



Christine McCall
Assistant City Manager/DPD Director

R. Eric Slagle
Director of Development Services

David Fuller
Building Commissioner

TO: Eileen Donoghue, City Manager *EMD*

FROM: R. Eric Slagle, Director of Development Services

DATE: May 19, 2021

RE: Motion by C. Elliott - Req. City Mgr. Provide A Report Regarding Status Of The Roundabout At The Intersection Of Old Ferry Road And Varnum Avenue; As Well As An Update On The Six Month Traffic Analysis And Impact Report On West Meadow Road..

This memorandum addresses the requests from Councilor Elliott regarding the status of the proposed roundabout at the Old Ferry Rd./Varnum Ave. intersection and the traffic study done as a result the Market Basket Planning Board decision.

First, for the status of the proposed roundabout, on March 9, 2020, an abutter to the proposed project, Steve O'Neill, filed an appeal of the Conservation Commission decision allowing the roundabout. That appeal to MassDEP is still pending, and the City on May 5, 2021 submitted amended plans to meet the concerns of the abutter. The City anticipates a decision from MassDEP will be coming soon, but an exact date is unknown at this time.

Second, with respect to the six month traffic analysis that was performed by VHB to comply with the Planning Board decision in the Market Basket case, that analysis has been completed and submitted to the City. Staff is currently scheduling a meeting with VHB and Market Basket to discuss the report. The executive summary of that report is attached to this motion response.

ES



Memorandum

To: Mr. Eric Slagle
Director of Development Services
City of Lowell

Date: May 6, 2021

Project #: 13776.01

From: Tess Benson, EIT
Transportation Consultant

Re: Traffic Monitoring Evaluation – 6 Months Post Occupancy
Market Basket Development
705 Pawtucket Blvd, Lowell, MA

Kathleen Keen, PE
Project Manager

Introduction

VHB has completed a traffic monitoring evaluation for the Market Basket development (the "Project") located at 705 Pawtucket Boulevard in Lowell, Massachusetts. The Project is subject to conditions of the City of Lowell's Planning Board Decision, including the following:

- Condition 6c: Traffic Monitoring Program, with evaluation beginning 6 months after the issuance of the certificate of occupancy and continuing at 1 year and then annually, ending after 5 years. If the traffic volumes exceed the estimated increase by 10%, the applicant agrees to evaluate and implement additional mitigation.
- Condition 7b: Applicant will specifically evaluate the impact of the U-Turn restriction at the intersection of Pawtucket Boulevard and Old Ferry Road as part of their Monitoring study noted in Condition 6(c) above.
- Condition 7c: Applicant will evaluate the justification and need for a left-turn lane into the Site driveway along Old Ferry as part of their Monitoring study noted in Condition 6(c) above.

This evaluation considers the period for six-months post occupancy. Additional traffic monitoring efforts will be completed at dates specified in the Decision.

This memorandum summarizes the results of the traffic monitoring program, evaluation of the U-turn restriction at Pawtucket Boulevard and Old Ferry Road, and evaluation for a left-turn lane into the center Site driveway along Old Ferry Road.

Project Description

The overall permitted development includes a 72,500 square-foot (sf) Market Basket building, a 22,000 sf Marshalls retail building, and a 2,600 sf coffee shop. The Market Basket opened on October 6, 2020 and the Marshalls opened on March 4, 2021. The coffee shop has not yet been constructed and therefore, trips associated with this portion of the development were not considered as part of this evaluation.

Data Collection

Manual turning movement traffic counts were conducted on Thursday April 8, 2021 during the weekday evening peak period (4:00 PM to 6:00 PM) and Saturday April 10, 2021 during the Saturday midday peak period (11:00 AM – 2:00 PM) at the following locations as required by the City of Lowell's Planning Board Decision:

- Old Ferry Road at Site Driveway (north)
- Old Ferry Road at Site Driveway (middle)

