HALIFAX
REGIONAL MUNICIPALITY

PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 10.1.3

Halifax Regional Council
April 1, 2008

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:

Dan English, Chief Administrative Officer

Wayne Anstey, Deputy Chief Administrative Officer - Operations

DATE: March 20, 2008

SUBJECT: **Park & Ride, Express and Rural Transit Services Study**

ORIGIN

At the January 16, 2008 meeting of the Regional Plan Advisory Committee, the following motion was passed:

> **MOVED by Ms. Grant, seconded by Mr. Pettipas, that the Committee recommend the HRM Regional Transit Plan be forwarded to Council. MOTION PUT AND PASSED.**

RECOMMENDATION

It is recommended that Halifax Regional Council approve in principle the Park & Ride, Express and Rural Transportation Service Study.

BACKGROUND

The Park & Ride, Express and Rural Transportation Service Study is one of the Transportation Functional Plan deliverables promised in the HRM Regional Plan. Map 7 in the Plan shows the establishment transit service outside the current transit service area. The map indicates two types of transit service: Express Bus and Rural Bus.

The objective of the Park & Ride, Express and Rural Transportation Service Study was to develop a preliminary operating plan for Express Bus in rural areas, and to develop a "toolkit" with which a variety of Rural Bus services could be explored and developed in consultation with individual communities through the visioning process.

DISCUSSION

The Park & Ride, Express and Rural Transportation Service Study was conducted by Entra Consultants of Markham, Ontario and was steered by an committee that consisted of HRM staff from Infrastructure & Asset Management and Transportation & Public Works, along with a representative from the Province's Community Transportation Assistance Program. The study was completed in January, 2008 and presented to the Regional Plan Advisory Committee at its February 20, 2008 meeting. The Final Report's Executive Summary is included as Attachment One. Full versions of the Phase 1 and Phase 2 studies are available through the Strategic Transportation Planning office and will be posted on the HRM website if the documents are approved in principle.

If the study is adopted, funding approved in the 2006-07 Capital Budget (CMU00973 - Rural Express Transit) will be used to purchase eight rural transit vehicles and begin development of park-and-ride lots on Highway 103 at exits four (Hubley) and five (Tantallon) as recommended in the report. A target date has been set as November, 2008 for operation of the service.

BUDGET IMPLICATIONS

There are no immediate budget implications. Adoption of this report in principle will allow staff to develop an implementation plan and present components of that plan for approval of Regional Council through the normal budgeting process.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

Halifax Regional Council may choose not to adopt, in principle, the Park & Ride, Express and Rural Transportation Services Study.

ATTACHMENTS

Attachment One: Park & Ride, Express and Rural Transportation Study: Executive Summary

A copy of this report can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: _____
Dave McCusker, P.Eng., Manager, Strategic Transportation Planning 490-6696

Financial Approval by: _____
Catherine Sanderson, Senior Manager, Financial Services, 490-1562

Report Approved by: _____
Cathie O'Toole, Director Infrastructure & Asset Management, 490-4825

Report Approved by: _____
Mike Labrecque, P.Eng., Director, Transportation and Public Works, 490-4855

Halifax Regional Municipality (HRM)

HRM Regional Transit Plan – Park & Ride, Express and Rural Transportation Services

Executive Summary

The Halifax Regional Municipality (HRM) Regional Transit Plan establishes the direction for express services in the suburban and rural areas of the HRM. The components of these services include park and ride facilities, vehicle sharing, increased Metro Transit coverage (including an expansion of MetroLink bus rapid transit) which will occur in conjunction with an improved road transportation network and an active transportation plan for modes that are an alternate to single-occupant vehicle transportation. This plan will be used to develop a comprehensive transportation master plan for the HRM.

This study was divided into two phases. The Phase 1 study assessed the needs and characteristics for rural express service in the key corridors identified in the regional plan, and Phase 2 study worked to develop a planning guide for the communities to assess the need for local service and connections to the express services, and assist regional staff in the planning and development of these community-specific services.

1. Phase 1 Study

This Phase 1 study builds on the recommendations of the regional transportation plan for express services in the principal highway corridors and identifies communities that are best suited to express services, establishes service performance and design and monitoring standards for these services, as well as an implementation plan for each corridor service. These services will link with Metro Transit services at transit terminals providing connections to the regional centre.

