



P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 11.3.2
Halifax Regional Council
October 20, 2015

TO: Mayor Savage and Members of Halifax Regional Council
Original Signed

SUBMITTED BY: Councillor Reg Rankin, Chair, Transportation Standing Committee

DATE: October 6, 2015

SUBJECT: Commuter Rail Feasibility Study

ORIGIN

Item 9.1.3, September 24, 2015 Transportation Standing Committee meeting

LEGISLATIVE AUTHORITY

Section 6(a) of the Transportation Standing Committee's Terms of Reference states that the Committee shall review and oversee policy direction and long term funding approach to promote and encourage Transit alternatives as outlined in the Regional Plan.

RECOMMENDATION

Transportation Standing Committee recommends that Halifax Regional Council:

- (a) Accept the findings of the Commuter Rail Feasibility Study; and
- (b) Direct staff to undertake a process to integrate land use planning and transportation planning to develop a strategic plan specifically aimed at increasing the modal split of sustainable forms of transportation as per the Regional Plan;
- (c) And furthermore direct staff to continue consultation with CN in terms of receiving information on cost implications.

BACKGROUND

A staff recommendation report dated September 11, 2015 was before the Transportation Standing Committee at their September 24, 2015 meeting. The Committee passed a motion to approve the staff recommendation with the following amendment:

“And furthermore direct staff to continue consultation with CN in terms of receiving information on cost implications.”

DISCUSSION

Halifax Transit staff introduced the report to the Committee. Mr. Eddie Robar, Director Halifax Transit stated that the recommendation would allow staff to investigate how best to achieve the modal split goals as outlined in the Regional Plan.

Members of the Committee stated concern for assumptions in the report regarding the future road network noting that the data was based on certain road improvements not yet confirmed or approved by the Municipality or Province.

Committee members restated the benefits of rail to improve the transportation network in terms of frequency and reliability and were not yet convinced of the cost implications provided in the report. As a result, the Committee agreed to amend the recommendation to direct staff to continue to consult with CN in regard to cost implications as provided for in recommendation c) of this report.

The Committee also requested that staff and the consultant present the findings to Regional Council along with the Committee recommendations.

FINANCIAL IMPLICATIONS

Implications are described in the September 11, 2015 staff report.

COMMUNITY ENGAGEMENT

The Transportation Standing Committee is comprised of six elected members of Regional Council. Meetings are held on a monthly basis and are open to the public (unless otherwise indicated). Agendas, reports and minutes are available on the Halifax website.

Community Engagement is further detailed in the September 11, 2015 staff report.

ENVIRONMENTAL IMPLICATIONS

There were no implications identified.

ALTERNATIVES

There were no alternatives identified.

ATTACHMENTS

Attachment 1: Staff recommendation report dated September 11, 2015

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Andrew Reid, Legislative Assistant, 902-490-5934



P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 9.1.3
Transportation Standing Committee
September 24, 2015

TO: Chair and Members of Transportation Standing Committee
Original Signed

SUBMITTED BY: _____
Eddie Robar, Director, Halifax Transit
Original Signed

SUBMITTED BY: _____
Bob Bjerke, Chief Planner & Director, Planning and Development

DATE: September 11, 2015

SUBJECT: Commuter Rail Feasibility Study

ORIGIN

January 10, 2012 motion of Regional Council:

Moved by Councillor Rankin, seconded by Councillor Outhit that Halifax Regional Council:

1. Consider directing staff to engage a consultant through a Request for Proposals for a full feasibility analysis of Commuter Rail in the Halifax to Windsor Junction and Enfield Corridor as part of the 2012/13 budget process.
2. To appropriately engage CN / VIA Rail in participation in the study.

Approval of the 2013/2014 Capital Budget, Supplemental Report page F7, which included funding for the preparation of a commuter rail feasibility study.

LEGISLATIVE AUTHORITY

Section 69(1) of the Halifax Regional Municipality Charter provides the legislative authority for the municipality to provide a public transportation service. The following report conforms to the Charter.

RECOMMENDATION

It is recommended that the Transportation Standing Committee of Council recommend that Regional Council:

- (a) accept the findings of the Commuter Rail Feasibility Study; and

- (b) direct staff to undertake a process to integrate land use planning and transportation planning to develop a strategic plan specifically aimed at increasing the modal split of sustainable forms of transportation as per the Regional Plan.

