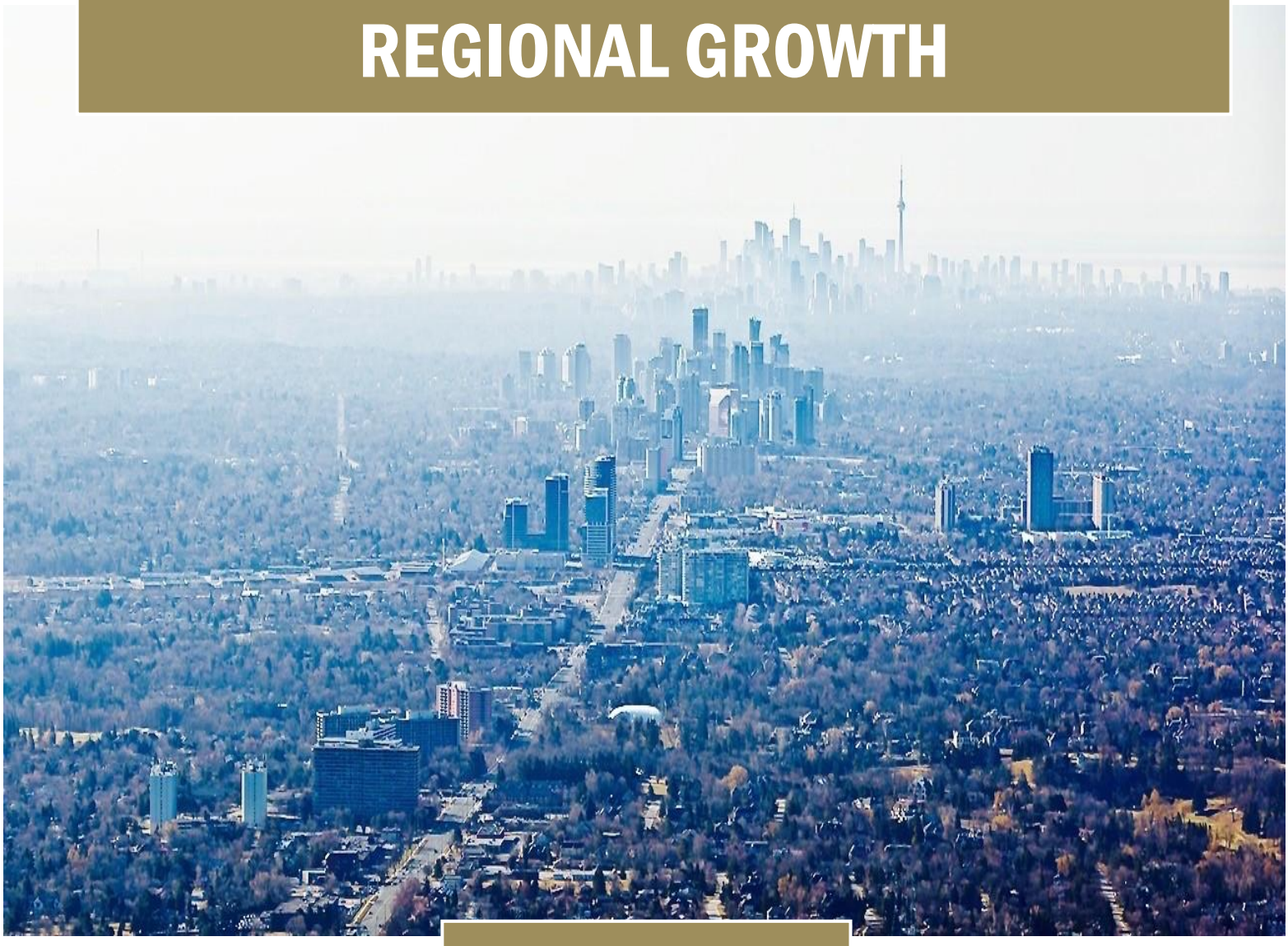
SRRA Strategic Regional Research Alliance

MAY 2016

THE IMPACT OF TRANSIT ON REGIONAL GROWTH



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SRRA

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SRRA is a not-for-profit organization, collaborating with both public and private sector organizations to provide strategic, non-partisan public policy research on the connections between infrastructure, land use and future economic welfare of the Greater Toronto and Hamilton Area (GTHA).

SRRA is a partnership created by public and private entities to bring together their experience and perspective, develop unbiased, evidence based research and inform the decision making process. **Learn more:** srraresearch.org.

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EXECUTIVE SUMMARY

Strategic Regional Research Alliance (SRRA) with its partners, the Cities of Toronto, Markham and Mississauga, and York Region (the project team) studied the effect of Regional Express Rail (RER), the SmartTrack plan proposed during the 2014 Mayoralty Campaign by then candidate John Tory, and other transit projects on projected growth in the region.

Having concluded the study, as required by the Terms of Reference, the project team identifies issues for further analysis which potentially may have impacts on current planning and policy assumptions with respect to incremental growth in the region.[1]

The study underscores the proposition that the region may not achieve the growth levels forecast by the Ontario Growth Secretariat unless appropriate intensification actually occurs around transit. To enable this intensification, the analysis suggests that current economics, land planning, and transit service policies need to be aligned with the realities of land economics and real estate markets in order to permit builders and investors to respond to the value of public investment in transit. The study also concludes that if substantial intensification does align with transit then regional growth may exceed forecasts.

A first order conclusion of the study is that the amount of intensification required to sustain transit operations is not well understood or quantified. This project tested potential scenarios to determine what was achievable and what challenges exist to support city building objectives of transit investment. Further development of analytical approaches to this issue is highly recommended.

Background

The project team was asked to do four things:

1. Reallocate existing forecasts of growth as prepared by the Ontario Growth Secretariat and applied by municipalities in traffic zones in anticipation of new transit infrastructure.

[1] *Commercial and Multi-Residential Forecasts for the Review of SmartTrack*, (SRRA, January 2016)

2. Evaluate current population and employment density throughout the Greater Toronto Area specifically for the planning periods 2011 and 2016 and augment the data with additional information to establish a more accurate starting point for future growth projections.
3. Examine growth projections for 2021, 2031, and 2041 to determine the impact of Regional Express Rail, SmartTrack and other committed transit plans on intensification.
4. Provide various growth scenarios to serve as a basis for the ridership analysis to be performed by the University of Toronto Transportation Research Institute (UTTRI).

The project team reviewed the data provided by the Ontario Growth Secretariat, the municipalities, the National Housing Survey (NHS), and the Transportation for Tomorrow Survey (TTS) and enriched these data sets with specific information provided by employers and private sector research organizations to better understand exact conditions on the ground before reviewing projected future growth.

The project team then reallocated the growth projections subject to three key public policy guideline constraints:

1. Top line aggregate growth expectation in the region was to remain as currently stated.
2. Existing land use policy would be adhered to.
3. Existing transit fares throughout the region were considered equalized.

A first order conclusion of the study is that these policy-driven constraints are themselves independent variables in all analysis. Further analysis that allows for variation to these variables is highly recommended.

The reallocated data was provided to University of Toronto Transportation Research Institute (UTTRI) for ridership analysis. UTTRI developed an enhanced ridership model that was better able to analyse the network effect of transit and determine expected ridership in the new transit based on the data provided. The study and the model were both peer reviewed and received positive endorsements. The model and the data were then made available for use by individual municipalities and transit agencies.

Objective of the Report

Development adjacent to transit capable of generating ridership is an important component in determining where and when to invest in transit. The objective of this study was to provide a market tested assessment of the growth expectations of government on the location of new homes and places to work relative to proposed transit plans. The data was analyzed by University of Toronto's Transportation Research Institute (UTTRI) to establish the expected ridership for each transit proposal.

The City of Toronto requested a study of the potential ridership for SmartTrack in December 2014 as proposed by then candidate for Mayor John Tory during the 2014 civic election. Strategic Regional Research Alliance (SRRA) was retained to undertake this work because of its unique data, its ability to evaluate development decisions, its previous research on the locational aspirations of employers, and its ability analyze risks to development.

The regional nature of transit plans made it important to the quality and relevance of the study that adjacent municipalities participate. The Region of York and the City of Mississauga agreed to fund additional work, to contribute data and participate in the research. This report is the product of this collaboration.

Critical Implications for Regional Growth Planning

The three constraints set out above significantly affected the findings of the study in the following ways:

- holding aggregate growth constant does not allow for higher growth projections resulting from increased mobility options; instead growth projections are simply reallocated;
- the effects of land economics and markets are not accounted for either negatively of positively; and
- current land use policy could not be amended to take advantage of emerging markets.

In order to adhere to the first constraint of unchanged aggregate regional growth, any additional growth from network or other ancillary infrastructure effects was excluded. Instead, expected growth was moved from non-transit areas to areas where it was reasonably expected

that RER and SmartTrack would attract such growth. It is counter-productive to assume that network effects are a zero sum game.

Where development around transit is less than expected, land use restrictions are often blamed. In most cases, however, the real impediment to development and intensification is often land value accretion and real estate markets which are not aligned with planned transit.

Land use policy surrounding much of the new rail RER corridors and SmartTrack, will require significant change to provide for intensification. This study did not allow for such change. For example, where private sector input suggested that multi-residential growth should occur, no residential growth was reallocated to industrially-zoned areas near transit.

More work is required to measure the effect of transit on growth by:

- lifting the above-noted constraints to develop richer scenarios;
- testing mobility outcomes of new policy surrounding transit with employers and developers; and
- engaging provincial and municipal agencies with the private sector to leverage a collaboration of expertise and knowledge.

SUMMARY OF PRELIMINARY FINDINGS

The province and municipalities in the GTHA are investing heavily in new transit infrastructure. This report measured the impact that transit, and specifically the development industry's response to transit may have on projected growth in the region.

FINDING 1: There are risks to growth unless the development response to Regional Express Rail/SmartTrack is positive.

The degree to which transit will support growth depends a great deal on the development community's response to transit. New transit relies on ridership from the transit network and new ridership generated from intensification surrounding stations on the network in order to provide riders who sustain and pay for transit operations.

The project team concluded that growth in non-transit locations may not occur as forecast and that intensification around transit may not occur unless plan permissions, land economics and markets support building. These risks need to be addressed with further analysis of potential changes to policy.

FINDING 2: The region is in transition from an era of sprawl to intensification; successful intensification will affect growth in the region.

The growth projections used in this study were established using econometric tools based on the pattern of growth for the past 25 years. The projections depend on the assumption that:

- required future infrastructure investment will align with growth objectives; and
- markets will adapt to that investment.

The project team believes that growth will not occur in the same way it has in the past because of two recent and transformative trends affecting where businesses and residential properties locate. These trends are:

1. The majority of population growth has and will continue to shift from single-family dwellings to multi-residential dwellings.
2. Employer access to labour markets (i.e. the pool of readily available potential employees) has been reduced and inhibited by road and transit congestion which can only be mitigated by connecting home to work with effective transit development.

Until recently, employers were able to locate in regional employment parks and families could move to low-density single-family suburban communities because of well-developed auto access. In the future, residents seeking to avoid congestion will locate where there are alternatives to the automobile, especially at peak hours of travel.

FINDING 3: New housing will predominantly occur in multi-residential buildings.

The region anticipates growth of more than 3M people during the next 25 years in the same geographic area occupied by approximately 6M people today. This research project revealed that the majority of this growth will be housed in multi-residential structures, which, when properly located, have the potential to be transit-oriented.

The project team found, however, that much of the new transit on RER/SmartTrack bisected industrial land which does not allow for residential intensification. The data provided to the University of Toronto Transportation Research Institute (UTTRI) for ridership analysis did not benefit from the relocation that would be possible if lands currently zoned for employment were treated as mixed use areas or reflect residential intensification.

FINDING 4: Conditions adjacent to transit vary widely from node to node. Policy must be specific to those conditions.

The development industry's decisions to invest rely on favourable conditions for development on specific parcels of land. The three most important conditions for development are:

- planning permissions which allow for improvement
- land and development economics which align with costs; and
- responsive estate markets.

The project team assumed that many specific impediments to development on a node by node basis would be addressed by policy change which aligned with the complexities of different nodes. The ridership outcomes from the analysis conducted by UTTRI are dependent on these assumptions.

FINDING 5: The impact of transit on growth is not as simple as taking growth from non-transit to transit nodes.

Reallocating growth from one area to another (i.e. from non-transit to transit-oriented locations), was required by the mandate of this project and depended on acceptable conditions to build around planned stations. The development industry identified both transit and non-transit nodes where conditions do not favour anticipated growth. The project team believes a more realistic approach would include varying scenarios for regional growth, which reflect area-specific conditions in different nodes. As a result, the project team cannot state with any confidence that the overall forecasts for the region as a whole can be achieved.

FINDING 6: Testing employers and the development industry's response to transit is valuable.

The reallocation process would not have been possible without testing the assumptions with the expertise and knowledge of the people who invest in places to live and work – the development industry. The history of intensification in the City of Toronto, where public transportation is well established, indicates that intensification does not occur simply because transit is available.

The project team believes, after consultation with the development industry and employers, that some non-transit areas will be hard to intensify without changes to land use planning and other yet to be determined policy changes that affect land economics.

FINDING 7: Transit Oriented Development (TOD) planning in advance of the opening of new transit is important to the development industry's response.

Transit Oriented Development has occurred in some areas outside of downtown Toronto, most notably Mississauga along the Hurontario Corridor and in downtown Markham. In these areas, conditions have allowed builders to build in anticipation of higher order transit. Many other nodes surrounding RER/SmartTrack station locations have not yet implemented new plans for TOD, making the task of reallocating growth to these nodes conditional.

FINDING 8: Sustained employment growth depends on the viability of established clusters of employment to leverage the benefits of agglomeration.

Since 1980, the location of the majority of growth in high value office jobs has occurred primarily in three locations: the Financial Core of downtown Toronto, Markham/Richmond Hill and the 401 corridor in Mississauga.

The projections of growth indicate that the majority of the 1M jobs required to support expected job growth will occur in office buildings. This will require an estimated 100 million sq. ft. of new office space capacity. The project team estimated that approximately 80% of this future office growth is most likely to take place in the three major employment nodes in the region. The remaining 20% is assumed to take place on individual sites.

The project team had difficulty reallocating the level of office employment anticipated in the region outside of these three nodes. While the Financial Services Sector, based on its growth over the last 40 years, has the capacity to locate in the Financial Core, employers said that two important changes had to occur to make new nodes on the edges of the Financial Core and the two 905 nodes outside of the Central Area attractive in the long term:

1. Planning regulations must provide the benefits of mixed-use development such as amenities like shops, restaurants and daycare (not necessarily residential use) in order to continue to attract employment to these employment districts.
2. Frequent and high speed service during peak-hours is required to give access to more diverse labour markets in a cost efficient timely manner.

FINDING 9: Land Value Accretion (LVA) has a potentially significant impact on outcomes.

Land value increases as a result of the expectation that use and/or density will change. This creates added costs to development and often raises the development costs beyond what the market can bear. Land Value Accretion has the unanticipated consequence of slowing down or precluding the desired level of intensification, particularly in locations adjacent to transit.

LVA creates problems for the reallocation of growth to specific locations where planning, economics, and markets are not favourable to development. The impact of LVA was not treated

as an impediment because it was assumed that new policies would be introduced to address the issue.

FINDING 10: The benefits of reverse peak hour ridership have not yet been incorporated into ridership forecasts.

Reverse peak hour ridership has a positive impact on operating costs when trains that would have previously returned empty to their point of origin are filled with paying customers. Both RER/SmartTrack have reverse ridership potential.

Mississauga and York Region are responding to this challenge with new research on how to connect major employment to transit (this is also commonly referred to as the 'last mile' problem) to allow for commuters to live downtown or some other location and use transit to get to employment nodes *where office buildings do not have direct access to transit*.

Although UTTRI's demand modelling tool is now better able to reflect 'network effects', the benefits of reverse ridership related to successfully addressing the 'last mile' have not yet been incorporated into ridership forecasts.

FINDING 11: Co-ordinated regional analytics and data produced more robust ridership analysis.

The coordinated effort by the province and the municipalities working with the development industry on this project underscores the value of coordinated, robust and uniform analytical capacity to measure travel demand. This framework provides the opportunity in future to add new data and analytics. It also allows for the recognition of the impact of the efforts underway at all levels of government to change policy and meet the challenges of intensification in the region.

The analytical capacity of UTTRI's demand modelling tool was greatly enhanced during the project to properly recognize the changing patterns of travel which have developed in the region in the past 25 years. The project demonstrated how a coordinated approach to data and analytics can improve the measurement of growth and identification of risks to growth.

1. THE DATA USED FOR RIDERSHIP ANALYSIS

1.1. WORKING WITH PUBLIC DATA AND WITHIN THE PUBLIC POLICY FRAMEWORK

The project team, in collaboration with senior planning and transportation staff in the City of Toronto and regions, started with data developed by municipalities and used for ridership analysis. The project team crosschecked the data provided in the base years of 2011 and 2016 against several sources to test the validity of the data and where agreed to by the project team the data was augmented with the new data. The forecasts for growth as distributed throughout the region were then reallocated to reflect the private investment response to transit.

The reallocation of population and employment data was done within the framework of existing land use, economic and real estate market conditions. This was done to ensure that the results were achievable without significant policy changes by governments.

1.2. DATA REQUIREMENTS FOR THE UNIVERSITY OF TORONTO'S (UTTRI) ANALYSIS

UTTRI requires population and employment projections for each traffic zone in the GTHA to analyze ridership and modal choice as a basis for forecasting transit ridership. The project team was mandated to provide this data to UTTRI for the analysis. From the report, *SmartTrack Ridership Analysis* by the University of Toronto Transportation Research Institute:

> "The UTTRI component of this work is to provide transit ridership estimates and other key network performance measures from the City's Regional Travel Demand Model. This work includes:
>
> - Confirming the integrated RER and SmartTrack Service Concept to be modelled.
> - Completion and validation of a new travel demand model system to be used by the City of Toronto in this and similar studies of transit ridership and travel demand.
> - Development and review of forecasting assumptions that provide key inputs into the transit ridership forecasts.
> - Generating transit ridership forecasts for the identified range of future year networks and input scenarios.
> - Analysis and comparison of ridership forecast results.
> - Documentation and reporting of all work and results."

1.2.1. How Growth Data is Distributed in the Region - Traffic Zones

The municipalities provided the project team with the data as distributed within each traffic zone as configured in 2006 by the Data Management Group (University of Toronto). These traffic zones were used as a basis for the allocation of population and employment projections. The use of traffic zones as a unit of analysis reflects the genesis of planning tools originally created to assess road traffic for the Ontario Ministry of Transportation.

Also from, *SmartTrack Ridership Analysis* by the University of Toronto Transportation Research Institute**:**

Traffic Analysis Zone (TAZ) System

The 2006 Transportation Tomorrow Survey Traffic Analysis Zone (TAZ) system is used in this study. Figure 2.1 illustrates this zone system, while Table 2.1 provides summary statistics for the system (not shown). For more detailed documentation of this zone system see Demand Modelling Group (2007).

Region	Planning Districts	Zones
Toronto	16	625
Durham	8	334
York	9	478
Peel	3	405
Halton	4	195
Hamilton	6	234

Table 2.1: *Summary Statistics for the 2006 TTS Traffic Zone System*

This detailed traffic zone system is aggregated into 46 “Planning Districts” for higher-level analysis and display purposes (see Figure 2.2). This “internal” detailed traffic zone system is augmented beyond the GTHA boundary to include 26 larger “external” traffic zones representing the remainder of the Greater Golden Horseshoe (see Figure 2.3). Travel between the GTHA and this external hinterland is modelled so that these trips are included in the flows on the GTHA road and transit networks, but these trips are modelled in a more simplistic fashion than the within-GTHA travel, which is the primary focus of the model system.”

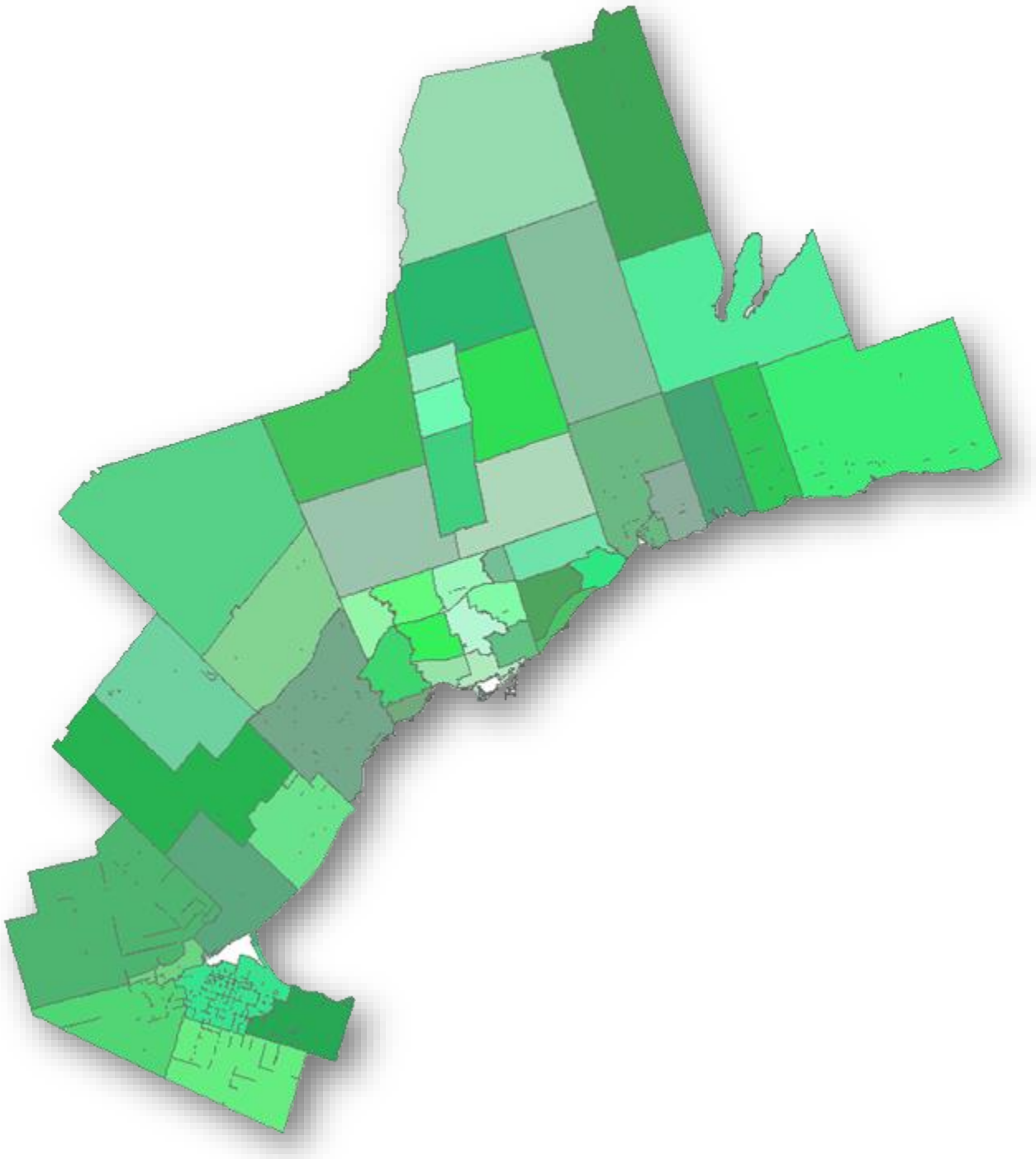


Figure 2.2: GTHA Planning Districts (from *SmartTrack Ridership Analysis* by the University of Toronto Transportation Research Institute)

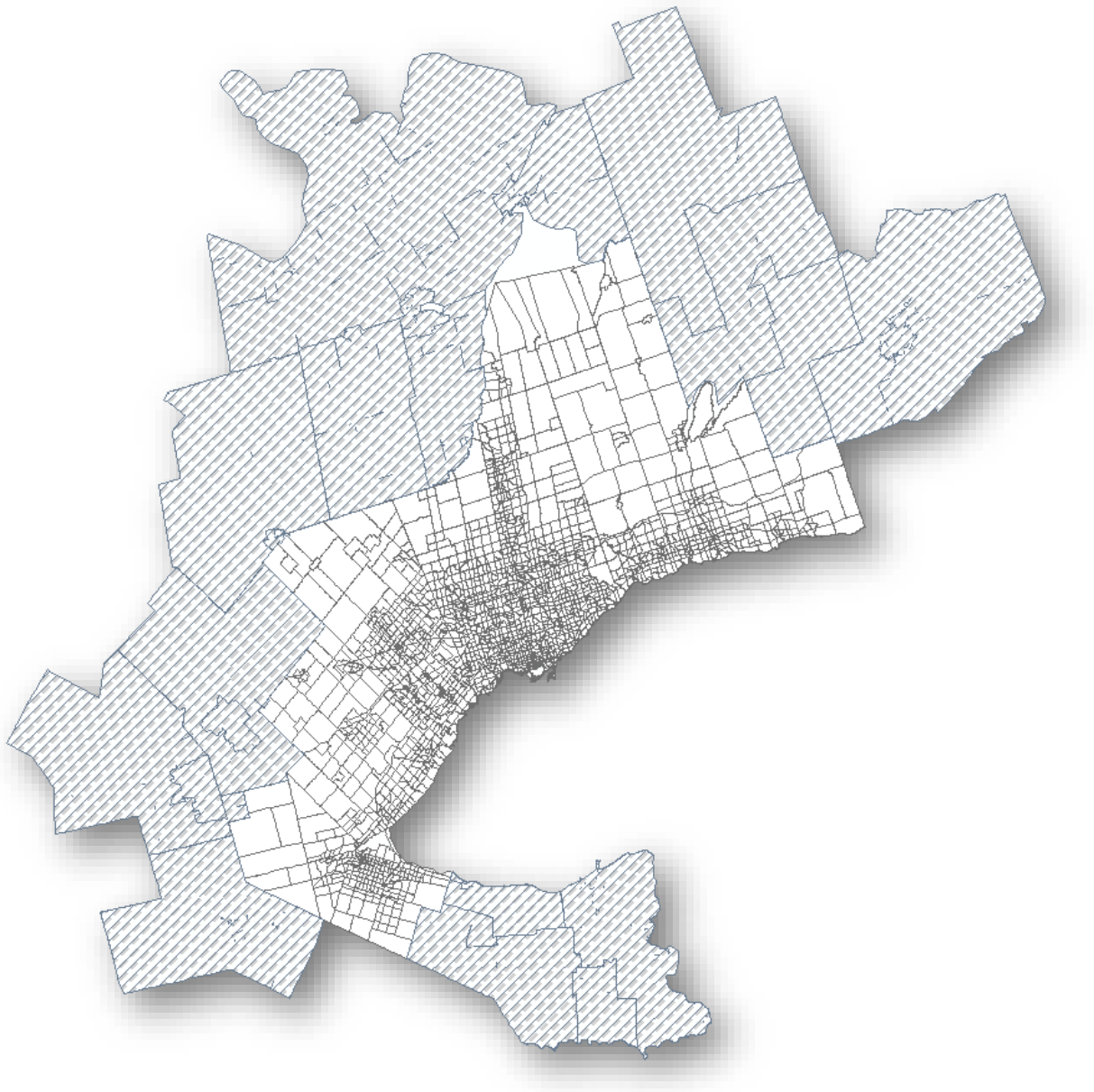
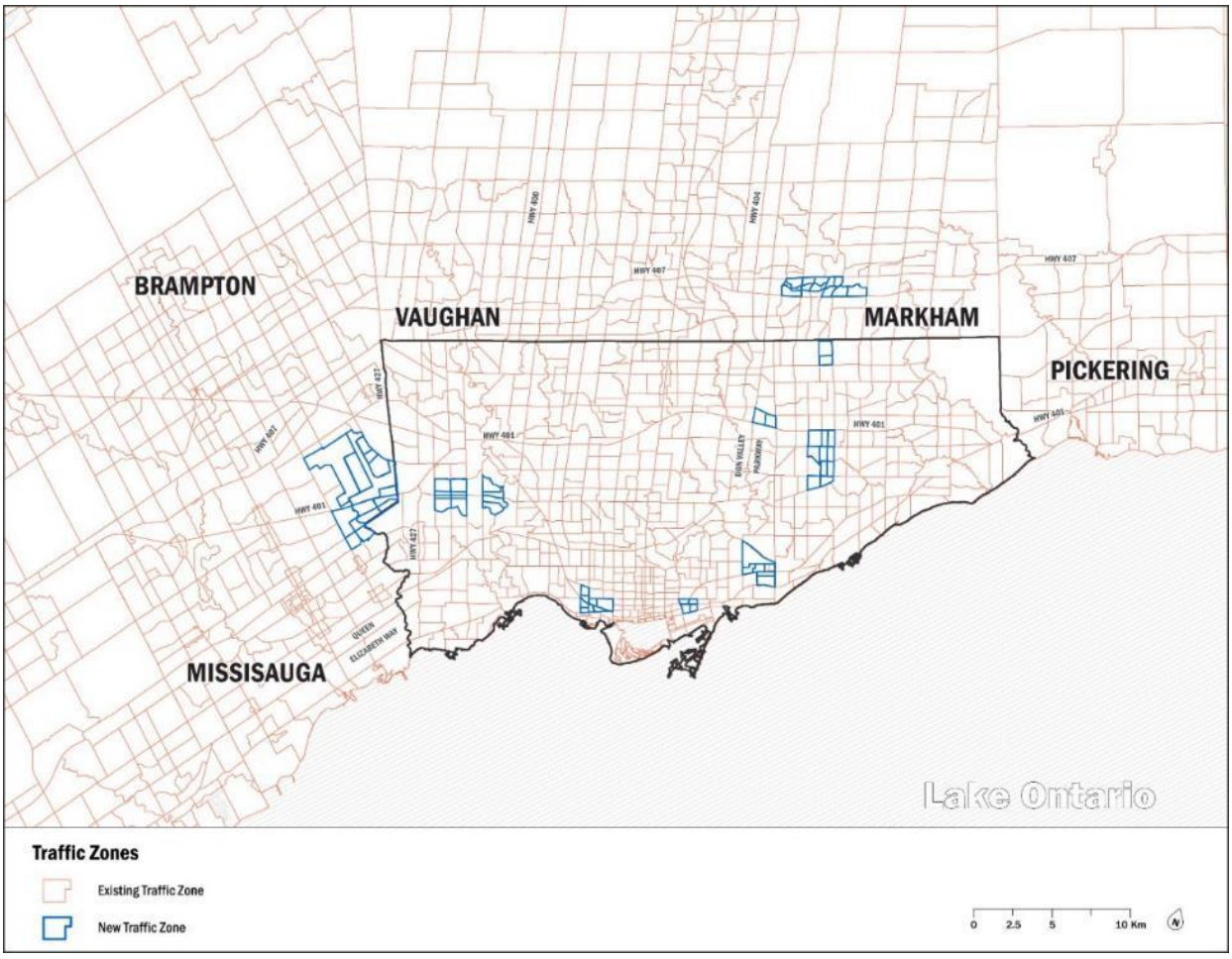


Figure 2.3: Traffic Zones in the GTHA (From *SmartTrack Ridership Analysis* by the University of Toronto Transportation Research Institute)

1.3. TRAFFIC ZONES CREATED TO RESPOND TO NEW TRANSIT

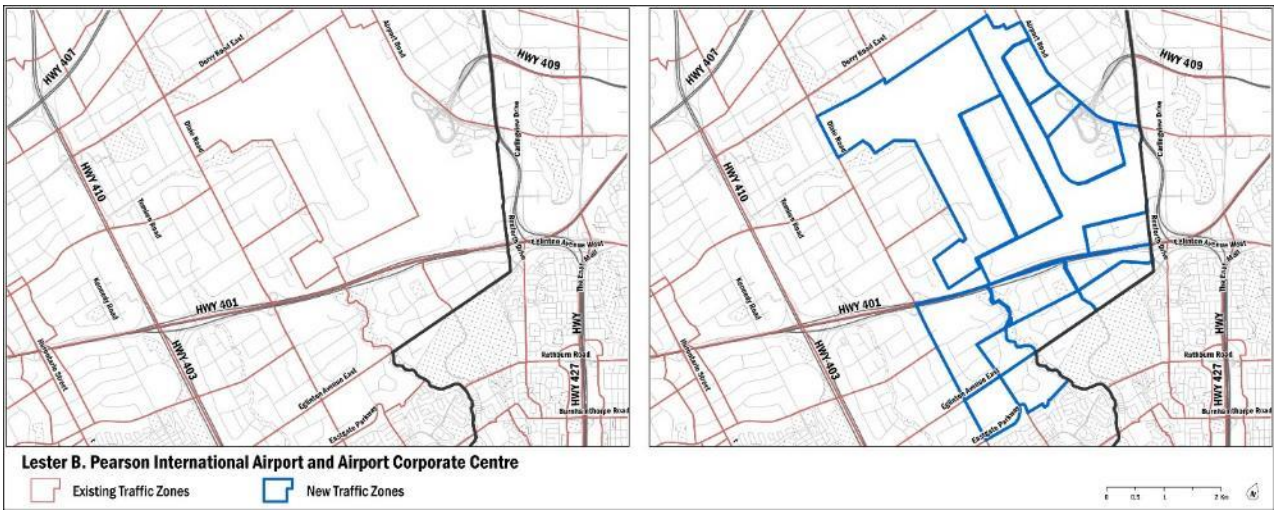


Map 1: *New traffic zones in dark blue*.

The project team was given permission to amend and supply to UTTRI new zones which recognized the location of new transit infrastructure which in turn allowed for a more accurate analysis of ridership.

The project team identified eight areas where the existing traffic zones needed to be reconfigured. Without modification, in some larger zones, the model may position potential transit users much further away from a transit station than they are located in reality. To adjust for this, the project team created new zones by subdividing (splitting) some zones so that the model is better able to reflect the true distribution of employment and population on the ground.

