



# THE OTHER 25% THE BIG MOVE & ACTIVE TRANSPORTATION INVESTMENT

## Acknowledgments

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Clean Air Partnership (CAP) is a registered charity dedicated to improving air quality, minimizing greenhouse gas emissions and reducing the impacts of air pollution and climate change. The Toronto Centre for Active Transportation (TCAT), a project of CAP, conducts research, develops policy, and creates opportunities for knowledge sharing, all with the goal of providing evidence and identifying workable active transportation solutions.

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## 1.0 Executive Summary

There is a strong case to be made for dedicated investment in active transportation as a component of The Big Move: the regional transportation strategy for the Greater Toronto and Hamilton Area (GTHA). Currently, on a typical weekday, approximately 47% of automobile trips in a 24-hour period by drivers living in the GTHA are between 0 and 5 km (TTS 2006). A significant proportion of these short trips could feasibly be replaced with cycling or walking if the infrastructure was put in place to support these modes.

By 2031, The Big Move projects 33 million new transit trips and an increase in the percentage of people who live within two kilometres of rapid transit from 42% to 81% (Metrolinx 2013a,b). These short “first and last mile” trips to and from the rapid transit network present a significant new window of opportunity for cycling and pedestrian infrastructure planning and investment that will ensure more GTHA residents leave the car at home.

Having to travel two or more kilometres (longer than an easy walking distance) to and from rapid transit, is known as “the last mile problem” and can be a barrier to transit use. Solving this problem will be a vital step towards achieving the mode share targets of The Big Move and meeting the mobility needs of the region. Active transportation facilities are crucial components of a regional transportation network that can work to solve the last mile problem while contributing to the health and liveability of local communities.

The level of active transportation occurring in GTHA municipalities is currently lower than in many other Canadian cities (9 of the 10 cities showing the lowest rates for cycling and walking in Canada are in the GTHA (Moneysense.ca)). However, research shows a preference for walkable and transit-friendly neighbourhoods in the region (Toronto Public Health 2012b). The availability of dedicated, continuous, well-connected active transportation facilities has been directly associated with residents choosing to walk and cycle (Strauss 2013, Halton 2009, Birk and Geller 2005). Investment in active transportation facilities is needed to increase walking and cycling activity.

### Environmental, Health and Economic Benefits of Active Transportation

Active transportation projects represent a small proportion of transportation infrastructure costs yet present opportunities for substantial environmental, health and economic benefits.

For every average car trip that is replaced by cycling or walking, 850 grams of CO<sub>2</sub> per kilometre is prevented from being released into the atmosphere (Transport Canada

2011). Total GHG emissions from personal transportation in the Greater Golden Horseshoe (a geographic area which includes the GTHA and 10 additional regions and counties) were estimated at 16.0 million tonnes in 2006 (Pembina 2010). The Big Move projects a 33% increase in active transportation mode share from 9% to 12.5% across the GTHA in the AM peak period. If active transportation were to increase to a mode share of 12.5% for all personal trips in the Greater Golden Horseshoe, it can be estimated that up to 615,000 tonnes per year of GHG emissions would be displaced.

More transportation choices in the region including cycling and walking will be needed to manage an inevitable increase in travel demand due to population growth. Transit system expansion on its own will not be adequate to substantially reduce current levels of traffic congestion (Metrolinx 2008a). Walking and cycling will be necessary to reduce motor vehicle congestion and improve access to services.

Pedestrian and bicycle infrastructure projects have been shown to provide important economic benefits to individuals and communities. Two Toronto neighbourhood studies looking at business and customer preferences for accommodating active transportation infrastructure showed that customers who walked or cycled visited the neighbourhoods most often and spent the most money per month (Clean Air Partnership 2009, 2010). An evaluation of local businesses in New York City has shown an increase in retail sales up to 49% since the installation of a protected bike lane in Manhattan (NYC DOT 2012).

Physical inactivity and obesity are major contributors to chronic diseases like Type 2 diabetes, heart disease and some cancers. Physical activities like walking and cycling have been shown to help maintain a healthy body weight and decrease the risks of chronic diseases. (Toronto Public Health 2012a).

The average annual cost of obesity in Ontario is considerably higher than other provinces at approximately \$2.35 billion. Toronto Public Health has estimated that levels of walking and cycling activity in 2006 prevented about 120 deaths in the Toronto population with an associated economic value between \$130 million and \$478 million. If walking trips were to increase in Toronto to 12% and cycling trips to 6%, these calculations suggest that 100 more deaths would be prevented with additional savings of \$109 million to \$400 million annually. (Toronto Public Health, 2012)

### Defining Regional Priorities for Active Transportation Investment

Research and interviews conducted with GTHA municipal staff revealed a need for greater clarity around Metrolinx's priorities for active transportation as a component of the Big Move. The Big Move (2008) indicated that a provincial funding commitment increased over time to at least \$20 million per year would be provided to municipalities to complete walking and cycling networks. However, an annual funding program has

not been put in place and Metrolinx's priorities for active transportation investment are unknown.

In December 2012, Metrolinx released a \$34 billion transit expansion plan requiring \$2 billion per year in dedicated funding. Seventy-five percent of this funding is intended for transit expansion projects with the other 25 % going to fund local improvements and other travel modes. The breakdown of this 25% shows 15% for municipal transit support, 5% for improvements to regional highways, and 5% for walking and cycling networks, transit fare integration, intelligent transportation systems, Mobility Hubs, and urban freight (Metrolinx 2013a,b). Metrolinx has not yet clearly identified a dedicated portion of "the other 25%" for cycling and walking networks.

Cycling and walking facilities are being implemented as part of some transit expansion projects underway through the first phase of the Big Move. However, the status of plans, available funding sources and annual budgets for cycling and walking infrastructure vary widely among the municipalities creating a variety of funding needs and priorities.

An additional dedicated funding source would accelerate the implementation of municipal active transportation plans or in many cases keep them on track. Active transportation networks are often implemented according to capital project schedules that prioritize roads and transit. Additional funding through The Big Move could have an important impact on active transportation in the region if used to prioritize the completion of gaps in cycling and walking networks.

Regional transit agencies in Canada and the U.S. are making dedicated investments to build active transportation networks. They recognize cycling and walking as integral components of regional transportation that support transit ridership. Drawing from a suite of revenue sources, these transit agencies set aside annual funding specifically for active transportation projects and have developed regional plans for active transportation. These organizations provide an opportunity for the GTHA to model best practices in regional active transportation planning and investment.

### Next Steps

Section 6 of this report offers a list of proposed actions to guide the next phase of planning for investment in walking and cycling networks through The Big Move. These recommendations are:

- 1) Establish clear leadership for regional active transportation planning and investment;
- 2) Dedicate a specific proportion of regional transit funding for active transportation infrastructure development;

- 3) Create a regional coordinating and advisory committee to support active transportation infrastructure implementation;
- 4) Develop a regional active transportation plan including undertaking a cost-benefit analysis of active transportation infrastructure to inform investment decisions; and
- 5) Establish a communications and outreach strategy and identify regional active transportation champions to raise the profile of active transportation and garner public support throughout the region for active transportation investment.

**Active transportation is unparalleled in minimizing the need for costly, space-intensive infrastructure. Promoting active transportation can help us address our current and growing infrastructure deficit at minimal cost. Shifting to active transportation can also help reduce congestion, along with its attached social, environmental and economic costs. – (Metrolinx Green Paper #3 January 2008)**

## 2.0 Introduction

In November 2008, Metrolinx (the regional transportation authority for the Greater Toronto and Hamilton Area (GTHA)) finalized a Regional Transportation Plan for the GTHA. This plan, known as The Big Move, was developed in consultation with the regional municipalities to address traffic congestion that is expected to result from population growth in the region over the next 20 years.

The Big Move and its \$50 billion dollar cost represent the largest transportation strategy and investment plan in the region's history. Implementation of the plan is well underway with over \$16 billion of new transit projects currently in progress. In December 2012, Metrolinx released a \$34 billion transit expansion plan building on the strategy put forward in 2008. This expansion would require \$2 billion per year as dedicated funding.

Following extensive consultation throughout the GTHA, Metrolinx has recommended four revenue tools to the province with a view to dedicated and fair funding sources. These include a 1% increase to the province's Harmonized Sales Tax for \$1.3 billion annually (A Mobility Tax Credit has also been recommended as a way to avoid overburdening people with lower incomes), a regional fuel and gasoline Tax (5 cents per litre) for \$330 million annually, a Business Parking Levy on all off-street, non-residential parking spaces for \$350 million annually, and 15% of Development Charges for \$100 million annually. These tools would provide the estimated annual revenue of \$2 billion for transportation improvements. Three additional tools are also being recommended because of their positive policy benefits: High Occupancy Toll Lanes, Paying for Parking at Transit Stations and Land Value Capture which means contributions from landowners whose property values increase due to their proximity to new rapid transit infrastructure.

Preliminary budget planning shows 75% of funding for this next phase would be for transit expansion projects with the other 25% going to fund local improvements and other travel modes. To date, the breakdown of this 25% shows 15% for municipal transit support, 5% for improvements to regional highways, and 5% (or \$60 million annually) for other projects, which could include walking and cycling networks, transit fare integration, intelligent transportation systems, Mobility Hubs, and urban freight (Metrolinx 2013a,b). It is not clear how much of the 5% will be allocated to active transportation but the 2008 Regional Transportation Plan had indicated that a provincial funding commitment increased over time to at least \$20 million per year would be provided for municipalities to complete walking and cycling networks.

