

Traffic Brief (Preliminary Assessment)
FOR
PROPOSED PLACE OF WORSHIP-MOSQUE DEVELOPMENT AT
12662 TENTH LINE, WHITCHURCH, STOUFFVILLE, ON

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(Project n2271)

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Table of Contents

1.0	Introduction	1
2.0	Proposed Development	1
3.0	Existing Transportation Conditions	3
3.1	Existing Roads (Tenth Line).....	3
3.2	Active Transportation	3
3.3	Existing Transit.....	4
3.4	Existing Traffic.....	4
4.0	Preliminary Trip Generation Estimates	4
5.0	Site Access and Internal Circulation	6
6.0	Internal Traffic Circulation	6
7.0	Parking Supply	6
8.0	Recommendations and Further Assessment	7
9.0	Preliminary Transportation Opinion	8

Reference:

1. Site Plan Concept of Proposed Development at 12662 Tenth Line, Whitchurch, Stouffville, Ontario, prepared by n Architecture Inc.
2. Transportation Mobility Plan Guidelines for Development Applications, 2025
3. Transportation Impact Study for 12811 Tenth Line-Lincolnville Northcape, April 2026 by TYLin
4. Place of Worship Policy Review Prepared for City of Brampton (Discussion Paper), January 2008
5. Institute of Transportation Engineers (ITE) Trip Generation Manual 12th Edition

1.0 Introduction

n Engineering Inc. has been retained to provide a preliminary assessment regarding suitability of the proposed development of a mosque/community facility to be located at 12662 Tenth Line in the Town of Whitchurch-Stouffville, Ontario. Figure 1 shows the proposed site location.



Figure 1-Proposed Site Location

The purpose of this preliminary assessment is to review the proposed development from a transportation engineering perspective, including the proposed site access arrangement, parking supply, internal circulation, preliminary traffic generation, and anticipated traffic characteristics associated with the proposed religious/community use.

2.0 Proposed Development

Based on the information provided in the preliminary concept plan, the proposed development consists of a mosque/community facility with associated surface parking, internal vehicle circulation, pedestrian connections, and emergency vehicle access.

The proposed building has a total Gross Floor Area (GFA) of approximately 2,807.48 m² including separate prayer areas for men and women, as well as a basketball court and associated community/support spaces. The proposed site plan provides 168 parking spaces. The concept plan proposes two full movement vehicular accesses coming off of Tenth Line and an internal circulation system surrounding the proposed building. Figure 1 shows the preliminary concept plan.

