

City of Mississauga

# Corporate Report



<p>Date: November 4, 2015</p> <p>To: Chair and Members of General Committee</p> <p>From: Martin Powell, P. Eng. Commissioner of Transportation and Works</p>	<p>Originator's files:</p> <hr/> <p>Meeting date: 2015/11/18</p>
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## Subject

MiWay 5 – Service Plan 2016-2020

## Recommendation

That the report to General Committee entitled “MiWay 5 – Service Plan 2016-2020” dated November 4, 2015 from the Commissioner of Transportation and Works be endorsed in principle.

## Report Highlights

- The MiWay 5 report was prepared with extensive stakeholder, public and rider input and provides a framework to reconfigure and improve our transit network over the next five years.
- Identifies the need for continued improvements in the transit network to advance the strategic pillar of developing a transit oriented city and support investments in rapid transit.
- Recommends re-aligning routes to improve travel efficiency moving towards a grid network.
- Capital requirements will be identified in the next budget cycle 2017-2020.
- Requires annual operating investments to improve service levels and increase ridership.

## Background

The City's strategic plan focuses on developing a transit orientated city as one of the key elements for Mississauga's future growth. In support of this goal, the City has made investments in new transit services including the MiExpress and MiLocal service, annual service growth, the addition of the Mississauga Transitway and the future Hurontario-Main LRT service.

To meet the City's future growth and development projections as well as the changing dynamics of travel demand and increasingly complex travel patterns within the City, continued investments in service levels and further reshaping of the transit system's route network is required.

In April 2014 MiWay began a study to prepare a five year service plan to enhance the route network, strengthen service quality and achieve better service delivery. The MiWay 5 study identifies opportunities and strategies to grow transit ridership and to direct service hours to achieve the best return on the City's investment.

## Comments

The approach to the MiWay 5 study involved high levels of collaboration between stakeholders and city staff. Oversight was provided by a Steering Committee and the project supported by the IBI Group. A new and important element in the success of the MiWay 5 study is that the outcomes and recommendations are based on a pro-active and inclusive public engagement process as well as an extensive technical analysis. Together the study creates an efficient and better quality transit network and meets the required transit improvements based on participation and input from residents and businesses in Mississauga.

The overall study was conducted in several phases over 18 months between April 2014 and November 2015 as shown the MiWay 5 Timeline in Appendix 1.

### Stakeholder and Public Engagement:

Stakeholder and public engagement were a key component of the MiWay 5 service plan study. It provided important input to the service plan development to ensure that the network alternative analysis process was widely understood in the community and the plan supported community needs, interests and priorities. Input was gathered from key stakeholders, including representatives of City Council and senior staff; key market target groups, including students and adults, business commuters, seniors; and the general public. The communication objectives for this project were to:

- Solicit input from stakeholders, the public and existing riders.
- Raise awareness of the MiWay service plan review.
- Inform the development of the service plan review.
- Create continued long-term support for MiWay.

Transit stakeholders and the public were consulted through an extensive program including individual interviews, focus groups with public and internal staff, public open houses and online surveying through the City's website. A key element in the consultation process was the use of an innovative web-based on-line survey, "MetroQuest", to obtain public feedback on transit service priorities and the future direction for MiWay.

Results from the public and stakeholder engagement indicated that preferences were consistent across all groups:

- Preference for a grid route network with improved frequencies understanding the potential for longer walking distances to transit in certain areas;
- More frequent service and increase service span especially on Sundays and early morning weekdays;
- Improved transit service in West Mississauga;
- Improved on-time performance and reliability;
- Faster travel times with more direct routes;
- Improved connections to GO services particularly rail services;
- More express routes; and
- Improved service to neighbouring communities

### **System Technical Assessment**

The existing 2015 MiWay route network represents a continued transition from its historical radial design focused on the City Centre/Square One to a grid design featuring a hierarchy of services connected at multiple transit hubs throughout the network. The network today is structured around five major transit hubs located at retail centres in the MiWay service area. In addition to the primary hubs, other intermodal transfer points represent secondary nodes in the grid network that may or may not be high-traffic destinations, but nevertheless are key connection points to higher order regional transit services.

### **System Performance**

A critical assessment of the existing system was undertaken and consisted of:

- An evaluation of system performance and efficiency on a route-by-route basis;
- Assessed the existing system to identify strengths and opportunities for improvement;
- Analysis of travel demand and origin-destination patterns; and

Originators files:

- Analysis of ridership demand and system capacity needs based on the travel demand and origin-destination patterns and current route performance.

The system assessment concluded that:

- The new service plan should build on the strengths of the existing system, its route network and service mix;
- Continue the trend towards a grid network design compared to a radial or hybrid (combination of radial and grid routes) design;
- Re-align routes to improve travel efficiency and flexibility based on the analysis of travel patterns;
- Establish more transit hubs across the city with less reliance on the City Centre/Square One terminal; (ie. Mississauga Transitway stations)
- Increase service frequency and span (hours) of service with emphasis on key routes in existing and emerging corridors, early morning and late evening weekdays and weekends, particularly Sundays;
- Add capacity during peak and off-peak hours on key routes;
- Improve service levels on north-south routes; and
- Increase connecting service to Mississauga's neighbouring communities particularly Brampton and Oakville.

Based on the extensive public consultation information and the detailed technical analysis, the Plan recommends improvements and growth to MiWay service levels in each year over the five year timeframe. The route network improvement and growth between 2015 and 2020 are shown on the maps in Appendix 2 and 3.

A detailed summary of the annual changes in each year of the plan are included in the final report. MiWay staff will provide information sessions to Mayor and Council, to the public through a series of open house sessions and to City staff to ensure that there is opportunity on an annual basis for education and feedback on proposed upcoming network improvements.

## Strategic Plan

The City's vision to make the city more transit-friendly and achieve the doubling of the transit modal split are founded on the principles that public transit provides a wide range of benefits to individuals, businesses and urban areas as a whole. This five year service plan will support the City's strategic goals in the following ways:

- Build a reliable and convenient transit system
- Direct Growth
- Increase Transportation Capacity
- Connect our City

- Develop Environmental Responsibility
- Build Vibrant Communities
- Provide Mobility Choices
- Create a Vibrant Downtown
- Build and Maintain Infrastructure

## Financial Impact

The MiWay 5 plan includes consideration for the longer term vision for transit and related outcomes at a high level thereby ensuring that short-term planning activities are compatible with Mississauga's strategic long-term goals. The City's Action Plan sets a goal of doubling the a.m. peak period transit mode split from 11% of total transportation trips to 22% by 2049. To achieve this ridership target, the City will need to progressively increase MiWay service levels and service-hours towards establishing a solid base for ridership growth over the next five years and as a first step towards achieving the 2049 ridership targets.