BACKGROUND

On January 10, 2012, Regional Council directed staff to undertake a feasibility study for commuter rail in the Halifax to Windsor Junction to Enfield corridor. Halifax Transit engaged a consultant to complete this work. The consultant, CPCS, is an international management consulting firm specializing in transportation sector strategy, planning and policy. CPCS began the Commuter Rail Feasibility Study in September 2014, and it is now complete. The full study is provided as Attachment A to this report.

One of the key transportation objectives in the Regional Plan is to “Implement a sustainable transportation strategy by providing a choice of integrated and connected travel modes emphasizing public and community based transit, active transportation, carpooling and other viable alternatives to the single occupant vehicle.” The Regional Plan acknowledges that new investments in transit will be required to address emerging transportation issues, and calls for the investigation of the feasibility of new services such as rail, bus rapid transit, and expanded ferry service. The Regional Plan also sets out modal split targets. The existing transit modal split, or percentage of work trips made on public transit in Halifax, is currently 12%. The goal is to increase this modal split to 16% or more by 2031.

DISCUSSION

Scope

The objective was to produce a comprehensive study that would accurately identify the costs of implementing and operating commuter rail in Halifax. The work plan included:

- a) A review of previous commuter rail feasibility studies and other background information;
- b) An analysis of performance, physical characteristics, and usage of the existing rail corridor;
- c) An assessment of potential infrastructure and operational characteristics of a commuter rail service; and
- d) Sufficient information, including ridership projections, to determine both the operational and economic feasibility of commuter rail on the Halifax to Windsor Junction and Enfield corridor.

The study scope did include consulting with external stakeholders, including VIA Rail, CN, and WHRC (Windsor & Hantsport Rail Company). For the purposes of this study, these consultations were preliminary discussions only. CN has indicated that before proceeding with commuter rail, assumptions relating to infrastructure upgrades and track access fees would need to be verified by CN, which requires a separate analysis led by CN.

The study is not intended to be an implementation plan. A significant amount of further investigation and planning would be required prior to implementing a commuter rail service. To estimate costs, assumptions had to be made about the potential operation of commuter rail service, including factors such as fares, station locations, and fleet choices. Although the service details described in the study are intended to demonstrate a potential commuter rail service, if a service were to be initiated in Halifax, the resultant operating and infrastructure choices could vary from those described in the study.

The study is not intended to make value based judgements on whether rail is the right choice for Halifax. Although the study does briefly refer to how rail could influence municipal settlement patterns and Transit Oriented Development (TOD) it does not take into account the long term vision or growth objectives of the Municipality, nor development patterns that could occur if rail was implemented.

Approach

To be comprehensive, and to determine if there exists any alternative service model that would make commuter rail feasible, the study evaluated nine different scenarios. The scenarios included three conceptual corridors, each analysed under three different levels of investment (low, medium, and high).

In the resulting scenarios, low investment refers to minimal capital infrastructure to support rail, medium investment is considered moderate but realistic investment, and high investment refers to maximum investment in rail despite high costs. High investment would mean that the municipality encourage rail ridership at a high infrastructure cost, even at the detriment of the existing bus ridership. Although not advisable, the high investment scenario is important to show the upper threshold for ridership.

The analysis focused on three potential commuter rail operating corridors:

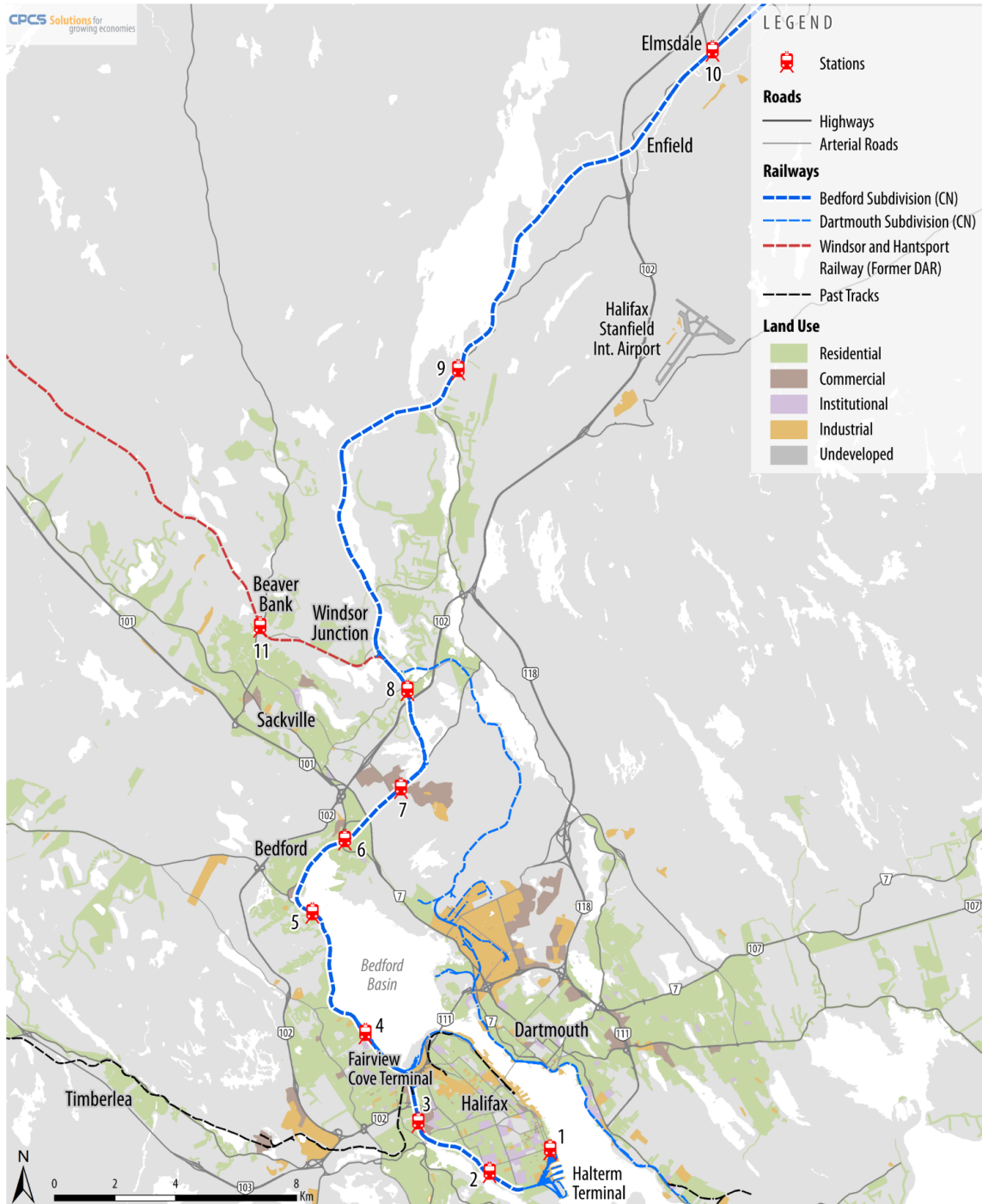
Halifax to Elmsdale: It was determined early in the study that it would not be viable to operate full peak-period service beyond Windsor Junction to Elmsdale under current conditions. There are existing freight trains originating in Dartmouth during the morning that impact the capacity of the track from Windsor Junction to Elmsdale. Operating commuter rail on this portion of track would very likely require the addition of a second main track. Construction of a second main track would be expensive and have significant environmental implications. As such, the Halifax to Elmsdale corridor is absent from a large portion of the discussion and analysis in the study because it was considered extremely cost prohibitive.

Halifax to Cobequid (Windsor Junction): Commuter rail service could physically be introduced between Halifax and Cobequid (Windsor Junction) with the addition of passing sidings and centralized traffic control in key areas. Although this would still require a large capital investment, it would not be the magnitude required for the Windsor to Elmsdale corridor because there is more capacity available on this portion of the track.

Halifax to Beaver Bank: The scope of the study was originally limited to the Halifax to Windsor Junction and Elmsdale corridor, however, during the study it was determined that there was also merit to analyzing the corridor to Beaver Bank. Commuter rail service could physically be introduced between Halifax and Beaver Bank with upgrades similar to the Halifax to Cobequid concept between Halifax and Windsor Junction. Additionally, 4.7 kilometres of mainline track to Beaver Bank would require extensive rehabilitation. However, because of the presence of existing infrastructure, these upgrades are not as costly as building entirely new track.

The analysis resulted in a list of 11 potential station locations, serving the following communities:

1. VIA Rail Station (Halifax)
2. South End
3. West End
4. Rockingham
5. Mill Cove
6. Sunnyside
7. Bedford Common
8. Cobequid
9. Wellington
10. Elmsdale
11. Beaver Bank



Six conceptual rolling stock alternatives were evaluated. Budd RDCs (Rail Diesel Cars) were selected for further analysis. It is anticipated that these vehicles will be the least expensive alternative and would be capable of meeting the anticipated ridership, and would therefore be the most likely to be financially and economically feasible.