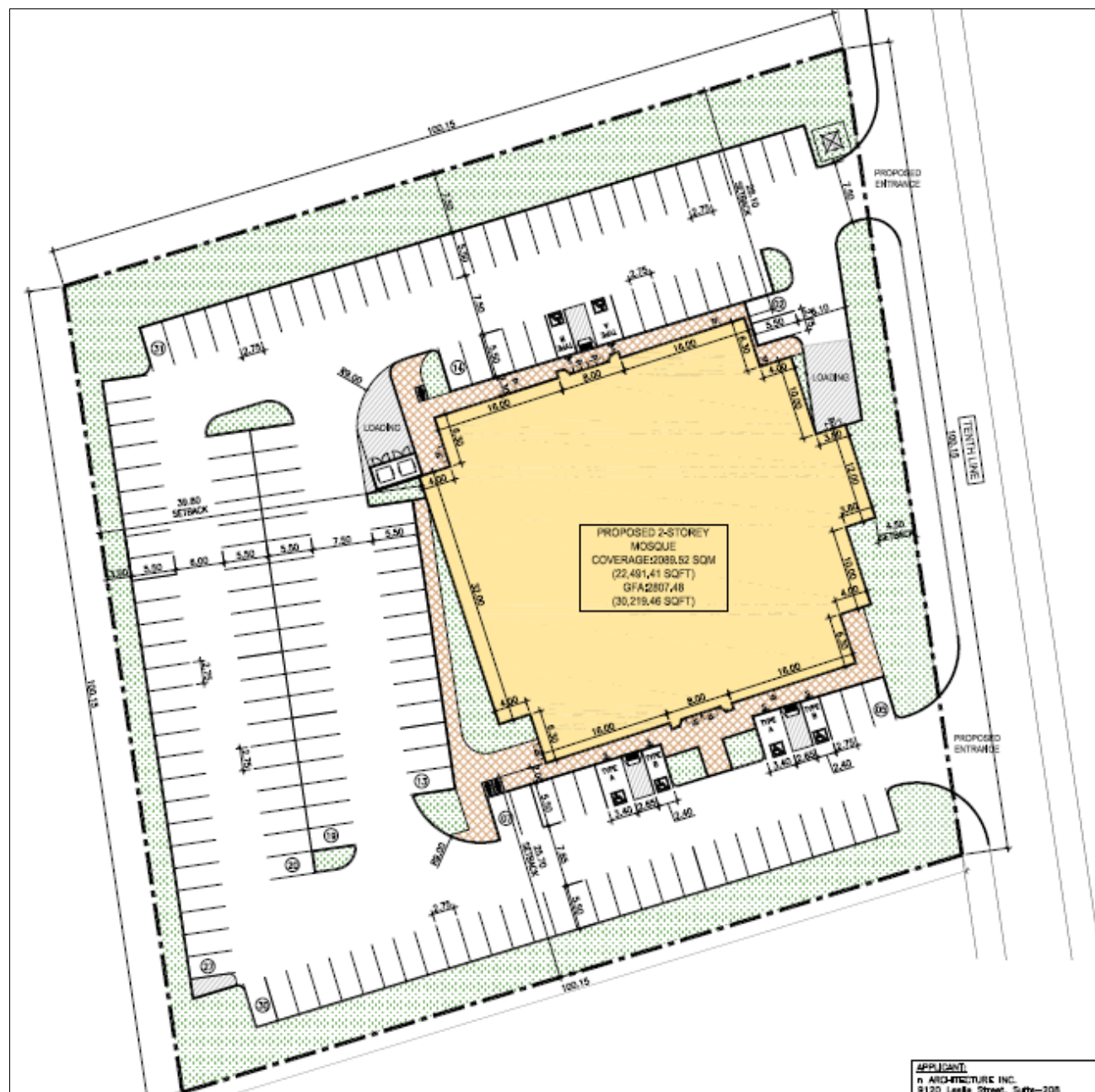


Figure1- Preliminary Concept Plan

The designated worship areas are summarized as follows:

Table 1- Proposed Development Components

Development Component	Gross Floor Area
Men's Prayer Area	636.0 m ²
Women's Prayer Area	182.6 m ²
Basketball Court	610.8m ²
Other(office, class rooms, circulation space, storage etc.)	1378.08
Total GFA	2807.48

The total designated worship area is approximately 818.6 m², equivalent to approximately 8,813 ft². The basketball court and other community/support areas are included within the overall building GFA but are not considered part of the designated worship area.

3.0 Existing Transportation Conditions

3.1 Existing Roads (Tenth Line)

Tenth Line in the vicinity of the subject property is characterized as a two-lane roadway, generally providing one lane of travel in each direction. The posted speed limit varies by direction, with a 50 km/h posted speed limit for southbound traffic and a 60 km/h posted speed limit for northbound traffic along the subject frontage. Within the limits of the proposed property frontage, the roadway widens to provide two southbound travel lanes, resulting in additional southbound capacity approaching/passing the subject property.

This widening provides an opportunity for traffic entering and exiting the proposed development to be accommodated with reduced potential for interference with through traffic, subject to the final design and approval of the proposed accesses. Overall, the existing roadway configuration provides a suitable transportation context for the proposed development, with detailed access geometry, sight distance, lane configuration, and traffic operations to be confirmed during the subsequent stages of design.

3.2 Active Transportation

There are currently no pedestrian sidewalks or dedicated cycling facilities, such as cycle tracks or bike lanes, along Tenth Line within the study area. As development continues to progress along the Tenth Line corridor, the provision of appropriate active transportation facilities will become increasingly important to support pedestrian and cyclist connectivity and provide safe and convenient access between existing and future developments. Future improvements to the corridor should therefore consider the implementation of sidewalks and cycling facilities, where feasible, to accommodate the anticipated growth and improve overall active transportation connectivity in the area.

3.3 Existing Transit

The site benefits from its proximity to the Old Elm GO Station, located approximately 600 m north of the subject property, providing a convenient transit option for staff, visitors, and members of the congregation. This proximity offers an opportunity for users to access the proposed mosque/community facility by GO Transit and active transportation, particularly for users travelling from surrounding communities. The availability of a nearby transit facility also provides transportation choice and supports a more sustainable and flexible travel pattern for the proposed development.

3.4 Existing Traffic

According to the background development Traffic Studies, existing traffic volumes, along this section of Tenth Line fronting the development are summarized below.

Table 2-Existing Traffic Volumes on Tenth Line

Period	Northbound	Southbound	Two-Way Total
Weekday AM Peak Hour	211	102	313
Weekday PM Peak Hour	95	254	349

Source: TYLin (Transportation Impact Study for 12811 Tenth Line-Lincolnville)

The available traffic information indicates that the existing traffic demand along this section of Tenth Line is relatively moderate.