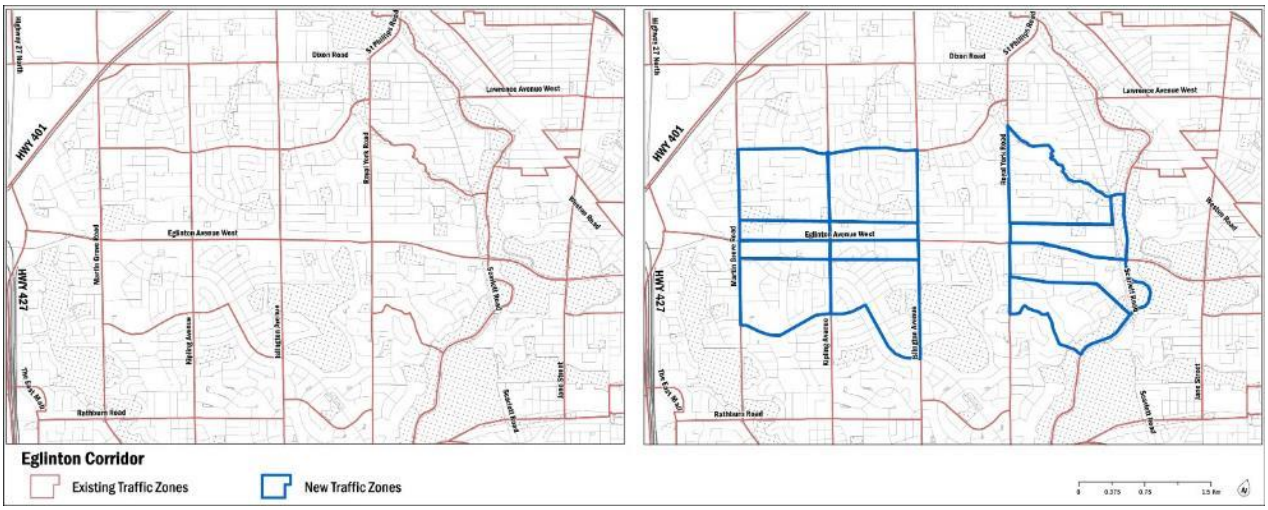
1.3.1. Airport District



Map 2: *New traffic zones at Lester B. Pearson International Airport and Airport Corporate Centre.*

Zones were split to recognize the three main locations of the 34,000 jobs at Lester B. Pearson International Airport: Terminal 1, Terminal 3 and the Infield. Zones in the Airport Corporate Centre were split to more accurately reflect the location of office employment concentrations in the area relative to the proposed SmartTrack terminal stations within the Airport Corporate Centre along Matheson Blvd. in the City of Mississauga

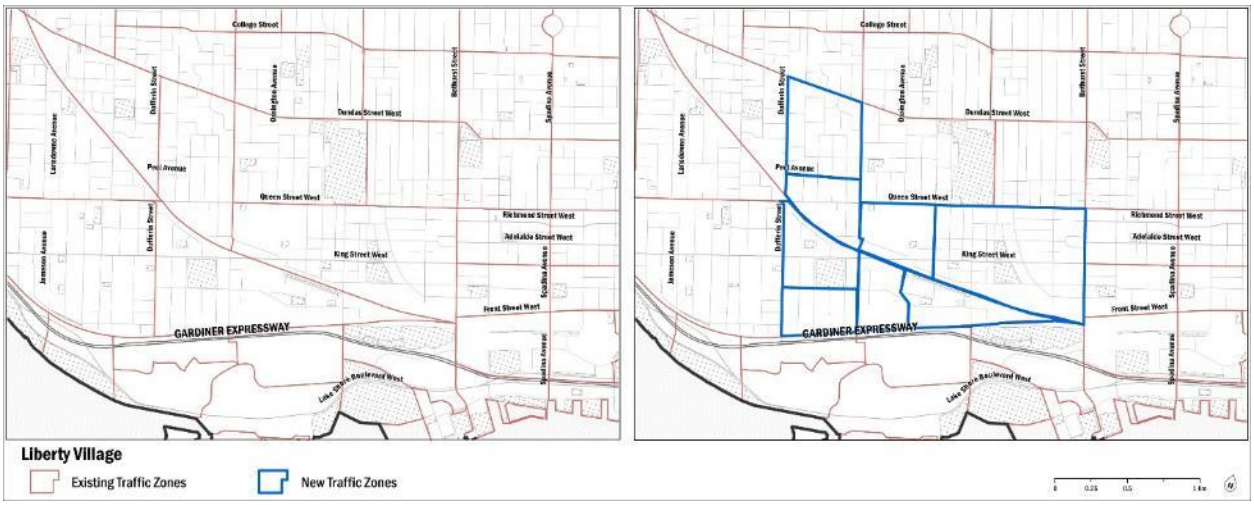
1.3.2. Eglinton Corridor



Map 3: *New traffic zones on the Eglinton Corridor.*

The traffic zones in this corridor were split to allow the model to recognize areas close to the proposed SmartTrack line which would likely be redeveloped as multi-residential. This is in contrast to low density neighborhoods located some distance from the corridor which have lower development potential.

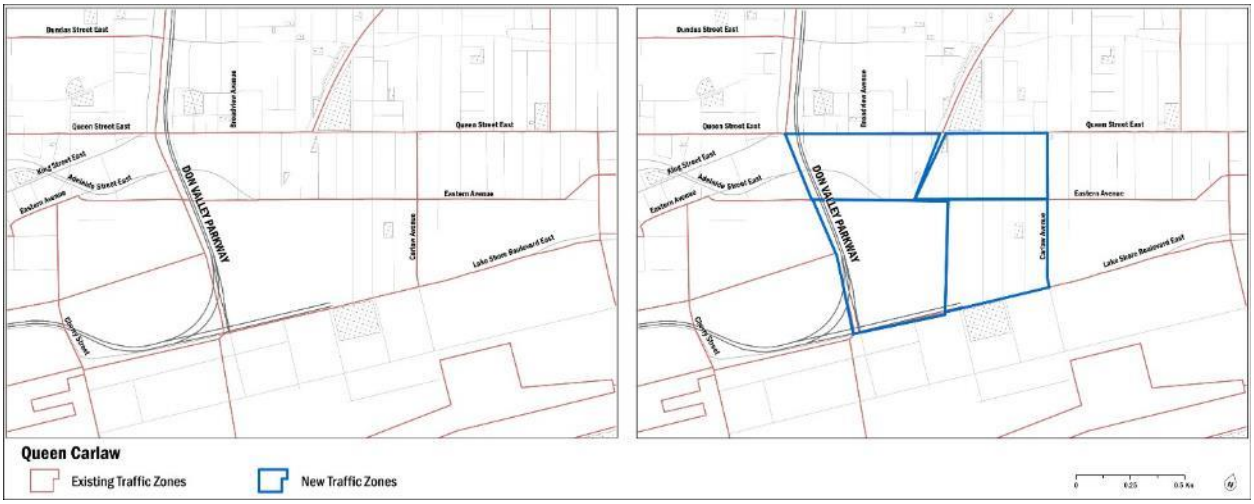
1.3.3. Liberty Village



Map 4: *New traffic zones in Liberty Village.*

The 2006 zones contain separate areas of employment and multi-residential development in each zone. The newly created traffic zones in this area allow for the recognition of more intensified development. This also permitted the analysis of both the RER station at the CNE and the proposed SmartTrack station in Liberty Village to be more accurate for ridership analysis.

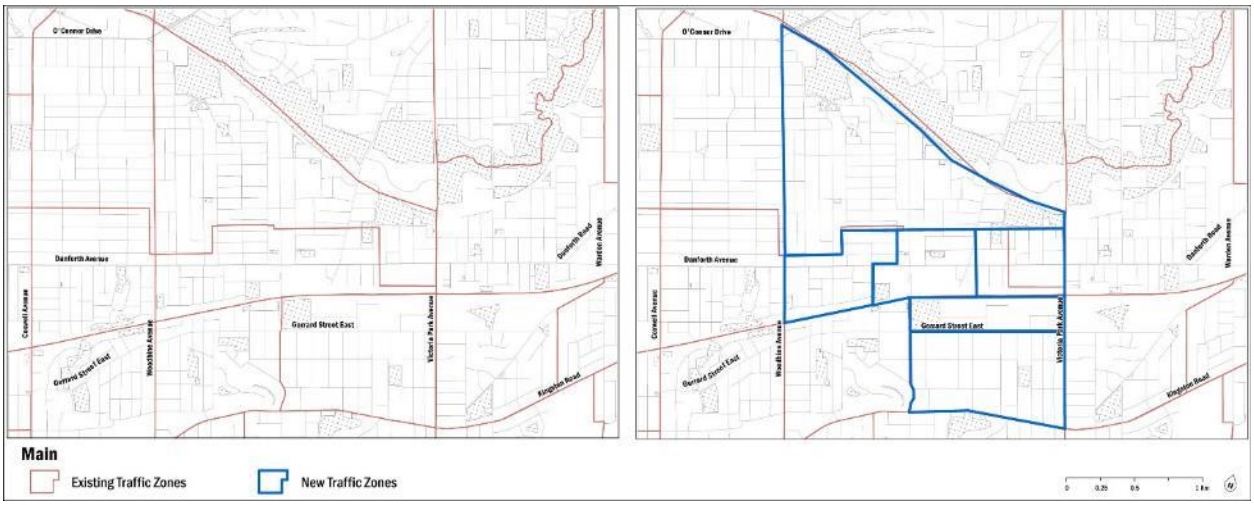
1.3.4. Queen Carlaw



Map 5: *New traffic zones at Queen Carlaw district (Lever Site).*

Two traffic zones were subdivided to reflect plans for development of the Lever Brothers site by Great Gulf and others to transform this area into a new mixed-use district with significant employment and population. As these plans mature, these zones may need to be further subdivided to reflect the amount of employment and population.

1.3.5. Main



Map 6: *New traffic zones at Main and Danforth.*

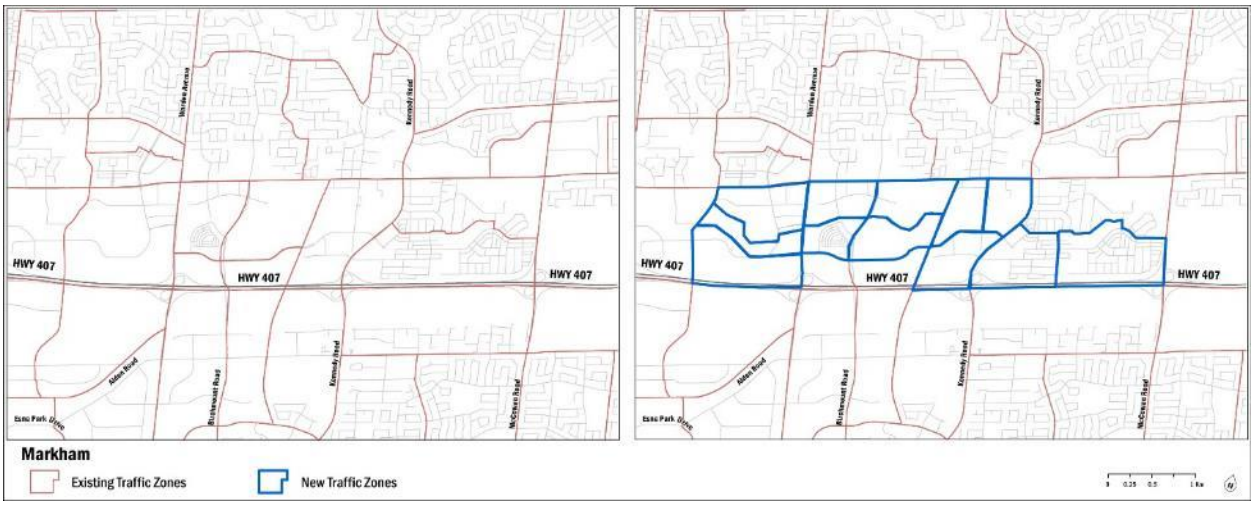
The boundaries of these zones reflect pre-amalgamation political boundaries. The new zones identified for this study are more representative of the conditions on the ground and are better able to accurately portray possible new development with SmartTrack.

1.3.6. Kennedy Corridor

Map 7: *New traffic zones on the Kennedy Corridor.*

Zones in this area were split to reflect the location of anticipated growth in relation to the SmartTrack alignment.

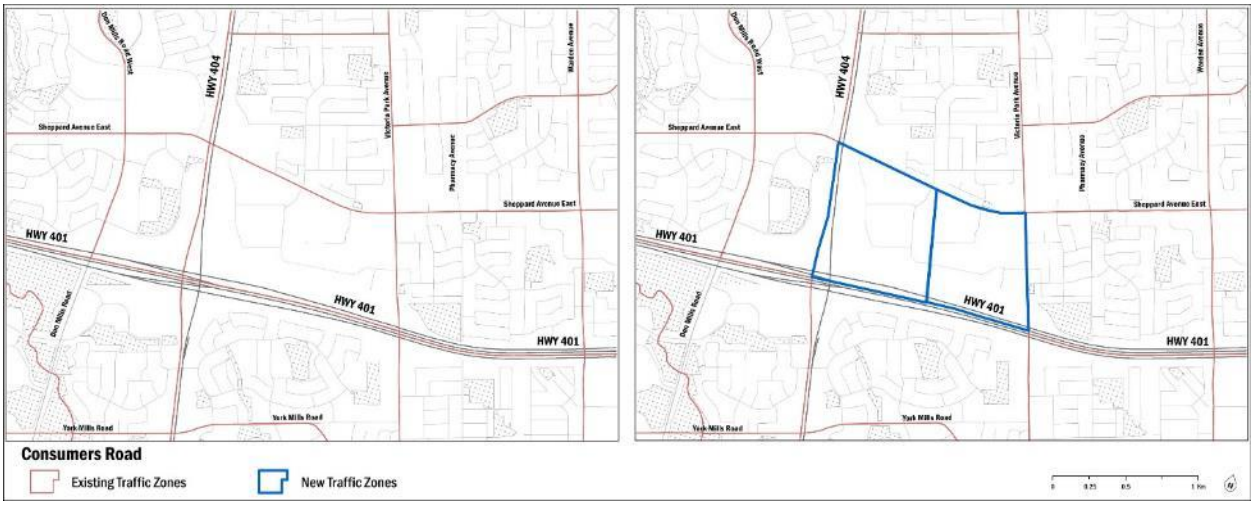
1.3.7. Markham



Map 8: *New traffic zones in Markham.*

The Markham Centre Plan and development which has occurred here since 2006 indicate that considerably more transit oriented development could occur in this node. The traffic zones were subdivided to reflect this and account for projected growth.

1.3.8. Consumers Road



Map 9: *New traffic zones on Consumers Road.*

The single traffic zone for the Consumers Road office park does not accurately recognize the changes in development or the potential for new growth. The implementation of new transit solutions along the Sheppard corridor will require a finer analysis and the zone may need to be further subdivided in the future.

1.4. DATA SOURCES

The project team reviewed the data provided by the Ontario Growth Secretariat as initially distributed into traffic zones by the municipalities. The distribution of the growth data by municipalities was tested against similar data provided by the National Housing Survey (NHS), the Transportation for Tomorrow Survey (TTS), and enriched with specific information provided by employers and private sector research organizations in order to better understand exact conditions on the ground before reviewing projected future growth.[2]

The project team utilized unique and proprietary data supplied by SRRA for commercial employment as well as data assembled by the City of Toronto, the City of Mississauga and York Region on employment type based on NAICS codes. [3] Sources for residential data included data from the National Household Survey and data provided by York Region and the cities of Toronto and Mississauga.

Other sources of private sector data were also used to augment public sector data. For example, the Greater Toronto Airport Authority (GTAA) provided an important source of employment data. It has long been recognized by TTS and the NHS that employment in the area around Lester Pearson International Airport (LBPIA) is too spread out over a large area and therefore not transit oriented. Information provided by the GTAA showed that 80% of the 34,000 jobs as of 2015 were highly concentrated in the two main terminals and therefore worthy of consideration for rapid transit. This concentration of jobs is second only to the density of employment in the largest office buildings of downtown Toronto.

Existing data on the density of office employment from SRRA was used to test the concentration of employment data in traffic zones and further adjustments were required to reflect known levels of office employment. This provided more transparent and reliable information on existing levels of employment.

Important data used to establish where employees live relative to where they work was also supplied to validate the attractiveness of transit options. Both the GTAA and York Region supplied substantial place of residence data (postal codes) for employees who work in their respective employment clusters.

[2] The data provided by the municipalities was done so under strict confidentiality use conditions and cannot be re-published. As a result, this report is not able to publish it or the reallocation data by zone.

[3] Under license from Real Estate Search Corporation (RESC)

The analysis of this data was not part of UTTRI's analytics but it helped to inform the assumptions of the attractiveness of these nodes to employers and define the catchment areas accessed by employers for their workforce.

1.5. FORECASTING GROWTH

The project team did not make any projections of growth. The province undertakes analysis to prepare forecasts of population and employment to 2041 on a macroeconomic basis. Beginning with population forecasts, the province establishes estimates of employment growth, relying on the historical performance of the economy and a sectoral analysis based on functionality (NAICS codes) and other factors.

The Ontario Growth Secretariat (OGS) allocates the product of these forecasts to the regional and upper tier municipalities, establishing an overall target for growth in the region. Each jurisdiction develops its own forecasts by translating the OGS allocations for population and employment into small areas (traffic zones) to reflect permitted land use designations. A key consideration is that the sum of all the local forecasts must align with the overall forecast for growth in the region.

The inherent challenge with this process is that it is extremely difficult to achieve an appropriate balance across the region as there are often discrepancies between forecasted growth at the regional scale, development expectations as designated in local official plans, and the realities of the marketplace. Each jurisdiction develops three or even four scenarios representing different levels of expectation for growth.

The project team in collaboration with each municipality concluded that preparing forecasts without a common framework makes it difficult to develop an accurate picture of regional growth patterns as it is applied to the ground. Jurisdictions outside of Toronto indicated that they were already worried about not being able to meet development targets set by the OGS when the Growth Plan was introduced in 2006. They collectively found the prospect of establishing long-term forecasts out to 2041 to be of great concern. The project team, recognizing the discrepancy, attempted to use projections which conformed to the growth expectations of the Region as a whole.

The project team further obtained data and professional judgment from representatives of the development and employer communities to assess and determine what growth could reasonably be redirected to transit and the probable impact to markets. This led to a

collaborative vetting process involving the project team and the participating employers and residential developers.

1.6. BIFURCATING EMPLOYMENT AND RESIDENTIAL GROWTH

The project team divided employment and residential data into four types of built form based on the distinct density impact of each type of work and residential place to more accurately understand the location characteristics of different types of built form. Some of this work had already been done at the municipal level. Gaps in the existing data were addressed using an agreed upon methodology.

1.6.1. Employment Growth

The employment data provided by the municipalities was separated into two kinds of employment data: jobs in office space and all other employment. This was done to facilitate a better understanding of the locational characteristics of employment.

Approximately half of all employment in the 416 is located in office space, with industrial jobs accounting for 17% and institutional, education, retail and cultural jobs making up the balance. In the 905, a quarter of all employment is located in office space.

Office buildings concentrate jobs in specific locations, which makes the location of office buildings potentially transit friendly. The projections for employment by industry type also predict that growth will occur more in office jobs than any other forms of employment.

Retail, medical and education jobs can also be concentrated in transit locations but for this project the data was not available to accurately recognize other forms of employment within traffic zones. It is recommended strongly that additional research be undertaken to include these important employment sectors in the analysis of regional growth. Such research would recognize the importance attributed by current public policy to enhancing employment in non-traditional sectors and also recognize the importance of employment in the broader public sector.

Institutional, educational and cultural activities also create significant pools of potential riders for transit that is not tied directly to employment activities. The inclusion of such riders in future analysis will have a significant impact on the assessment of various locations.

Separating office jobs from all other types of employment allowed the project team to improve the accuracy and location of future employment. This process further allowed for the application of growth in those types of jobs over the next 25 years in specific zones where office development could be reasonably expected to be built. Office jobs tend to be clustered in office nodes where employers can take advantage of agglomeration benefits while other employment such as retail, education and medical services tend to occur more in response to residential growth and, as a result, tend to be more dispersed.

The project team undertook a building-by-building, zone by zone analysis that showed that there were inconsistencies between the National Housing Survey (NHS) and the Transportation for Tomorrow Survey (TTS) estimates of where employment currently existed on the ground. In some zones, the TTS or the NHS data showed far less employment than actually exists, and vice versa. For example, the analysis of the capacity and occupancy of the office sector in zone 57 revealed more employment in the base year 2011 than the reported amount of total employment including retail and hospitality by the NHS and TTS.

Photo 1: *Traffic Zone 57 where known employment in office space exceeded reported data from the NHS and TTS.*

Adjustments were made to the year 2016 and 2021 data in the 22 zones where further growth was limited and adjustments were then made to the projection of growth for the years 2031 and 2041. This was achieved by reallocating that growth in adjacent zones where more capacity existed.

The discrepancy between estimated employment and population data and data which was documented from reliable sources obtained by the Project Team underscores the importance

for regional planning of the use of up to date data. Policy analysis for urban planning work undertaken by various stakeholders in good faith may require review and possible revision. It is recommended strongly that further study of these discrepancies be undertaken to ensure decision makers have access to the most current data for analysis.

1.6.2. Bifurcating Residential Data

The starting point for multi-residential forecasts was work commissioned by the City of Toronto for an analysis of Tax Increment Financing (TIF) potential. This work was expanded across the region when the City of Mississauga and York Region joined the project.

To begin with the project team took projections of apartment growth in each TIF Zone developed by Toronto staff and those zones proposed for the neighbouring City and Region and reallocated these to estimate the range of possible impacts of RER/SmartTrack on future multi-residential development.

The project team determined that it was important to distinguish between single family dwellings and multi-residential accommodation to better understand where population growth was more likely to occur. It separated population into single family dwellings and multi-residential properties.

It is anticipated that over the next 25 years very little new single family development will occur in the City of Toronto, the City of Mississauga and in Markham/Richmond Hill. In Brampton and parts of York Region, where single family capacity is more readily available, this distinction was not applied.

Data provided by the Building Industry and Land Development Association (BILD) indicated that the creation of single family homes in the GTHA has declined dramatically over the last 10 years and been replaced by multi-residential properties. For the purposes of this analysis population growth was based on the assumption that most would occur on properties where multi-residential development was permitted.

Findings from research with residential developers and their representatives on how RER/SmartTrack could change the attractiveness of multi-residential development within the traffic zones reveled that approximately 30% of the projected multi-residential growth in non-

transit served traffic zones could be reassigned to the nodes where it was permitted adjacent to the rail corridors of RER/SmartTrack.

The four traffic zones forming Vaughan Metro Centre is an example of where additional multi-residential development than is currently expected could be allocated.

Photo 2: *Traffic Zones 2085, 2091, 2093 and 2084*

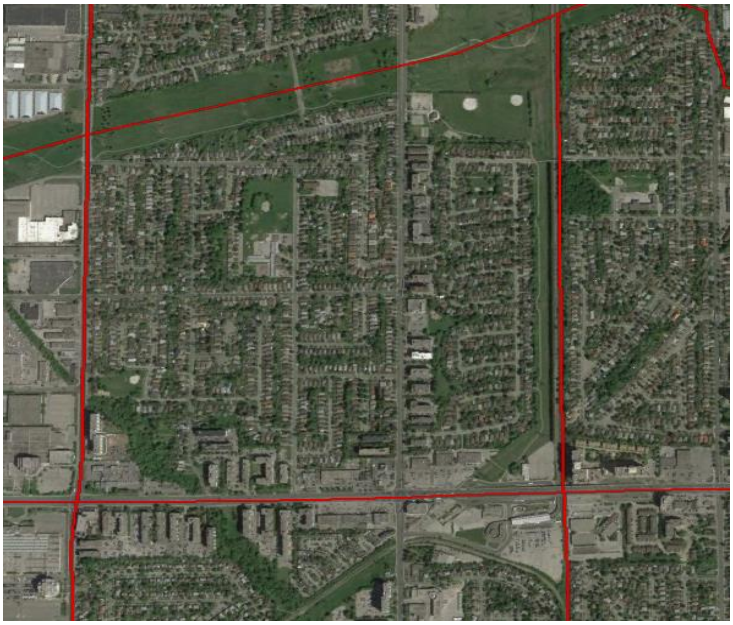


Photo 3: *Traffic Zone 504* bordered by SmartTrack and Lawrence Ave East

Traffic Zone 504 is an example of an area adjacent to the RER/ST corridor where growth is unlikely to exceed the projected growth provided by the City of Toronto.

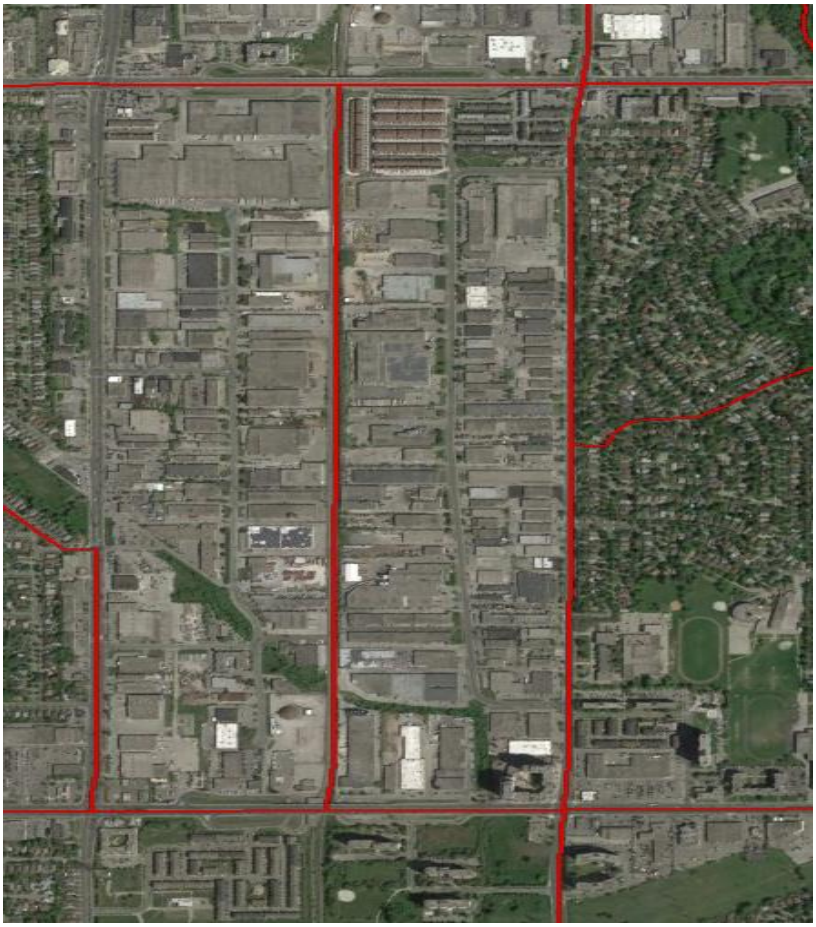


Photo 4: *Traffic Zone 500 bordered by the RER/ST corridor on the West, Ellesmere Midland and Lawrence East*

Zone 500 does not have the zoning to permit multi-residential development and as such the project team did not reallocate population growth there.

1.7. AUGMENTING PUBLIC SECTOR DATA FOR THE BASE YEAR

Although the base year for this study was 2011, the project team determined that project risk for the year 2021 could be greatly reduced by understanding what had been built between 2011 and 2016. When projects under construction and in the pipeline were added, the projections for 2021 would be more informed. The data was augmented by and reflects the location of buildings currently under construction and those anticipated to be under construction by 2016. These buildings can be expected to be completed and occupied by 2018.

This approach created a more complete and up to date assessment of development by the planning year of 2021. The accuracy of estimated employment and residential projections from 2018 to 2021 was informed through interviews with commercial real estate companies to determine their short-term development plans.

For example, Ivanhoe Cambridge/ Caisse de Dépôt/Metrolinx are in the planning stages of a new office complex near Union Station with an expected completion date by 2021.

***Photo 5**: Traffic Zone 60 (York St, Yonge St, Queen's Quay and the Gardiner) in 2009 shows three undeveloped properties. In 2015, there is only one left. By 2021, this zone will have likely been completely built out.*

An example of how the project team projected recognized development through 2011-2021 is found in Traffic Zone 60 (Photo 5). Development built between 2011 and 2021 was included as employment for 2021. This is also an example of a zone where projected growth was reduced and no further projection of growth in that zone was allocated so as to avoid the risk of double counting inherent in the use of non-updated data

1.8. ADJUSTING FORECASTS TO RECOGNIZE THE CAPACITY OF TRAFFIC ZONES

The project team examined all traffic zones in detail to assess the available capacity in each traffic zone to absorb the amount of growth assigned to the node. Upon detailed study, it became clear zones fell into three categories:

1. little or no capacity to absorb growth;
2. reasonable capacity for growth; and
3. unrealized capacity due to market conditions.

1.8.1. Zones with Little or No Capacity to Absorb Growth

There are a number of densely developed traffic zones that have little or no capacity for future growth. Adjustments, therefore, had to be made within the forecasting process to cap estimates of future development potential in order to ensure that the model did not allocate inappropriate amounts of new growth where it was not feasible. If a zone was deemed to have reached its capacity before 2041, growth was assigned to other zones in the node. The team followed established planning policy and capped development potential at a level that respected the existing character of the area.

1.8.2. Zones with reasonable capacity

The majority of traffic zones were deemed to have capacity for the growth as allocated by the municipalities. Where these zones intersected with planned transit expansion, they were examined to determine where they had more reasonable capacity for growth under current policy frameworks. For zones that did not intersect with transit, the growth capacity was examined to determine whether or not the growth met the tests of the "factors considered when reallocating growth" (see Appendix) to determine whether the reallocation of that assumed growth was reasonable.

1.8.3. Zones with unrealized capacity in proximity to transit

There are numerous zones where development is unconstrained by zoning and where the community supports development but markets have not responded. In many cases, new employment buildings have not been constructed in these nodes for over 30 years. Residential development has occurred in some of these nodes.

Nodes such as Scarborough Centre, the Kennedy Corridor, Mississauga City Centre and others where there are few planning restrictions to development were considered to be nodes where more growth may occur than projected despite the fact that growth to date has been limited by land economics or markets.

It is recommended strongly that research be undertaken to understand why growth has not occurred in nodes such as these to allow for regional planning modifications and potentially identify course of possible public policy action to facilitate development in these areas.

1.8.4. Zone Capacity – Commercial limitations

There are several existing office nodes such as the Brick and Beam and the Yonge Street Corridor node[4] where new construction has been challenged in the past 10 years by either the proliferation of multi-residential developments or the limited amount of development sites suitable for new commercial growth. The project team analyzed all available parcels of land in these zones and estimated a reasonable amount of market demand to establish the capacity of these nodes to accommodate future office employment. It was concluded that there could be some limited new office employment growth in these areas.

For significant growth to occur in these zones, existing buildings would have to be demolished and replaced. The project team assumed that the economics for the demolition and replacement for buildings in these types of traffic zones would not occur during the planning period of this assignment (2011-2041).

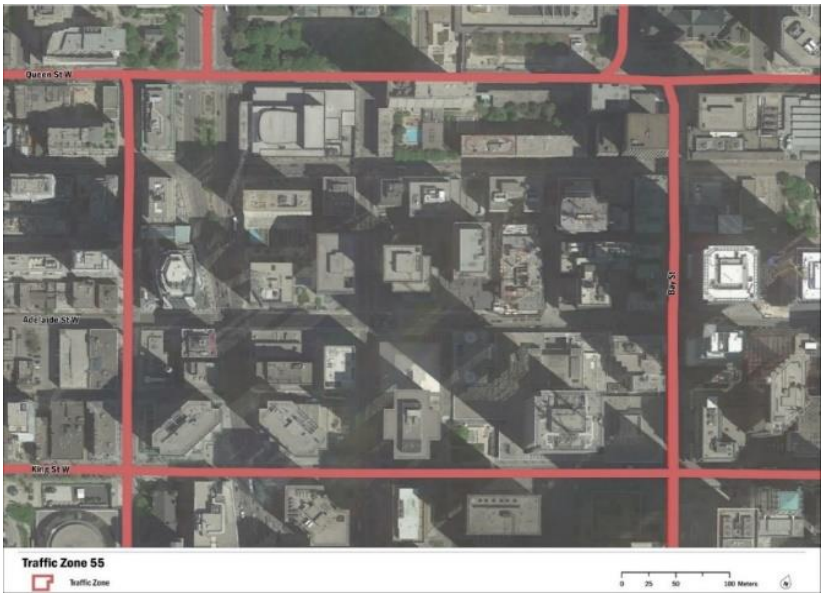


Photo 6: *Traffic Zone 55 (Queen – Bay – King –Simcoe) illustrates how some zones are near or at capacity.*

[4] *North of Dundas and south of the 401 Highway.*

1.8.5. Zone Capacity – Residential Limitations

Looking at the region as a whole, the team identified numerous traffic zones that are already built out or where there are low expectations for additional growth for multi-residential housing. Adjustments were made to these traffic zones to ensure that the ridership forecast model did not inadvertently apply standard rates of increase. For example, the City of Toronto identified a number of areas as 'stable neighbourhoods'. It would have been misleading to add or subtract from these zones.

