HALIFAX

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

Item No. 15.3.1
Halifax Regional Council
April 2, 2019

TO: Mayor Savage and Members of Halifax Regional Council

                 ORIGINAL SIGNED
SUBMITTED BY:
                 _____
                 Councillor Lorelei Nicoll, Chair, Transportation Standing Committee

DATE: February 25, 2019

SUBJECT: Feasibility of Onboard Wi-Fi for Halifax Transit

ORIGIN

February 25, 2019 Transportation Standing Committee meeting, Item No. 12.1.3

LEGISLATIVE AUTHORITY

Administrative Order 1, Respecting the Procedures of the Council, Schedule 7, Transportation Standing Committee Terms of Reference, section 4 (a):

"The Transportation Standing Committee shall oversee and review of the Municipality's Regional Transportation Plans and initiatives, as follows: overseeing HRM's Regional Transportation Objectives and Transportation outcome areas."

RECOMMENDATION

The Transportation Standing Committee recommends that Halifax Regional Council direct the Chief Administrative Officer to:
1. Amend the April 25, 2017 "Halifax Public Wi-Fi Solution Services Schedule" to the August 20, 2010 Master Services Agreement between HRM and Bell Aliant Regional Communications, and the Statement of Work executed with BellAliant on August 17, 2017, to
   a. provide for the orderly termination of each of the party's rights and obligations with respect to the design, installation and operation of, and payment for, access points at the Halifax Public Libraries' public wi-fi sites # 4, 5 and 6; and
   b. provide for the design, installation and operation of, and document payment arrangements for, access points at the Alderney Ferry Terminal, the Halifax Ferry Terminal, and the Lacewood and Bridge Bus Terminals.
2. In partnership with Halifax Public Libraries, begin a pilot program (lasting no longer than 12 months) to trial existing mobile library hotspots on up to 20 transit buses to gauge rider interest and understand support implications, subject to the successful negotiation and execution of relevant contract documents and purchase orders with HRM's service provider(s).
3. Based upon rider interest and findings from the preceding pilot program, consider development of a business case for expanding the service to additional terminals and/or additional buses/ferries and present the results to Regional Council.

BACKGROUND

A staff report dated October 17, 2018 pertaining to the Feasibility of Onboard Wi-Fi for Halifax Transit was before the Transportation Standing Committee for consideration at its February 25, 2019 meeting.

For further information, please refer to the attached staff report dated October 17, 2018.

DISCUSSION

The Transportation Standing Committee reviewed the October 17, 2018 staff report at its meeting held on February 25, 2019 and forwarded the recommendation to Halifax Regional Council as outlined in this report.

FINANCIAL IMPLICATIONS

As outlined in the attached staff report dated October 17, 2018.

RISK CONSIDERATION

As outlined in the attached staff report dated October 17, 2018.

COMMUNITY ENGAGEMENT

The Transportation Standing Committee meetings are open to public attendance, a live webcast is provided of the meeting, and members of the public are invited to address the Committee for up to five minutes at the end of each meeting during the Public Participation portion of the meeting. The agenda, reports, video, and minutes of the Transportation Standing Committee are posted on Halifax.ca.

ENVIRONMENTAL IMPLICATIONS

As outlined in the attached staff report dated October 17, 2018.

ALTERNATIVES

The Transportation Standing Committee did not discuss alterative recommendations.

ATTACHMENTS

1. Staff report dated October 17, 2018.

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Phoebe Rai, Legislative Assistant, 902.490.6517.

HALIFAX

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

Item No. 12.1.3
Transportation Standing Committee
February 25, 2019

TO: Chair and Members of Transportation Standing Committee

SUBMITTED BY:

Original Signed

David Reage, MCIP, LPP, Director, Halifax Transit

Original Signed

Jacques Dubé, Chief Administrative Officer

DATE: October 17, 2018

SUBJECT: **Feasibility of Onboard Wi-Fi for Halifax Transit**

ORIGIN

This report originates from the following motion (12.2.1) passed at the February 22, 2018 Transportation Standing Committee meeting:

> "That the Transportation Standing Committee request a staff report on the feasibility of onboard Wi-Fi for Halifax Transit."

