

September 6, 2023

Project No. 232039

Bayshore Contracting
51 Weston Court
Dartmouth, NS B3B 1X4

Attention: Reg Leblanc

Re: Gateway Meat Market – Traffic Impact Statement

1 Introduction

Harbourside Transportation Consultants has completed a traffic impact statement, as per Halifax Regional Municipality (HRM) requirements, in support of the development application for the expansion of the Gateway Meat Market located at 667 Main Street in Westphal, Nova Scotia.

2 Site Context

The subject site is located on Main Street east of the Forest Hills Parkway and encompasses two properties: Civic No. 667 (existing Gateway Meat Market) and Civic No. 671 (proposed expansion area). The site context is shown in Figure 1.

2.1 Existing Site Land Uses and Access

The existing Gateway Meat Market building has a gross floor area (GFA) of approximately 10,000 ft² including 5,500 ft² of retail space and 4,500 ft² of warehouse space. The property has two access points on Main Street which function as a separate entrance and exit with one-way circulation on site.

The property at Civic No. 671 includes a building that currently houses Banfield Ocular Prosthetic, an ophthalmologist office, and has two access points on Main Street.



Figure 1: Site Context

2.2 Existing Transportation Network

Main Street is an arterial roadway that runs east-west from Highway 107 and connects to the interchange of Highway 111 and Braemar Drive. The segment of Main Street near the subject site has a five-lane cross-section with two travel lanes in each direction and a center two-way left-turn lane. Main Street has a posted speed limit of 60km/h and there are bike lanes in both directions and sidewalks on both sides of the street. The Main Street cross section near the subject site is shown in Figure 2.



Figure 2: Main Street

2.3 Transit

The area is serviced by Halifax Transit Route 61 North Preston and 161 North Preston Express. There are bus stops in both directions on Main Street. The westbound bus stop is approximately 100 metres from the site. The eastbound bus stop location requires a pedestrian to walk 270 metres. Access to/from the eastbound bus stop on the opposite side of Main Street is facilitated via the crosswalk located at the signalized intersection of Main Street and Panavista Drive.

3 Proposed Development

The proposed development plan consists of adding a two-level expansion for total of approximately 15,000 ft² of additional GFA. Level 1 of the addition will consist of retail space and meat processing space (approximately 7,500 ft²) and level 2 will consist of offices (approximately 2,500 ft²) and warehousing space (approximately 5,000 ft²). The existing building footprint will be converted to warehouse space (10,000 ft²). The proposed site development plan is shown in Figure 3.



Gateway Meat Market Traffic Impact Statement

The overall building will have a total GFA of approximately 25,000 ft² and contain a total of 10,000 ft² of retail space (including meat processing spaces on level 1 and offices on level 2) and 15,000 ft² of warehouse space (including existing building and a portion of level 2 of the addition).

