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Technical Memorandum

To:	Michel Asselin	Date:	25 March 2025
Copy:	Luke Harrington, Melanie Knight	Project:	479397-01000
From:	Basel Ansari, P.Eng., Austin Shih, P.Eng., MASc		

Re: Brown Lands Subdivision – Technical Review Memorandum

1. Background

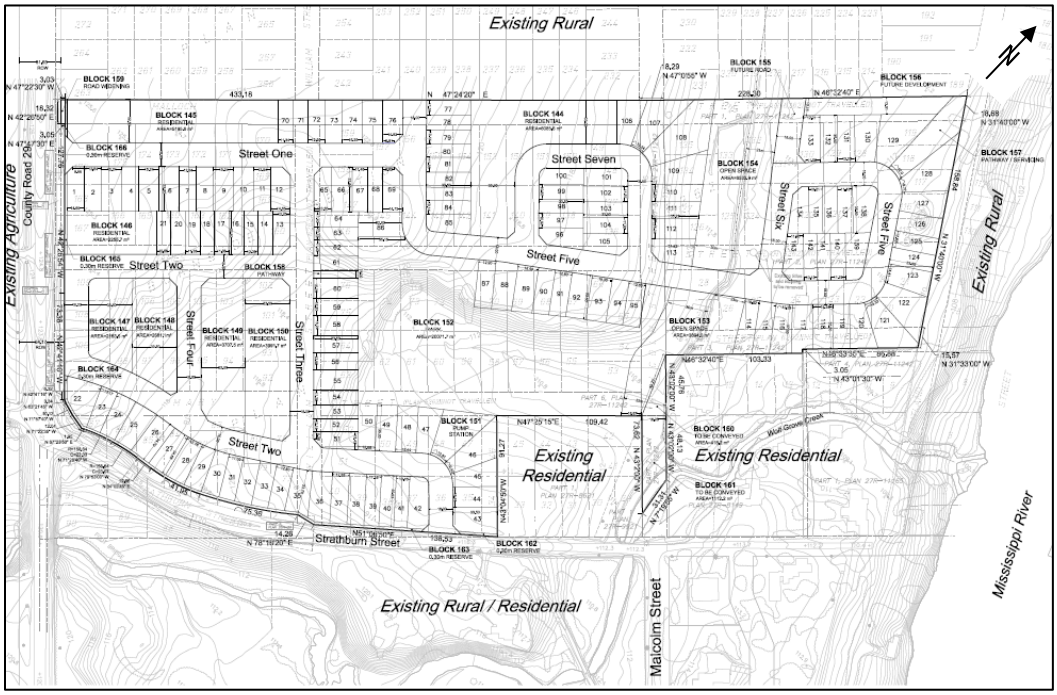
Parsons has been retained by the Municipality of Mississippi Mills to provide transportation technical guidance related to potential traffic implications stemming from a new subdivision proposal (The Brown Lands) in Almonte. The Brown Lands is located on vacant lands at the northeast corner of the County Road 29/Christian Street/Strathburn Street/Gleeson Road intersection. The plan of subdivision proposes 235 new residential units.

As part of the defined scope of work, Parsons will review all public engagement feedback related to the proposed Brown Lands Subdivision development application, conduct a technical peer review of the supporting Transportation Impact Study (TIS) prepared by Novatech (February 2024), and provide an objective response to outstanding transportation issues with particular focus on community concerns, industry standard approach and methodology, and general compliance with the 2024 Transportation Master Plan (TMP). Additionally, Parsons will highlight potential alternative solutions, if applicable that may be considered to address identified issues.

2. The Brown Lands Plan of Subdivision

The proposed development is expected to consist of 235 total residential units, which includes 143 single, 18 semi-detached and 74 townhouse units. The proposed development plan and internal street network are shown in **Figure 1**. The internal road network consists of seven streets, with Street 1 connecting to County Road 29 and Street 2 connecting to Strathburn Street. Concrete sidewalks are expected to be provided on at least one side of the internal street network.

Figure 1: Proposed Development Plan (Brown Lands TIS February 2024)



3. Brown Lands TIS Review

A Transportation Impact Study (TIS) was completed in February 2024, by Novatech Engineering Consultants Ltd. (Novatech) to support the Brown Lands plan of subdivision application. The Brown Lands TIS considers some community concerns with regards to site-generated traffic along Malcolm Street heard during the application process. However, it is important to note that the TIS was completed prior to the community engagement activities summarized in Section 4 of this memo and approval of the 2024 Mississippi Mills Transportation Master Plan (TMP). Therefore, it is understood that not all community concerns were addressed to residents' satisfaction in the TIS, which led to the municipality coordinating a public meeting and additional outreach.

