pursued to improve the efficient movement of goods. This would be an application-based program, with funding awarded on a competitive basis.

Furthermore, the Investment Strategy recognizes that investing in other mobility initiatives would also help promote innovation, and a diverse range of transportation options. The Investment Strategy would dedicate up to 5 percent of its revenues to funding multimodal and alternative transportation projects. With innovation being a core value of Metrolinx, initiatives and projects would incorporate progressive approaches and technologies that continuously move the system ahead as a global leader in transportation innovation.

Funding would be awarded on an evidence and merit-based system through a competitive process with detailed funding criteria, performance, and accountability outcomes to be developed to ensure high quality projects receive support. Examples of potential projects could include walking and cycling infrastructure and programming, intelligent transportation systems, traveler information systems, fare integration, mobility hub development and customer service initiatives. Funding could be provided to Metrolinx-led initiatives, municipal initiatives, third party service providers in the private sector or not-for-profit sector, or by other transportation service providers.

Investment Strategy funding is not a replacement for existing funding from the various levels of government. The Investment Strategy funds would be in addition to existing sources of revenue, so that new expansion of the system could be achieved, as opposed to funding existing commitments and projects.

RECOMMENDATION 18:

It is recommended that revenues generated through the Investment Strategy be used to establish a dedicated Transportation Trust Fund, to be allocated as follows:

- a. Approximately 75 percent to Next Wave capital construction and financing costs, maintenance costs and the Metrolinx share of ongoing operating costs of the Next Wave regional transit projects;
- b. Up to 25 percent for other key elements of the transit and transportation system – local roads and transit, improvements to the highway system and various other transportation initiatives, including:
 - Municipal funding of up to 15 percent, to be matched by local contributions, for local transit, road and bridge improvements that are intended to increase transit ridership and the carrying capacity of roads and streets for all users;
 - Up to 5 percent for strategic investments in the provincial and municipal controlled access highway network to improve the mobility of people and goods; and
 - Up to 5 percent for other transportation and mobility initiatives, including walking and cycling infrastructure, fare integration, mobility hubs, urban freight movement, intelligent transportation systems and user information systems.
- The allocation of funding among these categories should be reviewed regularly.

Existing funding from all orders of government should continue to support existing programs, services and projects. Specifically, the Province of Ontario should maintain its current level of capital and operating funding to services like GO Transit, provincial highways and existing committed projects. Municipalities would continue to be responsible for capital and operating funding for regional and local highways and roads, and local transit services. To support the expansion of the transit and transportation system, the investment tools recommended in this Investment Strategy are intended to be in addition to existing funding provided by all orders of government.

RECOMMENDATION 19:

It is recommended that Metrolinx work in consultation with stakeholders and municipalities, as well as the Province of Ontario to develop eligibility, selection, and allocation criteria to guide the distribution of the funds referred to in Recommendation 18 (b).

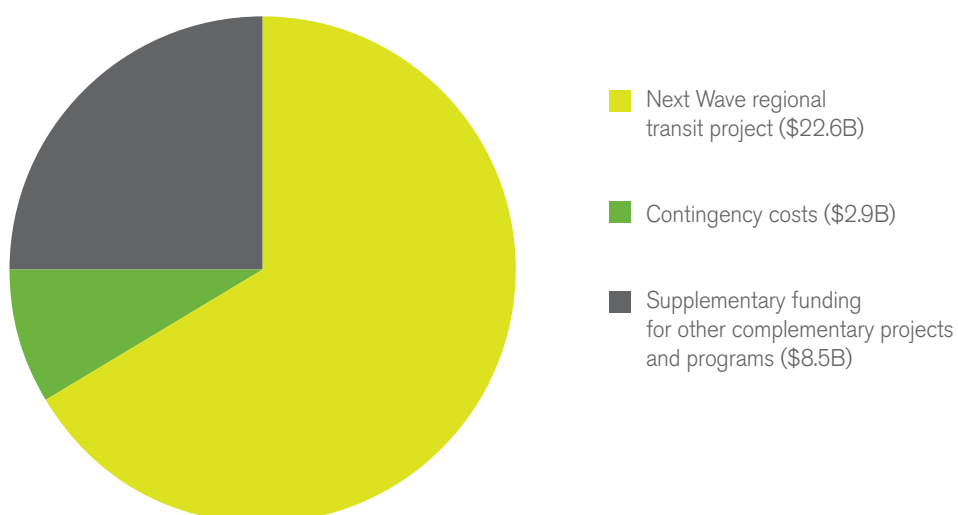
6.4.2 Life Cycle Costs

In order to advance a sustainable solution, the proposed investment package proposed is comprehensive. The \$34 billion package will fund:

- Next Wave regional transit project capital costs (\$22.6 billion);
- Supplementary funding for highways, local roads and transit, and other complementary projects and programs (\$8.5 billion); and
- Contingency costs to account for unexpected elements that put project delivery timelines at risk. This contingency helps prepare for factors such as increased cost of land, labour cost variability, and increased material costs (\$2.9 billion).¹³

Project funding needs do not end once the projects are built. The estimated \$34 billion package which translates into a \$2 billion per year requirement includes “all in” costs. At \$2 billion per year over 20 years, funding will include the ongoing operating, maintenance costs and rehabilitation costs to maintain the highest standards of safety and service excellence for the entire life-cycle of these projects.

NEXT WAVE INVESTMENTS (\$34 BILLION)



6.4.3 Choosing The Right Tools

The recommended investment tools were selected based on an extensive process drawing on world-wide experience in designing dedicated funding sources for transit and transportation infrastructure. Metrolinx studied the issue

thoroughly, and cast a wide net for input and advice from diverse sources. That included a review of the policies, practices and results of Regional Transportation Agencies (RTAs) around the world, focusing on best practices.

Of the regional transportation agencies studied – including RTAs in places like Hong Kong, London, Vancouver, Paris, Los Angeles, New York, Montreal, Portland, San Francisco, Washington, D.C., Chicago, Georgia, and Victoria, Australia – several common practices emerged that were of direct relevance to the selection and use of new investment tools in the GTHA.

One of the practices that was consistent among other RTAs was the use of investment tools specifically dedicated to transit and transportation. Other RTAs found dedicated tools to be a key element in their ability to meet the needs of their regions, rather than relying on general revenues.

In addition, it was clear that there is no single “silver bullet” jurisdiction or investment tool. No single investment tool by itself is the perfect candidate for implementation here in the Greater Toronto and Hamilton Area. Each RTA has developed its approach based on their unique history, culture and tradition, and our region needs to develop its own system based on its own unique needs. Similarly, a clear best practice is to develop a “basket” of tools, instead of relying on one single tool. Relying on a single tool focuses the impact on one particular group, and places too much reliance on the tool’s durability, when it is to be expected that every tool will have fluctuations during implementation. Using a basket of tools spreads the impact across various groups – increasing fairness, and building resilience in the overall Investment Strategy.

From this review, about 25 potential investment tools were identified as candidates for implementation in the GTHA.

- | | |
|-----------------------------------|--|
| • Auto Insurance Tax | • Land Transfer Tax |
| • Business Payroll Tax | • Land Value Capture |
| • Car Rental Fee | • New Vehicle Sales Tax |
| • Carbon Tax | • Parking Sales Tax |
| • Cordon Charge | • Business Parking Levy |
| • Corporate Income Tax | • Property Tax |
| • Development Charges | • Sales Tax |
| • Driver’s License Tax | • Tax Increment Financing (Special Assessment Districts) |
| • Fuel and Gasoline Tax | • Transit Fare Increase |
| • High Occupancy Toll (HOT) Lanes | • Utility Levy |
| • Highway Tolls | • Vehicle Kilometres Travelled (VKT) Fee |
| • Hotel and Accommodation Levy | • Vehicle Registration Fee |
| • Income Tax | |

Information on all of these tools can be found in Appendix A.

That list was narrowed to a short list of 11 tools, after technical analysis, input from the public, municipalities and stakeholders and a review of applicability to the GTHA.

An extensive process of consultation with residents across the GTHA occurred, as described in Section 2.4, included 12 roundtables – two in every regional municipality – and more than 100 other forums in which Metrolinx participated. A list of all of the stakeholders and members of the public who provided formal input to Metrolinx about the Investment Strategy can be found in Appendix D.

Seven tools selected for the short list would provide high revenue potential:

- | | |
|-------------------------|------------------------------------|
| • Business Payroll Tax | • Property Tax |
| • Fuel and Gasoline Tax | • Sales Tax |
| • Highway Tolls | • Vehicle Kilometres Travelled Fee |
| • Business Parking Levy | |

Four investment tools with smaller revenue generation capacity were also selected for the short list, for their potential policy impact which fit closely with the Investment Strategy principles.

- Development Charges
- Land Value Capture
- High Occupancy Tolls
- Transit Fare Increases

Throughout the process of shaping the recommended Investment Strategy to make the Next Wave a reality, the following four principles were applied:

1. **THE DEDICATION OF REVENUES TO SPECIFIC OUTCOMES:** At all times the public should be able to see exactly what they are paying for and have an assurance that funds are not diverted to other priorities.
2. **FAIRNESS:** The costs and benefits of the Investment Strategy should be distributed fairly across all population groups. Tools should be selected so that no one group pays too much or benefits too little.
3. **EQUITY ACROSS THE REGION:** All parts of the region should benefit from the investment in transit and transportation infrastructure. No community should be left behind.
4. **ACCOUNTABILITY AND TRANSPARENCY:** When implementing the Investment Strategy, tools and project delivery progress should be visible and the results publicly reported on a regular basis, including on how funds are being collected, managed and spent.

For the final review of 11 shortlisted investment tools, Metrolinx also considered five selection criteria:

- Strong, predictable and durable revenues
- Reasonable cost and ease of implementation
- Price signals to encourage efficient travel choices
- Promotes economic competitiveness
- Promotes social fairness and equality

Based on this process, Metrolinx developed its recommendations for the investment tools best-suited for use in the GTHA. A listing of tools not recommended can be found in Appendix B.

6.4.4 The Investment Tools

After thorough and exhaustive study and consultation, four investment tools are recommended – considering all four principles and the selection criteria – capable of providing the resources necessary to update and expand the GTHA's transit and transportation network:

- A one percentage point increase to the Harmonized Sales Tax, which would raise an estimated \$1.3 billion annually, net of the proposed Mobility Tax Credit discussed below;
- A five cent per litre increase on a GTHA basis to the Fuel and Gasoline Tax, which would raise an estimated \$330 million annually;
- A Business Parking Levy on off-street, non-residential parking spaces based on relative market value, which would raise an estimated \$350 million annually; and
- A share of the revenue raised from updated and amended development charges levied in the GTHA, which would raise an estimated \$100 million annually.

Together, these four tools would provide the GTHA with a balanced funding package that ensures a direct connection between the people and businesses who use the infrastructure and the people and businesses who pay for it. These tools would have impacts across the broader public sector and the not-for-profit sector. The investment tools would provide stable and long-term sources of funding that matches the long-term impact of the transit and transportation improvements.

These tools would be dedicated specifically to the implementation of the Next Wave of projects, and would be subject to a fundamental review and reauthorization after 20 years to ensure they continue to meet the needs of the region.

