

**Community Planning & Economic Development Standing Committee  
November 14, 2013**

**TO:** Chair and Members of Community Planning & Economic Development  
Standing Committee

**SUBMITTED BY:** Original Signed by:  
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Jane Fraser, Director, Planning & Infrastructure

**DATE:** November 4, 2013

**SUBJECT:** Mainland Halifax North – Bedford Corridor Transportation and  
Wastewater Servicing Strategy

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**ORIGIN**

At the Feb. 28, 2012, meeting, Regional Council adopted the recommendation of staff and this Committee:

1. That a servicing strategy be initiated for the Bedford - Mainland Halifax North Corridor to estimate transportation and wastewater services upgrades needed to service future growth with associated costs and suggested means of finance; and
2. Further public consultation on all development proposals referenced in this report<sup>1</sup>, which require plan amendments, be deferred until the servicing study has been completed.

**LEGISLATIVE AUTHORITY**

Under Part VIII, Section 229, a municipal planning strategy may include:

- statements of policy regarding studies to be carried out prior to undertaking specified developments or developments in specified areas;
- the protection, use and development of lands within the Municipality; and
- municipal investment for public and private development and the coordination of public programs relating to the economic, social and physical development of the Municipality.

In accordance with Section 219, Council is required to adopt, by policy, a public participation program concerning the preparation of planning documents.

*(Recommendation on next page)*

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<sup>1</sup> The staff report presented at the February 9, 2012 meeting of the Community Planning & Economic Development Standing Committee.

## **RECOMMENDATION**

It is recommended that the Committee recommend to Regional Council:

1. That the Bedford-Halifax Mainland North Corridor Traffic Study Report (MRC, October 2013) be accepted by Council and that the findings of the study related to the capacity of the transportation network, to accommodate the low and high population scenarios, be accepted in principle as a means to proceed with development applications;
2. That an amendment to the Halifax Municipal Planning Strategy be initiated to allow for consideration of a mixed use development on a 63 acre property, adjacent to Mount St. Vincent University (“the Motherhouse lands”) and that a public meeting be scheduled to present the proposal and solicit comments; and
3. That public consultations and deliberations on all development proposals, which were held in abeyance pending completion of the wastewater and transportation studies, be resumed.

## **BACKGROUND**

At the February 9, 2012, meeting of this Committee, a staff report was presented in support of the recommendation to initiate transportation and wastewater servicing strategies. The recommendation was made in response to four development proposals to allow for increased densities; these were at Mill Cove, Birch Cove, Paper Mill Lake, the former radio transmitter site (Rockingham South) and the Sister of Charity “Motherhouse” property. The staff report, presented as Attachment A, includes a summary description and status of various development proposals received and justification for the recommendations.

Staff also recommended that further public consultations on any proposal requiring a plan amendment be deferred until the studies were completed.

### ***Deliberations and Consultations:***

Since the recommendations were adopted by Council, the following activities regarding the development proposals have taken place:

- At the March 18, 2013, meeting of Halifax and West Community Council, a stage I development agreement was approved to allow for the Rockingham South mixed use development on the east side of Dunbrack Street. The development includes a mix of approximately 48 single unit, 98 townhouse units, 828 apartment units, and commercial floor space over 55 acres;
- Southwest Properties has held three meetings with area residents to consult about its development plans for the Motherhouse lands and has submitted its most recently revised plans for review by staff;
- Waterfront Development Corporation Ltd. has held three open house sessions to give area residents an opportunity for input into the development plans for the Bedford Waterfront at Mill Cove; and

- Crombie Property Holdings Ltd. and Sobey Leased Properties Ltd., have been working with Provincial and HRM staff to transfer a water lot in Moirs Pond to public ownership. Under a proposed plan for the Mill Cove area on the Bedford waterfront, this pond would become part of a municipal park.

Submissions received from proponents of these developments are presented as Attachment B.