The MiWay 5 plan recommends an increase its service-hours by 3% over the period 2016 to 2020. The 2016 budget includes a 2% growth rate however the remaining years will require 3% to achieve future ridership goals. Additionally, the City should take steps to ensure that transit productivity increases by implementing transit-supportive land-use and transportation policies. If this is done, the result will be a requirement for fewer service-hours to meet the City's Strategic Plan ridership goal over the longer term.

The full plan also recommends capital investments in infrastructure to meet the growth needs which will be identified in the next budget cycle 2017-2020. MiWay will bring forward for approval a summary of improvements and associated financial requirements annually during the City budget process.

## Conclusion

The MiWay 5 Transit Service Plan 2016-2020 has been prepared following a comprehensive planning process which included an extensive public consultation process, a detailed analysis of the existing transit network and a review and update of the City's transit service standards and key performance indicators.

The MiWay 5 Plan represents the first five-year step towards achieving a more transit-supportive community as well as working towards the goal of doubling transit ridership over the next 33 years. The Plan has a detailed implementation plan for continuing to re-structure the route network towards a grid pattern and the investment in service level improvements. This Plan will be posted on our MiWay website to educate the public on the changes and improvements to MiWay over the next five years. The Executive Summary of the MiWay 5 Plan is attached as Appendix 4.

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## Attachments

Appendix 1- MiWay 5 Project Timelines

Appendix 2 - MiWay Route Network - 2015

Appendix 3 - MiWay Proposed Route Network - 2020

Appendix 4 - MiWay 5 Executive Summary

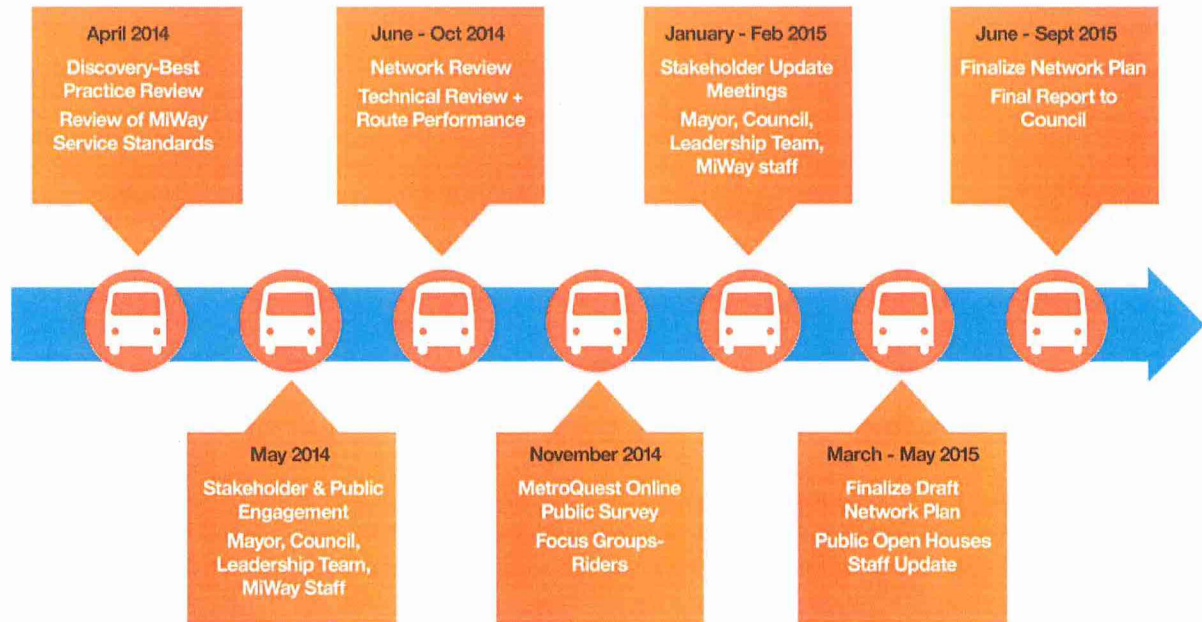


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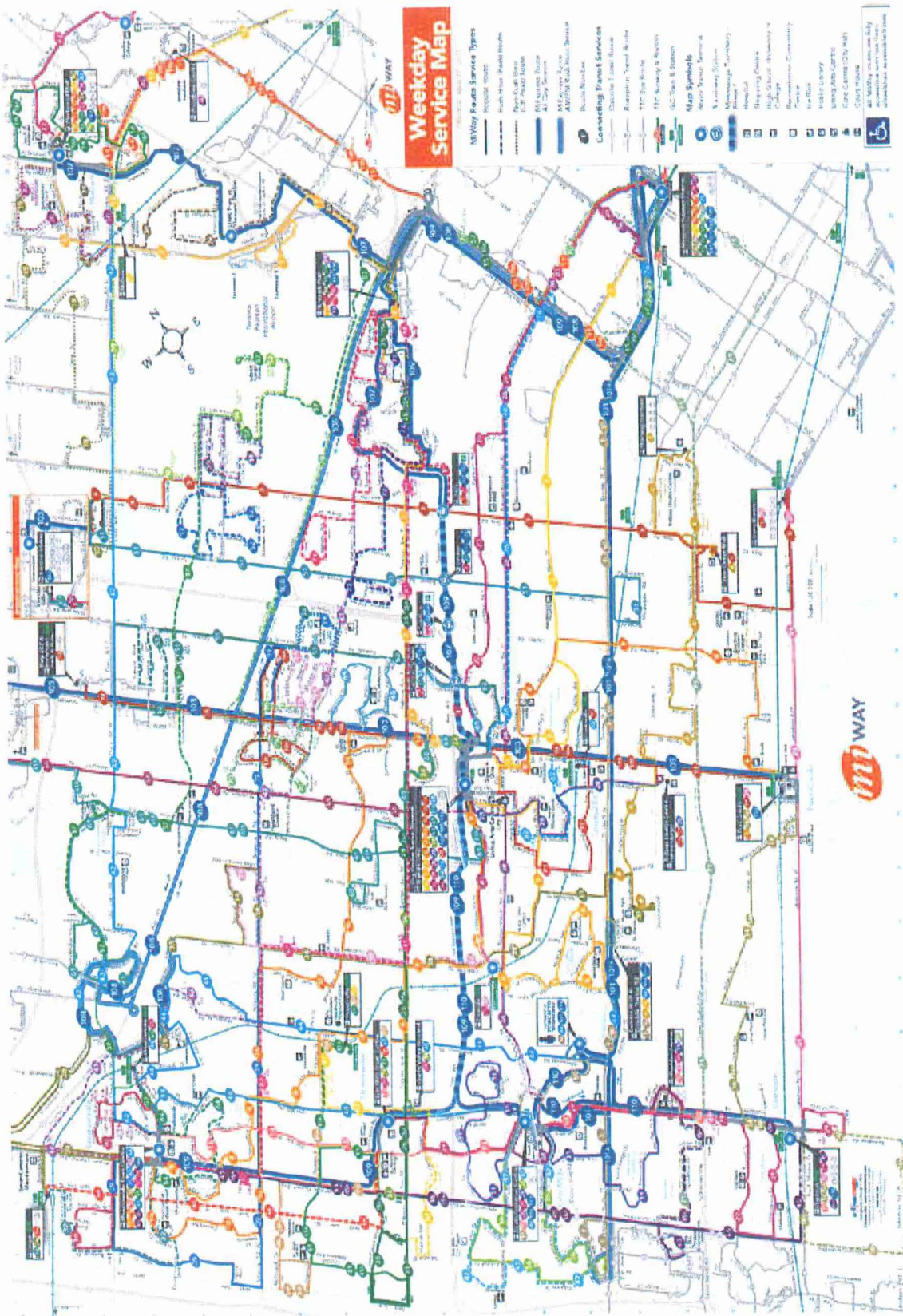
Martin Powell, P. Eng.  
Commissioner of Transportation and Works