The ability of the regional transportation plan to transform local municipalities into liveable, healthy and prosperous places will hinge upon the "first and last mile" of transit trips. These are the trips that connect us to the transit network and which are an

integral part of the travel experience. Without dedicated investment in active transportation infrastructure, cycling and walking connections will not be integrated into the Big Move. Without the availability of safe and convenient walking and cycling routes connecting to regional transit, there will be less incentive for GTHA residents to leave the car at home.

Designing safe, connected active transportation routes will be needed to increase levels of walking and cycling in the region. Research has shown that street design has been directly associated with residents choosing to walk and cycle and more people will walk if continuous, well-connected sidewalks are available (Halton 2009). Building a connected bicycle network has been correlated to substantial increases in bicycle use. In the City of Portland, Oregon, cycling increased 210% from 1991 to 2004. This increase was attributed to the expansion of bicycle infrastructure to create a connected network with good quality facilities. Areas of the city that lacked connected and well-designed facilities did not show this increase in bicycle use (Birk and Geller 2005). Dedicated bicycle facilities, especially those that are separated from other traffic, encourage more cycling because they are perceived to be safer by many cyclists (Halton 2009). Intersections in Montreal with protected bike lanes saw 61% more bike traffic and intersections with painted bike lanes saw 36% more cyclists than those without any cycling facilities (Strauss & Miranda-Moreno 2013). Bicycle route infrastructure has also been shown to be a determinant of cycling safety (Teschke K, et.al. 2012).

To date, much work has been undertaken by Metrolinx to evaluate the economic impacts of traffic congestion in the region and to assemble the evidence that points to the environmental and economic benefits of integrated, region-wide public transit projects. In order for transit investment to transform neighbourhoods into active communities where people want to live, work, and play, this investment must also include the infrastructure that is needed to support active transportation. This same level of attention to the cost-benefit analysis of active transportation infrastructure is required to inform investment decisions and to identify the appropriate level of funding for these elements of The Big Move projects.

## **2.1 Outline and Goals of this Report**

This report examines the case for investment in active transportation as a component of The Big Move: the regional transportation strategy for GTHA. It focuses on opportunities to coordinate and support regional active transportation planning in the GTHA through investment in active transportation facilities. The strategy to reduce regional and local traffic congestion must include a suite of transportation options for GTHA residents. Active transportation investment presents an opportunity for the region to provide viable, cost-effective and healthy travel options within local municipalities. These trips will incorporate the “first and last mile” of regional transit trips and are therefore an integral component of The Big Move.

The following pages provide an examination of the current status of active transportation planning in the GTHA, case study examples of active transportation investment by transportation agencies in other jurisdictions, and available research demonstrating the economic, health and environmental benefits of active transportation investment.

A list of proposed actions are offered to guide the next phase of planning for investment in walking and cycling networks through The Big Move.

## **2.2 Complete Streets Forum 2013**

The Toronto Centre for Active Transportation organizes an annual active transportation conference called the Complete Streets Forum to bring together multiple stakeholders and professionals to discuss new developments in the field of active transportation. On May 27, 2013 TCAT hosted the sixth annual Complete Streets Forum in Toronto. The closing plenary panel for this one-day forum was titled: “What would you do with 60 million per year? The importance of the Metrolinx investment strategy for active transportation.” Through this panel session, the concept of a dedicated revenue stream for active transportation facilities in the GTHA was pitched to the region’s core Active Transportation community. Panel members included Jacquelyn Hayward-Gulati, Manager, Cycling Office, City of Mississauga; Leslie Woo, Vice President, Policy, Planning & Innovation, Metrolinx; and Loy Cheah, Director of Transportation Planning, Regional Municipality of York.

Panel presentations underscored the importance of Metrolinx funding to provide active transportation connections to future rapid transit stations that will enable greater uptake of regional transit. Panelists identified other important opportunities that could be realized through dedicated funding, such as the development of regionally significant active transportation routes, and the completion of crucial connections over provincial highways and other significant physical or geographical barriers.

Conference delegates were presented with updated information on the proposed revenue tools for the next phase of the Big Move. No information was provided with regard to the proportion of funding that could be expected for active transportation facilities, the types of projects that might be eligible for funding, nor the process by which funds may be allocated by Metrolinx.

## **3.0 Benefits of Active Transportation Infrastructure Investment**

### **3.1 The Cost of Transportation Infrastructure**

Relatively speaking, cycling and walking facilities can represent a small portion of a total project budget. Capital costs for construction as well as ongoing operating and maintenance costs can be much lower for cycling and walking facilities compared to road and transit infrastructure.

#### ***Transportation Capital Costs***

A 2011 report from the Pembina Institute estimated construction costs for the components of Toronto's proposed Transit City Plan in comparison with an alternate proposal from the City's mayor to build an approximate 18km subway expansion. Light rail capital transit costs were estimated to be **\$140 million per kilometre**. Subway costs were much higher at **\$344 million per km**. Metrolinx has estimated the cost of light rail systems running underground or on elevated structures to be between **\$200-250 million per kilometre** and subway construction to cost somewhere within the range of **\$300-500 million per kilometre**

**Capital costs for building new city roads** are estimated at **\$5 million per kilometre** for a 4 lane road, **\$3.8 million per km** for a 2 lane road, and widening existing roads from 2 lanes to 4 lanes costs approximately **\$2.5 million per kilometre** (City of Vaughan 2012). Projects in the City of Vaughan to build a new highway interchange and to make improvements to an existing interchange have been estimated to cost **\$25 million** and **\$15 million** respectively.

Most **pedestrian and bicycle facilities** represent a fraction of these capital costs with new sidewalks costing approximately **\$110,000 per kilometre**, signed bike routes (no pavement markings, sometimes called bike boulevards) are approximately **\$2,000 per kilometre** (City of Mississauga 2009). Painted bike lanes applied to existing roads cost about **\$20,000 per kilometre** (City of Vaughan 2012). Bicycle lanes as part of a road reconstruction project can be approximately **\$550,000 per kilometre** (City of Mississauga 2009). Multi-use recreational paths or boulevard paths range from **\$225,000**

- **\$360,000 per kilometre** but can vary widely depending on a variety of environmental factors (City of Vaughan 2012, City of Mississauga 2009). In calculating costs for bicycle facilities, the assumption is linear kilometres on flat terrain with no need for special treatments. Costs per kilometre are based on two-way facilities for multi-use trails but otherwise typically based on one-way facilities (e.g. painted bicycle lanes).

Costs for road widening to include bicycle lanes or for building separated cycle tracks are higher but are still considerably less compared to transit and new city roads. **Road widening for bicycle lanes** costs approximately **\$1.2 million per kilometre** (City of Mississauga 2009). Unit costs for separated cycle tracks (also known as segregated bike lanes) are highly variable depending on the type of separator, intersection treatments, presence of dedicated signals, and whether they are being retrofitted to an existing roadway or are part of new construction. Costs can range between **\$40,000 to \$1,000,000 per kilometre** (Region of Peel 2011).

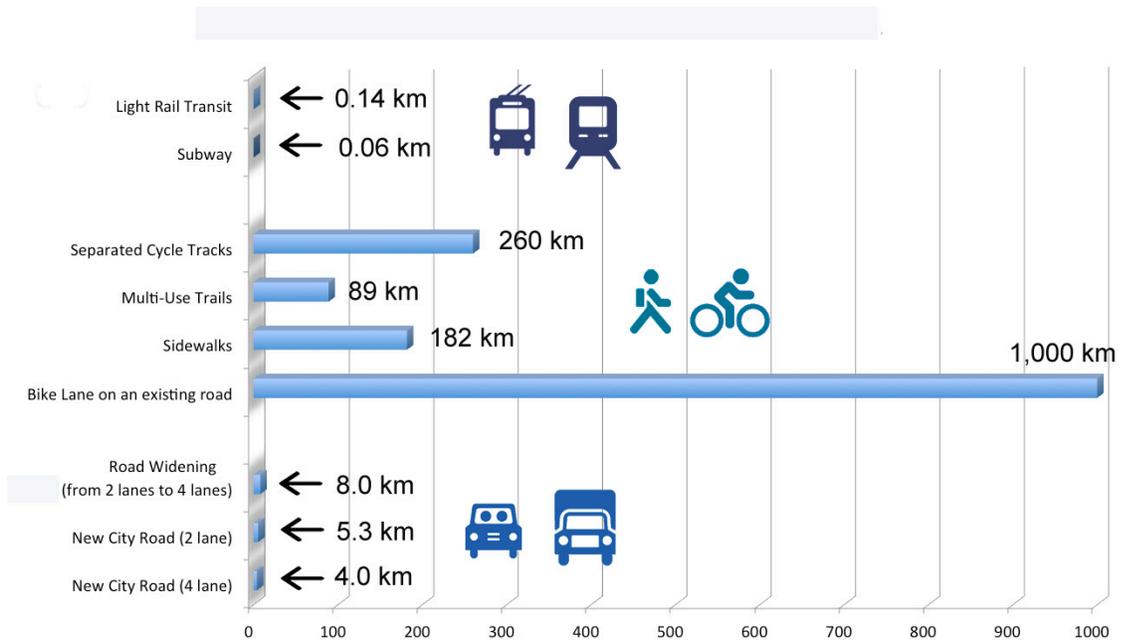
Parking infrastructure for cycling is considerably more cost efficient than for motor vehicles. Typical **car parking** costs **\$5,000 per space** in a surface parking lot and could range from **\$15,000 up to \$35,000 per space** or more in a parking garage. (Litman 2012).

