



Introduction

In today's global economy, the stakes for Canadian regions have never been higher. With business and the labour force more mobile than ever before, regional governments need to ensure they can provide their citizens with the most liveable, efficient and attractive communities possible, to attract and keep both workers and employers. A key component of such communities is a commitment to transit infrastructure that anticipates and supports future growth, while protecting, enhancing and connecting human-scaled public and living places.

Finding this balance has been a priority for York Region, which is engaged in a successful partnership with the private sector to plan and implement an innovative, effective rapid transit system. This paper will describe our project, including why it was seen as a priority, how our partnership is structured, and what are its main elements.

York Region: Planning for the Future

The Greater Toronto and Hamilton Area (GTHA) is one of the fastest growing areas in North America. One of the major regions in the GTHA is York Region, which sits to the north of Toronto, and encompasses the municipalities of Markham, Richmond Hill, Vaughan, Newmarket, Aurora, King Township, East Gwillimbury and Whitchurch - Stouffville.

During the next 25 years, over one-quarter of the increase in population projected to occur in the GTHA – and over 30% of the anticipated increase in employment – will come to York Region.

York Region has many natural advantages that have made it highly attractive to residents and employers. With its proximity to the GTA to the south and rural greenspaces to the north, and a mix of communities that give people access to both an increasingly dynamic and cosmopolitan lifestyle as well as quaint heritage neighbourhoods, it is no surprise that York Region's population and economic base have already grown exponentially.

The critical lesson learned from the great regions of the world is that this growth needs to be planned for and carefully managed, in order for York Region to fully realize its future potential. One negative consequence of growth – traffic-clogged streets – has already begun to appear. For residents in York Region, long drives in slowly moving traffic have become a reality throughout most of the day. With less than ten per cent of all trips currently using public transit, and many neighbourhoods designed in a previous era that focused on the then-prevailing car-dominated culture, it is clear that significant change is not likely to happen without a clear vision and commitment from our regional leaders.

Traffic gridlock, of course, is not a problem only in York Region. With growth taking place all across the GTHA, inter-regional travel patterns have changed dramatically over the past few years. Interregional travel has increased across all four of the region's boundaries, with north-south travel representing the most significant volume of trips, but east-west travel growing at a faster rate. In total, there are now almost as many trips coming into the York Region at peak travel periods as there are going out.

Already, significant traffic congestion is slowing down the competitiveness of regions and communities across the GTHA. In fact, it is such a problem that the Toronto

Board of Trade estimates gridlock already costs the region's economy \$1.8 billion a year.

Planning studies show that if no significant changes are implemented, there is a real risk that by 2031 the entire GTHA will face imminent gridlock. In that event, the resulting negative impact on our regions' economies, and by extension the quality of life of everyone who lives here, can only be imagined.

Governments of all levels have taken this concern very seriously, and have been working closely together to plan and implement a combination of road, transit and policy enhancements to address it directly. York Region is at the heart of a number of strategies, developed by the Province and by the Regional government, to manage growth across the Greater Toronto and Hamilton Area. Two of the most relevant are the Province's Places to Grow strategy, and York Region's Centres and Corridors strategy.

Places to Grow:

- This provincial strategy directs that growth must be accommodated through intensification of land use within existing urban areas. Under this strategy very little development will be allowed to occur in the areas designated as protected countryside, except for minor expansions or infilling within existing settlements.
- Because the majority of York Region land outside of the Oak Ridges Moraine, designated urban areas, towns and villages is subject to the Greenbelt Plan approved in 2005, the Places to Grow strategy will have a profound impact on York Region's future growth patterns.

Centres and Corridors Strategy

- The Region's Centres and Corridors strategy supports the Province of Ontario's Greenbelt Plan by concentrating growth and development within the designated urban areas.
- The Region's Official Plan seeks to manage growth through intensification of land use in four urban centres in Vaughan, Richmond Hill, Markham and Newmarket.