There were many of these zones throughout the region where significant growth is unlikely. Three are shown below for example:

Photo 7: *Traffic Zone 2204 north of the 407 just west of the Go Station at Langstaff*

Photo 8: *Traffic Zone 3668 in Mississauga near the Cooksville GO Station*

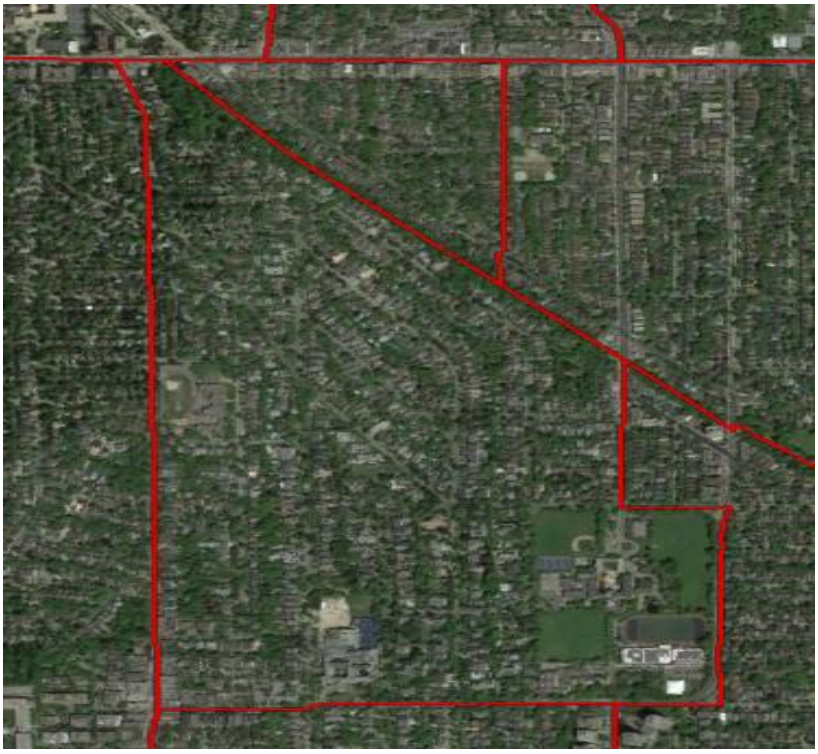


Photo 9: *Traffic Zone 189 Forest Hill in central Toronto and near the new Crosstown LRT*

2. FACTORS CONSIDERED WHEN REALLOCATING GROWTH ADJACENT TO TRANSIT

Transit investment in the GTHA has not always led to a sustained development response. Projecting the likelihood of growth occurring around transit requires an understanding of what conditions on the ground exist, or could exist, and matching those conditions with the considerations builders factor into their decisions above and beyond the benefits of transit. This approach suggests that transit is but one of the independent variables influencing siting decisions in the private market.

There are four general factors to consider when determining the likelihood of development following transit:

1. Understanding the type of transit and the cost (fares) to the consumer.
2. Land economics and creation costs.
3. Market forces.
4. Planning permissions which allow for intensification.

The project team assessed the existing or future presence of these factors in traffic zones in each node to develop a better understanding of the risks and rewards transit offers the developers of real estate. In addition to these factors the type of proposed transit and the network of other transit must also be evaluated.

2.1. TRANSPORTATION

2.1.1. Network Connections

The intersection of RER/SmartTrack and existing transit networks was an important consideration in reallocating forecast growth for each traffic zone. New development is more likely to occur if the location has multiple trip opportunities for customers. Where there are nodes with potential network effects the project team, evaluated them more highly than nodes without. Network effects occur as a result of new transit investment which improves connectivity, thereby increasing the likelihood that people will choose transit as their preferred mode of transportation.

It was recognized, in consultation with UTTRI, that the analysis of the data would take into account the benefit of network effects.

"A detailed, comprehensive modelling approach ... is essential for adequately assessing the impacts of any major transportation investment such as SmartTrack for many reasons:

- The entire transit network is modelled, not individual lines in isolation. Synergistic network effects are thereby captured that cannot be accounted for in analysis of a single line.
- The actual spatial origin-destination pattern of trip-making is explicitly accounted for. In other words, the entire travel market is modelled and the role which a given line plays in serving this overall market can be explicitly examined.
- Sensitivities to transit service frequencies, fares, travel times, stop locations and spacing, etc. can be simultaneously and consistently examined.
- The model is sensitive to assumptions concerning future year population and employment distributions.
- Competition from the road network (as well as walk/bike modes) is directly modelled. Transit investment impacts on roadway usage/congestion is directly modelled, as is the impact of auto service levels on transit ridership."

2.1.2. Travel Times and Service Levels

The peak hour use of public transit will increase if commuters are able to travel in both directions from home to places of employment. Over time, when commuters establish a pattern of repetitive travel, this can lead to increased ridership. Increased ridership supports both population and employment intensification in the nodes serviced by transit. Additionally, this also has the consequence of increasing the value of real estate (commercial and residential) located near transit.

RER/SmartTrack has the potential to substantially reduce the time of travel throughout the region. These improvements in trip times were taken into account in determining development risk and the likelihood of intensification around stations. For example, RER/SmartTrack is likely to lead to greater development in Markham/Richmond Hill and the Airport District because these areas are not currently well connected to regional high speed public transportation and the rapidly developing labour markets of downtown Toronto. As discussed with UTTRI, the potential savings of time afforded by RER/SmartTrack would likely have a demonstrable impact on ridership and a related favourable response by private investment.

2.1.3. Service Levels and Other Transit Projects Considered

The project team, in consultation with UTTRI, took into account the impact of service levels on the modelling assumptions of UTTRI. As per the Terms of Reference, the initial proposal of 15-minute service in Mayor Tory's election proposal was the starting point. It was assumed that ridership would be achievable over time with more frequency to accommodate demand and that service levels would also be expanded to match demand as required.

The project team further assumed that the 'surface subway' concept would eventually be delivered with greater service frequencies approaching service every 5 minutes. This is also reflective of the experience of the current subway system which evolved from its initial service levels at opening with considerably less capacity and frequency than provided today. The assumption is that the line would be able to provide enhancements in service as development and ridership is proven. From the *SmartTrack Ridership Analysis* by the University of Toronto Transportation Research Institute:

> "*Defining the SmartTrack Service Concept*
>
> Despite considerable discussion, the actual definition of the SmartTrack Service Concept remains unclear, especially relative to pre-existing and planned GO Rail / RER services in the corridor. Arguably much of this confusion stems from two problems:
>
> - The original SmartTrack proposals basically ignore the question of GO Rail service in the corridor, as well as the provision of service on the Stouffville line north-east of Unionville and on the Kitchener line north-west of Mt. Dennis. The original SmartTrack concept also was developed prior to the development of the Metrolinx RER Service Concept.
> - The Metrolinx RER Service Concept similarly ignores SmartTrack as any sort of independent concept / additional service. Given these partial views of the problem, defining a suitable no-SmartTrack "base case" and a logical set of "SmartTrack" scenarios to be tested against this base case has been challenging."

The project team noted that the following transit projects, which are planned or under construction, and which intersect with SmartTrack, are all assumed to be complete and operational by or close to 2021:

- Regional Express Rail
- SmartTrack[5]
- Crosstown LRT
- the planned subway extension into Scarborough from Line 2
- the extension of the Spadina subway to Vaughan
- Finch LRT
- Viva BRT
- Mississauga Transit Way
- Hurontario LRT.

[5] Note that RER is an enhancement of existing GO train corridors. SmartTrack utilizes two of those corridors. RER and SmartTrack are mutually exclusive for planning purposes.

The project team did not include the following transit projects:

- Planned transit projects that do not directly intersect with RER/SmartTrack; and

Projects that may be implemented and become operational substantially after RER/SmartTrack such as a proposed subway Yonge St., the extension into York Region or a Relief Line subway expansion within the City of Toronto were not subject to reallocation. It is recommended strongly that research be undertaken to expand the transit network model as such projects are considered and authorized.

2.1.4. Fares

It was assumed that regional fare integration as being studied by Metrolinx across the network would be in place by 2021. For the purposes of this study, however, it was assumed that there would be no barrier to regional travel resulting from inequitable fare structures across the network and that fares on SmartTrack would be similar to these currently charged by the TTC.

This was addressed by UTTRI in its report *SmartTrack Ridership Analysis*: "Thus, the model explicitly models trade-offs between slower, cheaper routes and faster, more expensive routes. This is a particularly important feature for modelling the choice of GO Transit relative to competing "local" transit routes, given the different fare structures which currently exist among the various GTHA transit systems".

2.2. LAND ECONOMICS AND MARKETS

2.2.1. Land Values and Land Value Accretion (LVA)

Land values surrounding proposed stations are a factor in determining the relative locational appeal for further development. For much of its route, SmartTrack and RER run through lower value industrial land or lower density residential developed areas (downtown Toronto being the major exception). Higher order transit projects once they are under construction, generally lead to increases in surrounding land value, in some cases dramatically. This is referred to as Land Value Accretion (LVA). If land value increases to such an extent that the pro forma financial analysis for development does not meet the demands of the market, then development makes no economic sense. In essence, the expectation of transit can actually undermine development needed for ridership by pricing new development out of the market.

If pre-transit land values were preserved it is more probable that the development industry would be attracted to those areas. Further, if pre-transit values were based on low density use it is possible to generate a case that these lands could be developed for affordable accommodations for employment and residence. However, if the land value increases to the

extent that new development is not competitive and development does not occur, transit ridership will suffer.

The analysis of the range of possible public policy responses to the challenge of land value accretion is beyond the scope of this assignment. The project team assumed that land value accretion would not deter intensification and that its development potential would not be negatively affected by inflated land value expectations.

The project team, in projecting development growth, assumed that public policy would be implemented to reduce the negative impact of Land Value Accretion at each stop. The project team did not factor into its reallocation of development the impact of LVA although this is a risk to ridership. LVA must be considered an important intervening variable where growth is concerned. It is recommended highly that further research be undertaken to identify the causes of land value accretion and the possible public policy responses that could be considered to increase the likelihood that development can occur where it is desired.

2.2.2. Markets – Commercial; Employers' Location Preferences

Forecasting growth of employment in office space requires knowledge of where employers are, where they want to be, and what motivates them to locate their new operations and where they relocate current operations. SRRA explored the reasons that determine where employers choose to build new facilities in *The Nodal Study*.

Timely access to labour was a key consideration. In addition, employers tend to move into existing clusters of employment which offer:

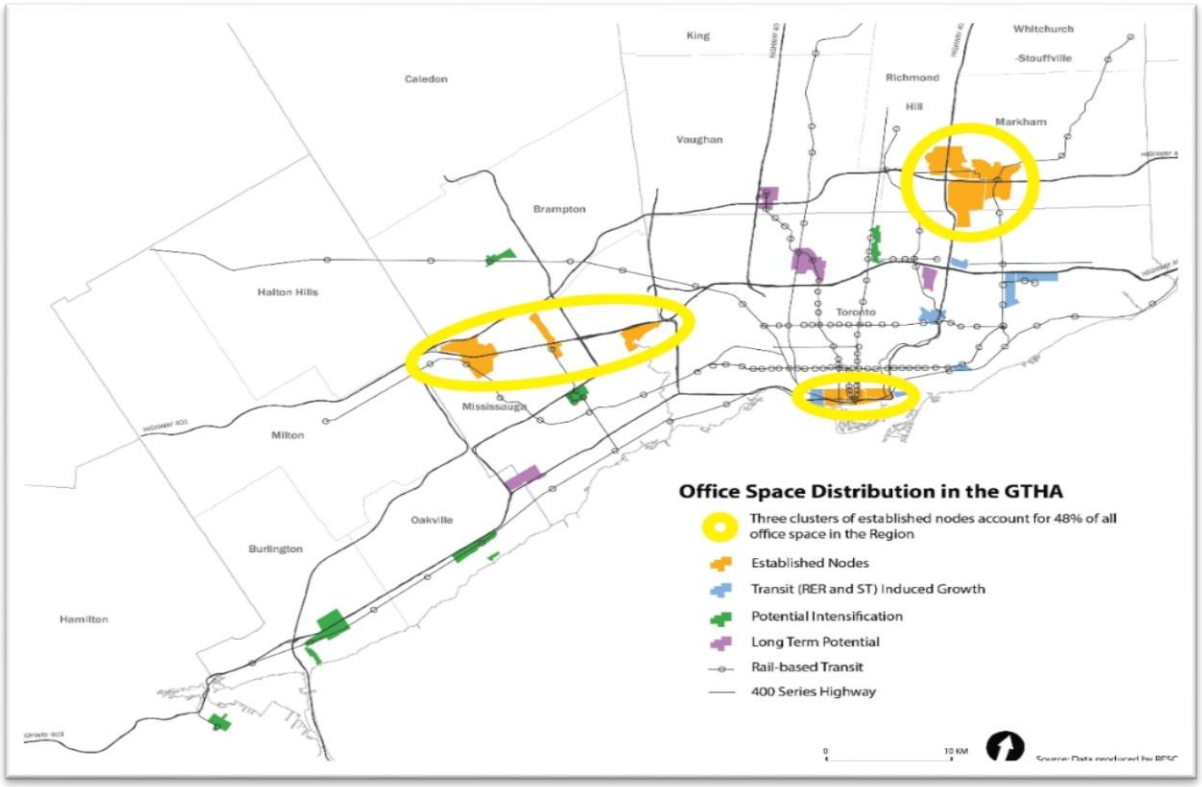
- the benefits of agglomeration;
- an established labour pool;
- proximity to suppliers and competitors;
- opportunity to have an office building built for them or available space in existing buildings; and
- competitive premises costs.

These factors help explain the recent trajectory of office development in the GTHA.

The growth of office space until about 1980 was concentrated in the Financial Core of the City of Toronto with almost no space in the 905 area. Since 1980, the 905 has seen the development of more than 65 million sq. ft. (approx. 350,000 jobs) of commercial space which is equivalent to all the office space in Calgary and Edmonton combined.

Two thirds of this growth has occurred in two 905 clusters: the Airport/401 corridor in Mississauga and the Markham/Richmond Hill nodes.[6] A significant proportion of office workers in these two clusters live in proximity to the proposed SmartTrack/RER transit corridors.[7]

The nodes as described in *The Nodal Study* are established areas of commercial employment in office space. More importantly, they account for 90% of all new office building construction in the region over the past 25 years. The expectation that employers will continue to view these nodes favorably and that these nodes also have the capacity to accommodate new employment growth is very high if access to employment is made more affordable and convenient.[8]



Map 10: *Office Nodes (from The Nodal Study, 2015)*

[6] *Region in Transition, SRRA, 2013*

[7] *Postal records of employers in these nodes provided by the Greater Toronto Airport Authority (GTAA) and the Region of York.*

[8] *The Nodal Study also identified several nodes that have yet to develop but which have significant potential provided they can be served by higher order transit.*

2.2.3. Realty Taxes

The project team assumed that the taxation policies which drive costs in all the areas of the region would remain relatively the same over the next 25 years. The differentiation between the Markham/Richmond Hill and Mississauga tax base and the City of Toronto have, in the past, driven location decisions based on the relative difference between these three jurisdictions. SRRA projected new growth based on the continued gap between downtown realty taxes and 905 realty taxes. The competitiveness of realty taxes was a significant factor in the growth of employment in the 905. However, for the purpose of reallocating forecast growth, it was assumed that other factors driving the value of the 905 and the addition of high-speed transit access to labor markets would maintain the attractiveness of these nodes.

The tax gap has been mitigated by the City of Toronto over the last eight years and this trend appears to be not as important a deterrent to intensification throughout the region as it has been in the past. The project team did not feel that the gap would be as large as it was in the past and would thus not constitute a material independent variable for the analysis.

2.3. PLANNING & LAND USE

Planning conditions in many cases within the region have not been a constraint to development around transit. There are many examples of planning which allowed for employment and residential intensification but development did not occur for other reasons where market conditions and land economics were much more important impediments to development.

An important consideration in preparing development estimates was the assumption that employers and their employees value mixed-use functionality when considering possible locations for office development. This assumption reflects known research but it is recognized that it is at odds with some planning theories. What must be highlighted, however, is that mixed-use planning can be as effective as single use planning where commercial development, rather than industrial development, is concerned.

One of the key findings *of The Nodal Study* was the recognition by employers that employment areas possessing residential capacity, community infrastructure, cultural, educational, and medical facilities, as well as retail and related amenities, were seen as attractive locations for

office development.[9] The project team assumed that mixed-use development would be permitted in traffic zones where appropriate. It should also be note that for Toronto, the team followed the land use permissions of the Official Plan, including recent changes to the land use designations in employment areas adopted in December 2013 (Official Plan Amendment 231).

Where official plans did not encourage mixed use planning, the reallocation of growth assumed that municipalities would follow the guidelines of the Ministry of Transportation with respect to Transit Oriented Development (TOD).[10] These guidelines adhere to the principles of good planning for the development of transit-friendly intensification of employment and residential development.

The reallocation process undertaken in this study assumed that policy adjustments would be made. The notable exception to this was in the reallocation of multi-residential properties in employment districts, even though proposed new amendments to the Growth Plan are encouraging review of this restriction.

The project team consulted with the cities of Toronto and Mississauga, and the Region of York to determine where and what planning policy changes were under consideration and applied those considerations to the appropriate nodes.

2.4. OTHER FACTORS CONSIDERED

2.4.1. Conversion of Industrial Buildings

There is a trend to convert existing industrial buildings to office use, which impacts the amount of construction of new office buildings. As reported in *The Nodal Study*, SRRA noted that many start-up businesses and firms in the new technology and creative industries seek locations in these converted buildings. The proximity of these buildings to places where people want to live is critical to determining which industrial buildings are attractive and the consequent capacity for office growth in the nodes SRRA studied. This has been the case in the Brick and Beam districts of downtown Toronto where many former industrial buildings (14 million sq. ft. total) have already been converted to office space and residential uses.

[9] *The Nodal Study, Strategic Regional Research Alliance, 2015*

[10] *"Transit-Supportive Guidelines," Ontario Ministry of Transportation, Queen's Printer, 2012*

Photo 10: *New Traffic* Zone 66 bounded by Queen, Simcoe, King and Spadina.

This trend is becoming evident in industrial parks in the 905 and in areas of Toronto adjacent to RER/SmartTrack, notably in the Scarborough corridor. The need for low cost office accommodation to encourage new employment growth is one of the significant drivers of future new economy companies which combine significant office employment with more flexible residential accommodation at affordable prices.[11]

2.4.2. Employment Density of Office Facilities

Employment projections were based on the number of employees who would use office space, not the amount of office space required to house them. As a result, the trend to intensify office space was not a factor in these forecasts.

For many years, employers have been reducing the amount of office space required for each employee through more efficient interior design and the use of new technologies. Making employee work space more efficient and lowering the cost of premises per employee is driving builders of new buildings to accommodate this trend. Developers of new office space targeting certain sectors of the economy are building in higher density capability for their tenants.

[11] SRRA will be researching this issue in the near future.

Developers are seeking ways to allow their tenants to intensify the use of their space in new construction and the project team believes that this trend will continue.[12] It may lead to less square feet being built to accommodate the same number of employees in new buildings, but, intensification or increased density in the existing inventory[13] of buildings is limited by physical restraints such as access and egress, fire, health and safety regulations, HVAC limitations with respect to ventilation rates and external factors such as parking standards.

In other words, the existing stock may not be able to accommodate a higher density of jobs as readily as new construction.

This reinforces the importance of implementing transit plans that better serve existing concentrations of office buildings as well as the need to accurately anticipate where the market is likely to see opportunities for expansion. There will likely be proportionately less office space in relationship to the number of employees (lower sq. ft. per worker), although the impact of such a trend over the entire regional inventory and future expansions of that inventory will likely have only a marginal impact on the total amount of future office space.

[12] New buildings designed and built in downtown Toronto by companies such as Oxford, GWL and Cadillac Fairview are excellent examples of buildings where densities can in some cases reach 7 employees per 1,000 sq. ft. of rentable space.

[13] There are approximately 209 million sq. ft. of office space in the Region as at 2015.

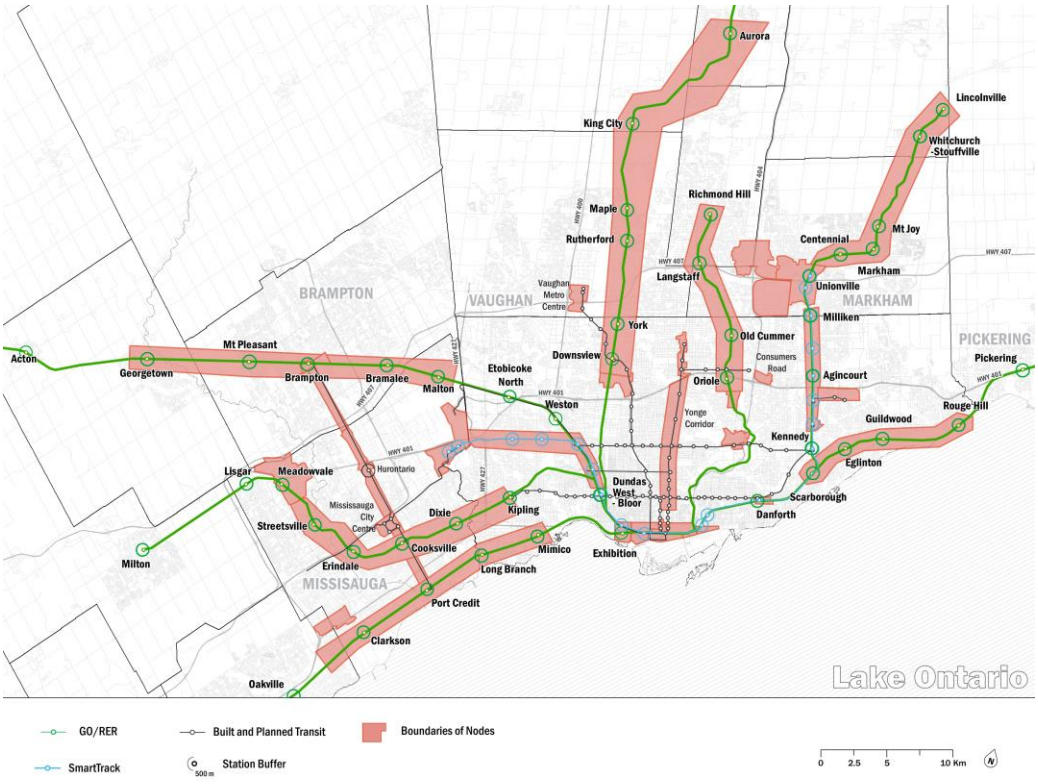
3. ALLOCATING GROWTH INTO NODES AND CLUSTERS

This section provides an overview of how the project team reallocated future development potential for office employment and multi-residential population growth in the GTA into nodes or clusters of traffic zones.

The project team was afforded access to projections of growth in traffic zones under confidentiality agreements which restrict publication of specific zonal data. However, we are able to comment on clusters of zones. In order to present findings as clearly as possible and within the confidentiality restrictions, we have organized the findings into nodes and describe the reallocation process in more general terms. The nodal analysis is further organized by municipal boundaries of:

- the City of Toronto;
- the Region of Peel, including Mississauga and Brampton; and
- the Region of York, including Markham, Richmond Hill and Vaughan.

The map below shows the distribution of those nodes.



Map 11: *Corridors in the region by node*

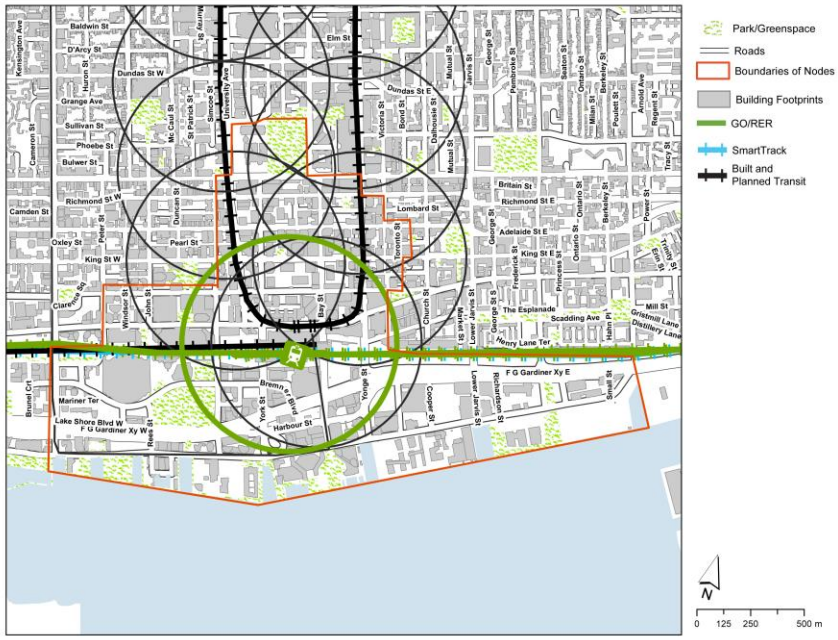
3.1. CITY OF TORONTO

3.1.1. The Central Area of Toronto and the Nodes beyond the Central Area

The Central Area of the City of Toronto contains the principal concentration of employment in the city. Outside the Central Area, growth of employment in high value office jobs has not occurred in over 25 years. New office buildings are a rare sight and in some areas, such as the central Yonge Street corridor, office employment has actually declined. Employment growth in the institutional and retail sectors typically follows population growth. There is a significant risk to office employment growth outside the Central Area unless more capacity to build is provided adjacent to the RER/SmartTrack rail corridors.

There has been an unprecedented growth of residential accommodation in the Central Area and in some nodes outside the Central Area during the past 20 years. The capacity of the City to absorb residential growth is not seen as challenging employment growth outside the Financial Core. New clusters of multi-residential development have evolved and for the most part have aligned with existing transit. The forecasts provided for multi-residential, subject to markets, are reasonably aligned with conditions on the ground. The project team did reallocate multi-residential growth in some circumstances. The reallocated multi-residential population growth came from non-transit areas.

3.1.2. Downtown - Financial Core



Map 12: *Financial Core*

The Financial Core owes its growth to the continued strength of the financial services sector (FSS), which accounts for approximately 70% of all existing leased space. This node has steadily absorbed 450,000 sq. ft. annually for the past 20 years. However, during that time, the GTA office market as a whole has grown at a faster rate than the Financial Core. A number of factors contribute to this dispersed growth. The first is that sectors such as telecommunications, data processing, publishing and technical services have migrated to the 905. In addition, increasingly companies best able to afford the cost of locating in the Financial Core are those that are directly part of or operate in support of the FSS.

Land values from condominium development exceed the value of land for commercial development which has led to a reduction of sites available for commercial expansion. However, there are sufficient sites in the Financial Core to enable the FSS to continue to grow for the foreseeable future. Even though the Financial Core is expected to attract an increasing number of residents in years to come, its primary focus and raison d'etre, as articulated by the members of the Toronto Financial District Business Improvement Area, continues to support the area as the primary employment hub for the region.

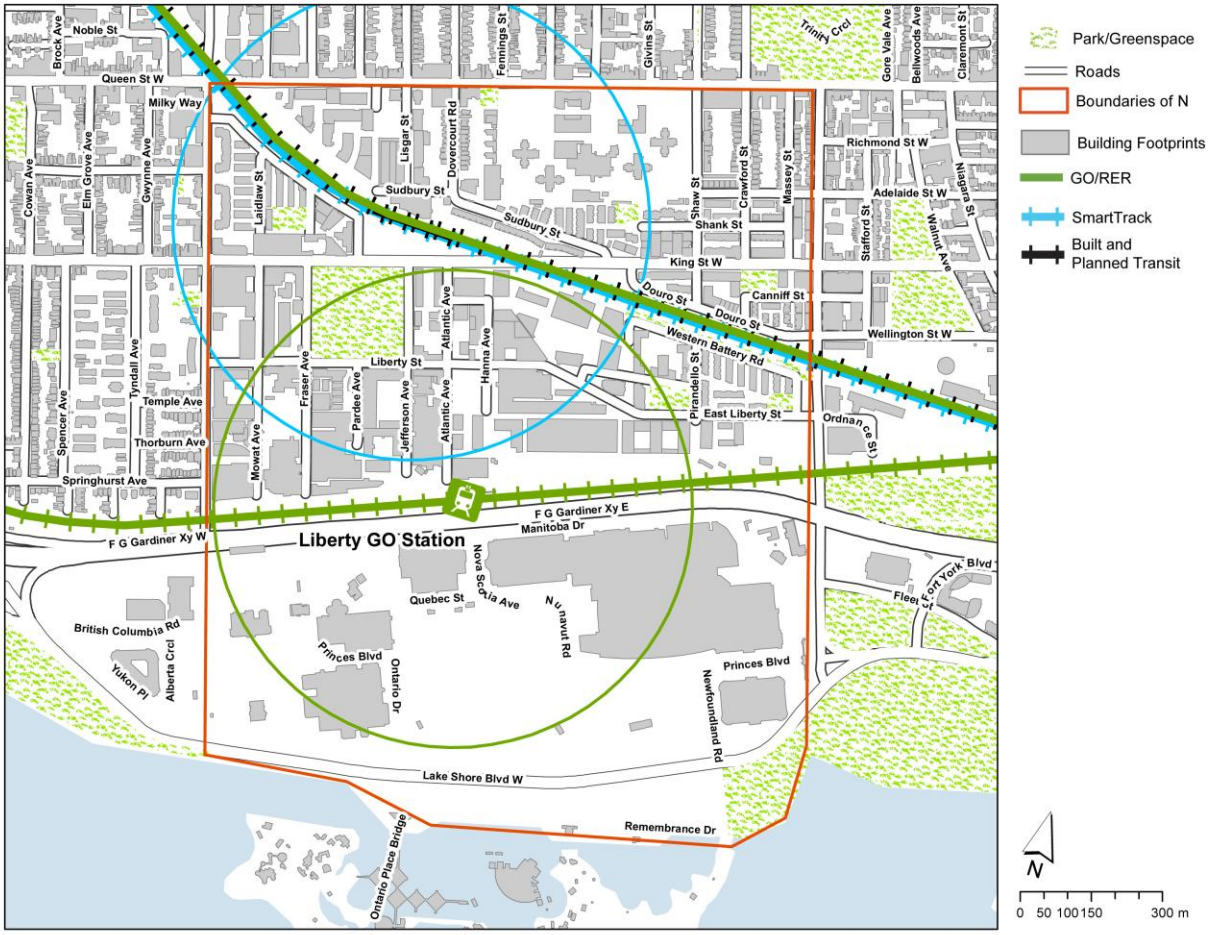
To properly assess the capacity to house new office space in the future, the project team consulted with commercial real estate experts from the brokerage and development communities and City of Toronto staff to determine how much new office space was reasonable. This assessment was made based on vacant sites and major redevelopment proposals. The project team also took into account the potential for some existing office space to be replaced by new space incorporated into new mixed-use condominium projects. While these projects will contribute to the supply of new space, this category of development is not a major consideration. Though the redevelopment of older and smaller buildings could provide new opportunities over the long-term (50 years), this was not factored in these forecasts.

This node is well served by public transit. Only 25% of in-bound trips are auto-based. SmartTrack and RER will provide considerable new capacity for employees who live in lower cost residential communities outside of the core, thereby providing Financial Core employers access to a larger work force within a reasonable commute time.

SmartTrack, and to a lesser extent RER, will also provide residents in downtown Toronto with access to jobs in Markham/Richmond Hill, Scarborough and the Airport District. This will increase the attractiveness and growth potential of the condominium development in the downtown.

The PATH system has recently been extended to serve new construction south of the rail corridor. Development of new and enhanced pedestrian connections within the core, creating connections with new commercial and residential developments south of Union Station, together with enhancements to the capacity of the station itself, will ensure continued growth. This was deemed to be adequate supply for growth of the FSS and related businesses over the 2021 – 2041 planning period.

3.1.3. Downtown - Liberty Village



Map 13: *Liberty Village's employment area*

The redevelopment of Liberty Village over the past 20 years has been led by a combination of City of Toronto planning policies and historical land ownership patterns. As a result, the eastern half of the area has developed as a high-density residential zone, while the area designated for employment has attracted a variety of office users such as software start-ups, media, and other new economy companies. By and large these companies have located in converted industrial spaces.

In *The Nodal Study*, SRRA identified this area as having significant potential when provided with expanded GO service at Exhibition station to the south and a new SmartTrack station to the north. These stations are within reasonable walking distance of each other and provide access to a significant portion of the region's population growth.[14] Metrolinx recently introduced 30-minute service to the south end of this node on the Lakeshore West GO line with great success. Along with increased service levels and the future implementation of SmartTrack (which would relieve congestion on the King and Queen Streetcar lines), zoning changes to permit mid-rise, single elevator style office buildings in this area (12 - 16 floors) would greatly increase its office development potential. This type of office building can be built at competitive prices and provide less costly opportunities for employers looking for 'Brick and Beam' space.

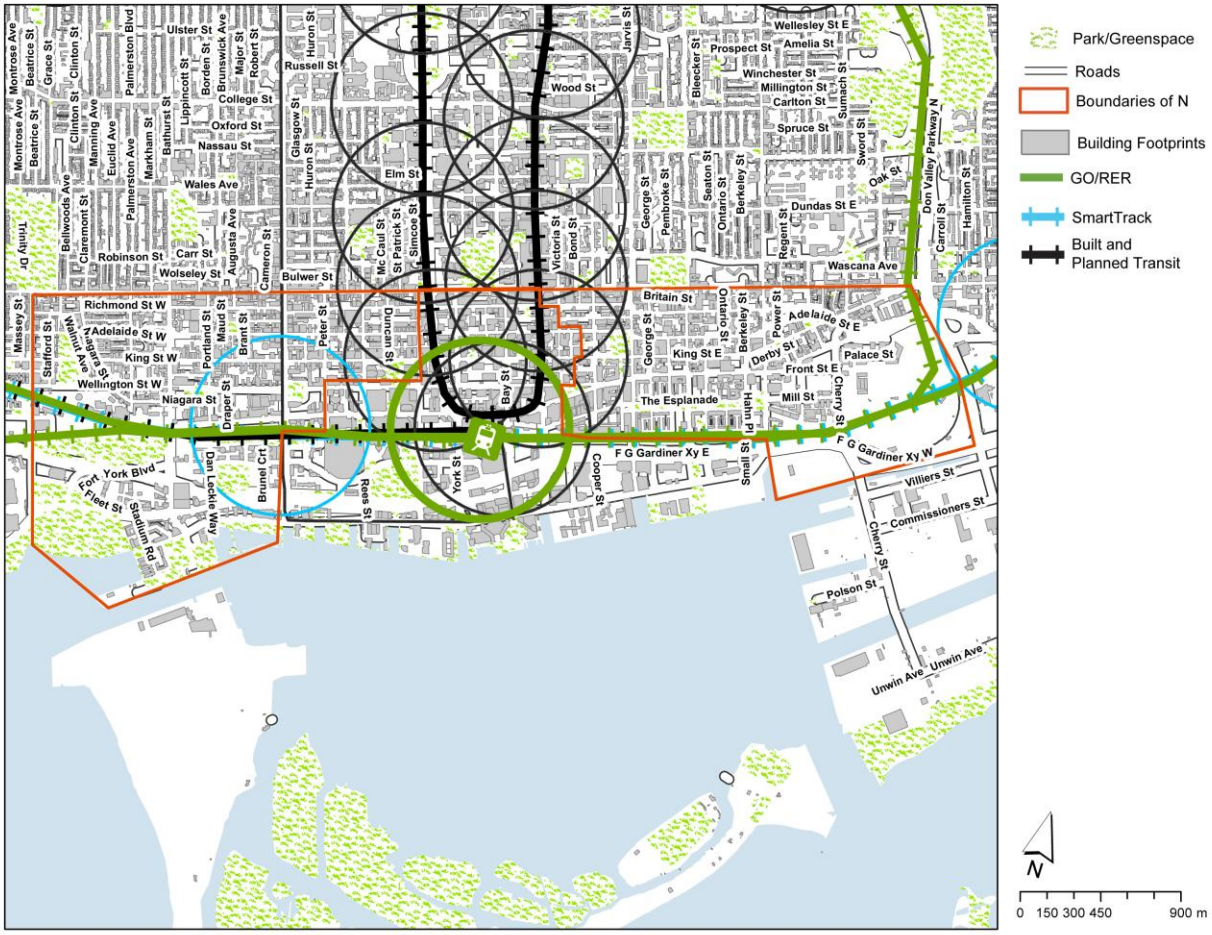
Liberty Village has considerable room to grow because the area is still zoned for employment uses and because the City of Toronto, in keeping with its Official Plan policies, has been reluctant to allow high rise residential development in the west end of the node in order to preserve it for employment.