***The Transportation Study:***

Under the requests for proposals, the following study tasks were established:

- Review the development proposals at the five sites shown on Attachment A, along with any relevant studies related to trip generation and impact;
- Determine the trip generation characteristics of each site under two scenarios. One scenario would entail the development as proposed by the land owners and the other would be at lower suburban densities recently approved by the Municipality (the figures to be used will be supplied by HRM staff);
- For each development scenario, describe the transit measures required in accordance with the following generalized transit service characteristics: (1) a low service level which minimizes the introduction of new transit services; (2) a medium service level which introduces new routes and possibly transit facilities; and (3) a high service level which includes new high-capacity services (rail/ferry), higher-service bus transit (express buses on partially dedicated corridors), and increased conventional transit service, will make up these scenarios. The Proponent is to consult with HRM transit services in developing the transit proposals;
- Determine modal split expectations for each development/transit service level scenario and describe how the potential development sites can best contribute to the success of these scenarios, by virtue of their transit-oriented design or their geographic location;
- Describe active transportation measures which could influence trip characteristics with particular emphasis on enhancing transit ridership;
- Employ trip demand modeling to determine demands on both the roadway and transit networks. Traffic counts will be required. Consultations are to be held with HRM Regional Transportation in determining the study, boundaries, traffic count locations, modeling requirements (see Section 3.2) and modeling assumptions to be made;
- Review the Highway 102-Bayers Road Corridor Study and the need for additional roadway capacity identified in that assessment;
- Design, at a functional level, any additional roadway capacity projects needed to manage increasing demands; and
- Provide a high-level estimate of life-cycle costs for each element of roadway infrastructure or transit service needed to service each scenario for the purpose of scenario comparison. It should be recognized that some cost determination has been conducted in previous studies and these may be applied, provided they are reviewed and adjusted or updated as needed.

MRC was selected as the consultant for the study. The Bedford – Halifax Mainland North Traffic Study Report (October 2013) can be found under Planning Updates at <http://www.halifax.ca/planhrm/>

## **DISCUSSION**

The key findings are summarized in Sections 7.5 and 8.4 of the study which are presented as Attachment C.

### ***The Transportation Network and Public Transit:***

Modelling of the transportation network was done for current (2011) and future (2031) conditions. The 2031 model included the following vehicle capacity additions to the road network identified in the 2006 Regional Plan and other development-related road requirements:

- Widen Bayers Road – Highway 102 to Windsor Street
- Burnside Drive Extension – Akerley Blvd to Damascus Road (provincial responsibility)
- Highway 113 – Highway 102 to Highway 103 (provincial responsibility)
- Margeson Drive Extension – Highway 101 to Lucasville Road
- Regency Park Drive Extension – Thomas Raddall Drive to Washmill Lake Drive

Additional road network projects will be needed to add lanes for transit, high-occupancy vehicles and bicycles, to encourage shift in demand from single-occupant vehicles. Although the report evaluates specific additional improvements to the road and transit networks that are not identified by the Regional Plan, these are not to be considered recommendations but simply a demonstration of the ability to handle increased demand.

The modelling examined the impact of increasing transit service in a medium scenario (dedicated transit lanes and express transit service) and a high scenario (medium scenario plus rail or ferry) as well as status quo transit service. The table below summarizes how those transit service levels are expected to affect transit modal split (the percentage of people who choose transit to make their trip to work). Not unexpectedly, this data shows that more trips will be attracted to transit as the level of transit service increases but these increases are moderate in comparison to overall growth in new trip generation.

	TRANSIT MODAL SPLIT TO PENINSULA HALIFAX (2031)	
	Fairview Residents	Bedford Residents
Status Quo	22%	18%
Medium Transit Service	26%	22-23%
High Transit Service	26-27%	24-29%

**Notes:** 1. These numbers reflect the High Population Scenario. Values for the Low Scenario are slightly less.

2. Ranges reflect alternative elements within the transit scenarios.

The study also reached the following conclusions regarding the transportation network and transit services:

- The higher population scenario would, in the broad regional context, not have significantly more impact on the road network performance than the low scenario;
- The resulting levels of service are within acceptable ranges without need to increase the road network capacity beyond the projects listed above;
- A higher level of transit service (medium or high) is important in reducing vehicle demand so that key intersections in the study area continue to operate capably. This capability is reliant on the road network projects indicated; however, even the scenario of high transit use cannot reverse that; and
- A ferry service between Mill Cove and Downtown Halifax does not appear to be viable due to the lack of contiguity of the Cove with neighbouring areas. Commuter rail appears to have the potential to complement transit and feeder buses in the longer term, as long as density also increases along the corridor.

The key to accommodating the transportation demands from this level of development is the implementation of the road network components identified and provision of an increased level of transit service delivery. The critical element of the road network requirement is the addition of traffic lanes to Bayers Road, as identified in the Highway 102/Bayers Road corridor study.