The City of Toronto's post and ring **bicycle rack costs** approximately **\$160 per rack** to produce and install and it parks two bicycles. Covered bike parking typically costs **\$100-\$500 per bike space** and a **full service bicycle station** with amenities such as personal lockers, showers washrooms and change facilities cost approximately **\$3,500 per bike space** (based on City of Toronto project budget estimates).

Metrolinx has identified \$2 billion per year as the funding required to build the next phase of The Big Move. Five percent of this annual funding (\$60 Million dollars) could build approximately 460km of sidewalks, 600km of basic pedestrian enhancements, or 3,000km of painted bicycle lanes on existing roadways in the region. That is almost three times the size of the City of Toronto's entire planned bicycle network as identified in the Toronto Bike Plan (2001). With a \$20 Million dedicated annual investment in cycling and walking networks as outlined in The Big Move 2008 report, the region could build approximately 260km of separated cycle tracks, 89km of multi-use trails, 182 km of sidewalks, or 1,000 km of painted bike lanes every year.

Metrolinx has not yet specifically identified the amount of funding that will be dedicated annually to cycling and walking facilities to accelerate municipal capital budgets and augment active transportation investments across the GTHA. At the time of this report Metrolinx has identified 5% of the expected \$2 billion annual revenue for walking and cycling infrastructure, fare integration, mobility hubs, urban freight movements, intelligent transportation systems, and user information systems.

**Figure 1: How Many Kilometres could be built for \$20 Million? (per km costs)**



### **Operations and Maintenance Costs.**

In addition to capital costs, maintenance and operating costs associated with different transportation modes must be considered when making investment decisions. The Big Move is estimated to cost \$50 billion in capital over 25 years and approximately \$1.5 billion in annual operation and maintenance costs. (Metrolinx 2008c).

### **Transit System Operating Costs**

Transit operating costs can be substantial and require some additional public funding to supplement revenue generated by passenger fares, advertising, rent, commuter parking and other income. The Toronto Transit Commission’s proposed gross operating budget for 2013 is **\$1.54 billion** for conventional operations (TTC 2012). With a projected ridership of 528 million in 2013, TTC operating cost estimates for this year are **\$2.92 per person trip**. The approved 2012 gross operating budget for York Region Transit/Viva was just over **\$175 million**. 2012 ridership statistics show 22,156,781 revenue passengers suggesting operating costs of **\$7.92 per person trip** (York Region 2012, 2013). Durham Region Transit’s approved operating budget for 2012 including Bus Rapid Transit and tangible capital assets was **\$61,611,000**. Durham Region Transit provided service to 10.3 million passengers in 2012 suggesting operating costs of **\$5.98 per passenger trip** (Durham Region 2013).

## Road Network Operating Costs

Annual operating costs for road networks are often higher in comparison to bicycle and pedestrian network maintenance cost estimates, however in many cases pedestrian and bicycle network costs are not separated from road operations so it is difficult to provide an exact comparison between the two.

For example, total operating costs for all roadway operations including all road maintenance and traffic signal maintenance costs in 2011 for Regional roads in York Region were **\$9,327 per lane kilometer, increasing to \$10,537 in 2013**. Costs for road maintenance only were \$7,461 per lane km in 2011 and budgeted at \$7,928 per lane kilometre in 2013. Total operating costs for road maintenance (including winter and non-winter maintenance), traffic signal maintenance and administrative support costs (excluding fleet costs and Forestry programs) (York Region 2012). York Region's 2012 Operating Budget allocated \$53.5 million to manage approximately 3,500 lane kilometres of Regional roads. This would amount to approximately \$15,286 per lane kilometer total operating budget.

Transport Canada's Full Cost Investigation (FCI) project, provides estimates of both financial and social costs of transport in Canada. Financial costs include operating and capital costs which social costs include costs associated with accidents, delay, air pollution, Greenhouse Gas emissions and noise. This work has concluded that the financial and social costs of infrastructure for light road vehicles in Ontario are much higher than for other modes at \$59 and \$10 billion respectively compared to the financial costs of rail transportation in Ontario at approximately \$2.3 billion and \$0.5 billion (Transport Canada 2008). Active transportation modes were not considered in Transport Canada's study.

Table 1 shows an example of the 2011 operating and maintenance costs for some single-tier and upper-tier (regional) municipalities in the GTHA. Various factors influence the operating and maintenance costs of the road network in a municipality, such as the size of the municipality, traffic volumes (higher volumes increase deterioration), weather issues, service standards, urban and rural mix, and age of the infrastructure. A key factor is the mix of roads under a municipality's responsibility. Single-tier municipalities are responsible for maintaining all types of roads, including arterial, collector, and local roads, and in some cases, expressways. Upper-tier (regional) governments are responsible for regional roads only. Costs shown for regional or upper tier jurisdictions do not include local roads and represent maintenance from curb to curb while single tier municipalities are responsible for the entire right-of-way which could include pavements, sidewalks, boulevards, winter maintenance, signage, street lighting, litter pickup and sidewalk/boulevard tree maintenance. Road Maintenance costs shown in column 2 include all of the former costs as well as amortization costs (the

depreciated value of assets such as pavements, bridges, culverts, and traffic signals). This data shows that road operations and maintenance require a significant amount of municipal/regional budgets and that variations in land use, urban form, geography, municipal standards, traffic volumes, and more, result in considerable cost differences from jurisdiction to jurisdiction.

**Table 1: Operating and Maintenance Costs for Municipal / Regional Roads in the GTHA (OMBI 2011)**

<b>Municipality / Region</b>	<b>2011 Road Operating Costs (per lane km)</b>	<b>2011 Road Maintenance Costs (per lane km)</b>
Hamilton	\$9,591	\$21,798
Toronto	\$31,186	\$37,883
Durham Region	\$16,875	\$32,440
Halton Region	\$21,290	\$37,382
York Region	\$14,878	\$27,334

### **Bicycle Network Maintenance Costs**

The operating costs associated with active transportation infrastructure can be difficult to separate from the road operating functions since they are included within road operating budgets and because bicycle networks are under development and show very different levels of connectivity and completion within municipalities and across the region. Operational costs will increase at different rates over time as more of the network is implemented. New trails and bike lanes also have lower maintenance costs in the first few years after installation. The maintenance cost estimates in Table 2 illustrate a variety of results from different jurisdictions.

The town of Richmond Hill has included maintenance costs in their Pedestrian and Cycling Master Plan Study (2010):

Signed Bike Route (for both bike route and bike route with edge line) **\$1,650** per km

Signed Bike Route with Shoulder Edge Lines (edge lines) **\$9,150** per km

Bike Lane (edge lines and stencils) **\$15,800** per km

Bike Lane (signs) **\$2,000** per km

Multi-use Trails **\$2,000** per km

*Table 2: Annual Cost Estimates for Bicycle Network Maintenance (per km)*

<b>Region / Municipality</b>	<b>Estimated Annual Costs to Maintain On-street Bicycle Lanes and Routes</b>	<b>Annual Costs to Maintain Trails</b>
Halton Hills (Halton Hills Cycling Master Plan 2010)	\$10,000	\$4,000
Richmond Hill	\$1,650 - \$15,800	\$2,000 - \$6,000
Los Angeles County (Los Angeles County 2010 Bicycle Plan)	\$5,000	N/A

***Pedestrian Network Maintenance Costs***

Pedestrian network maintenance costs are not separated from road operations budgets in GTHA municipalities so it is very difficult to quantify these costs on their own.

***Bicycle Parking Maintenance and Operations.***

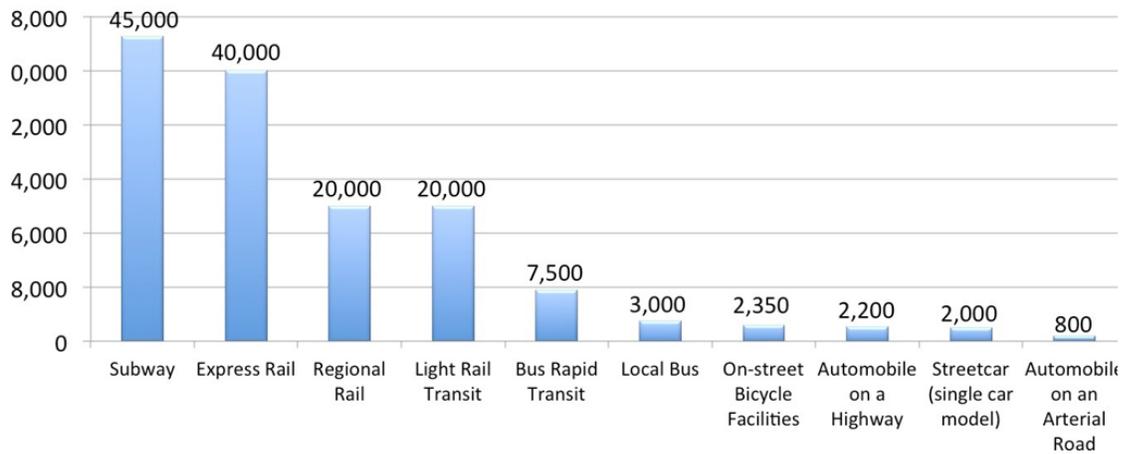
Operating costs for a staffed, full service bike station are approximately \$100-\$200 per space per year depending on the size and usage of the facility (based on City of Toronto project budget estimates). Operating costs for car parking facilities typically range from \$500 to \$800 per space per year (Litman 2012).