The project team and City of Toronto planning staff agree that this area has the capacity to provide upwards of 30,000 new jobs. This will allow companies that have grown in the traditional Brick and Beam office market to expand.

Nevertheless, external access to the area, as well as internal access within the neighborhood, will require investment in the public realm if the area's full development potential as an employment node is to be reached.

[14] The distance between the two stations is equivalent to the distance between Queen Street and Wellington St in the Financial Core.

3.1.4. Downtown - Brick and Beam



Map 14: *The Brick and Beam Area*

The Brick and Beam area is located in two distinct areas on either side of the Financial Core and has approximately 14 million sq. ft. of office space. The demand for office space has largely been met through conversions of former industrial buildings. A few new office buildings have been constructed in the area, but the majority of office job growth has been developed by conversion of industrial buildings to office space.[15] The potential for new supply resulting from further conversions of other types of buildings is limited. Some industry observers feel this capacity is now less than 1 million sq. ft. which is sufficient for only 5,000 jobs.

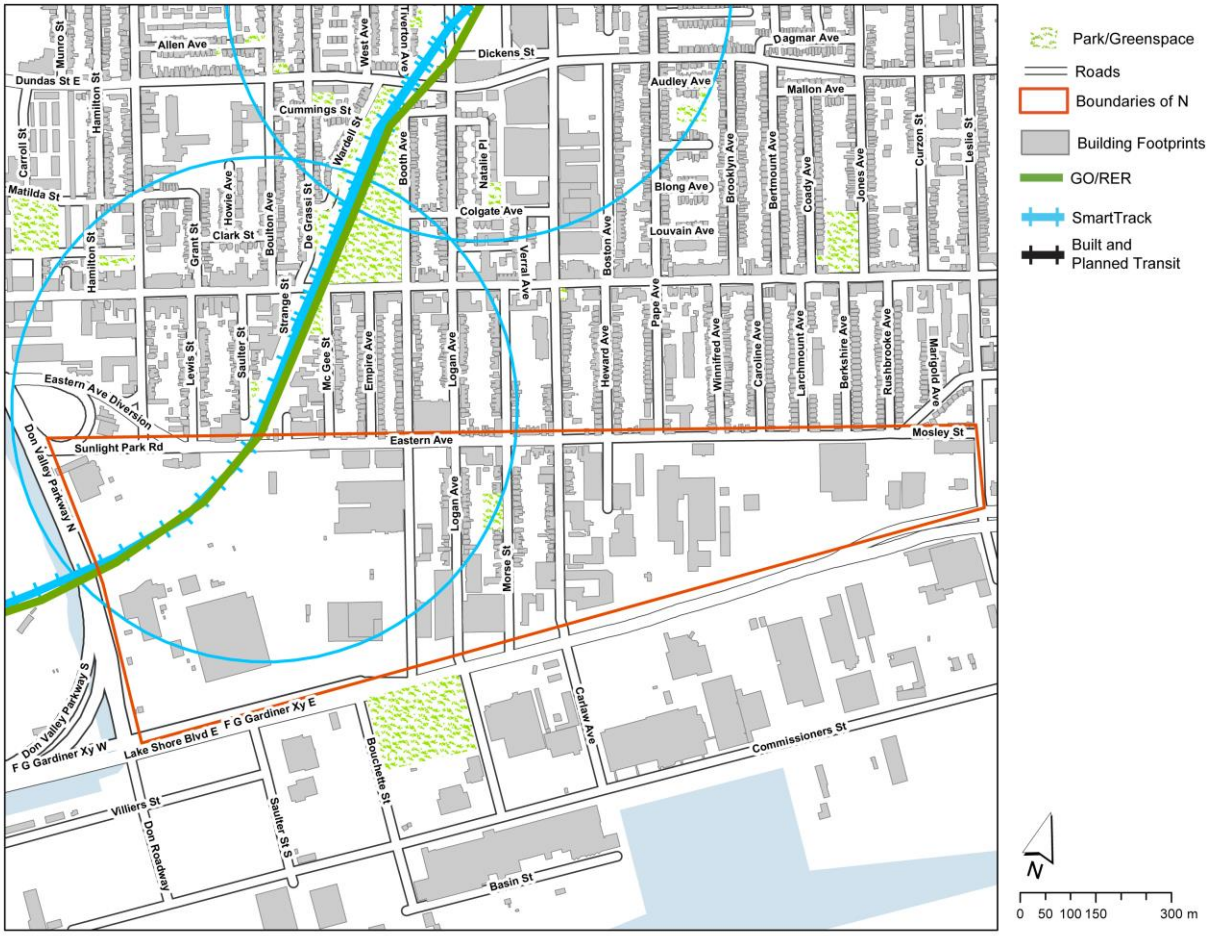
[15] New buildings in the Brick & Beam node include the SAS building, the new building for Coca Cola, and one under construction by Allied in Brick & Beam West.

The Brick and Beam area was surveyed property by property to determine the capacity for office space growth. This included provision for a component of office space in residential condominium towers, in addition to stand-alone office buildings.

The projection of population growth in multi-residential buildings in the area as provided by the City of Toronto planning staff, recognizes the area's continued popularity. Future growth of the area is characterized as a mixed-use environment where high levels of walking and cycling add to the appeal of current and future transit plans, all of which adds to the attractiveness of the area.

For the purposes of this study, growth was reallocated for office employment and some additional multi-residential development as a result of RER/SmartTrack.

3.1.5. Downtown - Don Valley East (Lever Site)



Map 15: *Don Valley East (Lever Site)*

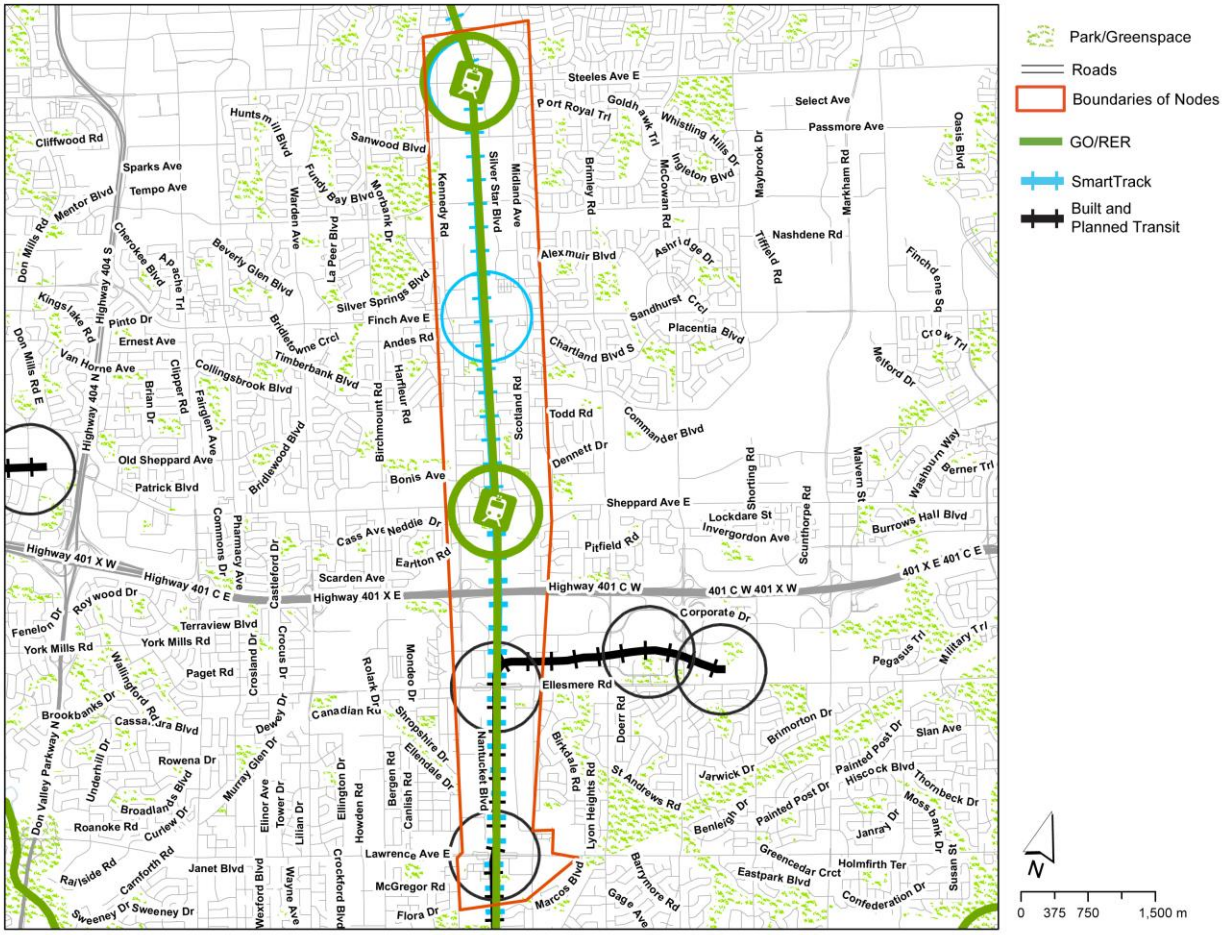
This potential employment cluster, the former Lever factory, was determined to be a vital addition to the growth of the Central Area. This node will be able to attract office jobs only if high speed access to labour markets is available. In anticipation of the higher order transit provided by RER/SmartTrack, and applying the analysis outlined in *The Nodal Study*, this area was allocated a significant amount of future office employment out to 2041. The area has been likened to London's Canary Wharf in terms of its potential because it has a single owner/developer committed to the complexities of developing a new cluster of employment and is located directly beside both SmartTrack service and RER service enhancements on the Lakeshore East line.

Canary Wharf, by comparison currently supports approximately 20M sq. ft. of office development, 1M sq. ft. of retail space in a reasonably similar geographic area. The neighbouring area could also provide a significant amount of multi-residential development if permitted as is the case with Canary Warf.

The potential of the Lever site was tested in *The Nodal Study* with the assumption of high frequency, 'surface subway' style service. Employers told SRRA that they believe that this would extend their ability to attract employees from Markham, Scarborough, the Region of Durham and from the west of the region, giving them access to a large, diverse workforce. This potential can only be reached if a high speed, high capacity transit service, like RER/SmartTrack, is available to provide timely and cost effective access to employment.

It should be noted that current City of Toronto policy designates the site for employment uses only, in part due to concerns about the negative impact of residential land value on the viability of office development. The fact that a significant portion of the site is in one ownership significantly mitigates this concern, and it is assumed that a reasonable accommodation will be reached as planning for the site proceeds. However, the project team did not reallocate a significant population growth to this node in keeping with current policy.

3.1.6. East - Kennedy Corridor



Map 16: *The Kennedy Corridor*

The Kennedy Corridor is a node that the project team believes could be very attractive to the creation of new 'complete communities' but this is not recognized by planning permissions or existing uses.

Employment reallocation to this area is very important to the growth of the City of Toronto. Employers in new start-up businesses and early stage enterprises that need affordable office space are beginning to recognize the corridor's potential. This opinion was informed in part by a complete physical inspection of every building and its current use which revealed that the area was already attractive to new economy enterprise. Further transitioning in this node can be achieved by either refurbishing redundant industrial buildings or building small new office buildings in this node.

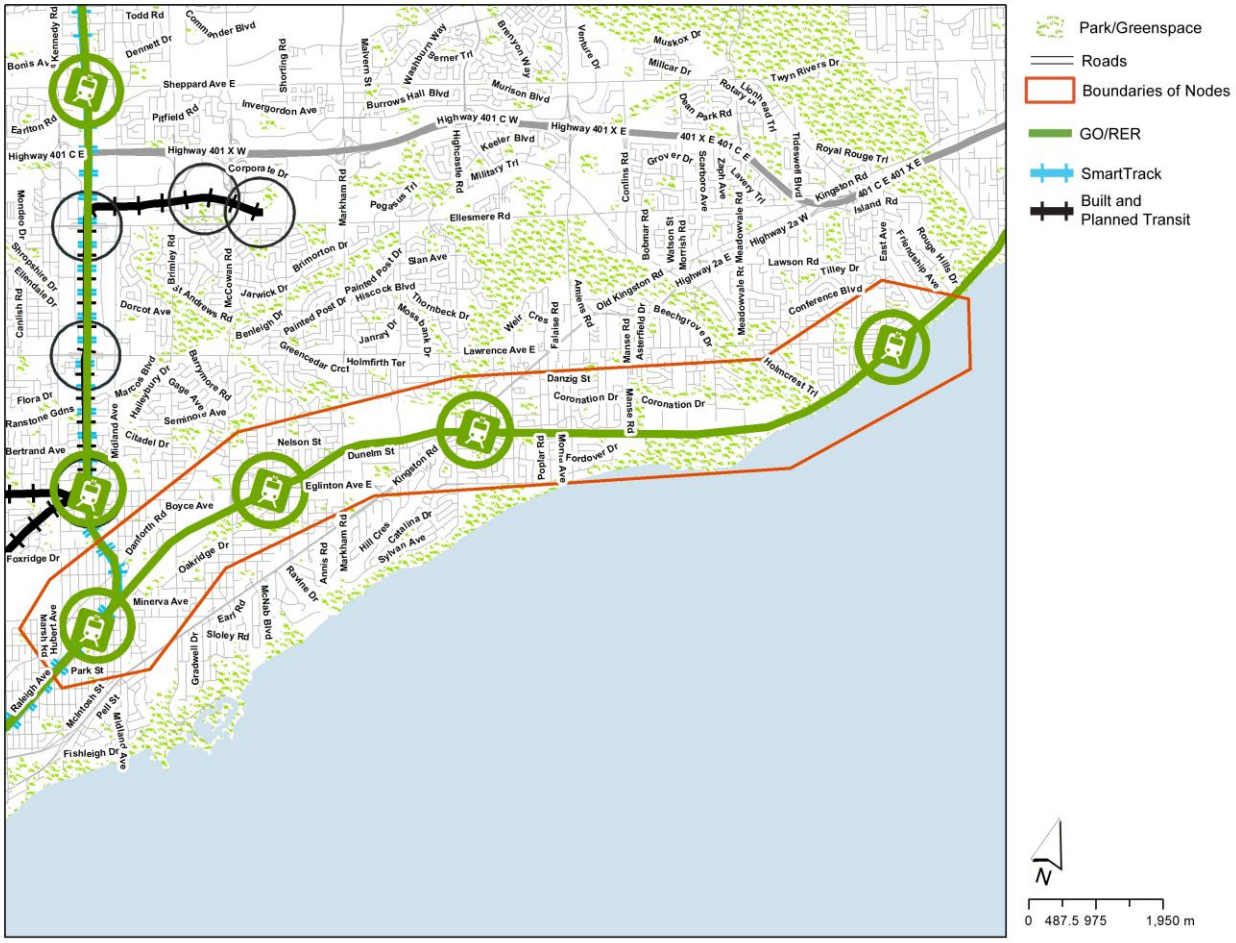
Small to medium-sized tenants, particularly those in new economy enterprises, are looking for low cost places to grow. The industrial stock in the Kennedy node is extensive and undervalued relative to its replacement cost. This area could become an employment regeneration area with new land use and economic development policy and the introduction of SmartTrack style service.

Employment use in this corridor will link to residential opportunities as far north as Stouffville and south and east into the residential concentrations of the Central Area in Toronto and increase the use of the new Eglinton Crosstown Light Rapid Transit line. For the purposes of this report, we have allocated increased future employment on the assumption of improved connectivity provided by RER/SmartTrack.

The potential to add residential development in the immediate area surrounding the stations of SmartTrack and to create complete communities would allow for considerable population growth in this corridor. The project team did not reallocate multi-residential development to these nodes and that potential is not reflected in the ridership analytics performed by the City of Toronto for SmartTrack.

Research on the potential impact of adding a residential component to this corridor and further analysis on ridership will likely produce higher transit value. The policy required to permit change in this corridor ought to be consistent with the economics of development and markets for these developments.

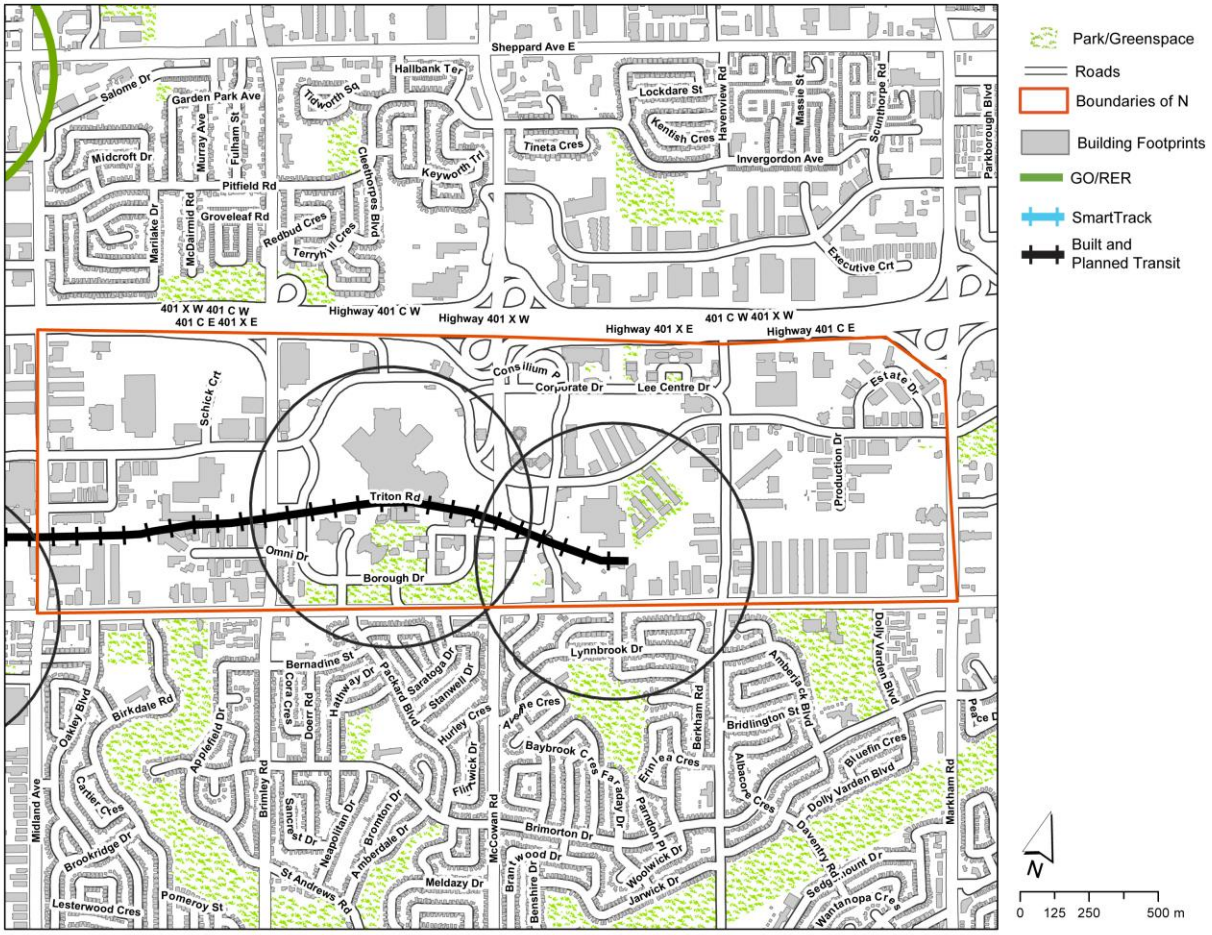
3.1.7. East - Scarborough South



Map 17: *Scarborough South*

There was no reasonable evidence that this area will attract office development. Some multi-residential capacity exists with the increase in service of RER but the project team did not augment the City's existing projections of growth in either sector which were deemed to be reasonable.

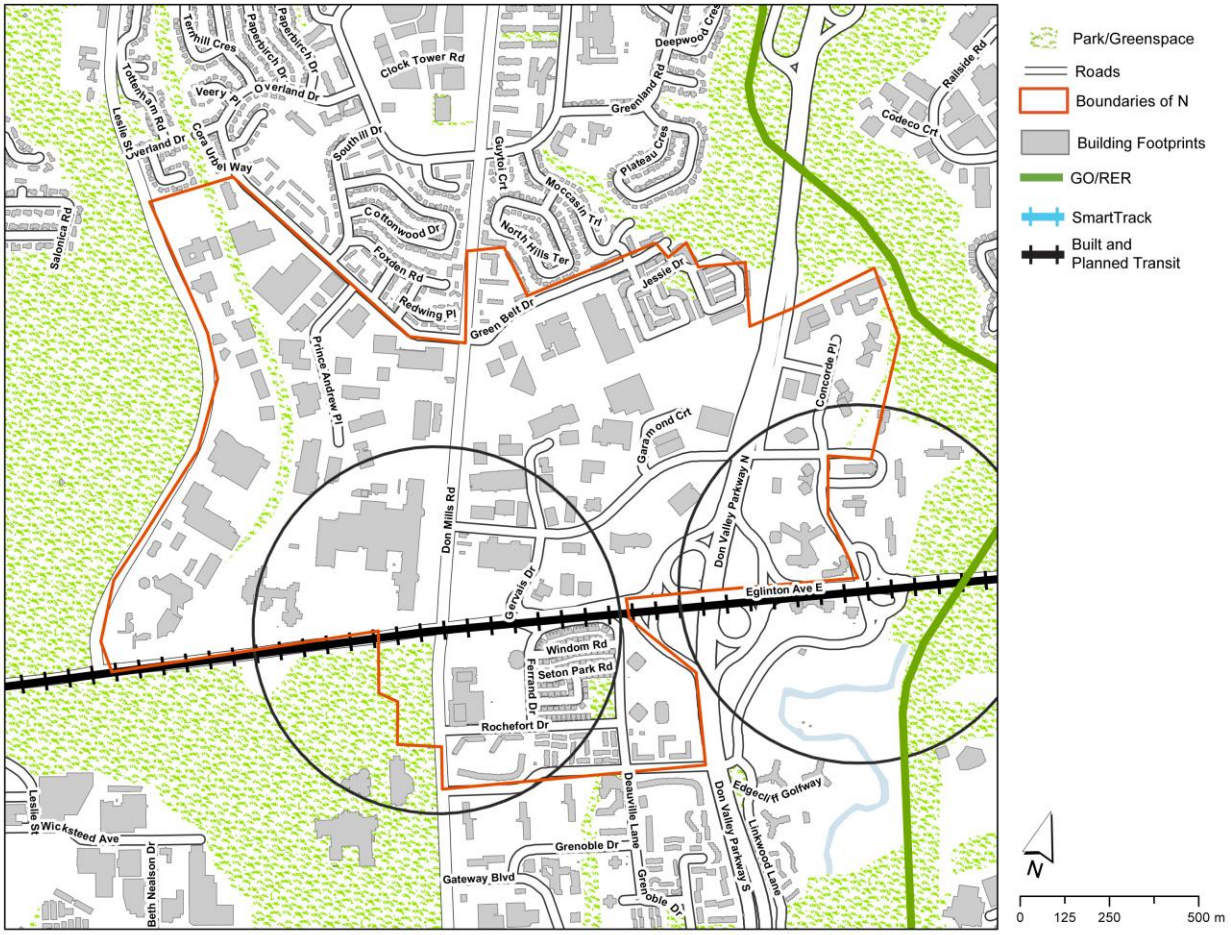
3.1.8. East - Scarborough Centre



Map 18: *Scarborough Centre*

Although there is a small amount of office development in Scarborough Centre, there has been no new commercial growth in 25 years and the rental rates for existing office development are well below market rates elsewhere in the Toronto market. In addition, these rates would not support construction of new space. Its primary potential will be derived from additional multi-residential development and further development of retail employment. But assuming that further improvements to transit will be made, including network effects resulting from the implementation of SmartTrack and the extension of the Danforth subway, the project team did augment existing projections for future office development in this area.

3.1.9. East - Eglinton/Don Mills



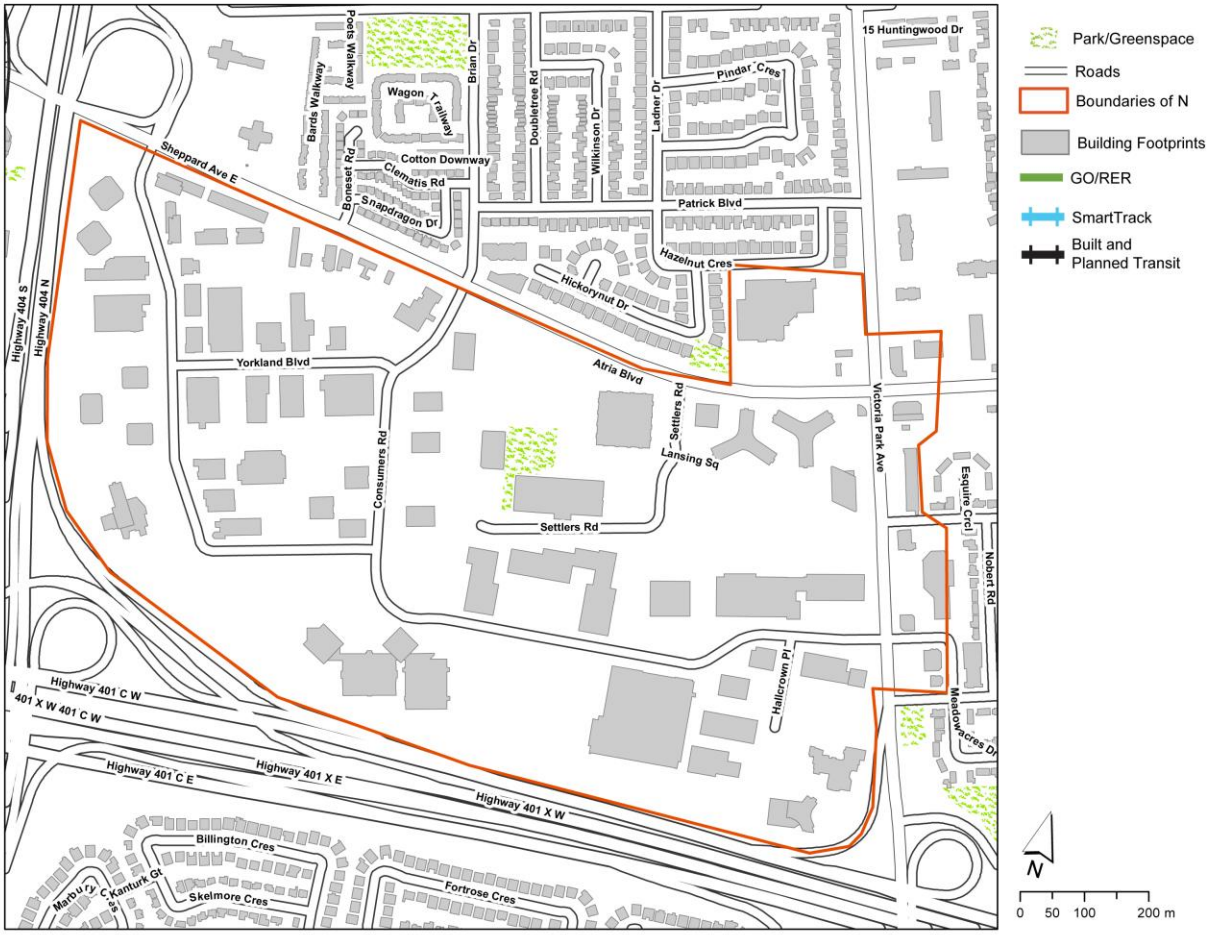
Map 19: *Eglinton/Don Mills*

The Eglinton/Don Mills node developed as a successful auto-oriented employment cluster in the 1980s, however, there has been no new employment growth in 30 years. A number of sites have since been repurposed (office to retail, office to institutional) or simply been developed for residential uses, including single family housing fronting on Eglinton Avenue.

Employers interviewed for *The Nodal Study* indicated that improved transit would have a positive effect on the attractiveness of the area for employers, even though commercial rates are currently well below replacement value. However, the project team did not supplement the expectations of growth beyond the amount assigned by the City's staff.

The projections for residential growth were also within reason. The project team, however, did increase those projections based on the impact of the Crosstown LRT.

3.1.10. East - Consumers Road



Map 20: *Consumers Road*

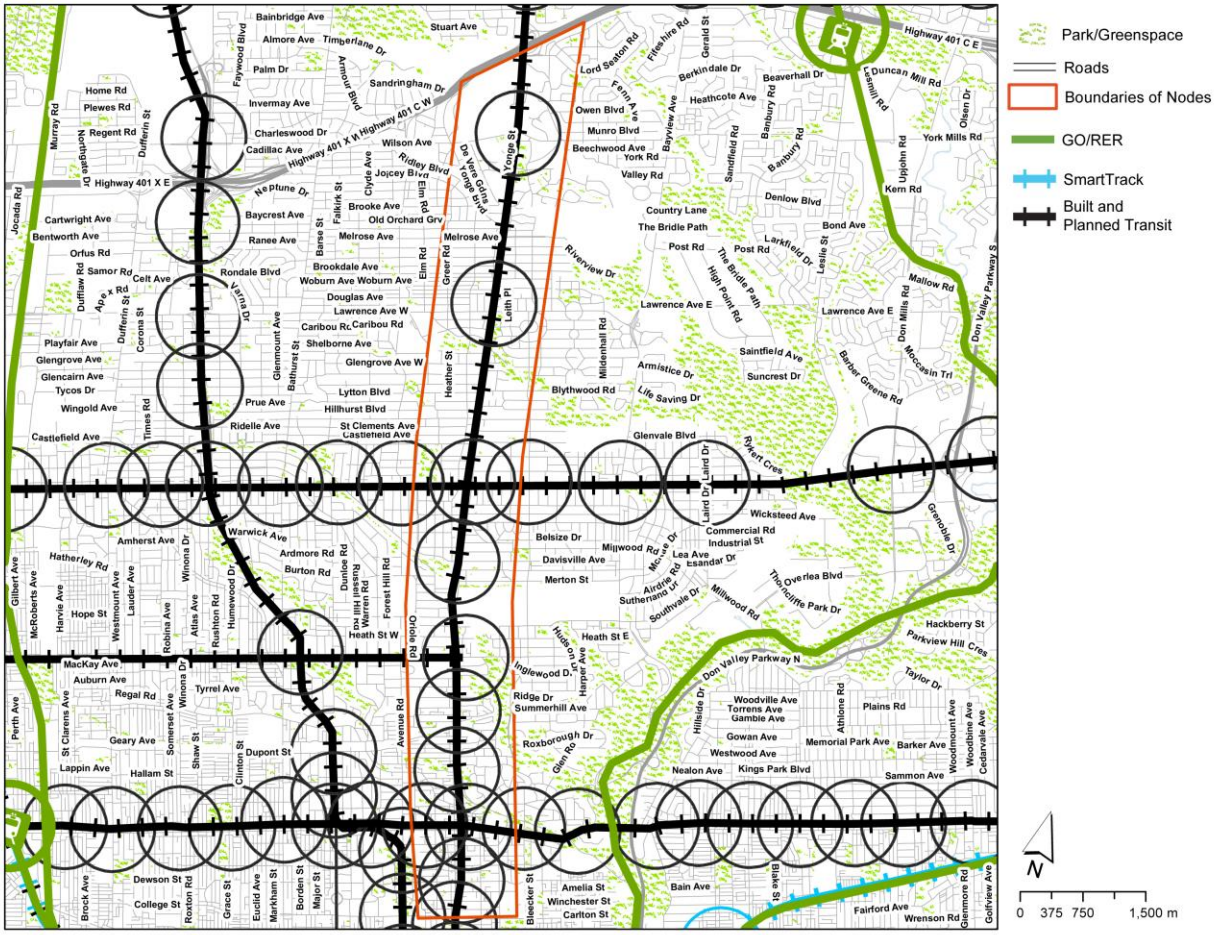
This node is not directly connected to RER/SmartTrack. Nonetheless, it will benefit as planned new transit service is provided from the Sheppard subway to Scarborough Centre along Sheppard which will intersect with RER/SmartTrack and attract more growth than was anticipated. This is a concrete example of the ancillary benefits of the proposed RER/SmartTrack line and its ability to enhance the transit network.

The Consumers Road employment district was initially an industrial park but in the 1970s and 1980s it also attracted office buildings. Its potential as a major employment node stalled when plans to extend the Sheppard subway over the Don Valley were postponed.

A number of residential projects have been allowed to proceed in recent years even though the area is designated for employment uses. The project team allocated more office jobs and some multi-residential reallocation to the area on the assumption that transit will be extended from Sheppard and combined with improved network connectivity resulting from SmartTrack. This will help rekindle the area's potential as an employment node.

The possible network implications of transit between the Sheppard Subway terminus and the RER/SmartTrack line should be the subject of further research. Noting the capacity and frequency enhancements provided by RER/SmartTrack, it is recommended that further research to assess growth prospects supported by different higher order transit modes be conducted.