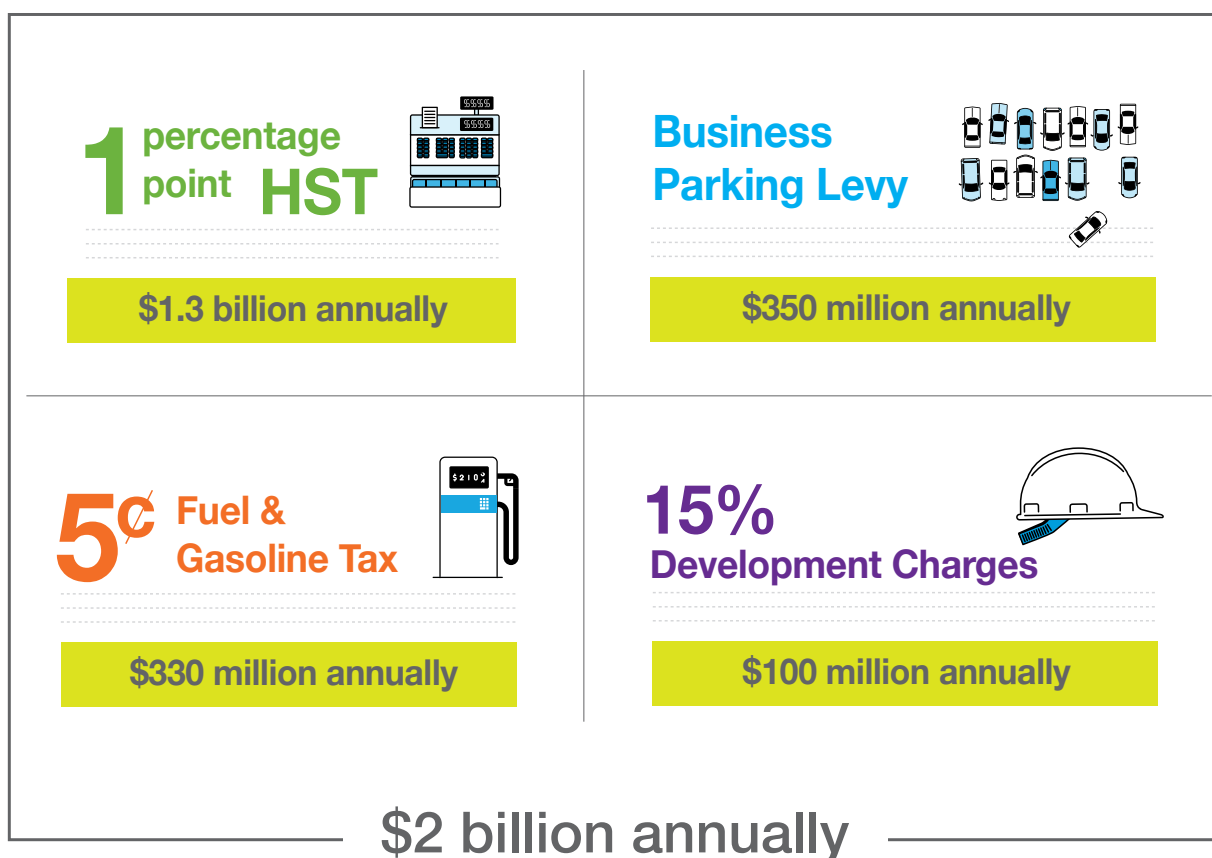
With the majority of dedicated revenues being raised through an increase to the Harmonized Sales Tax, all residents throughout the GTHA would contribute to funding an effective transportation system that all would benefit from – socially, economically and environmentally. A mobility tax credit, described below, would help ensure these tools do not disproportionately burden those with lower incomes.

With transit riders already paying for their use of the transportation system, a regional Fuel and Gasoline Tax of five cents per litre would ensure that all transportation users, including cars and trucks, residents and businesses, contribute fairly. A fuel and gasoline tax would encourage drivers to make use of the increasing availability of transit alternatives that would be provided now and in the future – helping to alleviate road congestion. Drivers would be a clear beneficiary of increased transit and transportation investments, and should make direct contributions to the improvements.

A Business Parking Levy would provide a direct means for businesses across the region to contribute to the transit and transportation system that would benefit them in terms of improved efficiency and reliability. And because a Parking Levy would be applied based on the relative market value of parking spaces across the GTHA, contributions would be equitably distributed across commercial property owners in the region.

The Development Charge system, which would be updated and amended, would provide municipalities with more flexibility to collect charges from new development and redevelopment. Because this would be paid by developers, it is another way of making sure business makes a solid contribution to the Investment Strategy.

These incremental tools can be dedicated to the Next Wave package of transit and transportation improvements through provincial legislation, and through a transparent reporting process described in Section 6.2.4.



* chart represents estimated annual revenue

6.4.4 (a) One Percentage Point Increase to the Harmonized Sales Tax

It is recommended that an increase of one percentage point be applied uniformly to all currently taxable goods and services in the GTHA that are subject to the Harmonized Sales Tax (HST), using the existing mechanisms for the HST. This is being proposed because an HST increase spreads the cost of the investments across the entire region, thus ensuring that everyone in the GTHA contributes toward an improved transportation and transit system.

The HST's ability to generate significant revenues, and its broad nature, has contributed to the growing use of similar tools for building transit and transportation infrastructure in the United States, where many communities have approved dedicating a sales tax to funding such projects. For example, a sales tax is the fastest-growing source of revenue for transportation funding in California, and is used in New York City, Chicago, Houston and Minneapolis, as well as many other U.S. cities. ¹⁴ Los Angeles introduced a sales tax to finance and accelerate transportation projects and programs, a measure expected to raise over \$40 billion (U.S.) over the course of 30 years. ¹⁵

PROVINCIAL OR REGIONAL INCREASE: Due to the nature of the administration and collection of HST at the federal and provincial levels, the Province may find it administratively necessary to introduce a percentage point HST increase province-wide, rather than just in the GTHA. It is estimated that the revenue generated outside of the GTHA would be \$1.7 billion on an annual basis. The Big Move strategy, including all projects under the Next Wave, is directed to an integrated, efficient and seamless transportation and transit network for the GTHA. Therefore, if the Ontario Government were to implement a province-wide approach, revenue collected outside of the GTHA should be exclusively directed to priorities outside of the region.

REVENUE: \$1.3 billion per year (2014 \$), net of the proposed Mobility Tax Credit.

IMPACTS ON INDIVIDUALS: On average, the direct ¹⁶ per capita contribution in the GTHA is expected to be \$158 per year, or approximately \$3 per week. A typical GTHA household of 2 to 3 individuals could expect to directly contribute \$421 per year, or just over \$8 each week. ¹⁷

IMPACTS ON BUSINESSES: The impact of a one percentage point increase in HST would vary from business to business, depending on:

- The extent that the business relies on purchasing goods and services;
- Eligibility for business input tax credits; and
- How sensitive a business's sales are to relatively small changes in price.

In this case there may be some leakage of purchases to other competing jurisdictions, particularly U.S. border states. However, due to import duties and regulations, this likely would not be a significant concern.

For a sales tax levied only in the GTHA, it is possible that some purchases would shift outside the region to other parts of Ontario not subject to the tax, particularly for large purchases where tax savings could be substantial (e.g. vehicle purchases).

IMPLEMENTATION COSTS: Implementation costs are expected to be minimal, particularly if implemented province-wide, as payment and collection systems already exist. A report by KPMG-AECOM indicates that the HST is one of the most efficient tax tools for raising revenue. The Ontario government would need to develop a mechanism to determine HST revenue by region so that the revenue allocation for the GTHA could be determined.

ECONOMIC IMPACT: An HST increase adds to the final purchase price of goods and services sold in Ontario, which leads to lower domestic demand. However, since some consumer goods are price inelastic (i.e. necessities), individuals would adjust their spending and savings to try to maintain their levels of consumption.

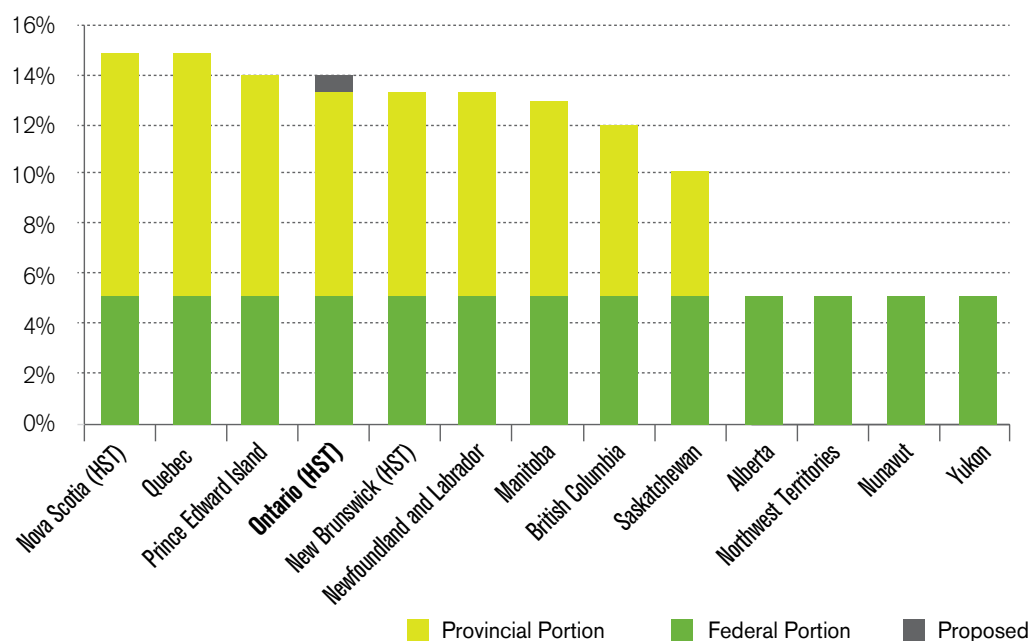
A study by the Federal Department of Finance in 2005 compared the economic impacts of major types of taxes. The study found that consumption taxes (i.e. HST) have the least negative impact compared to all major taxes over the long term. ¹⁸

A report by TD Economics states "to the extent that new revenue-raising measures are required, consideration should be given to those sources that impose less damage on productivity growth and competitiveness. In our view, the tax mix in the Toronto region is too heavily reliant on taxes on income and savings – key drivers of long-term economic prosperity – and not enough on consumption and the principle of user pay." ¹⁹

A study by the Government of Canada in 2004 found that for every dollar of consumption tax revenue, the cost to the efficiency of the economy is only \$0.13 – less than half the costs of personal income taxes (\$0.32) and corporate income taxes (\$0.37), and about one-tenth for personal capital income taxes (\$1.29).²⁰

In considering a potential increase to the HST, it is also important to consider the equivalent sales tax rates in adjoining jurisdictions. In the case of the Province of Quebec, the current rate is 14.975 percent (5 percent federal and 9.975 percent provincial). Manitoba recently approved an increase to its sales tax, which will bring the provincial rate from 7 percent to 8 percent, totalling 13 percent when combined with the federal portion. With the one percentage point increase to the HST recommended in this report, the combined federal/provincial rate in the GTHA would increase from 13 percent to 14 percent.

SALES TAXES BY PROVINCE/TERRITORY



ENVIRONMENTAL AND TRANSPORTATION IMPACT: No direct impact on travel behaviour that would result in environmental benefits, since relative prices are unchanged.

MOBILITY TAX CREDIT: A sales tax applied to a large base such as the HST is equitable inasmuch as everyone pays, as the tax is applied broadly to what people consume. However, sales tax disproportionately affects lower-income people since they generally spend a larger share of their income on day-to-day consumption. This can be mitigated by offering tax credits specifically targeted towards low-income individuals, reducing or potentially eliminating the burden of the proposed HST increase on those individuals. As a result, a Mobility Tax Credit is recommended to ensure fairness and equity - foundational to the selection criteria for the Investment Strategy program.

A Mobility Tax Credit, similar to the HST credit, would go to those below a determined level of adjusted family income. A Mobility Tax Credit has a number of advantages over other possible means of subsidizing low-income residents. Most importantly, it would help those who need help the most.

The Mobility Tax Credit could potentially be delivered as an increase to the existing Ontario Trillium Benefit (OTB), the mechanism that the Ontario government already uses to provide sales tax relief to low- and moderate-income Ontarians. The OTB was introduced in the 2011 Ontario Budget to combine Ontario's Sales Tax Credit, Ontario Energy and Property Tax Credit and Northern Ontario Energy Benefit into one payment. This method would be less administratively burdensome than implementing a new credit.

The cost of the Mobility Tax Credit, estimated at \$105 million per year, would be funded from revenue generated by the one percentage point increase in HST.

CONSIDERATIONS OF 1 PERCENTAGE POINT HST INCREASE

- Significant source of revenue.
- Revenues are stable, sustainable and grow with the economy.
- Individuals and businesses living and doing business in the GTHA contribute to transit and transportation infrastructure.
- Successfully used for dedicated transportation funding in cities across the U.S.
- Province-wide application could be implemented, with non-GTHA revenue directed to priorities in the rest of the province, with low incremental cost.
- A Mobility Tax Credit is proposed to mitigate impacts on lower-income groups.

EXAMPLES OF USE IN OTHER JURISDICTIONS:

Among many examples in the United States of sales tax dedicated to transit and transportation investment, Los Angeles ratepayers have voted to raise sales tax to finance and accelerate transportation projects and programs. Current rate is 1.5%, with ballot measures in 1980, 1990, and 2008 approving 0.5 percent increments. LA County Metro collected \$2.1B in 2011, representing 66 percent of its total revenue. Chicago's Regional Transportation Authority has a dedicated regional sales tax ranging from 0.75% - 1.25%, depending on the location.