Prepared by: Mary-Lou Johnstone, Manager of Business Development

## MiWay 5 Study Timeline

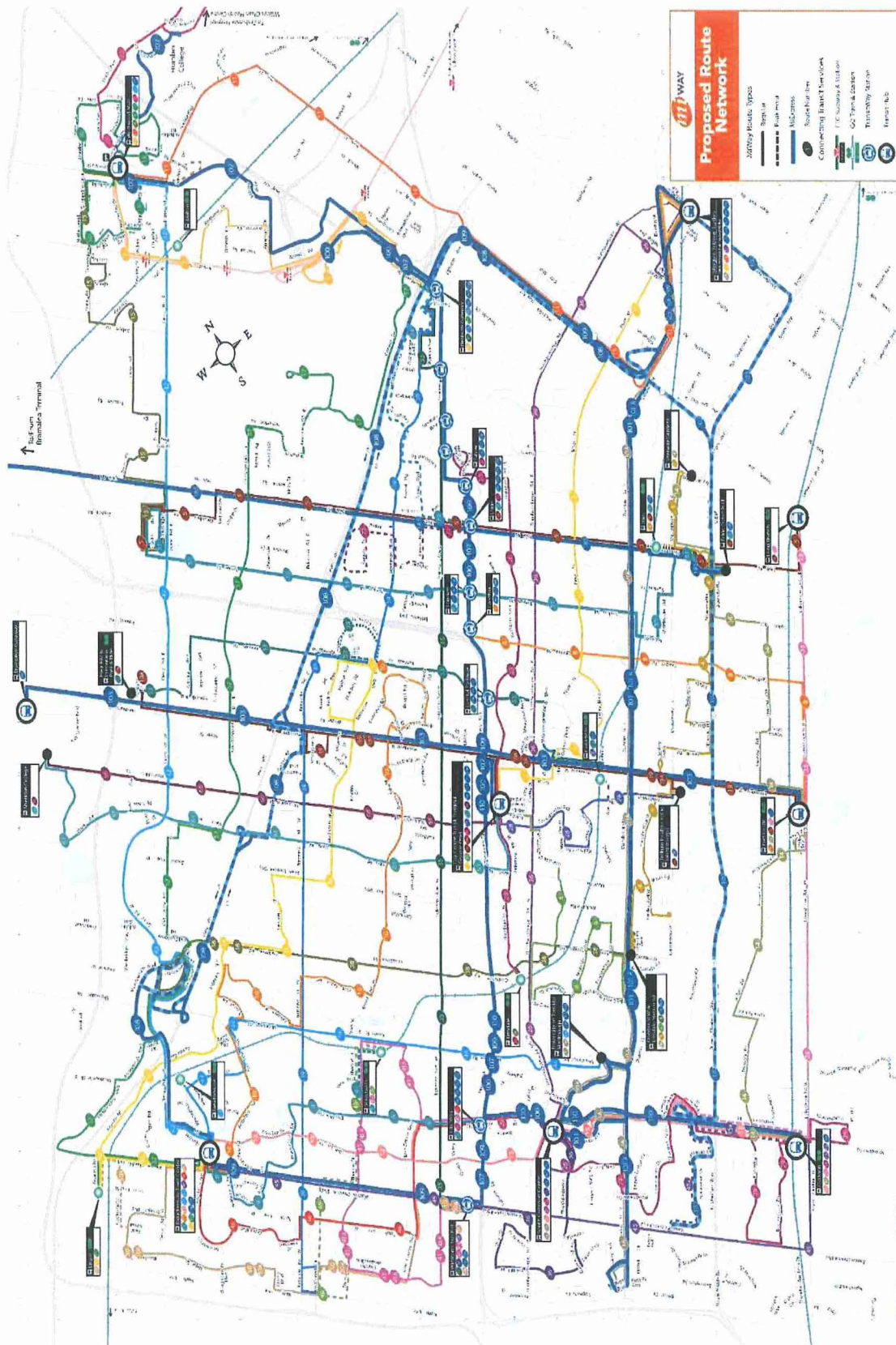




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Appendix 3 - MiWay 2020 Route Network





General Committee  
November 18, 2015  
Appendix 4

## Executive Summary

# MiWay Five Year Transit Service Plan, 2016-2020

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Prepared for City of Mississauga  
by IBI Group  
In association with AKelly Consulting Inc.  
November 3, 2015



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## Executive Summary

### ES.1 Introduction and Study Objectives

Increased emphasis is being placed on public transit as a core element of the City's future strategic plan, which is to be "transit-oriented". To effectively meet the city's future growth and development projections as well as the changing dynamics of demand and increasingly complex travel patterns within the city, further expansion and a re-shaping of the transit system's route network and enhanced service levels is required.

The purpose of this study was to prepare a five-year service plan for MiWay with associated service standards, route network and service changes, multi-year capital and operating budgets, and ridership and revenue forecasts. The major objectives were to:

- Create a better network;
- Strengthen service, quality and reliability; and
- Achieve better service delivery.

### ES.2 What We Did

The approach to preparing a new five-year service plan for MiWay was collaborative with the study Steering Committee, City staff and city stakeholders at all levels. A core element of the study work plan was a pro-active and inclusive public engagement process utilizing both web-based survey tools as well as personal meetings and open houses. The study was conducted in three phases:

**A □ Discovery** □ background research, critical assessment of the existing MiWay service, review and update of service standards.

**B □ Public Engagement** □ extensive consultation program to engage all transit stakeholders.

**C □ Development of the Five Year Service Plan** □ preparation of a comprehensive Service Plan for the years 2016 to 2020 with an implementation plan and summary of financial and physical resource requirements.