3.1.11. Central - The Yonge Street Corridor



Map 21: *The Yonge Street Corridor*

Yonge Street from Bloor Street to the 401 highway is an existing subway corridor, had considerable employment and population growth was forecast. After examination and consultation, it was determined that current employment expectations identified by the City of Toronto in this corridor are optimistic and overstated.

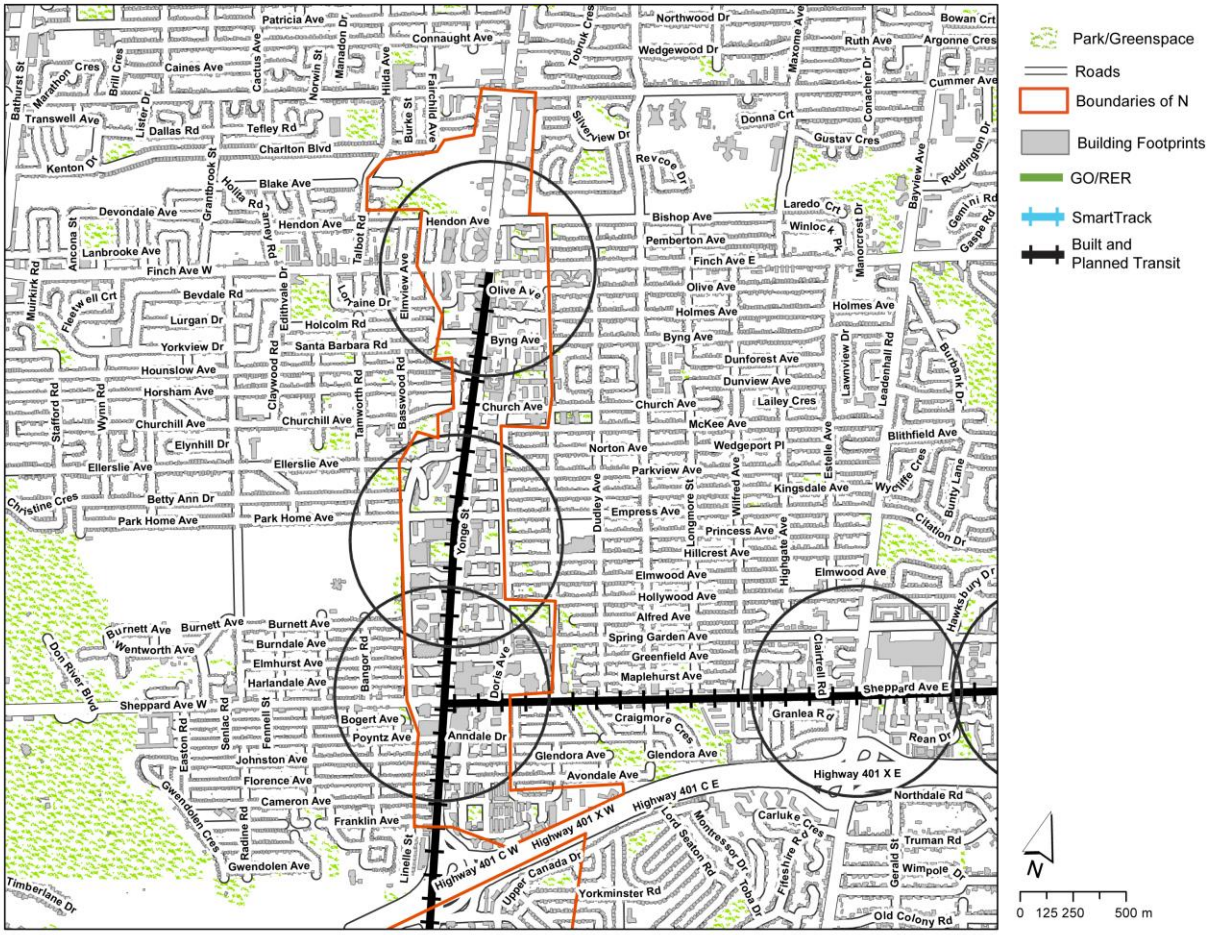
There has been a reduction of office space on this corridor (over 1M sq. ft. has been demolished) and no new office construction since the early 1990s. There has also been an increase in residential development and the forecasts for population growth in this corridor were considered to be adequate. Employment resulting from growth in the retail sector is expected but it will not be significant.

The expectation of renewed interest by office employers in this corridor was not evident in either the work of *The Nodal Study* or during interviews conducted with development specialists. The reasons for this low expectation are three fold: the lack of available sites, land cost and market demand. Congestion was not a factor in deterring new office growth when the subway was operating with excess capacity. Demand had tailed off long before the line reached its current levels of overcrowding.

If transit enhancement occurs, it still would not change the prospects for employment intensification. There are very few parcels of land that lend themselves to office development with the exception of a few sites, most notably the south west corner of Yonge and Eglinton. Land assembly is challenging and is not feasible with respect to the cost of land relative to market rates. The challenge for the City of Toronto will be the retention of existing office buildings in this corridor. The expectation of significant employment growth may be unrealistic under conditions and current policy.

The project team reallocated office employment from this corridor to transit locations where the land economics and markets are more favourable.

3.1.12. Central - North York

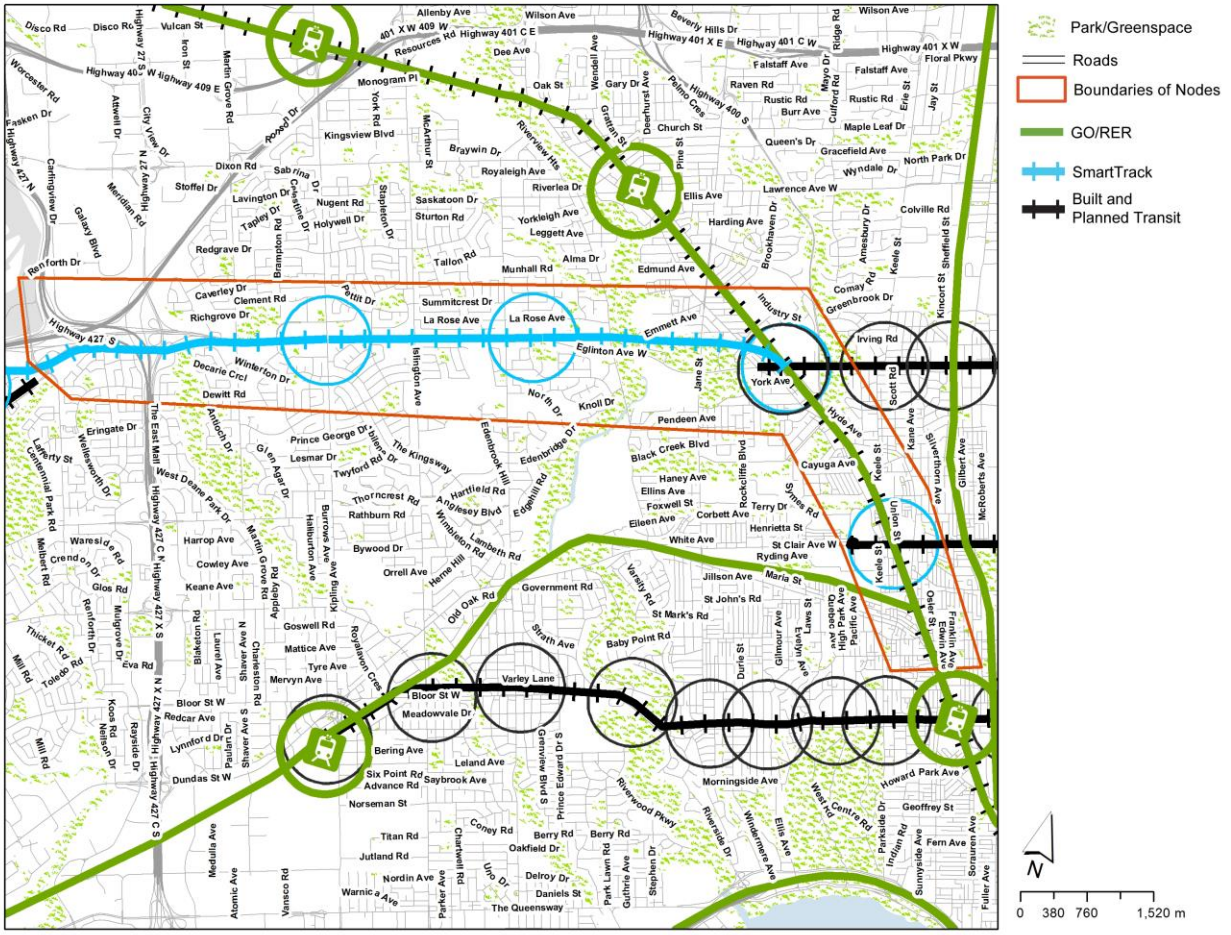


Map 22: *North York*

North York's projected growth was unaltered in this study. The expectations of growth are reasonable. It is noteworthy, however, that this area is another example of the shift in the past 25 years to affordable auto-based employment areas in the 905. Only one significant office building has been built here since 1990.

This is largely because of uncompetitive taxes and land cost. There are pre-zoned or acceptably zoned areas for commercial development but employers looking for a new building have consistently looked elsewhere. Owners of land designated for employment/office have been unable to attract tenants.

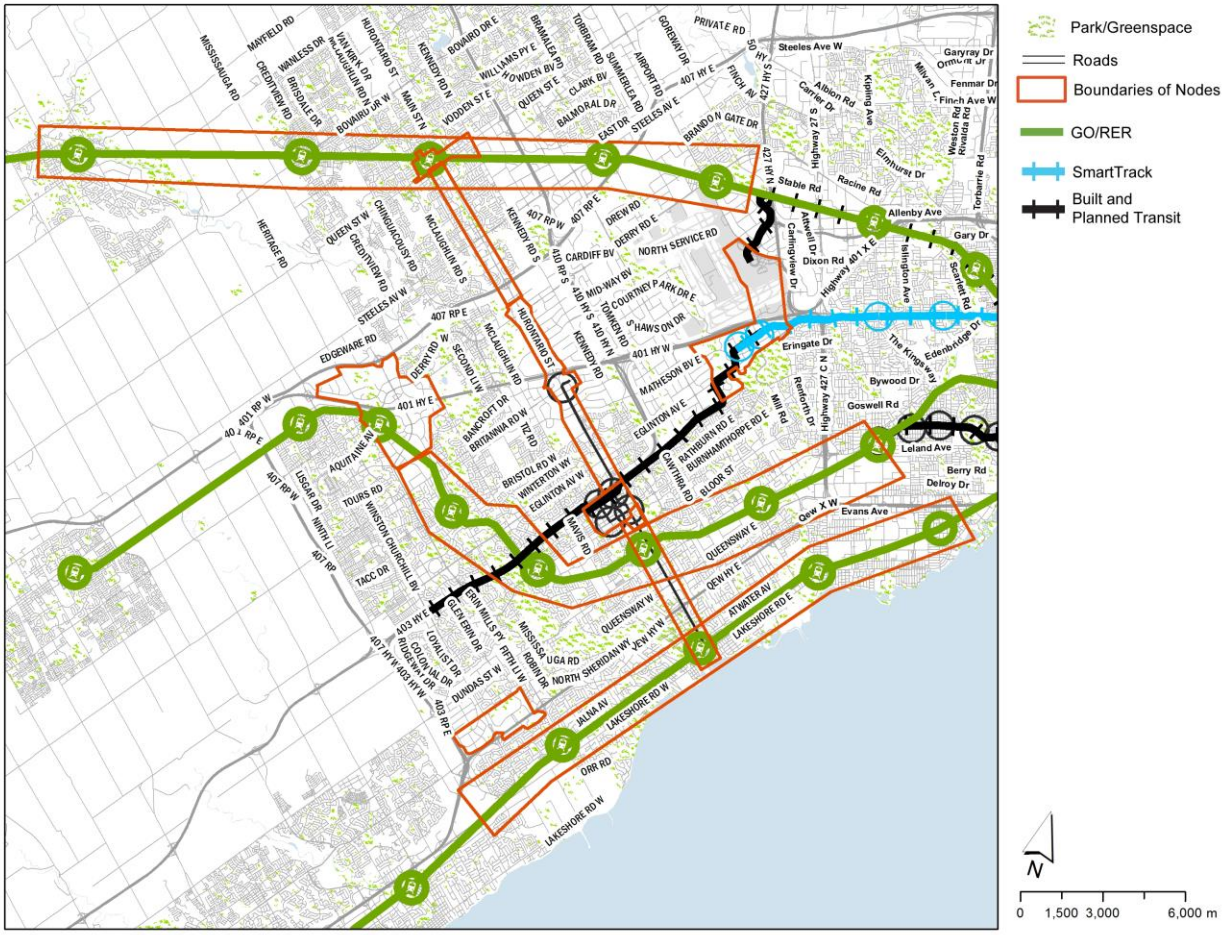
3.1.13. West – Eglinton West



Map 23: *The Eglinton West Corridor*

This node is a well built out, low density, residential corridor. The expectations of employment growth and population growth as determined by the City of Toronto are well founded including the mid-rise development recently built. Transit implementation here would be met by reasonable development but the capacity of this corridor is limited. The exception to this may be the Mt. Denis node but no reallocation was made there.

3.2. PEEL REGION (MISSISSAUGA AND BRAMPTON)



Map 24: *Peel Region*

Peel Region has experienced considerable major employment growth in three nodes: Meadowvale, Hurontario and Airport Corporate Centre (ACC). SmartTrack, in its original form running into the Airport District directly from downtown Toronto, would have a major impact on the employment and economic development of Mississauga and Lester B. Pearson International Airport.

Employment growth in the office sector has not occurred in other nodes, most notably the City Centre, for economic and market related reasons. The project team recognized that RER/ in some cases and SmartTrack in the Airport Corporate district will change the accessibility to labour markets by employers in a substantial way. This is the only major employment node where the project team reallocated office growth beyond the expectations of Mississauga.

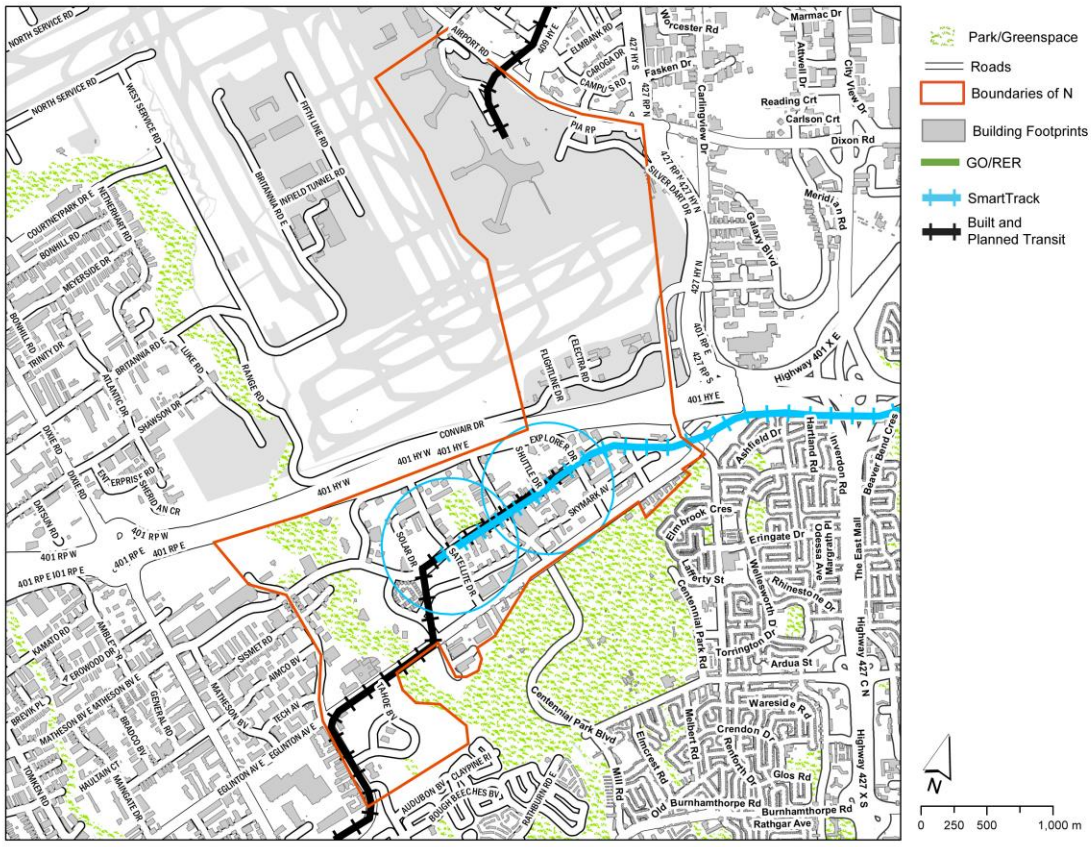
With the exception of northern parts of Peel, housing in single family properties is at capacity. Growth in population will have to occur in multi-residential buildings if Peel is to fulfil is targets under the Growth Plan. The completion of Hurontario Corridor is an essential first step in supplying this capacity especially if delivered affordably, a key factor for employers' location decisions.

The three RER corridors which trisect the region will provide an opportunity to induce intensified growth. But there are challenges in the short term. Meadowvale is the only node of major employment which will benefit from RER but the timing is uncertain.

In the short to medium term, the Hurontario Corridor will attract intensification and reallocation was applied there. SmartTrack, if extended into the Airport Corporate Centre would also be a significant employment enhancement to Mississauga and the region providing the convenient high speed connection to downtown Toronto that has been long sought by Mississauga. The City of Toronto's preferred option to extend the Crosstown Eglinton LRT to the airport and thus skirting the periphery will not have the same impact on employment growth.

Ironically, Mississauga attracted many employers from the City in the 1980s and 1990s when proximity to labour, facility cost and road accessibility was in ample supply. That attractiveness is now under more stress because of arterial congestion and higher rates of population growth in Toronto. The result of these changes led the project team to reallocate employment growth and some residential growth away from non-transit locations to the Hurontario Corridor and the Airport Corporate Centre. But, in general, the sum of projections of employment and population may be challenged unless the attractiveness of the region to employers is maintained in the long term as a result of improved transit accessibility.

3.2.1. Airport Corporate Centre and the GTAA



Map 25: *The Airport District with potential heavy rail connections to employment and travel in the two terminal buildings.*

This is a unique part of the region because it is the only employment cluster where commercial office development does not compete with multi-residential land economics. By 2021, there will be 100,000 office and industrial jobs in this node making it the most concentrated area of employment outside the Financial Core. The reallocation of growth to this node was based on heavy rail access to the downtown labour markets as proposed by SmartTrack.

An alternative to the SmartTrack proposal, extending the UPX into the ACC, could also provide the heavy rail connection which is a precondition for the employment projections. In the absence of such connectivity lower growth serviced by other transit modes should be researched. The impact on employment growth in Mississauga should be the subject of further analysis of lower capacity, reduced speed and peripheral connectivity to the ACC for comparison purposes.

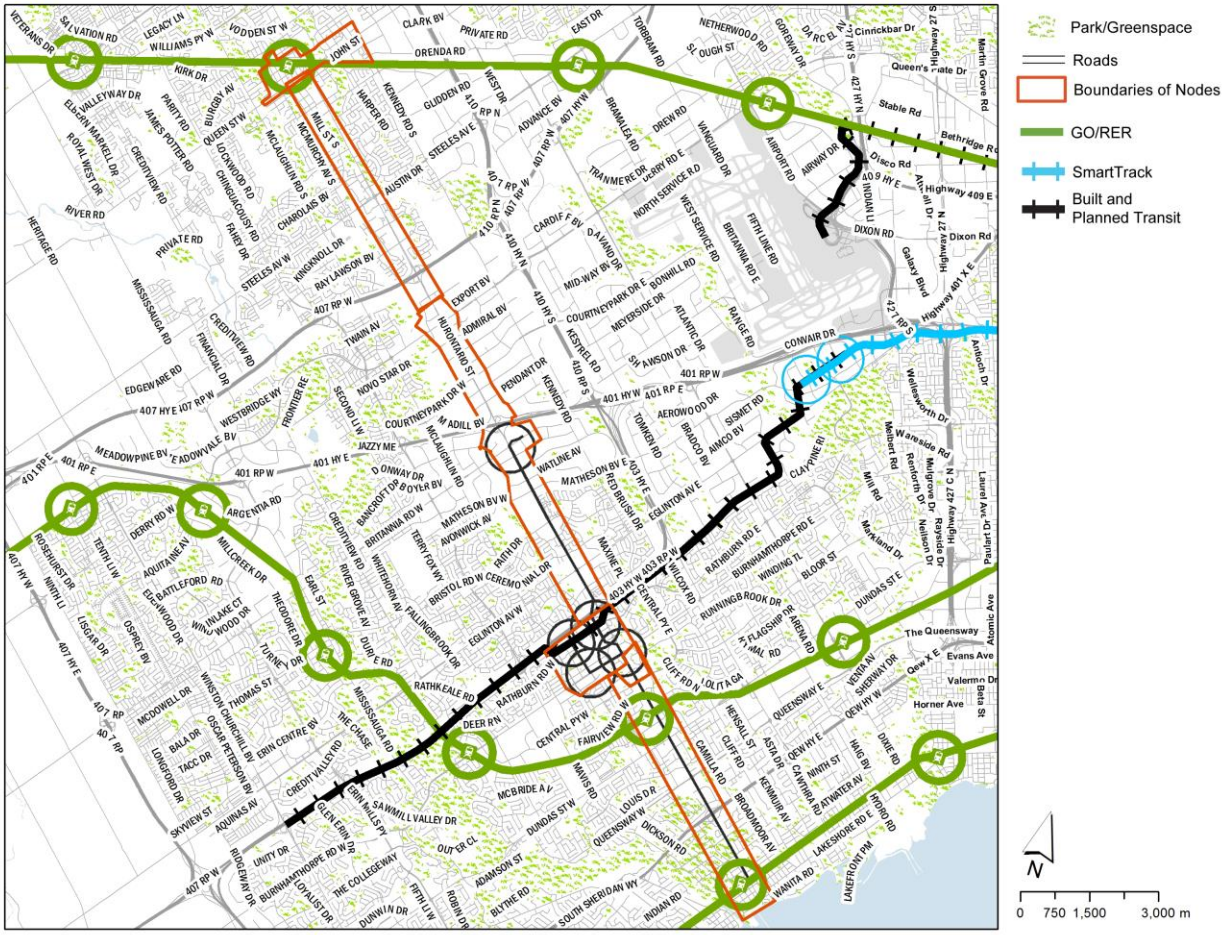
The projections of growth for the Airport Corporate Centre are partially informed by the unique character of this district. Land use restrictions prohibit residential resulting from proximity to Lester B. Pearson International Airport. Development has been restricted to industrial and office buildings, and land values for development have not had to compete with condominium development. When higher order transit such as SmartTrack is introduced, in combination with BRT and a variety of technology-driven ride-sharing alternatives (collectively known as the 'last mile' solution), this area is uniquely positioned to reach its employment potential without having to compete with residential land pricing.

There is current built capacity of 50,000 jobs in both the office and industrial buildings and ample suitable sites for intensification. Concerns about increasing road congestion have slowed down new construction recently. Employers indicate, however, that Airport Corporate Centre could continue to be a very attractive location with the direct high-speed connectivity provided by SmartTrack.

In recognition that employers are looking for workplace-supportive planning to include retail and cultural amenities, Mississauga is introducing new planning policies to support the introduction of amenities and other complementary uses to make the area more attractive as a place of employment. This will improve this node’s development potential.

Combined with the expectation that employment at the GTAA in the two major terminals will reach 40,000 jobs by 2021, this node could accommodate over 170,000 jobs by 2041 practically and economically.

3.2.2. Hurontario Corridor



Map 26: *The Hurontario Corridor*

The Hurontario corridor has been maturing as a transit-oriented corridor for some time, particularly in terms of the market for multi-residential development. The project team allocated more employment and residential development in this corridor.

The corridor is expected to benefit from the construction of an LRT connecting Port Credit to Mississauga City Centre, and north to the employment cluster at Hurontario and the 401. Clusters of office development at the intersection of the 401 and Hurontario have the potential to also attract additional employment uses.

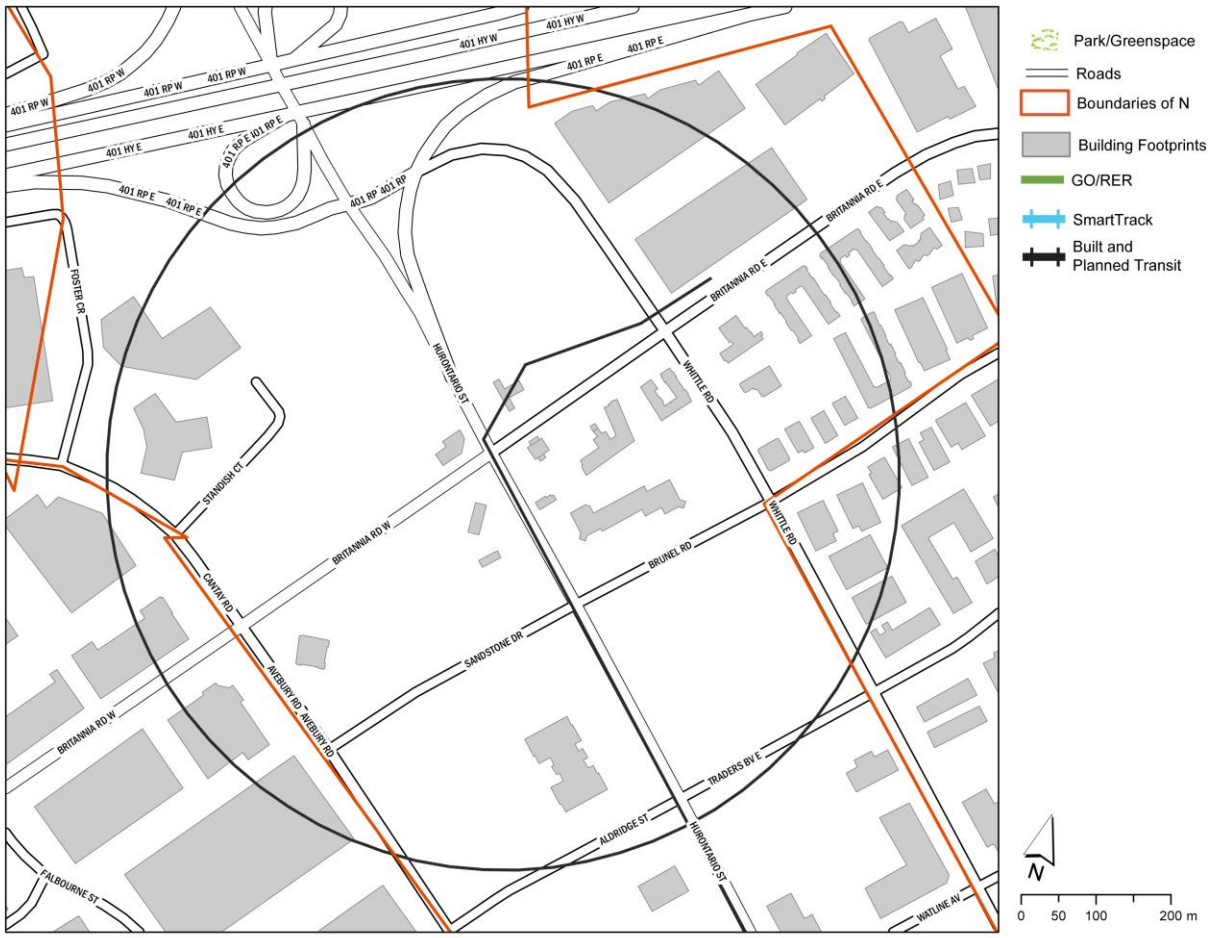
The City of Brampton, at the time of writing, has decided not to proceed with its portion of the LRT and it remains to be seen how this decision will affect the growth of major employment in

Brampton. The impact on growth of transit options should be undertaken to ensure regional growth projections are accurate.

Construction of an LRT in this corridor would have provided links between two GO/RER lines (Milton line and Lakeshore West line). Of particular interest from a development perspective is the strong likelihood that two stations (Cooksville and Port Credit) would be linked by the Hurontario LRT.

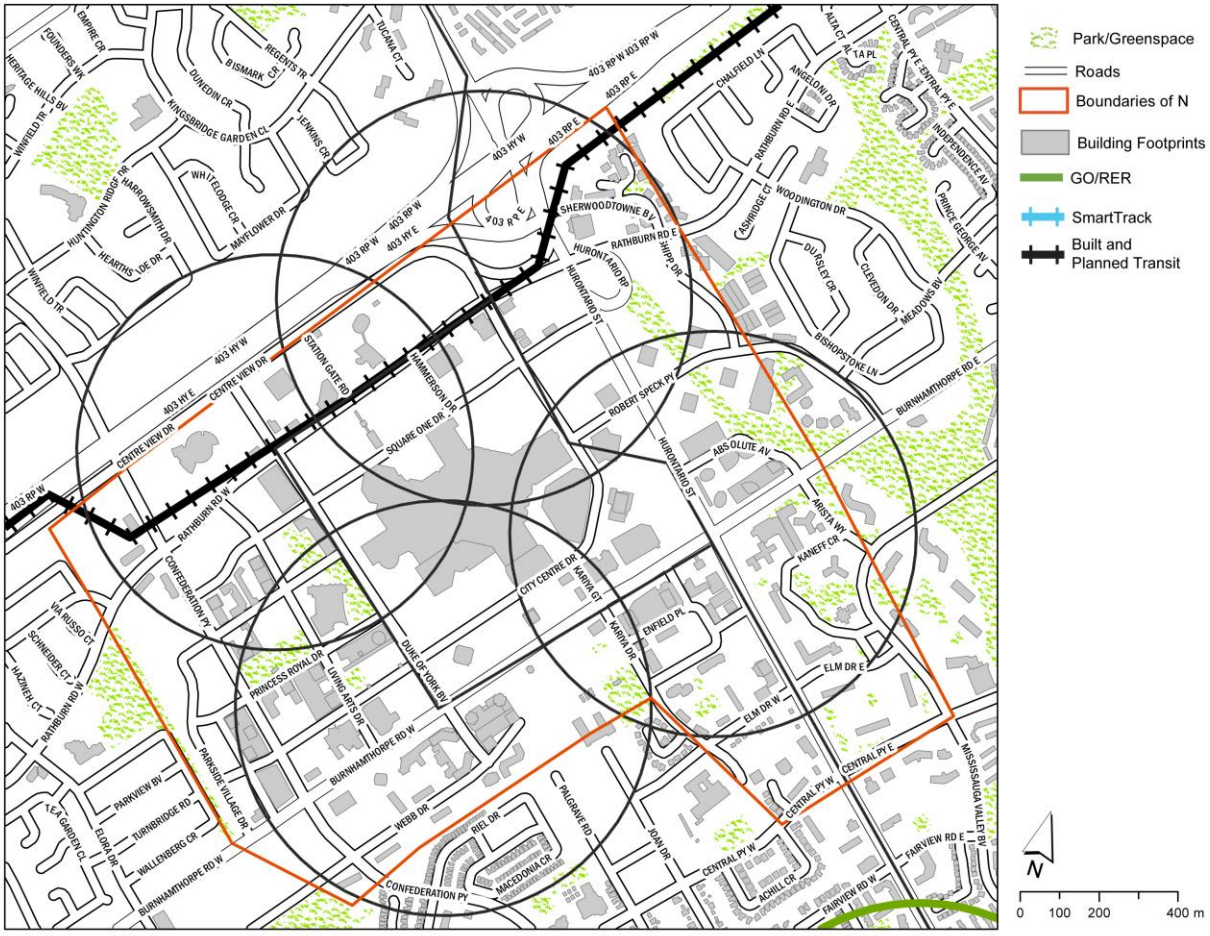
- **Hurontario, 401 to Brampton** – This corridor is primarily industrial. The project team did not allocate additional growth in this section and has not included the analysis of the northern segment originally planned to connect Brampton in this report.

- **Hurontario at 401** – This node continues to function as an important employment area, where two more large office buildings have just been constructed. There is a great deal of potential for additional intensification as the LRT comes on stream. The project team did allocate more growth in this node.



Map 27: *Hurontario*

Mississauga City Centre (Downtown)



Map 28: *Mississauga City Centre*

Downtown Mississauga has enjoyed considerable success as it matures from its status as a major shopping centre and municipal government hub to an attractive mixed use area with many of the qualities of a traditional downtown.

Multi-residential development, several institutional projects and most recently a thriving community college have been attracted to the City Centre but no major office development has occurred in 25 years. The introduction of light rail transit and continued efforts to improve the quality of the public realm are expected to have a positive impact on the prospects for employment growth.

The cost of constructing office buildings with structured or underground parking — a requirement in a downtown-like setting — has not allowed for a competitive supply of office space, particularly when compared to the low cost of surface parking in competing locations such as Airport Corporate Centre and development in the Hurontario node.

Strategies to create more favourable conditions for mixed-use and transit-oriented employment include Downtown 21, integration of light rail transit, and implementation of a long-term plan to create a more attractive pedestrian streetscape. In addition, the City of Mississauga committed to partnerships such as the development of a new Sheridan College campus that is already being expanded to accommodate more than 5,000 students by the end of 2016.

As public transit service improves, access to amenities such as childcare facilities, the library, Performing Arts Centre and the addition of street-oriented restaurants and other uses, combined with a rapidly increasing residential community, will continue to help create critical mass and drive ridership.

The introduction of Bus Rapid Transit (BRT) to the Airport Corporate Centre and potentially to the Airport, combined with initiatives to address the availability of parking will help this node meet its development potential but it will most likely continue to be dominated by multi-residential development.

- **Cooksville**

Map 29: *Cooksville*

This station has considerable development potential. The Cooksville station was once proposed to become the centerpiece of a new downtown but the impetus shifted north to what is now the Mississauga City Centre. A large area bounded by Hurontario, Hillcrest, Confederation Parkway and the tracks has the potential to be developed for a mix of uses, with an emphasis on multi-residential development.

