



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

Item No. 15.2.1
Halifax Regional Council
April 25, 2023

TO: Mayor Savage Members of Halifax Regional Council

SUBMITTED BY: Original Signed

Councillor Wayne Mason, Chair, Transportation Standing Committee

DATE: March 30, 2023

SUBJECT: **Hammonds Plains Road and Lucasville Road – Intersection Improvements**

ORIGIN

March 30, 2023 meeting of Transportation Standing Committee, Item 12.1.1.

LEGISLATIVE AUTHORITY

Legislative Authority is outlined in the attached staff report dated October 20, 2022.

RECOMMENDATION

The Transportation Standing Committee recommends that Halifax Regional Council direct the Chief Administrative Officer to:

1. Prioritize short-term operational improvements to the signalized intersection, including upgrades to the traffic controller cabinet and vehicle detection, along with updated signal timing plans; and
2. Ensure appropriate, longer-term intersection modifications, including accommodation of pedestrians, cyclists, and transit, are appropriately planned for through the development review process.

BACKGROUND

Transportation Standing Committee received a staff recommendation report dated October 20, 2022 to consider Hammonds Plains Road and Lucasville Road – Intersection Improvements.

For further information refer to the attached staff report dated October 20, 2022.

DISCUSSION

Transportation Standing Committee considered the staff report dated October 20, 2022 and approved the recommendation to Halifax Regional Council as outlined in this report.

FINANCIAL IMPLICATIONS

Financial implications are outlined in the attached staff report dated October 20, 2022.

RISK CONSIDERATION

Risk consideration is outlined in the attached staff report dated October 20, 2022

COMMUNITY ENGAGEMENT

Meetings of the Transportation Standing Committee are open to public attendance and members of the public are invited to address the Standing Committee for up to five (5) minutes during the Public Participation portion of the meeting. Meetings are live webcast on Halifax.ca. The agenda, reports, video, and minutes of the Standing Committee are posted on Halifax.ca.

For further information on Community Engagement refer to the attached staff report dated October 20, 2022.

ENVIRONMENTAL IMPLICATIONS

Environmental implications are outlined in the staff report dated October 20, 2022.

ALTERNATIVES

Alternatives are outlined in the attached staff report dated October 20, 2022.

ATTACHMENTS

Attachment 1 – Staff recommendation report dated October 20, 2022

Attachment 2 – Supplementary staff report dated March 8, 2023

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: Catie Campbell, Legislative Assistant, Municipal Clerk's Office 782-641-0796



P.O. Box 1749
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Item No. 12.1.1 ii
Transportation Standing Committee
October 27, 2022
March 30, 2023

TO: Chair and Members of the Transportation Standing Committee

SUBMITTED BY: 

Jacques Dubé, Chief Administrative Officer

DATE: October 20, 2022

SUBJECT: **Hammonds Plains Road and Lucasville Road – Intersection Improvements**

ORIGIN

September 28, 2021 Halifax Regional Council motion (Item No 15.3.1)

MOVED by Councillor Deagle Gammon, seconded by Councillor Russell

THAT Halifax Regional Council request a staff report on the intersection of Hammonds Plains and Lucasville roads to include:

1. recommendations to upgrade the intersection to ease the congestion of both west bound and east bound traffic;
2. appropriately plan for transit in this intersection;
3. increase pedestrian safety in this intersection.

MOTION PUT AND PASSED

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, Part XII, subsection 321(8) provides:

Subsection 321(8) The Traffic Authority for the Municipality has, with respect to highways in the Municipality, excluding those for which the Provincial Traffic Authority has authority, the powers conferred upon a traffic authority by or pursuant to the Motor Vehicle Act.

Section 4(g) of the Terms of Reference for the Transportation Standing Committee provides that the duties and responsibilities of the Committee include “providing input and review of road and pedestrian safety”.