The increased level of transit service proposed by the study consists of two alternative urban express transit routes, supported by on-street transit priority measures. The alternative routes are illustrated on pages 41 and 43 of the study, which are reproduced as Attachment D. These proposals will require further assessment and co-ordination with ongoing strategic transit service planning.

***Density and Clustering:***

The study offered the following comments regarding the impact of higher density and clustering on travel patterns:

- higher density developments, particularly when conceived as mixed use walkable projects, have the potential to support a more cost-effective transit system in the long run. From a transit perspective, they can be used to encourage less dependency on cars and more reliance on transit;
- The number of potential destinations within a specific area or neighbourhood, tends to increase with population and employment density, reducing travel distances and the need for car travel;
- Increased density tends to increase the number of transportation options available due to economies of scale; and
- Increased density tends to reduce traffic speeds, increase traffic congestion and reduce parking supply, making driving relatively less attractive relative to other transportation modes.

These findings are consistent with principles and opportunities identified by the Regional Plan to:

- Support development patterns that promote a vigorous regional economy;

- Manage development to make the most effective use of land, energy, infrastructure, public services, facilities, and consider healthy lifestyles;
- Develop integrated transportation systems that improve transit use and reduce costs through improved use of the existing transportation network and integration of settlement pattern and transportation planning;
- Promote walkable, mixed use communities where people can be more active;
- Reduce servicing costs by encouraging the right density in proposed developments and reducing the dispersion and distance between communities; and
- Reduce greenhouse gas emissions and leave more land in a natural state as less land is needed for development.

The Regional Plan targets 50% of household growth to the suburbs. These development proposals are all within the suburbs and would increase the density of development within the urban service area boundary established under the Regional Subdivision By-Law. For these reasons, staff recommends that the study be accepted and that deliberations proceed on the development proposals that have been deferred pending completion of the study.

***Cost Estimates and Financing:***

High level cost estimates for the various options are presented in Section 7.5 of the study which has been reproduced on page 13 of this report. Currently, these projects would be financed through the capital budget with possible assistance from senior levels of government, if available.

Staff has recently proposed a development charge to pay for regional transportation and transit related facilities, which could be used to pay for any of these projects in whole or in part<sup>2</sup>. At the October 29, 2013, meeting, Regional Council referred this matter back to the Committee of the Whole for further deliberation.

***Wastewater Servicing:***

As directed by the N.S. Utility & Review Board, the *Integrated Resource Plan* (October 2012, Genivar, Halcrow & XCG Consultants Ltd.) was undertaken by Halifax Water in order to define its overall program and resource needs for the next thirty years (2013 - 2043). The IRP, utilizing the output of Halifax Water's recently completed *Regional Wastewater Functional Plan*, responds to the combined requirements of regional growth, present and expected regulatory compliance and asset renewal. HRM's planning department provided a range of growth projections for use by the IRP project team.

The IRP outlined required upgrades to regional infrastructure to facilitate the growth projections. In conjunction with the infrastructure plan, Halifax Water is developing an implementation plan that includes an appropriate funding mechanism and reasonable timeline to provide the infrastructure. An application has been made to the N.S Utility & Review Board, and a hearing has been scheduled for December of this year, for enhancements to the Regional Development Charges (RDCs) to provide the required long term funding.

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<sup>2</sup> A copy of the staff report can be found at <http://www.halifax.ca/council/agendasc/131029rcAgenda.html> under item 11.4.2.

Subject to the approval of the funding increase, and establishment of a practical timeline to deliver the implementation plan, Halifax Water should be able to service the proposed developments.

Under an ideal timeline, Halifax Water would complete the above mentioned regional infrastructure upgrade implementation plan in advance of any major development activity within this broad planning area. However, in light of current development requests in the “Transmitter Lands”, the “Motherhouse Lands” and other smaller sites in this area, we have modeled our existing system and determined that the wastewater system has dry weather capacity for the approximate 5,000 person additional capacity that may be projected from these developments. Thus, they could be accommodated within our existing regional infrastructure, should HRM choose to proceed with the planning process for these developments. Please note there may be localized system upgrades required by each respective applicant in gaining access to the regional infrastructure.