- A mix of residential, commercial and employment uses will reduce live-work-play distances and parking management will be introduced within the urban centres to discourage automobile trips.
- The four centres are to be connected with an efficient rapid transit system.
- 40% of all new growth will be concentrated within the urban centres and along the transit corridors that connect them.
- One stated goal of the Centres and Corridors strategy is to triple transit's share within the urban centres—and to more than double transit use on a Region-wide basis.

Effectively planning for future growth across the GTHA, while addressing and mitigating the inevitable challenges it poses, requires the development of, and commitment to, a strategic vision that will integrate and implement all these strategies.

Obviously, the benefits of even the most comprehensive and integrated planning strategies cannot be realized with committed funding. Metrolinx, the provincial crown agency responsible for planning and securing funding for an interregional transit network for the GTHA, has developed a twenty-five year transit plan called, “The Big Move.” This overarching strategy and related planning strategies, identifies the projects which will have the most significant impact on reducing reliance on cars and improving interregional connectivity, and the recommended funding for each. York Region’s vision of a rapid transit system forms a key part of the Metrolinx vision.

Making Our Vision A Reality: Transit Oriented Development and Placemaking in York Region

Managing growth is a multi-dimensional challenge, requiring planners to anticipate and address future needs and priorities, while also protecting and nurturing the elements that have made our community attractive to people in the first place. This nuanced approach is one that we have accepted as a fundamental planning principle for Viva. We believe our best opportunity to enhance the quality of life for all citizens is to strike a balance between actively steering, shaping and enabling new developments of the future, while preserving the best of the past and present.

The experience of successful urban regions shows that well-planned and operated rapid transit plays a central role in achieving that balance. Properly planned and executed, rapid transit has the potential to go well beyond moving people from A to B. Rapid transit actually shapes communities, and contributes to the sense of community for everyone, whether they are riders, drivers, residents, or workers. This is the concept of “transit-oriented development.”

Transit-oriented development (TOD) refers to the concept of proactively using transit to shape communities that are accessible, local, and human in scale, rather than adding transit to

developments after the fact. With TOD, planning focuses on making livable communities where people have choices in how they get around, with a variety of forms of transit helping to take people where they want to go efficiently and conveniently. With TOD, transit and development are planned together so that there are places to go to, rather than simply places to go through.

TOD profoundly impacts the quality of life for everyone in the community, whether they take transit or not. A key underlying assumption to TOD is that transit acts as the catalyst by setting the cues for “placemaking” in York Region. Placemaking refers to the strategy of consciously planning and enabling the beautification of areas to be built around transit clusters.

Our vision is to use Viva rapid transit as the catalyst for urban renewal and revitalization across York Region, following our rapidway routes along Highway 7 and into and across Newmarket. Around our rapidway stops or “vivastations”, evolving transit villages will become both origins and destinations for the traveling public, resulting in new places to work, live, play and relax.

Properly executed, our TOD strategy will result in a vibrant mix of residential, employment and commercial land uses. One outcome will be a reduced reliance on cars as the primary means of transportation. But other, equally important outcomes will include reduced live-work play distances, increased pedestrian activity, new opportunities for protecting the environment, and enhanced quality of life for residents, employees and visitors.

Using Partnerships to Achieve Our Vision

To achieve this vision, we planned for a rapid transit program to be built in three phases, complemented by increased investments in infrastructure that would be linked to ridership and land use changes:

- Phase 1 is an early action plan to build ridership and public support.
- Phase 2 includes the construction of exclusive rapidways to separate transit vehicles from general traffic and reduce overall travel times by up to 40% as well as subway extensions to the urban centres.
- Phase 3 invests in light rail transit to significantly increase passenger capacity as population and employment continue to grow.

All three of the phases call for shared funding across the three levels of government: Federal, Provincial and Regional. The success of our entire strategy is dependent on access to a range of funding models that support the timely implementation of the required rapid transit infrastructure.

