

Right-Sizing Fleet: A Halifax Example



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1.0 Abstract

Metro Transit is the primary transit service provider in the Halifax Regional Municipality (HRM). The population of HRM is spread over an area similar in size to Prince Edward Island. Investment in Public Transit in HRM has steadily grown and as a result service hours, fleet complement and ridership have all increased at rates greater than the Region's population. Metro Transit's service area varies from the dense Downtown Core, to medium density suburban areas, to low density rural commuter hubs.

In order to best meet the needs of these diverse communities, Metro Transit has developed several service brands. Through the implementation of these service brands, lessons were learned with respect to having a supporting network in place before implementing higher-order service, ensuring the level of service is appropriate for the community in question, ensuring that the benefits of a sub-fleet exceed the negative aspects of doing so, and ensuring that the conventional service continues to grow as necessary in addition to the other available service brands.

It is also important to recognize that what the community wants initially may not be what will best serve the actual needs of the community. The solution to providing transit service will not likely be a full-size bus in every situation, particularly in low density rural situations.

The lessons learned from early implementations of new service brands will be used to guide the continued expansion of Metro Transit service in the coming years.

2.0 Metro Transit Background

Metro Transit is the primary transit service provider in the Halifax Regional Municipality (HRM). It is responsible for providing scheduled fixed-route services under several brands, door to door paratransit operated as Access-a-Bus, and ferry services in the Halifax Harbour.

During 2009/10 fiscal year, Metro Transit delivered over 790,000 scheduled annual service hours, including 729,600 hours of bus service, 9,300 hours of ferry service, and 51,300 hours of Access-A-Bus service.

The roots of public transit can be traced to 1752 when the first ferry service began to cross Halifax Harbour between Halifax and Dartmouth. This service continues today and Halifax boasts the longest continuously operating saltwater passenger ferry service in North America. Halifax once boasted the largest fleet in North America completely comprised of electric trolley-buses.

Metro Transit was formed in 1981 by the merger of the Halifax Transit Corporation and Dartmouth Transit, forming a regional transit system. The harbour ferries were added to Metro Transit in 1994, forming an intermodal transit system to service the transit needs of HRM residents.

Metro Transit is the largest municipal transit system in the Atlantic Provinces and employs over 750 people. As of August 2010 the system will include 62 bus routes and two ferry routes.

2.1 General Characteristics

2.1.1 Service Area

Metro Transit has traditionally served the urban areas of HRM. In recent years these areas have been extended to include some rural growth areas. As of 2008, the service area was approximately 250 km², with a service area population of approximately 313,000 people.

Figure 1 below illustrates the extent of Metro Transit's route network.

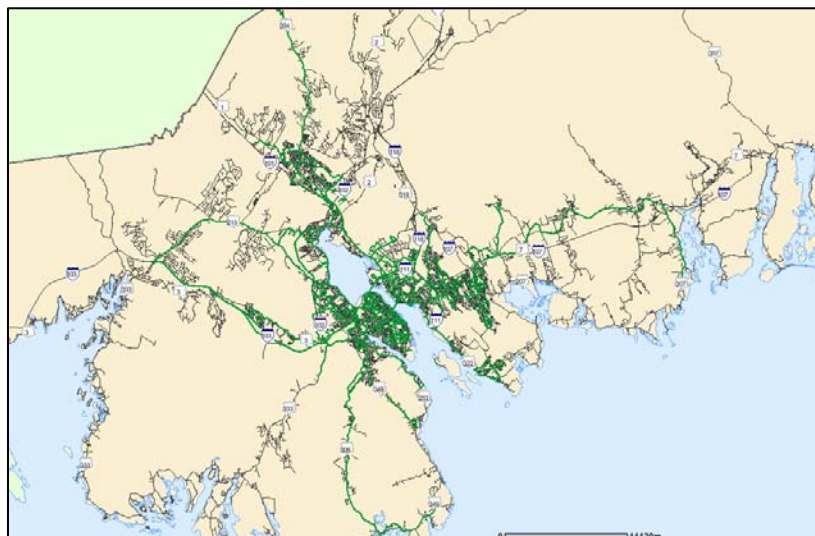


Figure 1 - Metro Transit's Route Network

2.1.2 Services provided

Metro Transit currently provides a family of services designed to meet the diverse transit needs of HRM residents (all figures as of August 2010):

Conventional Transit: Fifty routes providing Metro Transit’s standard fixed route, fixed schedule service.

MetroLink: Three routes providing a commuter-oriented, premium fare limited stop service using enhanced transit vehicles serving Park & Ride lots in urban areas.



MetroX: One route providing a commuter-oriented, premium fare express service using enhanced transit vehicles serving Park & Ride lots in rural areas.



Urban Express: Five routes providing a commuter-oriented service that will make local stops within residential catchment areas before proceeding with limited stops to Downtown Halifax.

Community Transit: Three routes providing local service within selected rural communities.

Access-a-Bus: Door-to-door paratransit service oriented toward those people who cannot use other transit services and meet a specific set of criteria.



Harbour Ferries: Cross-harbour ferry service operating on two routes from Woodside and Alderney to Downtown Halifax.