At the same time it is important to note, that while this existing regional system within the Halifax area has current dry weather capacity, it does suffer from excessive wet weather flows like many of the other wastewater systems within our region. As such, during certain rain events there are combined sewer overflows (CSOs) and sanitary sewer overflows at various points along this system. Currently, Nova Scotia Environment (NSE) requires Halifax Water to report CSOs related to the Halifax Harbour Solutions system to NSE. The new regulations (or future regulations) may require the elimination or reduction of overflows, and may further restrict development activities that could increase overflow events, or allow development to occur with an appropriate management plan in place to deal with the reduction of overflows over time. The timing of these regulations, the impact on Halifax Water wastewater infrastructure requirements and the details of subsequent management plans, are not certain at this time. However, the long term vision of the IRP has developed infrastructure requirements in consideration of these anticipated regulatory requirements.

***Next Steps:***

If the staff recommendations are adopted by Regional Council, the following actions would be required for the development proposals:

- A public information meeting would be scheduled to present the development proposal for the Motherhouse lands and solicit public opinion. If no significant problems arise, negotiations would be completed and the planning documents needed to accommodate the proposal would be brought back to Halifax and West Community Council for recommendation to Regional Council. If approval is to be considered, a public hearing would then be scheduled.

Normally, staff would recommend a more thorough public participation program than that being recommended for this project. However, in this instance, acknowledgement is being given to the three public consultations already undertaken by Southwest Properties.

- The staff and committee recommendations regarding the Paper Mill Lake and Bedford Waterfront development proposals would be tabled with North West Community Council

for deliberation. The Community Council would then recommend to Regional Council whether to hold a public hearing to consider approval of the plan amendments that have been drafted for the Paper Mill Lake lands, and whether to instruct staff to proceed to draft plan amendments to implement the consultant's study recommendations for the Bedford Waterfront. A supplementary staff report will be prepared for the Community Council to address the requests by property owners within the Bedford Waterfront study area (see Attachment B).

- A staff and steering committee report regarding the Birch Cove study area would be tabled with Halifax and West Community Council. The Community Council would be requested to recommend to Regional Council whether to instruct staff to draft plan amendments to implement the consultant's study recommendations.

The supportive road infrastructure and transit service will be built into upcoming functional and operational plans and the Project Budget process, all of which are subject to future approval by Regional Council. Staff accepts that a transit service level similar in concept to the medium transit scenario, is appropriate for areas such as this that have the potential to generate high transit demand and is necessary to moderate increased demand on the roadway network. The supportive road network capacity is identified in the current Road Network Functional Plan and some elements appear in the five-year Project Budget.

### **FINANCIAL IMPLICATIONS**

There are no budgetary immediate implications associated with the recommendations of this report. Future infrastructure and service investments discussed in this report will be dealt with through the normal Project Budget process.

### **COMMUNITY ENGAGEMENT**

A public meeting was held for the Paper Mill Lake plan amendment request and a series of three public meetings were held for each of the Bedford Waterfront and Birch Cove Waterfront design studies. Further information regarding the Paper Mill Lake proposal, meeting minutes and public comments received, can be made available upon request. Further information regarding the Bedford Waterfront and Birch Cove Waterfront design studies can be found at:

<http://www.halifax.ca/VisionHRM/BedfordWaterfront/index.html> and  
<http://www.halifax.ca/regionalplanning/WesternShoreBedfordBasin.html>



## **ENVIRONMENTAL IMPLICATIONS**

These projects offer opportunities to increase the density of development within the urban service area boundary, which could potentially further opportunities identified by the Regional Plan to manage development, to make the more effective use of energy and reduce greenhouse gas emissions and leave more land in a natural state, as less land is needed for development.

## **ALTERNATIVES**

This committee could recommend that Regional Council:

1. Adopt the staff recommendations to accept the Bedford-Halifax Mainland North Corridor Traffic Study Report (MRC, October 2013) for consideration in planning future transportation improvements; initiate a plan amendment process for the Motherhouse lands; and continue consultation processes and deliberations for the other development proposals that were deferred.
2. Defer further consideration of all of these development proposals until the Regional Plan review has been completed. This option would be appropriate if the Committee is of the opinion that Council should first deliberate on the broader regional direction regarding preferred growth patterns.

Numerous submissions have been received recommending that HRM should increase the target currently established for the Regional Centre from 25% to as much as 50% of new housing starts. If this option is preferred, approval of these projects, or similar projects which increase development potential outside the regional centre, would make this objective more difficult to achieve. The more likely policy approach would be to discourage further development outside the Regional Centre while creating incentives for more development within the Centre.