Beyond the development of the transit-infrastructure itself, transit-oriented development opportunities are also ideally suited to partnerships, in this case between the public and private sectors. For example, by partnering with developers, municipalities can advance joint

development of transit stations and terminals in conjunction with institutional facilities, office towers or shopping malls. At the interregional level, by working together, Regional municipalities can implement major mobility hubs for mutually beneficial use.

Joint development can deliver new infrastructure more cost effectively, and frequently raises the bar for urban development standards. Additional financing opportunities include:

- The application of a dedicated tax base, such as the gas tax.
- Sale of development rights to the private sector.
- Ongoing amendments to the Development Charges Act that support sustainable transportation infrastructure.

York Region Rapid Transit Corporation and York Consortium: Nurturing A Successful Partnership

To fast track delivery of the rapid transit network, York Region entered into a public-private partnership (P3) agreement with York Consortium. The consortium comprises seven firms with significant world-wide experience in rapid transit engineering, design, finance, construction and operations, including:

- AECOM/DMJM Harris
 - Program Management
- Delcan Corporation
 - Planning and Design Services
- Peter Kiewit Sons Company
 - Design and Construction Management
- Ellis Don
 - Construction
- Nord / LB
 - Financial Advisor and Arranger of Debt and Equity
- Siemens
 - Supply of Rail and Bus, ITS and Vehicles
- IBI Group
 - Planning, Architecture and Systems Technology

In general, public-private partnerships or P3's are characterized by the sharing of risk and reward between partners. Overall, P3's have a number of benefits. First and foremost, P3's can fast track

the process. This can dramatically reduce the overall schedule and, as a consequence, dramatically reduce the overall cost. P3's can create the opportunity to explore innovative financing and revenue generating techniques in ways that are not normally available to governments. P3's can meld the best management practices of both sectors, and allow for the sharing of risk between the partners. Lastly, they can bring private sector investment to major public infrastructure projects.

P3 is vastly different than privatization, and provides both sides with the opportunity to meet their own objectives and accountability requirements:

- Under the terms of a partnership agreement, York Region controls revenues and retains ownership of all assets, and full policy control.
- The Region will have voting majority on PPP corporation which is required to report to Council.
- The private sector provides technical staffing support and assumes risk on budgets and schedules.
- Through a cost-confidence process, procurement is open, transparent and competitive:
 - Under the terms of the P3 agreement, the Consortium has the contractual first right to bid; however, they are not guaranteed the contract at any price.
 - It incorporates open, transparent price analysis by an independent cost estimator.
 - It ensures the Region gets the best value for public funds.
- Projects are delivered within a guaranteed maximum price so that there will be no cost overruns.

To sum up, we believe we have benefited from a number of tangible advantages through our P3:

- It has given us the capacity to deliver early transit improvements.
- Through collaboration with internationally experienced partners we have been able to take advantage of emerging technologies.
- By working with a consortium of multiple partners we have been able to integrate planning, design and construction.
- We have confidence that we can effectively manage capital costs on the basis of prior experience.
- Our contractual relationship provides flexible contracting and procurement.

Through the partnership Viva Phase 1 was delivered within budget and on time.

Beyond our immediate P3 partnership, there are many other partners with whom we work. From the beginning, we have taken pains to ensure we work closely with the full range of stakeholders with an interest in our project. Because of the profound impact Viva has had, and will have, on all parts of our community, there is a long list of planning bodies, municipal committees, citizen groups, employer groups, and others who have a keen interest in all aspects of the project, including our vision for the future, how it will be implemented, how it will affect them, and how they can become more involved.

We have established processes to ensure our working approach is consultative, collaborative and transparent. As the next phase of our project continues to evolve and unfold, we have invested a huge amount of effort into ensuring that we are working with all our stakeholders and partners, and that we get input from as many people and groups as possible.

Viva and VivaNext: Our Project

The project to bring rapid transit to York Region has been unfolding in phases, since 2003. Less than three years after the rapid transit business plan was originally written, the first phase of Viva was officially launched in September 2005 as the first Bus Rapid Transit service of its kind in the Greater Toronto Area.