2.1.3 Fleet

Metro Transit operates a fleet of more than 300 transit coaches in varying configurations. The fleet complement includes transit coaches in 30, 40 and 60 foot lengths. It also includes “cutaway” style vehicles for Access-a-Bus and MetroX services. Metro Transit recently took delivery of two articulated coaches that utilize a hybrid-electric power train. Metro Transit’s ferry



fleet consists of three vessels. The fleet has grown by approximately 60% since 2001.

2.1.4 Service Levels and Ridership

Metro Transit's service levels have grown significantly since 2002, far exceeding the rate of population growth in HRM. The result has been a rate of ridership growth that also exceeds the rate of population growth. These trends are illustrated below in Figures 2 and 3.

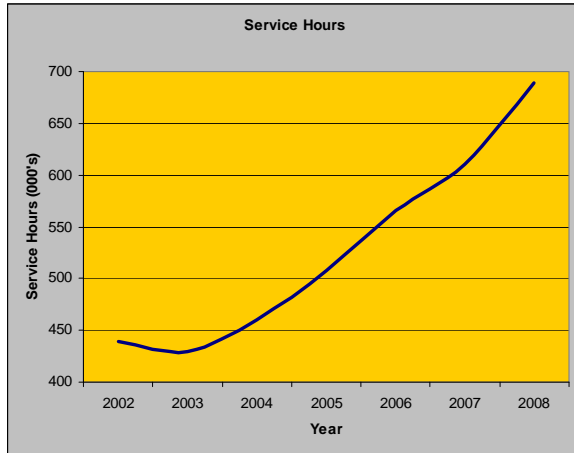


Figure 2 - Service Hours

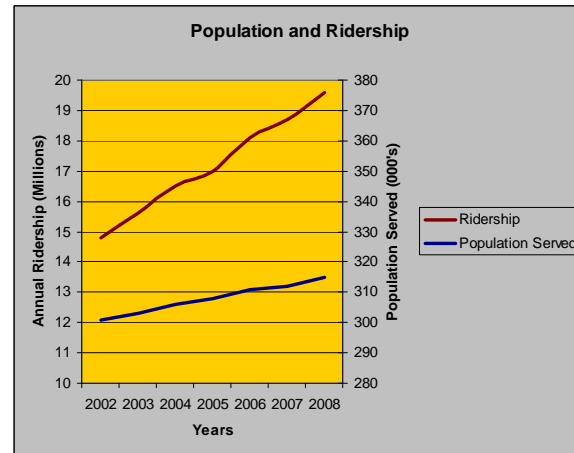


Figure 3 – Population and Ridership

2.2 Planning Context

Metro Transit plans and operates its services under the direction of several layers of planning documents. This layered approach is described below.

2.2.1 Regional Plan

The Regional Municipal Planning Strategy, known as the Regional Plan, was approved by Halifax Regional Council in June 2006. The 25-year Regional Plan is the guiding document for HRM in areas such as Transportation, Settlement and Economic Development. This plan specifies modal split targets and high-level means with which to meet those targets, including those for transit.

2.2.2 Five-Year Strategic Operations Plan

The Five Year Strategic Operations Plan was approved in principle by Halifax Regional Council in February 2010. This Plan, which takes direction from the Regional Plan, provides more detail on how the Metro Transit system should be planned and operated during its five-year life cycle. It includes a service plan, which makes high-level recommendations around service changes.

2.2.3 Service Standards

Metro Transit's Service Standards were developed as part of the Five-Year Strategic Operations Plan. They were approved in principle by Halifax Regional Council in November 2009. These standards provide guidance in terms of service design (span of service, headway, route coverage, stop spacing) and

required route performance (passengers per hour, cost recovery and vehicle loadings). Examples of the standards are included in Figures 4 and 5.

2.2.4 Annual Service Plan

The Annual Service Plan is derived from the Five-Year Strategic Plan. This plan provides detailed information on what was accomplished during the previous year and what is proposed for the following year including infrastructure, projects, marketing and detailed service changes. This plan forms part of the annual budget submission to Regional Council.

Figure 4 – Route Performance Standards

| | Core Routes | Local Routes | MetroLink / Express | MetroX | Community Urban | Community Rural | Ferry |
|--|--------------------|---------------------|----------------------------|---------------|------------------------|------------------------|--------------|
| <u>Passenger/Hour</u> – Routes are expected to equal or exceed the following ridership targets per service hour. | | | | | | | |
| Weekday Daytime | 40 | 25 | 50* | 40* | - | - | 390* |
| Evenings/Weekends | 20 | 15 | 35* | - | - | - | 290* |
| Peak | - | - | - | - | 20 | 15 | - |
| Off-Peak | - | - | - | - | 10 | 10 | - |
| <u>Cost Recovery</u> – Routes are expected to recover the following minimum percentage of its operating cost. | | | | | | | |
| Weekdays Daytime | 55% | 40% | 50% | 50% | 30% | 30% | 50% |
| Evenings/Weekends | 35% | 35% | 30% | 30% | 20% | 20% | 30% |
| <u>Vehicle Loadings</u> – Average peak-point ridership per vehicle shall not exceed the following percentage of seating capacity. | | | | | | | |
| Peak | 125% | 125% | 125% | 125% | 125% | 125% | 100% |
| Off-Peak | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