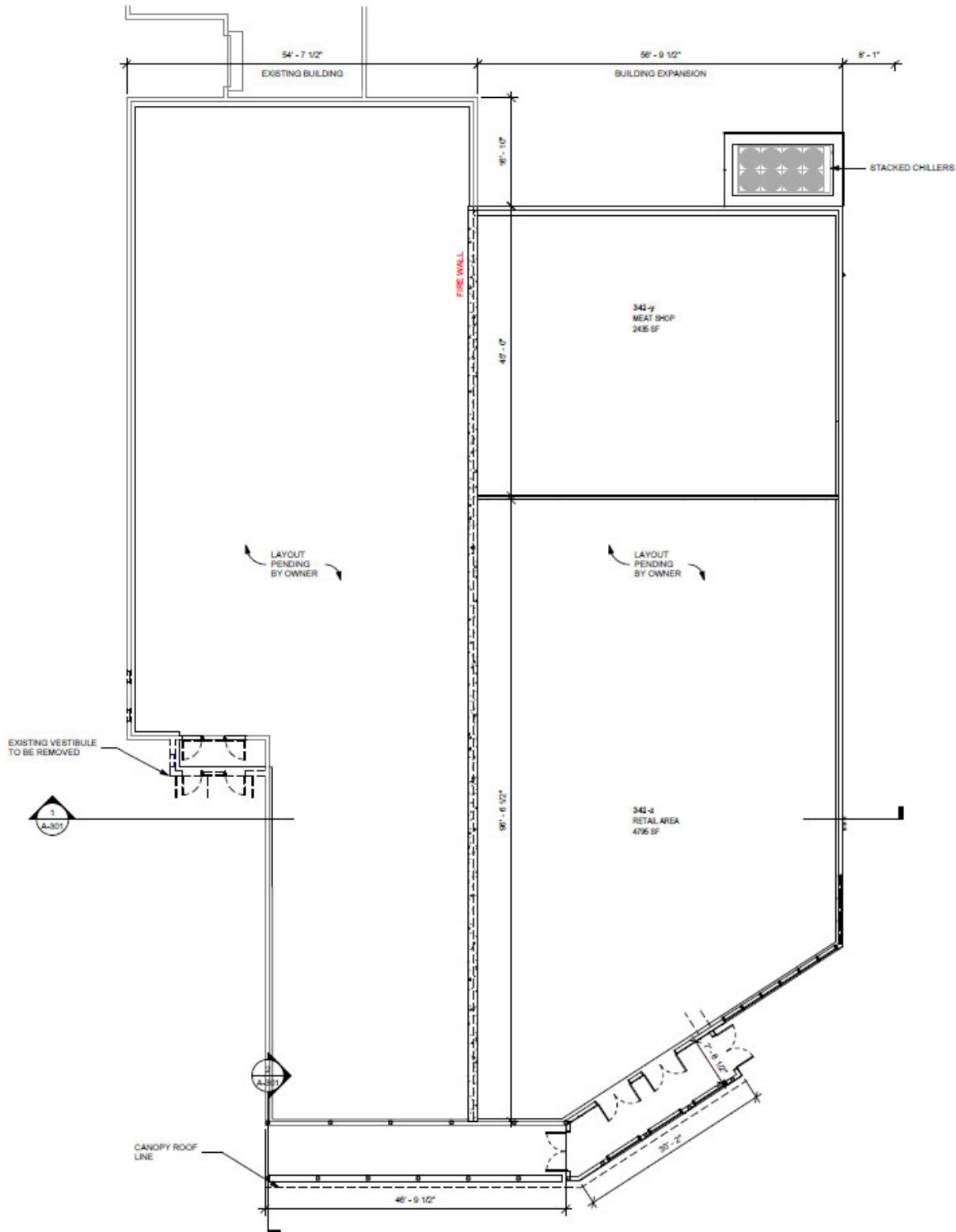


Figure 3: Site Development Plan



4 Site Access

Vehicle access to the Gateway Meat Market consists of two access points, one entry and one exit, complete with counter-clockwise circulation on the property between the entry and the exit. There are two separated curb cuts, one for in-bound entrance traffic and one for out-bound exit traffic. Due to the fact that all customers walk from the parking lot to the front entrance, conflicts between pedestrians and entering vehicles can regularly occur. Vehicles yielding to pedestrians can also lead to vehicles queuing back to Main Street. Switching the entrance and exit and reversing the on-site circulation direction would provide a safer situation, with fewer conflicts with pedestrians and would contain the queuing on the site and not out to Main Street.

The existing driveway to the adjacent site will be eliminated, which will reduce the number of driveways on Main Street and the number of conflicting turning movements.

A sight distance review was completed at the existing access locations to confirm that the sight lines meet the minimum stopping and turning sight distance requirements of the Transportation Association of Canada's (TAC) Geometric Design Guide for Canadian Roads¹. The minimum stopping and intersection sight distance requirements for a roadway with a design speed of 60 km/h are:

- ▶ Minimum stopping sight distance = 85 metres;
- ▶ Minimum intersection sight distance – left-turn from stop (across three lanes) = 145 metres; and
- ▶ Minimum intersection sight distance – right-turn from stop = 110 metres.

There is over 100 meters of stopping sight distance in both directions on Main Street to both the existing exit and entrance accesses. The minimum stopping sight distance requirement is met in both directions at the existing exit and entrance on Main Street.

The sight line west of the existing exit on Main Street (looking to the right) is shown in Figure 4. The sight line extends down Main Street beyond the signalized intersection with Panavista Drive indicating that there is over 150 metres of intersection sight distance available. The sight line east of the existing exit on Main Street (looking to the left) is shown in Figure 5. The sight line extends down Main Street beyond Civic No. 703 indicating that there is over 200 metres of intersection sight distance available. The minimum intersection sight distance requirements are met in both directions at the existing exit on Main Street.

¹ Geometric Design Guide for Canadian Roads, Transportation Association of Canada, June 2017.