The work undertaken included:

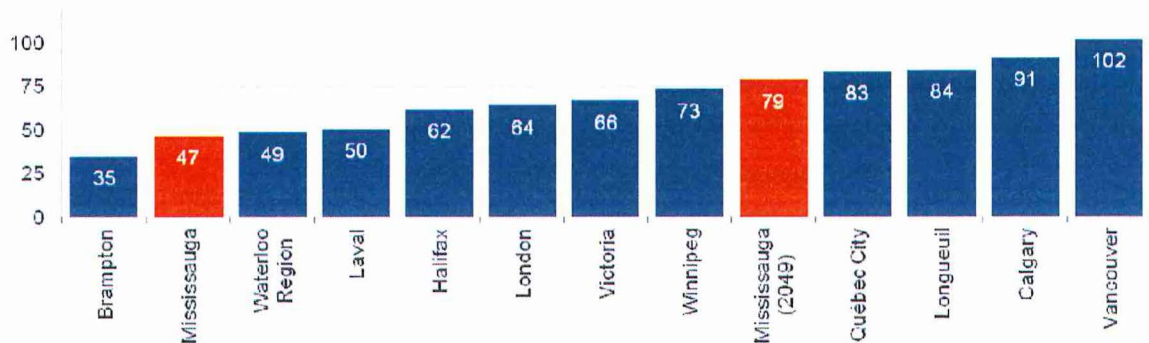
- Analysis of the existing system to determine its strengths and weaknesses;
- Assessment and analysis of the Origin-Destination and Transportation for Tomorrow (TTS) travel surveys against the existing transit route network to identify gaps, deficiencies and opportunities for improvement;
- Extensive consultation with all stakeholders including transit employees, senior City staff and members of Council;
- Detailed analysis and consideration of the City's short and long term development plans and transportation strategy;
- Development and evaluation of route network alternatives to meet the travel demand needs; and
- Preparation of a comprehensive service implementation plan.

The MiWay Five plan is intended to provide a strategic guide for how the network will evolve in the near to medium-term.

### ES.3 Future Vision and Ridership Target

The MiWay Five service plan is short-term and recommendations are focussed on network changes and service improvements that should be made up to and including 2020. The City's Action Plan sets a goal of doubling the a.m. peak period transit mode split from 11% of total transportation trips to 22% by 2049. In order to achieve this target, Mississauga's rate of transit use will need to increase from today's 47 annual rides per capita to approximately 79 annual rides per capita (a 65% increase) by 2049. As Exhibit ES-1 illustrates, this rate would bring Mississauga into the range of transit systems with more established transit levels such as Winnipeg and Quebec City.

Exhibit ES-1: Rides Per Capita for Transit Systems Across Canada (2012)



To achieve this ridership target, the City will need to progressively increase MiWay service levels and service-hours annually into the future towards establishing a solid base for ridership growth and, specifically, by 3% annually over the next five years. Additionally, the City should take steps to ensure that transit productivity increases by implementing transit-supportive land-use and transportation policies.

### ES.4 System Assessment How Can MiWay Be Improved

MiWay is projected to carry over 37 million revenue passengers in 2015, a 1.2% increase over 36.6 million revenue passengers carried in 2014.

The existing MiWay route network represents a continued transition from its historical radial design focused on the City Centre/Square One and Malton retail centres to a grid design featuring a hierarchy of services connected at multiple transit hubs around the service area.

#### System Performance

A critical assessment of the existing system was undertaken and consisted of an:

- Evaluation of system performance and efficiency on a route-by-route basis;
- Assessment of the existing system to identify strengths and opportunities for improvement;
- Analysis of travel demand and origin-destination patterns; and
- Analysis of ridership demand and system capacity needs based on the travel demand and origin-destination patterns and current route performance.

The assessment concluded that:



- The new service plan should build on the strengths of the existing system, its route network and service mix;
- Continue the trend towards a grid network design compared to a radial or hybrid (combination of radial and grid routes) design;
- Re-align routes to improve travel efficiency and flexibility based on the analysis of travel patterns;
- Establish more transit hubs across the city with less reliance on the City Centre/Square One terminal;
- Increase service frequency and span (hours) of service with emphasis on core routes in existing and emerging corridors, early morning and late evening weekdays and weekends, particularly Sundays;
- Add capacity during peak and off-peak hours on key routes;
- Improve service levels in key corridors, especially north-south routes; and
- Increase connecting service to Mississauga's neighbouring communities particularly Brampton and Oakville.

### **Performance relative to Travel Patterns**

Since the early 1990s, the balance of trips to, from and within Mississauga has been consistent at about 58% Internal (meaning trips originating and terminating within the City); 22% Outbound (trips originating in Mississauga and terminating in neighbouring cities); and 19% Inbound (trips originating in neighbouring cities and terminating in Mississauga) when measured during the AM peak period. This pattern is expected to continue to 2020 and beyond based on assumptions that short-term population and job growth will continue to occur at roughly similar rates.

The current route network facilitates east-west transit travel more than north-south travel. With the exception of the Hurontario Street corridor, none of the north-south arterial streets have an average headway under 10 minutes and four of the five north-south core routes running west of Hurontario Street have peak headways of 18 minutes or higher. As a result, travel demand in the west end of the will be considered as a part of the network change in the five-year service plan.

Regional travel data indicates that City Centre is no longer a primary destination for overall (all modes) travel in Mississauga. Transit ridership volumes are heavily influenced by the use of City Centre Terminal as a system-wide transfer location which was essential to the historical development of the radial system but is less suited to a robust grid network in the future. As the grid is further reinforced, the importance of Square One Terminal should lessen as a transfer point, although not at the expense of customers who have destinations or reside in the City Centre.

The MiWay system has been successful in generating ridership growth on routes serving GO stations in Mississauga. Service to GO stations will continue to increase through 2020 and beyond as GO adds rail and regional bus service, and as parking capacity at selected GO stations becomes scarce. However, the present strategy of providing separate feeder service with single-purpose shuttles to stations along the Milton Line should be reconsidered in light of their relatively high cost per passenger.

Key findings of the 2012 MiWay Origin-Destination Survey indicate that MiWay's customer base includes a large number of young people, particularly students. One third of all weekday riders are between the ages of 18 and 24, and nearly 60% are under the age of 35. In terms of

occupation, 42% of all weekday riders are students, 39% are full-time workers and 10% are part-time workers.

Survey findings additionally indicate that eight percent of MiWay riders prefer to use public transit instead of a personal automobile even as they possess a valid driver licence and have more than one vehicle available at home. A much larger share □ half of all MiWay customers do not have a licence and/or personal vehicle, and therefore depend on MiWay to meet some or all of their travel needs. Future ridership growth will occur from amongst existing car owners as well as increasing transit use by existing users generally.