Running on four key travel corridors across York Region, Viva operates up to 18 hours a day, seven days a week with a service frequency of 15 minutes or less. Unlike regular buses, Viva's distinctive BRT vehicles are quiet, modern and comfortable, with air-ride suspension and low emissions. They have ample seating, extra-wide doors and low-level floors. They look and feel different.

From the beginning, our mandate has been to provide a transit service that emphasizes convenience, comfort and fun. Through the implementation of a variety of innovative features, we provide passengers with a level of customer service that has resulted in extraordinarily high satisfaction levels.

To make our service faster and more reliable, we installed "queue jumpers" and transit signal priority at over 100 intersections to speed vehicles through congested traffic.

We built convenient, modular transit stops every one-two kilometres along corridors. Off-board fare collection and intermodal terminals provide connections to the subway, commuter rail and local bus networks. Passengers are able to purchase passes and tickets from convenient automated fare vending machines.

Intelligent transportation systems have resulted in improved movement of vehicles, centralized control and improved communications with the public. Electronic displays let passengers know

when the next vehicles are due at stops and terminals. And convenient web-based trip planning across the entire YRT system lets passengers find the fastest and easiest way to get from here to there.

Viva Phase 1 has been a great success, proven by ridership increases: since service was launched, annual transit boardings in York Region have grown by over 55% to reach almost 25 million. Our passengers have been won over by our service innovations and reliability: service ratings indicate that Viva is exceeding customer expectations in terms of reduced travel times and clean, comfortable service.

And we have the most important backers – the general public - for continued investment in transit improvements: over 90% of respondents to a recent public survey indicated that rapid transit should continue to be a medium to top priority for York Region.

As a key measure of success to date, our long-term strategy of using transit-oriented development as a lever to encourage and shape new development is paying off. Consistent with the planning strategies for intensified development in specific urban areas, millions of square feet of transit-oriented development are now underway within the four urban centres and along the Viva corridors.

Our conclusion so far: transit is clearly an effective driver to shape the York Region of the future.

What's Next for Viva?

With the first of three phases successfully implemented, York Region is rapidly planning the design and implementation of the second phase: vivaNext. This phase will see York Region move into the future with a true rapid transit system, with the introduction of subway extensions and dedicated rapidways to significantly improve travel times across the Region.

As a key component of the Metrolinx plan for a strong interregional network, vivaNext will connect centres to centres across the Region, and provide convenient interregional links with the transit systems in neighbouring regions through intermodal facilities.

Viva rapidways will incorporate a number of key design elements including traffic and pedestrian facilities, landscaped boulevards and roadway medians and passenger-friendly vivastations. With capital funding recently announced, preliminary engineering and design are now moving forward, and construction will begin on selected segments later this year.

What's In a Rapidway?

VivaNext rapidways are designed to reduce travel times by up to 40% along the most congested sections of the transit corridors. By 2016 our plan is to have dedicated rapidways along the most congested stretches of Highway 7 going east to west across York Region. Rapidways will also

extend north on Yonge Street into Newmarket, and along Davis Drive from Yonge Street to Highway 404. Additional segments will also be built as needed and capital funding is available, to provide full connectivity across the Region and into the rest of the GTHA.

The standard rapidway cross section includes the following:

- Four through lanes with left turn lanes.
- Dedicated centre lane rapidways.
- Fully landscaped boulevards and median plantings.
- Bicycle route.

Rapidways and intersections are clearly identified with coloured paving, to ensure driver and pedestrian safety and promote a consistent aesthetic look across the system.

To ensure our system provides a welcoming environment for pedestrians, generously sized crosswalks and sidewalks will be designed for continuous pedestrian movements. And keeping traffic of all kinds moving is a priority, so signal timings will take into account the diverse needs of general traffic, transit vehicles, pedestrians and cyclists

To provide safe, convenient access to properties located between intersections, signalized u-turns are required. Although the rapidways will result in some changes to existing driver patterns, they will also result in safer movements, cutting down on the need for drivers to cut across on-coming traffic.