The highway corridors assessed in the phase 1 study are those identified in the regional plan:

- Highway 103, which extends from the regional centre to Timberlea, Hubley, Tantallon and Upper Tantallon
- Highway 107, which extends from the regional centre to Preston, Lake Echo, Porters Lake and Musquodoboit Harbour
- Highway 118/102, which extends from the regional centre to Fall River, Halifax International Airport and Enfield.

1.1 Community Review

Residents in each of the corridors were surveyed about existing travel patterns and their preferences for potential transit services. This information was used to identify the service features for each of the three corridors. The respondents typically travel to the regional centre for work, with most commuters traveling alone in their own vehicle. Responses were consistent in terms of preferences for higher travel speeds to the regional centre, in addition to service reliability and high frequency in the AM and PM peak travel periods (approximately 6:00 to 9:00 AM and 3:00 to 6:00 PM, respectively).

1.2 Experience of Others

To assist in developing the transit strategy, case studies of relevant North American were examined in terms of community and service characteristics. This complemented the survey findings by providing innovative examples of vehicle selection, fares, business organization and passenger amenities.

1.2.1 Service Delivery

Service Frequency

Many of the case study systems operate similar services – each operate primarily in the peak direction, with trips designed to arrive in the peak commuting times, between 7:30a.m. and 9:00a.m., and depart in a similar timeframe in the afternoon – between 4:00p.m.and 6:00p.m.

Travel Time

Trip times vary with distance of course, but the typical drive times range from 60 to 90 minutes to the furthest end of the route.

Vehicle Type

Most of the cases examined use highway coaches, but urban transit buses and small community buses are also used.

1.2.2 Fares

Most systems use a zone-based fare by distance policy. Services that offer local travel within the communities (anticipated as part of the Community Service design) offer local fares comparable to transit fares.

None of the cases examined offer return trip discounts, but virtually all offer 10-ride discounts ranging from 10 to 20 percent, and most offer a monthly pass with a multiple of approximately 40 times the discounted ticket price.

Few offer concession discounts to seniors or students.

1.2.3 Business Organization

Most of the cases examined are controlled and planned by an upper tier government reflecting the regional nature of the services and the need in some cases for coordination of different transit agencies.

Virtually all of the cases use contract operators for service delivery, aligning with the growing practice to provide all transit services this way. Particularly in the US, contract operations are very common.

1.2.4 Other Features

Passenger Service and Amenities

Given the nature of the services, most systems offer amenities geared to the commuter, sometimes restricting services to commuters only.

Accommodations for food and drink are inconsistent, with some service prohibiting food and drink, and other permitting it in sealed containers. No specific information on enforcement practice is available for those that prohibit food and drink. Most, but not all, systems prohibit luggage, large packages and bicycles on peak services.

Guaranteed Ride Home

Large centres in the US typically offer a Guaranteed Ride Home program to supplement their services. For example, in the Washington DC area, this is coordinated by Commuter Connections, a service coordinated by the Metropolitan Washington Council of Governments.

1.3 Service Standards and Performance Indicators

For each of the service corridors, a specific strategy has been proposed, incorporating service standards for service frequency, travel time, bus stop locations, accessibility and vehicle capacity.

1.3.1 Service Frequency

Basic corridor service should comprise a minimum of nine trips comprising:

- three AM peak inbound trips timed to meet specific corridor needs;
- three PM peak outbound trips timed to meet corridor requirements;
- one late PM outbound trip following the PM peak trips; and
- one inbound and 1 outbound trip during the midday period.

1.3.2 Travel Time

Routes should be designed to provide a service trip within approximately 10 percent of the travel time for the similar trip made by auto. This measurement should take into account door-to-door travel time, and make allowance for parking as a time cost in the auto trip.

1.3.3 Stop Locations

Stops should not be introduced if the additional travel time jeopardizes the travel time objectives. Where possible, stops should be served by separate branch routes, to maximize the direct routing opportunities.

1.3.4 Vehicle Capacity

RECOMMENDED STANDARD

For both passenger comfort and safety, the objective of the service is to provide a seated trip for all passengers, but occasional standees may not be avoidable, based on daily service and ridership patterns.

1.4 Performance Indicators

For service monitoring, performance indicators are proposed to maintain an effective and efficient service. The indicators include ridership tracking and operating costs, which will be examined using a combination of standards by corridor and by averages of the overall express service. A low cost approach to data collection will facilitate service monitoring.