- **Port Credit**

Map 30: *Port Credit*

This area has already been transformed as a result of the redevelopment of the former St Lawrence Starch site, which has created an attractive mixed-use neighbourhood four blocks to the south. There is potential to develop a parking lot fronting on Hurontario to the east of the station. No further growth was reallocated in this node.

3.2.3. Brampton Corridor

Map 31: *The Brampton Corridor*

Brampton has not yet become a major office location. Brampton only has two major office employers. Loblaws is located on the border of Meadowvale and Rogers in in an industrial building converted into office space by Nortel (an example of a conversion practice by employers, which is trending throughout the region).

With the implementation of RER, Brampton will attract more employment both through the regeneration of outdated industrial buildings and new construction. RER will have a positive impact on growth because the RER station is centrally located in downtown Brampton.

The project team concludes that the forecasts of growth on this corridor recognize RER and their estimates and growth are within reason. The expectations of major employers may be

challenging to achieve in the short term. The focus of growth will be on multi-residential development.

Five GO/RER stations in this corridor have potential to meet their growth targets if supportive land use changes are implemented.

- **Georgetown**

Map 32: *Georgetown*

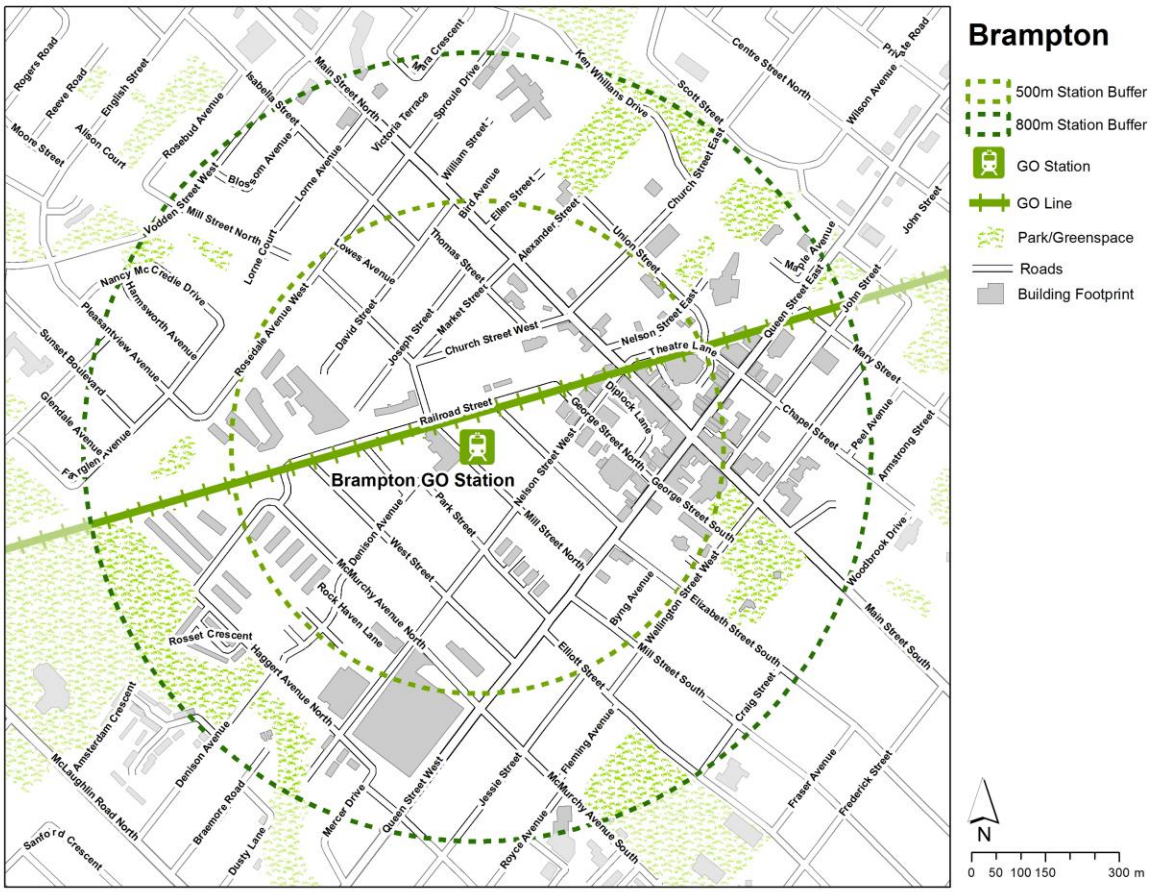
Although the Georgetown GO station is largely surrounded by low density residential subdivisions, there are two sites north and south of the station that have potential for multi-residential development. The development potential for this station may be restricted, however, as there are three storage tracks north of the station which create a less than ideal physical environment for transit-oriented development.

- **Mt. Pleasant**

Map 33: *Mt Pleasant*

The City of Brampton has focused a great deal of attention on this node, creating a village-like character with a mix of residential, retail and other amenities. The area south of the GO station bounded by Lagerfield Drive has considerable potential for multi-residential development, as do lands north and west of the station between Veterans Drive and the tracks.

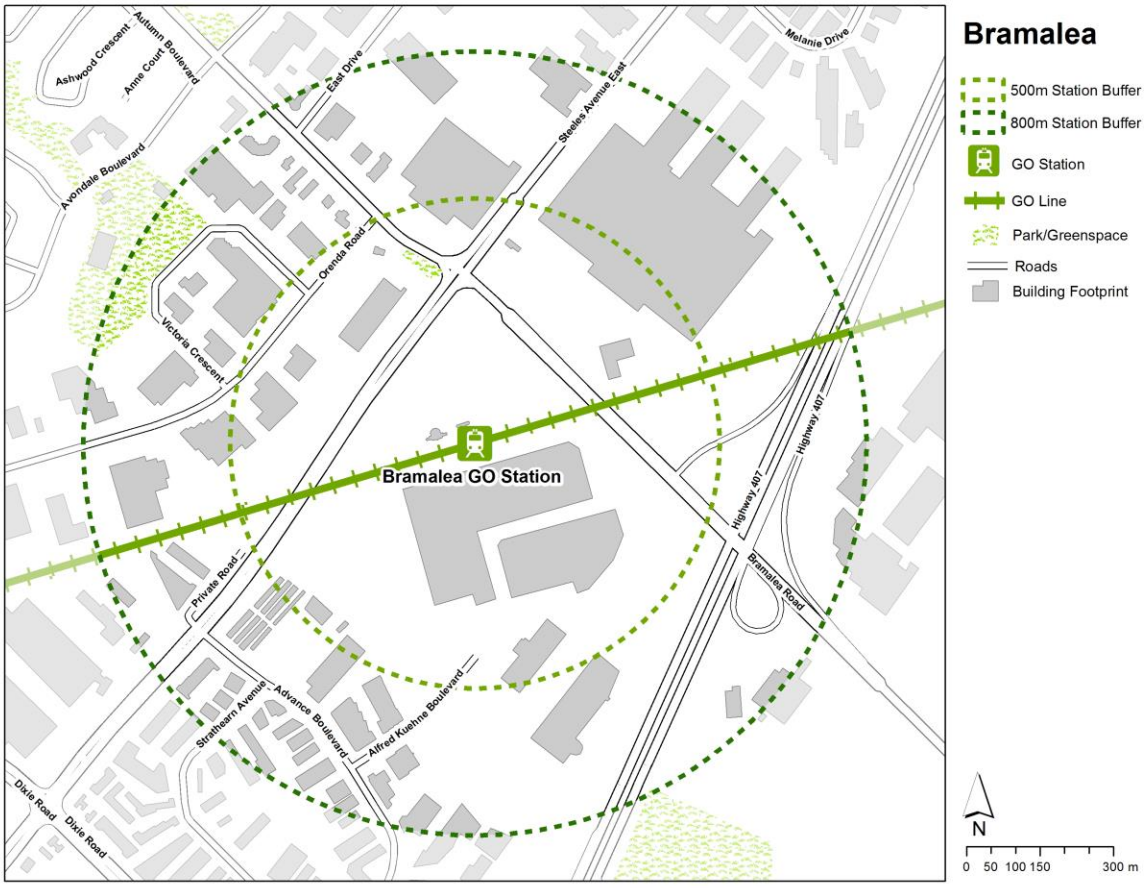
- **Brampton downtown**



Map 34: *Brampton*

Lands situated north of the GO station to Church Street have potential for higher density development, including multi-residential projects that could add critical mass to this section of downtown. As indicated above, the office market has not yet developed in Brampton, so the most likely prospect for development is residential.

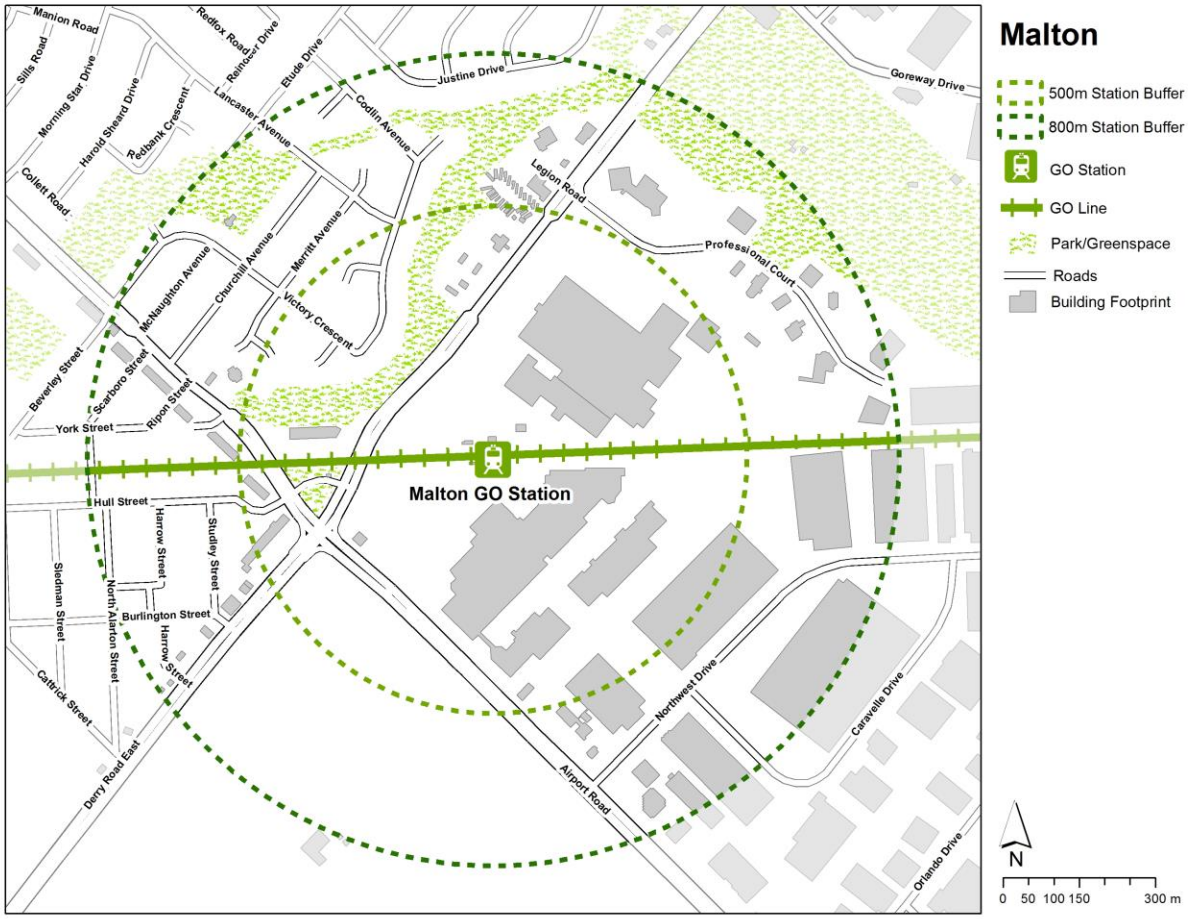
- **Bramalea**



Map 35: *Bramalea*

The area immediately north of the station bounded by Steeles and Bramalea is currently undeveloped. Development of multi-residential condominiums in this area could provide impetus for future redevelopment of older industrial properties to office use located within a 500m walk from the station.

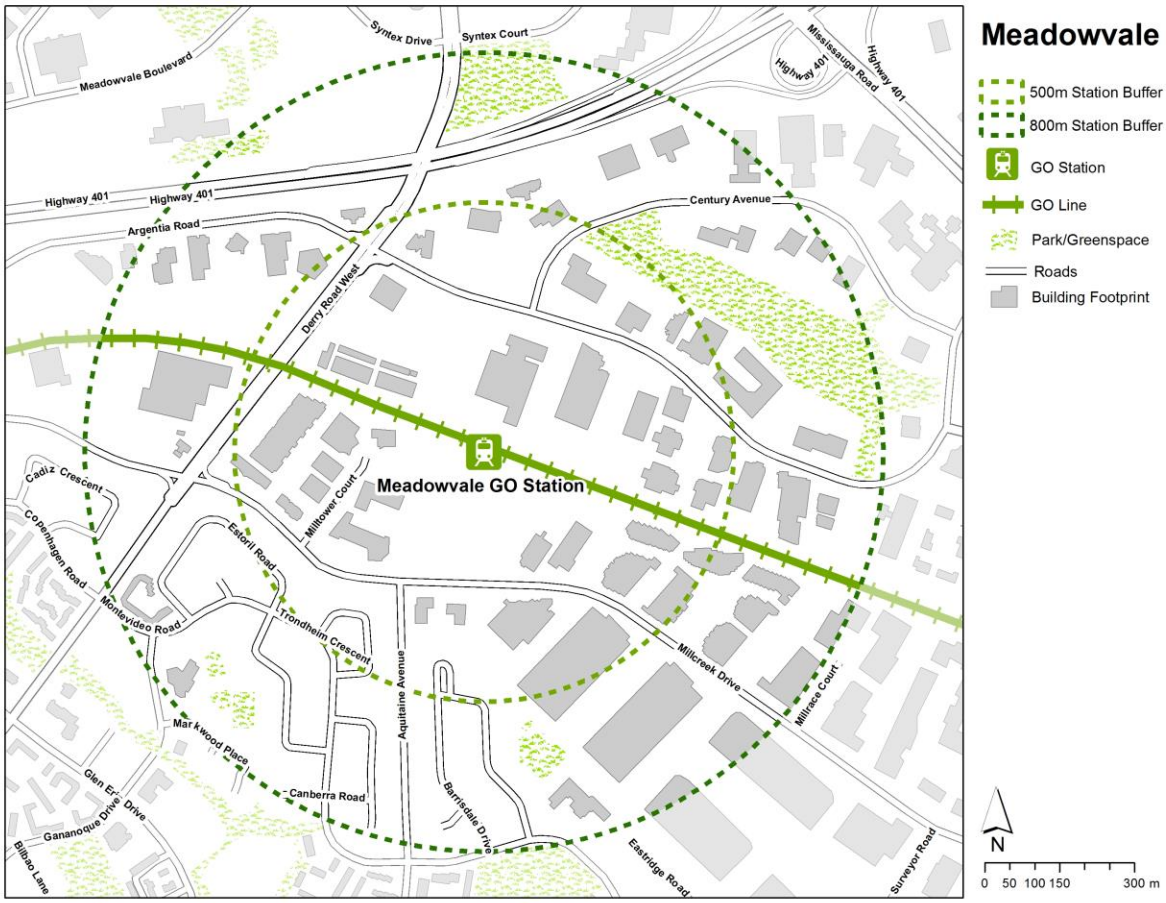
- **Malton**



Map 36: *Malton*

This is primarily an important industrial area situated near the Lester B. Pearson Airport. No additional growth was reallocated to this node.

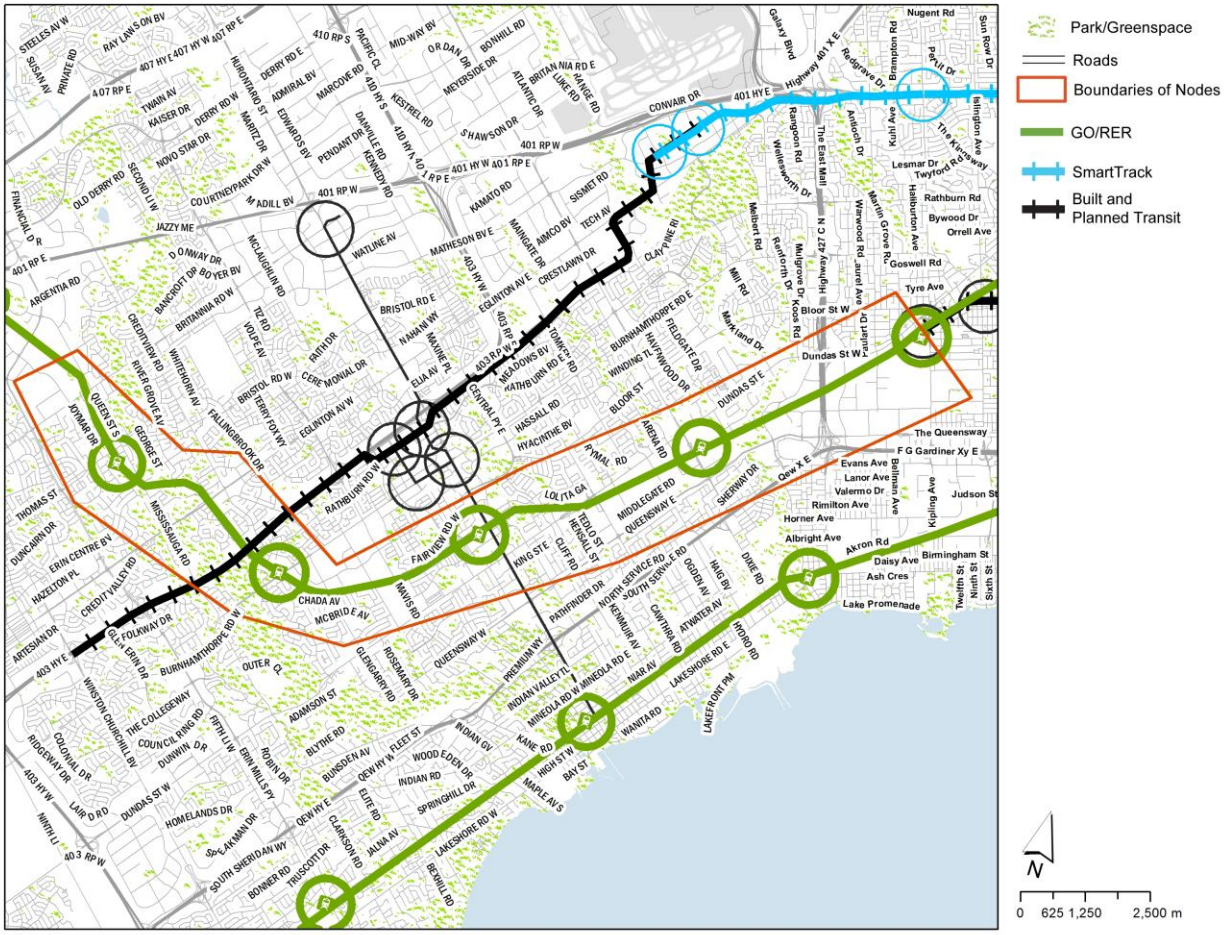
3.2.4. Meadowvale



Map 37: *Meadowvale*

Meadowvale is a significant office node. It has approximately 6M sq. ft. of office space (approx. 30,000 jobs) and industrial buildings but with few other amenities. Although there is a GO (RER) station at the westerly end of Meadowvale, development adjacent to the station has not been oriented to transit use and significant improvements in the public realm would be needed to maximize its growth potential. Nevertheless, the project team view Meadowvale as an area likely to continue modest employment growth in the context of RER enhancements to the Milton GO line. It will also benefit from intensification of the adjacent residential zone to the west of the station.

3.2.5. Erindale-Dundas Corridor



Map 38: *The Erindale-Dundas Corridor*

The project team viewed this corridor as a critical component for the long term growth of Mississauga. As a transit oriented development corridor it has many of the conditions for effective intensification and city building objectives. Critical to its evolution and contribution to growth is the development of RER.

The project team did not reassign growth to this corridor because the allocation of growth done by Mississauga was deemed to be achievable under present conditions. It was felt that the potential will be heavily dependent on the adaptability of frequent service on the corridor. The province under the leadership of Metrolinx has begun a process which will, over time, rationalize freight and passenger service to permit the kind of transportation network which, in turn will stimulate growth beyond current expectations.

There are five GO/RER stations in this corridor that have some potential for accepting multi-residential development.

- **Streetsville**

Map 39: *Streetsville*

The development potential for this station is physically constrained by the presence of the tracks to the north and an extensive forested area to the south. Multi-residential development in this enclave would need to accommodate supporting retail and other amenities to compensate for its isolation from the surrounding community and provision would have to be made for connections to the station and the rest of the development site.

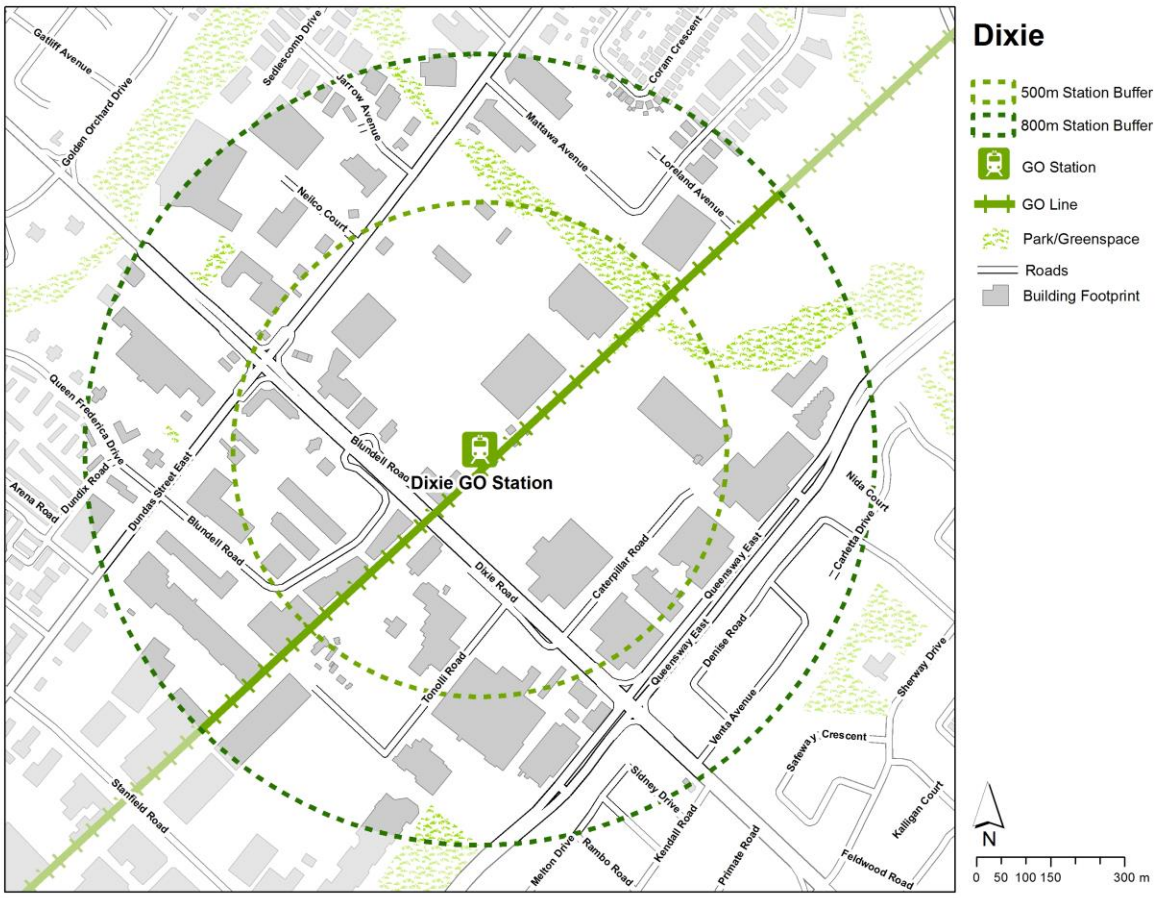
- **Erindale**

Map 40: *Erindale*

The Erindale station has already been developed with a variety of institutional, residential and commercial uses. Some additional development potential exists to the west of the station fronting on Rathburn Road West.

- **Cooksville** (**see Hurontario Corridor *Map 29***)

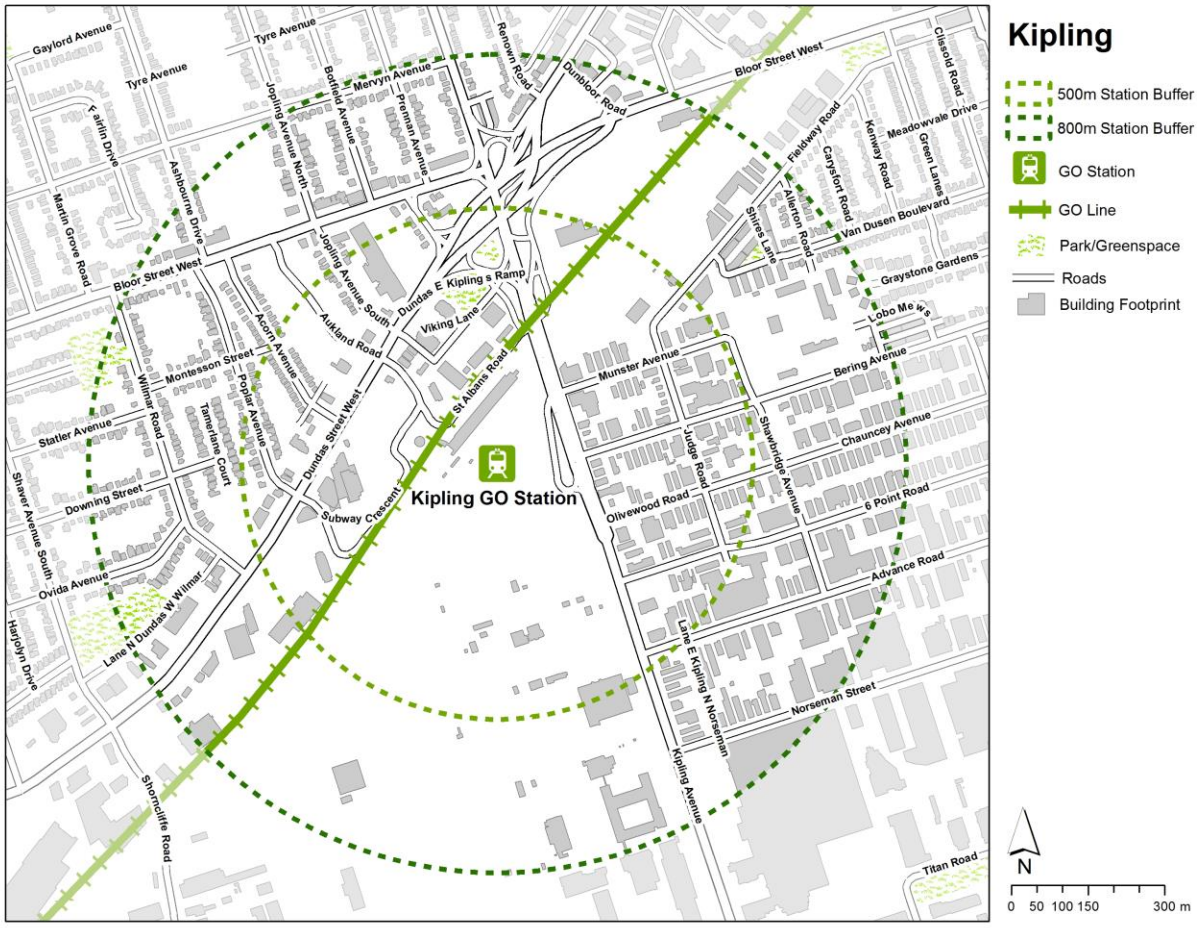
- **Dixie**



Map 41: *Dixie*

There is development potential but will require changes to conditions to allow for more growth than now planned. There was no further reallocation at this station.

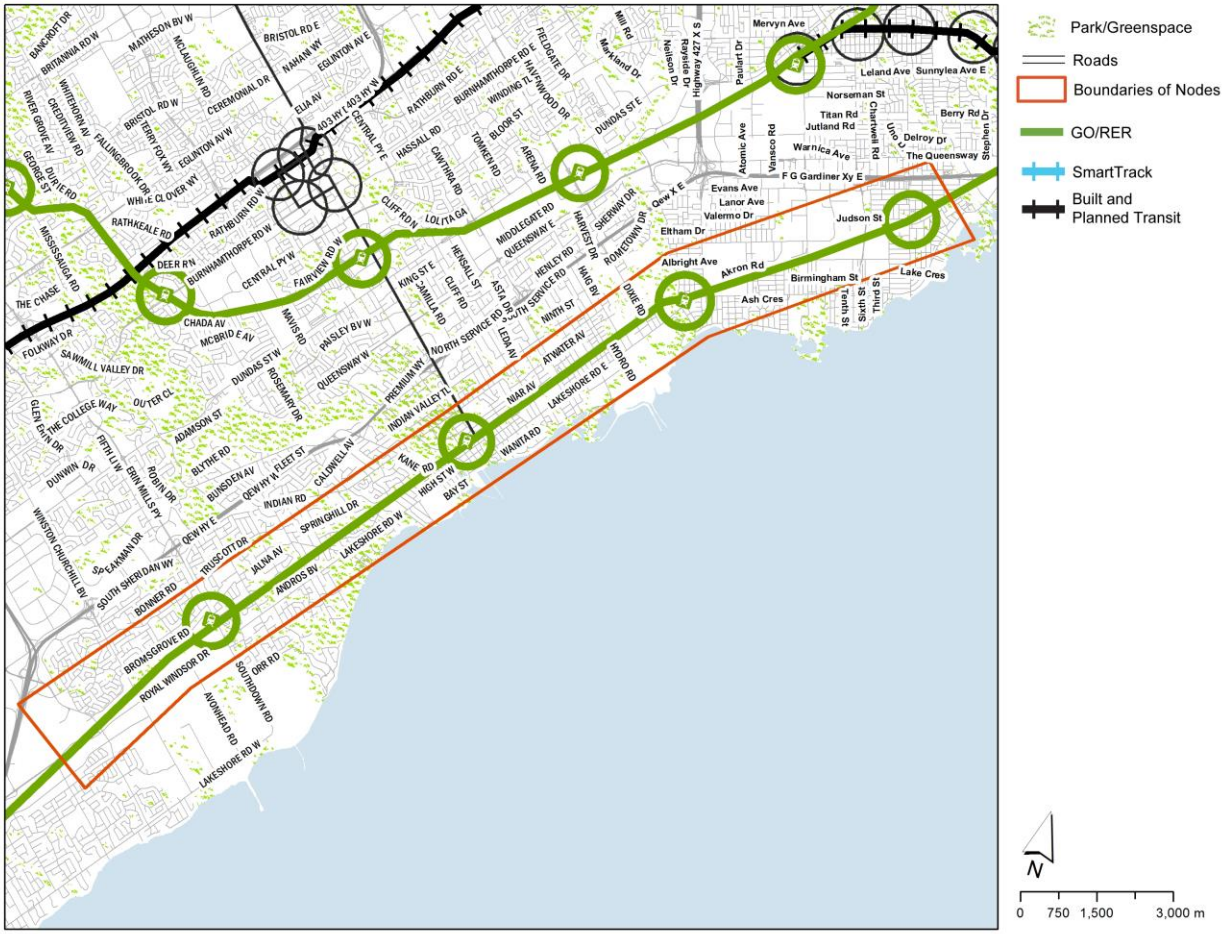
- **Kipling**



Map 42: *Kipling*

This is an important link to RER and the TTC's Bloor Subway. Considerable planning has occurred here to facilitate the creation of a mobility hub. The allocation of growth here was reasonable.

3.2.6. Port Credit Corridor



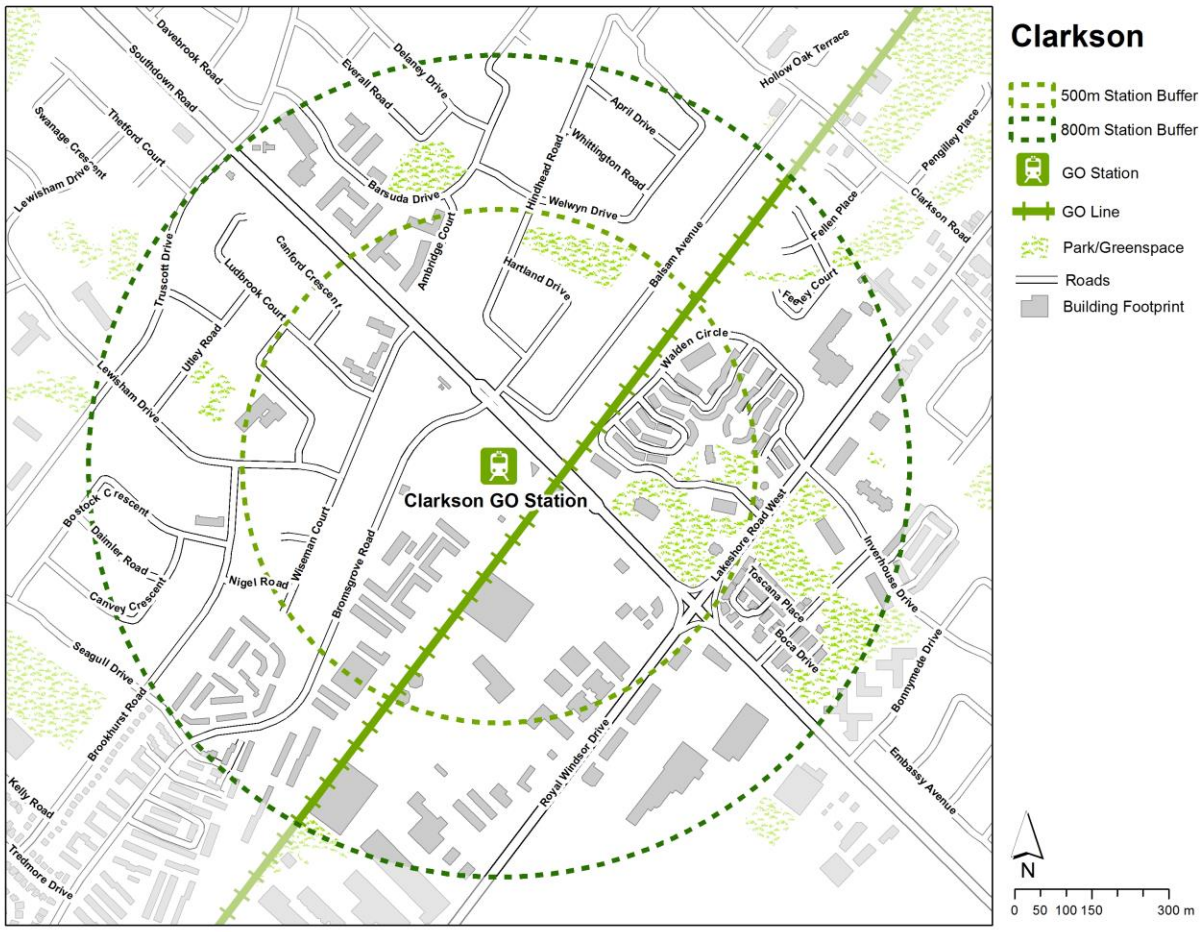
Map 43: *The Port Credit Corridor*

This corridor is surrounded mostly by low density mature industrial and residential development. It crosses from Mississauga into Toronto but much of the land shares the same characteristics for intensification. The corridor provides considerable benefit to the residential concentrations of the surrounding areas. The development potential surrounding stations, however, presents challenges. Some high density residential has occurred and the immediate provision of all day service is of benefit to ridership.