**These Service standards apply in peak direction only.*

Figure 5 – Route Coverage Standards

| | Minimum Service Span | Minimum Headway |
|--|-----------------------|-----------------|
| <u>Core Routes</u> | | |
| Weekdays | 6am to 9am | 15 minutes |
| | 9am to 3pm | 30 minutes |
| | 3pm to 6:30pm | 15 minutes |
| | 6:30pm to 12 midnight | 30 minutes |
| Saturdays | 6am to 12 midnight | 30 minutes |
| Sun/Holidays | 7am to 11pm | 30 minutes |
| <u>Local Routes</u> | | |
| Weekdays | 6am to 9am | 30 minutes |
| | 9am to 3pm | 60 minutes |
| | 3pm to 6:30pm | 30 minutes |
| | 6:30pm to 12 midnight | 60 minutes |
| Saturdays | 6am to 6:30pm | 30 minutes |
| | 6:30pm to 12 midnight | 60 minutes |
| Sun/Holidays | 7am to 11pm | 60 minutes |
| <u>MetroLink & Urban Express Routes</u> | | |
| Weekdays | 6am to 9am | 10 – 15 minutes |
| | 9am to 3pm | 30 minutes |
| | 3pm to 6:30pm | 10 – 15 minutes |
| | 6:30pm to 12 midnight | 30 minutes |
| <u>MetroX</u> | | |
| Weekdays | 6am to 6:30pm | 30 -90 minutes |
| <u>Community Urban</u> | | |
| Weekdays | 6am to 12 midnight | 30 minutes |
| <u>Community Rural</u> | | |
| Weekdays | Peak | 60 minutes |
| | Off-Peak | 120 minutes |
| <u>Ferry</u> | | |
| Weekdays | 6:30am to 9am | 15 minutes |
| | 9am to 3pm | 30 minutes |
| | 3pm to 6:15pm | 15 minutes |
| | 6:15pm to 11:45pm | 30 minutes |
| Weekends | 6:30am to 11:45pm | 30 minutes |

3.0 Evolution of Metro Transit Service Types

Metro Transit has many different service types today that fill various roles throughout HRM. Having implemented these various service types within a large geographic service area, Metro Transit has had a wealth of experience in developing and delivering service through various models. As such, Metro Transit is in a position to share the lessons learned and help other properties when looking to implement similar services.

Metro Transit is tasked with servicing a vast area representing everything from a dense urban population to more sparsely populated rural areas. Transit staff and Regional Council have heard from the people of HRM that in this time of escalating fuel prices reasonable, economical transportation is one of the most important issues facing residents today, so much so that Halifax Regional Council has made this a council focus area and one of their top priorities moving into the future.

It is because of this public appeal Metro Transit faces increased pressure to meet the needs of the travelling public. In saying that, it is important to note due to the large service area and vast demographic and population differences through the Municipality that this is a challenging task. In 2002 Metro Transit had four services types, Conventional Fixed Route Service (consisting of 40' and 60' buses both high floor and low floor), Access-A-Bus (demand based para-transit service), Ferry service (three ferries on two routes) and Community Transit Service (area rated service paid for by the community).

Each of these services plays an important role in our transportation network and we will discuss the role and lesson learned as described below.

3.1 Conventional Bus Service

Conventional bus service provides 50 fixed routes throughout the urban service area. Metro Transit has a diverse fleet including 40' high floor vehicles, 40' accessible low floor (ALF) vehicles, 60' high floor articulated vehicles, 60' low floor articulated diesel/electric vehicles as well as 15 60' low floor articulated clean diesel buses that have just arrived in July of this year.



This fleet profile is largely based on a continued push to provide a fully accessible transit system to all who wish to use public transportation as well as the capacity to accommodate the demand of HRM residents. One thing to note as the transit industry moves to low floor accessible services is to always be aware of reduction in seat capacity that results from moving to low floor vehicles.

Metro Transit moved to a more accessible system in 2003 with the purchase of 32 ALF vehicles, and has been purchasing this way to date. However, it is during this time that Metro Transit initiated a new program with the universities to provide a universal pass to all full time students. This program is a success story for HRM and has been an asset to all universities however, due to the shift to ALF vehicles

at the time of inception Metro Transit was left with an overall decrease in seating capacity. ALF vehicles, because of the lowered body structures actually have fewer seats than a standard high floor vehicle. When replacing a high floor 48 passenger bus with a 36 passenger ALF bus there is a loss of 12 seats. When replacing 32 high floor vehicles with 32 low floor vehicles Metro Transit lost an overall 384 seats during the peak hour. During a time when ridership was rising at an unprecedented rate combined with this overall seating reduction it had a substantial impact on the service provided to our customers. It is very important when looking at vehicle replacement that planners look at more than the physical vehicle when replacing it and really investigate all aspects of the service delivery.

Based on this experience Metro Transit now reviews the service delivery and replacement strategy to compensate for these issues. Currently Metro Transit has a three year contract for 45, 60' articulated buses to augment the issues created by the loss of seating capacity coupled with the increase in rider demand. A 60' articulated ALF vehicle has a seated capacity of 55 passengers and will help to recover the overall seated capacity during the peak hours of service delivery.