***Peak Hour Capacities by Mode:***

Peak hour capacities for the following modes of transportation are listed in the number of persons per hour per direction:

Express Rail: 25,000-40,000; Regional Rail 5,000-20,000; Subway 25,000-45,000; LRT 2,500-20,000; BRT 2,000-7,500; Streetcar (single car model): 2,000; Local bus: 2,000-3,000, Automobile on a highway, assuming 1.2 people per car and no congestion: 2,200; Automobile on an arterial road, assuming 1.2 people per car and no congestion: 800 (Metrolinx 2013).

**Figure 2: Peak Capacities of Different Travel Modes (# persons per hour)**



Capacities for bicycle facilities are listed between 500 and 2,350 bicycles per hour by the US Highway Capacity Manual - depending on the type of facility, the number of lanes, and one-way or two-way operation (Allen 1998).

In downtown environments, active transportation can move more people, more efficiently than motor vehicles. Where cars and bicycles travel at similar speeds, bike lanes can accommodate 7 to 12 times as many people per metre of lane per hour than car lanes and sidewalks can carry approximately 20 times the volume of people per hour compared to cars on roads in urban settings (Transport Canada 2011).

### 3.2 Cost Effectiveness of Active Transportation Investments

The capital and operating costs of cycling and walking facilities are most often comparatively lower than the cost of building complete roads, and transit facilities. However, in order to determine the relative cost effectiveness of active transportation investments there are several factors to consider.

Regional data collection of pedestrian and bicycle usage has not been formalized in the GTHA. There is no regional data collection program in existence. Some, but not all municipalities are collecting local usage data and are developing data collection programs, others collect data on a project basis and / or as part of routine traffic counts that may not capture accurate data on cyclists and pedestrians due to

weather, time of day, location or counting methods. There is a need to establish baseline data for active transportation in the region and coordinate data collection methodologies across the municipalities to obtain reliable and comparable information for both local and regional planning.

The potential economic benefit of increased levels of walking and cycling is another area that requires ongoing study. Personal and community cost savings and benefits, potential savings in health costs due to increased daily physical activity, and the possibility to improve local air quality by encouraging a shift to non-motorized forms of transportation are all part of the business case for investment in walking and cycling networks.

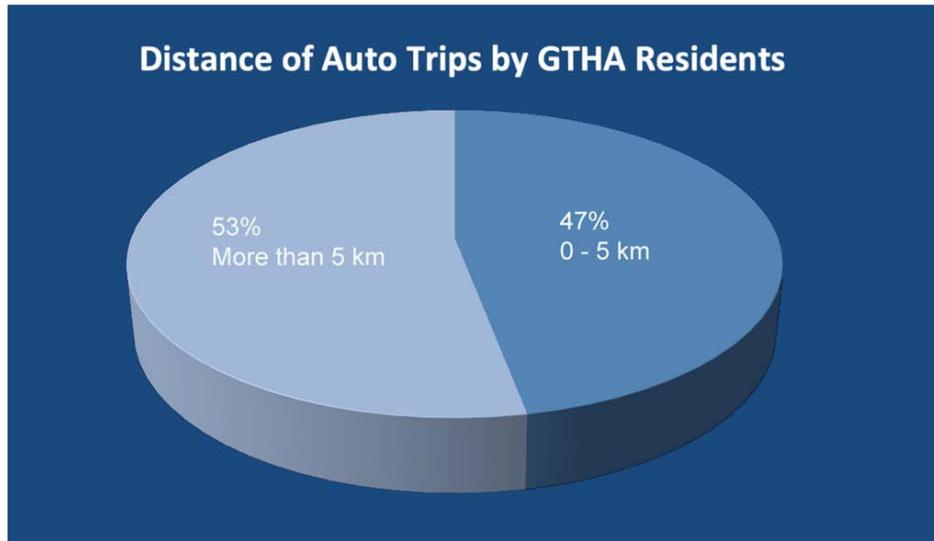
### **3.3 Reduced Traffic Congestion and Improved Local Air Quality**

Population growth projected for the region will cause the amount of car traffic on the roads (total vehicle kilometres travelled) to increase despite significant projected gains of The Big Move (Metrolinx 2008a). As a result, transit system expansion on its own will not be adequate to substantially reduce GHG emissions. Investment in cycling and walking infrastructure will continue to be needed to shift trips away from motor vehicles. For every average car trip that is replaced by cycling or walking, 850 grams of CO<sub>2</sub> per kilometre is prevented from being released into the atmosphere (Transport Canada 2011).

Walking and cycling helps to reduce motor vehicle congestion and improves access to services. On a typical weekday, approximately 47% of automobile trips in a 24-hour period by drivers living in the GTHA are between 0 and 5 km (TTS 2006). A significant proportion of these short trips could feasibly be replaced with cycling or walking if the infrastructure was put in place to support these modes. This would provide more travel options for the “first and last mile” of every transit trip. Investing in Active transportation infrastructure could have an important impact on reducing auto-dependency in the region. More people will be able to leave their cars at home and take full advantage of the region’s transit investments.

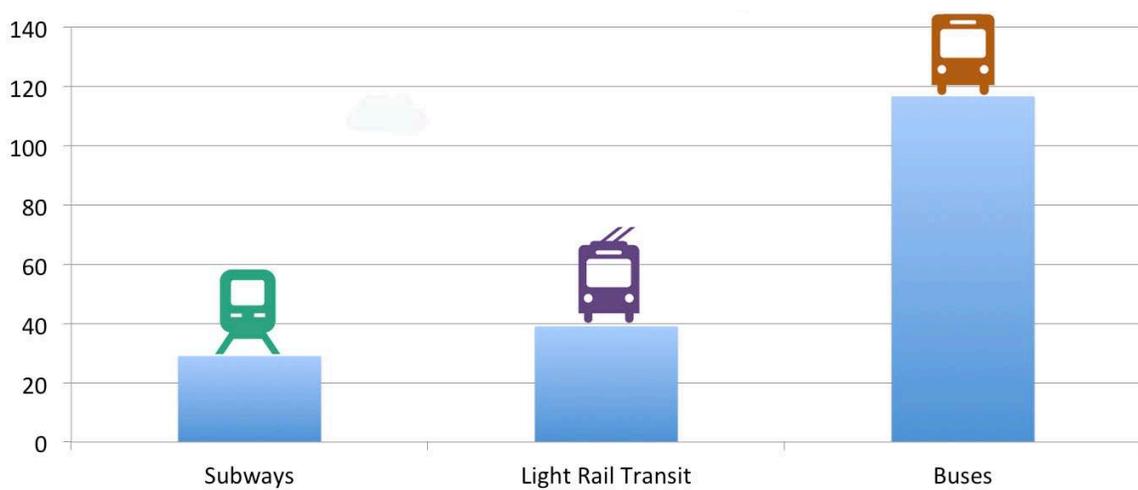
More transportation choices in the region including cycling and walking will be needed to manage an inevitable increase in travel demand due to population growth. The Big Move is expected to curtail automobile traffic so that 2.1 million a.m. peak period trips (in 2006) will only increase to about 2.6 million over 25 years, instead of about 3.2 million if things stay as they are now (Metrolinx 2008a).

Figure 3: Percentage of GTHA Auto Trips in a 24-hour period travelling 5km or less



Road Transportation is a significant source of air pollutants and has an important impact on air quality. Road transportation represented 19% of total GHG emissions (135 megatonnes of CO<sub>2</sub> equivalent) in Canada in 2011. Transportation also produces a large share of air pollutant emissions in Ontario, with 45% of Carbon Monoxide (CO), 27% of Nitrogen Oxides (NO<sub>x</sub>), and 13% of Volatile Organic Compounds (VOCs) coming directly from road transportation (MTO 2012).