Figure 4: Sight Line West of Access (Looking to the Right)



Figure 5: Sight Line East of Access (Looking to the Left)



5 Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual² was used to estimate the vehicle trip generation for the existing and proposed site land uses. With proposed changes to land uses in the existing building, trips were estimated for the existing site land uses in order to quantify the change between the existing and future trip generation for the overall site.

Land use codes 150 Warehousing, General Urban/Suburban and 850 Supermarket, General Urban/Suburban were used for the existing building and proposed expansion to the Gateway Meat Market and land use code 720 Medical-Dental Office Building, General Urban/Suburban, Stand Alone was used to account for trips to the adjacent property associated with existing land uses that will be removed by the proposed expansion. Table 1 summarizes the trip generation rates for the land use codes.

Table 1: Trip Generation Rates

Land Use	AM Peak Hour			PM Peak Hour		
	Rate	Entering	Exiting	Rate	Entering	Exiting
150 Warehousing	$T = 0.12(X) + 23.62$	77%	23%	$T = 0.12(X) + 26.48$	28%	72%
850 Supermarket	$T = 2.86 (X)$	59%	41%	$\ln(T) = 0.81 \ln(X) + 2.92$	50%	50%
720 Medical/Dental Office	$T = 3.10 (X)$	79%	21%	$T = 3.93 (X)$	30%	70%

Note: Rates are in vehicles per hour vph/1000 ft² of GFA.

5.1 Existing Land Uses

The weekday morning (AM) and afternoon (PM) peak hour trip generation estimates for the site's existing land uses are summarized in Table 2. On a typical weekday, the existing site is estimated to generate 44 vehicle trips in the AM peak hour and 106 vehicle trips in the PM peak hour.

Table 2: Existing Trip Generation Estimates

Land Use	1000 ft ² GFA	AM Peak Hour			PM Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
150 Warehousing	4.5	24	19	5	27	8	19
850 Supermarket	5.5	16	9	7	74	37	37
720 Medical-Dental Office Building	1.3	4	3	1	5	2	3
Total Trips Generated (vph)		44	31	13	106	47	59

5.2 Future Land Uses

The weekday AM and PM peak hour trip generation estimates for the site are summarized in Table 2. On a typical weekday, the site with the future expansion is estimated to generate 54 vehicle trips in the AM peak hour and 148 vehicle trips in the PM peak hour. After accounting for

² Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, September 2021.



existing trips to the site, the proposed changes to the Gateway Meat Market site will result in an increase of 10 vehicle trips in the AM peak hour and 42 vehicle trips in the PM peak hour.

Table 3: Future Trip Generation Estimates

Land Use	1000 ft ² GFA	AM Peak Hour			PM Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
150 Warehousing	15.0	25	20	5	28	8	20
850 Supermarket	10.0	29	17	12	120	60	60
Total Trips Generated (vph)		54	37	17	148	68	80
Existing Trips		-44	-31	-13	-106	-47	-59
New Trips Generated (vph)		10	6	4	42	21	21

6 Adjacent Development

The area adjacent to the Gateway Meat Market is planned on being converted into a residential complex encompassing both a seniors retirement living complex, and a multi-unit residential building targeted toward adult senior living. These buildings are estimated to have 300 units each with two access points to the complex: one using Loonview Lane and the new right-in, right-out driveway immediately west of the existing Fast Fuel driveway. The planned development, known as the Lake Loon Development, is shown in Figure 6³.



Figure 6: Planned Adjacent Lake Loon Development

³ Lake Loon Development Transportation Impact Study, Fathom Studios, March 2022.



The trip generation was calculated for the development in the transportation impact study completed by Fathom Studios and is summarized in Table 3. On a typical weekday, the adjacent development is estimated to generate 77 vehicle trips in the AM peak hour and 121 vehicle trips in the PM peak hour.

Table 4: Adjacent Development Trip Generation

Land Use	# Units	AM Peak Hour			PM Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
Retirement Living Complex	300	17	10	7	47	25	22
Seniors Apartments	300	60	21	39	74	41	33
Total Trips		77	31	46	121	66	55

The study concluded the following:

- ▶ The Main Street corridor occasionally experiences some congestion during peak hours.
- ▶ Congestion in the area is directly tied to the intersection of Main Street and Forest Hills Parkway/Extension.
- ▶ The full proposed development contributes less than 2% of the total traffic through this critical intersection. These volumes are distributed over multiple movements at the intersection, resulting in negligible impacts.
- ▶ Outside of the intersection of Main Street and Forest Hills Parkway/Extension, the other signalized intersections at Panavista Drive and Montague Road can reasonably accommodate the development's additional traffic with limited impact on intersection level of performance.
- ▶ The relatively close spacing of signalized intersections along this area of the Main Street Corridor help provide gaps that allow lower volume side roads and driveways to operate at a reasonable level of service.