When considering the future fleet profile it is important to note the goals that are to be achieved without sacrificing the operational efficiency of your service delivery.

3.2 MetroLink

MetroLink was established as part of Transport Canada's Urban Transportation Showcase Program and has been an overwhelming success in HRM. This service was established to showcase that Bus Rapid Transit (BRT) can be successful in mixed traffic conditions in smaller cities. The program saw the creation of 3 rapid transit lines, as well as the construction of two new terminals and a host of transit signal priority initiatives. The 3 MetroLink lines connect 25,000 workers to surrounding commuter areas.

The implementation of these lines was a phased approach that saw the routes 159 and 165 established in August of 2005. The route 185 followed with its service launch in February of 2006. This service was established as a premium service with upgraded infrastructure and uniquely branded vehicles.

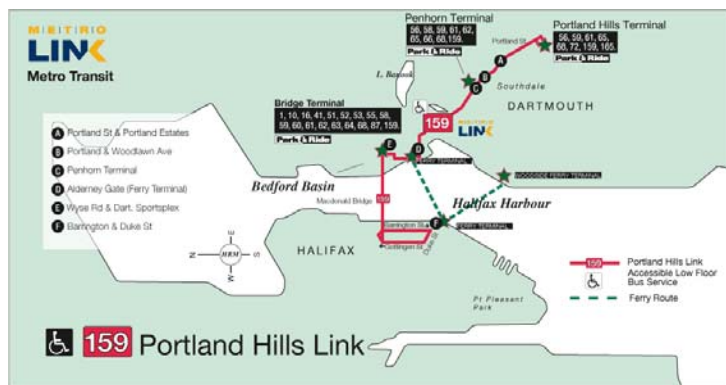
All vehicles are fully equipped 40' ALF vehicles with upgraded interior and an on-board opticom system for signal pre-emption and truncation along the corridor in which they travel. Queue-jump lanes were also installed in the MetroLink corridors. The service was established as a limited stop service to ensure time-competitiveness with the personal vehicle. In total the implementation of this service realized a 57% reduction in car travel on the corridors in which these lines were established. The reduction in car travel is shown in Figure 6.

| | | Route 159 | Route 159 | Route 165 | Route 165 | Route 185 | Route 185 |
|---|-------|-------------------|---------------------|--------------------|---------------------|-------------------|---------------------|
| | Total | Halifax Direction | Dartmouth Direction | Woodside Direction | Dartmouth Direction | Halifax Direction | Sackville Direction |
| Total car kms traveled before MetroLink (per rider) | 21.5 | 13.4 | 12.6 | 17.6 | 18.2 | 31.8 | 29.5 |
| Total car kms traveled after MetroLink (per rider) | 9.1 | 4.4 | 3.8 | 7.1 | 7.7 | 10.5 | 21.5 |
| Percentage reduction in car travel | 57% | 67% | 70% | 60% | 58% | 67% | 27% |

Figure 6 - Reduction in Vehicle – KM Travelled

When establishing a BRT system it is important to assess the supporting local transit network where the service will originate. Taking the example from Metro Transit the route 159 Portland Hills was the first line established in HRM and was tremendously successful. When this service was implemented it did not have a robust supporting local transit network. The service has a 10 minute peak hour frequency and the supporting feeder services in the area typically operated on a 30 minute frequency at best. Why is this an issue? Unless the intent is to rely mainly on costly (and never large enough) Park & Ride lots to collect riders, it is important to make sure the local feeder routes have frequencies that support bus travel to the origin terminals of such a popular service. Metro Transit’s Park & Ride lot at Portland Hills Terminal was full three days after the launch of the MetroLink service, in large part due to traveller issues with using the conventional bus service as a feeder. In the morning this is not as much of an issue since when a passenger arrives at the terminal by feeder bus they typically wait for a short time for a connecting MetroLink route since they are transferring to a high frequency service. However, in the afternoon the return trip home can be less convenient since the transfer is now from a high frequency service to a lower frequency service. Depending on the schedule of the local service, a passenger could have to wait up to 20 to 25 minutes for a connecting trip. This specific issue pushed many riders to drive their personal vehicles to the terminal rather than utilize the local transit service available in their area, resulting in significantly more demand than for Park & Ride spaces than was available or could reasonable be built. Because of this parking capacity issue Metro Transit had to increase the capacity of both MetroLink Park and Ride lots due to the increased demand.

However, in the afternoon the return trip home can be less convenient since the transfer is now from a high frequency service to a lower frequency service. Depending on the schedule of the local service, a passenger could have to wait up to 20 to 25 minutes for a connecting trip. This specific issue pushed many riders to drive their personal vehicles to the terminal rather than utilize the local transit service available in their area, resulting in significantly more demand than for Park & Ride spaces than was available or could reasonable be built. Because of this parking capacity issue Metro Transit had to increase the capacity of both MetroLink Park and Ride lots due to the increased demand.



