



Strategic Regional
Research Associates



THE BUSINESS CASE FOR THE REGIONAL RELIEF LINE

OCTOBER 2013

*WE IDENTIFY SOLUTIONS THAT CREATE THE FOUNDATION FOR MAKING COORDINATED
PUBLIC AND PRIVATE SECTOR INVESTMENT DECISIONS.*

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1. BACKGROUND

The “Regional Relief Line” (RRL) was first developed in 2009 by Real Estate Search Corp and the CUI resulting from the research conducted in the study known as the “New Geography of Office Location”. This research showed that the location of employment had shifted from the centre of the City to several suburban nodes and employees in these nodes had no alternative to the automobile. In addition it was apparent that the roadways to access these nodes were at capacity. After 40 years of neglected transit investment in the Region the Report noted that because of major changes in the location of the workplace, old transit plans needed to be rethought. New transit solutions were required to meet the challenge of new workplace destinations if chronic congestion throughout the Region in the morning and evening was going to be materially relieved.

The new approach to solving congestion had to include reaching beyond the 416 and relieving congestion on the highways in the 905 as well as relieving transit congestion downtown. By identifying the route which forms the RRL the authors believed that the majority of the suburban auto congestion and the downtown transit congestion could be addressed in one high value project. It was also clear from the earliest stage of the project development that this route and the type of train on the route had tremendous potential to generate high frequency high occupancy ridership in both directions at rush hour, significantly increasing the efficiency of the transit solution. The route also has the immediate benefit of connecting to the most congested transportation infrastructure in the Region.

To validate the case between 2009 and 2013, considerable research was conducted by both groups to advance the value equation, cost over benefit. Trips to New York, Washington, Chicago and London England by the group and associates enabled the research to focus on best practices in those environments. Some of the areas of high value included:

- Funding structures which captured beneficiary benefit
- Last mile solutions in dispersed geographic employment environments
- Future ridership modeling
- Land use value creation, density intensification and city building objectives
- Technical solutions to the use of heavy rail corridors
- Business Case Analysis application.

This project has benefitted from contributions from planning and engineering experts, without which this study would not have been possible. In particular, the consultants and executives of the Crossrail project in London provided insights into the complexities of the development of that project which is widely acknowledged as the new standard in accessible regional transit. The founders of SRRA are very grateful for their contributions.

The following is a summary of the findings. Detailed research is available to Investment Partners of SRRA. The findings of the research as of October 2013 were provided to the Transit Investment Strategy Advisory Panel (TISAP) headed by Anne Golden co-chaired by Paul Bedford and included SRRA co-founder Iain Dobson. Much of the core evidence and conclusions from this study helped form the many recommendations of the panel which address the issue of creating high value, high capacity, and high ridership transit.

2. INTRODUCTION

The “Regional Relief Line” (RRL) connects the majority of the Region’s office employment clusters, offering employers and employees an unprecedented degree of mobility choice, considerable reduction in commute time, significant congestion relief in the 905 and the downtown core. It further permits growth of employment in established nodes creating the necessary conditions for the Region to remain competitive.

The RRL delivers extraordinary value for public investment by creating solutions to congestion in by transit terms and has the potential to be implemented quickly without disrupting other transportation options. It will generate over 500,000 new riders within 5 years of commencing operations. It generates this high value by transforming a series of individual rail-based corridors into a cohesive, high speed, high frequency transit system. The RRL will connect to and incorporate the following existing projects or projects under construction to create the most important interconnected network possible for relieving congestion. The connections will enhance ridership and options for travel choices on:

1. The Yonge and University Subways
2. The Eglinton Crosstown
3. Pearson Union Express
4. Mississauga Bus Rapid Transit
5. The VIVA BRT
6. GO Electrification on the Lakeshore Corridors
7. The Georgetown South Line
8. The Scarborough SRT Revitalization
9. St. Clair and Spadina Streetcar Rights of Way
10. King and Queen Streetcars.

The unique opportunity to serve employment destinations at either end of the line will result in highly productive passenger loads on trains in BOTH directions. This has only been successfully achieved in a few transit projects in the history of transit.

RRL will provide high frequency, high capacity and high speed transit service to car-dependent office employment clusters in Mississauga and Markham. These two clusters already have enough ridership potential (150,000 jobs in each) to make the RRL an instant ridership success and provide immediate congestion relief in the two busiest suburban areas of the Region. These clusters contain both office and industrial employment and will attract employment for decades to come if congestion can be addressed. To neglect these nodes today would be to consign the employees of these areas to auto dependency for a very long time.

In Toronto’s Financial Core - already well serviced by transit - the line will offer significant relief to overcrowding on the Yonge line. Transit commuters will have the choice to go directly downtown from the ends of the Danforth and the Bloor subways in less than half the time or transfer from the busy Queen and King Street car or use the new crosstown LRT at Eglinton to access the core from the east or west - all for the same fare. The line will also allow employment growth to occur at “shoulder” nodes such as Liberty Village and the Lever Bros site, permitting continued growth of the core’s employment districts.