## ES.5 Service Standards and Performance Monitoring

Service standards are used to ensure the services operated by MiWay meet their customers' needs and expectations and are provided in a cost-effective, fiscally responsible manner. They provide guidance and information for the following purposes:

- Service development
- Evaluation
- Budgeting
- Public accountability

Service standards and key performance indicators (KPIs) are important tools for planning, operating and managing the transit system. MiWay's service standards were reviewed and updated to reflect new services, such as express routes, which have been introduced or the use of the new Transitway. MiWay has been using Boardings per Service-hour as the primary KPI, although three others are also generated: Boardings per Service Kilometre; Passenger Kilometres; and Average Load (Passenger Kilometres/Service Kilometres).

The performance of the existing services based on the KPIs will be reported to the Transit Management Team on a regular basis, and will be incorporated into the annual Business Plan. To help support the performance monitoring process, it would be desirable in the future for MiWay to develop a method for calculating individual route costs.

## ES.6 Stakeholder Consultation

Stakeholder and public engagement was a key component of the MiWay Five service plan study. It provided important input to the service plan development to ensure that the alternatives analysis process was widely understood in the community and the plan supported community needs, interests and priorities. Input was gathered from key stakeholders, including representatives of City Council and senior staff; key market target groups, including students and adults, business commuters, and seniors; and the general public. The communication objectives for this project were to:

- Solicit input from stakeholders, the public and existing riders.
- Raise awareness of the MiWay service plan review.
- Inform the development of the service plan review.
- Create continued long-term support for MiWay.

Transit stakeholders and the public were consulted through an extensive program of communications using the City's website, social and print media and through a program of meetings and public presentations. A key element in the consultation process was the use of the innovative web-based on-line survey, □MetroQuest□ to obtain feedback on transit service



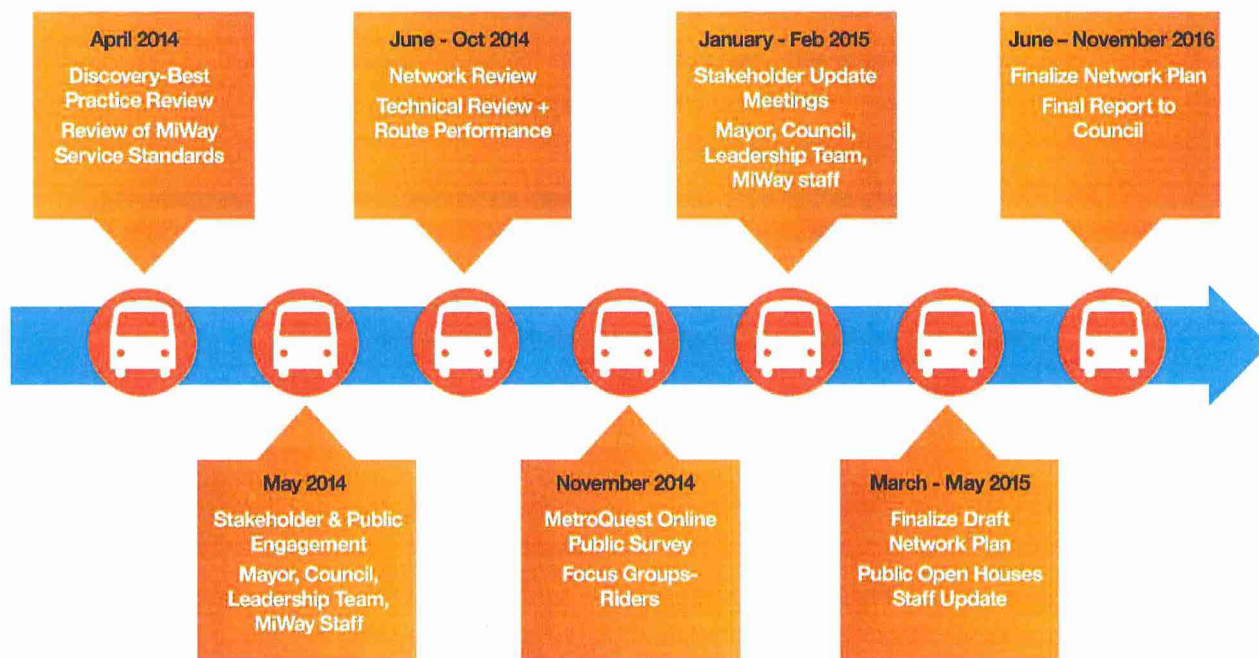
priorities and the future direction for Miway. The key objectives of the consultation program were to determine the transit needs of the city, and priorities for improving transit services.

Public and stakeholder preferences were consistent across all groups:

- Preference for a grid route network with improved frequencies although the potential for longer walking distances to transit in certain areas;
- More frequent service and increase service span especially on Sundays and early morning weekdays;
- Improved transit service in West Mississauga;
- Improved on-time performance and reliability;
- Faster travel times with more direct routes;
- Improved connections to GO services particularly rail services;
- More express routes; and
- Improved service to neighbouring communities.

The MiWay Five Service Plan reflects this feedback.

Exhibit ES-2: Consultation and Engagement Process



### MetroQuest Survey

The consultation activities included "MetroQuest", an online public engagement tool which provided an interactive means of engaging the community and getting input on travel preferences, priorities, and network alternatives. Together with MiWay staff, a series of questions was developed and the survey made available to the public online and for mobile devices from November 7 to December 7, 2014. Survey participants were shown network

alternatives and asked to rank priorities such as faster travel, less waiting, fewer transfers, less walking, one terminal, and travel flexibility. 2,181 survey responses were received, with over 3,500 unique visitors to the site. The survey results indicated strong public support for:

- a grid route network;
- services that would offer faster travel and less waiting; and
- increases in Sunday, weekday and Saturday early morning, and late evening service.

All comments received were incorporated into the final service plan.

## ES.7 Five Year Service Plan

### Summary and Benefits

The MiWay Five Service Plan recommended route network is designed around a hierarchy of services that respond to transit travel demand for regional connectivity, city-wide coverage, and neighbourhood circulation. It responds to seven primary objectives formed around the findings of the stakeholder outreach effort as well as the quantitative analysis of the current system and assimilation of service area demographics. Key service plan objectives included:

- Increase transit ridership by providing better travel choices;
- Build a more livable City that benefits everyone;
- Keep pace with changing community needs and travel patterns;
- Support the City's growth and transportation needs;
- Reduce traffic congestion; and
- Improve connectivity with employment and activity centres and neighbouring communities.