Effective monitoring of the service is crucial to maintaining effective and attractive services that meet customer's needs. As longer distance express services, the performance evaluation must consider the low turnover and long distance trips.

Basic indicators should include:

- ridership, tracking period-over-period change, monitored monthly and annually;
- ridership by stop, assessing the relative performance of stop locations; and

- cost per passenger-kilometre.

Cost per passenger-kilometre is recommended because it takes into account the longer distance trips with lower passenger turnover.

ENTRA recommends that a combination of both average in individual corridor performance be used for monitoring– an average calculation for the three corridors combined, with a single threshold calculation, combined with a minimum threshold for each corridor or route segment.

The recommended average threshold for all segments and corridors combined, is $0.75 per passenger-kilometre, with a minimum for any segment or corridor of 2 times this amount, or $1.50 per passenger kilometre.

1.5 Vehicle Guidelines

1.5.1 Vehicle Capacity and Size

Vehicle capacity and size is an important consideration, and for passenger accommodation and comfort and operational efficiency. Whenever additional capacity is required, HRM and Metro Transit staff should carefully consider the demand pattern based on desired inbound arrival times and outbound departure times. If there are true surges in demand, a larger capacity vehicle could be appropriate. If the demand pattern indicates a desire for different and additional arrival or departure times, then additional trips would be more appropriate. In some cases, both responses may be appropriate, for example, providing additional capacity with a larger vehicle for a popular trip time, but also adding an additional trip with a smaller vehicle to accommodate a wider range of travel demands.

1.5.2 Passenger Amenities

An important element in the marketing of this service is the passenger amenities provided to make the trip more comfortable and convenient, and in part, to justify the higher fare.

Most amenities did not rank high on the scale of importance in the decision to use transit, however, a few basic amenities are known to be attractive to commuter passengers and can be provided at relatively low cost. Accordingly, all buses should include:

- high-back commuter seats, for increased comfort and safety at highway speeds;
- upgraded suspension, and larger wheels, where available, for increased passenger comfort; and

- footrests, seatback tables and overhead luggage racks, for passenger convenience.

1.5.3 Accessibility

Accessibility to people in wheelchairs, using mobility aids or with other mobility requirements is an important aspect of the rural express service. However, cost and operational efficiency are also considerations, and there is a significant difference in both areas between low-floor vehicles and lift-equipped vehicles.

Based on the survey results from this study, there appears to be little requirement for accessibility as long as the service remains primarily commuter–oriented. On this basis, the recommendation for the initial vehicle is to achieve accessibility with original equipment manufacturers or after-market lift equipment on the vehicle. On-going monitoring will indicate when staff should consider acquiring low-floor vehicles.

1.6 Ridership Methodology

The demand for the service was estimated using data from the HRM regarding population projection, place of work and residence, existing travel patterns in addition to Metro Transit experience and transit industry standards. These data were used to establish overall travel patterns, then conservative modal share rate, ranging from 3 percent to 5 percent were used to establish ridership ranges. These data allowed ridership projections for different periods of the day and relate to each proposed park-and-ride location.

The Highway 103 corridor shows the best potential in the short-term to support the proposed service, but each of the corridors demonstrates sufficient potential to support a minimum level of service in the short-term.

1.7 Corridor Service Plans

The express service design in the corridors will be oriented to meet the needs of the daily commuter, working daytime hours and traveling into the regional centre. Transfers to Metro Transit at terminal locations along the corridor will accommodate demand for workers not destined to the regional centre but still require daily travel outbound from the rural and suburban areas in the AM peak travel period and, conversely inbound travel during the PM peak period.

The initial service frequencies are shown in the following table:

Highway 103	AM Peak	Three trips arriving Halifax in the period from 7:30a.m.- 8:30a.m. no reverse trips
	Midday	One-hour headway in both directions
	PM Peak	30-minute headway outbound no reverse trips
	Evening	Min. 1 outbound trip
Highway 118/102	AM Peak	Same as 103
	Midday	Same as 103
	PM Peak	Same as 103
	Evening	Min. one outbound trip
Highway 107	All Day	Two-hour headway in both directions

These initial frequencies will be improved based on the demand for additional service. Routes have also been created to accommodate additional demand by combining routes to reduce transfers and accommodate travel patterns that may vary from service implementation.