The study assumes a basic level of service; specifically, a peak oriented service with trains running every 30 minutes during rush hours. There would also be one trip during the midday. The following table illustrates the travel time for a one way trip. The cumulative travel time presented includes a dwell time of one and half minutes at each station.

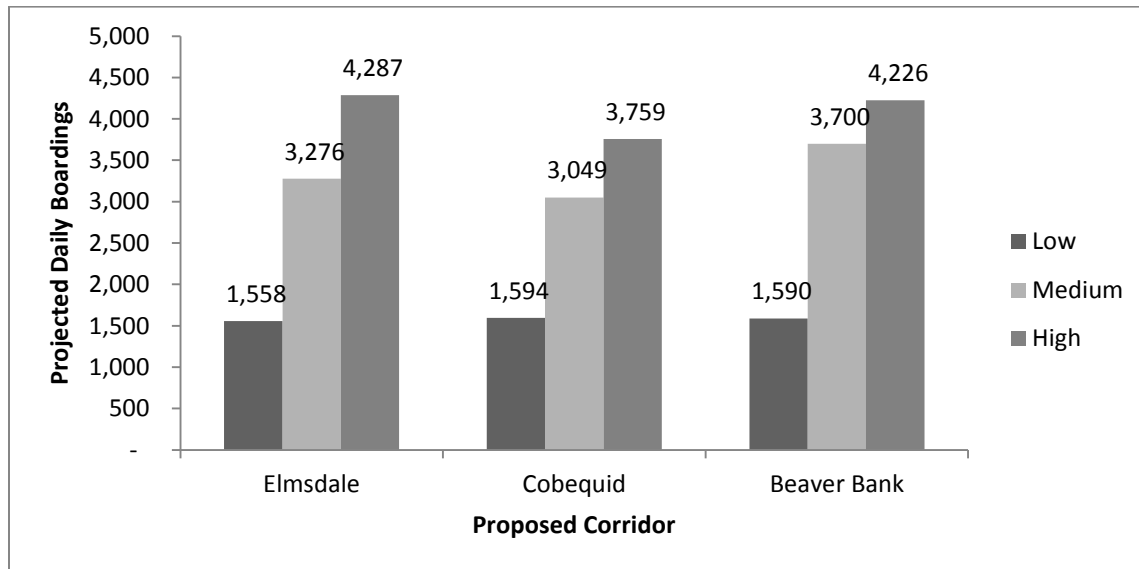
		Scenario		
		Halifax - Cobequid	Halifax - Beaver Bank	Halifax - Elmsdale
Cumulative Travel Time (in minutes)	VIA Rail Station	0	0	0
	South End	4	4	4
	West End	7	7	7
	Rockingham	12	12	12
	Mill Cove	18	18	18
	Sunnyside	22	22	22
	Bedford Common	27	27	27
	Cobequid	32	32	32
	Beaver Bank	-	41	-
	Wellington	-	-	45
	Elmsdale	-	-	58

Operational Feasibility

The technical analysis reveals that commuter rail is operationally possible along the proposed corridors. There are no apparent physical or legislative constraints that would preclude the implementation of commuter rail service in Halifax. However, capacity on the rail track significantly limits the potential for commuter rail service between Windsor Junction and Elmsdale. On the remainder of the track, infrastructure improvements, including passing sidings, crossing upgrades, signal upgrades, and new switch infrastructure would be required to minimize disruptions to freight rail service and maintain safe and efficient operations. A new maintenance depot would also be required.