As part of this assignment, the key conclusions and recommendations from the TIS, as well as relevant outcomes from subsequent discussions have been reviewed.

3.1. TIS Review and Comments

Overall, the Brown Lands TIS prepared by Novatech (February 2024) provides a comprehensive transportation assessment of the proposed Brown Lands Subdivision. The approach and analytical methodology generally follow industry practices. A table is provided in **Appendix A** listing some minor technical comments that have been noted during our review. In Parsons' view, addressing these minor comments are not expected to significantly alter the analytical results, and corresponding conclusions and recommendations of the TIS. However, these comments should be considered as part of any future submission.

There was one assumption in the TIS Parsons did not agree with. In our view, a left-turn prohibition at Street 2 through signage alone, without corresponding physical infrastructure would not realistically ensure no left-turn movements onto Strathburn Street and Malcolm Street from the proposed development. The TIS proceeded to assess the network functionality based on the original assumption. For the purposes of this technical memo, we have re-assigned outbound left-turn traffic back to Street 2 to properly complete our review. Further detail on this is provided in the subsequent sections of this memo.

We acknowledge that Brown Lands TIS did identify some geometric modifications to reduce traffic on Malcolm Street in either direction, such as only permitting right-in/right-out at site access via "pork chop" island or converting Strathburn Street to one-way eastbound between the access and Malcolm Street, but at that time (before the separate community engagement process), these alternative options were considered unsuitable by municipal staff.

3.2. Conclusions and Recommendations of the Brown Lands TIS

Some of the key findings and highlights from the Brown Lands TIS, by Novatech are provided below, with follow-up analysis and commentary by Parsons where applicable. Note, more detailed commentary on the identified issues has been provided in Section 5.

- Existing two-way traffic on Malcolm Street is in the order of 40 vehicle trips in the morning peak hour, and 60 vehicle trips in the afternoon peak hour. Parsons used these results to forecast roughly *500 (two-way) vehicles trips* per day based on industry conversion rates[1].
- Due to the isolated location of the community bounded by CR 29 and the Mississippi River, the TIS did not apply any additional growth factors on existing Malcolm Street traffic beyond the proposed development, which Parsons considers reasonable.
- Site-generated traffic (approximately *150 two-way trips in AM peak hour* and *200 two-way trips in PM peak hour* using industry standard rates) were not expected to result in any major impact to traffic operations at the intersections analyzed along each of Malcolm Street, Strathburn Street, Almonte Street and County Road 29.

[1] The industry conversion of AM and PM peak hour trip volume to daily trip volume for commuter traffic is (AM Pk trips + PM Pk trips) * 5. This formula originates from the trip generation rates cited in the Institute of Transportation Engineers Trip Generation Manual.

- To address some community concerns related to traffic infiltration on Malcolm Street, a southbound left-turn prohibition at Street 2 onto Strathburn Street was suggested in the TIS. Additionally, a new auxiliary right-turn lane taper was recommended at the NB approach of the future County Road 29/ Street 1 intersection.
- The TIS assigned approximately 20% of site-generated traffic towards Malcolm Street via the Street 2 access but the outbound left-turn movement of the Street 2 was reassigned to CR 29 based on a proposed left-turn prohibition using signage.

  As previously discussed in Section 3.1, we have reverted outbound left-turn traffic back to Malcolm Street to enable us to properly assess the long-term traffic implications under a "typical" or "do nothing" scenario. With this, the two-way morning and afternoon peak hour vehicles on Malcolm Street would increase to approximately *70 and 100 vehicles* respectively. This equates to approximately *850 vehicles per day (two-way)* on Malcolm Street at full buildout. This impact of this change is minimal and does not materially alter the operational results and corresponding conclusions in the TIS.
- As part of the approvals process, the municipality requested Novatech complete an additional sensitivity analysis that assessed the transportation network implication if 50% of all site-generated inbound and outbound traffic from the Brown Lands would use Malcolm Street as their primary access/ egress route, representing a worse case scenario. Of note, this scenario did not assume a left-turn prohibition for outbound movements of the Street 2 access.

  This scenario resulted in the addition of approximately *80 morning peak hour* and *100 afternoon peak hour* two-way site-generated trips to Malcolm Street during peak hours, resulting in a total two-way peak hour traffic volume of approximately *120 morning peak hour* and *160 afternoon peak hour* vehicles, or approximately *1,400 (two-way) vehicles per day* using industry conversion rates.