Staff would not recommend this option as projects such as these, which intensify development within the established urban service boundaries, can further principles and opportunities identified by the Regional Plan.

3. Defer further consideration of these proposals until the Utility & Review Board has concluded hearings and rendered a decision regarding the application by Halifax Water for growth related development charges for water and wastewater services. The decision from the NSUARB may impact Halifax Water's ability to fund growth related projects at current projected timelines.

Staff does not support this option as there is no evident advantage as growth will have to be accommodated in any event. More importantly, HRM should take the lead in deciding where growth should be supported.

**ATTACHMENTS**

- Attachment A: Staff Report Re: Mainland Halifax North – Bedford Corridor Transportation Study, dated January 12, 2012.
- Attachment B: Submissions received from development proponents
- Attachment C: Summary of Study Findings
- Attachment D: Alternative Transit Priority Routes

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A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/cc.html> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Paul Morgan, Planner, Planning & Infrastructure, 490-4482; David McCusker, Regional Transportation Manager, Planning & Infrastructure, 490-6696; and Kenda MacKenzie, Manager Engineering Approvals, Halifax Water, 490-5029

Original Signed by:

Report Approved by: Eddie Robar, Director, Metro Transit, 490-6720

Original Signed by

Report Approved by: Austin French, Manager, Planning Services, Planning & Infrastructure, 490-6717

Original Signed by:

Report Approved by: Jamie Hannam, Director, Engineering and Information Services, Halifax Water, 490-1584

Original Signed by:

Financial Approval by: Greg Keefe, A/ Director of Finance/CFO, 490-6308

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## Attachment C: Summary of Study Findings

### 7.5 What does all this mean?

The modelling process determined that for the afternoon peak hour, the High Population Growth Scenario resulted in 954 more person-trip “in” productions and 1452 more person-trip “in” attractions than the Low Population Growth Scenario, for the five development areas combined. Beyond these basic figures, a number of specific conclusions can be drawn from the findings.

#### *Traffic impacts*

- The volume-to-capacity ratio (v/c) on roadways represents a similar condition for both Low Population Growth and High Population for the 2031 Base Case, The high and low population Growth scenarios result in very limited difference in v/c at the network level since the total populations in both scenarios are similar.
- In addition, the implementation of transit improvements would benefit auto users; the average delay could be reduced by up to 3.9% depending upon the transit improvements.
- Under both Low and High population scenarios, total vehicle-trip (auto), total vehicle-kilometers, total vehicle-hours, and total delay in the network would be reduced with the medium and high transit service level scenarios; accordingly, total person-trip-in-transit usage would be increased with the proposed transit modes.

#### *Transit Share and Ridership*

- The medium service levels scenario with the major transit route is expected to improve transit ridership by 320 to 475 during the afternoon peak hour compared to Base Case (‘Status-Quo’).
- Under a low population growth scenario transit improvements could increase transit share from the Peninsula to Fairview Clayton Park by approximately 4.0 to 5.1% and from the Peninsula to Bedford by approximately 3.0% to 9.5%.
- Under a high population growth scenario transit improvements could increase transit share from the Peninsula to Fairview Clayton Park by approximately 3.9% to 4.7% and from the Peninsula to Bedford by approximately 3.6% to 10.6%.
- Ridership on the major transit route may be increased by providing additional stops and/or feeder routes.
- Commuter Rail is expected to add about 300 additional riders during peak hour or 0.20 to 0.25 percent total transit share compared to the medium transit scenario.

#### *Transit Trips*

- For the low population growth scenario, the medium transit service levels would increase the total transit trips by 2.4 to 2.9% and the high transit improvement scenario could provide a 3.5 to 6.9%

increase in total transit ridership. The high service level scenario with commuter rail + major transit route would provide the highest transit ridership.

- For the high population growth scenario, the medium transit improvements would increase the total transit trips by 2.63 to 3.44% and the high transit service scenario could provide about 3.80 to 6.12% increase in total transit ridership.

**So what does this all mean?**

In Section 2, for the five development proposals, it was found that the higher population scenario would, in the broad regional context, not have any significantly more impact on the road network than the low scenario, other than some additional delay on Bedford highway between Hammonds Plains Road and Southgate Drive in the southbound direction (PM peak hour). This is not surprising given the relatively minor impact on the overall regional population and dwelling increases expected over the next twenty years.