6.4.4 (b) Regional Fuel and Gasoline Tax – 5 cents per litre

It is recommended that a tax of \$0.05 per litre be levied on the sale of transportation fuel and gasoline in the GTHA. The tax would apply to the sale of both gasoline and diesel fuels in the region, on top of existing federal and provincial gasoline and fuel taxes. Fuel and gasoline taxes are frequently used to generate dedicated revenues to support transit and transportation investment, including in the Greater Montreal Area and Metro Vancouver. In Metro Vancouver, the regional tax is \$0.17 per litre, more than three times as high as the proposal for the GTHA.

The average regular gas price in the GTHA in 2012/13 was 126.1 cents per litre. This is less than the average price in centres like Montreal (136.2 cents per litre) and Vancouver (134.9 cents per litre). The differential between the three regions can be partially accounted for through the dedicated fuel and gasoline taxes in Montreal and Vancouver. Introducing a five cent per litre dedicated tax in the GTHA would still see this region's average regular gas tax price lower than Canada's other two global cities.

The tax would be applied to fuel and gasoline sold in the GTHA and dedicated to the Next Wave investments. A tax on both fuel and gas would also ensure that businesses, many of whom rely on diesel fuel, as well as households, contribute to transit and transportation investments. Regional collection, allocation, and dedication has been demonstrated in other Canadian jurisdictions, such as Metro Vancouver and Greater Montreal.

The transfer of existing federal and provincial fuel and gasoline tax revenue to municipalities under existing programs would continue.

REVENUE: \$330 million per year by 2021 (2014 \$).

IMPACTS ON INDIVIDUALS: On average, direct per capita contribution in the GTHA is expected to be \$21 per year, or approximately 40 cents per week. On average, households in the GTHA could expect to directly contribute \$56 per year, or about \$1 per week.^{21 22}

IMPACTS ON BUSINESSES: A regional fuel and gasoline tax would also be paid by businesses that consume fuel or gas. Goods movements and employee travel require fuel or gas to be purchased, with the costs absorbed by businesses. For instance, businesses could be expected to pay the majority of the diesel fuel portion of this tax, which is used predominately by trucks. Approximately 45 percent of the total regional fuel and gasoline tax revenues is expected to be paid by businesses.

Due to the difference in the price of re-fuelling within the GTHA compared to outside the GTHA, fuel purchases are expected to be partly diverted to outside the region. The AECOM-KPMG report indicated that this diversion is particularly likely to occur by “carriers (freight users), commuters who reside in the outer municipalities of the GTHA as well as by long-distance through traffic.”

IMPLEMENTATION COSTS: Fuel and gasoline taxes are currently collected in Ontario, providing an opportunity to leverage existing collection mechanisms. Since the current fuel and gasoline taxes are pre-collected at the wholesale level and included on the wholesaler's invoice to the retailer, systems would need to be implemented to enable specific taxation on fuel and gasoline delivered to GTHA retailers. While acknowledging administrative complexities for regional collection and distribution, it should be noted that regional fuel and gasoline taxes have been administered and dedicated in other Canadian cities such as Vancouver, Victoria, Edmonton, Calgary, Montreal and Quebec City.

ECONOMIC IMPACT: The economic impacts of a fuel and gasoline tax are both positive and negative by nature. Positive impacts include reduced fuel consumption and reduced travel times for drivers, due to a reduction in vehicle kilometres travelled and an incentive to shift to more fuel-efficient vehicles, transit and other transportation alternatives.

Negative impacts include the potential for economic distortions as a result of fuel purchases shifting outside the region and fuel-intensive businesses moving outside the region. However, according to regional travel data, more than 97 percent of all trips generated in the GTHA stay within the GTHA boundary area. This indicates that fuel purchases made outside the region should not be significant. Keeping the rate and price differential moderate (as is proposed at 5 cents per litre), should minimize the potential negative effects of cross-boundary fuel purchases.

There would be transitional impacts, however, for fuel and gasoline sales at locations close to the boundary of the GTHA. Sales of fuel and gasoline would likely increase at service station sites immediately outside of the GTHA boundary line, while there would likely be sales decreases at GTHA service station that are in close proximity to the boundary.

The proposed GTHA rate of 5 cents per litre is less than a third as high as Vancouver TransLink's dedicated fuel and gasoline tax (\$0.17 per litre). Metro Vancouver's southern suburbs immediately border Washington State, a relatively low-cost fuel-tax jurisdiction. Easy access and proximity to cheaper U.S. fuel is a revenue “leakage” challenge for TransLink that would not be replicated in the GTHA.

According to a recent study of the impact of raising U.S. gasoline taxes, cited in the AECOM-KPMG report, costs to the efficiency of the economy are in the range of \$0.15 to \$0.25 cents per dollar of revenue raised, significantly lower than taxes on corporate and personal income and sales taxes on capital goods.²³

Due to the nature of collection of these investment tools, it is important to note that the proposed increase to the HST would apply on top of the fuel and gasoline tax. This means that a 5 cent per litre regional fuel and gasoline tax, combined with a one percent increase in HST is equivalent to a 5.7 cents per litre increase in fuel prices with 5.05 cents per litre dedicated to GTHA transportation.

COMPARISON OF CANADIAN REGULAR FUEL PRICES AND EXCISE TAXES

	VANCOUVER	MONTREAL	GTHA
Average Regular Gas Price - April 2012 to April 2013 (cents/L) ²⁴	134.9	136.3	126.1
Federal Fuel and Gasoline Tax (cents/L) ²⁵	10	10	10
Provincial Fuel and Gasoline Tax (cents/L)	8.5	17.2	14.7
Local Fuel and Gasoline Tax (cents/L)	17	3	5**
Provincial Carbon Tax on Fuel (cents/L) ²⁶	6.67	-	-
Total Excise Fuel and Gasoline Tax (cents/L)	42.2	30.2	29.7
Sales Tax (HST, GST or GST + QST) ²⁷	5%*	14.975%	14%**
Total impact of Fuel and Gasoline tax (cents/L)	44.3	34.7	33.9
Sales Tax (excluding impact on fuel and gasoline tax) (cents/L)	4.3	13.2	12.2
Total taxes on fuel and gasoline (cents/L)	48.6	48	46**

* The B.C. HST is 12 percent but the 7 percent Provincial portion is refunded at the point of sale and replaced with the carbon tax on fuel.

** Includes proposed Investment Strategy investment tools.

ENVIRONMENTAL AND TRANSPORTATION IMPACT: An increase in the fuel and gasoline tax is expected to have considerable positive impact on the GTHA's transportation network. In the long term, the amount of fuel used per capita would likely decline due to fewer kilometres driven and the inducement for more fuel efficient vehicles. In Vancouver, the volume of fuel consumed has been declining on average 1.5 percent per year since 2007. ²⁸ Reduced driving accounts for a portion of this, partly due to drivers using more efficient routes and using trips for more than one purpose. A study of Canada's 12 largest metro regions between 1986 and 2006 found that higher gas prices significantly reduced urban sprawl; a one percent increase in gas price increased inner city living by 0.32 percent and reduced low-density housing units by 1.28 percent. ²⁹ This proposed tool would also encourage the production of more fuel-efficient vehicles and support the use of alternatively-powered vehicles.

Reduced use of cars and shorter trips would also improve travel time for remaining drivers, and reduce emissions into the environment. A 2013 report by the Residential and Civil Construction Alliance of Ontario noted: "(S)tudies suggest that fuel and gasoline tax hikes could reduce driving in the GTHA considerably, particularly in regions with good public transit service" and "a fuel and gasoline tax is ideal for internalizing the costs of greenhouse gas emissions." ³⁰

However, as a result of reduced fuel consumption over time, revenues could be expected to decline in the medium to long term. For this reason, Ontario may wish to undertake studies of alternative forms of raising revenue from fuel consumption. Other jurisdictions are studying, piloting and implementing alternative methodologies, such as mileage-based approaches. In July 2001, the Oregon legislature passed legislation to create a 12-member road user fee task force charged with designing a new strategy to replace the gas tax with a long-term, stable source of funding. A Vehicle Miles Travelled fee was piloted in 2006 and found to be a viable concept that led to a 22 percent decline in driving during peak periods and adequate privacy protection. ³¹

Another method of implementing mileage-based user fees is through an auto insurance tax. A dedicated auto insurance tax was identified in the long list of potential investment tools, but eliminated from further consideration.

However, the concept of tying auto insurance payments to smart pricing -- also known as pay-as-you-drive auto insurance -- could offer significant benefits for the transportation network and individual drivers. It would reward drivers who drive less and drive at less busy times using more efficient, safer routes; or leave their cars at home and walk, cycle or take transit instead. Pay-as-you-drive insurance would be enabled by the wider introduction of in-vehicle pay-by-distance GPS technology. It would give drivers the option of matching their auto insurance coverage with actual use, and would reward drivers who drive less and drive more safely with real cost savings.

CONSIDERATIONS OF 5 CENTS PER LITRE FUEL AND GASOLINE TAX

- Substantial source of revenue.
- Provides transportation system benefits and decreases pollution and emissions due to a reduction in vehicle kilometres travelled and promoting the use of more fuel efficient vehicles.
- Collection mechanism currently exists for province-wide implementation and would require adjustment for implementation on a regional level.
- Widely used as a dedicated revenue to support transportation investment.
- Revenues decline over time due to reduced travel, alternative modes of travel, more efficient vehicles and alternatively powered vehicles.
- Small revenue leakage would occur from those who commonly travel outside the GTHA or live/work near the boundary of the GTHA.

EXAMPLE OF USE IN OTHER JURISDICTIONS:

TransLink currently collects \$0.17 per litre on all fuel sold in the Greater Vancouver Metropolitan Area. In 2011, dedicated revenues were \$315M, accounting for 24 percent of TransLink's total revenue.³²

6.4.4 (c) Business Parking Levy

It is recommended that a business parking levy on all off-street, non-residential parking spaces based on the current value assessment of the parking spaces be implemented across the Greater Toronto and Hamilton Area. Since property values are closely tied to transit and transportation access, the levy would vary throughout the region with parking in higher value areas charged a higher rate. The average space would be charged approximately 25 cents per day.

Parking is a key determinant in a person's decision whether to drive, take transit, walk or cycle. As a result, the supply and cost of parking has a large impact on the functioning of the transportation network.³³ Off-street parking also influences the look, feel and efficiency of the built environment. For instance, parking can constrain the land available for commercial development and can make neighbourhoods less conducive to walking due to driveway ramps and surface parking lots. By charging commercial parking owners a levy, businesses would be encouraged to provide only the amount of parking required to meet their needs. Furthermore, the levy would allow business owners which rely on parking and therefore benefit from a robust transportation network to contribute to investments that will see that network improved and alternative options for accessing their properties increased. It also provides an important signal to municipalities, which typically set out minimum parking requirements in zoning by-laws. It is important that these municipalities do not set requirements that result in too much parking.

Metrolinx has proposed an average rate that is lower than those used by most other international cities:

REGION	CHARGE PER SPACE/DAY (2013)
MONTREAL	\$1.42 - \$2.85*
NOTTINGHAM, UK	\$1.43
MELBOURNE, AU	\$2.68*
SYDNEY, AU	\$2.22 - \$6.23*
GTHA (PROPOSED)	~\$0.25

** Rates only apply to certain areas in the region.*

A non-residential parking levy based on the current assessed value of the parking spaces could generate revenues while growing transit ridership and supporting provincial land use policies. In addition, structuring the levy using the current assessed value of the parking ensures the impact of the levy is equitably distributed so that manufacturing properties and suburban businesses lacking rapid transit services are not disproportionately impacted. Meanwhile, in commercial areas with higher property values and greater transit access, the rate levied would be higher, reducing congestion and supporting surface transit and goods movement. Similar varied parking levies are used to reduce congestion and fund transit in Montreal, in Nottingham, U.K. and in Melbourne and Sydney, Australia.

REVENUE: \$350 million per year (2014 \$)

COSTS TO INDIVIDUALS: Individuals would not directly contribute to this tax as it would be applied to businesses only. However, in the case where parking is currently charged, it is expected that the cost would be passed on to the user of the space.