The 2020 recommended build-out route network is presented in Exhibit ES-4. Compared to the existing route network in Exhibit ES-3, the 2020 network is noticeably less complex and easier to comprehend, an important benefit to transit users.



Exhibit ES-3: Existing MiWay Weekday Route Network Map

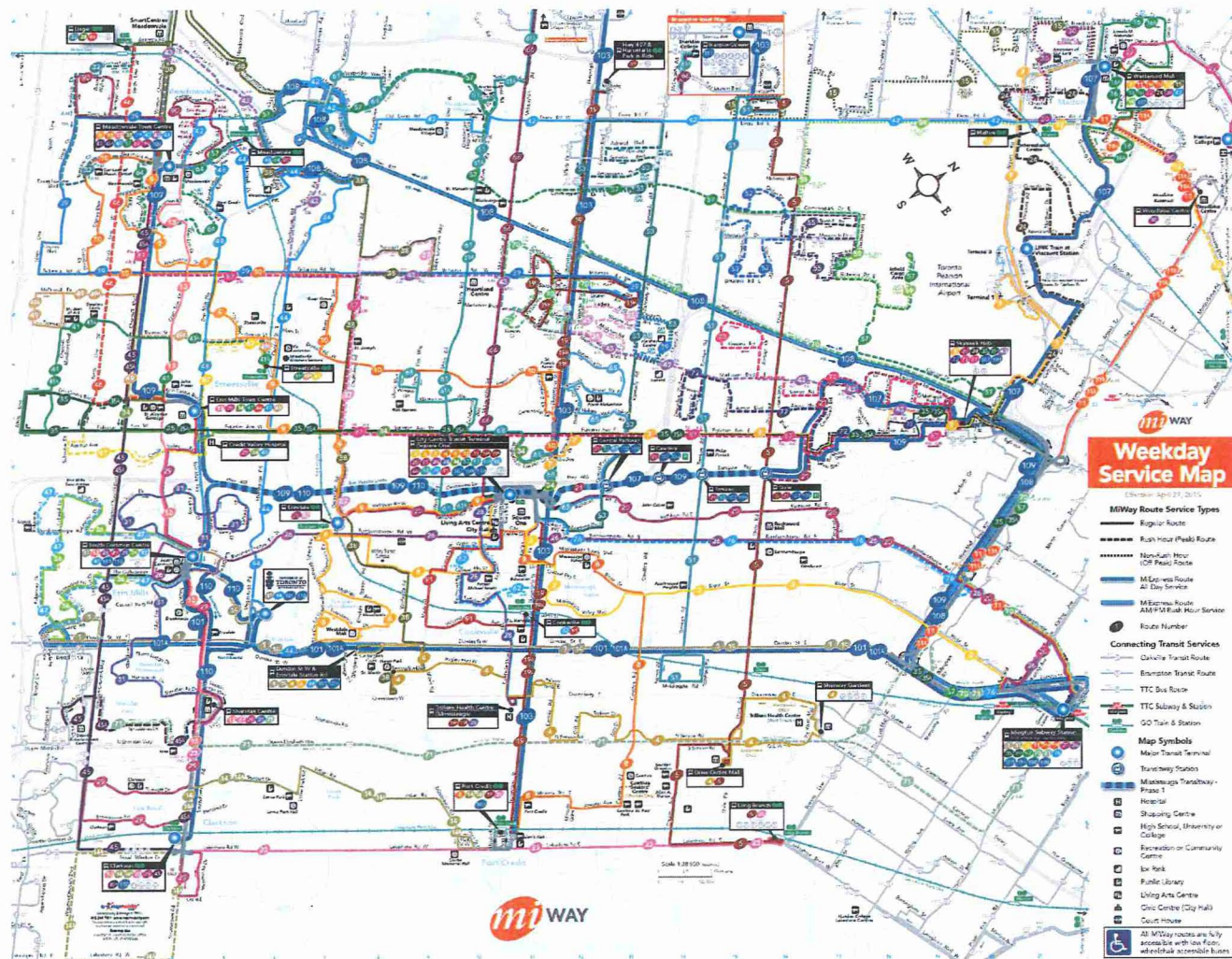
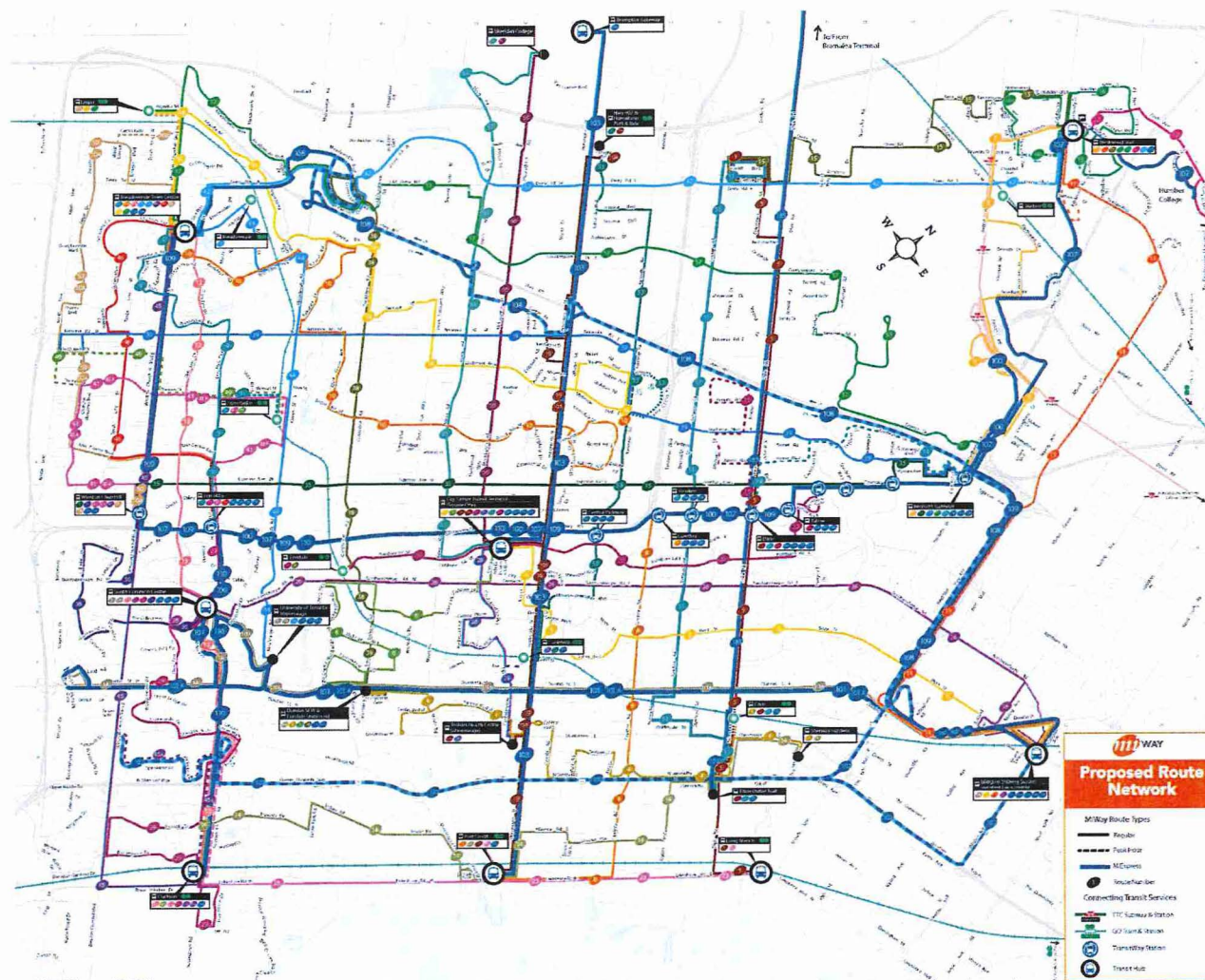