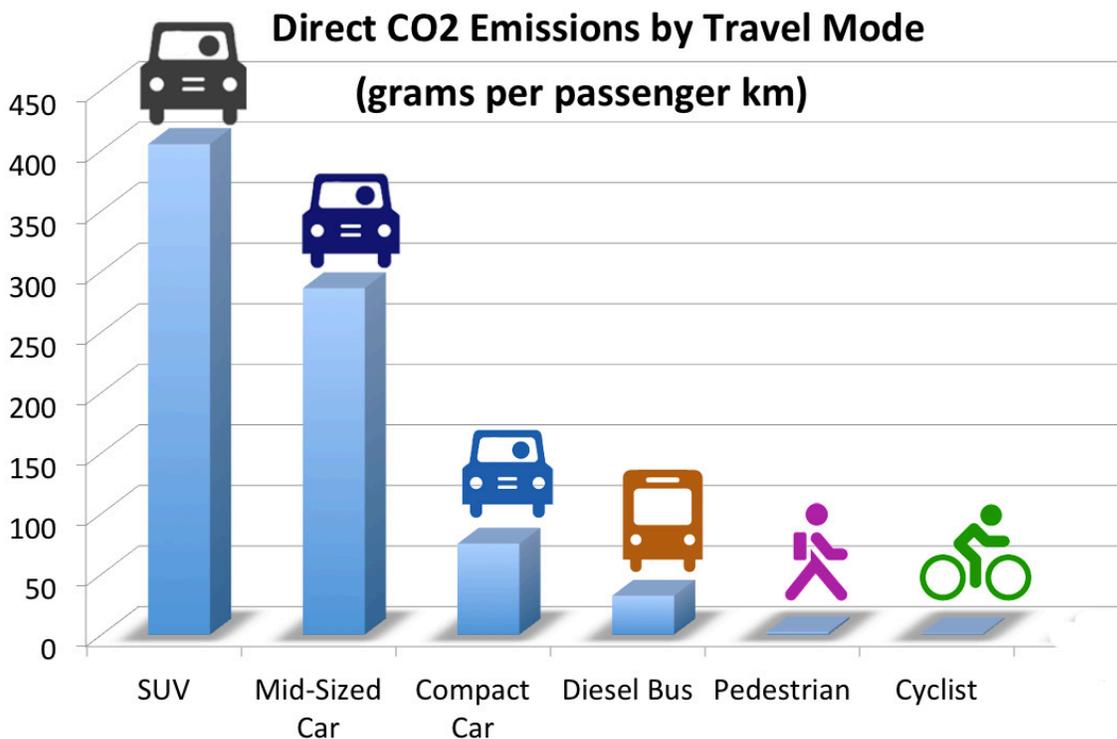
Figure 4: GHG Emissions From Transit (tonnes of CO<sub>2</sub>e per million passenger km)



Rail transportation produces considerably less greenhouse gas emissions than road transportation. Tonnes of CO<sub>2</sub>e emitted per million passenger kilometres has been estimated at 29 for subways, 39 for light rail transit and 116.6 for buses (Pembina 2011).

In contrast, active transportation releases little to no greenhouse gases (estimates are as low as 1 gram for cycling and 2 grams for walking per kilometer travelled (Hydro Quebec 2006)). A shift toward active modes for local trips could have a dramatic impact on local air quality in the region. Total GHG emissions from personal transportation were estimated at 16.0 million tonnes in 2006 in the greater golden horseshoe (Pembina 2010). (The Greater Golden Horseshoe is the geographic area identified in the Province of Ontario's 2006 *Places to Grow: Growth Plan for the Greater Golden Horseshoe*. The area includes the GTHA and 10 additional regions and counties. It covers approximately 70% of Ontario's population). Metrolinx's projections for future walking and cycling mode share in the GTHA during the AM peak period are from 9% to 12.5%. If active transportation were to increase to a mode share of 12.5% for all personal trips across the greater golden horseshoe, it can be estimated that up to 615,000 tonnes per year of GHG emissions would be displaced.

**Figure 5: CO<sub>2</sub> Emissions by Travel Mode**



### 3.4 Health Benefits and Economic Gains

Pedestrian and bicycle infrastructure projects have been shown to provide important economic benefits to individuals and communities. Increasing the use of active travel modes can save on external, community costs such as time lost to traffic congestion and health expenses from illnesses caused by an inactive lifestyle and air pollution.

#### *Personal Cost Savings*

The annual cost to own and operate a mid-sized car is about **\$7,574 for the year** (Transport Canada 2011). The cost to purchase a basic commuter bicycle ranges from **\$200-\$600**. The annual cost to operate a bicycle (assuming 2 advanced tune ups a year) is approximately **\$170**.

#### *Community Cost Savings and Benefits*

One US study undertook a detailed analysis of 58 projects in 11 different US cities to study employment opportunities that were created by the design and construction of pedestrian, bicycle, and road infrastructure. Bicycle projects created the most jobs at 11.4 jobs for each \$1million spent, pedestrian-only projects created 10 jobs per \$1 million, multi-use trails created 9.6 jobs per \$1 million and road-only projects created the fewest number at 7.8 jobs per \$1 million spent (Garrett-Peltier 2011.)

In New York City, the construction of bicycle and pedestrian facilities and the improvement of public spaces has led to important local economic benefits. An evaluation of the local businesses on 9<sup>th</sup> Avenue from 23<sup>rd</sup> to 31<sup>st</sup> streets has shown an increase in retail sales up to 49% since the installation of a protected bike lane on 8<sup>th</sup> and 9<sup>th</sup> Avenues in Manhattan. Following streetscape improvements to Union Square North in Manhattan, including a protected bike lane, pedestrian safety improvements at intersections and a new pedestrian plaza, there were 49% fewer commercial vacancies compared to a 5% increase in vacancies throughout the whole borough (NYC DOT 2012).

In the UK, the London School of Economics evaluated the socio-economic benefits of cycling at a national level and found that bicycle use contributed £2.9 billion (\$4.5 billion CAD), or £230 (\$357 CAD) per cyclist annually to the UK economy. (Grous 2010)

Two Toronto-based studies by the Clean Air Partnership looked at merchant and patron preferences for reallocating road space to convert auto parking spaces to widened sidewalks or bike lanes in Toronto's Bloor-Annex and Bloor West neighbourhoods. Walking was the predominant travel mode reported by patrons in both neighbourhoods. The majority of merchants surveyed believed that improving

pedestrian or bicycle facilities would either increase or not change their daily number of customers. The majority of people surveyed (78% in the Bloor-Annex neighbourhood and 58% in Bloor West Village) said they would prefer that space on the street be reallocated to widen sidewalks or to construct a bike lane, even if parking was reduced by 50%. The majority of respondents who preferred improvements for active transportation chose a bike lane over widened sidewalks. Survey results showed that patrons who arrived by walking or by bicycle visited the neighbourhoods most often and spent the most money per month (Clean Air Partnership 2009, 2010).

### ***Health Benefits***

Physical inactivity and obesity are major contributors to chronic diseases like Type 2 diabetes, heart disease and some cancers. A 2010 Toronto Health Status Report showed that in 2008 at least 1 in 5 adolescents and 4 out of 10 adults were considered obese or overweight in Toronto. Youth in the Region of Peel are at significant risk for poor health due to issues such as high body mass index and low levels of physical activity. Thirty-two percent of students in grades 7 to 12 are overweight or obese. Forty-one percent of grade 9 students were identified as being in the “low fit” category for cardiorespiratory fitness and 76% were identified as “needing improvement” in musculoskeletal fitness levels. Sixty-two percent of parents are physically inactive (Region of Peel 2013).

Physical activities like walking and cycling have been shown to help maintain a healthy body weight and decrease the risks of chronic diseases (Toronto Public Health 2012a).

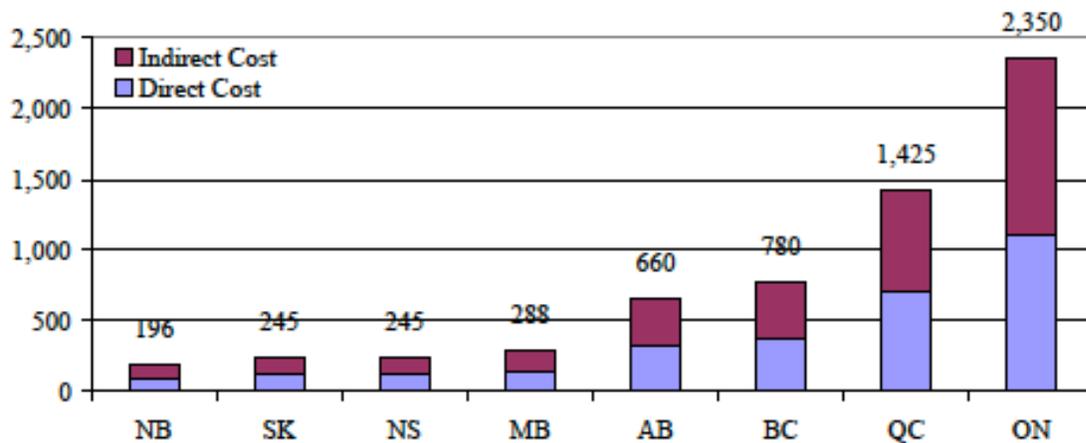
Toronto Public Health’s Walkable City report investigated the relationship between the walkability of a neighbourhood, the travel choices of residents and their body mass index (BMI) (BMI is considered a good indicator for obesity and health risk when comparing populations). Walkability was measured using a Walkability Index which measures and evaluates neighbourhood design features that are associated with utilitarian walking: residential density, retail ratio, land use mix, and intersection density. Results showed that residents walk and use transit more often in more walkable neighbourhoods. In Toronto, residents from the most walkable neighbourhoods walked (for utilitarian purposes) 2.7 times more, and reported an average BMI that is one point less than residents in the least walkable neighbourhoods (Toronto Public Health 2012b). Physical activity is associated with the built environment and transportation choices, and has been found to support mental health (Frank 2008).