COST TO BUSINESSES: The impact of the business parking levy would vary from business to business depending on their location and the amount of off-street parking owned. In areas with higher land values where transit access is more likely to exist, businesses could face a higher per-parking space levy than the 25-cent average. However, these businesses are generally in more profitable sectors that allow them to locate in expensive areas where rapid transit and other travel alternatives exist. Furthermore, businesses could reduce the amount of parking they provide through redevelopment, sharing parking with new developments or repurposing the spaces for more productive uses. Metrolinx is committed to working with business owners, municipalities and the Province to decrease parking requirements to give businesses more flexibility to reduce the amount of off-street parking they must provide. Decreasing minimum parking requirements was a priority action of The Big Move as a way to build communities that are pedestrian, cycling and transit-supportive.

For business owners in locations with lower land values without rapid transit options, the per-parking space cost of the levy would be smaller. This would be particularly the case in manufacturing areas where land values are significantly lower. As a result, it is expected that despite more parking existing in suburban areas of the GTHA, a parking levy using a variable structure based on the current assessed value of the parking spaces would allow the costs to be evenly distributed between business property owners in the central and suburban areas.

IMPLEMENTATION COSTS: Metrolinx would work with the Municipal Property Assessment Corporation (MPAC) to create a comprehensive inventory of the value of all off-street non-residential parking spaces. This is expected to require a moderate up-front investment to create the inventory, and small on-going amounts to keep it current. It also may require MPAC to change the way it currently classifies properties in order to distinguish between parking and other uses, as well as assess the value of the parking portion of the properties. However, these implementation and administration costs would be small compared to the total expected revenues generated.

ECONOMIC IMPACT: Since it is based on current assessed values, the levy would reduce economic distortions in the parking. Studies have found that even modest corrections to imperfect parking markets in urban areas can have significant benefits to businesses by increasing parking availability and reducing congestion.³⁴

Encouraging businesses to reduce their parking supply also supports provincial and municipal smart growth policies and policies to encourage transit use by helping to optimize the provision of parking spaces. Studies have shown that cities that significantly expanded their supply of parking not only experienced higher rates of driving; they saw decreases in population and jobs.³⁵

Because the levy is based on assessed land values, sensitive industries like manufacturing, particularly those located in suburban areas without significant transit access, would bear a smaller portion of the levy. The median value of vacant manufacturing property in the GTHA is half as high as the median values of vacant commercial properties, suggesting that the parking levy rate applied to manufacturing parking would be significantly lower than to other non-residential parking spaces.

ENVIRONMENTAL AND TRANSPORTATION IMPACT: A parking levy would encourage efficient use of land and optimized parking provision, driving down the cost of development, reducing sprawl and minimizing the amount of new public infrastructure required to serve development. A growing amount of research highlights the potential for parking policies to improve the efficiency of transportation networks.³⁶ A survey of Canadian cities found that peak-period transit use and the supply of downtown parking are strongly related, with the provision of more parking spaces per employee resulting in lower transit use.³⁷ Even in highly transit accessible locations, free parking acts as a strong incentive to promote commuting by car. In California, research has also pointed to the fact that plentiful parking at office buildings likely eclipses the proximity of transit in determining personal travel preferences.³⁸ In one study, a parking policy to reimburse employees who did not use their free parking space with the taxable cash value of the space found that commuting alone by car declined by 17% while carpooling, transit use and walking increased by 64%, 50% and 39% respectively.³⁹

With more than 4.1 million non-residential off-street parking spaces estimated in the GTHA, the majority of which being surface parking, there is at least 125 square kilometres of paved land dedicated to storing cars. A parking levy that reduces the total amount of parking in the region would support improved stormwater management and decrease urban heat island effects currently facing the region.^{40,41}

CONSIDERATIONS OF BUSINESS PARKING LEVY

- Substantial source of revenue.
- Used in other urban regions as a dedicated revenue to support transit and transportation investment. Successful implementation in Montreal, Australia (Melbourne and Sydney) and the United Kingdom.
- Costs spread fairly between downtown and suburban commercial property owners, depending on land value and access to high-quality transit alternatives.
- Supports provincial growth plans.
- Collection mechanism can leverage the existing Municipal Property Assessment Corporation and municipal property tax systems.
- Over time, increased optimization and more efficient management of the region's parking inventory, and the increased availability of transportation alternatives, would help reduce congestion and emissions, and help achieve growth and land use intensification objectives.
- Complementary land use and tax policies that provide businesses with more choice regarding how much parking they can provide and give employees the option to "cash out" their employer-provided parking as taxable income could further increase the transportation benefits of a business parking levy.

EXAMPLES OF USE IN OTHER JURISDICTIONS:

Parking space levies have been used in Montreal, in Sydney and Melbourne, Australia, and in Nottingham, United Kingdom

In 2010 in Montreal, a dedicated tax on non-residential, off-street parking facilities was implemented to fund public transit. Higher rates apply for the central business district than in other areas of the region, with higher rates for outdoor lots than indoor lots.⁴²

In Melbourne, a parking space levy has been in place in a central area of the city since 2006, with costs per parking space as high as the equivalent of \$980 CAD per year, or about \$2.68 CAD per day. It is dedicated to funding transportation services and improvements.⁴³

In Sydney, parking levies are applied to non-residential parking spaces in six districts, including the Central Business District. The cost per year in 2011 was the equivalent of either \$2,150 CAD per year (\$5.60 per day) or \$755 CAD per year (\$2.07 per day) per space, depending on the parking space location, categorized as category 1 and category 2 areas.⁴⁴

A parking levy was implemented in Nottingham, U.K. in 2011 on all workplace parking spaces. All employers must apply for licenses stating the amount of parking provided and are charged \$523 CAD per year (\$1.43 per day) for each licensed space.⁴⁵

6.4.4 (d) Development Charges Amendments

It is recommended that the *Development Charges Act* be amended and updated to better fund transit-related growth costs and that a portion of these development charges be dedicated to Metrolinx to fund regional transit and transportation projects. Development charges are fees paid by developers to municipalities to fund the capital costs of servicing new development with sidewalks, roads, sewers and other infrastructure. In 2011, \$1.3 billion in development charges were collected across Ontario, two-thirds in the GTHA.⁴⁶ The Association of Municipalities of Ontario estimates development charges contribute 15 percent to 32 percent of total municipal capital funding.⁴⁷ As a result, development charges are a key way for the private sector and business to contribute to local infrastructure funding needs, including transit.

Development charges vary across the GTHA based on locally set rates, the type of building and in some cases the location of the development. These levies are determined based on the estimated need for new services attributable to the new development. As a result, rates can change substantially across the GTHA. Consultation between the Province, Metrolinx and municipalities will be required, supported by technical research, to establish a new formula and service standards for determining how much additional development charges could be generated and dedicated to transit improvements. In the meanwhile, an average 15 percent increase is assumed in existing development charges on new development across the GTHA to generate an estimated \$100 million dollars per year in additional, dedicated revenue.

GTHA DEVELOPMENT CHARGES

MUNICIPALITY	EXISTING TOTAL SINGLE DETACHED & SEMI-DETACHED DWELLING AVERAGE CHARGE, 2012-2013*
Toronto	\$19,400
Mississauga	\$55,300
Brampton	\$63,900
Oakville	\$50,000-\$60,000
Burlington	\$30,000-\$50,000
Milton	\$30,000-\$35,000
Hamilton	\$30,000
Oshawa	\$34,000
Pickering	\$10,000
Ajax	\$35,000
Markham	\$60,000-\$70,000
Vaughan	\$45,000-\$50,000

* Chart represents estimated annual revenue.

Source: Rates gathered from publicly available municipal websites in February 2013.

The 15 percent increase achieves a reasonable balance between how much developers are being asked to invest and how much additional value and benefit they will receive from new and improved transit infrastructure. Fifteen percent is not expected to trigger undue economic impacts. It is not expected to trigger an outflow of development from the GTHA to neighbouring jurisdictions.

The *Development Charges Act, 1997* currently limits developers' contributions to transit through two key provisions: a 10 percent discount on the assessed charges for transit and a 10-year average historical service level cap. While introduced to prevent municipalities from overcharging developers for transit services, these provisions have been identified by municipalities, the Canadian Urban Transit Association and others as a hurdle to funding transit, particularly in areas with little existing transit service. As a result, in 2011 only 5 percent of the \$1.3 billion collected went to transit. In the City of Brampton alone, the 10 percent discount is estimated to have reduced funding for transit by \$42 million between 2004 and 2009.⁴⁸

By removing the provincially legislated 10 percent discount and 10 year historical cap, municipalities could implement additional development charges and dedicate the revenue to support the implementation of Next Wave projects within their communities. Instead of a development charge revenue formula based on historic transit service levels, the proposed additional development charge could be based on a more progressive future-looking calculation based on long-term transit needs and the transit investment required to maintain reasonable travel times in the municipality.

Adjustments were made recently to the *Development Charges Act, 1997* to expand the application of tool so that it could better recover growth-related transportation infrastructure costs, but the scope of these changes was limited to the Toronto-York Spadina subway extension. If the restrictions were removed from the *Development Charges Act, 1997* a new prospective standard based on maintaining travel times or speeds could be developed, encouraging greater municipal investment in transit.⁴⁹ This would give municipalities an increased ability to strengthen existing local feeder transit networks and contribute to cost-sharing agreements.

Metrolinx could work in collaboration with the Province of Ontario, municipalities and stakeholders to advance proposed changes to the *Development Charges Act, 1997*. These reforms could expand the ability of municipalities to use development charges to raise revenues for transit. A share of these additional development charges would be provided by municipalities to Metrolinx, as a contribution to the Next Wave regional transit projects.

These charges would ensure that businesses contribute to transit and transportation investments. Further discussions with municipalities would inform how revenues collected for Metrolinx Next Wave investments would vary from municipality to municipality.

REVENUE: \$100 million per year by 2021 (2014 \$)

IMPACTS ON INDIVIDUALS: Some portion of development charges are passed on to purchasers and leasers of development

IMPACTS ON BUSINESSES: Businesses would benefit from investments in transit and transportation, increasing access to development sites and raising property values. This would strengthen the region's economy and make it a more attractive place for residents and businesses, increasing development opportunities.

An increase in development charges would make new residential and commercial development more expensive.

IMPLEMENTATION COSTS: The use of development charges to pay for growth-related capital costs are a well-established practice in Ontario. Additionally, development charges collected in the GTHA are currently used to fund GO Transit growth. As a result, a precedent already exists for using development charges to fund regional transit.

To amend existing provisions in the *Development Charges Act, 1997* limiting the use of development charges for funding transit would require discussions with the provincial government, municipalities and other stakeholders. Further discussions would then be required to set a mechanism for remitting funds related to New Wave projects to Metrolinx.

ECONOMIC IMPACT: The economic impacts of reforms to the *Development Charges Act, 1997* combined with an increase that will be equivalent to 15 percent of current levels are both positive and negative by nature. By removing existing provisions limiting the use of development charges for funding transit, municipalities would have greater flexibility to assess and apply development charges related to transportation more efficiently. Positive impacts include more efficient development located where existing infrastructure is best able to accommodate growth at the lowest public cost. As a recent Residential and Civil Construction Alliance of Ontario report highlights, "a development charge corresponds best to the benefits-received principle when the costs and benefits of the infrastructure for each property can be determined."⁵⁰ By reforming the development charges assessment process to better incorporate transit, a more accurate calculation of funding needs for transportation can be calculated.

Negative impacts include the potential for increased housing and commercial development prices that may reduce housing affordability and increase business costs. A 2009 study found that government imposed charges (including development charges) represented up to 19 percent of the median price of single detached new homes in the GTHA.⁵¹ Research in the United States has also found that marginal increases in 'impact fees' can raise housing prices.⁵²

These negative impacts could be offset through complementary policy measures. For instance, increases in development charge revenues for transit will expand travel options available to residents and employees in new developments. This could reduce the need for off-street parking, currently a large cost paid by developers, freeing up valuable lands for development. The Ontario Home Builders' Association has highlighted that "current parking requirements discourage intensification and significantly increase the cost of medium-and-high density projects."⁵³

As there are already significant variations in development charges levied across the GTHA, modest economic distortions to the region's real estate market could result unless the increase is distributed in a manner that takes into account the true cost of infrastructure provided to new developments. Expanding the use of area-specific development charges that more accurately estimate the variation in costs associated with different types of development in different parts of municipalities would reduce economic distortions. Area-specific charges are already in place in some municipalities in the GTHA.

Due to the nature of collection of these investment tools, it is important to note that the proposed increase to development charges would apply on top of any development charges revenues already remitted by municipalities to Metrolinx.