By providing fast, efficient two-way transit between three major employment nodes, the RRL will significantly reduce congestion and relieve bottlenecks in the transit system that are currently at or close to capacity and be a significant part of continuing the long legacy of building a great city. The RRL enables the network to add over 250,000 commuters during both the morning and evening rush hours, dramatically reducing trip times within and across the Region, effectively expanding the catchment area from which employers can draw and help the Region to continue to prosper. This is delivered conveniently and cost effectively. Most importantly the RRL can be built and operational in the Region much earlier, move more people and at a lower cost than any other transit project currently being considered.

Most significant will be the time saved by commuters coming to the core from places like Rexdale and Etobicoke in the northwest and Scarborough in the northeast; all these commuters will enjoy a 50% reduction in travel time and convenience. Many commuters who live in the City but work in the 905 will now have choice about how to get to work and in many cases this choice will save considerable time in the daily commute. In short, this project will get the Region moving again.

Within 8 years of the commencement of the RRL it will have:

- Created two-way peak traffic where fare revenue will exceed operating costs allowing for the elimination of operational subsidies. This will afford transit planners greater financial ability to continue to expand the system instead of subsidizing transit solutions with sub optimal ridership.
- Reduced commute times by at least 15 minutes and in some cases over 45 minutes for over 250,000 commuters improving the quality of life for employees.
- Given high speed access (maximum commute of 45 minutes) to employment for over 750,000 people, a benefit to employers making expansion more competitive in the Region
- Reduce congestion on the Region's Highways, opening up the highways for those who have to use the automobile
- Increase the effectiveness (ridership) of the other transit projects of the Big Move.
- Partial capital funding will come from beneficiaries of its services.
- The RRL will have unlocked the capacity of businesses to grow, people to get to work with many choices, and increase the capacity of the entire Region Transport system by over 20%. Estimated new ridership is 500,000 passengers per day.

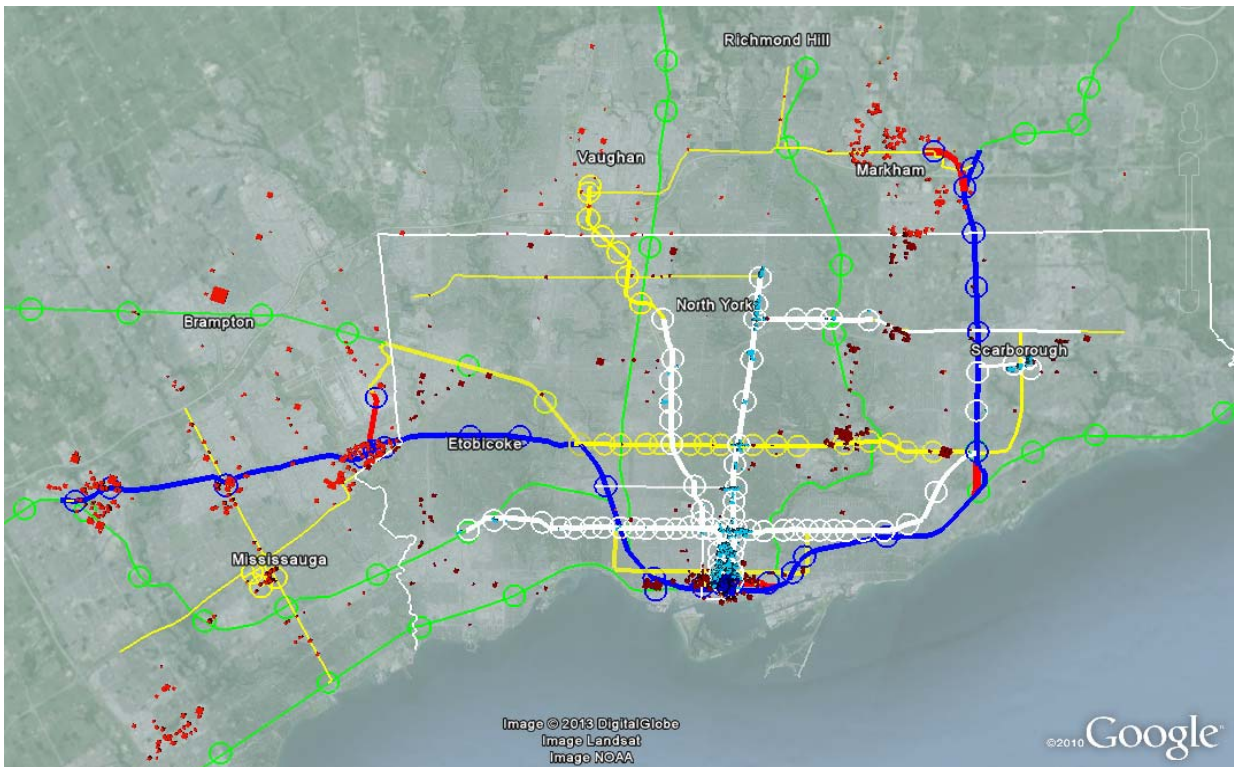


Figure A. The route diagram for Regional Relief Line, showing the network connections with the existing public transport network including the location of accessible stations and more importantly direct connections to place of work for over 300,000 commuters who have no other way of getting to work than driving a car.