  The TIS analysis for the 50% traffic distribution sensitivity scenario results showed only a slight increase in delays at the Malcolm/Almonte intersection, but no major operational deficiencies. It is the opinion of Novatech that this scenario is unrealistic; more traffic is expected to be drawn towards County Road 29 via Street 1. Parsons agrees that this traffic distribution assumption reflects a worse case scenario and may not be the typical daily travel pattern when considering the internal street layout and the available capacity on CR 29.

Parsons generally agrees with the overall approach to the operational analysis completed in the TIS. The general conclusions and recommended modifications to the road network appear reasonable, based on information available at the time of the study.

3.3. 2024 TMP Implications

The Brown Lands TIS was prepared prior to Council approval of 2024 Mississippi Mills TMP. Both Malcolm Street and Strathburn Street were recommended to be reclassified as local streets, befitting the local context and sensitivities of the local community to traffic. Local streets have an ideal two-way peak hour traffic volumes of up to 120 vehicles/hour or 1,200 vehicles per day, but they can and often do operate above this threshold adequately with proper management. Malcolm Street and Strathburn Street were also designated local route cycling routes, which recommend shared on-road cycling befitting the local, low volume and low speed context.

Strathburn Street is currently rural with no pedestrian facility since the fronting lands are largely undeveloped. Malcolm Street is mostly urbanized, with a sidewalk on one side up to Dunn Street. The roughly 190m section of Malcolm Street north of Dunn Street to Strathburn Street has no sidewalk.

As previously discussed, the TIS forecasted two-way traffic without consideration of outbound left-turn traffic from Street 2 based on a left-turn prohibition. We have reintroduced the left-turn traffic to complete our review resulting in *70 morning and 100 afternoon combined peak hour vehicles* (existing plus site generated traffic) on Malcolm Street, representing approximately *850 (two-way) vehicles over a day*, which is still well below the noted threshold for a local street.

Novatech's 50% sensitivity scenario indicates that the afternoon peak hour traffic may reach *160 vehicles in the peak hour,* with a potential daily volume of *1,400 vehicles*, both exceed the ideal threshold outlined in the TMP. It is our opinion that such a scenario represents a worse case outcome and is an outlier rather than the norm or target to design for. In the unlikely case that the 50% or more distribution scenario occurs, Malcolm Street may experience some congestion, but it is expected the road will still operate adequately. As will be discussed in Section 4.2, there are options to enhance safety and comfort of residents on Malcolm through passive traffic calming to help reduce the safety risks in these rare instances.

The 2024 TMP outlines general framework to respond to road safety concerns (such as speed management and traffic calming) that references available policies, such as Lanark County Speed Management Policy (2023), the Canadian Guide to Traffic Calming (2018), among others. It is our understanding the municipality has taken steps to engage the community and assess existing traffic conditions along Malcolm Street to better understand local concerns and identify the appropriate response. This process and outcomes are documented in the next section.

4. Community Engagement and Malcolm Street Surveys

4.1. Community Engagement Highlights

A public meeting was held on June 25th, 2024, organized by the municipality and was attended by approximately 40 residents. The main comments and concerns raised during the meeting were:

- Introduce a dead-end/ close Strathburn Street, between the Street 2 access and Malcolm Street, to completely prevent site-generated traffic from the Brown Lands from using Malcolm Street.
- Consider a new traffic signal along County Road 29 at either Strathburn Street or the proposed site access (Street 1) intersections.
- Consider implementing traffic calming measures (as offered by municipal staff) along Malcolm Street and convert some two-way stop control intersections into all-way stop control along the road.

Following the public meeting, residents created a petition, which was signed by 104 individuals, requesting to make Strathburn Street a dead-end and prevent through traffic on Malcolm Street from the Brown Lands development.

Further public input and data was collected and summarized by the municipality in the *Community Survey Report for Traffic Management on Malcolm Street* (Community Survey Report). Staff prepared a short survey with two questions to residents of the Cameron neighbouhood that asked them to rate different traffic management options in terms of effectiveness. The survey had approximately 100 respondents. The results are as follows:

- There was substantial support to closing Strathburn Street west of Malcolm Street and adding a westbound right-turn lane added to the County Road 29/Almonte intersection.
- There was also support for a new traffic signal on County Road 29 at either Strathburn Street or the development Street 1 access.
- Residents were less supportive of converting the Malcolm/Hope intersection to all-way stop control and restricting left-turns from the development onto Strathburn Street.
- The least support was shown to providing traffic calming bollards on Malcolm Street and restricting left-turns from Malcolm Street onto Strathburn Street.