It should be noted, however, that the available traffic data represents the conventional weekday AM and PM peak periods. Friday midday traffic volumes are not available as part of this preliminary assessment. This distinction is important because the proposed mosque is expected to experience its highest traffic demand during the Friday midday period rather than during the conventional weekday commuter peak periods.

4.0 Preliminary Trip Generation Estimates

For the purpose of this preliminary assessment, the estimated site-generated traffic was derived using three alternative methodologies. The ITE Mosque land use (LUC 562) was considered, together with the City of Brampton's place-of-worship trip-generation rates based on total GFA and designated worship area. As the ITE methodology does not provide a specific Friday midday peak-hour rate, the ITE PM peak-hour rate was conservatively applied to represent the concentrated Friday prayer period. The resulting estimates were compared with the municipal place-of-worship methodologies. Based on the characteristics of the proposed facility, the designated worship area is considered the primary component generating mosque-related traffic, while the GFA-based methodologies provide additional conservative checks.

- **Trip Rates by ITE Manual:** the Landuse Code 562 provides trip rates for Friday AM and PM peak hour of generator 9.54 and 23.55 respectively. The PM peak hour of generator rate is used to estimate the Friday's Midday peak hour trips as it is considered the busiest time of the mosque.

Similarly, for PM peak hour the trip rate for the peak hour of adjacent street traffic was considered to estimate the Friday's and Saturday's PM Peak hour trips.

- **Trips Rates Based on Place of Worship Policy, City of Brampton:** The City of Brampton has conducted research on places of worship and has provided recommended trip rates based of the Mosque's Gross Floor Area and Designated Worship Area for AM, Midday and PM peak hours. These rates have been applied to the respective factors to estimate the generated trips.

Table 2 below shows the estimated trips generated by proposed development. For this preliminary assessment, the average of the three methodologies has been adopted as the representative site-generated traffic volume, resulting in approximately 563 trips during the Friday midday peak hour, 100 trips during the Friday PM peak hour, and 100 trips during the Saturday PM peak hour.

Table 3- Trip Generation Calculations

Property	Friday Midday Peak Hour			Friday PM Peak Hour			Saturday PM Peak Hour		
Based on ITE Mosque (LUC 562)	Average rate*	IN	OUT	Average rate**	IN	OUT	Average rate**	IN	OUT
30221 ft²	23.55	43%	57%	4.22	50%	50%	4.22	50%	50%
Trips	712	306	406	128	64	64	128	64	64
Based on Brampton City Policy (Trips/ Total GFA)	Average rate\$	IN	OUT	Average rate\$	IN	OUT	Average rate\$	IN	OUT
Gross Floor Area (30221 ft²)	19.45	74%	26%	3.62	52%	48%	3.62	52%	48%
Trips	588	435	153	110	57	53	110	57	53
Based on Brampton City Policy (Trips/ Designated Worship Area)	Average rate#	IN	OUT	Average rate#	IN	OUT	Average rate #	IN	OUT
(Worship Area) 8813 ft²	44.08	74%	26%	6.83	52%	48%	6.83	52%	48%
Trips	389	288	101	61	32	29	61	32	29
Total Site Generated Trips	563	343	220	100	51	49	100	51	49

*PM Peak Hour of Generator ** Peak Hour of Adjacent Traffic \$ Trips/Total GFA # Trips/ Net Worship Area

Based on the above table, the proposed development is expected to generate approximately 563 Friday prayer trips, 100 PM peak hour trips and 100 Saturday PM peak hour trips. The Friday midday period, is anticipated to represent the most critical traffic period for the proposed development due to the concentrated arrival and departure activity associated with the Friday congregational prayer.

Given the relatively moderate existing traffic volumes on Tenth Line, there appears to be reasonable capacity within the existing roadway corridor to accommodate the proposed development; however,

5.0 Site Access and Internal Circulation

The proposed site plan provides two vehicular accesses to Tenth Line. The provision of two access points provides flexibility for the distribution of site-generated traffic and avoids concentrating all development traffic at a single access. The internal site circulation system generally provides a continuous circulation route around the proposed building, with parking areas located around the perimeter of the site. From a preliminary transportation perspective, the proposed arrangement provides an appropriate framework for accommodating vehicle circulation, parking access and emergency vehicle movements. However, the detailed access design should be reviewed to confirm:

- Access spacing from the Tenth Line road main intersections and other accesses;
- sight-distance requirements;
- Applicable Town of Whitchurch-Stouffville access standards.
- Assessment of left turn and right turn taper lanes at the entrances

The final access locations and geometry should be confirmed in consultation with the Town during the development application process.

6.0 Internal Traffic Circulation

The proposed parking layout provides drive aisles around the central building, allowing vehicles to circulate between the parking areas and proposed accesses.