Recognizing that the built environment plays a significant role in supporting a healthy population by providing opportunities for active transportation and physical activity,

Peel Region has formalized a connection between its public health and planning departments and is creating evidence-based tools and guidelines to design neighbourhoods that promote active lifestyles such as the Peel Healthy Development Index, a framework to provide quantifiable health standards to inform planning decisions.

In addition to improving health and the quality of life for residents of the GTHA, increased physical activity, enabled through improved cycling and walking networks, has the potential to create significant economic savings. In 2001, the combined direct health care costs and indirect costs of physical inactivity in Canada was \$5.3 billion and for obesity was \$4.3 billion a year. The average annual cost of obesity in Ontario is considerably higher than other provinces at approximately \$2.35 billion (Katzmaryzk 2004).

**Figure 6: Average Annual Cost of Obesity in Select Canadian Provinces in \$Millions (Parliamentary Information and Research Services 2005)**

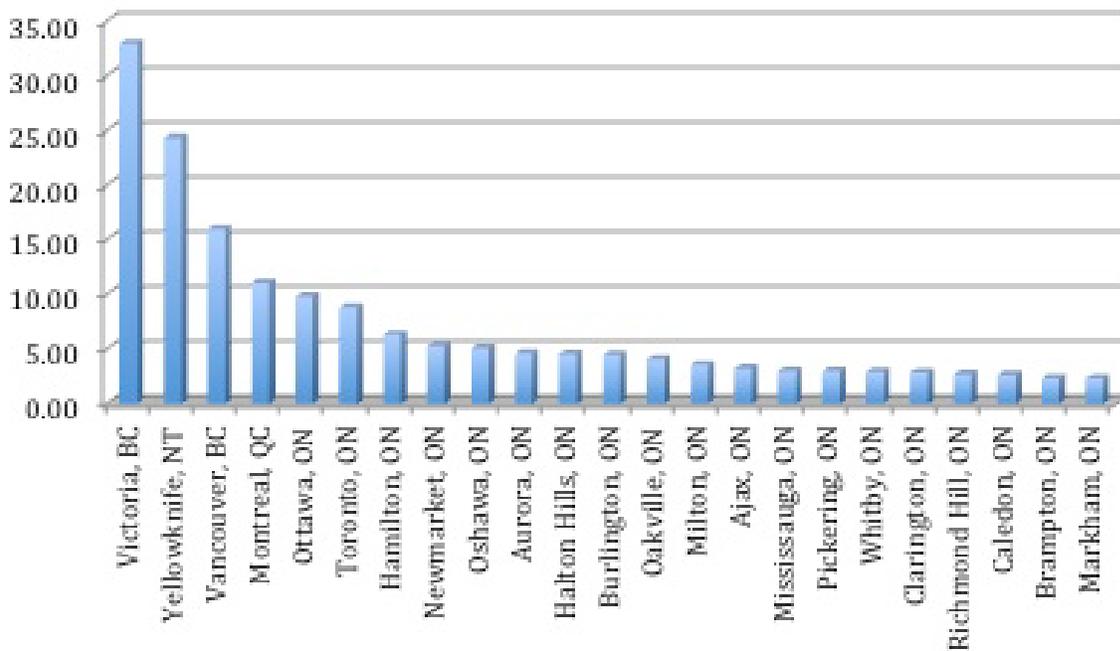


Toronto Public Health has estimated that levels of walking and cycling activity in 2006 prevented about 120 deaths in the Toronto population with an associated economic value between \$130 million and \$478 million. If walking and cycling trips were to increase in Toronto to 12% of all trips for walking and 6% of all trips for cycling, these calculations suggest that 100 more deaths would be prevented with economic savings of \$109 million to \$400 million annually (Toronto Public Health, 2012).

## 4.0 Active Transportation in the GTHA

The level of active transportation occurring in GTHA municipalities is lower than in many other Canadian cities. Each year, Moneysense.ca, a Canadian personal finance website, ranks Canadian cities using a variety of data sets to determine which cities offer the best overall quality of life. Using 2006 Census data, the “Canada’s Best Places to Live in 2012” rankings showed that municipalities in the GTHA have some of the lowest rates of walking and cycling in Canada. Nine of the 10 cities showing the lowest rates for cycling and walking are in the GTHA. Although Toronto shows the highest rates of walking and cycling among GTHA municipalities it still ranks 60<sup>th</sup> out of 190 cities. Hamilton is the next highest GTHA municipality with a ranking of 133 out of 190.

*Figure 7: Percentage of Bike / Walk Work Trips in GTHA Compared to Other Major Cities in Canada*



Municipalities in the GTHA are at varying stages in the planning and implementation phases of their active transportation networks. The Clean Air Partnership catalogued the status of Active transportation planning in the region for the Greater Toronto Area Clean Air Council in their 2010 report “Bike and Pedestrian Transportation Action Plans Scan: Greater Toronto Area Jurisdictions”. CAP is currently updating this scan and a new report is scheduled for release in the fall of 2013.

GTHA municipalities differ considerably from one another (and even within their own boundaries) with respect to the amount of growth and development that is occurring and expected, land use patterns, population density, access to public transit, the connectivity of existing road networks, the amount of traffic, and the type, quality and availability of active transportation routes. As a result, each region and municipality has particular needs and is not necessarily in an equal position to take advantage of funding opportunities.

## **4.1 Active Transportation and the Big Move: Project Highlights**

The following projects are in various stages of planning and implementation as components of The Big Move transit projects. This is not an exhaustive list of active transportation projects in the region. Most GTHA municipalities are currently undertaking efforts to build out cycling and walking networks throughout their municipalities.

### **City of Mississauga**

Hurontario-Main Light Rail Transit line: Cycling and walking facilities are an important part of this project. Detailed design is underway. The type of cycling facility varies along the corridor and includes routes (East-West connections) into transit stations (including multi-use trail and/or protected bike lanes) and includes bike parking.

### **City of Brampton**

Hurontario-Main Light Rail Transit line: on-street bicycle facilities are being designed as part of this EA and will run most of the length of this transit route.

### **City of Toronto**

Streetscape enhancements, bike lanes, bike stations and short-term bike parking are included in the current Eglinton Crosstown project. Toronto-York Spadina Subway Extension: an indoor bicycle station for 100 bicycles has been planned as part of the new Finch West Station.

### **City of Hamilton**

Based on the City of Hamilton's cycling master and Pedestrian Mobility Plan (currently in development) and a recent report called "Rapid Ready", Hamilton has identified specific active transportation projects to advance once funding has been confirmed by Metrolinx. Planned AT projects associated with Big Move transit projects include Bay St bike lanes, Cannon St bike lanes, a multi-use trail along Strachan St, a multi-use trail

crossing the Niagara Escarpment in the centre of the city, and a multi-use trail along Upper James St.



Example of a buffered bike lane in Hamilton. Photo Credit: Daryl Bender

## York Region

Bus Rapid Transit on Hwy #7: buffered bike lanes will be included (on-street) including left turn bike boxes and green surface treatments between Bayview Ave and Warden Rd. Hwy #7 west of Bayview Ave to Islington Ave will also include active transportation facilities, the design is still to be determined. The priority for York region with respect to active transportation and regional transit is to build out the North-South connections to Hwy#7 and the East-West connections to Yonge St. Other projects that are not specifically connected to transit but are regional in scale include the Lake to Lake trail (Lake Simcoe to Lake Ontario).

## Durham Region:

Big Move projects that include active transportation work include: (a) Scarborough to Durham Rapid Transit along Highway #2 (through Pickering and Ajax). Design for this project is near completion and construction on the first phase has begun. Buffered cycling lanes are being constructed as part of this project (b) Electrification of the GO Transit line from Lakeshore E to Bowmanville. Plans to provide cycling and walking access to all GO Stations along this corridor are underway.

## Region of Durham:

Big Move projects that include active transportation work include: (a) Scarborough to Durham Rapid Transit along Highway #2 (through Pickering and Ajax). Design for this project is near completion and construction on the first phase has begun. Buffered cycling lanes are being constructed as part of this project (b) Electrification of the GO Transit line from Lakeshore E to Bowmanville. Plans to provide cycling and walking access to all GO Stations along this corridor are underway.

## Town of Milton

Pedestrian / bicycle bridge was constructed over the Canadian Pacific Railway tracks between Thompson Road and James Snow Parkway providing access to the Milton GO Station, Bishop Reding Secondary School, the Milton Leisure Centre, Centre for the Arts, Memorial Arena, Lions Sports Park and the downtown area.

## Halton Region

Dundas Street Bus Rapid Transit: both on-road and off road active transportation facilities are being considered along the Dundas Street Corridor. These facilities may include a variety of on-road facilities (i.e. exclusive bike lanes) and off-road facilities (i.e. sidewalks and/or multi-use paths). These facilities are still being planning through the Class Environmental Assessment (EA) Study process



Bike Parking Shelter at GO Transit Station (Ajax). Photo Credit: GO Transit

### **Town of Newmarket / York Region**

The vivaNext project includes planning for active transportation infrastructure on Yonge Street (potential for on-road bicycle facilities and/or boulevard trail) Newmarket is working with the region on design-build.

### **Peel Region**

In collaboration with its local municipalities, Peel Region constructed approximately 19 km of new active transportation facilities in 2012. The Region anticipates an additional 22 km of new AT facilities in 2013.