4.2. Malcolm Street Survey Highlights

Municipal staff also conducted vehicles and vehicle travel speed surveys on Malcolm Street, between Hope Street and Almonte Street, to better understand current traffic behaviour and conditions. The data was collected in June 2024 (24th to 28th). The average daily traffic was approximately 600 vehicles, where the average and median speeds (both approximately 35 km/h) were less than the 40 km/h posted speed limit and the 85th percentile speed was 41 km/h.

The average daily traffic volumes were higher than the estimated factor based on the peak hour conversion rate in Section 3.2. This result increases the estimate of future two-way daily traffic volume higher, but as discussed in the previous sections, it simply increases the risk of congestion; the road network would still operate adequately and expected volumes (not worse-case volumes) would still be at acceptable levels for a local street.

Another key road safety metric is vehicle speed. The 85th percentile speed[2] is slightly above the posted speed limit (by 1 km/h), which suggests the posted speed is generally being adhered to, but there will be instances where drivers exceed the posted speed. It is industry standard to use the 85th percentile to help identify locations of speeding or high risk of injury, and its commonly embedded within "screening criteria" for further study or consideration of traffic calming measures or other mitigation strategies. For example, the Lanark County Speed Management Policy (2023) identifies three screening criteria to consider speed management measures (or undergo a more detailed technical assessment):

- Within 500m of designated School Zone or Community Safety Zone or other location of special consideration;
- Where 85th percentile speed exceeds current speed limit by 10 km/h or more…; and
- Where the 95th percentile speed exceeds current speed limit by 20 km/h or more ….

In the City of Ottawa, funding for traffic calming studies is only triggered if recorded 85th percentile speeds are over 55 km/h or average speed is above 45 km/h. If not, only temporary traffic calming measures should be considered.

Based on best practices and contemporary speed management and traffic calming protocols, the available data suggests most drivers comply with the posted speed, and major interventions are not necessary. However, a combination of minor interventions should be considered to help address local concerns.

4.3. Parsons' Thoughts on Traffic Issues

Community concerns are understood to primarily revolve around the increase of traffic volumes along Malcolm Street due to the proposed Brown Lands development, which may result in potential safety issues. However, increase in traffic does not necessarily result in unsafe conditions. As mentioned in previous sections, future traffic volumes on Malcolm Street including the Brown Lands are expected to fall within the optimal range for a local street. The worse case scenario, with 50% of Brown Lands traffic traveling to Malcolm Street, exceeds the optimal volume threshold by roughly 15%. However, it is important to understand that the ranges outlined by industry and the 2024 TMP are guidelines and context-sensitive; it is not uncommon for local streets to safely accommodate higher levels of traffic with proper management and design interventions.

At the intersection of Malcolm Street and Almonte Street, traffic operations are not expected to be a major concern, based on results of the Brown Lands TIS analysis; this conclusion also applies to the 50% worse case scenario. The existing stop control on the side street is expected to adequately accommodate future traffic. However, upon a desktop review of the existing intersection design, there may be opportunities to help mitigate some road safety risks. For example, the northeast corner of the intersection appears to have a radius of approximately 15m. Contemporary intersection and traffic calming guidelines suggests local street corner radii could be reduced as low as 3m to 5m [3] to slow down right-turning vehicles.

5. Parsons Review of Desired Community Mitigation Measures

The concerns of community members should always be taken into consideration. It is understandable that community members will have reservations about a new development that will add more traffic and potential risks to local streets. However, perceived risks and desired outcomes must be investigated, and solutions be justified using evidence-based approaches and data before deciding upon the appropriate solution. Table 1 below outlines Parsons' thoughts and views of the various mitigation proposals heard, with suggested actions where applicable.

[2] From City of Ottawa Traffic Calming Design Guidelines (2019) - The 85th percentile speed of all vehicles passing along a roadway during a specified time period is typically regarded as the representative speed of traffic. The 85th percentile speed is the speed exceeded by the fastest 15% of vehicles.

[3] From Transportation Association of Canada (TAC) Canadian Guide to Traffic Calming, 2nd Edition (2018), Table 3.3.2., Pg. 64.