7 Traffic Impacts

Both the Lake Loon development and Gateway Meat Market expansion have low trip generation estimates that contribute relatively few peak hour trips to the road network in comparison to existing traffic volumes on Main Street. Table 4 summarizes the combined area trip generation estimates. The combined developments are estimated to generate 87 vehicle trips in the AM peak hour and 163 vehicle trips in the PM peak hour.

The trips generated by the two developments are not expected to have a significant impact on traffic operations on Main Street. It is anticipated that the new vehicle trips associated with the Gateway Meat Market Expansion and Lake Loon can be accommodated on Main Street with a negligible impact on traffic operations. It should be noted that this consists of a high-level qualitative assessment, therefore no analytical capacity calculations have been completed to support the assessment.



Table 5: Summary of Area Trip Generation

Land Use	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting
New Gateway Meat Market Trips	10	6	4	42	21	21
Lake Loon Development	77	31	46	121	66	55
Total New Trips	87	37	50	163	87	76

8 Parking

8.1 Parking Supply

The Gateway Meat Market has an existing parking supply of 91 parking spaces including 2 barrier free parking spaces and 89 standard parking spaces. No increase in parking is expected with the expansion, however the number of barrier free parking spaces will be increased to 6 in the future parking supply. The site will have a future parking supply of 91 parking spaces including 6 barrier free parking spaces and 85 standard parking spaces.

8.2 Land Use By-Law Requirements

The minimum parking requirements for the subject site are set out in the Cole Harbour/Westphal Land Use By-Law.⁴ For retail stores exceeding 5,000 ft² of GFA, the parking requirement is 5.5 parking spaces per 1,000 ft² of GFA and for warehouse space the parking requirement is 2 parking spaces per 1,000 ft² of GFA.

Table 6 summarizes the calculated parking requirement. For a total GFA of approximately 25,000 ft² including 15,000 ft² of warehouse and 10,000 ft² of retail, a total of 85 parking spaces (not including barrier free parking spaces) are required to satisfy the by-law's parking requirements. The future parking supply will conform to the by-law requirements.

Table 6: Parking Requirement

Land Use	1,000 ft ² GFA	Parking Requirement
Warehouse	15.0	30
Retail	10.0	55
Total		85

8.3 Observed Parking Demand Ratio

Parking demand is defined as the total number of vehicles seeking a parking space at a location or within a specific area over a specified period. Demand is typically determined by counting the number of vehicles parked at a given time. Utilization refers to the proportion of parking spaces that are occupied by parked vehicles at a given time, expressed as a percentage of spaces occupied.

⁴ Land Use By-Law Cole Harbour/Westphal, Halifax Regional Municipality, April 2023.



To capture typical weekday parking operations, a parking demand and utilization survey was completed on Tuesday, May 16, 2023 between 7:30 a.m. and 8:30 p.m. The number of parked vehicles were recorded every 15 minutes. The following parking occupancy statistics were calculated:

- ▶ **Average parking demand and utilization:** The average number of parking spaces occupied every 15 minutes over the survey period. Average utilization is determined by calculating the average of the occupied spaces observed at each 15-minute interval over the entire day and dividing by the total number of parking spaces; and
- ▶ **Maximum parking demand and utilization:** The peak number of parking spaces occupied over the survey period. Maximum utilization is determined by dividing the highest number of occupied spaces observed over the entire day by the total number of parking spaces. This rate represents the peak parking requirement.

The parking data is included in Appendix A. The parking survey conducted before the proposed expansion indicates an average parking demand of 25 parking spaces (27% utilization) and a maximum parking demand of 45 parking spaces (49% utilization). The two 15-minute intervals that reached the peak parking demand of 45 parking spaces occurred at 11:45 am and 12:30 pm.

Based on the existing retail GFA of 5,500 ft², the observed peak parking demand translates to a parking demand ratio of 8.18 parked vehicles per 1000 ft² of retail GFA. For a total retail GFA of 10,000 ft² with the proposed expansion, the peak parking demand is estimated at 82 parked vehicles based on the ratio of existing parking demand. For comparison purposes, the ITE Parking Generation Manual⁵ indicates that the weekday peak parking demand is 2.93 parked vehicles per 1000 ft² of retail GFA. This translates to a peak parking demand of 29 parked vehicles for 10,000 ft². The parking supply is expected to accommodate the estimated parking demand.