2.1 ABOUT THE REGIONAL RELIEF LINE

The RRL is a new world class, high speed electric rail project that works at a Regional scale as well as providing extraordinary value and increased mobility to passengers needing to connect between home and work on a more local basis. This type of transit solution is called a “surface subway” because it moves quickly between stops unimpeded by other transit or pedestrians, and carries as many as 70,000 people per hour.

The trains look like subway trains but operate mostly above ground. This is not unusual for subways either. Most subways including the Toronto subways have surface track (TTC 21%). The \$25 Billion Cross Rail project in London England is 78% above ground. The RRL will operate through a 62.8 km of rail on the surface. Two additional parts of the system can be added at a later date to further improve the project and they will be underground. Those options are underground subway components (10.47 km) under central Toronto and the airport. These two additional high value parts of the project can be phased in as required.

The initial project can be built and opened for use in less than half the time to build subways and deliver higher ridership benefits than subways.

This is possible because the project is being built almost entirely on grade separated right of ways.

- a) Markham to Union – unlocking the ability for Scarborough to grow around a high speed connection to over half a million jobs in both downtown Toronto and Markham and the average trip time will be 25 minutes to Downtown and 15 minutes to Markham.
- b) ACC to Union – relieving the most congested area in the Region, the North West, and this line will enable people who live in the Eglinton corridor, St Clair corridor, Bloor Corridor, the King Queen corridor to get to work in half the time.
- c) Meadowvale To ACC – this high speed connection allows business to expand without the fear of creating more congestion on the 400 series highways which are at maximum capacity.

Two optional additions to the RRL can be built as demand merits without slowing the delivery of the relief to congestion of the first 2 stages of the project. They are:

- a) The Union Station Relief Subway on Wellington, Union station will have reached its capacity and by routing RRL through a new underground tunnel at Wellington Street, a complete network with capacity to grow will service the engine of the Region the Financial Services sector.
- b) Subway connection to Pearson once completed the RRL will allow for a direct link underground into Pearson International Airport and give access to not only business travelers but to the 30,000 people who work at Pearson on a daily basis.

The RRL will also open up extensive areas for medium to high density housing in areas of Toronto, helping to address the crisis of housing affordability that plagues all successful urban agglomerations. The residential and retail development opportunities are critical to the success of the project. Mixed use and community building planning at many of the nodes will result in even greater benefits to the project. In order to successfully drive ridership and accommodate intensification it is essential to create a planning policy which creates the conditions for all forms of urban functionality to be present and accessible by transit. The RRL affords the opportunity for municipalities to re-think employment districts alongside residential intensification in a community building manner. The intensification of employment and residential properties around high speed transit in areas where there is substantial development in place will guarantee the RRL will have optimum ridership on day one.

2.2 BENEFITS OF PHASED DELIVERY

There are several ways to introduce the service in an iterative manner and many benefits to staging the delivery of the service. Staging of the construction will allow for an orderly procurement of rolling stock, the continuous construction of subway tunnelling and the adaptation of ridership patterns in a practical way. Employers will now have several options to locate cost effectively throughout the Region knowing that transit will be delivered in a timely manner and when complete their labour markets will be close at hand.

a) PHASE 1 - MARKHAM TO UNION

The current Stouffville Go line will become the RRL's eastern spine. The new trains will deliver commuters from Ellesmere and Kennedy to Union Station in 21 minutes, saving 26 minutes each way for passengers who go downtown. By contrast the Subway to Scarborough Town Centre would only save commuters between 1 and 2 minutes over the old SRT transfer. The RRL line will be completed at least 7 years before the subway. Commuters heading to Markham and Richmond Hill will be accessing one of the most congested areas in the region with high speed transit linked to the developing rapid bus way network.

This corridor is currently grade separated and owned by the Province, making the RRL a more cost effective solution than LRTs. It can be operational before any other parts of the system are completed because trains can be reversed at Union Station.

People in Scarborough will benefit from RRL before any other projects are completed. The 20 million sq ft of office space in Markham and the 56 million sq ft of industrial plants and warehouses will be readily accessible by transit for the first time while access to the financial district will be possible in less than half the commute time. Instead of having empty trains on the way back from the downtown in the morning this project will have ridership who will want to go both ways allowing residence to live in the City and work in the Region. The line is a destination at both ends and as such has extraordinary two way traffic/operational benefits, benefit for both employers and employees.

b) PHASE 2 - AIRPORT CORPORATE CENTRE TO UNION (2019)

There are 56,000 auto-dependent employees in the Airport Corporate Centre alone who have no access to high speed transit in any direction. By directly linking this node to the financial core, employers will be able to locate there and draw on both Mississauga and the City of Toronto for access to employees. The route travels due east from ACC along the Eglinton corridor to Black Creek and then south east toward the Financial Core, intersecting with 5 major local transit facilities. The electrification of this line directly into Union Station (and eventually into the core along the new subway route under Wellington Street) creates a high speed link at both ends to Mississauga's 401 employment corridor and relieves transit traffic into the Financial Core. This segment of the RRL also captures two-way peak hour traffic making the line extraordinarily efficient and cost effective.