The relatively long drive aisles provided in the vicinity of both entrances appear to provide opportunities for internal vehicle storage during periods of concentrated arrival and departure activity. The adequacy of the available internal storage should be confirmed through a detailed review of the final site plan and anticipated Friday prayer arrival/departure profile to ensure that queues do not extend onto Tenth Line.

7.0 Parking Supply

The proposed development provides 168 parking spaces, compared with a reported parking requirement of 129 spaces based on Town of Stouffville Zoning By-Law.

The proposed parking supply is therefore approximately 30 percent greater than the identified parking requirement.

The additional parking capacity is particularly beneficial for the proposed use because mosque traffic demand is expected to be concentrated during specific prayer periods and religious events.

In particular, Friday congregational prayer can result in a short-duration increase in both parking demand and vehicle arrivals/departures. Providing parking beyond the minimum requirement reduces the potential for vehicles to seek parking on Tenth Line or adjacent properties.

It is recommended that the final site plan maintain sufficient on-site parking to accommodate anticipated peak prayer and event demand without relying on public roadways for parking or vehicle queuing.

8.0 Recommendations and Further Assessment

This Opinion Letter represents a preliminary transportation engineering assessment based on the information available to n Engineering Inc. at the time of preparation. The assessment is not intended to replace a comprehensive Traffic Impact Study, detailed traffic operations assessment, or detailed transportation engineering design.

Given the scale and nature of the proposed development and the concentrated traffic activity anticipated during Friday prayer, a full Traffic Impact Study is recommended in accordance with York Region's applicable transportation guidelines as the development proceeds through the formal approval process.

The following matters should be addressed as part of the subsequent detailed transportation assessment:

- Confirm the study area, study methodology, study intersections and traffic count requirements with Town and York Region staff;
- Undertake site-specific Friday midday traffic counts, in addition to conventional weekday peak-period counts, to establish existing traffic conditions during the critical mosque operating period;
- Review future development scenarios, including appropriate background traffic growth and traffic generated by approved/ongoing developments within the study area;
- Confirm the proposed mosque's anticipated occupancy, Friday prayer attendance, vehicle occupancy, modal split and future operating characteristics;
- Confirm the applicable trip-generation methodology with Town and York Region staff;
- Review the proposed Tenth Line accesses, including access spacing, sight distance, driveway geometry, turning movements and applicable left-turn/right-turn treatments;

- Review internal vehicle circulation and confirm that anticipated Friday prayer queues can be accommodated within the site without extending onto Tenth Line;
- Review pedestrian circulation
- Review the parking demand and supply
- Evaluate the traffic impact of the proposed development on surrounding intersections and roadways; and
- Identify and recommend mitigation measures, if warranted, based on the results of the detailed assessment.

9.0 Preliminary Transportation Opinion

Based on the preliminary assessment and the information currently available, the proposed mosque/community facility appears capable of being accommodated from a transportation engineering perspective.

The proposed development provides approximately 2,807.48 m² of GFA, including approximately 818.6 m² of designated men's and women's worship area, together with a basketball court and associated community/support spaces.

The site provides 168 parking spaces compared with 129 required spaces, resulting in a surplus of 39 parking spaces. This additional parking capacity is considered beneficial in accommodating the concentrated parking demand anticipated during Friday prayer and other religious events.

The proposed two-access arrangement to Tenth Line appears to be reasonable for distributing site traffic and accommodating vehicle circulation within the property.

The preliminary trip-generation assessment indicates that the Friday midday period is the critical transportation period for the proposed use. Depending on the methodology applied, preliminary Friday midday traffic generation is estimated to range from approximately 388 to 563 vehicle trips, with the ITE Mosque methodology providing the most conservative estimate.

Nevertheless, no fundamental transportation constraint has been identified through this preliminary review that would preclude the proposed development from proceeding to the next stage of the development approval process.

It is recommended that the transportation matters identified in this letter, particularly the Friday midday traffic conditions, trip generation, access operations, internal circulation and pedestrian movements, be further assessed as the development advances.

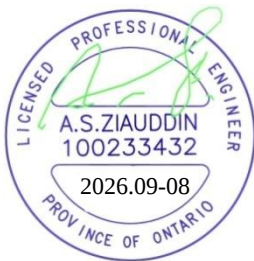
The conclusions presented herein are subject revision as additional and more detailed information becomes available. Further studies, analysis, design modifications, or mitigation measures may be required as part of the formal development application process.

Subject to confirmation of these matters and compliance with the applicable requirements of the Town of Whitchurch-Stouffville, it is our preliminary professional opinion that the proposed mosque development can be appropriately accommodated from a transportation engineering perspective.

We trust that this preliminary Transportation Engineering Opinion Letter is sufficient to support the current stage of the proposed development application.

Respectfully submitted,

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-----End of Statement-----