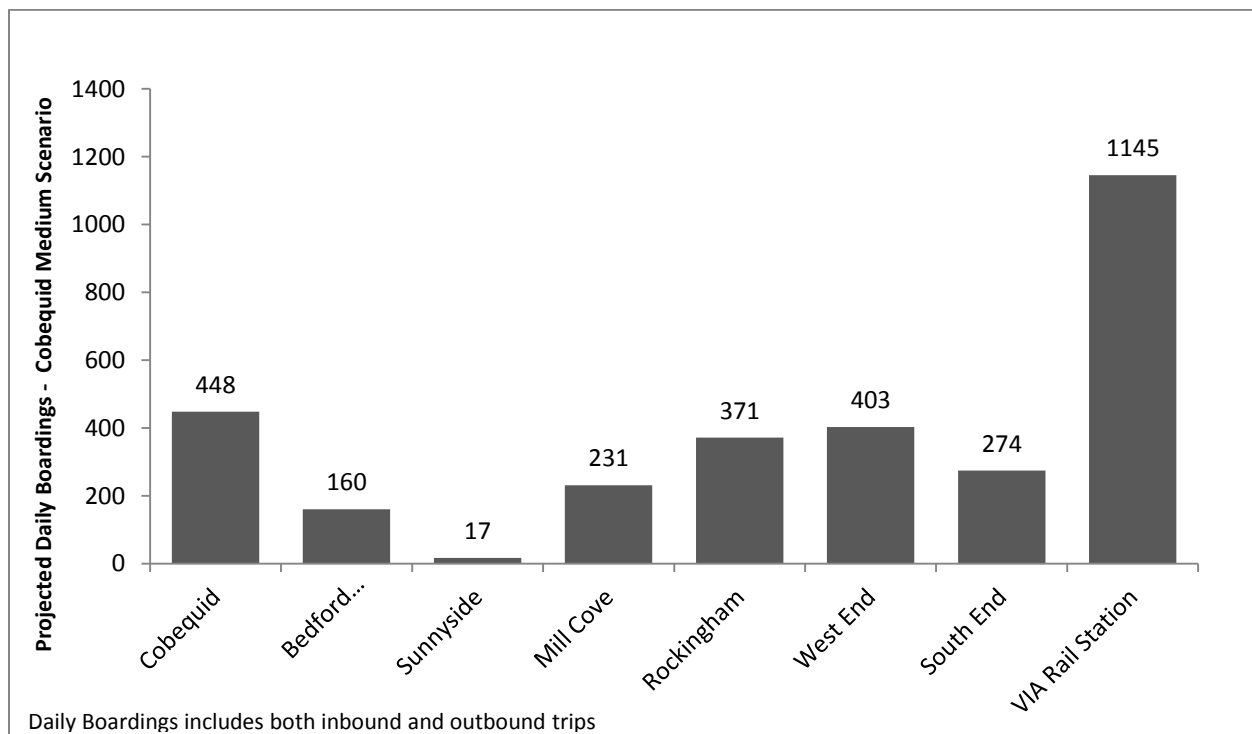
Potential Ridership

Ridership projections vary relative to the level of investment in the rail system. According to the projections, by 2031, the total ridership forecast would range from a low of 1,588 daily weekday boardings to a high of 4,287 daily weekday boardings, depending on the scenario. Weekday boardings refer to the number of passengers that board the train in any direction of the course of one day. For clarification, this is equivalent to between 794 and 2144 people using commuter rail to travel both to and from their destination.