Major employment, however, in office space is not near the stations. Further growth in this sector may occur in limited amounts but not directly adjacent to the stations.

The expectation of both residential and major employment growth was not enhanced during this study because the expectations presented are reasonable. Over time if policy change were developed to encourage intensification the transit service would benefit greatly.

- **Clarkson**



Map 44: *Clarkson*

- **Port Credit (See Hurontario Corridor Map 30)**

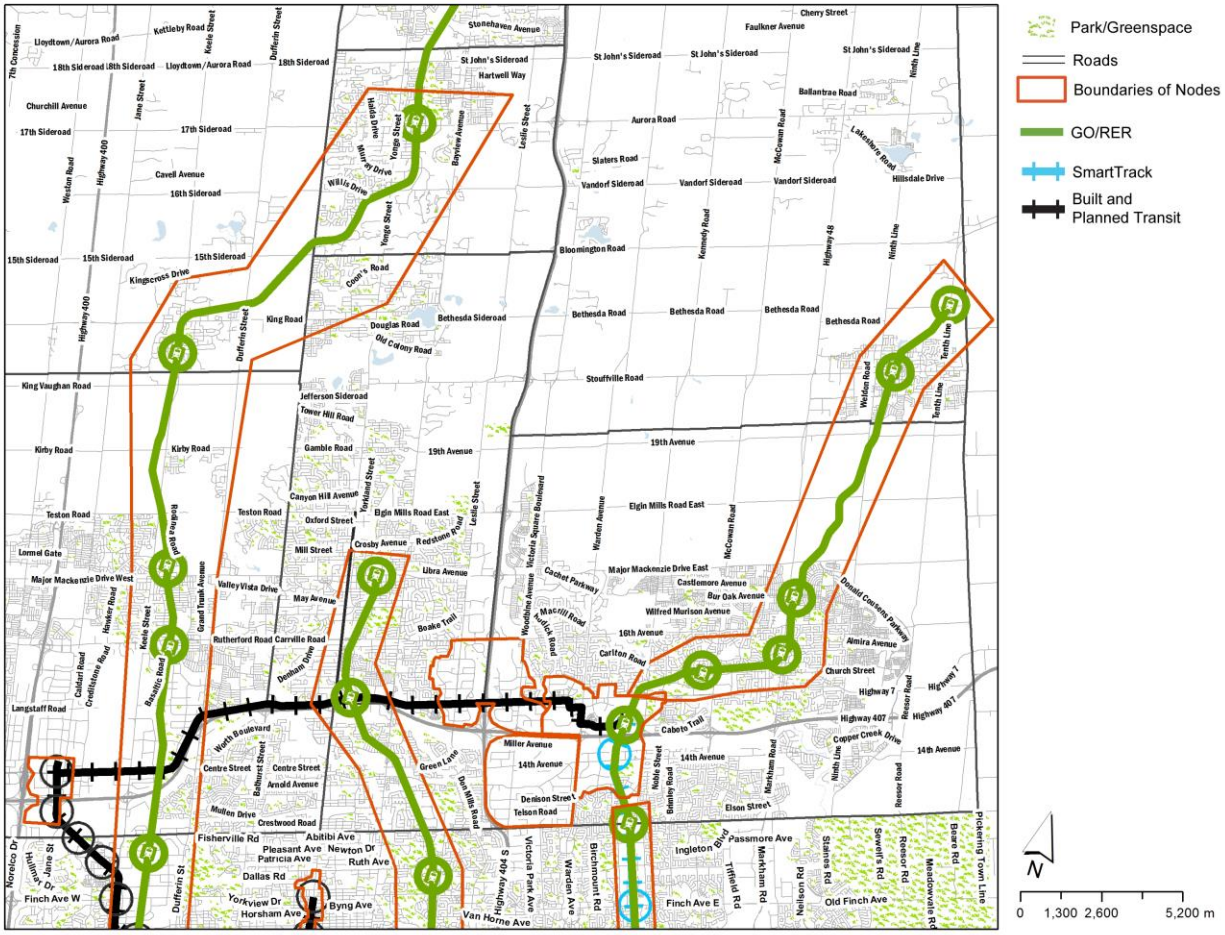
- **Long Branch**

Map 45: *Long Branch*

- **Mimico**

Map 46: *Mimico*

3.3. YORK REGION (VAUGHAN, RICHMOND HILL, AND MARKHAM)



Map 47: *York Region*

York Region is a vast geographic area which has enjoyed diverse and significant growth in the past 25 years. The project team reviewed in detail the assignment of projected growth in the region to assess the impact of planned regional transit expansion. During this process several challenges became apparent. The rail corridors have served commuters to downtown Toronto effectively and continue to do so. Employment in industrial jobs is linked both to those rail corridors for freight movement and to the network of highways developed in the post war era.

Recently, however, there has been a significant increase in jobs housed in office space. Over 100,000 jobs are now located primarily in the Markham/Richmond Hill employment parks often intermingled with industrial buildings. These jobs did not exist in York Region 30 years ago. In total, the node has an estimated 150,000 jobs which are auto dependent. This change in

employment pattern is presenting both opportunities in the region and challenges to the way employers access labour markets.

Congestion on the arterial routes is the major challenge. The major opportunity in the next 25 years is to provide the response employers are seeking which is cost effective and convenient access to labour. One solution is to concentrate places to live locally and in proximity to those places of work which have a proven track record for attracting employers. Another is to provide rapid regional rail connectivity to the clusters of employment which exist or may exist in the future. The major impediment to these rail corridors is the highly dispersed nature of the office and industrial buildings.

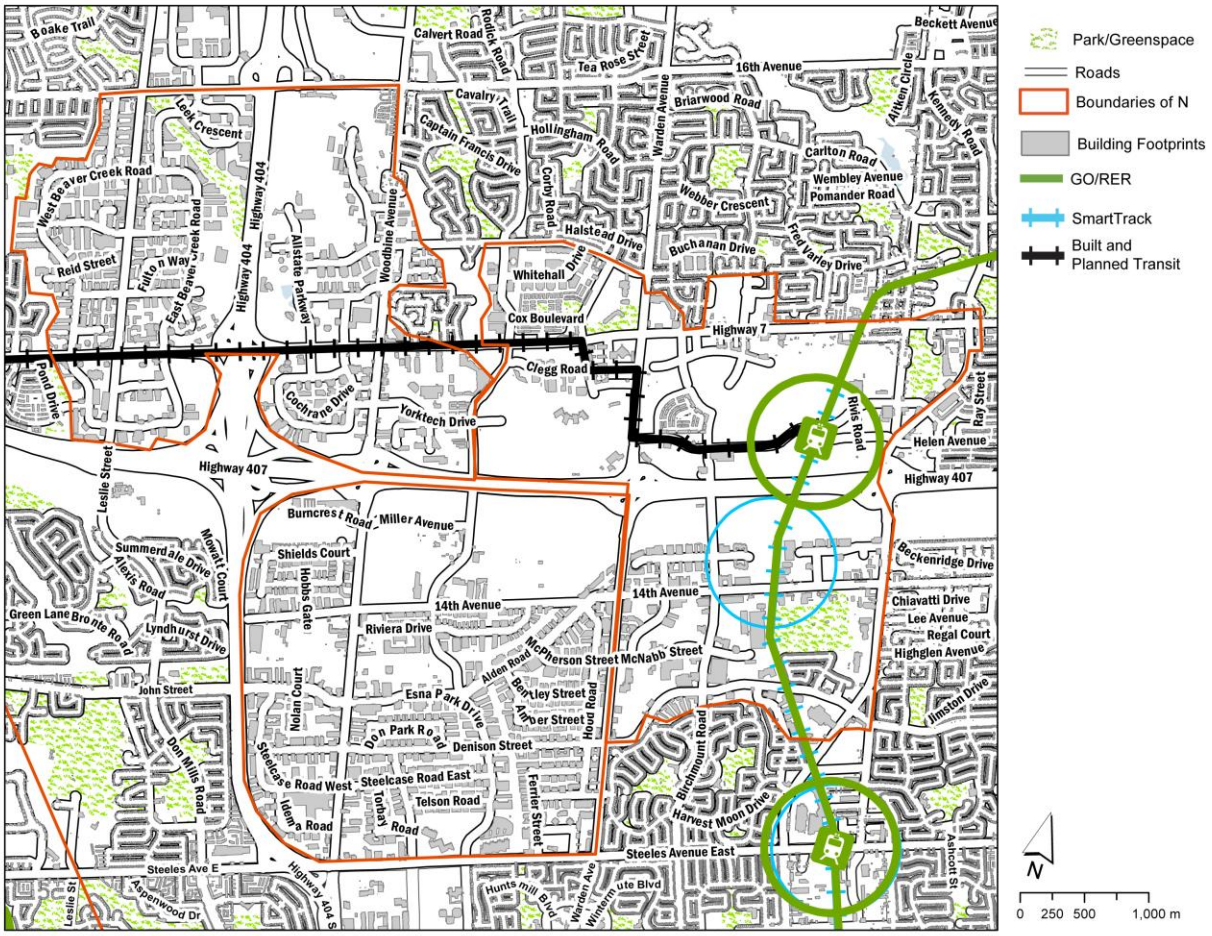
The project team reviewed all the nodes directly related to the rail corridors in collaboration with York Region and determined that the allocation of residential growth as provided by the region did assign growth with respect to planning and other considerations reasonably. The team reallocated only a small amount of multi-residential development to the transit oriented development areas of Vaughan and Markham because they have the conditions to permit more growth and because they were determined in conjunction with the development industry to be areas where growth could be reallocated from non-transit oriented housing elsewhere. There are a number of policy barriers to reallocating residential growth to areas of planned transit that are beyond the mandate of this project. It is recommended highly that research be undertaken to identify public policies that will facilitate and maximize the proposed transit development.

Employment growth is more challenging. Some growth was reallocated in various cases beyond local expectation for the following reasons. Employers told us that existing nodes of office employment are their first choice because of the benefits of agglomeration, access to proven labour markets and proximity to competitors and customers. Employers rarely ‘pioneer’ new nodes and when they do it is generally the result of an individual employers’ unique requirements.

The project team did reallocate employment growth to the Markham and Richmond Hill nodes but left the expectation of population growth as stated by the region. Of note, however, is the substantial issue of transforming a region with a heavy reliance on the car for mobility and a shrinking capacity of the arterial road network to stay abreast of growth.

The region has embarked on an ambitious plan to link communities to each other and to employment with the ever expanding network provided by the VIVA Rapid Bus system in recognition of the dispersed nature of housing and employment. This investment is essential to help the region transition from auto dependency to increased use of public transit options. Without question this will improve the viability of RER throughout the Region.

3.3.1. Markham/Richmond Hill



Map 48: *Markham Richmond Hill*

This node contains over 18 million sq. ft. of office space and over 150 million sq. ft. of industrial space accounting for over 150,000 jobs. In combination with the Airport District, these areas now contain almost as many jobs as the Financial Core. From a transportation perspective it presents considerable challenges. York Region and the cities of Markham/Richmond Hill have recognized these challenges and are striving to overcome them.

Congestion on the arterial routes serving this area is reducing the access employees have to this important employment node and creating challenges to employers. The public sector response to this problem has been underway for a considerable time. Secondary planning in the Markham area for the past 15 years has embraced Transit Oriented Development (TOD) as an

essential ingredient in mitigating congestion and providing for access via transit. The investments by the province and the region in the new VIVA bus rapid transit network are well underway and will play a significant role in providing transit to this region. But additional regional transit solutions pending the introduction of RER/SmartTrack are badly required.

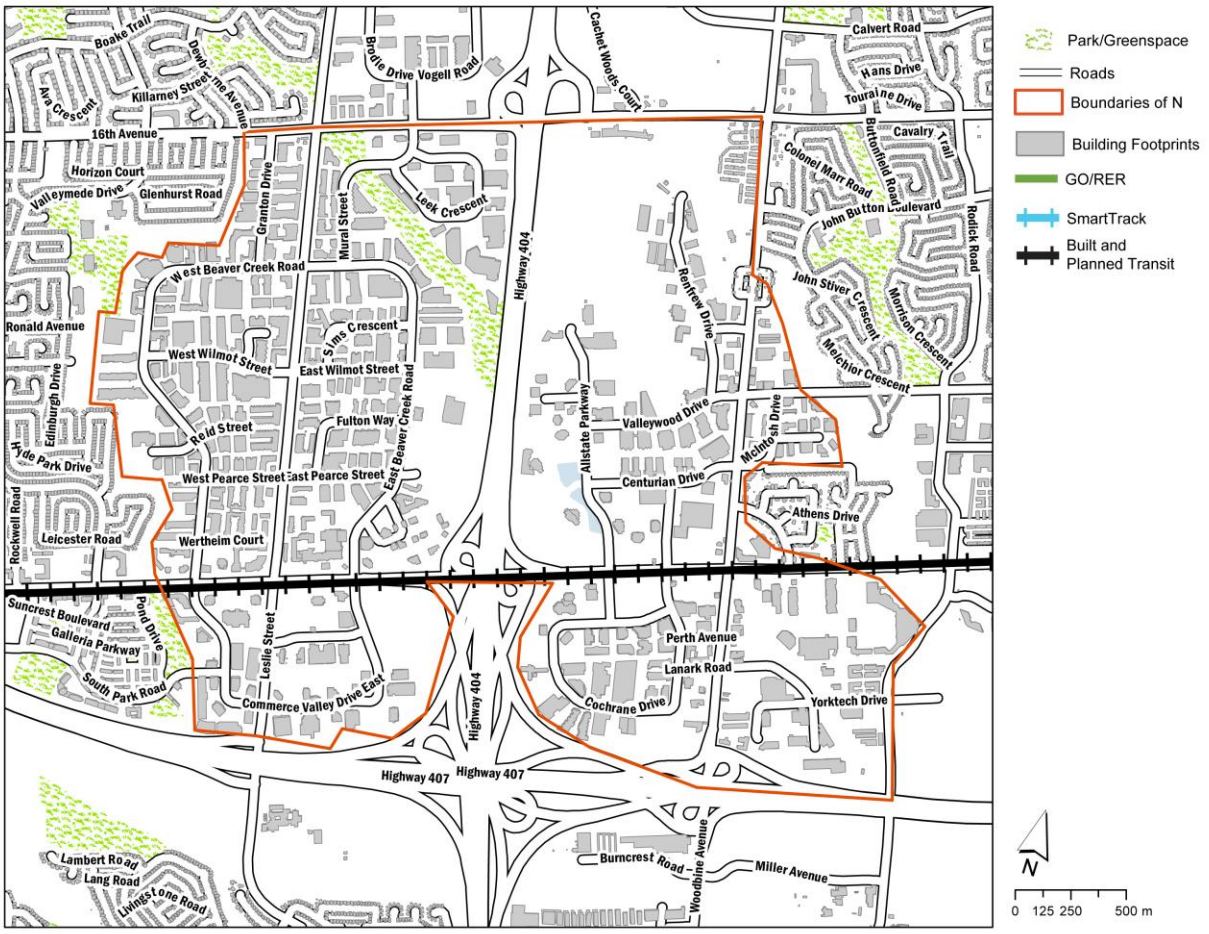
The Markham/Richmond Hill office cluster has developed around low cost land that is easily accessible by car and serviced by the intersection of the 404 and 407 highways. The pace of development has declined in recent years in common with other auto-based nodes in the 905. Employers indicated that this slowdown is the result of concerns about growing congestion. Employers indicated that a high-speed transit alternative to connect to labour markets is extremely important in terms of influencing their location decisions. The ability to extend or expand the labour pool that can access an employment cluster such as Markham/Richmond Hill is an important criterion for employers considering this location.

This area is also seeing intensified use of industrial buildings occupied by new economy companies with a mix of office workers and product manufacturing (e.g. software). They do not require industrial style segregation and benefit from low cost premises. This emerging trend, first seen in the Brick and Beam area of Toronto, may give the area a competitive advantage arising from its strong inventory of flexible industrial buildings. This trend to intensify jobs in the same built form will increase traffic without the addition of new buildings which is even more reason to provide transit alternatives.

The recent introduction of Bus Rapid Transit (BRT) on Highway 7 is an important step in meeting the ‘last mile solution’. York Region is aggressively pursuing new strategies, which the project team believes will go a long way in connecting this area to SmartTrack and RER. This work was not reflected in the ridership analysis because the data on these solutions has not yet been integrated into the analytical tool.

York Region provided the project team with the results of a 2015 postal code study that indicated where people working in Markham lived. This study revealed that approximately 30% resided within one transfer to the proposed RER/SmartTrack line. This helped inform the reallocation of employment growth. The project team has assigned growth to this dispersed employment cluster in recognition that the introduction of SmartTrack and RER improve access to labour markets.

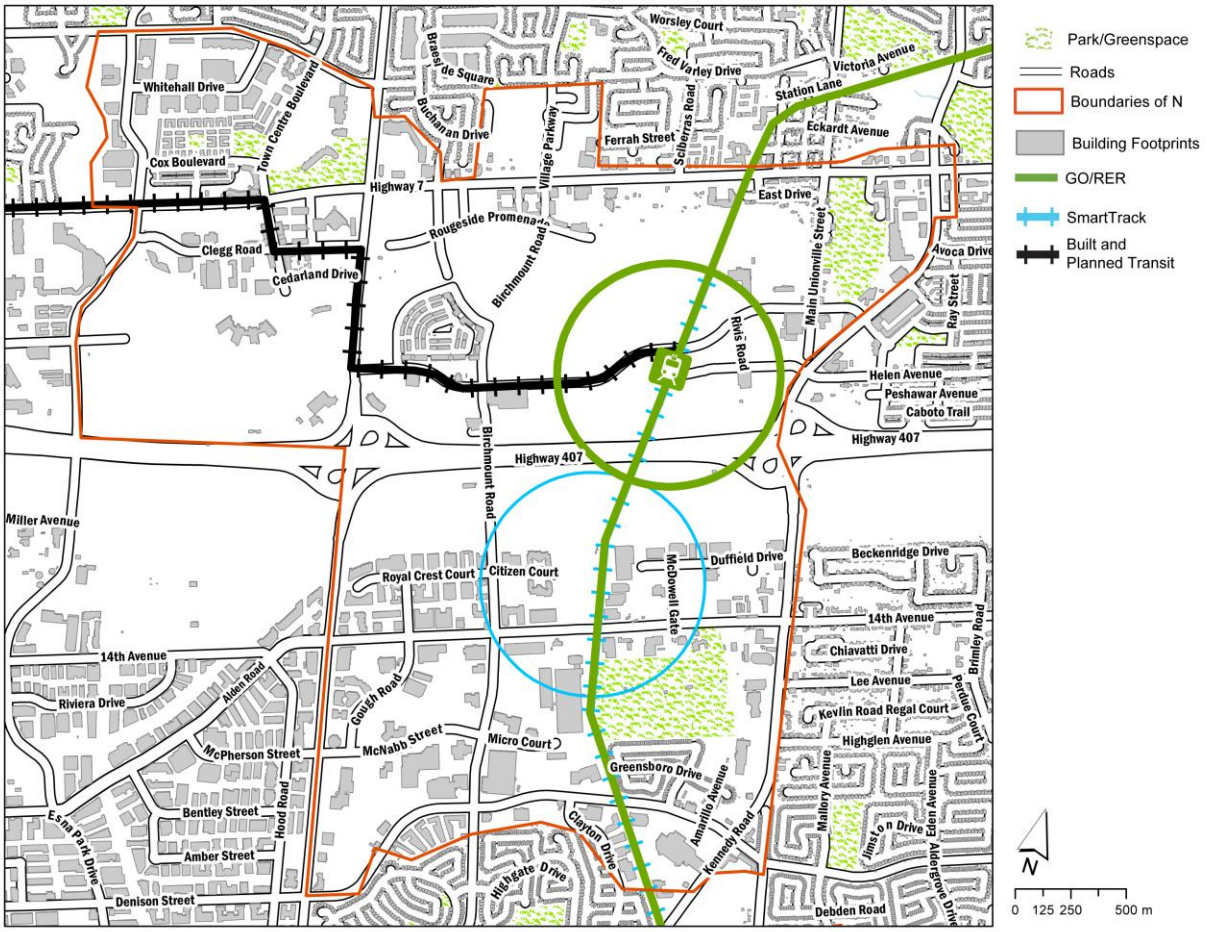
- **Commerce Valley**



Map 49: *Commerce Valley*

The area has grown extensively over the past 25 years, but the rate of growth has slowed as a result of growing highway congestion. The recent introduction of VIVA, which has the potential to support jitney type local transit connections along with other 'last mile' solutions, promises to enhance the area's connectivity. This node is positioned between two RER lines and the introduction of SmartTrack/RER will help create positive network effects in terms of the area's potential for growth.

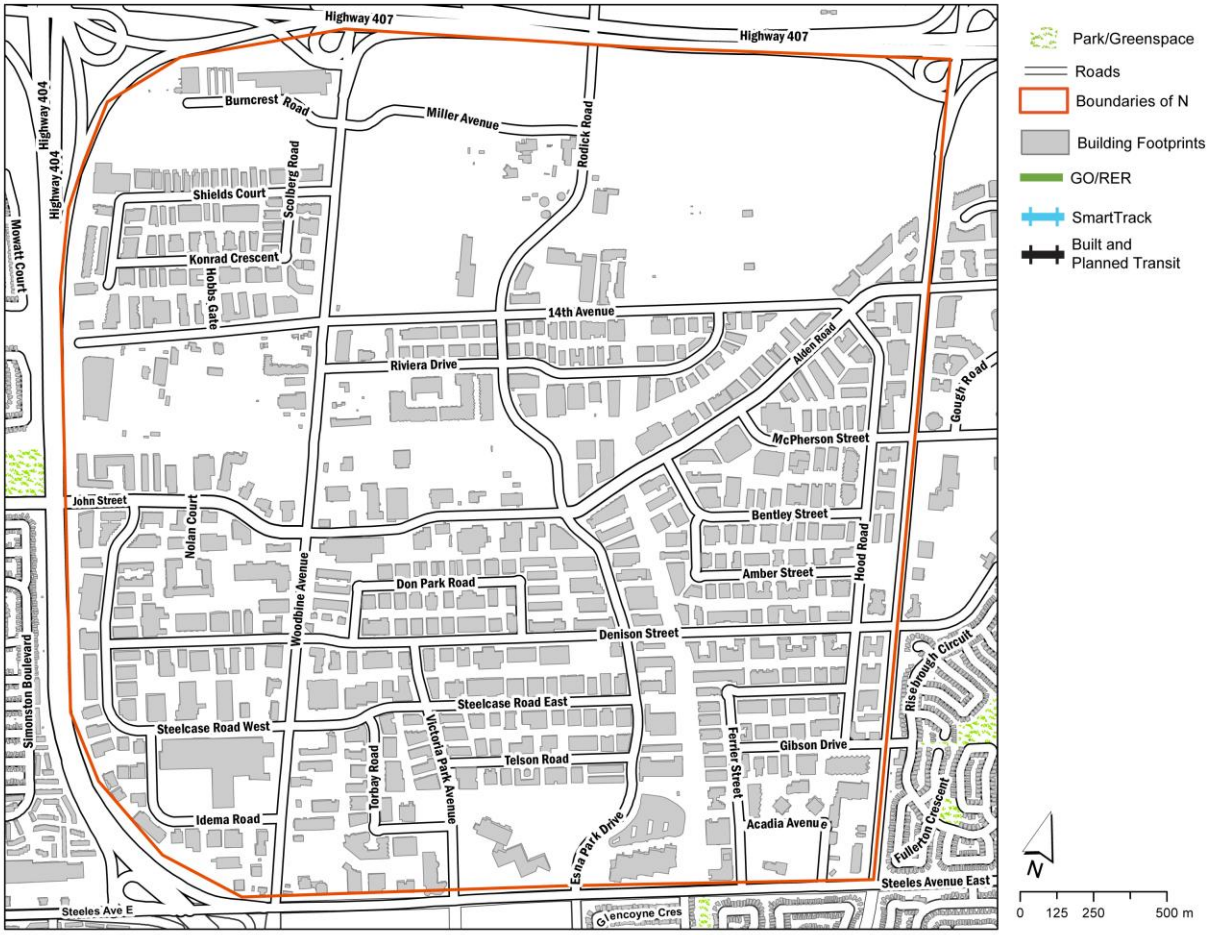
- **Markham Centre**



Map 50: *Markham Centre*

Markham Centre (also known as Downtown Markham) is a good example of a successful greenfield area planned for transit oriented downtown style development. The foundation has been set for future growth. Built around a district energy system, and enhanced by an increasingly effective public transit network (VIVA), Markham Centre is relatively compact, and if planned new office projects proceed, the City's emphasis on developing an attractive, walkable environment will have paid off. Markham Centre is expected to thrive as a mixed-use node because growth is occurring in both employment and multi-residential development. The addition of a new campus for York University also helped inform the reallocation of jobs to this node.

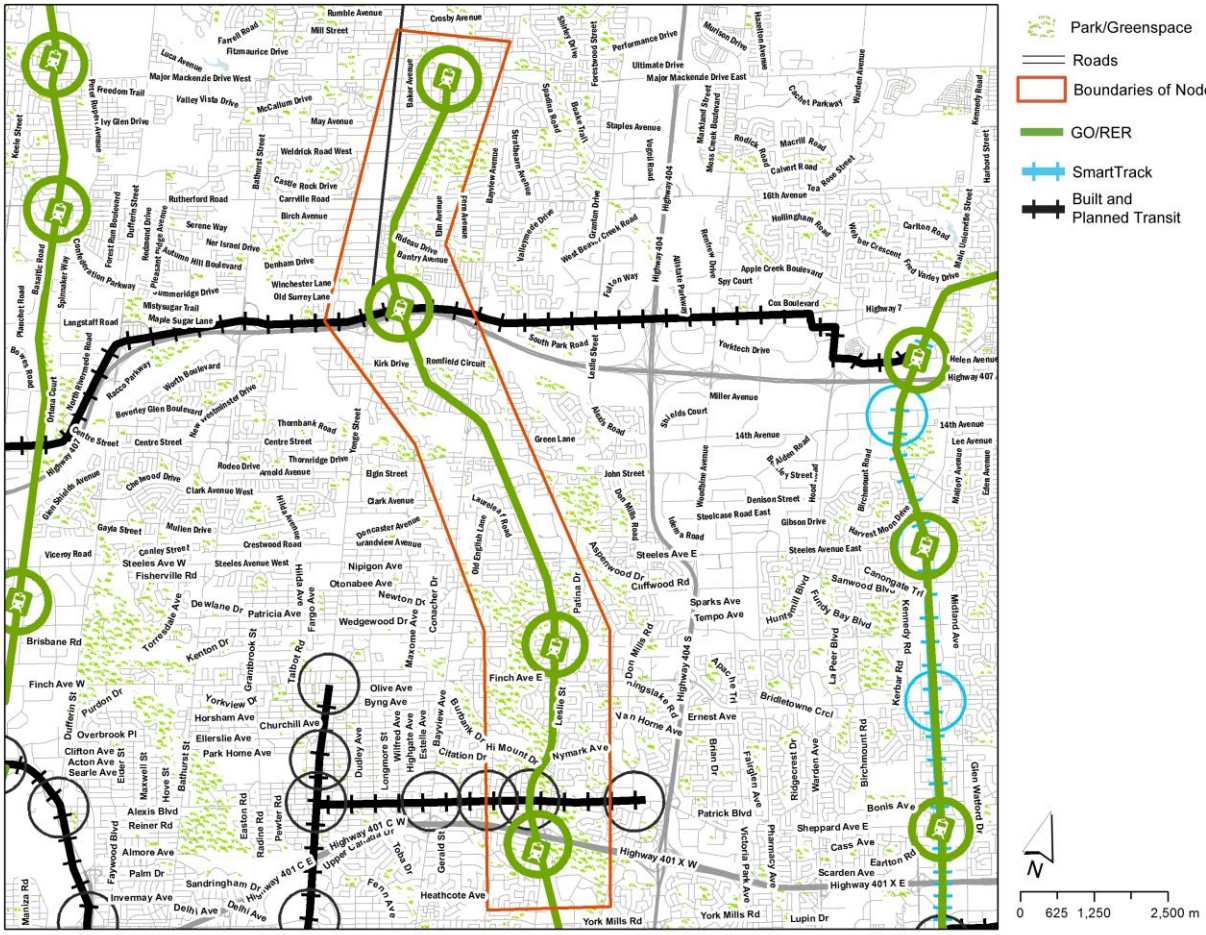
3.3.2. Woodbine and Steeles



Map 51: *Woodbine and Steeles*

Woodbine and Steeles is primarily an industrial node. Office concentrations are located close to the 404 Highway. The impact of transit improvements in this area is critical to its continued growth. The project team did allocate increased employment growth in this node.

3.3.3. Richmond Hill Corridor



Map 52: *Richmond Hill Corridor*

The Richmond Hill corridor has potential to absorb more growth with the improvement of transit connectivity provided by both RER and VIVA. The markets as tested with the development industry will allow for growth but the project team did not enhance those expectations beyond those already projected by York Region.

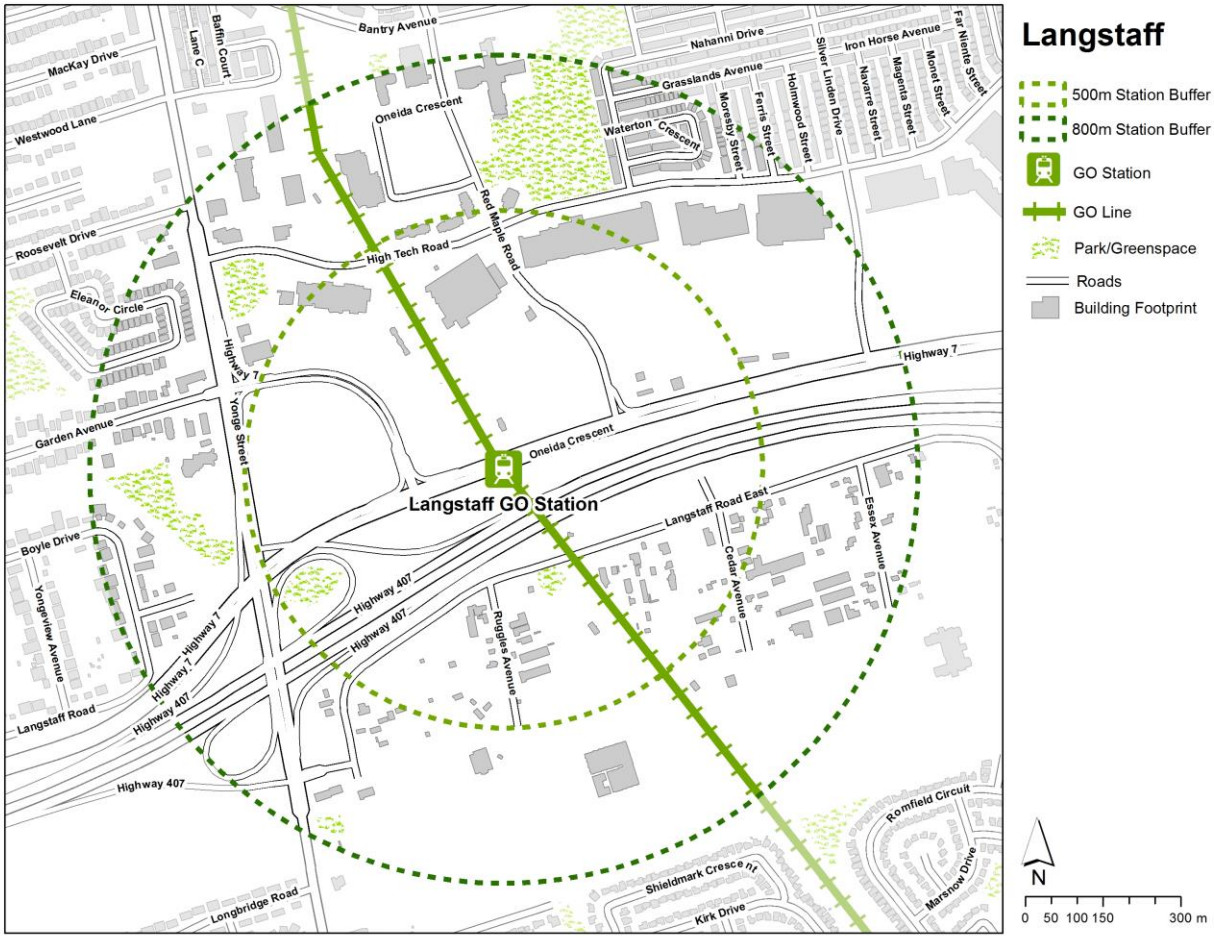
There are three GO/RER stations with limited amounts of development potential in this corridor.