RECOMMENDATION

It is recommended that the Transportation Standing Committee recommend that Halifax Regional Council direct the Chief Administrative Officer to:

1. Prioritize short-term operational improvements to the signalized intersection, including upgrades to the traffic controller cabinet and vehicle detection, along with updated signal timing plans.
2. Ensure appropriate, longer-term intersection modifications, including accommodation of pedestrians, cyclists, and transit, are appropriately planned for through the development review process.

BACKGROUND

Traffic volume challenges have been a growing concern on Hammonds Plains Road in recent years and reports of traffic congestion during weekday peak periods have increased. The area has been subject to considerable growth as the community of Bedford West has developed, with potential for additional growth, including the Sandy Lake area, that will put further pressure on roadway infrastructure.

In addition to serving as an important connection in the regional roadway network, Hammonds Plains Road has been an important component in accommodating the growth occurring in Bedford West. Road safety statistics show that there have been five vehicle collisions in the last three years including:

- Four multiple-vehicle collisions, one single-vehicle collision, no pedestrian collisions, and no cyclist collisions
 - 1 red-light running (westbound)
 - 2 left-turn across the path of another vehicle (both left turn from Hammonds Plains Road eastbound to Lucasville northbound)
 - 1 rear-end collision
 - One single-vehicle incident – a truck's non-retracted boom struck the traffic signal
 - No fatal or injury collisions (property damage only)

DISCUSSION

Existing Conditions

Hammonds Plains Road is an arterial roadway carrying approximately 18,000 vehicles per day. The speed limit on Hammonds Plains Road had recently been reduced in this area from 70 km/h to 60 km/h. Lucasville Road is a major collector roadway carrying approximately 6300 vehicles per day with a posted speed limit of 70 km/h.

The signalized intersection (Figure 1) includes separated left and through lanes on Hammonds Plains Road in the eastbound direction; shared through/right turn lane on Hammonds Plains Road in the westbound direction and separated left and right turn lanes southbound on Lucasville Road. The storage for left turning vehicles on the eastbound approach is approximately 80 metres. Storage for southbound right turning vehicles is approximately 30 metres. Pedestrian crossings exist across the southbound and eastbound approaches of the intersection. There are no sidewalks or other pedestrian infrastructure near the intersection.

The Halifax Transit Route 433 Tantallon operates along Hammonds Plains Road through this intersection. The nearest bus stop is located approximately 140 metres west of the intersection of Hammonds Plains Road and Lucasville Road. There is currently no transit service on Lucasville Road.



Figure 1: Hammonds Plains Road at Lucasville Road - Signalized Intersection

Traffic data was collected in early 2022 and traffic volumes were modelled to determine the existing conditions of the signal operation. Staff have identified changes to signal timing which can take effect without infrastructure changes to provide greater efficiency in traffic flow through the intersection during peak periods. Staff will continue to monitor for additional changes to traffic patterns and adjust signal phasing and timing accordingly as development continues.

Issues have been identified with the existing controller and vehicle detection equipment which are likely impacting the current operation of the intersection. Vehicle detection equipment at this location has historical occurrences of not properly identifying vehicle demand on Hammonds Plains Road. When detection isn't working properly the intersection essentially goes into failsafe mode whereby the maximum allotted time is provided to each approach even without adequate vehicle demand, creating unnecessary delay at the intersection. Both the traffic controller cabinet and vehicle detection are due for an upgrade which can be done under existing maintenance budgets.

Modelling of existing peak period traffic volumes at the intersection indicates adequate storage length for the eastbound left turning volume during the am peak period; however, suggests the eastbound left turning volume during the evening peak period is approaching the available storage length capacity. The southbound approach on Lucasville Road demonstrates a need for additional storage capacity during both the morning and evening peak periods. The shared through/right lane on the westbound approach is also near capacity during the evening peak period.