It is very important when establishing a different service delivery method that planners look at all aspects as it relates to customer travel. Start by increasing the levels of intra-community service and create a supportive transportation system. Once this support network is in place, the premium service lines can proceed. As well, it is important when launching a new service to be prepared to add additional service as needed and have the ability to react quickly. Upon initial launch to the MetroLink service Metro Transit had a 15 minute headway but due to the popularity of the service it was increased to 10 minute to accommodate rider demand with three month of the service launch.

When implementing new services to attract choice customers (customers who have vehicles but would choose to leave them at home if a convenient alternative is available) it must be done right the first time, there are no second chances. If the goal of this service is to aggressively remove private vehicles from the road one of the best ways to do this is to be time-competitive with the personal vehicle. As well, the service has to work every time the customer uses it, which means that extensive testing is required to ensure the schedules proposed are met and the service delivery is reliable. For Metro Transit, this testing has been a large part of the instant success of new services and has lead to extremely positive public feedback, which in itself is an excellent marketing tool for the service.

A final point to consider when planning new services such as these is to consider the impacts they may have on other existing services. In Halifax it was found that ridership on the Alderney Ferry route declined after implementation of the 159 MetroLink route. This route provided a travel time to Downtown that matched that of using the ferry system, but without having to transfer from a bus to a ferry. The MetroLink system is now competing with – and shifting passengers from – the long standing ferry service. While ferries are a situation specific to a small number of transit systems in Canada, this situation could be duplicated in other cities by moving all ridership from a local route to a new service. The main point to consider is that the service must be planned holistically to ensure all parts of the system work together to create a well functioning, compatible suite of services.

3.3 MetroX

HRM is a municipality the size of Prince Edward Island and because of this the service area is vast. Based on HRM's Regional Plan, Metro Transit was tasked with providing services to communities in the rural commutershed of HRM. However, it was determined that conventional transit would not be the best service delivery model for these communities due to their distance from Downtown Halifax and their relatively low population densities. The resulting delivery model was named MetroX. This service is very similar to the MetroLink service but on a smaller scale, using lighter-duty cutaway-style transit vehicles. It travels primarily via 100-series highway corridors to provide a direct limited stop service from the outlying areas to the central business district. It is a service designed with the commuter in mind. This service is



largely focused on the peak hour services with a few trips in the mid-day and evening. There is an associated park and ride in the outlying area and a designated pick up and drop off location in the central business district. Implemented in August 2009 this service has been tremendously successful and well received in the community. Over 90% of passengers using the service had been either a car driver or passenger prior to using the service. MetroX has also been nationally recognized by the Canadian Urban Transit Association (CUTA) for service excellence.

This service would follow all the similar lessons discussed with MetroLink. However selecting a vehicle becomes critical. When establish a multi level delivery system it is important to maintain operation cost effectiveness. Establishing this service to outlying areas creates lengthy trip times and is hard to integrate into a transit network. As stated earlier it is important to look at all aspects of the service and with a rural express service like MetroX these trip times create some inefficiency when implementing and integrating in the transit network. The vehicles for this service are branded specific to the service line and are dedicated to the corridor in which they operate, and because of the nature of the service it is one directional peak oriented service. This means that one vehicle would start a trip to downtown and have to get back out to the origin to conduct another trip to be effective. Due to the distance to outlying areas such as Tantallon there are very few buses used on this service that can do more than one trip in the peak hour.

When looking at this type of service in any area it is best to look at how you can integrate the vehicle into your fleet to best utilize the available capacity of that vehicle for your transit network. For example, upon completion of a trip to the central business district if the vehicle selected has the ability to integrate into the regular service fleet the option of utilizing the service in the urban core exists as it would not be able to return to its origin before the end of the peak hour. This creates operational efficiency that would be unachievable by dedicating your fleet to one service line.



It is this experience that has caused Metro Transit to analyze all aspects of future service implementations and establish an operational plan that not only meets the needs of the customers in the outlying area but also integrates into the transit network and supports an operationally efficient transit network as Metro Transit moves into the future.

When establishing a rural express route it is important to know the area that is being serviced. Understand your catchments, demographics and population so that a proper demand analysis can be completed. Once a proper ridership estimate is conducted a vehicle specification can be determined. It is during this specification stage that planners should establish the use of the vehicle and to what extent the vehicle should be used in regular operations. Depending on the vehicle specifications for the service you may have a vehicle that could provide 20 hours of service per day that is only used for 8 hours because of a dedicated brand. Be very careful when choosing to dedicate a fleet. Be sure that it is the best interest of the transportation network as a whole.

3.4 Community Transit

Community Transit is a service to smaller communities and rural areas of HRM. This service was established by a private firm and taken over by Metro Transit in the 90's. Communities with this service until 2009 paid an area rate on their tax bill for the service and were to a large extent a community run initiative. All revenue generated went directly back into the service and the residual operational cost was applied to the tax bills of area residents. With a new tax scheme around transit instituted by Halifax Regional Council in 2009 community transit is now paid through a local transit tax shared by all residents within 1 kilometre of a local transit stop whether fixed route or community transit.