Stop location were developed based on the potential for park-and-ride locations. The following table outlines the location, approximate number of parking spaces for the short- and long-term and the approximate long-term cost of the facility.

Corridor	Location	Parking Spaces		Approximate Long-term Cost (exc. land)
		Short-term	Long-term	
Hwy 103	Tantallon/St. Margaret's Bay Road	10	10	80,000
	Hwy 103 at Exit 5	75	250	2,000,000
	Timberlea on St. Margaret's Bay Rd.	10	10	80,000
	Highway 103 at Exit 4	50	100	800,000
	Highway 103 at Exit 3	75	125	1,000,000
Hwy 107	Musquodoboit, near arena	25	50	400,000

Corridor	Location	Parking Spaces		Approximate Long-term Cost (exc. land)
		Short-term	Long-term	
	Porter's Lake commercial area	10	10	80,000
	Hwy 107 at exit 20	25	50	400,000
	Hwy 107 at exit 18	50	100	800,000
Hwy 102	Enfield, in community	25	100	800,000
	Airport	-	-	
	Fall River commercial area	10	10	80,000
	Hwy 102 at Exit 5	50	100	800,000

1.8 Fares

The recommended fares for the proposed service are a two-zone fare by distance in each corridor, with a zone boundary at a location determined by population distribution and stop locations. The fares will be the same for all corridors and will be set at a premium over Metro Transit's fares. Free transfers will be provided for passengers transferring to conventional Metro Transit services, but keeping with current Metro policy, a 50-cent premium will be charged to transfer to MetroLink. The discount offered on children's and senior's fares would be at a discount comparable to Metro Transit's, as would monthly passes. The fare collection technology will also be the same for the express service as Metro Transit's.

Passenger Class	One Zone Cash Fare	Two Zone Cash Fare	20 Ticket Price	Unit Ticket Price	Ticket Discount to Cash	Monthly Voyageur One Zone Pass Price	B/E No. Monthly Rides to Cash
Adult	$3.50	$7.00	$50.00	$2.50	28%	$105.00	30.0
Student	$3.50	$7.00	$50.00	$2.50	28%	$105.00	30.0
Child/Senior	$2.75	$5.50	$40.00	$2.00	27%	$82.00	30.0

An alternative fare is considered with riders paying the appropriate one- or two-zone fare in peak periods, when routes are dedicated to one-zone and two-zone,

and in off-peak periods, where single route branches serve both zones, fares would reflect the lower single zone fare only. This would simplify fare collection and provide a concession to the longer distance rider since their trip is lengthened by the service to the inner zone stops.

1.9 Implementation Plans

The Highway 103 corridor service is the recommended first stage of implementation based on the potential for ridership. Implementation will continue to be staged on a single corridor basis based on the effectiveness of the initial implementation. Staging service implementation will allow for manageable service growth by offering flexibility to respond to changes of ridership projections. Services will be implemented at the initial service frequencies.

Branches of routes will be implemented to ensure coverage to the furthest-reaching point in the highway corridor without sacrificing the trip time that it takes to reach the regional centre.

2. Phase 2 Study

The second phase of this study involved the creation of a planning guide for rural and small community services, to form part of a supporting network for the corridor express service..

The Rural Transit Planning Guidelines booklet was created as a framework for transit service design for rural municipalities in the Halifax Regional Municipality. The guidelines have been created for staff in these municipalities as a means of conceptualizing a service that is concurrent with Metro Transit services.

Currently, Metro Transit provides service in the regional centre with bus rapid transit services along corridors extending from the centre into major commuting areas. Transfer terminals offer multi-modal connections with Metro services integrating facilities such as park and ride, passenger drop off and bike racks.

The intent of these guidelines is to create effective and efficient services that could either connect with Metro services or operate within a rural community area.

The guidelines have established a process for service design and costing, which follows the following steps:

- Step 1 - Who will use this service?
- Step 2 - Where do people in my community want to travel?

- Step 3 - What service design would best serve my community?
- Step 4 - What vehicle type is most appropriate for my community?
- Step 5 - What are the capital costs for this service?
- Step 6 - What are the annual operating costs for this service?
- Step 7 - Budget summary.

Worksheets that correspond to these steps have been included in the guidelines and sample calculations have been appended to illustrate an example through a fictional community. Case studies of innovative North American rural transit practices have also been appended.

Finally, a glossary of transit and planning terms closes the document, providing the relevant background needed for transit service conceptualization.