101 Walnut Street
PO Box 9151
Watertown, MA 02472-4026
P 617.924.1770

- Old Ferry Road at Site Driveway (south)
- Pawtucket Boulevard at Site Driveway (west)
- Pawtucket Boulevard at Site Driveway (east)
- Pawtucket Boulevard at Old Ferry Road
- Pawtucket Boulevard at Rourke Bridge
- Old Ferry Road at Varnum Avenue

Concurrent with the TMCs, 24-hour ATRs were conducted on Thursday April 8, 2021 and Saturday April 10, 2021 at:

- Site Driveway (north), east of Old Ferry Road
- Site Driveway (center), east of Old Ferry Road
- Site Driveway (south), east of Old Ferry Road
- Site Driveway (west), north of Pawtucket Boulevard
- Site Driveway (east), north of Pawtucket Boulevard

All traffic count data is included in the Attachments.

Traffic Volumes

TMC data indicates that, within the study area, the weekday evening peak hour occurs between 4:30 PM and 5:30 PM and the Saturday midday peak hour occurs between 12:45 PM and 1:45 PM.

MassDOT 2019 seasonal adjustment factors were reviewed to understand the seasonality of traffic count data collected in the month of April. Based on this review, traffic counts conducted in April are generally higher than average month conditions. To remain conservative, the traffic counts were not adjusted. It should be noted that the traffic counts were conducted during the COVID-19 pandemic. While data shows that traffic volumes have increased since the start of the pandemic in March 2020, traffic volumes in general may still be lower than pre-pandemic conditions. The observed traffic volume networks for the weekday evening and Saturday midday peak hours are shown in the Attachments as Figures 1 and 2, respectively.

Pawtucket Boulevard at Old Ferry Road U-Turn Restriction

Prior to the construction of the Project, a median break existed along Pawtucket Boulevard between the Rourke Bridge and Old Ferry Road that accommodated westbound U-turns. As part of the Project's mitigation program and conditioned in the City of Lowell's Planning Board Decision, the median break was closed to prevent the westbound U-turn movement. Additionally, westbound U-turns were and continue to be restricted at the intersection of Pawtucket Boulevard and Old Ferry Road. At the time, the Planning Board appeared to be concerned that closing the median break would lead to numerous drivers illegally using the traffic signal to reverse direction. Vehicles have the opportunity to make a westbound U-turn on Pawtucket Boulevard via a median break just west of Old Ferry Road.

As required by Condition 7b, VHB has evaluated the westbound U-turn restriction at the intersection of Pawtucket Boulevard at Old Ferry Road. The April 2021 traffic counts show that a minimal amount of trips make this illegal movement (two and five during the weekday evening and Saturday midday peak hours, respectively). Based on the minimal number of trips making the westbound U-turn movement at the Pawtucket Boulevard and Old Ferry Road intersection, the closure of the median break does not appear to have significantly increased the number of illegal westbound U-turns made at the signal.

The Proponent is committed the traffic monitoring program and will continue to evaluate the westbound U-Turn restriction as required by Condition 7b the City of Lowell’s Planning Board Decision as traffic volumes continue to rebound from the COVID-19 pandemic.

Old Ferry Road at Site Driveway (center)

As required by Condition 7c, VHB conducted an analysis at the intersection of Old Ferry Road at Site Driveway (center) to determine whether a southbound left-turn lane is warranted at this location. The analysis reflects the April 2021 traffic counts and the results are summarized in Table 1.

Table 1 Unsignalized Intersection Capacity Analysis

Location / Movement	2021 Existing Conditions				
	D ^a	v/c ^b	Del ^c	LOS ^d	95 Q ^e
Old Ferry Road at Site Driveway (center)					
<i>Weekday Evening</i>					
WB L/R	160	0.38	18	C	43
SB L	70	0.07	8	A	5
<i>Saturday Midday</i>					
WB L/R	160	0.36	17	C	40
SB L	65	0.06	8	A	5

- a Volume to capacity ratio.
- b Average total delay, in seconds per vehicle.
- c Level-of-service.
- d 50th percentile queue, in feet.
- e 95th percentile queue, in feet.
- ~ Volume exceeds capacity, queue is theoretically infinite.
- # 95th percentile volume exceeds capacity, queue may be longer.
- m Volume for 95th percentile queue is metered by upstream signal.