Table 1: Parsons Input Regarding Proposed Modifications

No.	Mitigation Proposal	Source	Technically Supported?	Parsons Comments
1	The full or partial closure of Strathburn Street to traffic between Malcolm Street and Street 2	Community	Not at this time	**Problem Statement:** This is understood to be the community's most desired mitigation option. In the hierarchy of traffic calming measures, it is one of the most aggressive and impactful options. The full closure would require a new cul-de-sac on Strathburn Street that has land impacts. It is acknowledged this option would eliminate traffic infiltration on Malcolm Street. **Parsons' View:** It is Parsons view that this measure (including the conversion of Strathburn to one-way only) is not warranted based on information and data collected to date. As local streets, there is an ideal traffic volume threshold of 1,200 vehicles per day, forecasted full buildout activity on a "typical" day are not expected to exceed this number. Further, the 85th percentile speed shows most drivers on Malcolm St today adhere to the posted speed limit and are well below the industry threshold of 50 km/h. It is acknowledged that as future development occurs, there is risk that conditions will worsen, but it is common practice to first consider less invasive or drastic means to manage traffic behaviour and enhance safety on impacted corridors. Using targeted interventions may be effective before considering a permanent road closure. There are also secondary implications to closing a connected road link - reducing efficiency of municipal operations such as snow clearing and waste collection. It also reduces network resiliency if there is an incident in the community that requires emergency vehicle access, potentially increasing travel time. Proper consideration and consultation with relevant departments should be completed prior to implementing any road closure solution. **Alternative Approach:** • Given this is a future issue, forecasted volumes and implications as well as perceived issues are not yet realized or validated, a staggered plan should be considered. This approach requires monitoring activity and collecting data on Malcolm Street prior to and during early stages of occupancy. • If activity demonstrates greater traffic volume growth than expected or increasing occurrences of speeding, consider a pilot of easy to implement temporary traffic calming measures to reduce attractiveness of Malcolm St as a short-cut route, such as (but not limited to): o Centreline flex posts/ delineators o Temporary lane or intersection narrowings, e.g., edgeline flex posts, pin curb or planters o Textured Pavement o Supportive pavement markings and signage Note, the municipality may consider proactively applying temporary measures in advance of occupancy if desired. • Collect subsequent data and continue monitoring. If issues persist, proceed to higher tier measures such as (but not limited to): o Speed humps o Permanent road or intersection narrowings o Mini-roundabout • At this time, geometric modifications and permanent interventions such as converting Street 2 access to right-in right-out only, road closures or one-way conversions may be considered.

2	A new traffic signal along County Road 29 at either Strathburn Street or Street 1.	Community	Not at this time	**Problem Statement:** Residents felt strongly that a traffic signal would improve traffic flows and improve safety for cyclists and pedestrians to cross County Road 29 at Street 1, as well as attract more residents away from Malcolm Street. **Parsons' View:** County Road 29 and its intersections are under the jurisdiction of Lanark County. As such, the decision to provide a traffic signal ultimately lies with the County. Based on input provided by the County to municipal staff, the signalization of either of the two intersection is not warranted because the anticipated traffic volumes are too low. The traffic analysis in the TIS further supports this conclusion based on operational results assuming stop-controlled intersections (with stop signs on the side street only) at both intersections result in a LOS B (where a LOS D is the typical minimum acceptable operational standard). If a traffic signal were to be implemented, it would not be a disbenefit to overall network operations and arguably would be more attractive to residents, but it has a capital and operating cost implication and the financial responsibility for this modification that is not warranted would need to be clarified between parties. It is noted that the TIS does recommend a northbound right-turn lane at the future intersection of County Road 29/Street 1 that will increase operational capacity.

3	Traffic calming measures along Malcolm Street	Community
		+
		MM Staff
			Yes	**Problem Statement:**
				
				Residents are concerned about safety along Malcolm Street due to the increase in traffic stemming from the proposed Brown Lands development. Residents have claimed vehicles speeding at the Malcolm/Strathburn intersection when completing turns and leading to erratic vehicle behaviour (e.g. sliding onto front lawns)
				
				Parsons' View:
				
				The new TMP generally encourages the provision of traffic calming measures where needed. Along local roads, particularly when posted speeds are below 50km/h, traffic calming is recommended by the TMP in a context-specific manner and if vehicle speeds create unsafe or uncomfortable environments. The TMP identifies different policies that can be used to determine if the need for traffic calming measures is triggered by various factors. Three different policies are referenced:
				
				• **The TAC Canadian Guide to Traffic Calming (2018)** – the guide lists several criteria to pass the screening process for traffic calming, which include either a serious collision with a vulnerable road user or meeting at least one of the context criteria and two of the traffic criteria.
				  ○ Context criteria is dependent on pedestrian activity and surrounding land uses.
				  ○ Traffic criteria is dependent on inappropriate driver behaviour, vehicle speeds significantly higher than posted speeds, high traffic volumes and high collision rates.
				• **The Lanark County Speed Management Policy (2023)** – the policy lists three main criteria for speed management measures, which includes the road experiencing high pedestrian activity (from school or community safety zones, or other locations with special considerations), the 85th percentile speed exceeds posted speed by 10 km/h, or the 95th percentile speed exceeds the speed limit by 20 km/h.
				• **The Mississippi Mills Policy for Traffic Calming and Speed Management on Municipal Roads (2010)** – the key criteria to be met is the 85th percentile speed, which would initiate a traffic calming study if speed exceeds posted speed by 15 km/h.
				