LEGISLATIVE AUTHORITY

Section 4(a) of the Terms of Reference for the Transportation Standing Committee provides that the Transportation Standing Committee is responsible for "overseeing HRM's Regional Transportation Objectives and Transportation outcome areas".

Appendix B of the Administrative Order No. 2016-005-ADM, the Procurement Policy, delegates to staff certain approval and signing authority limits relative to contract amendments. The making of additional expenditures is subject to the availability of sufficient funds, and must correspond to a change in the scope of work, meet the conditions for a sole source purchase and be in the best interests of the Municipality.

RECOMMENDATION

It is recommended that the Transportation Standing Committee recommend that Halifax Regional Council direct the CAO to:

1. Amend the April 25, 2017 "Halifax Public Wi-Fi Solution Services Schedule" to the August 20, 2010 Master Services Agreement between HRM and Bell Aliant Regional Communications, and the Statement of Work executed with BellAliant on August 17, 2017, to

    a. provide for the orderly termination of each of the party's rights and obligations with respect to the design, installation and operation of, and payment for, access points at the Halifax Public Libraries' public wi-fi sites # 4, 5 and 6; and

    b. provide for the design, installation and operation of, and document payment arrangements for, access points at the Alderney Ferry Terminal, the Halifax Ferry Terminal, and the Lacewood and Bridge Bus Terminals.

2. In partnership with Halifax Public Libraries, begin a pilot program (lasting no longer than 12 months) to trial existing mobile library hotspots on up to 20 transit buses to gauge rider interest and understand support implications, subject to the successful negotiation and execution of relevant contract documents and purchase orders with HRM's service provider(s).

3. Based upon rider interest and findings from the preceding pilot program, consider development of a business case for expanding the service to additional terminals and/or additional buses/ferries and present the results to Regional Council.

BACKGROUND

This report provides a summary of the feasibility of implementing onboard Wi-Fi on all Halifax Transit buses and ferries as determined by Halifax Transit staff through investigation over the past several months. In addition to this analysis, ICT in conjunction with Halifax Transit, have developed a recommendation to expand Wi-Fi access to transit users in major transit terminals.

DISCUSSION

Smart Cities and the Digital Divide

Building upon the Poverty Reduction Strategy, efforts to close the digital divide were a key part of the Municipality's Smart Cities Challenge submission. As noted in the submission, residents without access to the internet are at a greater risk of living in poverty and being socially excluded. The Municipality's Smart Cities Challenge submission identified project activities to work with partners, such as Halifax Transit and Halifax Public Libraries, to expanded public Wi-Fi and small cell technology to buses and shared public spaces.

Free Public Wi-Fi

In February 2017, Halifax Regional Council approved a project to deliver free public Wi-Fi at various locations throughout the core of the Halifax Regional Municipality. Bell and HRM began the implementation of the Wi-Fi access points immediately in the two Waterfront locations and Grand Parade. All three locations have been implemented since late summer 2017. The equipment was installed in the three libraries; however, it was not activated. The library staff elected to decline the Halifax Wi-Fi installation, opting instead to continue to utilize their own Wi-Fi services, separate from the Downtown Public Wi-Fi. Since the decision was finalized by the library, ICT has been working with the vendor to assess alternative locations and develop new pricing to utilize the access points originally designated for the three libraries.