Community Transit service is one of the more difficult delivery models to deal with as there is a need to understand the communities' travel needs. By far the most difficult issue to address is the public expectation of what it means to have public transit service. In HRM residents only know the service models Metro Transit provides, so when asked what they would see in their community the common response is a Metro Transit bus running regular service. It is important to help the community understand that there is a difference between perceived "need" and "wants".

Area residents often want a big 40' transit bus running through their community every 30 minutes to a destination of their choosing. This is not always a practical alternative in a sparsely populated area. A good example is the Sambro community transit service that has been recently implemented as a pilot in HRM. The service was implemented as an all day service to the smaller community and travels quite a distance to reach the community. It is a low density community that had a regular transit bus providing service.

When providing service to smaller communities every planner should go through the area demographics, population and ridership demand to establish the need for service through ridership profiling. Although communities would like to see a conventional transit fixed route service in their area this is not always the most feasible cost effective alternative. Upon establishing the ridership demand and travel patterns of the community transit providers can establish a delivery method for the area. This method may not even be a service delivered by the public transportation provider, however could be one of many alternative delivery methods, i.e. shared taxis, dial-a-ride programs etc.



In order to deliver a program to these communities that is sustainable over time it is important to work through the program alternatives with a community group. The community group has to be involved in the process to develop the buy in to the program and help push the successful implementation. As well it allows staff of the local transit provider to show why the alternatives chosen are in the best interest of the community and would provide the best opportunity for long lasting success.

The all day service referred to above after a pilot period of a year had to be reduced to a few trips at peak hour as the service levels provided were far more substantial than what was required for the area at this time.

4.0 Future Service Development

Metro Transit will continue to move forward, implementing new service and new service types to continue expanding the use of public transit in HRM. Every new service implementation is improved over the last, as lessons continue to be learned and applied to future implementations.

Over the next few years, new services will be a mixture of new routes within existing service types and completely new service types. The following sections describe some of the specific service implementations expected over the next few years.

4.1 MetroLink

A new MetroLink route to the Clayton Park area is currently in the planning stages. Service levels are expected to be similar to the existing MetroLink routes. It will include two new facilities: a replacement for the Lacewood Transit Terminal, and a new Park & Ride facility. Figure 7 illustrates the proposed Clayton Park MetroLink route.

The separation of Lacewood Terminal and the Park & Ride facility is necessary due to spatial constraints at the potential sites for the new terminal. Also, most ridership at the existing Lacewood Terminal is based on walk-ups from adjacent higher-density residential areas and transfers. This route will serve Lacewood Terminal first, and then proceed to the Park & Ride lot before operating express to Downtown Halifax. With this configuration there will be a tangible benefit to either walking to the service or taking local

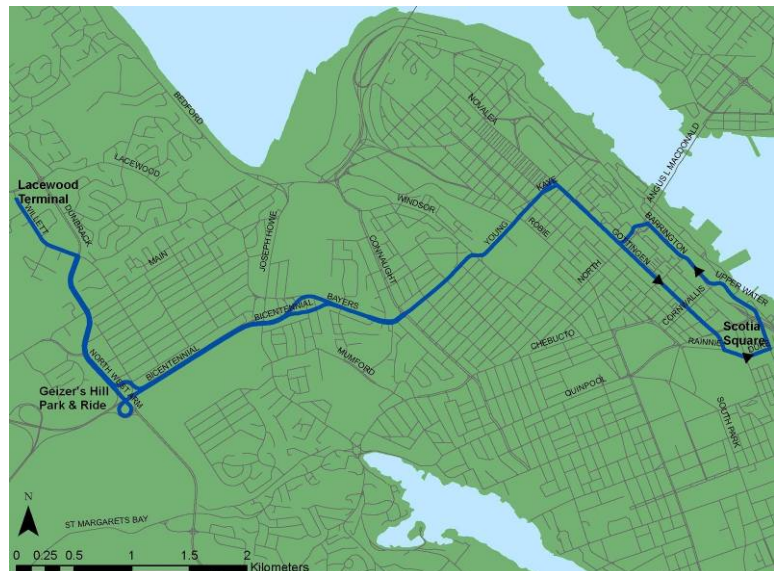


Figure 7 - Proposed Clayton Park MetroLink

transit to access the service. These passengers will get the first chance to board the bus before picking up Park & Ride passengers downstream, which during peak hours could mean the difference between having a seat to Downtown or having to stand. It is hoped that this, combined with the existing higher density development in the Lacewood Terminal area, will mean having a service that is less Park & Ride dependant than other MetroLink services.

New MetroLink vehicles will be procured for this service. Based on previous experience, it is anticipated that these will be a combination of 40' and 60' ALF vehicles that will feature MetroLink branding. The 60' vehicles will provide more capacity on the busier trips and will allow the removal of some double-head runs on existing MetroLink routes that have become necessary due to demand for specific trips. There are issues with having a separately branded sub-fleet in terms of overall fleet flexibility. However the decision at this time is to continue with the separate MetroLink branding as there is a measurable

benefit to doing so in terms of overall service attractiveness, particularly in introducing service to a new area.