				The municipality should monitor traffic activity and review different types of traffic calming measures, both at the Malcolm/Strathburn intersection as well as long the Malcolm Street corridor by following the alternative approach outlined in **Item No. 1 of this table.**

				Other Considerations: It is understood that the municipality is also considering converting the intersection of Malcolm/Hope from two-way stop to an all-way stop as an additional traffic calming measure. It is important to understand that all-way stop control is not considered an effective traffic calming measure based on best practices. The TAC Traffic Calming Guide and other industry guidelines state the overuse and improper application of all-way stop-control intersections can have the opposite effect, since drivers are inclined to ignore or not comply with signage when there is low vehicle activity, thereby increasing the risk of collision and injury. The proper application of all-way stop-control is guided by a warrant (outlined in the Ontario Traffic Manual: Book 12). This warrant should be used to determine if an all-way stop-control intersection is appropriate at any unsignalized location. An alternative approach may be to consider intersection specific traffic calming measures, such as a mini-roundabout, which adds a layer of safety, but has secondary benefits such as adding a landscaping and aesthetic feature.
4	MM and County coordinate to increase westbound right-turn capacity at CR29 and Almonte Street	MM Staff	Yes	**Problem Statement:** Based on a survey prepared and collected by the municipality, the community considers the provision of a westbound right-turn lane (or in general increasing westbound right-turn capacity) at the County Road 29/ Almonte Street intersection to be the second most effective method to reduce traffic generated by Brown Lands along Malcolm Street. **Parsons' View:** The Brown Lands TIS indicates the existing volume on the westbound right-turn movement at the County Road 29/Almonte intersection exceeds 60 vehicles in the peak hour, which would increase with future development traffic. The Transportation Association of Canada (TAC) Geometric Design Guidelines (2017) suggest that an auxiliary right-turn lane at unsignalized intersections may be considered when 60 right-turn vehicles per hour is exceeded, or there is demonstrated high risk of collision or aggressive interactions between the through and right-turn traffic. Furthermore, analysis results in the Brown Land TIS show the volume to capacity ratio (v/c ratio) of the westbound movement reaches 0.89 during the PM peak hour at full buildout, which is approaching the typical capacity limit (0.90) based on industry standards. The 2024 TMP, Table 39 and Schedule 18 has flagged the County Road 29/Almonte intersection for future intersection modifications, including auxiliary left-turn lanes on all approaches within 15 years. This presents an opportunity for the County to consider advancing works at this location and develop a design that accommodates not only traffic in the short-term but will also satisfy long-term needs. Based on these factors, Parsons agree there is sufficient evidence and justification to support modifications to this intersection, including (but not necessarily limited to) an auxiliary westbound right-turn lane.
5	Restrict left turns out of development onto Strathburn Street	TIS + MM Staff	No	**Problem Statement:** The Brown Land TIS proposes signage to prohibit outbound left-turns from Street 2 onto Strathburn Street. This option was introduced to address community safety concerns regarding traffic increase along Malcolm Street. Alternative physical options were dismissed by the TIS through discussions with municipality staff due to operational concerns and impacts for municipal and emergency vehicles. **Parsons' View:** Prohibiting left turns from Street 2 to Strathburn Street via signage alone will have limited effectiveness. This option would require constant enforcement to ensure residents are adhering to it. It also increases the risk of collision due to non-compliance. While it may help deter some of the outbound traffic and redirect them to County Road 29, to be truly effective, there must be some physical deterrent, either a road narrowing or physical median/ island. As it stands, it is not recommended as an isolated measure.