Consistent with the TOD concept, the introduction of rapidways is being used as an opportunity to beautify our public spaces through the development of spacious new boulevards and pedestrian areas.

Boulevards are approximately five and a half metres wide on both sides of the road, allowing for generous plantings, landscaping and other treatments. Boulevards widen at intersections to support placemaking opportunities.

Within the boulevard we are allocating approximately two metres for the Pedestrian Zone, incorporating wider sidewalks with comfortable seating to create a welcoming environment for pedestrians. The Furnishing/Planting Zone can be treated with a variety of hard and soft landscaping. Wherever possible, existing trees will be preserved and additional landscaping will be added to create a beautiful as well as functional space.

Because existing development varies widely along the length of the rapidway segments, the specific details of the boulevard setback will also vary along our routes. Final plans for each

segment will be developed and finalized through discussions with landowners, businesses and other stakeholders

In addition to the beautification that will take place along the boulevards, medians also offer an opportunity to improve the aesthetic appeal of our public roadways. During recent public consultations, York Region residents told us that they want a greener environment. Therefore, we will use our rapidways as a lever to incorporate tree plantings along the roadway medians to achieve this goal, making our public streetscapes more appealing.

The most visible and iconic element of our plans will be formed by impressive rapidway stations or “vivastations”. These stations will play an important role in placemaking in communities connected by the rapidway, and their design has been the focus of a great deal of effort by the consortium’s international team of architects. Vivastations will help to transform the roadway median into a comfortable and welcoming place for people to await their Viva vehicle.

The most visible part of each station will be its lofty, elegant glass canopy. These canopies will be an important element defining the Viva brand, creating a positive visual impact that signals the point of arrival and departure at a vivastation. Not only will stations look beautiful, but they will provide a human-scaled waiting place for passengers, ensuring their safety and security with handrails, splash walls and other protective elements. Station canopy design is evolving to provide overhead weather protection, heated platforms, and an enclosed, well-lit waiting area.

Each vivastation will provide fully accessible customer amenities include indoor seating areas, fare equipment, trash containers, a telephone and bicycle racks.

Although not directly related to vivaNext, another new innovation will be introduced on our system later this year, making transit even more convenient for passengers. Presto, an integrated fare policy based on travel distances that will be used across the GTA, will be phased in starting in 2009. Using smart card technology, Presto will allow riders to enter their card into a reader on the bus or at the station, with the lowest fare automatically deducted from the remaining balance on the card.

VivaNext Subways: Partnerships with Toronto and the TTC

Developed in partnership with the City of Toronto and the TTC, two extensions of TTC subway lines from Toronto into York Region form key components of both the vivaNext and the Metrolinx interregional transit networks.

Spadina Subway Extension

With the Toronto York Spadina Subway Extension, which will create a critical extension of the TTC’s Spadina line, a subway will for the first time cross the City of Toronto boundary into York Region.

The Spadina Subway Extension will run for 8.6 kilometres, going through commercial, industrial and residential areas. Its route will wind through York University's Keele campus and Black Creek. The Spadina Subway Extension will have 6 stations, running from its current terminus at Downsview in the City of Toronto, to the Vaughan Corporate Centre in the City of Vaughan in York Region. Stations will be located at the following locations:

- Sheppard West, located in Downsview Park lands, adjacent to Bradford GO line
- Finch West at Keele Street and Finch Avenue
- York University, in the Common of York University
- Steeles West at North West Gate and Steeles Avenue, east of Jane Street
- Highway 407 Transitway at Highway 407 and Jane Street
- Vaughan Corporate Centre at Highway 7 and Jane Street

The Spadina Subway Extension project is already funded for design and construction, and work is well underway. Currently, the project is in the planning and design phase. Station design contracts and the tunnelling contract were awarded last year, and public consultations on station designs will be held this spring. Some early construction work for utilities and roadwork will begin in mid 2009, continuing into the summer of 2010 when construction of the subway tunnel is expected to begin. Final engineering design for the tunnels and stations should be completed mid to late 2010, with construction beginning soon after.