Jurisdictional Scan of Other Transit Agencies in Canada

City	Transit agency	2017 Ridership	Wi-Fi on buses	Wi-Fi at terminals	Note
Calgary	Calgary Transit	101.9 m	No	Yes	
Ottawa	OC Transpo	96.5 m (2016)	Limited	Yes	
Edmonton	ETS	87.17 m (2016)	Limited (1 route)	Yes	https://www.edmonton.ca/ets/edmonton-international-airport.aspx
Winnipeg	Winnipeg Transit	48.1 m	Limited (pilot on 12 buses)	Unknown	https://winnipegtransit.com/en/rider-guide/Wi-Fi-on-buses---pilot-project/
Mississauga	MiWay	39.8 m	No	Yes	
Brampton	Brampton Transit	27.39 m	No	Yes	
York region	YRT	23.1 m	No	Yes	
London	LTC	22.6 m (2016)	No	Unknown	
Hamilton	HSR	20.95 m (2010)	Limited (pilot on 15 buses)	Unknown	https://www.hamilton.ca/hsr-bus-schedules-fares/riding-hsr/free-Wi-Fi-pilot-15-hsr-buses
Kitchener-Waterloo	GRT	19.7 m	Limited (1 route)	Yes	http://www.grt.ca/en/about-grt/ion-bus.aspx
Gatineau	STO	18.39 m (2009)	No (previously yes)	Yes	https://www.ledroit.com/actualites/gatineau/fin-du-wifi-dans-les-autobus-du-rapibus-06567be9d05d9abd1c1eec43b68b5a4a
Halifax	Halifax Transit	17.19 m	TBD	TBD	
Saskatoon	Saskatoon Transit	12.39 m	No	Yes	
Regina	Regina Transit	7.68 m (2007)	No	Unknown	
Sherbrooke	STS	7.62 m (2016)	No	Unknown	
Windsor	Transit Windsor	6.3 m (2014)	No	Yes	
St. John's	Metrobus	2.97 m	Yes	Unknown	
Saint John	Saint John Transit	2.7 m	No (previously yes)	Unknown	https://www.cbc.ca/news/canada/new-brunswick/saint-john-unplugs-free-Wi-Fi-from-city-buses-1.2611812
Moncton	Codiac Transpo	2.31 m	Yes (limited)	Unknown	https://www.cbc.ca/news/canada/new-brunswick/Wi-Fi-codiac-transpo-buses-1.3332308
Charlottetown	T3 Transit	0.55 m	Yes	Unknown	

The agencies listed were reviewed to gain insight into a broad variety of transit agencies, not just those that are similar in size and ridership to Halifax Transit. The list of agencies reviewed includes those with:

- a much larger ridership compared to Halifax Transit;
- a similar ridership to Halifax Transit; and
- a much smaller ridership compared to Halifax Transit.

It should be noted that the majority of transit agencies that have implemented onboard Wi-Fi across their entire fleet are much smaller than Halifax Transit. As a result, the operating, hardware and solution costs associated with the service would be much less, and the smaller fleets would be easier to maintain.

The few agencies that had previously made Wi-Fi available onboard buses have since removed the service due to the high cost associated with offering the service to the public.

Several transit agencies similar in size to Halifax Transit have begun pilot projects to evaluate onboard Wi-Fi or have implemented onboard Wi-Fi via premium or specialized services. More commonly, many transit agencies have begun making Wi-Fi available at transit terminals and hubs instead of on the vehicles themselves.

Cost of Implementation and Maintenance of Onboard Wi-Fi Across the Full Conventional Transit and Ferry Fleet

Halifax Transit would incur significant costs in implementing an onboard Wi-Fi solution. The hardware requirements of an onboard Wi-Fi solution would include, at the minimum, a new mobile modem on each of Halifax Transit's 340 buses and 5 ferries. With a cost of approximately $1,000 per modem, to supply equipment for the fleet of buses would cost approximately $345,000.

The ongoing costs of operating onboard Wi-Fi would include the monthly costs of mobile data. Cost of the mobile data could be approximately $10,350 - $17,250 per month ($124,200 - $207,000 per year), based on an estimated cost of $30 - $50 per device, but may be much higher.

[It has not been confirmed if using our existing mobile data service to provide Wi-Fi access to the public is acceptable under the terms of HRM's current mobile data agreement. Exact costs would likely need to be negotiated with HRM's mobility provider if Halifax Transit is directed to proceed with a complete onboard Wi-Fi solution.]

The implementation of an onboard Wi-Fi solution would likely require the use of external consultants to complete much of the delivery of the project as Halifax Transit staff does not have the capacity to implement an additional technology project at this time. Because acquiring external consultants would require an RFP, the exact cost of securing external consultants is unknown; however, it is expected that external consultants would cost between $100,000 - $200,000 based on the scope and complexity of the work.