This phase will take a little longer to complete than the Markham phase because there are no tracks on the section from Mt Denis to the Airport Corporate Centre. This right of way will take longer to design and obtain approval in an EA process. It is owned by the Province and was intended to be an expressway. There is ample room for the dedicated right of way.

c) PHASE 3 - MEADOWVALE TO AIRPORT CORPORATE CENTRE (2021)

This corridor from ACC to Meadowvale runs parallel to the 401 highway and connects the Hurontario LRT and Go Lines to employment areas currently containing over 100,000 commuters. The 401 highway is the most congested roadway in the Region, with all commuters completely auto-dependent. This is also a heavily travelled trucking corridor which needs to be freed up for the movement of goods and services.

The Meadowvale phase is the only land acquisition part of the RRL system. Most land is either part owned by government or is low cost industrial land. No residential expropriation will be needed. There are also two significant water systems which will have to be crossed raising the initial capital cost of the segment. Once the first two segments of RRL are completed and ridership benefits proven this section can be scheduled to meet demand. There may be a case to leave this segment until after the Airport Subway connection is complete.

d) PHASE 4 - THE UNION RELIEF SUBWAY ON WELLINGTON (2022)

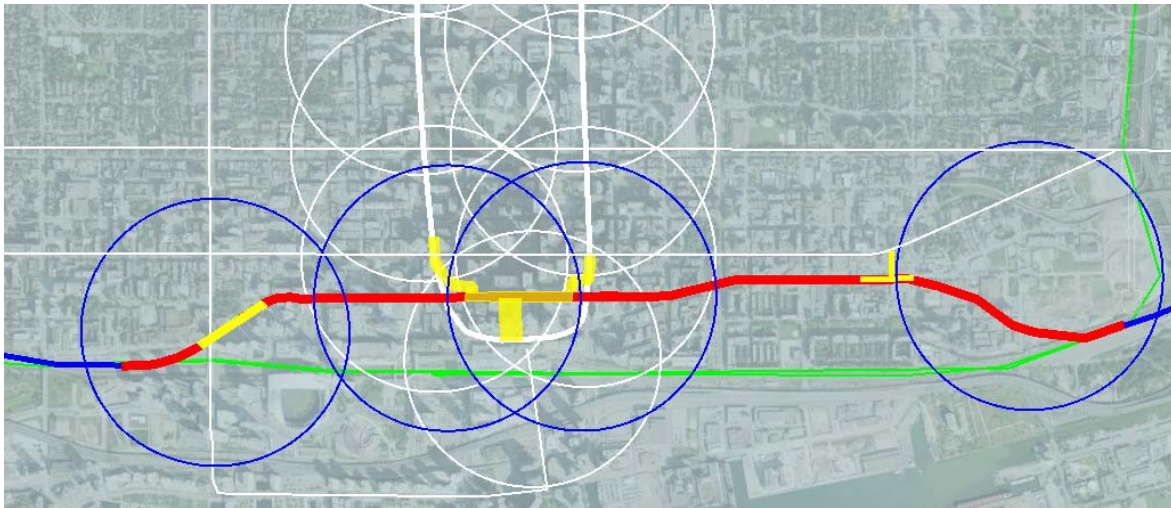


Figure B. The Wellington Subway – Relief of Union Station Red Line is the Wellington Subway Route, White circles and lines represent existing subway and street car network, Yellow shapes are stations and network connectors to existing transit infrastructure, Green Line is the existing Go corridor into Union Station.

Capacity at Union station is expected to reach optimum levels in 2022. The ability to move RRL’s significant ridership arriving from both ends out of Union Station and into a subway along the Wellington Street has three significant construction advantages...

- Wellington has no Street cars to disrupt during construct and very little subsurface infrastructure.
- Is a low vehicular traffic street and during construction access to existing buildings for parking and deliveries is the only constraint to construction.
- Accessing Wellington Street at Spadina and the Pan Am Village will provide further growth options without having to tunnel more than necessary.

The Wellington Subway segment of the RRL will move RRL passengers from the initial go lines and out of Union Station to a new superstation under Wellington Street between University and Yonge St. with 250,000 sq ft of new retail built at the base of the highest concentration of office space in Canada. Its value based on the traffic into and out of the City of Toronto every day is expected to attract private sector investment to pay for the construction of the station and connector paths to Union Station, the King and St. Andrew stations. This station will be the signature piece on the entire system and in Canada, but can be built as demand is established and is not critical to the early stage value of the east and west portions of the RRL as they enter Union Station.

e) PHASE 5 - SUBWAY CONNECTION TO PEARSON (2024)