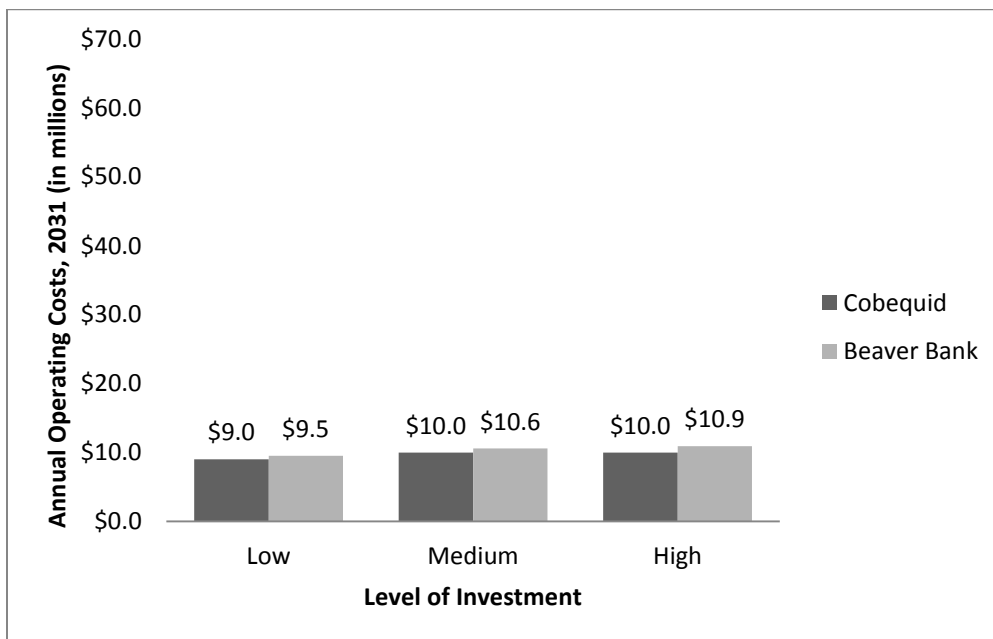
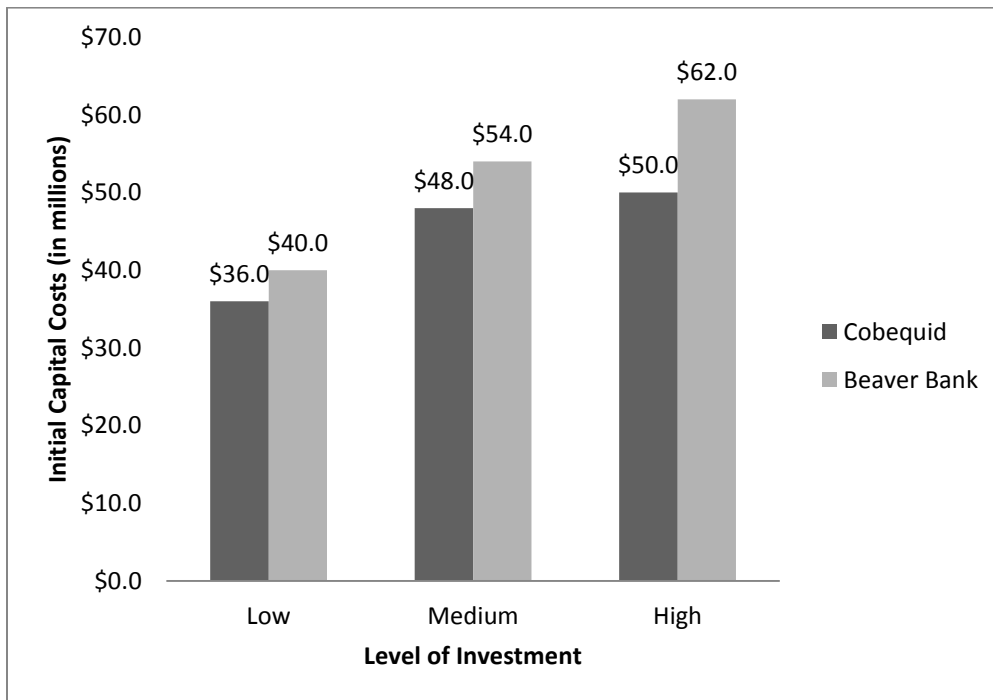
*chart shows the projected ridership for each of the nine scenarios, and is not cumulative.

The daily ridership is distributed among the eleven proposed stations. The following chart illustrates this ridership distribution for the Cobequid medium scenario. The highest number of boardings are anticipated from the VIA Rail Station (downtown Halifax); these primarily represent return trips in the pm peak. The Cobequid (Windsor Junction) station would have the highest number of passengers travelling in the inbound direction. The Bedford Common and Sunnyside stations would have the lowest number of boardings per day.