Additionally, the maintenance of the hardware associated with an onboard Wi-Fi solution would require at least one additional staff resource within the Bus Maintenance division of Halifax Transit. This would come with an annual cost of approximately $140,000 (including salary, benefits, tools and materials, etc.).

Capacity to Implement and Maintain Onboard Wi-Fi

Currently, the Technical Services division of Halifax Transit is involved in four major ongoing technology projects (TransitMaster upgrade; Fare Management; Fixed Route Planning, Scheduling, & Operations; and Paratransit) in addition to the operational requirements of supporting the current technology utilized by Halifax Transit.

Because of the current demands on the Technical Services division of Halifax Transit, any additional major technology projects would require the use of external consultants or an adjustment of Halifax Transit Technical Services' current priorities. Should Halifax Transit receive direction in the future to implement an onboard Wi-Fi solution, the following 3 options exist to address the resourcing needs of such a project:

- External consultants are contracted to implement the solution;
- An onboard Wi-Fi project would commence after an ongoing project is completed; and
- An ongoing project is delayed to focus on the Wi-Fi project. *(note: delaying an ongoing project would result in significant cost increases)*

The Technical Services division of Halifax Transit has the capacity to support an installed onboard Wi-Fi solution; however, the Electronics Technicians (part of the Bus Maintenance division of Halifax Transit) do not currently have the capacity to support the on-vehicle hardware required for an onboard Wi-Fi solution and would require additional staff resources.

Halifax Public Libraries Mobile Library Program

Halifax Public Libraries currently leverage mobile Wi-Fi technology to provided internet access in non-traditional locations, such as parks and community events. These devices provide connectivity to 15-20 people in a limited area, and operate using the commercial cellular network. They are self contained, can be powered via battery, AC or DC voltages, and require very little support or maintenance. These devices can be configured to allow full access to the internet or to only allow access specific content, such as the library's online magazine service or Lynda.com training service, which reduces the risk that they would become overloaded by unreasonable usage such as large downloads.

Bell has evaluated and determined that it is feasible to provide public Wi-Fi at Alderney Ferry Terminal, Halifax Ferry Terminal, Lacewood Terminal, and Dartmouth Bridge Terminal given the current footprint and existing infrastructure available. It should be noted that there is a credit from Bell for the library locations that were not activated and this credit will offset the installation and operation of these locations. This information will also be included in a Public Wi-Fi recommendation report that will be presented to Council.

Conclusions

Based on the challenges and financial considerations identified by Halifax Transit in the feasibility analysis, and the industry trends identified, prioritizing the expansion of the existing public Wi-Fi to only the key hubs within the Halifax Transit network (Alderney Ferry Terminal, Halifax Ferry Terminal, Lacewood Bus Terminal, and Dartmouth Bridge Bus Terminal) would offer Halifax Transit's customers the greatest benefit relative to cost. By expanding the service to the key Transit hubs, the Municipality would be able to increase transit user Wi-Fi access and align its services with those seen across other transit agencies in Canada in a cost-effective manner.

These installations would leverage existing technology and support services, as provisioned through the Municipality's current Public Wi-Fi agreement, which would dramatically reduce the effort by HRM staff to implement the service and provide a consistent user experience to citizens moving between public spaces and transit.

In regard to the request to implement an onboard Wi-Fi solution across Halifax Transit's entire fleet of buses and ferries, due to the challenges and costs previously identified staff are recommending that onboard Wi-Fi should not be implemented on Halifax Transit's entire fleet. Instead, implementing a 12-month pilot, in partnership with Halifax Public Libraries, on a limited number of buses would allow staff the opportunity to gather additional information. With 12 months of usage of the service, staff would then be in a position to

confirm or refute the findings from the jurisdictional scan, further gauge public interest in onboard Wi-Fi, and assess the challenges and opportunities associated with providing this service.