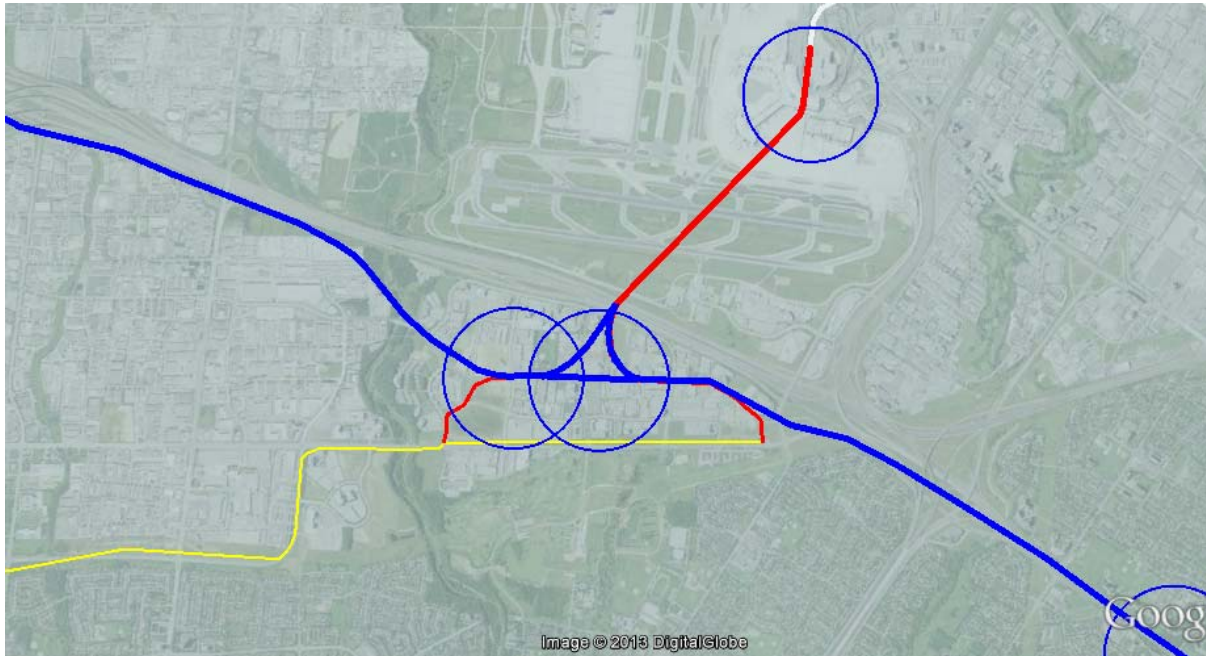


Figure C. The Airport Subway White circles and lines represent existing subway and street car network, Yellow Line is the Bus Rapid Transit route completed 2014, Blue Line is the RRL, Thick Red Line is the new Subway Route.

The Airport Access Option would give 30,000 employees of the GTAA and its tenants public transit access to the Airport which is limited currently. This subway addition to the system and provides considerable access options for people who work at the airport as well as travellers. It could be added to the system at any time and could easily be preceded by an upgrade of the BRT to an LRT from downtown Mississauga to the Airport Corporate Centre and extended into the Pearson Airport. The scheduling of all subway phases can be co-ordinated with other tunnelling projects in the Region to take advantage of the efficiency of constant and steady construction of tunnels. It can also be prioritized as dictated by ridership levels and the appetite for private sector investment.

2.3 FUTURE DEMAND

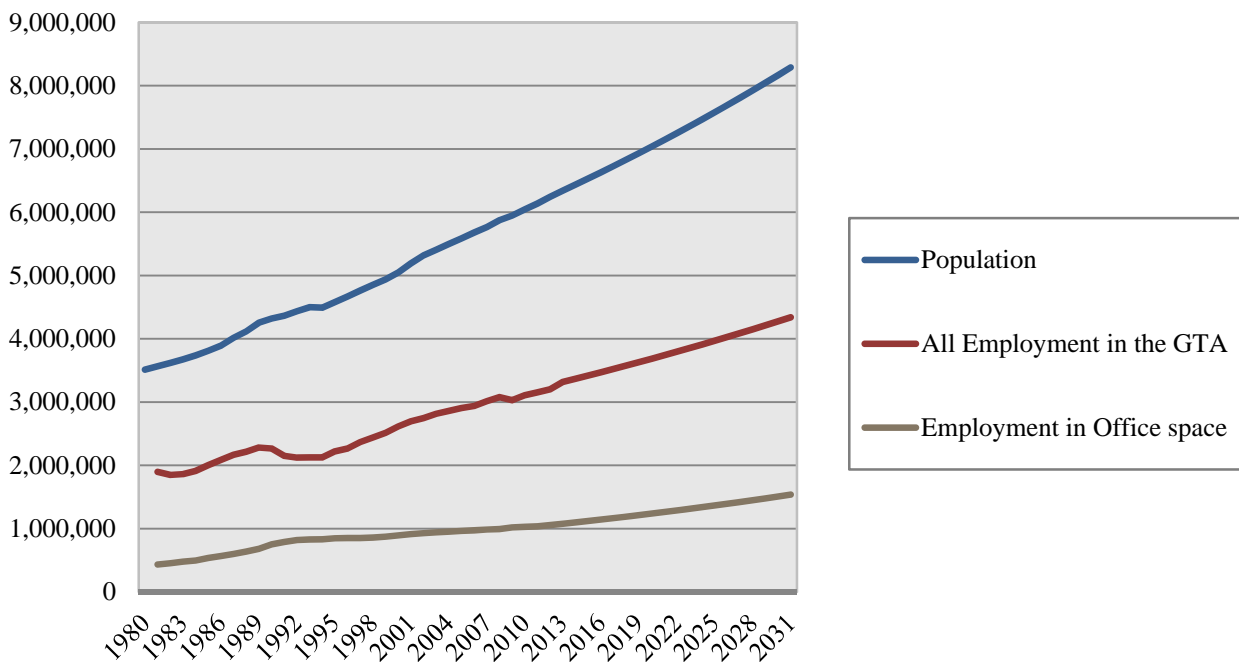
Greater Toronto Area is forecast to continue to grow. The Growth Plan expects that by 2036 nearly 3 million additional people and 1,000,000 new jobs will be in the Region. The RRL in one project will accommodate the transit solutions for a considerable amount of that expected growth. The projected 45 per cent growth in public transport trips will bring inevitable additional pressures on the transport network. The RRL, connecting employment in nodes which can accommodate growth without putting undue pressure on communities, will allow for more sustained intensification while preserving neighbourhoods.