As shown in Table 1, the Site Driveway (center) currently operates at LOS A and with a 95th percentile queue of five-feet or less than one vehicle during both the weekday evening and Saturday midday peak hours. Based on the results of the analysis, a southbound left-turn lane is not recommended at this location. The need for a southbound left-turn lane will continue to be evaluated as part of the traffic monitoring program.

The results of the analysis are included in the Attachments.

Trip Generation

As previously described, the Project Site is not fully constructed and occupied at this time. The Market Basket, approximately 72,500 square feet (sf), and the Marshalls retail building, approximately 22,000 sf, were open and

occupied at the time of the traffic counts in April 2021. The proposed coffee shop, approximately 2,600 sf, has not yet been constructed.

VHB completed a comparison of the observed Site trip generation and the projected Site trip generation presented in the August 2019 Trip Generation memorandum¹. Since the Site is not fully constructed and occupied, the observed Site trip generation was only compared to the projected Site trip generation for the uses that were open at the time of the traffic counts (Market Basket and Marshalls). The projected trip generation associated with the occupied uses was determined using the same methodology as presented in the August 2019 Trip Generation memorandum.

Table 2 compares the projected trip generation for the occupied portion of the Site to the April 2021 observed trip generation. The ITE projected trip generation worksheets are included in the Attachments.

Table 2 Trip Generation Comparison

	Projected ^a	April 2021 Observed ^b	Trip Difference	Percent Difference
Weekday Daily (vpd)	7,312	7,031	-142	-4%
Weekday Evening (vph)				
Enter	373	300	-73	-20%
<u>Exit</u>	<u>370</u>	<u>343</u>	<u>-27</u>	<u>-7%</u>
Total	743	643	-100	-13%
Saturday Daily (vpd)	14,372	8,024	-6,348	-44%
Saturday Midday (vph)				
Enter	488	322	-166	-34%
<u>Exit</u>	<u>460</u>	<u>316</u>	<u>-144</u>	<u>-31%</u>
Total	948	638	-310	-33%

vpd vehicles per day

vph vehicles per hour

a Total ITE trip generation for the Market Basket (72,500 sf) using ITE LUC 850 (Supermarket) and the Marshalls retail building (22,000 sf) using LUC 820 (Shopping Center). Credit taken for internal capture. Trips associated with the proposed coffee shop, as presented in the August 2019 Trip Generation Comparison memorandum, are not included as the coffee shop has yet to be constructed.

b Counts conducted on Thursday April 8th and Saturday April 10th, 2021

As can be seen in Table 1, the Site is currently generating close to the weekday daily volume that was projected but is 44-percent less trips than those projected during the Saturday daily and 13- to 33-percent less than the critical peak

¹ Market Basket Development – Trip Generation Comparison, VHB, August 2019

commuter periods. The lower trip generation may be partially attributable to the impacts the on-going COVID-19 pandemic has had on traffic volumes.

As the Project's traffic generation does not exceed the 10 percent threshold set forth in the Planning Board's decision, no additional actions are required of the Developer at this time. The Proponent is committed to continuing the traffic monitoring program and will continue to evaluate the overall traffic generation of the project as required by Condition 6c the City of Lowell's Planning Board Decision as traffic volumes continue to rebound from the COVID-19 pandemic.

Conclusion

VHB conducted a traffic monitoring program and evaluations required as part of the City of Lowell's Planning Board Decision for the Project. Based on the review, the observed trip generation ranges between 4-percent (weekday daily) to as much as 44-percent (Saturday daily) lower than the projected trip generation for the constructed/occupied portion of the development. Additionally, the evaluations indicated that the current westbound U-turn restriction at the intersection of Pawtucket Boulevard and Old Ferry Road and lane geometry at Old Ferry Road and Site driveway (center) are appropriate.

Therefore, the ITE projections that formed the basis for the Project's transportation mitigation program is confirmed. The traffic monitoring program will continue to be completed on an annual basis for a period of five years as required by the City of Lowell's Planning Board Decision.