Cost Estimates

The pre-site assessment estimate to install Public Wi-Fi hotspots in the Alderney and Halifax Ferry terminals, as well as the Lacewood and Dartmouth Bridge Bus Terminals, based on 1-3 access points and speeds of 100-200 mpbs per site is as follows:

- Installation and set-up for 4 locations: $40,000 - $52,000 ($10,000 to $13,000 per site);

- Monthly costs for 4 locations: $2,000 - $3,400 ($500 - $850 per site).

The installation and set-up costs per site are presented net of external funding, so represent approximately 35% of total project costs. An existing credit from Bell funds the majority of the work. The on-going costs will be funded from the existing Finance, Asset Management & ICT operating budget.

Under a cost sharing agreement with Halifax Public Libraries, the estimated costs to the Municipality to leverage Halifax Public Library hotspots on a limited number of buses is the following:

- Mobile Internet Hotspot Devices: $12,000 ($600 per bus for 20 buses);

- Monthly costs: $2,400 ($120 per month per bus for unlimited data).

Installation and setup, as well as ongoing support for the pilot would be provided by existing staff as part of regular operational duties. No additional staffing costs are anticipated for the pilot.

FINANCIAL IMPLICATIONS

Bus and Ferry Terminal Wi-Fi Expansion: The (up to $52,000) installation costs for four additional public Wi-Fi locations will be funded from capital account CI000021 - Public Wi-Fi. Ongoing operating costs are net $0, as the costs are within the amount provided for the initial implementation in libraries. These costs are being funded from cost centre A421-ICT Corporate Services (Finance, Asset Management & ICT).

Mobile Internet Pilot Project: The $12,000 for the 20 mobile hotspot devices will be funded from capital account CI990004 - ICT Business Tools. The operating costs for the 12-month pilot period (up to $28,800) will be shared between Halifax Public Libraries (cost centre B012) and ICT Corporate Services (cost centre A421).

Budget Summary:	**Project Account No. C1000021 – Public WiFi**	
	Cumulative Unspent Budget	**$ 521,890**
	Less: This report - installation	**$ 52,000**
	Balance	**$ 469,890**

Budget Summary:	**Project Account No. CI990004 – ICT Business Tools**	
	Cumulative Unspent Budget	**$ 650,806**
	Less: This report - installation	**$ 12,000**
	Balance	**$ 638,806**

RISK CONSIDERATION

There are not significant risks associated with the recommendations of this report. The risks considered rate low.

COMMUNITY ENGAGEMENT

No community engagement took place as part of this report; however, an informal scan of social media has shown that, while some members of the public would welcome the addition of onboard Wi-Fi, most members of the public, who made their opinion known through social media, felt as though onboard Wi-Fi is an unnecessary expense that would not improve their experience on Halifax Transit or significantly increase ridership.

Should Halifax Transit receive direction to proceed with the recommendation made in this report, because only an informal review of social media was conducted, this expansion would allow Halifax Transit to further gauge interest in public Wi-Fi access.

ENVIRONMENTAL IMPLICATIONS

There were no environmental implications identified associated with this report.

ALTERNATIVES

The Transportation Standing Committee may recommend that Regional Council direct staff to only proceed with the expansion of the existing public Wi-Fi technology to the Alderney Ferry Terminal, Halifax Ferry Terminal and the Lacewood and Bridge Bus Terminals and omit the pilot of library hotspots on up to 20 Halifax Transit buses.

The Transportation Standing Committee may recommend that Regional Council direct staff to not proceed with the expansion of the existing public Wi-Fi technology to the Alderney Ferry Terminal, Halifax Ferry Terminal and the Lacewood and Bridge Bus Terminals but proceed with the pilot of library hotspots on up to 20 Halifax Transit buses.

The Transportation Standing Committee may recommend that Regional Council direct staff to not proceed with the either the expansion of the existing public Wi-Fi technology to the Alderney Ferry Terminal, Halifax Ferry Terminal and the Lacewood and Bridge Bus Terminals or the pilot of library hotspots on up to 20 Halifax Transit buses.

ATTACHMENTS

None.

_____

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Marc Santilli, Manager Technical Services, Halifax Transit, 902.490.6649
_____