Exhibit ES-4: MiWay 2020 Route Network Map





### **MiWay 5 □ 10 Key Customer Benefits**

The service plan incorporates the recommended annual service-hour growth rate of 3% to 2020. Detailed annual route and service level changes are provided in exhibits and appendices.

The MiWay Five service plan features 10 key benefits:

1. Stronger transit corridors through continuation of building a grid route network;
2. More frequent service on main corridors;
3. More early morning, weekday mid-day, weekday evening and Sunday service levels;
4. More express routes between key destinations;
5. Route network integrated with the Transitway to reduce travel times;
6. More direct and faster connections between major transit hubs;
7. Improved connectivity with GO rail stations including increase travel flexibility through the integration of service to the stations with regular routes;
8. Improved connectivity with major employment areas particularly northwest Mississauga, the airport, and the Dixie Road corridor;
9. Improved connectivity with college and university campuses within Mississauga, particularly UTM; and
10. Improved connectivity with neighbouring communities particularly Brampton.

Exhibits ES-5 and ES-6 illustrate the expanded High Frequency Corridors and Express route network under the Service Plan.

Exhibit ES-5: High Frequency Corridors □ 2020

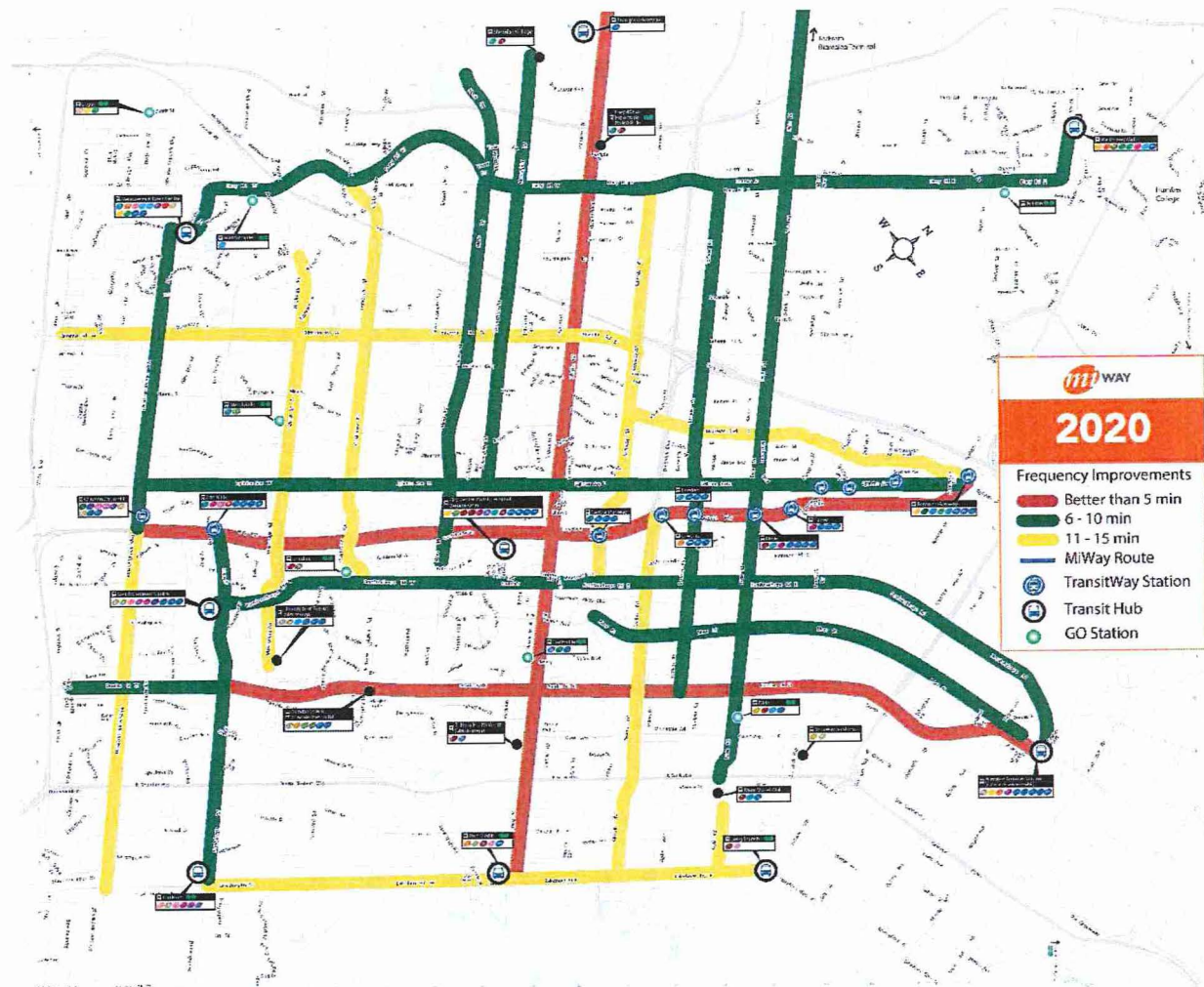
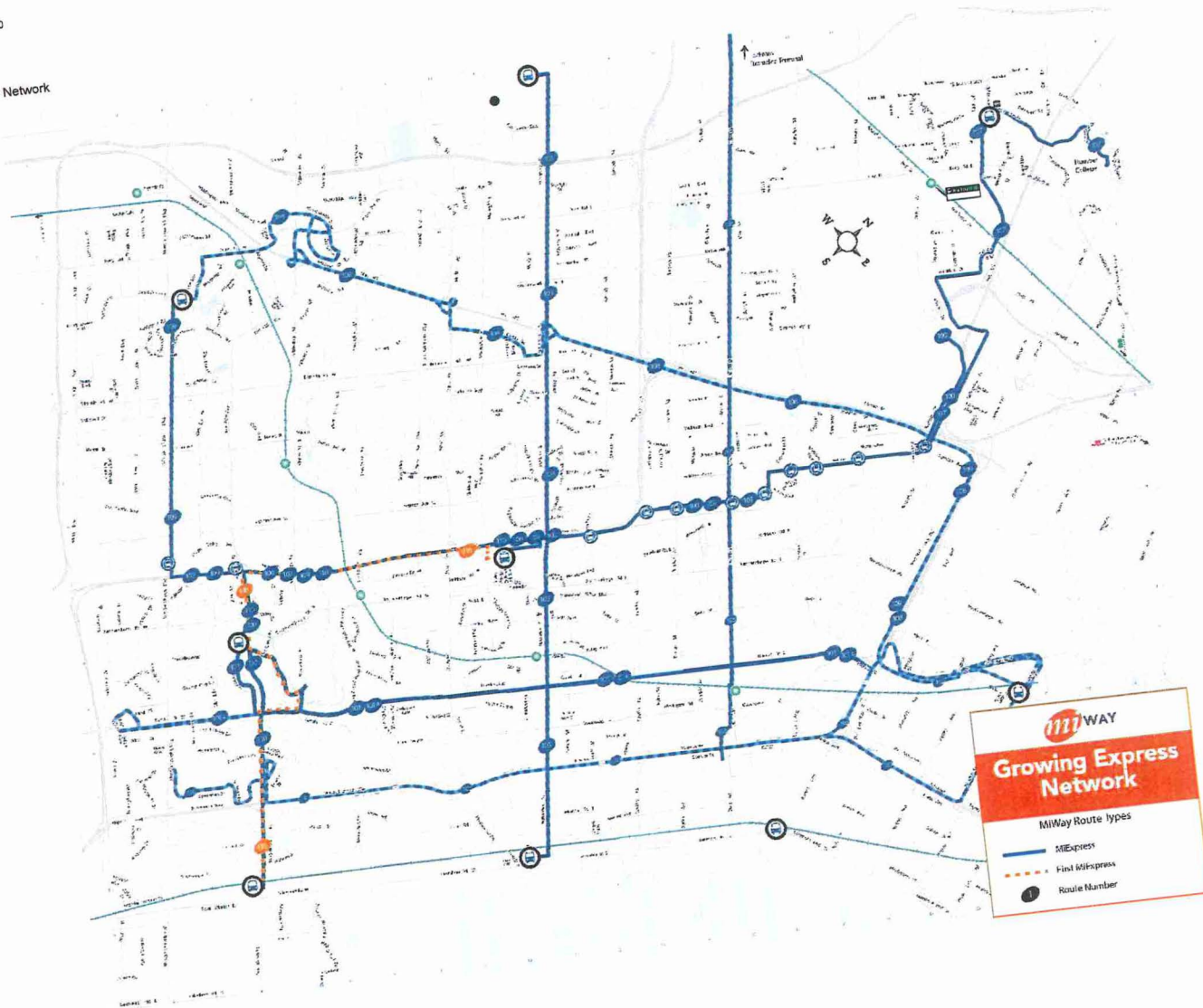