### **York, Peel, Halton and Durham Regions**

A Greenbelt Trail being proposed by Waterfront Regeneration Trust (WRT) runs through all three of these regions. There are gaps in this trail and WRT is working with the regions in an attempt to connect and complete this cycling route by providing signage along existing roads.

More projects are anticipated to be part of the next phase of The Big Move for several municipalities. Municipalities are hoping to receive more information on the amount and nature of the funding that will be available for active transportation to assist with the planning of additional walking and cycling projects. Details such as the kinds of active transportation projects that will be eligible for funding, the amount of funding that will be available and the method for funding allocation are needed to assist with planning and prioritizing the next phase of work.

## **4.2 Funding for Active Transportation**

Municipal funding sources for walking and cycling infrastructure, as a component of road construction and operation budgets, vary throughout the region and often include a combination of property taxes and Development Charges. In municipalities where there is considerable population growth and development, Development Charges are an important resource for infrastructure funding. However, the amount of revenue from these charges can change and is not always consistent. In smaller, rural municipalities where growth is much slower, limited funding is available from Development Charges and the level of funding may vary considerably from year to year. An additional dedicated funding source would accelerate the implementation of active transportation plans or in many cases keep them on track.

*Table 3: Examples of Active Transportation Network Plans and Funding in the GTHA*

<b>Municipality / Region</b>	<b>Number of Years Planned to Complete Active Transportation Networks</b>	<b>Estimated Funding Required to Complete Networks</b> (data from municipal staff interviews)
Mississauga	20	\$200 million for cycling network
Peel Region	20	\$52 million for regional network
Toronto	10	\$87.2 million for cycling network (2012-2021 Capital budget Plan)
York Region	10	\$44.5 million (for Phase 1 and 2 of 25 Year Strategy)
Milton	10+	\$51.4 million
Newmarket	Cycling network and trails plan Schedules D & E in Official Plan. Ongoing planning through secondary plans.	\$3.3 million for routes identified in Official Plan + secondary plans
Brock Township	No Active Transportation Plan	No budget for cycling networks (\$5,000 annual budget for sidewalks)
Scugog Township	Depends on available funding (currently no budget for new facilities)	\$5-10 million for municipal routes in Regional cycling plan and the planned waterfront trail.

For some municipalities, the affordability of projects is a significant determinant of change, whereas for others, particularly where trade-offs are required, there can be considerable political obstacles. In some cases, although active transportation plans are supported in principle by Municipal Councils, funding approvals can still be difficult to obtain. Dedicated funding from Metrolinx could allow for increased municipal investments in active transportation projects that may function to accelerate prioritized implementation of existing active transportation plans or to fund pilot, showcase projects. For cost control purposes, active transportation routes are often implemented according to capital project schedules that prioritize roads and transit. This can result in a less coordinated roll out of network components. Additional funding through The Big Move could have an important impact on active transportation in the region if used to prioritize the completion of gaps in cycling and walking networks.

The status of plans and annual budgets for cycling and walking vary widely among the municipalities creating a wide variety of funding needs and priorities

## **5.0 Active Transportation System Investments in Other Regions**

Regional transit agencies in other jurisdictions are making dedicated investments to build active transportation networks. They recognize cycling and walking as integral components of regional transportation that support transit ridership. Drawing from a suite of revenue sources, these transit agencies set aside annual funding specifically for active transportation projects. They provide important examples of how to integrate active transportation into regional transportation planning and provide dedicated funding to build cycling and walking facilities.

### **Los Angeles County Metropolitan Transportation Authority (Metro)**

Metro is responsible for the planning, designing, coordination building and operations of public transportation in LA County. More than 9.6 million people live in the county and Metro had 39.1 million boardings (on bus and rail combined) in January 2013.

With an approximate \$4.5 billion annual budget, Metro relies on a variety of revenue sources. These are, passenger fares, sales taxes, federal grants, state grants, bond proceeds and other local revenue. In order to ensure affordability of their transit system, Metro subsidizes about 70 % of every trip.

Funds acquired by Metro through the Transportation Development Act, Article 3 fund the planning and construction of bicycle and pedestrian facilities in cities and areas in LA County. Metro is responsible for administering the funding program and establishing its policies. The funds are eligible for the following expenses related to planning and constructing bicycle and pedestrian facilities:

- Engineering expenses leading to construction.
- Property acquisition.
- Construction and reconstruction.
- Retrofitting existing bicycle and pedestrian facilities to comply with the Americans with Disabilities Act (ADA).
- Route improvements such as signal controls or detectors for cyclists, rubberized rail crossings and bicycle-friendly drainage grates.
- Bicycle parking, benches, drinking fountains, washrooms, shower and change facilities if adjacent to bicycle trails, employment centers, park-and-ride lots, and/or transit terminals and are accessible to the general public.

There are three different sales tax revenues used to fund Metro, Proposition A (one-half of 1% tax on most retail sales in the County), Proposition C (an additional one-half of 1% tax on retail sales in the County), and Measure R (an additional one-half of 1% sales tax to fund traffic relief and rail expansion). A proportion of Proposition C and Measure R funding is specifically dedicated to bicycle and pedestrian infrastructure.

Revenues from all of these sources are allocated annually to the cities and areas of LA County on a per capita basis. These population-based allocations show Metro’s 2013 approved budget includes \$25.3 million for Bikeways and Pedestrian Improvements. This is in addition to \$6 million for bus stop improvements, and \$14.8 million for Transit Facility Improvements. In addition to this dedicated revenue, funds for cycling and walking infrastructure are also available through other budgets, which may vary from year to year.

Metro is also responsible for allocating discretionary transportation funds (federal, state and local) to improve all modes of surface transportation in LA County, including walking and cycling. Metro puts out a Call for Projects once every two years through the Los Angeles County Transportation Improvement Program (TIP). Through this competitive process, Metro distributes capital funds to transportation projects deemed to be regionally significant, including cycling and/or pedestrian infrastructure projects.

**Table 4: North American Transit Agencies Investing in Active Transportation**

Transportation Agency	Population of Region	Ridership Estimates	Annual Capital Budget	Dedicated Capital for AT Facilities	Proportion of Capital funding for AT Facilities	Other Funding Sources
LA County Metro	9.6 Million	463 million trips (2011)	\$4.5 Billion	\$25.3 million (2013)	0.6% or \$2.64 per person	Capital funding: \$6 million for bus stop improvements, \$14.8 million for Transit Facility Improvements, some improvements funded through highway operational improvements. Bi-annual call for regionally significant projects can include cycling/ped projects
TransLink	2.3 Million	233 million trips (2011)	\$676 Million (2012)	\$3 Million (reduced from \$6 Million in 2012)	0.44% or \$1.30 per person	2012 Supplemental plan included an additional \$9 Million for Bicycle Capital expenditure, \$92,400 for bicycle program operating budget, \$1.5 Million of annual rehabilitation funding is available to municipalities for upgrades to regional bicycle facilities

Highlights from the 2013 approved budget show that Metro's Bicycle Parking Capital Improvement Program System and Bikeway Initiative have been expanded in 2013.

### ***TransLink - South Coast British Columbia Transportation Authority***

As Metro Vancouver's regional transportation authority, TransLink is responsible for the planning, financing and managing of all public transit in the region as well as all major regional roads and bridges. They also share responsibility with the municipalities in Metro Vancouver for the Major Road Network and for regional cycling (TransLink provides funding for road operations, maintenance and rehabilitation, and shares in the cost of eligible capital improvements). TransLink had a ridership of 233 million rides in 2011. The 2012 Capital Budget was set at \$676 million (TransLink 2012b).

TransLink is mandated to provide a regional transportation system that includes cycling and walking infrastructure. The agency is required to support Metro Vancouver's Regional Growth Strategy, which emphasizes transit, cycling and walking, and to support Regional and Provincial goals for emission reductions. TransLink has developed a long-term transportation strategy (Transport 2040) and a regional cycling strategy to support the transportation goals of the region.

Concrete goals have been set as a part of Transport 2040 which include having at least half of all daily trips in the City of Vancouver be on foot, bicycle and/or transit by 2020, with these trips growing to at least two thirds by 2040 along with a parallel goal of zero traffic fatalities.

With a view to encouraging the development of communities designed for transit, walking and cycling, TransLink has completed Transit Oriented Communities Guidelines in 2012 which bring a land use perspective to their performance based investment policy. The guidelines were scheduled to be released for consultation in Spring 2013.

TransLink has dedicated capital funding for cycling and walking infrastructure. This includes \$6 million annually in capital funding for bicycle networks. Following resizing of the capital budget for 2012, the Bicycle Capital program was reduced to \$3 million and \$92,400 for the bicycle program operating budget. However, an additional \$1.5 million annually was allocated for upgrades to Bicycle facilities that serve the region (TransLink 2013). TransLink's 2012 Supplemental Plan included an additional capital expenditure of \$9 million on the bicycle program which resulted in an actual spend of \$2.7 million for the 2012 year, as projects ramp up over a four year term under the management of participating municipalities.

In order to facilitate the integration of cycling and walking with regional transit, TransLink's Station Upgrade program has shared costs with municipalities on projects that promote the integration of cycling and pedestrian facilities, urban design and

transit priority within 800m of a station. By providing staff support (and in some cases, funding) TransLink has helped municipalities to develop station area plans that identify opportunities to improve transit, pedestrian and cycling access.