Similarly, this section presented the results of an analysis of transit performance under high and low population growth scenarios. Similar to the base case analysis presented in Section 2, while there are nearly 900 more person trips projected in the AM and PM periods for the high growth scenario, the higher population growth would not have any significantly greater impact on the road network than the lower growth scenario. Both show modest reductions in total auto-trips, total vehicle-kilometers, total vehicle-hours, and total delay in the network, as well and an increase in transit use as a result of transit improvements (both medium and high scenarios).

Notably however, an improvement in transit usage is slightly better in the high transit scenario than the medium transit scenario, but at significantly higher cost. For the high population growth scenario, the medium transit improvements would increase the total transit trips by 3% while the high transit improvement scenario would provide a marginally better 3.5 to 4.0% increase.

**Cost implications**

Following are high-order infrastructure cost estimates for each option discussed in this report.

Table 1: Infrastructure Cost Estimates			
Scenario	Start-Up Capital Costs	Notes	
Major Transit Route - Alt A (Bedford Highway/Seton/Lacewood/Dunbrack)	\$ 14,694,000	2013 estimates	
Major Transit Route - Alt B (Dunbrack)	\$6,600,000		
Ferry	\$ 35,850,000	2010 estimates per: <i>An Operational and Life Cycle Cost Analysis of Transit Service Alternatives in the Bedford-Halifax Corridor</i>	
Commuter Rail	\$ 25,850,000		
Transit–BRT (vehicles only)	\$ 9,050,000		
This amount would be added to all of the costs above, based on the scenarios described.			
<b>Note:</b> Because of the available capacity on Dunbrack, it is possible to use it as-is for the foreseeable future. There may be a desire over time to add transit priority measures; in such case, additional costs would be relatively minor.			

## 8.4 Conclusion: What it all means

This report has analyzed the transportation implications of five development proposals in the Mainland North area of Halifax and Bedford. The probable impact on traffic congestion was explored, and various ways to mitigate that impact through transit, ferry and rail were also examined. The following conclusions and strategic directions are suggested by our findings:

### 8.4.1 Not significantly worse

The analysis revealed that the slightly higher level of development currently proposed for the five sites is not likely to have a significantly worse impact on the transportation network than more conventional densities proposed by the Regional Planning Advisory Committee. That being said, on a general note, higher density developments, particularly when conceived as mixed use walkable projects, have the potential to support a more cost-effective transit system in the long run. In other words, compact projects such as these should be encouraged. From a transit perspective, they can be used to encourage less dependency on cars and more reliance on transit.

### 8.4.2 Higher-order transit can deliver more riders

The analysis also revealed that a higher order of transit that builds on Metro Transit policies for the area, including a new transit terminal in Lacewood, has significant potential to improve transit usage and dependency. This could be achieved at a reasonable cost by using a four-lane Dunbrack Street as a central transit spine from which a feeder transit system could be added.

### **8.4.3 Build on the planned Peninsula Transit Corridor**

Future study should consider the long term potential of the Dunbrack Street route, when connected to the proposed Bayers Road/Highway102 Peninsula transit corridor, to eventually permit a high-order transit corridor through the Mainland North area.

### **8.4.4 Adopt transit oriented development as a near term strategic goal**

By affirming the long term intent for such a corridor, HRM and its citizens could begin to plan now for a highly connected transit oriented district that encompasses the entire Mainland North area.

### **8.4.5 Make a choice between rail and ferry**

As demonstrated in our 2010 report, a ferry terminal at Mill Cove is constrained by a number of factors:

- The catchment area is limited by its lack of contiguity with neighbouring areas. While this could be partially mitigated by the large Mill Cove development as discussed in this report, it does not address the larger catchment area problem.
- Without a large investment in on-site parking, the ferry would require an off-site parking lot and shuttle service that imposes a time penalty on users; other modes (especially bus transit) are available and can be readily expanded at lower cost.

As a result of these constraints, which we conclude are insurmountable in the face of more cost-effective options, we recommend that a Mill Cove-Downtown ferry option as currently envisioned should be abandoned.

### **8.4.6 Plan for commuter rail as a long term strategy**

As an opportunity for further significant growth in transit ridership and modal split, the High Transit Service Level with commuter rail appears to have potential to complement conventional transit and feeder bus routes in the longer term, as long as density also increases along the corridor. More study and planning should begin that includes a commuter rail-based transportation system as part of a long term vision for Halifax Regional Municipality and beyond.