Most parts of the Spadina Subway extension's twin subway tubes will be constructed by tunnelling using Earth Pressure Balance tunnel boring machines. Where the work is more complex or where larger spans need to be dug, a cut-and-cover construction method will be used.

Subway service is expected to begin in 2015. Service plans call for trains to run every two minutes between Downsview and Steeles Avenue, and every five minutes between Steeles Avenue and the Vaughan Corporate Centre.

New commuter parking lots are being built at key stations along the new Spadina Subway Extension, making it easier for commuters to use the subway system. We will be building 2,900 parking spaces, with new lots at the currently named Finch West station (400 spaces), Steeles West station (1900 spaces), and Highway 407 station (600 spaces).

Yonge Subway Extension

The Yonge subway extension project is an exciting, ambitious proposal to extend the Yonge subway north by 6.8 kilometers, from its current terminus at Finch Station to the Richmond Hill Centre at Highway 7 in York Region.

With this extension, people will be able to move more easily between York Region and Toronto, making transportation easier and more convenient for thousands of commuters, every day, travelling in both directions. Whether people are going to work, to school, to shop or to socialize, the Yonge subway extension will add a much-needed new option for people to get around the GTA.

Over the past year, we have worked closely with our partners at the City of Toronto and the TTC to design the proposed subway project. We have consulted extensively with the public, property owners, technical agencies, local municipalities and other organizations with an interest in the subway.

Informed by the consultations and collaboration, an Environmental Project Report was prepared to provide a full description of the recommended project including an assessment of any impacts on the environment and our community, and preliminary details on how the subway could be built. The formal Environmental Project Report, including all technical analyses and reports was submitted to the Province for their approval in February 2009, and was recently approved.

Final design work is continuing, pending approval of capital funding expected sometime this year.

Our project design was shaped with a great deal of public input and advice, such as the number and location of stations including one to be placed in a sensitive heritage district. We also spent a great deal of time determining the public's preferred approach for crossing the East Don River, and their views on the options for the alignment at the Richmond Hill Centre, and strategies to mitigate any impacts from noise created by the subway.

We are pleased that we have had such a high degree of involvement from the public, who have given us helpful advice. We also are gratified that our very active outreach and communication to the community has resulted in strong expressions of support.

At the north end of the system, the two last stations, Langstaff/Longbridge and Richmond Hill Centre (RHC) stations, work together to form the terminus. The RHC-Langstaff Gateway is a designated urban growth centre, with future development inevitable. This area provides the greatest opportunities for transit integration in York Region, and our plan is that the RHC will provide full intermodal facility with transfers from North Yonge Rapid transit and 407 transit, as well as local transit services.

Our station will form the basis for a compact intermodal forum that can be fully integrated into future growth and intensification. The facility will include an underground subway platform, with a planned 407 Transitway underground station and a two-level, 28-bay bus terminal above. As well, the station will be connected to the Richmond Hill GO platform. Lastly, the plan allows for a future northerly extension of the subway.

Commuter parking is also being planned for the Langstaff-Longbridge station, which will make it easier for commuters to reduce their reliance on their car, and take transit.

Conclusion

We are confident that through our use of innovative partnerships, collaboration with international transit experts, and respectful consultation, our plans for York Region will help it fulfill its future potential as a dynamic, welcoming region of the future.

With full implementation, not only will vivaNext reduce reliance on automobiles, but it will make it easier for people to get around the GTA, support more healthy forms of transportation such as walking and cycling, and help us achieve a more sustainable environment for future generations to enjoy.

And as we have already seen, rapid transit, carefully planned and implemented, is a singularly effective lever to shape and encourage positive new development, making our community more liveable, more dynamic, and more attractive for residents and business alike.

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