To better understand growth and why it is important to connect current buildings where employment occurs and future buildings it is useful to understand what job growth means to location decisions of employers. To do this SRRA is researching where employers want to be and what they need to be successful in those buildings. The research is expected to be released in 2014.

Initially, the research has determined that 125 million sq ft of office space will have to be added to the Region. If it is not located on transit the road system does not have the capacity to move commuters. The stark reality of this is why the SRRA team believes that in addition to the new transit solutions being researched in this work so too must the land use policies and economic policies be co-ordinated to complement and augment the transit solutions.

This graph illustrates the relationship between historical growth of population and the projected growth alongside employment forecast. If correct that will mean an additional 125 million sq ft of office space will be needed.

POPULATION, EMPLOYMENT & OFFICE JOBS



Regional Relief Line will play a vital role in meeting Greater Toronto Area's current and future transportation needs thereby securing the economic growth of the Region and encouraging sustainable development. As the Region grows from 6 million people to 9 million as most forecasts show the need to create a sustaining transit network within an intensifying environment will require the maximization of rail corridors and provide connectivity where roads simply aren't viable.

Regional Relief Line will increase the capacity of Greater Toronto Area's rail transport system by over 20 per cent which represents the largest single increase in Greater Toronto Area's transport capacity since the completion of the Bloor Danforth Line 1967. Demand forecasts indicate that by 2026 Regional Relief Line will generate over 500,000 new passengers each day with over 300,000 of that during the six hour morning and evening peak periods.

This extra capacity will reduce congestion by between 20 per cent to over 60 per cent of the existing subway, street car and bus networks and significantly improve the flow of traffic on the major highways of the Region.

The key transport aims for Regional Relief Line will support delivery of the objectives to:

- Contribute to sustainable economic development and population growth by increasing transport capacity, reducing congestion on the existing transport network and highways;
- Improve quality of life and productivity through time savings for commuters; and
- Bring wider benefits including: enhancing accessibility (including those with restricted mobility) improving people's access to jobs, schools and other locations; improved transport safety with reduced road accidents; and environmental improvements; including a reduction in CO2 emissions;
- Opens up large tracts of previously inaccessible land to be developed for medium to high density housing, helping to alleviate the high cost of housing in the region.

Regional Relief Line will also support the delivery of objectives set out in Metrolinx's Mandate, namely to:

- Support a transport system that is an engine for economic growth but one that is also greener and safer and improves quality of life in our communities;
- Improve the links that help to move goods (reducing road congestion) and people around;
- Secure the sustainability of the transit system and create capacity for improvement of services, by addressing the high cost of congestion and supporting Greater Toronto Area's growth.

The current transport network in and around Greater Toronto Area is already highly congested, with untenable levels of crowding on key Go Rail lines, TTCs subway and streetcar lines and bus routes feeding higher order transit, particularly during the peak period. Even with the on-going investment on the TTCs subway and streetcar lines, and other transport systems, Greater Toronto Area's transport system is struggling to meet existing demands.

The most obvious element of relief is the new direct connection between the Bloor and Danforth lines and Union Station. This relief has been proposed for over 40 years in a narrowly designed focus on the Downtown employment cluster. The benefit of RRL is that it achieves those objectives and much more than downtown relief. It will significantly improve connections across Greater Toronto Area and particularly in the heart of Scarborough and the northwest region of the City both areas are notoriously congested.

As can be seen from the route diagram on page 4, each of Regional Relief Line's is connected to other parts of the existing transport network – including the two main subway lines in 5 places, the new Crosstown high speed LRT at both ends, two major street car routes currently at capacity on Queen and King Streets and connects the two street car right of ways on St. Clair Ave and the Spadina. These benefits will flow through into a wider range of journeys – those starting or finishing at locations that are not directly served by transit but which can use Regional Relief Line for part of it for the overall trip.

2.4 IMPACT ON ROAD CONGESTION

On Greater Toronto Area's roads, Regional Relief Line is expected to reduce pressures on road traffic, by 6% per cent across Greater Toronto Area. A more significant impact is expected on roads running parallel to the Regional Relief Line route, with Regional Relief Line also helping to alleviate future growth in road traffic by reducing the need for car trips to central Greater Toronto Area, Suburban Clusters and, particularly, Pearson Airport and the 404/407 intersections.