Other MetroLink routes have been previously proposed. Based on past success with MetroLink, the demand to expand MetroLink service to many areas of HRM is significant. However, based on past experiences, any potential routes will have to be closely examined to ensure that MetroLink is indeed the correct model for a given situation/area. In many cases, Metro Transit has found that although MetroLink may be the most popular service option, it is in fact not the best service option for the demand in question. Similarly, there are cases where the perceived demand is less than the actual demand; these areas typically do not warrant MetroLink service strictly from a population catchment perspective.

4.2 MetroX

Following the success of the initial MetroX service launch to Tantallon, up to eight additional locations are proposed for service by MetroX routes within the next five years. These routes will serve rural commuter hubs along the Highway 101, 102/118, 103 and 107 corridors as well as the Halifax Stanfield International Airport. Figure 8 illustrates the proposed MetroX network.

Each new route will be scrutinized to ensure that the proper vehicle type is used based on ridership and expected mileage while at the same time ensuring compatibility with the existing fleet. As such, all routes are likely to either utilize a cutaway vehicle, like the ones used on the current MetroX service, or some variation of a regular transit coach. Highway coaches have been considered, and may be utilized in the future as the service grows. However at this time it is not anticipated that they will be used in the near future as they would introduce another variable to the overall fleet mix at Metro Transit.

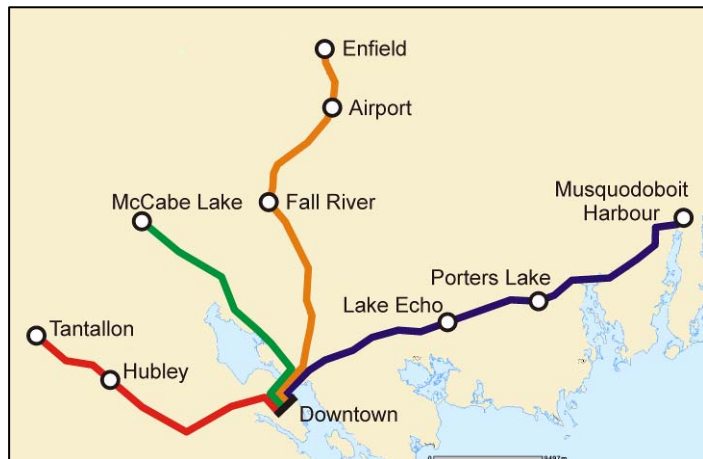


Figure 8 - Proposed MetroX Network

Service to the Halifax Stanfield International Airport will be provided under the MetroX brand. However this service is very different than most MetroX services in that it will operate for a full service day (rather than peak only). Also, the commuting patterns are expected to be the reverse of a standard pattern, with higher loads travelling outbound in the morning, and inbound in the afternoon. This route will also service the rural commuter hub of Fall River. This provides an excellent (and unfortunately rare) opportunity to have significant peak travel occur in both directions on most peak trips.

Ridership projections are still being finalized, but it is expected that the ridership will dictate using more of a conventional style transit coach rather than a cutaway vehicle. Also, since the Airport is much

further from Downtown than in most cities, this will be a very high mileage service, especially considering that buses will have to run a full service day rather than peaks only. This also leads to the conclusion that a heavier-duty transit bus would likely be more appropriate than a lighter-duty cutaway vehicle.

4.3 Urban Express

In August 2010, Metro Transit will re-introduce the Urban Express service delivery model. While this is not a new service type for Metro Transit, it has been inactive since the early 1990's when the existing Urban Express routes were converted to all-stop conventional routes.



The Urban Express is similar in concept to MetroLink: get people from their homes to Downtown as quickly as possible. However instead of relying on costly Park & Ride lots to collect passengers, Urban Express buses will circulate within a local residential catchment area and then operate express to Downtown Halifax, making limited stops along the way. In essence they are MetroLink routes with a local service segment attached at the outer end. Service will be oriented toward commuters and provided during peak hours only.

Urban Express services will not use a separately branded vehicle as MetroLink does. Instead they will use standard Metro Transit conventional buses. This allows for maximum efficiency in scheduling the service as the vehicles can be used for both Urban Express and conventional services throughout the day. It also avoids the hassles that would accompany introducing another sub-fleet to the overall fleet complement.

The first phase of this service will consist of converting five peak-only conventional routes to Urban Express by reducing the number of stops and in some cases increasing the service frequency. These routes are all either direct or indirect descendants of former Urban Express routes. The second phase will see conversion of several routes serving the Bedford/Sackville area. Later phases will see Urban Express service extended to new developments such as Bedford West/Bedford South and to other areas of HRM such as Timberlea, Dartmouth and Eastern Passage. Some Urban Express routes in the Dartmouth/Eastern Passage area will be designed to feed the two ferry terminals, ensuring that these routes support rather than erode ridership on the ferry network. There is also the potential for Urban



Figure 9 – Proposed Urban Express Network Phases 1 and 2

Express routes to expand beyond Downtown Halifax as a destination. Other high-employment destinations such as the Burnside Business Park could potentially see Urban Express service in the future. Figure 9 illustrates phases 1 and 2 of the proposed Urban Express network.

4.4 Local Rural Service

Metro Transit is now reviewing service initiatives for rural areas and is taking a planning approach to services provided to these areas, with a focus on the community. Metro Transit has set aside funds to help the communities get a service off the ground and is helping the communities identify the preferred delivery model for their area. There are identified funds in the capital budget with associated operating cost for each community but it is important to note that focusing on one community at a time is essential with a smaller staff complement.