ENVIRONMENTAL AND TRANSPORTATION IMPACT: An increase in development charges assessed and invested in transit infrastructure can be expected to have a positive impact on the GTHA's transportation network. To the extent that new developments in areas more costly to service by transit are assessed higher development charges, more compact development encouraging transit, walking and cycling will be encouraged. This should contribute to reduced car trips, vehicle emissions and trip length. This in turn would also improve travel time for remaining drivers.

CONSIDERATIONS FOR PROPOSED DEVELOPMENT CHARGES REFORM

- Moderate source of revenue.
- Provides transportation system and land use benefits by encouraging compact development in areas conducive to walking, cycling and transit use.
- In the long term, this revenue tool should decrease pollution and emissions due to a reduction in vehicle kilometres travelled and increase transit ridership.
- Collection mechanism currently exists, however amendments to the *Development Charges Act* would be necessary to achieve many of the policy benefits.
- Widely used as a mechanism to fund growth-related capital costs for transit and transportation.
- Could decrease housing affordability if implemented without complementary regulatory reforms.
- Some economic distortions could occur through uneven increases in residential and commercial development costs in the GTHA, which could increase business costs.

EXAMPLES OF USE IN OTHER JURISDICTIONS:

The City of Vancouver applies Development Cost Levies to new developments to funding infrastructure including transportation.

In London, U.K., a Community Infrastructure Levy is applied to Greater London for the purposes of raising £300 million to fund Crossrail, a major rail project to be completed by 2019. The levy applies one of three rates per square meter to the net increase in development in Greater London.

Levies similar to development charges used to pay the capital costs of growth-related infrastructure also exist in the City of Winnipeg and the provinces of Alberta, Manitoba and Nova Scotia.

6.4.5 Everyone Benefits Fairly – Everyone Pays Fairly

Everyone in the GTHA could expect to benefit from the proposed investments.

A more efficient transit and transportation system would clearly benefit drivers, with a road and highway system better able to carry necessary traffic, while more GTHA residents take advantage of the benefits of an integrated, streamlined transit network.

And it would clearly benefit transit users, who would be able to take advantage of a wider range of choices, giving them the opportunity to get to more places they need or want to go faster, more efficiently, more seamlessly.

But a more efficient transit and transportation network would also benefit businesses. Not only would they find it easier to attract and retain a strong, talented workforce. They would also be better able to transport and receive goods and services at a reduced cost.

An efficient transit and transportation system would enhance the value of neighborhoods and property— benefiting homeowners. The economic growth and jobs that infrastructure investment would generate would yield increased general tax revenues for municipal, provincial and federal governments.

Even visitors to the GTHA would benefit – by being better able to enjoy all of the amenities the region has to offer. Everyone in the region would benefit. Their mobility would increase. Travel time would decrease. Employment and business opportunities would expand.

The anticipated revenues from each of these investment tools reflect the core principles of fairness and equity:

- Given that all groups would benefit from an integrated, enhanced transit and transportation network, 64 percent of the investment revenue would come from the one percentage point dedicated HST tax, the broadest of the proposed investment tools.
- Given that users of the transportation system would derive particular benefit, 15 percent of the investment resources would come from the 5-cent per litre fuel and gasoline tax, paid by both residents and businesses.
- Given that business would derive benefits in attracting and retaining employees and in moving and receiving goods and services more efficiently, 16 percent of the total investment revenue would come from a Business Parking Levy.
- Given that land developers benefit from the increased residential and commercial development opportunities and the broader uplift in land value generated from a higher functioning and expanded transportation system, 5 percent of total investment revenue would come from development charges.

“Everyone needs to use transit. Making our transportation system stronger benefits everyone.”

-Peel Region resident, at regional roundtable

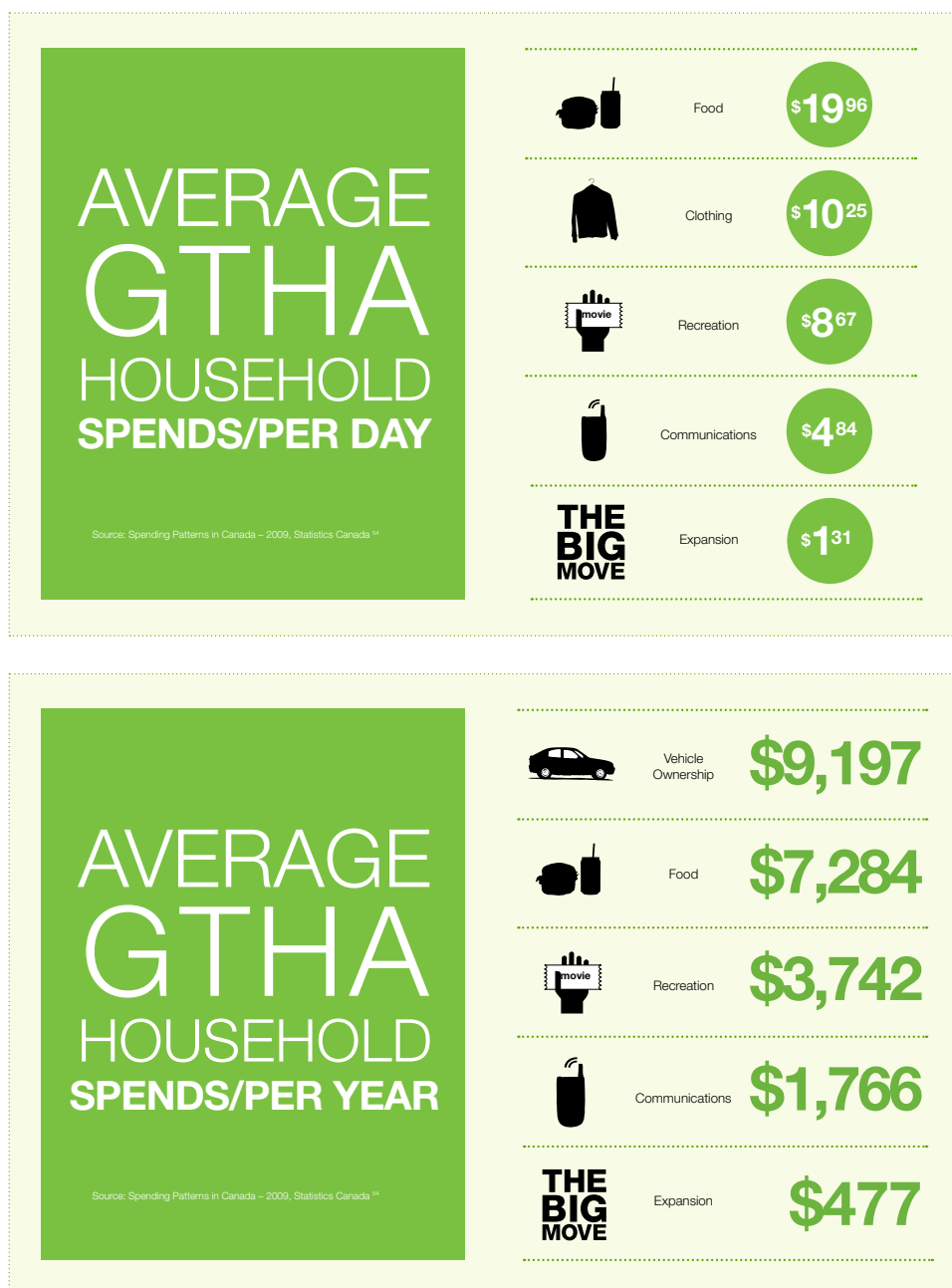
6.4.6 Impact on Households and Individuals

The average household in the GTHA would bear a total direct cost of \$477 per year, or about \$9.17 per week. This average household is based on 2.66 people per household, an average distance driven of 12,670 kilometres, and estimated taxable expenditures of \$42,100.

The per capita total direct cost would be \$179, or about \$3.44 per week, for the dedicated tools. That would of course vary depending on income and spending patterns. For example, a retired person who drives 40 kilometers a week and takes public transit four times a week would likely bear a direct cost of \$140 per year, or about \$2.70 per week. A student without a car who makes two transit trips per day would face a direct cost of about \$117 per year, or about \$2.25 per week. A family of five with two cars driven a total of 40,000 kilometers a year and above-average household income, would end up paying a total of \$977, or \$18.79 per week.

While households will experience costs related to these new tools, they will also experience household savings as a result of the new transit investments. For instance, Statistics Canada estimates that the average Ontario household spends \$9,197 per year on auto ownership, which could be avoided by choosing the different travel options provided in the Next Wave.⁵⁴

In addition, the cost of congestion to families each year currently amounts to about \$1,619 per household. Investments in transit and transportation can help families reduce these kinds of costs.



6.4.7 Impact on the Economy and the Region

Different tools have different impacts on the regional economy. The key to these proposed tools is the fact they would be used to fund needed transit and transportation infrastructure – thus creating a significant benefit. Some tools would be broadly applied, and others more specific to user groups. The tools specific to user groups actually generate benefits of their own by making the transportation system more efficient.

The sales tax is attractive because the costs are well-spread throughout the population, and therefore the impact on the economy for every dollar raised is relatively small. The AECOM-KPMG report indicates that “the biggest advantage of sales taxes is that they tend to create the fewest economic distortions relative to other taxes.”

A study using Canadian data found that increases in fuel prices have contributed significantly to reducing urban sprawl in the 12 largest Canadian metropolitan areas over the period of 1986-2006.⁵⁵ On average, a 1 percent increase in gasoline prices has caused a 0.32 percent increase in population living in inner cities, and a 1.28 percent reduction in low-density housing units. This means that an incremental increase in the cost of fuel can have an impact on reaching the objectives of the *Growth Plan for the Greater Golden Horseshoe* – to reduce the cost of infrastructure required to serve communities, protect green space, and encourage walkable, vibrant places for people to live.

This would also encourage a switch to more fuel-efficient cars – giving drivers and others the opportunity to reduce emissions, improve air quality, and reduce the amount of tax they pay.



The Eglinton Crosstown LRT tunnelling team with tunnel boring machine

6.4.8 Contributions Spread Fairly Across the Board

One of the principles used in developing this Investment Strategy is to provide equity across the entire region. This is accomplished by an effective evidence-based approach to project selection, as demonstrated by the Next Wave of projects. This package of projects provides real benefits in virtually every corner of the GTHA. At the same time, we are building a regional system, and in a single integrated economy such as we have in the GTHA, we all benefit from an effective transit and transportation system.

At the same time, we need to show a reasonable match of investments made and revenues generated. The Investment Strategy accomplishes this objective with the “416” area code in the City of Toronto contributing 41 percent of the overall revenue generated by the investment tools, and receiving 42 percent of the Next Wave project funds. The “905” area code outside of Toronto contributes 59 percent of overall revenues and receives 58 percent of project funds. These calculations do not include funds to be raised by Development Charges, as studies will be required to determine the revenue potential. Nor do the calculations include the 25 percent of Investment Strategy revenues that would be dedicated to other key elements of the transit and transportation system such as local roads and transit, improvements to highway systems and various other transportation initiatives.

6.4.9 Putting the Four Principles of the Investment Strategy into Action

Given the fact that this Investment Strategy reflects the principles of dedication of revenues to specific outcomes, fairness, equity across the region, and accountability and transparency, it is recommended that it be implemented to ensure that the people of the Greater Toronto and Hamilton Area obtain the integrated, comprehensive transit and transportation system that the region needs.

RECOMMENDATION 20:

It is recommended that to generate the targeted \$2 billion annually to complete the Next Wave of projects, the following investment tools be implemented in the Greater Toronto and Hamilton Area:

- a. A one percentage point value added tax, as part of the Harmonized Sales Tax;
- b. A five cent per litre regional fuel and gasoline tax;
- c. A variable Business Parking Levy, with an average cost of 25 cents per day per space, to be implemented on off-street non-residential parking spaces on the basis of relative market value.
- d. A Development Charge increase equivalent to a 15 percent increase in existing rates, along with amendments to the *Development Charges Act*, 1997 to be arrived at in consultation with the Province of Ontario, municipalities and other stakeholders. The amendments would include:
 - I. Removal of the 10% reduction and 10-year average historical service level cap on development charges levied for transit growth.
 - II. Introduction of an “integrated transportation service” category that combines various transportation modes and determines charges based on new service improvement standards.
 - III. Introduction of a new reporting standard for municipalities to demonstrate accountability and transparency for the revenues raised by Development Charges, and dedicated to achieve transit and transportation expansion and improvement.