TransLink conducts an on-going data collection program to provide information for research, analytics and to facilitate an evidence-based decision-making approach for the transportation system. This program includes data collection on active transportation modes and the results are published by TransLink.

As part of TransLink's work to update the regional transportation strategy (Transport 2040), TransLink and Vancouver Coastal Health (VCH) funded a research study led by Dr. Lawrence Frank at the University of British Columbia. The report titled "Integrating Health into Transportation Planning in the Metro Vancouver region" documents how transit, bike and pedestrian infrastructure positively impact health, and reduce air pollution and traffic collision risk. Recommendations include identifying the reduction of chronic diseases and injuries as a high level goal for transportation policy. This research not only identifies an opportunity for TransLink to incorporate health concerns into the strategic goals of the regional transportation plan but also to link health outcomes to the evaluation and funding of transportation infrastructure.

TransLink's efforts to build a network for active transportation seem to be succeeding. According to the 2011 Metro Vancouver Regional Trip Diary Survey (part of TransLink's data collection program), between 2008 and 2011, the total number of bike-only trips increased 26 per cent, from 84,300 to 106,500; while the regional population increased 5.8 per cent. In the City of Vancouver, bike trips increased by 35%. Bikes are also integrating into the transportation network. In 2011, 6,200 bike trips (in addition to the 106,500 bike-only trips) were combined with other transportation modes: 65% combined with transit, 18% combined with a car as the driver, 13% combined with a car as the passenger (TransLink 2012a).

## 6.0 Next Steps

There is a strong case for dedicated investment in active transportation as a component of The Big Move.

Although the level of active transportation occurring in GTHA municipalities is currently lower than in many other Canadian cities, research is showing a preference for walkable and transit-friendly neighbourhoods in the region and the economic, health and environmental benefits of active transportation are well documented (Toronto Public Health 2010, 2012a,b).

The Big Move projects are expected to increase the percentage of people who live within two kilometres of rapid transit from 42% to 81%. Having to travel two or more kilometres (longer than an easy walking distance) to and from rapid transit is known as “the last mile problem” and can be a barrier to transit use. Solving this problem will be a vital step towards achieving the modal share targets of The Big Move and meeting the mobility needs of the region. Active transportation facilities are crucial components of a regional transportation network that can work to solve the last mile problem while contributing to the health and liveability of local communities.

Active transportation infrastructure projects can be extremely cost effective when considered relative to investments in other transportation modes such as new or widened roadways and automobile parking facilities.

Due to expected population growth in the region, transit system expansion on its own will not be adequate to substantially reduce greenhouse gas emissions. As a result, investment in cycling and walking infrastructure will continue to be needed to shift local trips away from motor vehicles.

The following list of recommendations and proposed actions are offered to guide the next phase of planning for investment in walking and cycling networks through The Big Move.

### 6.1 Establish Clear Leadership for Regional Active Transportation

Several GTHA municipalities interviewed for this report expressed concerns about a lack of clarity around the vision for active transportation in The Big Move. It is not clear whether Metrolinx envisions the regional transit expansion projects to include active transportation facilities or if projects that prioritize local active transportation

connections to regional transit will be eligible for Metrolinx funding. Establishing a regional vision for cycling and walking networks is necessary to coordinate local networks that will support transit use and promote regional transit expansion.

### **Proposed Actions:**

#### **6.1.1** Create dedicated staff within Metrolinx to:

- lead the development of a regional active transportation strategy ;;
- build upon the excellent work Metrolinx has begun through the Mobility Hub Cycling Network Interface Analysis project;
- work with municipalities on active transportation components of The Big Move; and
- lead the identification of, and allocation planning for regional active transportation investment funding.

#### **6.1.2** Develop and communicate a regional vision and coordinated priorities for active transportation, including the roles and responsibilities for Metrolinx, the Province of Ontario and the municipal partners, as a component of a regional transportation plan.

## **6.2 Provide Dedicated Investment for Active Transportation through the Big Move**

Current funding sources for cycling and walking facilities vary by municipality, are often contingent upon growth and are not necessarily consistent. Dedicated funding will provide some municipalities with a valuable opportunity to accelerate implementation of their active transportation networks, or where funding shortfalls exist, keep them on track. Investment support could also enable municipalities to build crucial connections across major barriers such as rail corridors, ravines, rivers or provincial highways, which can be cost prohibitive.

GTHA municipalities differ considerably from one another (and even within their own boundaries) with respect to the amount of growth and development that is occurring and expected, land use patterns, population density, access to public transit, the connectivity of existing road networks, the amount of traffic, and the type, quality and availability of active transportation routes. As a result, each region and municipality has particular needs and is not necessarily in an equal position to take advantage of funding opportunities. Smaller municipalities with little or no dedicated staff or budget for active transportation infrastructure could be unintentionally marginalized by a rigorous funding application process.

## Proposed Actions:

- 6.2.1** In consultation with municipal partners and other stakeholders, develop an investment model for active transportation facilities that includes:
- (a) a baseline amount of dedicated annual funding (from the 5% that has been identified by Metrolinx for local projects) that is specifically for active transportation facilities;
  - (b) opportunities for municipalities to augment this baseline amount with additional funding from the 5% that has been identified for local projects;
  - (c) clear guidance to municipalities for the eligible expenditure of dedicated active transportation infrastructure funding (for example, determine and clarify the eligibility of projects such as feeder routes to regional transit stations and mobility hubs, or enhanced / upgraded facilities along new transit routes); and
  - (d) a variety of opportunities that respond to the differences between municipalities in terms of budgets, staffing, and planning; and that ensure efficient use of administrative resources.
- 6.2.2** Conduct a thorough evaluation of the Bikelinx funding (2008) in consultation with participating municipalities to improve upon the process for allocating funds and to work toward time-efficient expenditures in the future.
- 6.2.3** Clearly identify the active transportation infrastructure components in the project budgets for The Big Move transit expansion projects, as well as the expectations and requirements for these facilities to be included.
- 6.2.4** Identify shovel-ready active transportation infrastructure projects within GTHA municipalities that might function as opportunities for “quick wins” and as demonstration projects to:
- (a) test pilot funding allocation models,
  - (b) provide local community benefits in the short term; and
  - (c) help to gain increased public support for the Big Move.

## **6.3 Create a Regional Coordinating and Advisory Committee for the Greater Toronto and Hamilton Area**

Several GTHA municipalities interviewed for this report saw merit in creating a regional committee to support active transportation infrastructure implementation. The coordination of this committee could feasibly be led by Metrolinx, the Provincial Ministry of Transportation, or by an NGO like the Toronto Centre for Active Transportation. The committee would provide better opportunities for regional communication around

active transportation infrastructure, knowledge sharing, best practices in facility design, data collection and analysis. For some, this committee could also be a valuable way to help coordinate the planning and implementation of cross-boundary cycling and walking network projects.

#### **Proposed Actions:**

- 6.3.1** Invite all local municipalities to participate in a regional coordinating committee giving the option for local municipalities to be represented by their regional municipalities.
- 6.3.2** Develop terms of reference for this committee with clear, achievable and relatively short-term deliverables.
- 6.3.3** Engage this committee on the development of regional strategies and priorities for active transportation investment including development of the model for Metrolinx funding allocation.
- 6.3.4** Ensure this committee is dedicated to infrastructure planning and implementation and does not overlap with the existing Metrolinx GTHA Transportation Demand Management Coordinating committee.

## **6.4 Conduct further research, planning and outreach**

This report provides preliminary research into the current status of active transportation planning in the GTHA in the context of The Big Move. Information gathered from conversations with Metrolinx staff and GTHA municipal staff as well as best practice research in other jurisdictions has revealed the need for further research, communication and outreach in the GTHA on these issues.

#### **Proposed Actions:**

- 6.4.1** Undertake a thorough cost-benefit analysis to better understand the relative costs of active transportation infrastructure investment within the context of the Big Move and to help position the argument for investment decisions, as has been done for the regional transit expansion projects. Include a focus on regionally significant issues such as potential reductions in provincial health costs associated with increased physical activity and improved air quality.
- 6.4.2** Develop a regional Active Transportation Plan to:
  - (a) establish a vision for regional active transportation within the context of The Big Move;

- (b) integrate regional cycling and walking network planning with The Big Move , existing municipal plans and regional policies and guidelines such as the Metrolinx Mobility Hub Guidelines;
- (c) set performance targets, policies and goals such as mode share targets and priority zones for the implementation of walking and cycling networks around regional transit hubs and stations;
- (d) prioritize Active Transportation infrastructure investment where uptake of active travel modes would be supported by environmental factors such as mixed land uses, connected street networks and population densities;
- (e) identify regionally significant Active Transportation routes;
- (f) coordinate the implementation of active transportation projects with regional transit expansion projects to support new transit routes as they become operational.

**6.4.3** Identify regional data needs for active transportation modes to guide the province and municipalities in the formation, or review of formal data collection programs.

**6.4.4** Establish a communications and outreach strategy to regional stakeholders and interest groups and the general public to draw more attention to the benefits of active transportation infrastructure investment within the current dialogue supporting investment in The Big Move.

**6.4.5** Identify regional active transportation infrastructure champions from business, institutions, not-for-profit and community organizations across the Greater Toronto and Hamilton Area to raise the profile of active transportation and garner increased public support throughout the region for active transportation investment.

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