- **Richmond Hill**

Map 53: *Richmond Hill*

This station has the most obvious development potential in this short stretch. East of the tracks, large parking lots can be developed for multi-residential uses. Over the longer term, low-grade industrial development could be redeveloped. West of the tracks, there is a single potentially developable site.

- **Langstaff**



Map 54: *Langstaff*

This site has been the subject of many planning studies, which have outlined strategies for developing the area with a variety of options including multi-residential development. The site is a difficult one because Highway 407 abuts the station to the north. To the south is an area of underutilized open storage and low-grade industrial development. Development north of the 407 is big box retail, which has the potential to be redeveloped.

- **Old Cummer**

Map 55: *Old Cummer*

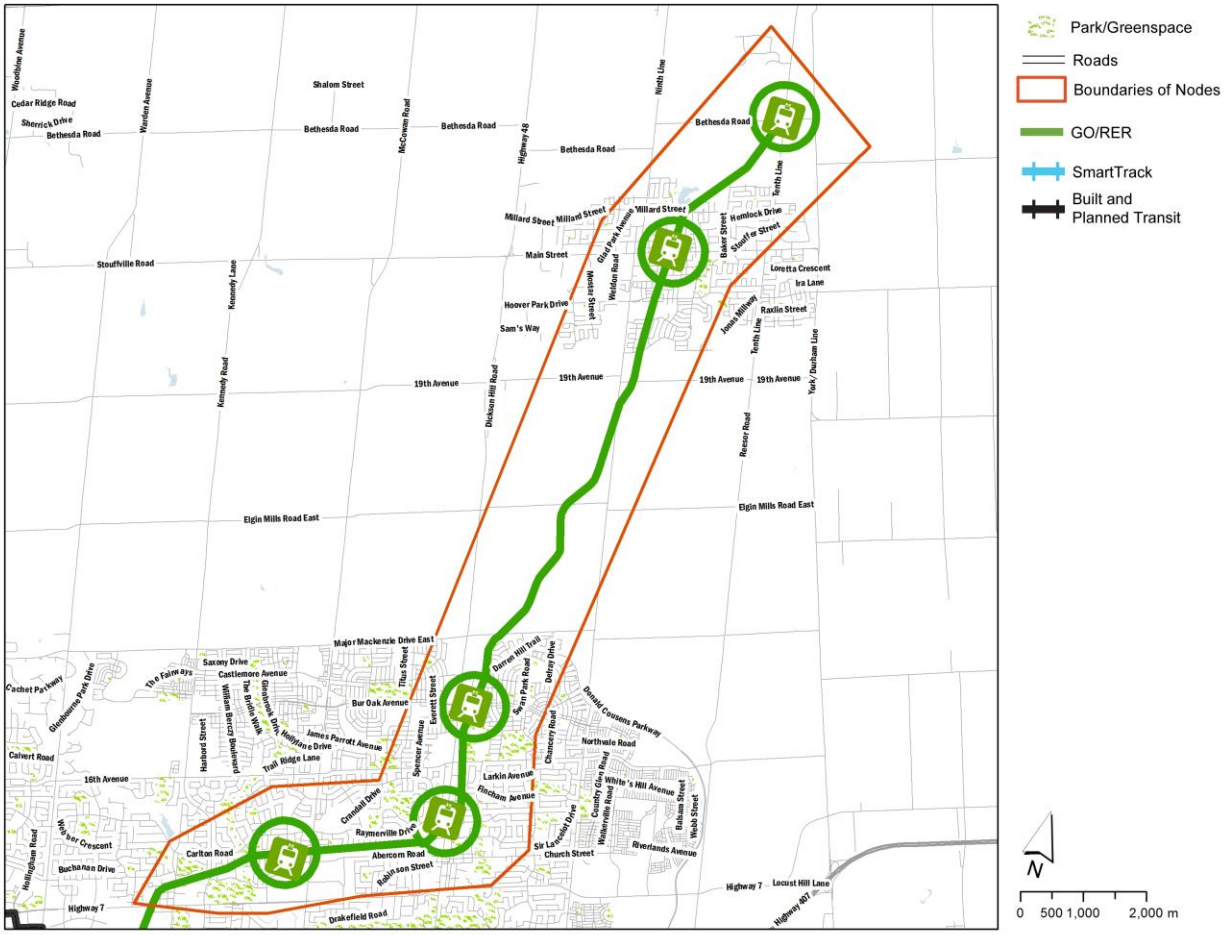
Although this station is surrounded by low-density residential development, the parking lot has development potential. Property to the west of the station is part of an open space corridor, so it would be important that multi-residential development of the parking lot respect the need for east-west connectivity.

- **Oriole**

Map 56: *Oriole*

No additional growth beyond expectation was considered in this area because of its location beside the 401/Leslie intersection and the development that exists adjacent to the station.

3.3.4. Stouffville Corridor



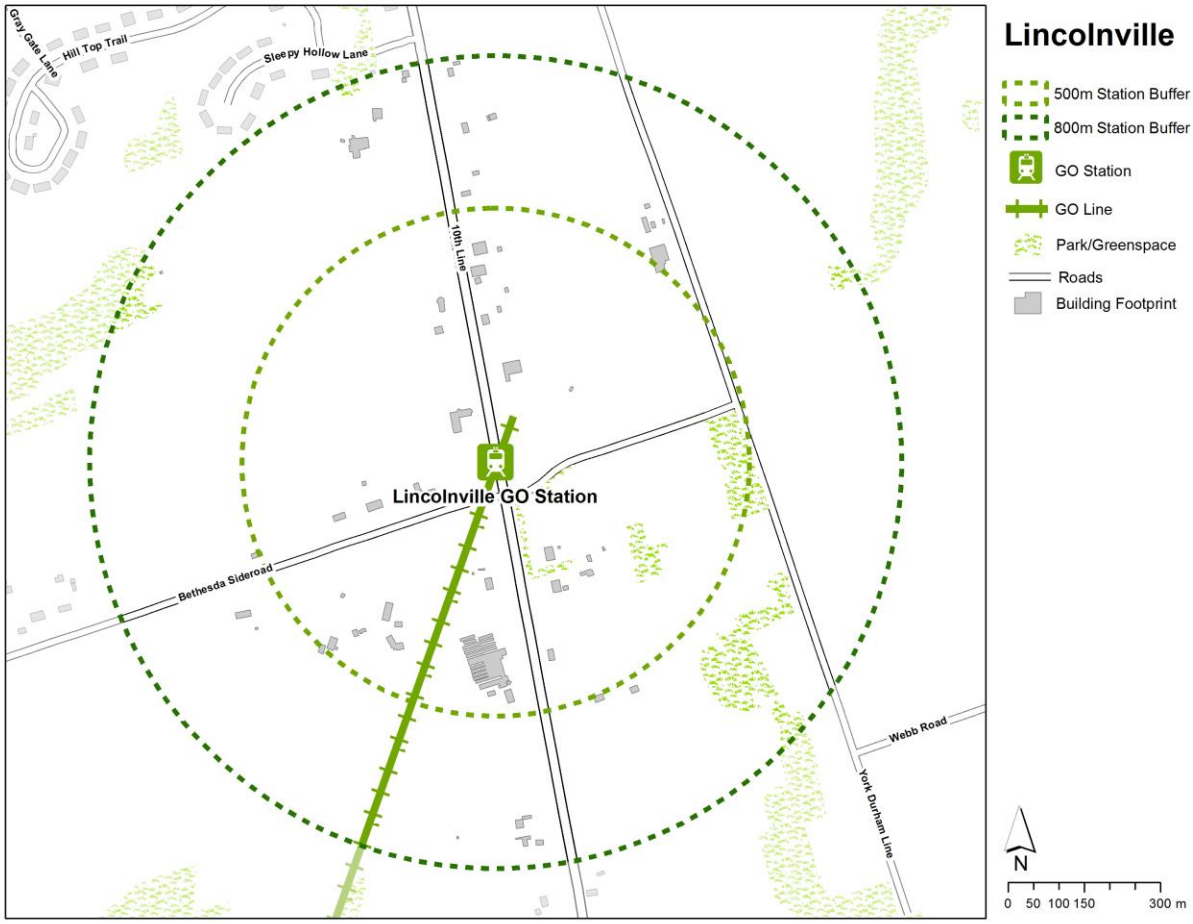
Map 57: *Stouffville Corridor*

RER corridor from Unionville to Stouffville has potential to absorb more growth with the improvement of transit connectivity provided by both RER and VIVA. Condominium development has occurred in some nodes but the mixed use of retail and low rise residential built form presents intensification challenges to those communities. Local conditions and policies on the ground did not allow the project team to assign any more growth than projected by York Region.

There will be enhanced opportunities for residence in these nodes to access employment in Markham's employment district and enhanced access to employment markets on the SmartTrack service as well as the existing commuter travel enjoyed by GO users to the Financial Core of the City of Toronto.

There are seven GO/RER stations in this corridor, with varying amounts of development potential.

- **Lincolnville**



Map 58: *Lincolnville*

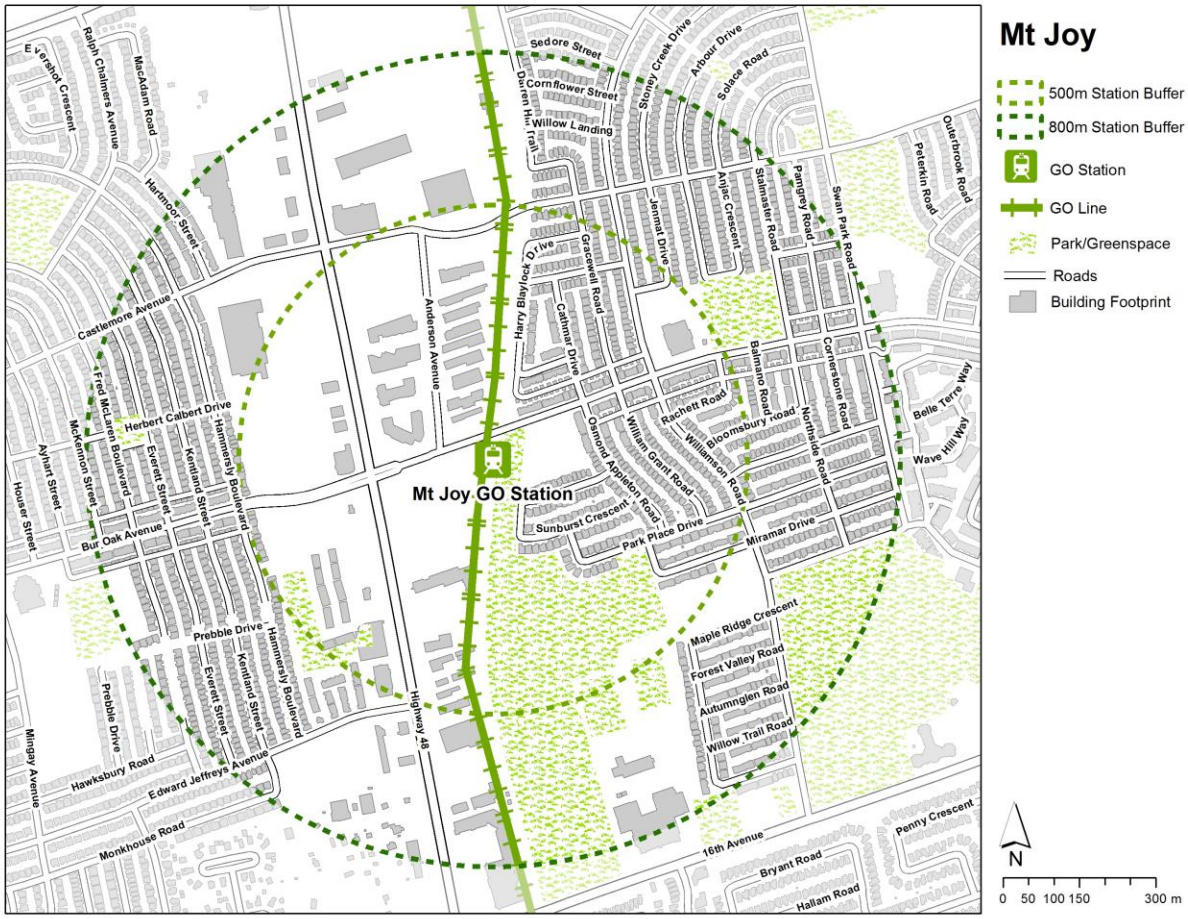
As a predominantly greenfield area, the project team did not allocate any further growth in this node.

- **Whitchurch-Stouffville**

Map 59: *Whitchurch-Stouffville*

This is a low rise residential community with very little opportunity under current use for intensification

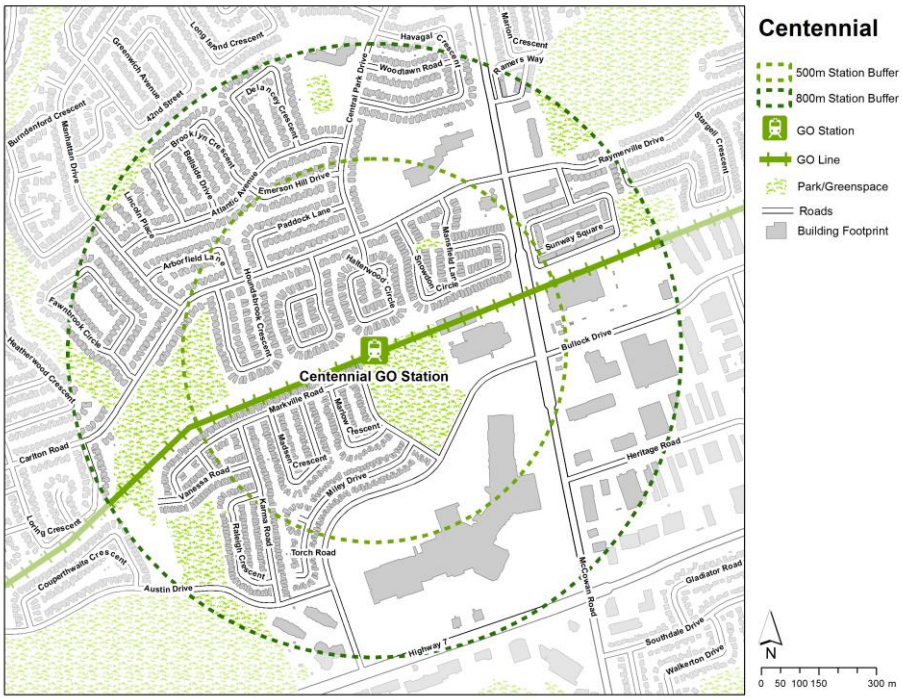
- **Mount Joy Centennial and Markham**



Map 60: *Mt Joy*

These three stations have limited development potential as they are all surrounded by mature residential development and have very few developable sites. Residential densities and parking limitations are also limits to ridership at these stations.

- **Centennial**



Map 61: *Centennial*

- **Markham**

Map 62: *Markham*

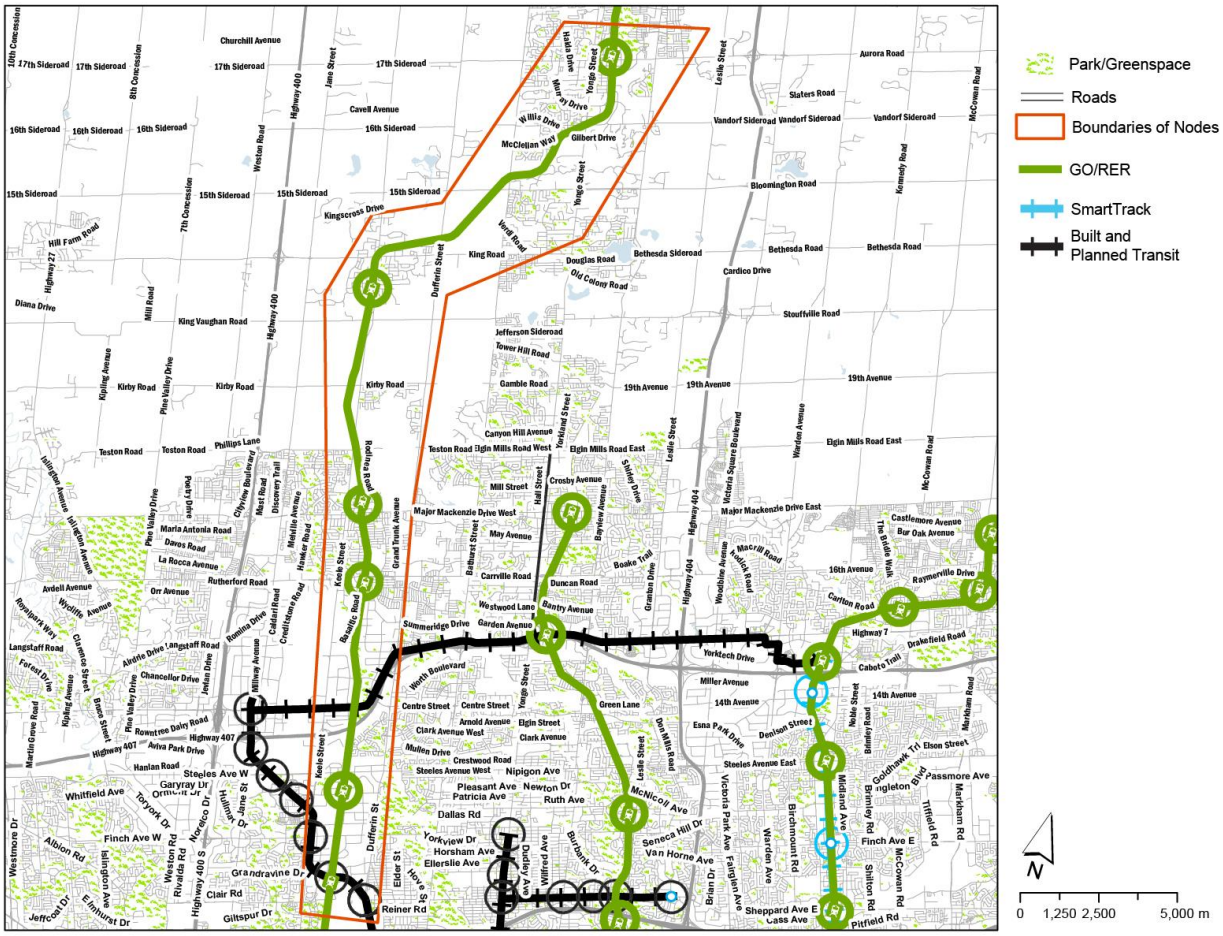
3.3.5. Vaughan Metropolitan Centre

Map 63: *Vaughan Metropolitan Centre*

The influence of the new subway connecting the node to Toronto will enhance development. At present, the node is dominated by big box low-rise retail outlets, and, notwithstanding construction of two small office buildings, the primary focus for the foreseeable future will be in multi-residential development which is well provided for in the allocation of population growth in this node.

The project team forecast some additional office and employment growth in the Vaughan Metropolitan Centre (VMC) consistent with the stated objectives of the secondary plan for VMC. A primary barrier to office development in the VMC is the expectation for land values which greatly exceed the office market rents that could be earned at the location. It is challenging to establish the conditions on the ground (such as appropriate parking standards) that will induce tenants to locate there.

3.3.6. Maple-York Corridor

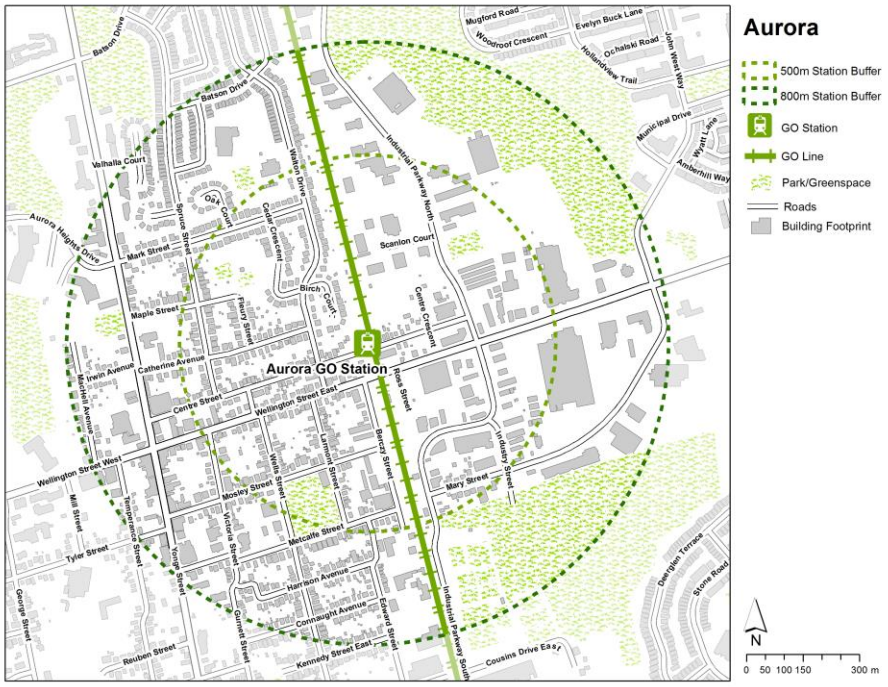


Map 64: *Maple – York Corridor*

The GO/RER stations in the Maple-York corridor bisect largely industrial or low rise residential development. The project team expects that enhanced transit service will lead to more growth on this corridor, but did not reassign more employment or residential growth than was already allocated by York Region and the City of Toronto.

The connection to the TTC subway at Downsview and the completion of the VIVA bus rapid transit network will enhance the connectivity of stations in this corridor and may prove to induce intensification. But current planning policy seems unlikely to provide the conditions for the development industry to be attracted to these stations in amounts other than those ascribed to these nodes already.

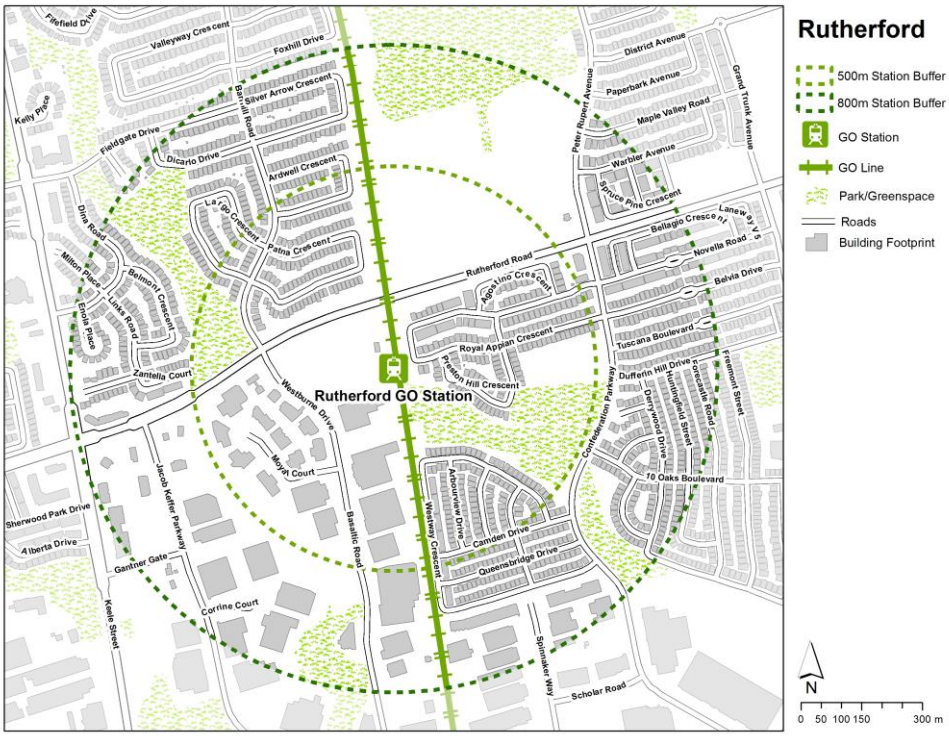
- **Aurora – King City – Maple –Rutherford**



Map 65: *Aurora*

Map 66: *King City*

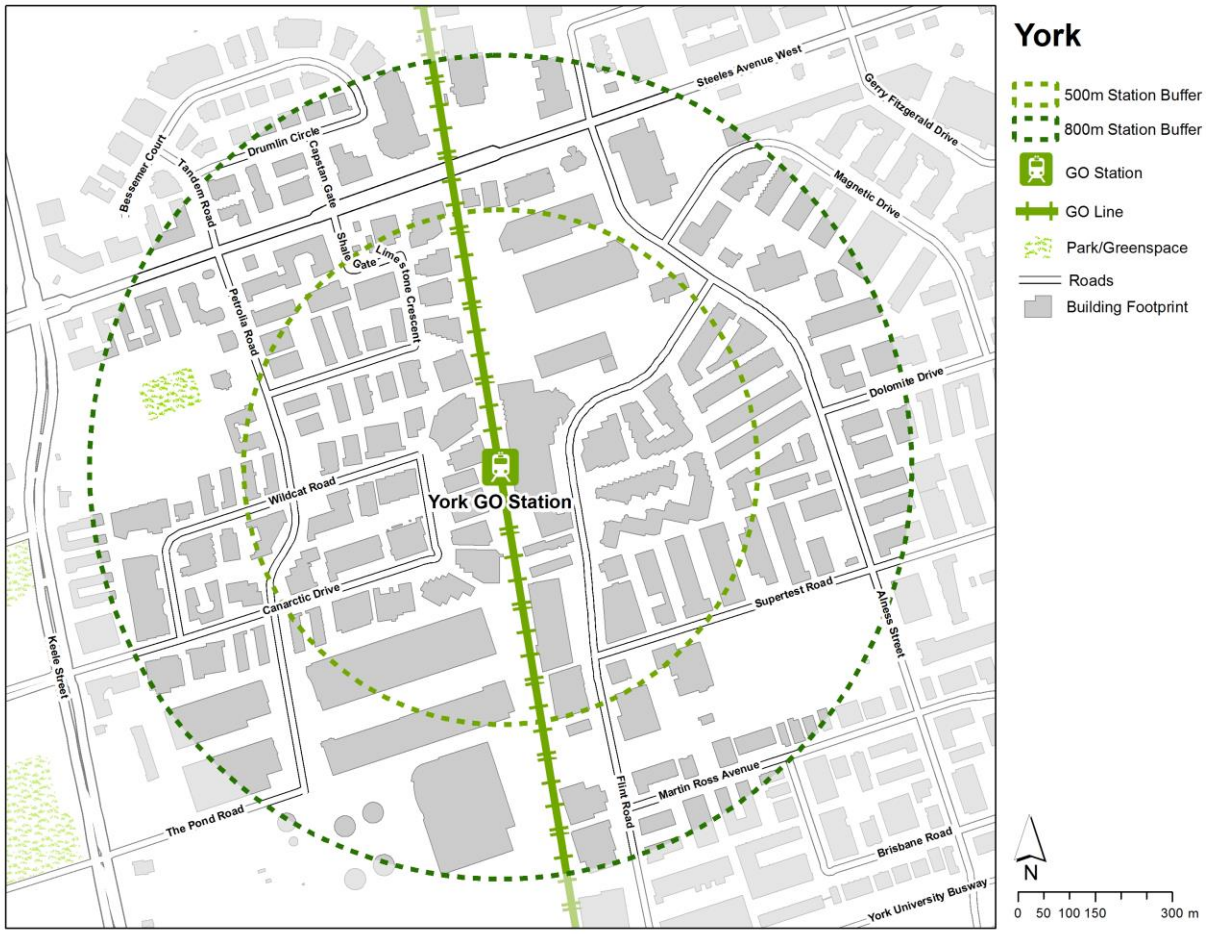
Map 67: *Maple*



Map 68: *Rutherford*

All these stations will benefit by serving the surround areas accessible by car and local bus systems. The opportunity to intensify through TOD will require community engagement and local authority to change the conditions on the ground. Parking facilities and other land available for redevelopment exists, but the project team was unable to reasonably reflect that potential under its mandate.

- **York**



Map 69: *York*

Although labeled as the York University GO station, this station is a considerable distance from the university and the adjacent properties are already developed for industrial uses. It must be considered as a long-term prospect.

- **Downsview**

Map 70: *Downsview*

Downsview provides a link to the Spadina Subway which will be a considerable opportunity to develop the Downsview employment district currently an aerospace cluster. Reallocating industrial jobs was not part of the mandate of this project but it is worthy to note that industrial conversions to new economy industry may benefit.

APPENDIX 1: EXCERPTS FROM UTTRI'S RIDERSHIP ANALYSIS

The following are exerts from the *SmartTrack Ridership* Analysis, the final report prepared by University of Toronto Transportation Research Institute (UTTRI). The project team has chosen to highlight the results of the reallocation of growth in this study. The numbering of sections below respects the original numbering of the UTTRI study.

4.3.2 Summary of All-Day 2031 Ridership Forecasts, Various SmartTrack Options

Table 4.1 presents 2031 total daily SmartTrack ridership for the six headway – fare combinations investigated. Clearly, ridership is quite sensitive to both fares and headway. With respect to fares, the TTC fare is (not surprisingly) far more effective in attracting riders than the more expensive GO fare. As a result, the TTC fare is assumed as the base fare system in all other scenarios investigated.

With respect to headway, it is clear in all the scenarios investigated that moving below 15-minute headways to 10- or 5-minute headways (or other, intermediate values) has a very significant impact on usage. There appears to be a very significant latent demand for transit service in the corridor that manifests itself once the transit service becomes sufficiently attractive.

Table 4.1: 2031 SmartTrack All-Day Transit Ridership by Headway & Fare*

SmartTrack Headway	2031 TTC Fare Scenario	2031 GO Fare Scenario
15 min	74,000	34,400
10 min	151,700	57,100
5 min	307,900	102,400

* Assumes Low population/Medium employment with SmartTrack influence

* Assumes Standard SmartTrack alignment

Table 4.2 displays projected net new daily transit riders for the same combinations of headway and fare as in the previous table and shows the same pattern of impact. For the SmartTrack options the net new ridership is computed with respect to both the base case which includes the RER Unionville-Union service and a second base case which excludes this service.[16] Note that moving to shorter headways has a significant impact on net new ridership.

[16] Recall from Chapter 3 that the SmartTrack scenarios assume that the Unionville-Union RER 15-minute service is removed, while the Brampton-Union RER service is retained.

Table 4.2: 2031 All-Day Net New System Ridership by SmartTrack Headway & Fare*

SmartTrack Headway	2031 TTC Fare Scenario		2031 GO Fare Scenario	
	compared to RER base case	compared to no RER base case	compared to RER base case	compared to no RER base case
15 min	22,000	82,900	14,500	75,500
10 min	32,900	93,800	17,200	78,100
5 min	52,400	113,400	20,800	81,800

* Assumes Low population/Medium employment with SmartTrack influence

4.3.10 Network Interactions

Any transit line is a piece within an overall network which collectively provides the connectivity between points in space needed to serve a complex origin-destination travel pattern. A productive new line should not only attract riders to itself but also make the overall network more productive. Table 4.13 lists total daily riders on selected TTC rail lines[17] that run parallel to or intersect with the proposed SmartTrack alignment, with and without the implementation of SmartTrack. Points to note from this table include:

- In addition to relieving ridership on the YUS subway (as has been previously discussed), SmartTrack provides some relief to other over-burdened lines, notably the downtown streetcar routes and the Bloor-Danforth subway, thereby freeing up some capacity on these lines and providing a somewhat better quality of service on these lines.
- The addition of SmartTrack boosts ridership on Eglinton Crosstown and the Sheppard LRT.
- SmartTrack's daily ridership is only exceeded by the ridership on the YUS and Bloor-Danforth subway lines, again reinforcing the importance of this line to increasing the productive capacity of Toronto's transit system.

[17] SmartTrack impacts on Metrolinx RER/GO Rail lines is discussed in Section 4.3.12, below.

Table 4.13: 2031 Daily Ridership, TTC Rail Lines, with & without SmartTrack*

Line	Daily Boardings without SmartTrack	Daily Boardings with SmartTrack
Queen (incl. Kingston Rd, Downtowner) Streetcar	72,500	67,300
King Streetcar	88,400	76,200
Dundas Streetcar	13,400	11,200
Carlton Streetcar	31,400	28,700
Harbourfront Streetcar	7,100	7,400
Spadina Streetcar	11,300	8,800
Bathurst Streetcar	7,100	6,300
St Clair Streetcar	22,600	21,200
Eglinton LRT	124,800	171,700
Finch West LRT	33,000	30,500
Sheppard LRT	41,100	42,600
Yonge-University-Spadina Subway	991,800	933,400
Bloor-Danforth Subway	621,000	549,200
Sheppard Subway	52,400	47,800

* TTC fare, Low population/Medium employment with SmartTrack influence land use for all scenarios. Note that Eglinton LRT includes the western extension in the SmartTrack case.

STUDY SUMMARY

One or more tables comparing total riders (AM peak, daily) and net new riders of SmartTrack vs. a bunch of other lines; also changes in other lines' ridership due to SmartTrack.

6.2 KEY FINDINGS

From the summary report:

Three key observations can be drawn from these findings:

1. Contrary to much prior speculation, SmartTrack and the RL are not significant competitors of, or substitutes for, one another. Rather, they are largely complementary to one another and largely serve somewhat different travel markets.[18] Thus, investment decisions in one or the other or both of these lines should not be viewed as an "either/or", "zero sum" exercise. Both lines display considerable ridership potential, individually and collectively, and both should be considered as viable additions to the Toronto transit network, subject, of course, to engineering and cost considerations.
2. Put another way, there is a huge demand for more transit capacity connecting the suburbs with downtown Toronto. There is clearly scope/need from a ridership perspective for both lines to help serve this latent demand.
3. This analysis illustrates the need for comprehensive, network-level analyses of individual project proposals. The interactions between SmartTrack and the RL are complex and their outcomes cannot be anticipated without detailed modelling of the overall origin-destination demand patterns, mode choices and transit route choices.

In general, these results indicate that the RL primarily functions as providing an improved path into the Toronto downtown for trip-makers within its catchment area. It provides an improved level of service (e.g., reduced travel times) for these riders and helps reduce over-crowding on the Yonge line. Its potential for attracting large numbers of new riders to the transit system, however, appears to be somewhat limited.

[18] This hypothesis is explored further below.

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