Future Conditions

The communities of Hammonds Plains and Bedford West have seen significant development growth in recent years. This is expected to continue, with increasing traffic volumes putting additional capacity pressure on the Hammonds Plains Road/Lucasville Road intersection. Future volumes were estimated based on a 2% annual growth rate for Hammonds Plains Road over 10 years to capture an increase in background traffic as well as to account for additional, unknown, development traffic. The estimated future (2032) volumes were modeled to determine the extent of capacity upgrades which may be considered at the intersection.

Potential Intersection Improvements

Modelling shows the intersection would benefit from modifications to increase vehicle capacity. The eastbound storage lane is adequate at 80 metres; however, it could be extended to provide residual capacity within the existing hatched area. An extension of the southbound right turn storage lane on Lucasville Road to 60 m should also be considered. Modelling also indicates creating a westbound right turn storage lane approximately 50 m in length plus the appropriate taper length would help ease congestion in the westbound direction. A conceptual design of the noted traffic improvements is presented in Figure 2.

The widening on the southbound Lucasville Road approach does not require property acquisition as the extension of the southbound right turn lane could be accommodated within the existing right-of-way. The widening required for the westbound right turn lane on Hammonds Plains Road, however, would require some minor property acquisition for the signal pole relocation as noted in Figure 2, and would also result in impacts to Nova Scotia Power infrastructure which would need to be relocated to the edge of the right-of-way. Further scoping and design work would ensure the integration of appropriate transit facilities and accommodation of pedestrians and cyclists in the area. The integration of active modes and transit facilities would identify any additional property requirements in order to develop a full cost estimate of the intersection improvements.

There are no immediate plans for the construction of pedestrian or bicycle infrastructure in this area. There is a functional plan and 30% design for a multi-use pathway on Lucasville Road. Most of the work has focused on the other end and the connection between the middle of Lucasville Road and Sackville Drive. The concept for the Hammond's Plain Road end would be a multi-use pathway on one side. Implementation is not in any capital plan at this point. Any permanent physical changes would consider the retention of space for future construction of the Lucasville Greenway. The existing paved shoulders on Hammonds Plains Road, which provide space for people walking and bicycling, would not be impacted by the proposed changes.

This area lies outside of the Urban Transit Service Boundary (UTSB) as outlined in the Regional Plan, and as such, there are no short-term plans for increased or new transit service in the area. Any future service increases or new transit routes would need to be in alignment with regional planning policies and considered as part of a future transit service plan.

Development Opportunities

There is a conceptual development plan for the northwest corner of the Hammonds Plains Road/Lucasville Road intersection which includes 336 additional residential units. This is in the early review stages, though it is assumed the Traffic Impact Study will identify similar intersection upgrades to mitigate the traffic impacts of the additional development traffic. Any intersection upgrades related to the development would also consider appropriate accommodation of pedestrian, bicyclist, and transit facilities. Longer-term infrastructure changes to the intersection should, therefore, be planned in coordination with the upgrades required through development.