In addition, it is recommended that all revenue generated from these tools, other than reasonable administration costs and Mobility Tax Credit rebates, be dedicated to fund transit and transportation infrastructure, and be transferred to the Transportation Trust Fund.

RECOMMENDATION 21:

It is recommended that, to ensure fairness and mitigate the impact of the implementation of the investment tools on low-income segments of the population, the Province of Ontario develop a Mobility Tax Credit, to be implemented on an income-tested basis, funded by revenue generated by the investment tools. Other transitional or ongoing measures may be considered by the Province to mitigate impacts on other populations, if appropriate.

RECOMMENDATION 22:

It is recommended that, should the Province of Ontario decide to implement an investment tool on a province-wide basis, only revenue collected in the Greater Toronto and Hamilton Area should be directed to the region, with revenues outside of the GTHA being available for priorities in other parts of Ontario.

6.4.10 Timing of Implementation

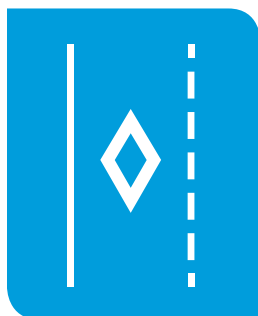
It is recognized that implementation of the recommended tools is dependent on the legislative process for the Province of Ontario. In that context, it is important to keep in mind that the GTHA faces a pressing need to recover from a large backlog of deferred transportation infrastructure investment. During the stakeholder consultation process, many expressed the view that it is urgent to catch up through smart, significant investments. Through dedicated revenue streams that could become available as early as 2014, the region would be able to break out of a history of incremental on-again, off-again system expansion of its transit and transportation system. Immediate, dedicated revenues will ensure that project implementation progress can begin immediately, and some projects can be accelerated to achieve results and relief for GTHA commuters.

RECOMMENDATION 23:

It is recommended that the investment tools be implemented as soon as practical. Surplus revenue in any given year is to be retained in the Transportation Trust Fund outlined in Recommendation 4 and may only be available for use for future expenditures in subsequent years. Revenue from the investment tools may be used to service long-term debt to finance transit and transportation infrastructure.

6.4.1.1 Tools to Advance Policy Goals

In addition to the dedicated HST, Fuel and Gasoline tax, variable Business Parking Levy and Development Charges, additional investment tools are recommended because of their positive policy benefits – such as improving the efficiency of the transportation network, or driving good outcomes in creating positive communities/urban form, encouraging transit ridership, and making the most of the infrastructure we have.

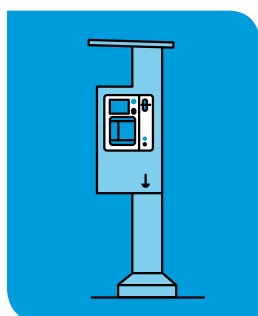


HIGH OCCUPANCY TOLL LANES: Getting more efficiency out of the road network is a key goal of Metrolinx's Investment Strategy. High Occupancy Toll (HOT) lanes allow vehicles with one person in them to travel in congestion-free conditions—similar to existing High Occupancy Vehicle (HOV) lanes. The difference is that with an HOT lane, the additional capacity that goes unused in HOV lanes is filled by single-occupant vehicles that pay a variable toll based on traffic levels.

In the 2013 Ontario Budget, the Province announced a plan to “convert select high-occupancy vehicle (HOV) lanes in the GTHA into high-occupancy toll (HOV/HOT) lanes” along with constructing “new HOV lanes on sections of Highways 401, 404, 410 and 427 in the GTHA.” This commitment recognizes the benefits of increased utilization of the HOV network, allowing highways to accommodate more people, more quickly. In Minnesota, studies found that converting an HOV to an HOT lanes on the Interstate I-394 not only increased speeds for drivers paying a toll, vehicle speeds in the uncharged general purpose lanes increased between 2 percent and 15 percent.⁵⁶

At an average rate of \$0.30 per kilometre, an estimated \$25 million per year would be generated from existing HOV lanes to invest in transit and transportation infrastructure. By 2020, with the expansion of the network this revenue could increase to between \$160 million and \$250 million. This initiative would offer excellent benefits for drivers through increased choice, faster travel times and improved reliability. Transit users also benefit as buses can also use the HOT lanes – supporting the expansion of the region's burgeoning express bus network.

In addition, the tolling of new and proposed highways is a viable approach for the future and should be considered for the planned extension of Highway 407 East and the potential GTA West transportation corridor.



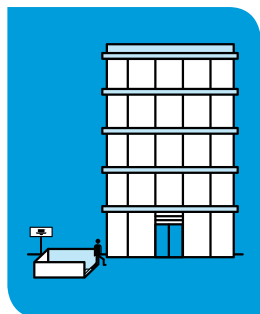
PAY FOR PARKING AT TRANSIT STATIONS: The practice of charging for parking at transit locations is not consistent across the GTHA. The TTC charges for use of parking lots at subway stations, while GO Transit provides free parking, except for a portion under a fee-based reserved program. Transit agencies like GO Transit and TTC that provide parking for their customers incur the capital and operating costs of building and maintaining these services and recovering a portion through fares. At one point, these costs were insignificant to the transit operator. As the demand for transit has increased and commercial and residential growth has seen land values rise near stations, there has been a move from surface parking to structured parking – a five-fold increase in costs. Increased land dedicated to parking has impact on the potential for further intensification and the opportunity for greater interconnectivity of transit to the community it serves.

Fairness and equity across transit customers is also a concern as customers who walk, bike, get dropped off or take local transit in effect subsidize the fares of those currently parking for free at transit stations. Implementing a charge for parking at transit stations over time would reduce this subsidy and encourage transit customers to walk, bike, get dropped off or take local transit. Monies collected from this source of revenue could be used for additional investments in local transit access to stations and to increased service.

In Seattle, it has been suggested that charging for parking at park-and-ride lots could actually increase transit ridership by shifting some current parking users at overcrowded lots towards alternative modes of accessing stations, thereby freeing up additional parking spaces for new users.⁵⁷

A well-considered and implemented charge for parking at GO Transit locations could, over time, help to manage

the demand for parking, encourage some transit customers to use other ways to get to transit stations, and provide more assurance of finding a parking space for customers who have no other means to access the station. An average fee of between \$2 and \$4 per day across the GO network would raise in the order of \$20 million to \$40 million annually. Monies collected from this source of revenue could be used for improving access to stations by local transit, cycling or walking, and could help to cover the cost of increased service along GO lines. Walking and cycling was identified in The Big Move as a priority for the GTHA's future transportation network. Its health benefits, cost-effectiveness and low environmental impact make it an ideal way to access rapid transit stations.



LAND VALUE CAPTURE: As described previously in this report, seeking Land Value Capture would drive excellence in planning and project development, and transfer development risk wherever appropriate from the public to the private sector. It also seeks to capture some of the development value uplift to contribute to projects which in turn generate value. Municipalities, the Province, Metrolinx, and private sector developers need to directly work together to generate increased value in transportation projects and development, in turn contributing both financially and in ridership, to better long-term infrastructure, in turn creating greater value.

RECOMMENDATION 24:

It is recommended that the investment tools outlined in Recommendation 20 be supplemented by:

- a. High Occupancy Toll lanes on regional highways, implemented by converting existing High Occupancy Vehicles lanes, as well as expanding the network of HOV/HOT lanes to other highway corridors;
- b. Pay-for-parking at transit stations, with revenues dedicated to the improvement of services delivered in the relevant transit corridors and for local transit access improvements;
- c. Land value capture.



7.0 It's Time to Invest in Our Future

The challenge facing the people of the GTHA is clear. But so is the opportunity to address it. One of the greatest urban regions in the world – a centre of commerce, learning, technology and the arts – faces a threat to its position as a great place to live, work and play.

The opportunities before us are enormous. But to take full advantage of them, it is crucial to ensure a transit and transportation network that would meet the needs of this region's tremendous potential.

Many long-time GTHA residents fondly recall an era, more than a generation ago, when experts and practitioners came to this region to see and learn about transportation innovation in action. Back then, the region's stellar international reputation included: the birth and expansion of GO commuter rail, the world's longest continuous express-collector highway, intermodal transit stations that allowed customers to transfer seamlessly between subways, streetcars and buses under one roof, and urban intensification above the Yonge subway line.

The GTHA can once again show that kind of leadership. By ensuring that our region has the modern, integrated and comprehensive network that our people and businesses need, we can take a major step to ensuring a bright future for the region.

This report has demonstrated the need to meet this challenge head-on and how to do it. It has documented the potential costs should we fail to act. It has pointed out the great potential we can fulfill if we meet our challenge head-on. It has outlined the transit and transportation infrastructure programs that can turn a brighter vision of the future into reality.

The Next Wave of The Big Move projects that comprise this blueprint are the culmination of years of strategic thinking, planning and consultation and are based on four principles that the people across this region can embrace – the dedication of revenues to specific outcomes; fairness; equity across the GTHA; and complete accountability and transparency.

The solution requires investment – in our economic future, our environment, and our quality of life. It is a significant investment; from it, the economic benefits of construction of the Next Wave of projects would be enormous – creating over 800,000 – 900,000 new person-years of construction and long-term employment, and providing an overall infusion to the GTHA economy of \$110-130 billion.

The investment by the people of the GTHA would be dedicated entirely to ensuring that the region has a transit and transportation system that would meet their needs. Dedicated funding is required to ensure that plans for transit and transportation proceed speedily, and consistently. It is required to ensure that the residents of the GTHA will be certain of obtaining the transit and transportation improvements they need. And it is in line with practices in many other major urban regions around the world.

The plan takes into account the transit and transportation needs of the whole region - to catch up on transit and transportation infrastructure investments that were not made in the '70s, '80s or '90s. The plan would triple the length of rapid transit lines in the GTHA: subways, commuter trains, light rapid transit lines, and bus rapid transit lines.

The recommendations in this Investment Strategy can provide our region the opportunity to turn aside our greatest challenge, and invest in our future.

8.0 Summary of Recommendations

RECOMMENDATION 1:

To ensure continued progress in The Big Move, it is recommended that:

- a. Metrolinx continue to pursue the completion of First Wave rapid transit projects.
- b. All transit and transportation investment decisions made by Metrolinx, municipalities or other agencies for the use of funds generated by the Investment Strategy should be consistent with The Big Move.
- c. Metrolinx continue working with the Province of Ontario, municipalities and other agencies on planning, designing, building and operating a series of regional rapid transit projects, listed below, referred to as the Next Wave projects, described in Section 3.5.1:
 - Relief Line;
 - Yonge North Subway Extension;
 - Brampton's Queen Street Rapid Transit;
 - Hamilton Light Rail Transit;
 - Hurontario-Main Light Rail Transit;
 - Dundas Street Bus Rapid Transit;
 - Durham-Scarborough Bus Rapid Transit;
 - GO Two-Way, All-Day Service;
 - GO Lakeshore Express Rail Service – Phase 1 (including Electrification); and
 - Electrification of GO Transit Kitchener Line and Union Pearson Express.
- d. Metrolinx continue working with the Province of Ontario and municipalities on the finalization of the scope and phasing of the Next Wave projects, and report back to the Metrolinx Board of Directors by June 2014. Any material changes to the Next Wave projects would require approval by the Metrolinx Board of Directors, following appropriate consultation and input from municipalities and the public, as required under the *Metrolinx Act*. Continued progress on Next Wave projects is subject to the availability of funding from this proposed Investment Strategy.
- e. Metrolinx continue working with communities and local and regional organizations to develop and implement strategies to take advantage of local jobs and training programs to provide community benefits for the areas that will be hosting the rapid transit infrastructure outlined in Recommendation 1(c) above.

RECOMMENDATION 2:

It is recommended that as part of its legislated review of the regional transportation plan, scheduled to begin in 2014 and be completed in 2016, Metrolinx fully integrate the recommendations of the Investment Strategy, including the Next Wave projects.

RECOMMENDATION 3:

It is recommended that the Province of Ontario consider adjusting the composition of the Metrolinx Board of Directors, in order to provide municipalities in the Greater Toronto and Hamilton Area with the opportunity to nominate up to six citizen appointees to the Board.

RECOMMENDATION 4:

It is recommended that the funds generated by the Investment Strategy be dedicated to the construction, financing, management and operation of transit and transportation infrastructure set out in this report. To this end, it is recommended that a Greater Toronto and Hamilton Area Transportation Trust Fund be established and governed by a board of trustees, for the management and distribution of the proceeds of the trust.