6	Add a northbound auxiliary right-turn lane to the future CR 29/Street 1 intersection	TIS + MM Staff	Yes	**Problem Statement:** The TIS recommended the addition of a northbound auxiliary right-turn lane at the future CR 29/Street 1 intersection to accommodate anticipated right-turn traffic. **Parsons' View:** Anticipated northbound right-turn traffic volumes at the CR 29/Street 1 intersection are expected to exceed 60 vehicles/hour. Based on industry guidance for right-turn lanes discussed in **Item No.4** of this table, Parsons has no concerns with this recommendation.
7	Active Transport (walking/cycling) facility improvements along Strathburn Street and at the intersection with Malcolm Street	MM Staff	Yes	**Problem Statement:** Strathburn Street currently lacks active transportation facilities, along with a portion of Malcolm Street (north of Dunn Street). The proposed development presents an opportunity to make improvements to the surrounding active transportation network. **Parsons' View:** Municipal staff have proposed the section of Strathburn Street between Malcolm Street and Street 2 access be urbanized to support the proposed development. Malcolm Street is classified an urban street and Strathburn Street a rural street in the 2024 TMP. Any active transport interventions or enhancements must be tailored for the corridor environment, which is demonstrated in the TMP standard cross-sections. Schedule 9 of the 2024 TMP identifies gaps in the pedestrian network along Strathburn Street, where a facility would be provided on at least one side of the road in the future. For cyclists, the TMP Schedule 11 identifies Strathburn Street and Malcolm Street as Local Route designation that should provide shared road treatments, such as specialized pavement markings and signage. Parsons agree there is a tremendous opportunity to address existing gaps in the active transport network to better serve existing community residents and future residents of the proposed development. At this time, it is our understanding the municipality is considering urbanizing with sidewalk Strathburn Street between Malcolm Street and Street 2 and maintaining the rural design but adding a paved shoulder for active transport between Street 2 and County Road 29. New pedestrian facilities, whether paved shoulder if road remains rural or sidewalk if urbanized, and appropriate cycling road treatments along Strathburn Street is greatly supported. Additionally, there is value in also adding a new sidewalk on the west side of Malcolm Street between Dunn Street and Strathburn Street to fill the gap to the existing facility at Dunn Street.

6. Closing

The Municipality of Mississippi Mills retained Parsons to provide a review of the transportation implications and associated community concerns related to a new residential subdivision proposal in Almonte (the Brown Lands). Municipal staff had provided the TIS Report prepared by the applicant's consultant (Novatech), as well as feedback from various community outreach activities. The TIS Report was considered adequate and applied appropriate industry approaches and methodology when evaluating the area transportation network.

The key concern expressed by the local community related to the traffic impacts from the new development on Malcolm Street. Some of the options to address these concerns raised by the community and/ or the municipality included:

1. Full closure of Strathburn Street to through traffic between Malcolm Street and Street 2 access
2. Limiting traffic at the Street 2 access to right-in/right-out only via a "pork chop" island
3. Prohibiting inbound traffic of the development from using Strathburn Street by converting it to one-way eastbound between Malcolm Street and Street 2 access
4. Maintaining normal operations on Street 2 and Strathburn Street (no restrictions), but apply interventions along Malcolm Street to reduce speeds

While the first three options are valid options to reduce traffic volumes on Malcolm Street, they are permanent and require additional considerations to ensure they are effective and do not trigger downstream impacts. For example, the full closure of Strathburn Street may adversely affect municipal operations and emergency vehicle travel times. Additional due diligence would be needed to confirm the impacts are acceptable.

In Parsons' view, the first three options are not warranted at this early stage, since the Brown Lands development has yet to achieve early occupancy. It would be prudent for the municipality to apply a gradual/ staggered approach to mitigating community concerns while avoiding unforeseen downstream impacts. This approach is embedded within standard practice when considering traffic calming mitigation; "it is not uncommon that the perceived nature of a traffic problem is substantially different from the real situation. " [4] The municipality should ensure the perceived problem is validated before considering permanent road network changes.

Therefore, we suggest the municipality observe and assess traffic conditions and maintain flexibility in how to address future traffic issues as they arise over the course of time. They should continue to monitor traffic conditions on Malcolm Street annually leading up to, and during early occupancy to properly assess changes in travel behaviour and trends in corridor activity with development. They may consider proactive low-cost and low-impact or temporary measures along Malcolm Street and Strathburn Street to passively manage traffic during or even in advance of occupancy as desired, but reserve stronger, higher cost and permanent measures if problems materialize or persist. If traffic growth along Malcolm Street exceeds expectations or observed vehicle behaviour heightens safety risks, despite early efforts, the municipality may always revisit the first three options at that time. Proactive monitoring will enable the municipality to assess the effectiveness of any measures applied and strategically adjust their approach accordingly.