Preliminary calculations put the number of cars which will be initially taken off the road on a daily basis at 70,000. This is a number which will have an exponential impact on mobility of the highways of the Region and will reduced congestion significantly.

Regional Relief Line also has a small, but beneficial, impact on safety with a two per cent reduction in road accidents as well as benefits derived from providing a safe, secure railway. All told, nearly five per cent of the BCA and WEB benefits from Regional Relief Line result from improvements to the environment, safety and reduced road congestion.

2.5 NEW TRAINS AND STATIONS

The rolling stock, a new high speed electric train which looks and feels very much like the new subway cars on the TTC, will be assembled in Ontario, built tested and delivered in a similar manner as the rolling stock for Crossrail in the UK which allows for the cost effective delivery of the rolling stock over time and the provision of new capacity as the system grows. Benefits of the new Rolling Stock are speed, comfort, flexibility and safety. They have the capacity to be lengthened as need be. Initially they will run on 5 minute intervals at peak hours but increase frequency easily and cost effectively as demand grows.

The new trains are being designed to meet the needs of passengers Greater Toronto Area. They will travel at speeds of up to 160kmh thereby delivering fast cross town service. Critical to increased speed is the spacing between stations, which is why stations are on average more than 2.5 kms apart. They will be electric and organized by the world's most advanced signalling system allowing the frequency of service up to every 90 seconds if demand requires. Initially frequent (less than 4 minutes between trains) service can be delivered at peak demand times, while less frequent as demand reduces.

More importantly they will be comfortable to ride, with wide doors and aisles, plenty of handles, dedicated spaces for wheelchairs, real time information with announcements made by PA and in-carriage screens, clear sightlines through the carriages and onboard CCTV. The experience will be similar to the new TTC subway cars, only they will carry slightly more passengers with more seating and travel at twice the speed. People with restricted mobility will see significant improvements as a result of Regional Relief Line. All of Regional Relief Line's fleet of new trains will be fully compliant with the latest standards for facilities for passengers with restricted mobility and will comply with the safety and performance standards.

All Regional Relief Line stations will provide enhanced accessibility features including improved signage and security. Independent, step-free access from street level to the Regional Relief Line platforms and then level boarding without ramps onto the Regional Relief Line trains at the new central Greater Toronto Area stations. Regional Relief Line will also bring step-free access at the interchanges between Regional Relief Line and many of the existing Subway routes and Street car /LRT Routes.

Stations on the existing GO network where significant works are undertaken will also offer step-free access from street to platform including the busiest stations will both start and end at a station with step-free access. Good design encourages high levels of usage and the plans to have local input into the development of stations so that the character of the local communities can be incorporated into the design and ancillary functions of these highly public spaces.

3. THE ECONOMIC CASE FOR REGIONAL RELIEF LINE

The future economic success of Greater Toronto Area and the Province of Ontario is dependent on a robust transport infrastructure. As described above in the section on the ‘transport case’, Regional Relief Line is a key part of the package of investments needed to ensure that Greater Toronto Area has a transport network to meet its current and future projections of growth and intensification.

Improved public transport is one of the major prerequisites for attracting more jobs and residents, delivering and facilitating the growth that is forecast. Over 85 per cent of the future employment growth in office space in Greater Toronto Area is expected to be located in areas well served by Regional Relief Line services – the Downtown Toronto and Suburban Clusters.

The expansion of the highway system enabled the suburban industrial parks to accelerate employment development in office space. However, this transformation of industrial capacity to the much more intense development of office employment has outpaced the ability of highways to provide access. This unintended result of policies developed in the 70s is exactly why congestion has also outpaced the capacity of the highways to manage growth in this part of the Region.

Regional Relief Line can also enable the regeneration of areas along its route through improving accessibility with shorter journey times, and giving employers located along the route better access to a larger, more highly skilled labour market with more choice of skilled employees. This is likely to attract new private sector development, and increased employment densities, near Regional Relief Line stations.

Regional Relief Line will bring 1.5 million more people within a 45 minutes commute of the existing major employment centres of the Downtown Toronto and Suburban Clusters.

Regional Relief Line will also have beneficial impacts on the environment in terms of a reduction in pollution, noise and improvements for local communities. For example, Regional Relief Line will contribute to wider goals to reduce carbon emission – as a result of modal shift; Greater Toronto Area’s total carbon emissions will be reduced.

3.1 CONSTRUCTION EMPLOYMENT

The actual construction of Regional Relief Line will also be economically significant in its own right, particularly in current economic circumstances. Up to 10,000 people are likely to be working on the construction of Regional Relief Line at its peak, with approximately 1,000 net additional jobs being created to operate and maintain the railway once it is completed. Further jobs will be secured in supplying the project during construction and providing services to those directly employed by Regional Relief Line. Regional Relief Line construction passes through some of Greater Toronto Area’s most disadvantaged areas.

Regional Relief Line will also leave a longer term skills legacy behind. RRL is committed to the skills agenda and has devised a strategy which focuses on inspiring future talent, supporting local labour, revitalising our skills base and maintaining safety across the programme.