9 Conclusions

Based on the investigations carried out, it is concluded that:

- ▶ The existing Gateway Meat Market building has a GFA of approximately 10,000 ft² including 5,500 ft² of retail space and 4,500 ft² of warehouse space.
- ▶ The proposed development plan consists of adding a two-level expansion including 10,000 ft² of retail space and 5,000 ft² of warehouse space and converting existing building to warehouse space. The overall building will have a total GFA of approximately 25,000 ft² and contain a total of 10,000 ft² of retail space and 15,000 ft² of warehouse space.
- ▶ It is recommended that vehicle access to the Gateway Meat Market should change by switching the entry and exit driveways and reversing the on-site circulation from counter-clockwise to clockwise. The two existing access points on the adjacent site will be

⁵ Parking Generation Manual, 5th Edition, Institute of Transportation Engineers, January 2019.



eliminated. The TAC minimum stopping and intersection sight distance requirements are met at the existing access points on Main Street.

- ▶ The existing Gateway Meat Market and adjacent site are estimated to generate 44 vehicle trips in the AM peak hour and 106 vehicle trips in the PM peak hour on a typical weekday.
- ▶ The future Gateway Meat Market is estimated to generate estimated to generate 54 vehicle trips in the AM peak hour and 148 vehicle trips in the PM peak hour. After accounting for existing trips to the site, **the proposed changes to the Gateway Meat Market site will result in an increase of 10 vehicle trips in the AM peak hour and 42 vehicle trips in the PM peak hour.**
- ▶ There is a planned development adjacent to the site. The Lake Loon development includes a residential complex encompassing both a seniors retirement living complex and a multi-unit residential building targeted toward adult senior living. The adjacent development is estimated to generate 77 vehicle trips in the AM peak hour and 121 vehicle trips in the PM peak hour. The traffic study for the Lake Loon Development concluded that the development is not expected to have a significant impact to traffic operations on Main Street.
- ▶ The combined area total trip generation estimate for the Lake Loon development and the new trips associated with the Gateway Meat Market is 87 vehicle trips in the AM peak hour and 163 vehicle trips in the PM peak hour.
- ▶ Both the Lake Loon development and Gateway Meat Market expansion have low trip generation estimates that contribute relatively few peak hour trips to the road network in comparison to existing traffic volumes on Main Street.
- ▶ It is anticipated that the new vehicle trips associated with the development can be accommodated on Main Street with a negligible impact on traffic operations.
- ▶ The site's future parking supply is identified as 91 parking spaces including 6 barrier free parking spaces and 85 standard parking spaces.
- ▶ The site's parking supply will meet the Land Use By-Law requirement of 85 standard parking spaces.
- ▶ The observed parking demand ratio at the existing site indicates a future parking demand of 82 parking spaces. The parking supply is expected to accommodate the estimated future parking demand.

If you have any questions or additional discussion, please feel free to contact the undersigned.

Regards,

[Redacted Signature]

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Appendix A: Parking Utilization Data



Gateway Meat Market Parking Demand and Utilization

Date 16-May-23

Parking Supply 91

Time	Demand	Utilization
7:30	1	1%
7:45	4	4%
8:00	6	7%
8:15	15	16%
8:30	20	22%
8:45	19	21%
9:00	16	18%
9:15	22	24%
9:30	21	23%
9:45	31	34%
10:00	29	32%
10:15	28	31%
10:30	31	34%
10:45	22	24%
11:00	33	36%
11:15	32	35%
11:30	23	25%
11:45	45	49%
12:00	41	45%
12:15	33	36%
12:30	45	49%
12:45	40	44%
1:00	38	42%
1:15	31	34%
1:30	25	27%
1:45	23	25%
2:00	32	35%
2:15	27	30%

Time	Demand	Utilization
2:30	24	26%
2:45	30	33%
3:00	31	34%
3:15	37	41%
3:30	24	26%
3:45	28	31%
4:00	22	24%
4:15	16	18%
4:30	19	21%
4:45	25	27%
5:00	23	25%
5:15	22	24%
5:30	33	36%
5:45	35	38%
6:00	37	41%
6:15	23	25%
6:30	24	26%
6:45	25	27%
7:00	15	16%
7:15	24	26%
7:30	13	14%
7:45	9	10%
8:00	1	1%
8:15	1	1%
Average Demand		25
Average Utilization		27%
Maximum Demand		45
Maximum Utilization		49%