RECOMMENDATION 5:

It is recommended that Metrolinx enhance its public engagement processes to model best practices and its reporting systems in order to establish robust and transparent public reporting on the delivery of projects, related to budget and schedule, the rationale or basis for any changes, and the concrete, specific results that are experienced as a result of the implementation of programs as a whole and specific projects.

RECOMMENDATION 6:

It is recommended that the Investment Strategy be reviewed periodically, at least every 10 years, to confirm that it continues to be effective and reasonable in delivering a transit and transportation system for the Greater Toronto and Hamilton Area.

RECOMMENDATION 7:

It is recommended that after 20 years, the Investment Strategy be subject to a fundamental review and reauthorization to consider the future needs of the region and that an updated report be submitted by Metrolinx to the Province and GTHA municipalities.

RECOMMENDATION 8:

It is recommended that the federal government be requested to increase its commitment to implementing The Big Move. Particular consideration should be given to the adoption of a National Transit Strategy that would see the federal government contribute up to one-third of the capital costs of Next Wave transit and transportation infrastructure.

RECOMMENDATION 9:

It is recommended that the Minister of Transportation proceed with the development of a Transportation Planning Policy Statement under the provisions of the *Metrolinx Act*, to encourage greater integration of land use policies with The Big Move and investments in transit and transportation infrastructure.

RECOMMENDATION 10:

It is recommended that Metrolinx work with municipalities and the land development industry to develop a land value capture strategy for the Next Wave of rapid transit projects, which also considers existing and under-construction rapid transit assets, to ensure an appropriate private-sector contribution towards the cost of stations and other infrastructure.

RECOMMENDATION 11:

It is recommended that Metrolinx, in conjunction with the Province of Ontario, municipalities and their respective agencies, use the Next Wave of projects to increase the quality of the urban environment through design excellence, the support of transit-oriented development, as well as maximizing value through the management of publicly-owned property along rapid transit lines.

RECOMMENDATION 12:

It is recommended that all public agencies give consideration to planning public infrastructure and facilities for locations that support the land use, transit and transportation policies of the Growth Plan for the Greater Golden Horseshoe and The Big Move. Particular consideration should be given to facilities that are large employment generators or significant focal points for communities, such as government services, hospitals, post-secondary institutions, justice facilities and other major trip generators, and ensure that the costs of providing transit and transportation services are considered in deciding on the location of facilities and infrastructure.

RECOMMENDATION 13:

It is recommended that all Next Wave projects with a construction value of more than \$50 million be evaluated to determine whether they could be delivered through Alternative Financing and Procurement, using Infrastructure Ontario, to ensure service delivery that is on budget and on schedule.

RECOMMENDATION 14:

It is recommended that Metrolinx, working in conjunction with the Province of Ontario, municipalities and their respective agencies, build on, expand and enhance our collective capacity to undertake world-leading evidence-based project evaluation and selection processes for the delivery of regional rapid transit projects, as well as other transit and transportation projects.

RECOMMENDATION 15:

It is recommended that Metrolinx work with transit authorities in the GTHA to build and improve upon a common approach to reporting on performance, so that information can be consolidated for the region as a whole and benchmarked with other systems.

RECOMMENDATION 16:

It is recommended that Metrolinx and the local transit authorities:

- a. Continue to take steps to improve the level of service integration across the GTHA, in order to enhance the customer experience. To this end, a GTHA Regional Service Integration Plan should be developed, with measurable deliverables, for completion in 2014, with implementation to follow.
- b. Initiate work no later than 2014 on the development of a GTHA Regional Fare Integration Plan, identifying short and long term strategies, with measurable deliverables, that will be pursued.

RECOMMENDATION 17:

It is recommended that Metrolinx and the local transit authorities work together to share best practices on continuous improvement in customer service, in order to improve customer service and experience, and to develop common reporting mechanisms, where appropriate. All transit authorities in the region should move to develop a passenger charter or similar document, and to report publicly on progress and performance, and this kind of reporting should be a condition for the receipt of any funding through the Investment Strategy.

RECOMMENDATION 18:

It is recommended that revenues generated through the Investment Strategy be used to establish a dedicated transit and Transportation Trust Fund, to be allocated as follows:

- a. Approximately 75 percent to Next Wave capital construction and financing costs, maintenance costs and the Metrolinx share of ongoing operating costs of the Next Wave regional transit projects;
- b. Up to 25 percent for other key elements of the transit and transportation system – local roads and transit, improvements to the highway system and various other transportation initiatives, including:
 - Municipal funding of up to 15 percent, to be matched by local contributions, for local transit, road and bridge improvements that are intended to increase transit ridership and the carrying capacity of roads and streets for all users;
 - Up to 5 percent for strategic investments in the provincial and municipal controlled access highway network to improve the mobility of people and goods; and
 - Up to 5 percent for other transportation and mobility initiatives, including walking and cycling infrastructure, fare integration, mobility hubs, urban freight movement, intelligent transportation systems and user information systems.
- The allocation of funding among these categories should be reviewed regularly.

Existing funding from all orders of government should continue to support existing programs, services and projects. Specifically, the Province of Ontario should maintain its current level of capital and operating funding to services like GO Transit, provincial highways and existing committed projects. Municipalities would continue to be responsible for capital and operating funding for regional and local highways and roads, and local transit services. To support the expansion of the transit and transportation system, the investment tools recommended in this Investment Strategy are intended to be in addition to existing funding provided by all orders of government.

RECOMMENDATION 19:

It is recommended that Metrolinx work in consultation with stakeholders and municipalities, as well as the Province of Ontario to develop eligibility, selection, and allocation criteria to guide the distribution of the funds referred to in Recommendation 18 (b).

RECOMMENDATION 20:

It is recommended that to generate the targeted \$2 billion annually to complete the Next Wave of projects, the following investment tools be implemented in the Greater Toronto and Hamilton Area:

- a. A one percentage point value added tax, as part of the Harmonized Sales Tax;
- b. A five cent per litre regional fuel and gasoline tax;
- c. A variable Business Parking Levy, with an average cost of 25 cents per day per space, to be implemented on off-street non-residential parking spaces on the basis of relative market value.
- d. A Development Charge increase equivalent to a 15 percent increase in existing rates, along with amendments to the *Development Charges Act, 1997* to be arrived at in consultation with the Province of Ontario, municipalities and other stakeholders. The amendments would include:
 - I. Removal of the 10% reduction and 10-year average historical service level cap on development charges levied for transit growth.
 - II. Introduction of an "integrated transportation service" category that combines various transportation modes and determines charges based on new service improvement standards.
 - III. Introduction of a new reporting standard for municipalities to demonstrate accountability and transparency for the revenues raised by Development Charges, and dedicated to achieve transit and transportation expansion and improvement.

In addition, it is recommended that all revenue generated from these tools, other than reasonable administration costs and Mobility Tax Credit rebates, be dedicated to fund transit and transportation infrastructure, and be transferred to the Transportation Trust Fund.

RECOMMENDATION 21:

It is recommended that, to ensure fairness and mitigate the impact of the implementation of the investment tools on low-income segments of the population, the Province of Ontario develop a Mobility Tax Credit, to be implemented on an income-tested basis, funded by revenue generated by the investment tools. Other transitional or ongoing measures may be considered by the Province to mitigate impacts on other populations, if appropriate.

RECOMMENDATION 22:

It is recommended that, should the Province of Ontario decide to implement an investment tool on a province-wide basis, only revenue collected in the Greater Toronto and Hamilton Area should be directed to the region, with revenues outside of the GTHA being available for priorities in other parts of Ontario.

RECOMMENDATION 23:

It is recommended that the investment tools be implemented as soon as practical. Surplus revenue in any given year is to be retained in the Transportation Trust Fund outlined in Recommendation 4 and may only be available for use for future expenditures in subsequent years. Revenue from the investment tools may be used to service long-term debt to finance transit and transportation infrastructure.

RECOMMENDATION 24:

It is recommended that the investment tools outlined in Recommendation 20 be supplemented by:

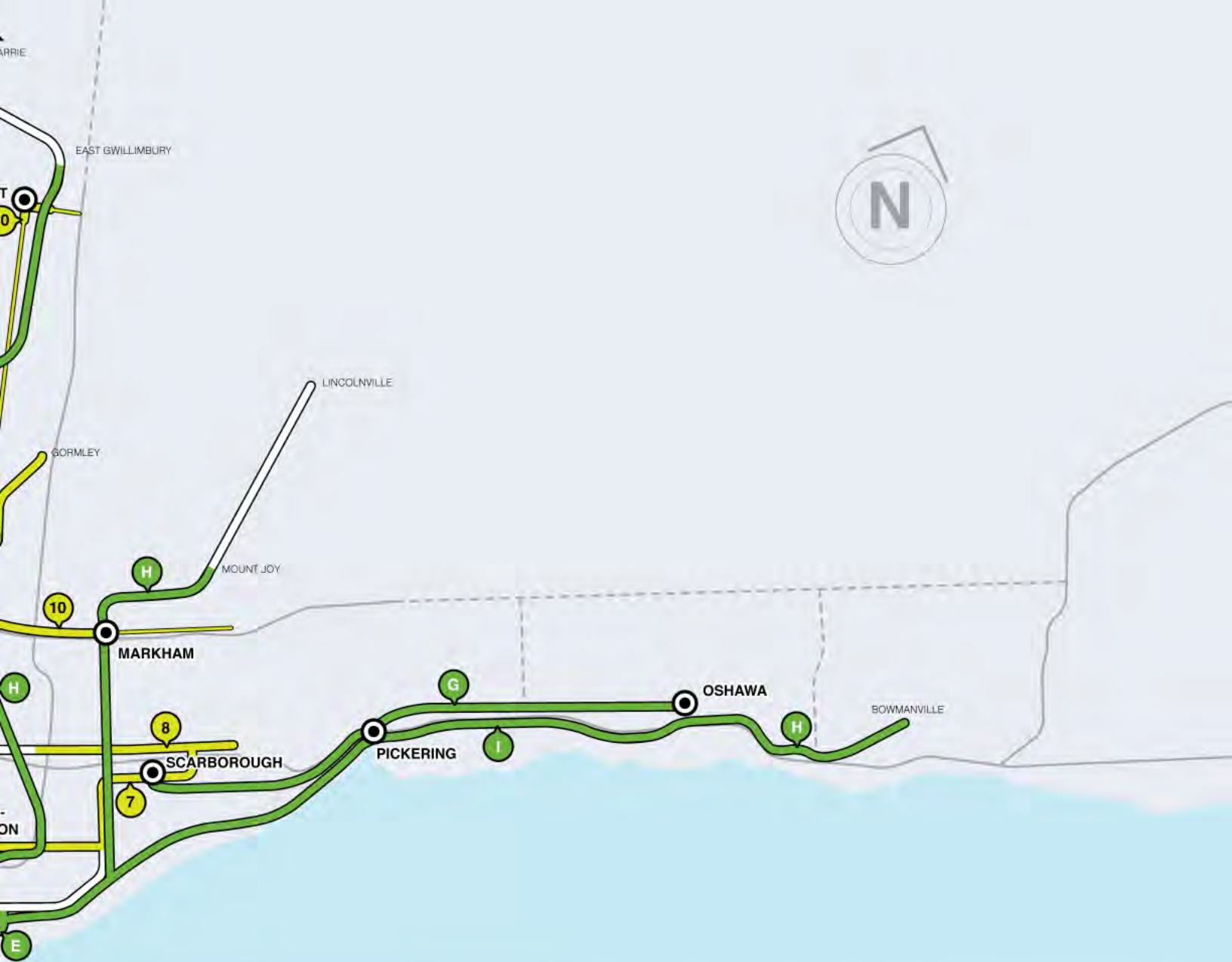
- a. High Occupancy Toll lanes on regional highways, implemented by converting existing High Occupancy Vehicles lanes, as well as expanding the network of HOV/HOT lanes to other highway corridors;
- b. Pay-for-parking at transit stations, with revenues dedicated to the improvement of services delivered in the relevant transit corridors and for local transit access improvements;
- c. Land value capture.