4. BUSINESS CASE ANALYSIS (BCA) - REGIONAL RELIEF LINE

In common with other major planned transport investments, a formal 'business case' has been prepared for Regional Relief Line, quantifying where possible – and comparing – the benefits and costs of building the project. The BCA for the other projects not covered by this report are available from Metrolinx, the impact of RRL has been estimated at a cost benefit ratio of 2.5 to 1 making it on a par with the most valuable transit projects in the world.

The plan takes into account the latest revenue and cost, changes to the business case methodology beyond those incorporated in Metrolinx's Investment Strategy.

- A comprehensive update of the requirements/scope, design, schedule, cost estimate, risks and inflation for the construction of Regional Relief Line;
- Updates to operating, maintenance and longer term renewal costs to provide planned Regional Relief Line services;
- Incorporating changes to the Metrolinx's appraisal methodology in respect of GDP growth rates
- Revised Real Fares growth assumption of two per cent and one per cent

The conventional transport economic appraisal of a project assesses the transport benefits (and costs) associated with its implementation. It focuses on factors such as the travel time savings and journey quality benefits, assessing these against the total cost of the project over a period of time. Such appraisals have long been used to value the relative attractiveness of different transport projects by assigning monetary values to both the benefits and costs.

To enable direct comparison with other projects, values in the economic appraisal have been expressed in 'Present Value' over a 60 year appraisal period from the opening of Regional Relief Line with a discount rate of 3.5 per cent for the first 30 years and three per cent thereafter.

The appraisal compares Greater Toronto Area with and without Regional Relief Line, assuming a number of committed improvements to Greater Toronto Area's transport system are completed including other transit upgrades. Compared to the costs associated with building the project as well as the costs for operating and maintaining services (including longer term infrastructure renewal), Regional Relief Line generates substantial net transport economic benefits. Over 40 per cent of these transport benefits are associated with Regional Relief Line's ability to increase the capacity of Greater Toronto Area's congested transport network to meet the existing and future transport needs of Greater Toronto Area.

A number of sensitivity tests have also been conducted to test the robustness of the project if a number of key assumptions were to be changed. These tests indicate that the benefits of Regional Relief Line are resilient to possible future economic shocks to Greater Toronto Area and the country and would still represent a good value for public money invested.

4.1 WIDER ECONOMIC BENEFITS

The conventional appraisal methodology for analysing transit investments considers the direct transport benefits and costs which we have covered above in the BCA. In addition to these, it is expected that a major project such as the Regional Relief Line will generate wider economic benefits (WEB) that are not currently included in the standard benefit case analysis calculations. Investing in public transport can have a significant impact on more than just transit.

There are four specific components of these ‘wider impacts’ or ‘wider economic benefits’ (WEBs):

- Move to More Productive Jobs;
- Pure Agglomeration;
- Increase in Labour Force participation; and
- Impacts on Imperfect Competition

The calculation of these benefits has recently been revised and it is this guidance that has been used to provide an estimate of the WEBs Regional Relief Line is likely to generate. The impact of Regional Relief Line on the wider economy is substantial. The increase in Canadian GDP derived from the implementation of Regional Relief Line is focussed on enabling the growth of central Greater Toronto Area employment and its impact of productivity. This generates higher earnings and profits for Canadian businesses which translate into higher taxes. As with transport economic benefits, the total value of these wider benefits are immense.

In total, Regional Relief Line WEB are estimated to exceed the capital cost to create the project including increased tax receipts, higher value jobs, , exceeding the initial public sector funding required to build Regional Relief Line. Including the wider economic benefits in the appraisal this increases the BCA for the RRL from 2.5 to between 3.50 and 4.0 using Canadian wide values of time.

5. CONCLUSIONS

The latest assessment of Regional Relief Line’s benefits and costs indicates a continuing strong business case for the project’s ability to reduce congestion on Greater Toronto Area’s increase the capacity of existing transport network and allow Greater Toronto Area to generate more productive jobs. The Business Case Analysis (without the Wider Economic Benefits added) indicates that this project will have the same impact on congestion and public transportation as did the original construction of the Yonge Street Line to Eglinton in 1954. No other project since has been so highly rated.

Further sensitivity tests carried out as part of the appraisal – testing the impact of alternative scenarios for population and employment growth for example – indicate that the case for Regional Relief Line remains resilient even with possible future economic shocks. Simply put this project has a strong and positive outlook without growth in the Region! It is sustaining without having to rely on growth AND it has the capacity to meet the demands of considerable growth.

It is possible that the demand for Regional Relief Line services will outstrip current forecasts – research undertaken for the Regional Relief Line sponsors into demand on other new services such as the DRL project, extension of the Yonge line north and the highway expansion indicates that transport projects designed primarily to relieve congestion and support future population and employment growth, generally meet or exceed their original demand forecasts.

Regional Relief Line has a significant role to play in addressing the existing and future transport needs for Greater Toronto Area. The railway/subway will significantly reduce congestion on 400 series highways and TTC subway and streetcar networks, build additional ridership in the bus network and support improved access to the key centres of the City, West End and Suburban Clusters. As such – and with the Wider Economic Benefits it will bring – Regional Relief Line will support growth in Greater Toronto Area, the Province of Ontario, and thereby have a positive impact on the Canadian economy as a whole.