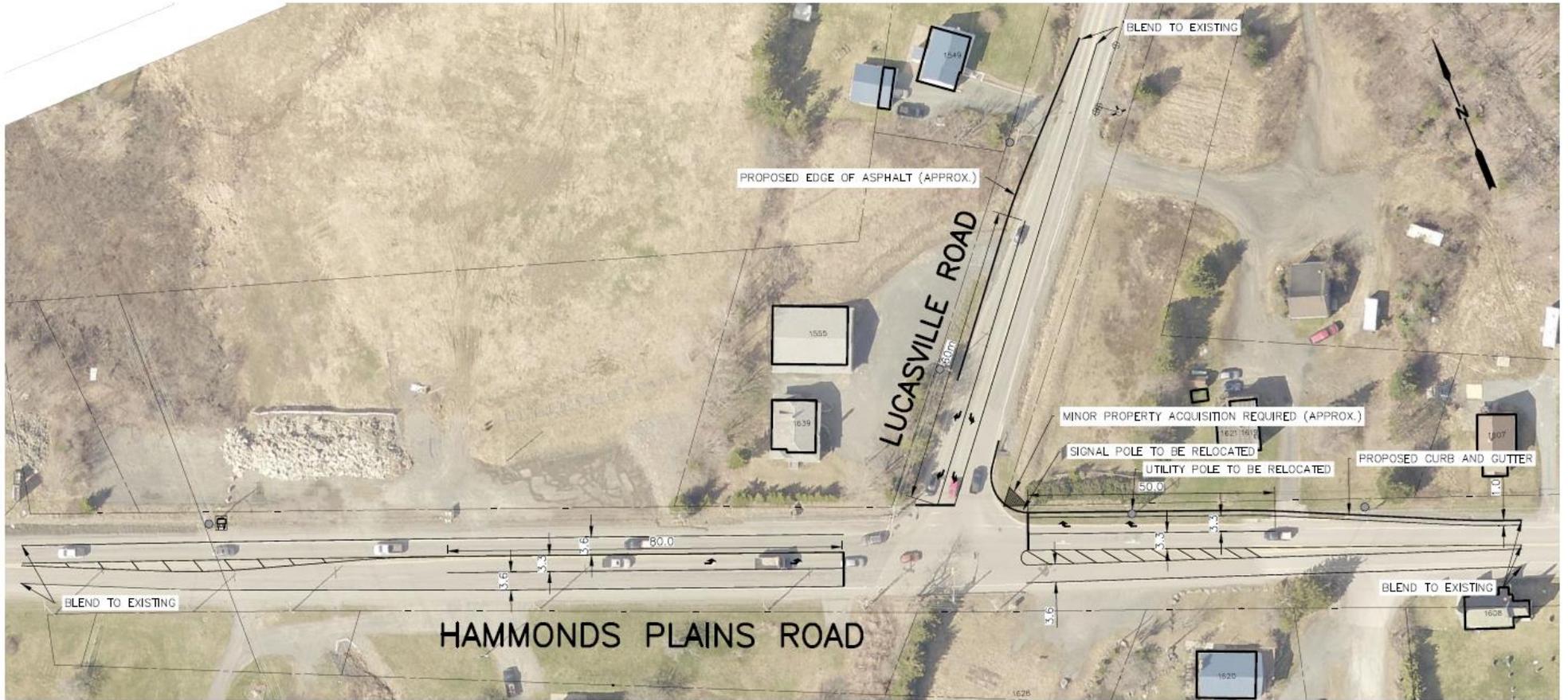


Figure 2: Potential Intersection Improvements

SUMMARY

Short term improvement measures have been identified to improve traffic operations at the Hammonds Plains Road/Lucasville Road intersection. Adjustments to signal timings can be completed without physical changes to the infrastructure. A new set of signal timing plans based on the traffic patterns at various times of day can be developed and implemented. These can then be monitored and adjusted again as required. Modification to the eastbound left turn lane storage length can be completed when the pavement marking programs resumes in the spring. The upgrades to the traffic controller cabinet and vehicle detection will be placed on a workplan with Traffic Maintenance to complete once equipment becomes available.

Longer-term improvement measures have been identified for coordination within the proposed development plans. Lengthening the southbound right turn storage lane on Lucasville Road; including a westbound right turn lane on Hammonds Plains Road; and accommodation of appropriate pedestrian, bicyclist, and transit facilities, should all be considered during the development design phase.

FINANCIAL IMPLICATIONS

There would be no financial implications for moving forward with the short-term recommended changes. These can be accommodated within existing operating and maintenance budgets.

The financial implications of the longer-term recommendations are unknown. Further design scoping is required within the development application process. The recommended longer-term upgrades would be considered as part of future capital budgets.

RISK CONSIDERATION

There are no significant risks associated with the recommendations in this Report.

COMMUNITY ENGAGEMENT

No community engagement was required.

ENVIRONMENTAL IMPLICATIONS

No environmental implications were identified.