9.0 Endnotes

1. Metrolinx. The Big Move: Transforming Transportation in the Greater Toronto and Hamilton Area. (2008). <http://www.metrolinx.com/thebigmove/Docs/big_move/TheBigMove_020109.pdf>
2. Environment Canada. National Inventory Report 1990-2011 – Greenhouse Gas Sources and Sinks in Canada. (2013). <<http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=A07ADAA2-E349-481A-860F-9E2064F34822>>
3. HDR Corporation Decision Economics. Cost of Road Congestion in the Greater Toronto and Hamilton Area: Impact and Cost Benefit Analysis of the Metrolinx Draft Regional Transportation Plan. Commissioned by Metrolinx (Dec. 2008). <http://www.metrolinx.com/en/regionalplanning/costsofcongestion/ISP_08-015_Cost_of_Congestion_report_1128081.pdf>
4. Toronto Transit Commission and HDR Corporation. Downtown Rapid Transit Expansion Study: Phase 1 Strategic Plan. (Sep. 2012). <http://www.ttc.ca/PDF/About_the_TTC/DRTES_Final_Report_-_September_2012.pdf>
5. Benefits and government revenues are estimated over a 20 year period and are for the capital and operating cost of the Next Wave of rapid transit projects. Estimates are extrapolated from: Centre for Spatial Economics. The Economic Impacts of Metrolinx Transportation Project Scenarios. Commissioned for Metrolinx. (Oct. 2012).
6. Benefits and government revenues estimated over a 20 year period. Estimates are extrapolated from: Centre for Spatial Economics.
7. American Public Transit Association. 2012 Public Transportation Fact Book, 63rd ed. (2012).
8. Ontario Ministry of Infrastructure. "Building Canada Together – Ontario's Recommendations for the Federal Long-Term Infrastructure Plan." (2012). <http://www.moi.gov.on.ca/pdf/en/BuildingCanadaTogether_EN.pdf>
9. Turcotte, Martin. "Commuting to work: Results of the 2010 General Social Survey." Statistics Canada. (Aug. 2011). <<http://www.statcan.gc.ca/pub/11-008-x/2011002/article/11531-eng.pdf>>
10. Strategic Regional Research. "A Region in Transition." (Jan. 2013). <http://www.canurb.com/doc_download/86-2013-strategic-regional-research-report>
11. Transportation Tomorrow Survey. 2006. <<http://www.dmg.utoronto.ca/transportationtomorrowsurvey/>>
12. Strategic Regional Research.
13. Material cost in the GTHA is influenced by global markets; more details can be found in: Prism Economics and Analysis. "Big Move Implementation Economics - Construction Capacity Study." Commissioned by Metrolinx. (Dec. 2012).
14. US sales tax examples are not value-added taxes like the HST.
15. Los Angeles County Metropolitan Transportation Authority. "Measure R." <<http://www.metro.net/projects/measurer/>>
16. The term "direct" is used to describe who is specifically paying the tax and does not account for externalities or pass-through affects. These externalities are described in the economic impact sections.
17. Average household statistics include: 2.66 of people per household (Statistics Canada), average distance driven of 12,670 kilometres per year (extrapolated from Canadian Vehicle Survey data) and estimated taxable expenditures of \$42,100 (extrapolated from Statistics Canada data).
18. Baylor, Maximilian. "Ranking Tax Distortions in Dynamic General Equilibrium Models: A Survey." Department of Finance Canada. (Apr. 2005).
19. Burleton, Derek and Sonya Gulati, "Staying on Track: Sustaining Toronto's Momentum after the Global Recession – Moving the Region Forward in a Modest Growth, Fiscally-Constrained Environment Will Require New Approaches." TD Economics. (Apr. 2013). <<http://www.td.com/document/PDF/economics/special/SustainingTorontoMomentumAfterTheGlobalRecession.pdf>>
20. Baylor, Maximilian, and Louis Beauséjour. "Taxation and Economic Efficiency: Results from a Canadian CGE Model." Department of Finance Canada. (Nov. 2004). <http://www.ecn.ulaval.ca/~sgor/cit/baylor_FinanceCanadaWP_2004/F21-8-2004-10E.pdf>
21. Average household statistics include: 2.66 of people per household (Statistics Canada), average distance driven of 12,670 kilometres per year (extrapolated from Canadian Vehicle Survey data) and estimated taxable expenditures of \$42,100 (extrapolated from Statistics Canada data).
22. Impacts refer to contributions to Metrolinx from the Regional Fuel and Gasoline Tax. Residents are expected to pay a slightly higher amount due to the application of HST on top of the fuel and gasoline taxes.
23. Bento et al., "Distributional and Efficiency Impacts of Increased US Gasoline Taxes." American Economic Review 99: 1-37 (2009).
24. Natural Resources Canada. "Average Retail Fuel Prices in Canada." <www2.nrcan.gc.ca/eneene/sources/pripri/prices_byfuel_e.cfm>
25. Natural Resources Canada. "Taxes on Fuels." (Mar. 2009) <<http://www.nrcan.gc.ca/energy/sources/petroleum-crude-prices/1485>>
26. British Columbia Ministry of Finance. "How the Carbon Tax Works." <<http://www.fin.gov.bc.ca/tbs/tp/climate/A4.htm>>
27. Pigeon, Marc-André. "Federal and Provincial Consumption Taxes on Petroleum Products." Fuel Focus, 2011 Annual Report. Natural Resources Canada. (Jan. 2012). <<http://www.nrcan.gc.ca/energy/sources/petroleum-crude-prices/gazoline-reports/2012-01-13/2080>>

28. Shirocca Consulting. Review of TransLink's 2013 Base Plan for TransLink Commission. (Nov. 2012). <translinkcommission.org/Review_of_TransLink_s_2013_Base_Plan_by-Shirocca_vers3.pdf>
29. Tanguay, Georges A., and Ian Gingras. Gas Prices Variations and Urban Sprawl: An Empirical Analysis of the 12 Largest Canadian Metropolitan Areas. CIRIANO. (Apr. 2011). <www.cirano.qc.ca/pdf/publication/2011s-37.pdf>.
30. Kitchen, Harry, and Robin Lindsey. Financing Roads and Public Transit in the Greater Toronto and Hamilton Area. Commissioned by Residential and Civil Construction Alliance of Ontario. (Jan. 2013). <http://www.rccao.com/news/files/RCCAO_JAN2013_REPORT_LOWRES.pdf>
31. Oregon Department of Transportation. Oregon's Mileage Fee Concept and Road User Fee Pilot Program. (Nov. 2007). <http://www.oregon.gov/ODOT/HWY/RUFPP/docs/rufpp_finalreport.pdf>.
32. TransLink. 2011 Annual Report. p.8. <http://www.translink.ca/~media/documents/about_translink/corporate_overview/annual_reports/2011.ashx>
33. Shoup, Donald. The High Cost of Free Parking, American Planning Association, Planners Press. (2004).
34. Kolozsvari, Douglas, and Donald Shoup. "Turning Small Changes into Big Changes." (2003). <shoup.bol.ucla.edu/SmallChange.pdf>
35. McCahill, Christopher, and Norman Garrick. "Automobile use and land consumption: Empirical evidence from 12 cities." Urban Design International 17, 221-227 (2012).
36. Schaller, Bruce. "Free Parking, Congested Streets: The Skewed Economic Incentives to Drive in Manhattan." Schaller Consulting. (Mar 2007). <<http://www.schallerconsult.com/pub/freeparking.htm>>
37. Morrall, John and Dan Bolger. "The Relationship between downtown parking supply and transit use," Institute for Transportation Engineers Journal. (Feb. 1996).
38. Cervero, Robert. "Office Development, Rail Transit, and Commuting Choices." Journal of Public Transportation, Vol. 9, No. 5 (2006).
39. Shoup, Donald. "Evaluating the effects of cashing out employer-paid parking: Eight case studies." Transport Policy, Vol 4. No. 4, (1997).
40. Toronto Region and Conservation Authority. The Living City Report Card 2011. (2012). <http://www.thelivingcity.org/lcrc/LivingCityReportCard_web_r1.pdf>
41. Rinner, Claus and Mushtaq Hussain. "Toronto's Urban Heat Island – Exploring the Relationship between Land Use and Surface Temperature." Remote Sensing 3 (2011). <<http://digitalcommons.ryerson.ca/cgi/viewcontent.cgi?article=1033&context=geography>>
42. Ville de Montreal. "Parking lot tax." <http://ville.montreal.qc.ca/portal/page?_pageid=44,57217573&_dad=portal&_schema=PORTAL>
43. State Revenue Office Victoria. "Congestion Levy." <<http://www.sro.vic.gov.au/SRO/sronav.nsf/childdocs/-3A87315B22BC23FFCA2575A100441F59-EFC160ABBE873990CA2575B70020FC3B-F47D8E52D98A8D12CA2575A100444BBE>>
44. New South Wales Government. "Parking space levy." Office of State Revenue. <<http://www.osr.nsw.gov.au/taxes/parking/>>
45. Nottingham City Council. "Workplace Parking Levy." <<http://www.osr.nsw.gov.au/taxes/parking/>>
46. Ontario Ministry of Municipal Affairs and Housing. Financial Information Returns (FIR) Data. <http://csconramp.mah.gov.on.ca/fir/FI11PROV_SCHED61.pdf>
47. Association of Municipalities of Ontario. "Development Charges Reform." <http://amo.on.ca/wcm/amo/AMO_Content/Elections/Provi/2011Provincial/Development_Charge_Reform_Backgrounder_July_2011.aspx>
48. Ontario Public Transit Association and Canadian Urban Transit Association. "Investing in Urban Transportation: The Growing Need for Urban Mobility." Submission to The Hon. Dwight Duncan, Minister of Finance, 2013 Pre-Budget Consultations. (Jan. 2013) p.9.
49. Baumeister, Mia. "Development Charges across Canada: An Underutilized Growth Management Tool?." Institute for Municipal Finance and Governance, University of Toronto. (2012). <http://munkschool.utoronto.ca/imfg/uploads/201/imfg_no.9_online_june25.pdf>
50. Kitchen and Lindsey.
51. Mareschal, Roger. "Government-imposed Charges on New Housing in Canada (2009)." Canada Mortgage and Housing Corporation. (Nov. 2010). <<http://www.cmhc-schl.gc.ca/odpub/pdf/67163.pdf?lang=en>>
52. Amborski, David. "Alternatives to Development Charges for Growth-Related Capital Costs." Commissioned by Residential and Civil Construction Alliance of Ontario. (Mar. 2011). <http://www.rccao.com/news/files/RCCAO_March2011_REPORT-1.pdf>
53. Ontario Home Builders' Association. "Re: Metrolinx Investment Strategy." Submission to Metrolinx (Apr. 2013).
54. Statistics Canada. "Spending Patterns in Canada, 2009." (2010). <<http://www.statcan.gc.ca/pub/62-202-x/62-202-x2008000-eng.htm>>
55. Tanguay and Gingras.
56. Cao et al. "Benefit and Cost Analysis of the I-394 MnPASS Program." Intelligent Transportation Systems Institute, Centre for Transportation Studies, University of Minnesota. (Feb. 2012). <http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1632&ei=kRJGUMS_FMT66QGCS0H4DQ&usq=AFQjCNE0j-DWucjLBAMe6I6DTEqWc4wUnw&sig2=KIRrRzaTbX4ChAykFi60jA>
57. Lindblom, Mike. "Are Park-And-Pay Lots in Commuters' Future?" The Seattle Times. (24 Jul. 2012). <http://seattletimes.com/html/localnews/2018763016_soundtransit25m.html>





FIRST WAVE PROJECTS

1. Mississauga BRT
2. UP Express
3. Georgetown South Project
4. Finch West LRT
5. Toronto-York Spadina Subway Extension
6. Eglinton Crosstown LRT
7. Scarborough RT Replacement and Extension
8. Sheppard East LRT
9. Union Station Revitalization
10. VivaNext Rapidways

NEXT WAVE PROJECTS

- A. Hamilton LRT
- B. Dundas Street BRT
- C. Hurontario-Main LRT
- D. Brampton Queen Street Rapid Transit
- E. Relief Line
- F. Yonge North Subway Extension
- G. Durham-Scarborough BRT
- H. GO Rail Expansion
- I. GO Lakeshore Express Rail Service - Phase 1
(including Electrification)
- J. Electrification of GO Kitchener line and UP Express

Existing Rapid Transit

Controlled-Access Expressway

Urban Growth Centre

Metrolinx
20 Bay Street, Suite 600
Toronto, Ontario
M5J 2W3

Phone: 416.869.3600
Fax: 416.869.3525

www.metrolinx.com
www.bigmove.ca