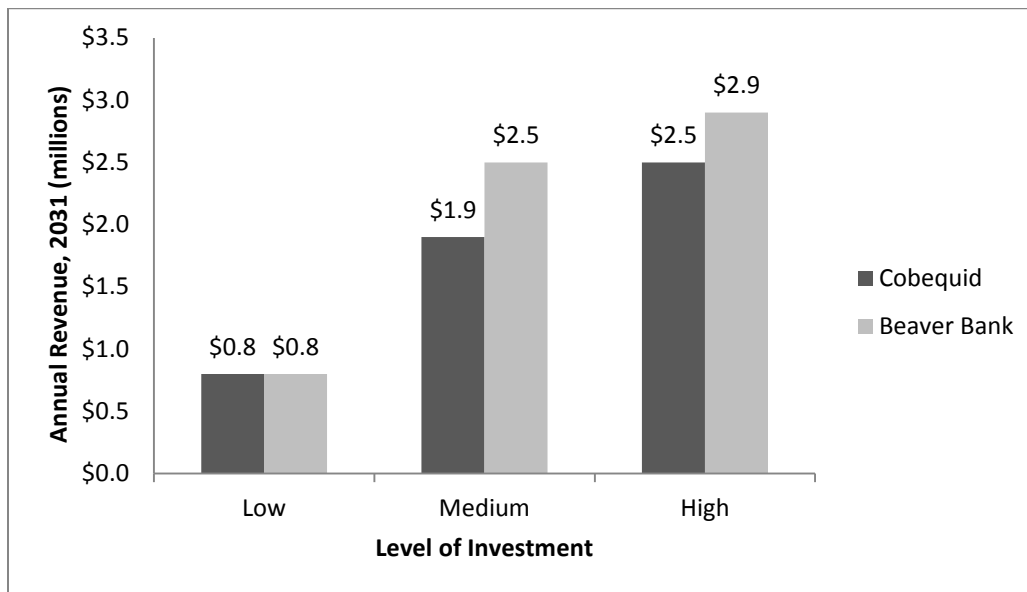


Economic and Financial Feasibility

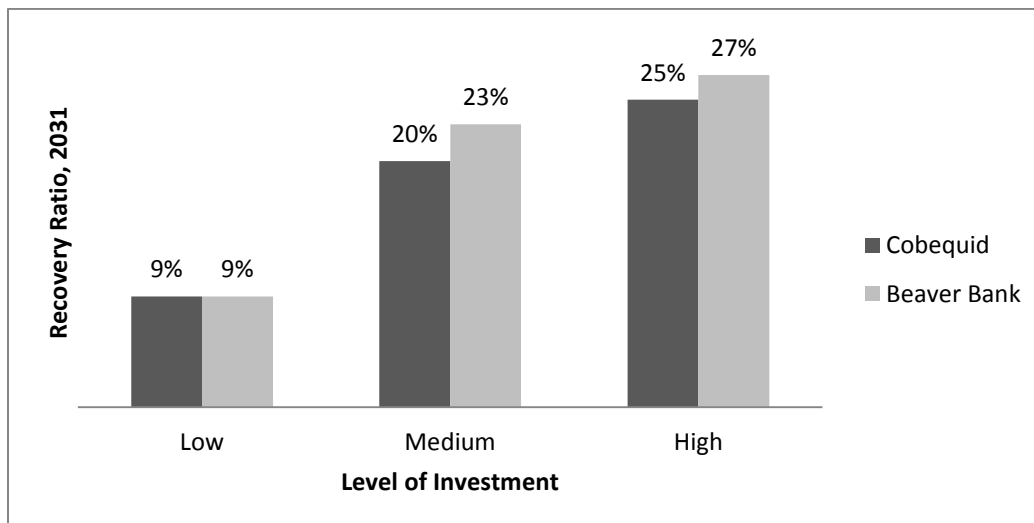
The capital costs required to establish the commuter rail system varies based on the scenario chosen, and would range from \$36 million dollars to \$62 million dollars. The annual operating costs of the system would also vary based on the scenario chosen, from \$9 million dollars to \$10.9 million dollars.



The revenue forecasts for the commuter rail system vary by scenario, and in 2031 are projected to range from \$0.8 million dollars per year to \$2.9 million dollars per year.



As a result, should a commuter rail system be operating in 2031, CPCS anticipates that it would have a cost-recovery ratio between 9% (Cobequid low scenario) and 27% (Beaver Bank high scenario).



The study concludes that from a net benefits standpoint, implementing a commuter rail system in Halifax is not economically viable. Due to the high initial capital costs, high annual operating costs, and relatively low fare revenue, all scenarios evaluated have a negative financial net present value (FNPV) and negative economic net present value (ENPV).

However the study also acknowledges the analysis is at a very early stage and that there are both upside and downside risks. The study identifies several strategies to mitigate the downside risks and acknowledges that the project may be more economically viable if some or all of the strategies are successful. Strategies to mitigate risk that were identified by CPCS include the following:

- Several growth centres identified in the Regional Plan align with proposed station locations (West End, Mill Cove, Birch Cove, Sunnyside) and there is an opportunity to encourage transit-oriented development;
- federal capital assistance programs; and
- land uplift capture and densification.

Two significant downside risks identified in the study were track access fees and higher than expected capital costs. Track access fees represent a significant portion of commuter rail operating costs (36%). For the purposes of this study, they have been estimated based on fees paid in other areas and the professional judgment of CPCS. However, these fees would ultimately need to be negotiated with CN, and could vary substantially from those proposed in the study. CN has indicated that a CN-directed independent assessment would be required to confirm the infrastructure requirements needed to establish commuter rail. The track access fees would also depend on findings of this assessment.

The study explores a number of potential opportunities to reduce costs, but even a reduction in the estimation of track access fees by 50% would not result in net positive economic benefits. The study also cautions that although there may be some opportunities to reduce costs (i.e., negotiation of lower track access fees); it is also possible that capital and/or operating costs will be higher than expected.