Exhibit ES-6: 2020 Express Route Network





## **Ridership Projections**

The MiWay Five Service Plan will provide significantly improved transit service and travel options across the city through the continued transition towards a grid network. The overall objective is to increase transit ridership and, particularly, increase the transit modal split towards the City's Vision and Goal as outlined earlier in this report.

Achieving this modal shift will be a challenge and will require transit-supportive policies in the areas of development locations, densities and density intensification, transportation, and parking supply and pricing in addition to service level improvements.

The service plan will increase transit service levels by 16.1% over the period of the plan. Ridership is projected to increase by 12.1%. While this estimate is less than the service level increase, it is considered conservative by allowing for uncertainties in predicting future ridership levels and allows for the delay in ridership response to service changes.

## **Infrastructure Plan**

The Service Plan will increase the number of buses and employees required to deliver the service. The peak number of buses required during the term of the plan will vary by year and is included in the current transit capital program to 2020.

MiWay has two operations and maintenance facilities: the recently renamed E.J. (Ed) Dowling Operations Centre on Central Parkway in central Mississauga, and a second facility in Malton. Both facilities have some residual capacity. In view of the moderate increase in fleet size over the term of the five year service plan, no changes or expansion to MiWay's O&M facilities are required.

There are some eight major transit terminals or hubs in the MiWay system as well as a number of on-street transfer locations and other locations that serve as terminals or transfer points. A number of these should be expanded or re-designed to improve operations and enhance customer amenities.

MiWay has approximately 3,634 bus stops and 950 shelters throughout its service area. This represents a shelter coverage ratio of approximately 26%. While this level is higher than other transit systems in the GTHA, it is lower than Toronto's which is above 50%. On a go-forward basis and to increase the attractiveness of using transit, the City should actively consider augmenting the number of shelters provided by the shelter contractor and move towards a shelter/stop coverage rate of 40% over the longer term.

## **Financial Plan**

A 5-year general operating and capital budget estimate is provided for the service plan for the years 2016 to 2020. This budget indicates that MiWay's operating cost will increase to \$199,753,465 (exclusive of inflation) based on the increased annual service-hours; fare revenues will increase to \$84,291,542 based on the projected ridership increase of 12.1% exclusive of any future adjustment in fare levels; and the Net Municipal Operating Investment will be \$97,372,695 by 2020. It is to be noted that the Service Plan includes a significant increase in the level of service on Sundays.

Other capital expenditures in addition to buses as part of implementing the service plan are:

- 450 additional bus shelters at an estimated cost of approximately \$3,375,000, or \$675,000 per year. Maintenance costs would be additional.
- Changes to bus stop signs and locations.

- Relocation of shelters.

## ES.8 Conclusions

The MiWay Five 2016-2020 Transit service plan has been prepared following a comprehensive planning process which included a critical analysis of the existing transit network, a review and update of the City's transit service standards and key performance indicators, and an extensive public consultation program.

The Plan reflects the City's vision to make Mississauga more transit-supportive as well as achieve its goal of doubling the peak hour transit modal split to 22% by 2049. The MiWay Five Plan represents the first 5-year step towards achieving those goals by providing City and MiWay staff with a detailed implementation plan for continuing to re-structure the route network towards a grid pattern and the investment in service level improvements.

### Reasons to Invest in Transit

The City's vision to make the city more transit-friendly and transit modal split goal are founded on the principles that public transit provides a wide range of benefits to individuals, businesses and urban areas as a whole which is summarized within the report.