ALTERNATIVES

The Transportation Standing Committee may recommend that Regional Council direct the CAO to prioritize infrastructure modifications at full cost to Halifax Regional Municipality, through capital funds, in advance of modifications being recommended through the planned development. This is not recommended as the extent of requirements associated with the proposed development are not yet known and moving forward with larger scale intersection changes before knowing the development impacts/requirements would likely result in increased costs and disruption to newly built infrastructure.

ATTACHMENTS

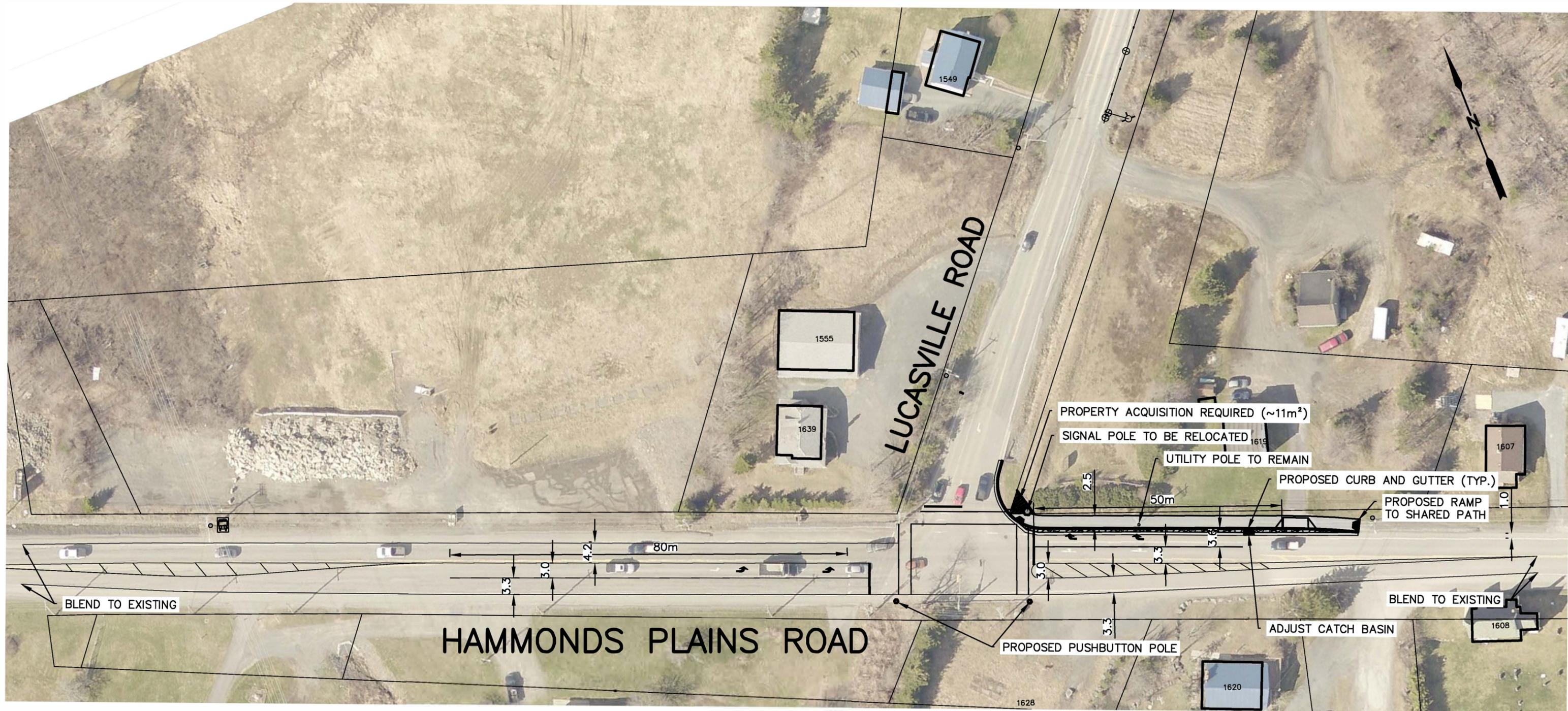
None

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: Jill Morrison, P.Eng. 902.490.5018