Comparison to Existing Transit

The Cobequid medium scenario would cost approximately \$10 million dollars in annual operating costs, and would carry approximately 3,049 passengers daily. For comparison, in the existing Halifax Transit system (including all existing routes and services), for every \$10 million dollars spent on operating costs, the service carries approximately 13,500 passengers. As such, the existing service is almost four and a half times more cost efficient than commuter rail would be. However a direct comparison between commuter rail and existing transit services is difficult. The existing passenger count includes transfers made between routes, while the commuter rail ridership assumes one complete journey to work trip.

A better comparison is today's urban express transit routes that travel to downtown Halifax (Route 31, 32, 33, 34, 35, 84, 85, and 86) which carry 3,608 passengers daily, and cost approximately \$2.3 million dollars to operate.

Comparing the cost of commuter rail to other modes of transit is best achieved by comparing the total capital and operating costs (with and without commuter rail) needed to achieve the modal split target established in the Regional Plan. The Regional Plan anticipates that the modal split will increase from 12% of home based work trips to 16% of trips by 2031. This represents an increase of 2% per year in transit ridership, compared to an increase in transit ridership of 0.6% per year needed to maintain the current modal split. This cannot be achieved by implementing commuter rail alone, and there currently is no strategy on how the modal split target will be met.

Conclusion

The Commuter Rail Feasibility Study completed by CPCS is comprehensive and meets the objectives set out for the study. The study concludes that although commuter rail in Halifax is operationally feasible, it is not economically viable at this time.

Transportation is a key issue to some of the communities around the rail corridor, including areas such as Bedford West that are experiencing development and population growth, however, the rail corridor is in a fixed location which limits the functionality of the service, both in terms of the neighbourhoods it can reasonably attract ridership from, and in terms of the downtown station, which is unfavourably located in terms of the major employment centres in the downtown.

In addition, it is clear from the ridership projections provided that implementing a commuter rail system by itself will not allow Halifax to meet the modal split target set out by the Regional Plan. Working towards

achieving the modal split target will require fully integrating land use planning with transportation to create a strategic long term plan that looks at the entire region. Other ongoing initiatives, such as the Moving Forward Together Plan, which places emphasis on increased transit ridership, and the Centre Plan, which focuses on high quality, connected, and sustainable land uses, will contribute to meeting the goals of the Regional Plan. The Commuter Rail Feasibility Study, the Moving Forward Together Plan, and the Road Network Priority Plan, are all integral components required to understand how transit can be integrated with land use to create this strategic vision.

As such, the recommendation is that following the completion of the Moving Forward Together Plan and Road Network Priority Plan, staff undertakes a process to integrate land use and transportation to develop a strategic plan for achieving the modal split target set out in the Regional Plan.

FINANCIAL IMPLICATIONS

Should Regional Council decide to pursue the implementation of commuter rail system, resources would need to be identified.

As an example, to proceed with the Cobequid medium scenario without reducing other expenditures, it would require an average increase of 24.7% for the first five years of operational service, falling gradually over time with growth in the assessment base. The impact on the average home for operating costs would be \$27 in additional tax payable, falling gradually over time with growth in the assessment base.

Assuming HRM issues bonds (for intergenerational equity purposes) and with some cost-sharing between higher levels of government; the burden of funding \$48 million of capital requirements would be reduced, but would nonetheless require a tax rate rise to fund a portion of this, in addition to the principle and interest stemming from bond issuance, holding all else equal in the long run.

There would be financial implications associated with developing a strategic plan, which can be determined should Regional Council provide direction to do so.

COMMUNITY ENGAGEMENT

A public open house was held on February 26, 2015 at the Sunnyside Mall with a panel display and slideshow of commuter rail feasibility analysis technical information. Coordinated and facilitated by CPCS, the event attracted over 300 people. Follow-up questions and answers were made available on the Halifax Transit website. If Council chooses to pursue commuter rail, a more comprehensive public consultation program may be warranted.

ENVIRONMENTAL IMPLICATIONS

There were no environmental implications identified associated with this report.

ATTACHMENTS

Attachment A – Commuter Rail Feasibility Study

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/index.php> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Patricia Hughes, MCIP, LPP, Supervisor Service Design & Projects, Halifax Transit
902.490.6287

Robert Jahncke, MCIP, LPP, CSLA, Coordinator, Project Planning, Halifax Transit
902.490.6683

Peter Duncan, P.Eng, Planning and Development Services, 902.490.5449

Original Signed

Report Approved by:

Dave Reage, MCIP, LPP, Manager, Planning & Scheduling, Halifax Transit 902.490.5138

Original Signed

Financial Approval by:

Amanda Whitewood, Director of Finance and Information Technology/CFO, 902.490.6308