Year one for each community is a planning year in which Metro Transit staff will meet with community residents, as well as surveying residents living in the service area. After collecting all of this data Metro Transit will analyze the data and generate a ridership demand forecast. Based on this forecast Metro Transit will recommend the appropriate service delivery model for the area. Year two will see the implementation of the service delivery model that has been determined by transit staff and the community to best fit their needs.

Most communities that fit into this category do not have a sufficient population density to warrant fixed route transit service. If a fixed route transit service were implemented, it would likely be reviewed after the standard two year operating period and then removed due to not meeting service standards for ridership. This is obviously not a good solution to meet the transportation needs of these communities. However at the outset of the planning stage fixed-route bus service may be what residents want and believe they need, simply because it is the typical service delivery model they see in urban areas. Alternative delivery models are intended to bridge that gap and offer travel modes that require fewer riders to be sustainable. Examples of these alternative models are shared-ride taxis, vanpool, dial-a-ride service, and subsidized taxis.

During the implementation of the Lucasville service Metro Transit will be planning the service for the next rural area requesting service, and start the process all over again. Metro Transit has as part of the five year capital plan assessments planned for three rural areas of HRM: Lucasville, Cow Bay and Lawrencetown.

4.5 Conventional Bus Service

While the service models described above all have their place and purpose in a transit system, it is important to not forget about the conventional route system. In HRM, the conventional system carries the majority of Metro Transit's ridership and is likely to continue doing so for the foreseeable future.

Especially when dealing with "supplementary" service delivery models such as MetroLink or Urban Express, it is important that the conventional system continue to grow along with these other models and not fall by the wayside. This can be a difficult challenge, especially given that modes such as MetroLink and MetroX can garner significantly more attention from the media, politicians and the public

than the conventional system. This is exemplified by the relatively extensive media attention given to a new MetroX or MetroLink launch versus the virtually non-existent attention given to the launch of a new conventional route, even if the conventional route may attract more ridership.

In order for Metro Transit to continue growing ridership and moving toward modal split targets set out in the Regional Plan, it will be imperative that the conventional system receives the attention and resources it requires. This will allow the conventional service to expand to newly developed areas as HRM grows and to improve services on existing routes as warranted. While the other service types discussed in this paper will help to grow overall ridership, a significant portion of ridership growth is still likely to come from the conventional system.

5.0 Conclusion

There are many issues and concerns that arise through varying service delivery models in a public transit fleet and none more prevalent than the culture shift needed for the community and your politicians. As stated earlier, residents of the areas of implementation expect a certain type and level of service and the only way to be successful upon implementation is to ensure the community and politicians know that the proposed service for their area is the best fit, and sustainable over time. The only way to overcome this challenge is through extensive engagement of the public and politicians. So, consult, consult, and consult. Meet with local groups explain the procedures planners use, explain the logic and process you go through to reach the decision and involve them in that process. Keeping the public engaged and allowing them to be a part of the process will attain the buy in upon implementation and having the public on side with decisions made will bring the politicians on board.

Always take the time to do the proper analysis of the proposed services. When planning the route the vehicle acquisition for the service should be the last step not the first. Identify your population in terms of demographics, land uses, and traveller patterns. A good way to do this is through surveying. With today's technology and its accessibility to residents we have found on-line surveying to be the most effective. When conducting surveying of HRM for Metro Transit 5-Year Strategic Operations Plan the expectation was that Metro Transit would receive upwards of 1,000 responses, based on our history of response rates. However, utilizing the internet surveying technology and offering up small prizes we were able to attain a statistically valid response of more than 9,000 residents. The information you gain from this type of response is invaluable and can take the service you implement to a new level when you gain the knowledge of the communities wants, needs and travel patterns. Once this information is acquired it can be overlaid with current data and travel patterns to establish a ridership profile. By using these profiles planners have the ability then to design routes, schedules and frequency of service. This schedule is what will drive the vehicle chosen for the service. Distance of travel throughout the day, passengers travelling each day/trip, and route of travel are all important aspects for vehicle specification. Network fit comes with this part of the process and is just as important. Analyze the use of the vehicle, the operational cost of the vehicle and how it can integrate into the transportation network.

The decision to provide an alternative delivery model is made after all the pieces have been evaluated. The decision to dedicate a fleet is not something to take lightly it is important to look at the network fit as a whole and how to best use the vehicle. In 2010 vehicles for public transportation are expensive and are built to run full service days. If the decision is to provide a dedicated fleet on a day to day service properties should look to utilize the vehicles chosen to the best of there ability to provide the most operationally efficient and effective service to the public.

Lastly, when considering service implementation of any type always have performance assessment criteria. Metro Transit has Regional Council-approved service standards to which all services provided are measured (Figure 4 & 5). Politically approved service standards provide guiding principles to transit properties in which to hold all services provided accountable. Standards give the ability for the transit property to market the information to communities prior, during and after implementation and allow analysis and defensible positions to be represented when recommending service implementations or adjustments to specific routes.