HAMMONDS PLAINS ROAD AT LUCASVILLE ROAD – INTERSECTION MODIFICATIONS

JANUARY 17, 2023
SCALE – 1:750





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Item No. 12.1.1 i
Transportation Standing Committee
March 30, 2023

TO: Chair and Members of Transportation Standing Committee

SUBMITTED BY:



Cathie O'Toole, Chief Administrative Officer

DATE: March 8, 2023

SUBJECT: Hammonds Plains Road and Lucasville Road - Supplementary Report

SUPPLEMENTARY REPORT

ORIGIN

Transportation Standing Committee Oct 27, 2022, Item 12.1.3

Moved by Councillor Kent, seconded by Councillor Outhit

THAT the Transportation Standing Committee defer Item 12.1.3 Hammonds Plains Road and Lucasville Road – Intersection Improvements to a future meeting of the Transportation Standing Committee pending a supplementary staff report with options for a right-turning out bound lane prior to future development.

MOTION TO DEFER PUT AND PASSED.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, Part XII, subsection 322(1) provides:

"The Council may design, lay out, open, expand, construct, maintain, improve, alter, repair, light water, clean and clear streets in the Municipality."

Section 4(g) of the Terms of Reference for the Transportation Standing Committee provides that the duties and responsibilities of the Committee include "providing input and review of road and pedestrian safety".

BACKGROUND

Staff submitted a recommendation report (Attachment 1) at the October 27, 2022 session of the Transportation Standing Committee in response to a request to provide:

1. Recommendations to upgrade the intersection to ease the congestion of both westbound and eastbound traffic;
2. Appropriately plan for transit in this intersection;
3. Increase pedestrian safety in this intersection.

The report provided information related to existing conditions, recognizing growing traffic demand and delay at the intersection and identified a development planned for the northwest corner. At the time of the original report, there was limited information related to documented, potential impacts associated with the planned development. As a result, the recommendations provided in the report limited any major infrastructure modifications that could conflict with proposed development plans or infrastructure requirements, and included:

1. Prioritize short-term operational improvements to the signalized intersection, including upgrades to the traffic controller cabinet and vehicle detection, along with updated signal timing plans.
2. Ensure appropriate, longer-term intersection modifications, including accommodation of pedestrians, cyclists, and transit, are appropriately planned for through the development review process.

Discussion around the report resulted in a vote to defer the matter and request a supplementary information report be submitted to provide additional information regarding options to provide a dedicated right-turn lane for vehicles heading westbound in advance of any development related infrastructure upgrades.

The information outlined in the discussion section of this report is provided as supplementary information to that which has previously been provided in the report presented to Transportation Standing Committee on October 27, 2022 (Attachment 1)

DISCUSSION

In the time since the original report was submitted, the traffic signal controller upgrade has been completed and new signal timing plans implemented to help address the concerns of vehicle delay and queueing. Initial observations done after the upgrades were completed indicated delay and queueing at the intersection were within acceptable limits. Traffic Management staff will continue to monitor and adjust signal timing and phasing as required.

Staff was able to obtain some basic information related to planned access related to the proposed development. Preliminary plans identify a new intersection on Lucasville Rd, approximately 200 metres north of the Hammonds Plains Rd intersection and a new access on Hammonds Plains Rd, approximately 100 metres west of the Hammonds Plains Rd/Lucasville Rd intersection.

The traffic impact study, which will indicate anticipated impacts resulting from additional vehicle, transit and active mode trips, as well as potential infrastructure upgrades required to address these impacts, has not yet been submitted for the development. Anticipated vehicle trip generation from the development, however, will most likely result in an increased number of vehicles making the right turn from Hammonds Plains Rd to Lucasville Rd, adding further demand on the westbound approach. It is anticipated that the requirement for construction of the westbound right turn lane would be detailed in the traffic impact study; along with requirements for extending the southbound right turn lane, relocating transit stops and construction of infrastructure to support active modes of transportation.