Michel, should you have any questions or comments on this memorandum, please feel free to reach out to the undersigned.

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Reviewed by:

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[4] TAC Canadian Guide to Traffic Calming, 2nd Edition (2018), Section 2.1.1. Guiding Principles, Pg. 17.

Document Control Page

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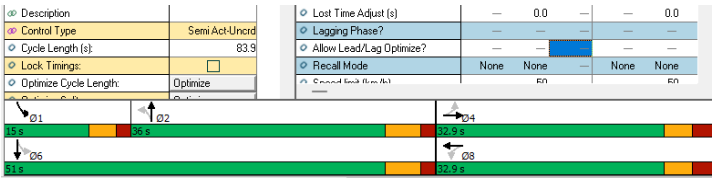
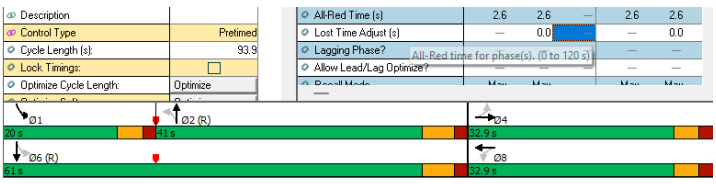
	Original March 12, 2025	Basel Ansari, P.Eng.	Austin Shih, P.Eng., MASc

Appendix A

TIS Technical Review and Comments

Table A-1: Comments Addressing the TIS Content

Section	Comment	Parsons Input
Throughout	Since the TIS report was prepared prior to the approval of the new 2024 Mississippi Mills TMP, it may be worth noting that some information in the TIS based on the 2016 MMTMP is now superseded by the 2024 TMP. This includes the roadway descriptions in Section 2.0, where Strathburn Street and Malcolm Street are both no longer classified as collector roads and are now considered local roads as per Schedule 15 in the new TMP. It also includes the planned conditions of Section 3.0 Table 2, where the new TMP's Table 38 provides a different set of future road projects. Lastly, the AADT and vehicles per hour based on road classification (indicated in Section 6.4 of the TIS) were modified slightly in the new TMP and a local road is considered optimal for a traffic volume up to 120 vehicles per hour.	If desired by the Municipality staff, information obtained from the previous TMP in the TIS report can be updated to utilize the new 2024 Mississippi TMP.
Section 1.3, Page 2 and Section 6.0, Page 12	The HCM delay criteria for signalized intersections is provided (referred to as Exhibit 18-4 in the TIS). Also, MTO Guidelines is referenced for v/c ratio criteria at signals. However, analysis results in Section 6.0 only reference the v/c ratios at the County Road 2/Almonte intersection and do not acknowledge the v/c ratios exceeding 0.85 during the PM peak hour for the WB movement in all scenarios.	As the MTO Guidelines consider v/c ratios exceeding 0.85 to be less optimal, it may be noting delays for other movements at the signalized intersection and acknowledging v/c ratios exceeding 0.85.
Section 6.0, Page 12	Based on the Synchro reports in Appendix D, the analysis uses a Peak Hour Factor (PHF) of 0.9 for existing conditions and 1.0 for future conditions, as well as a saturated flow rate of 1,800 veh/hr/lane. These parameters are typically utilized by the City of Ottawa based on the requirements of the City's TIA Guidelines. However, they may not necessarily apply to the context of Almonte.	Consider using the default HCM saturated flow rate of 1,900 veh/hr/lane, as well as a more conservative PHF for future conditions. Also consider using the default Synchro PHF value of 0.92, or a value of 0.9 for future conditions to match the parameters of the existing conditions analysis. Spot checks using Sycnhro were carried out to recreate the Novatech analysis using the parameters mentioned. Based on the analysis, these changes are not expected to result in any major changes to conclusions of the TIS.
Appendix C and D	Based on the Synchro reports, a cycle length of 75 seconds was used at the County Road 29/Almonte signalized intersection for both AM and PM in all scenarios. While this cycle length is acceptable as the most optimal time for traffic operations in all future scenarios, it may not be accurately representing the cycle lengths and phase splits in existing conditions based on the signal timing plan in Appendix C of the TIS, as it does not take into account the "green time only" table. The assumed existing timing plan splits for AM and PM have been recreated below based on the available signal timing plan. **AM Peak Hour**  **PM Peak Hour**  	Note that this timing plan was tested and found to result in higher congestion and delay results for existing conditions, particularly for the AM peak hour. Optimizing the cycle length in future conditions to 75 seconds is found to be acceptable, but it may be worth noting that the current split is not optimal for existing conditions.