Traffic Management has completed a preliminary design for an outbound right turn lane onto Lucasville Rd to investigate the option of providing this upgrade prior to the identification of the impacts and requirements related to the future development. Attachment 2 shows the details of this preliminary design.

The design includes widening the westbound approach on the north side to include a section of raised asphalt multi-use pathway which is included to replace the current shoulder space available for pedestrians and cyclists that would be taken up to accommodate the addition of a 50 m long right-turn lane. This design option avoids the relocation of a utility pole which had been included in the conceptual design provided in the original report (Attachment 1). There is also a new push-button post proposed for the southwest corner to provide improved access to the push-button for pedestrians wanting to cross Hammonds Plains Road.

Like the previous concept, a small wedge of property is required on the northeast corner of the intersection to accommodate the relocation of a signal pole.

Given the constraints at this intersection (existing guide rail to the south and property constraints on both east and west corners), the proposed concept focuses primarily on the addition of only the right-turn lane to minimize cost and impact as there will likely be a need for further changes once the development requirements are identified and design is finalized on the proposed AT corridor along Lucasville Rd.

Preliminary cost related to the proposed right turn lane as identified in this report is estimated at approximately \$220,000. This is a very preliminary estimate as there was no survey available, so a detailed design with survey could potentially identify higher cost requirements. The cost estimate is based on 2022 construction rates and does **not** include costs associated with property acquisition.

It should be noted that the proposed design identified in this report is primarily intended to provide for the implementation of the right-turn lane only, with a minor improvement to existing push-button access, as anything beyond this would require a complete intersection upgrade and likely additional property acquisition. A full-scale intersection / traffic signal upgrade would cost \$500,000 - \$600,000 and require a minimum 2-3 year lead time for proper budget allocation, design, property acquisition and construction.

Moving forward with a full intersection upgrade without understanding the potential requirements related to the proposed development and AT corridor has a very high potential for infrastructure being put in place that is insufficient for those projects. Even with the smaller scale design identified here, there will most likely be property acquisition required to accommodate upgrades related to the development and AT corridor, which would be unknown at this time, so HRM would be put in a position of going through the property acquisition process twice at the same location. The typical time frame for the acquisition of property for construction projects is in the range of 18 months (minimum) and requires a detailed and set project design to accurately identify the extents of the property needed before negotiations can begin.

As noted previously, staff has completed upgrades to the traffic signal controller and signal timing / phasing at this location which appears to have resulted in improved operation. Additional signal timing / phasing adjustments can also be made as needed. Given the uncertainties associated with infrastructure requirements at this location due to the proposed development and AT corridor, continuing with adjustments to the traffic signals appears to be the most appropriate approach until more formalized plans for development and AT requirements are available.

FINANCIAL IMPLICATIONS

There are no financial implications associated with the information outlined in this report.

However, if Transportation Standing Committee decides to identify a project to move forward with the identified right-turn lane concept, which is not recommended at this time, funding in the amount of approximately \$220,000, plus associated property acquisition costs, which are currently unknown, would need to be identified for future capital budgets.

Moving forward with this project at this time would carry financial risk associated with potential disruption of newly built infrastructure. Implementing intersection modifications prior to knowing the extent of the recommended changes to be included in the traffic impact study for the development as well as plans for the AT corridor, could result in the need to remove, replace or alter recently installed infrastructure.

COMMUNITY ENGAGEMENT

No community engagement was required.

ATTACHMENTS

Attachment 1 – Hammonds Plains Road and Lucasville Road – Intersection Improvements – October 27, 2022 (Transportation Standing Committee Recommendation Report)

Attachment 2 – Concept Design – Hammonds Plains Road at Lucasville Road – Westbound Right-Turn Lane

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: Jill Morrison - Supervisor, Traffic Services 782-641-1436
