

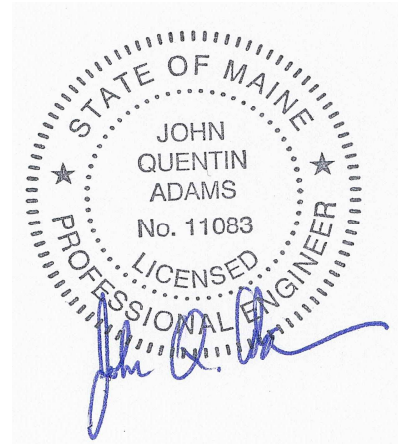
## **Response to Traffic Comment**

TO: Ms. Jean Fraser, Planner  
Development Review Program, City of Portland

FROM: John Q. Adams, P.E., PTOE  
Senior Transportation Engineer  
Milone & MacBroom, Inc.

DATE: December 28, 2012

RE: Additional Response to Traffic Comments  
Queue Observations  
Applicant - J. B. Brown & Sons  
Proposed Hotel, Restaurant, and Residences  
321 Commercial Street, Portland, Maine  
MMI #5002-01-4



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### **Purpose**

The purpose of this memo is to address an additional traffic comment received for the proposed JB Brown & Sons Level III Site Plan/Subdivision application for the Mixed-Use development at 321 Commercial Street.

The following comment was received:

- 1. Comment received from City Traffic Review Engineer, Tom Errico related to the potential for the proposed Commercial Street full-access entrance to be blocked by queuing from the adjacent signalized intersection of Commercial Street at Center Street.**

*Comment: The applicant should review and analyze the potential for the proposed Commercial Street entrance to be blocked by queuing from the adjacent signalized intersection of Commercial Street at Center Street.*

Response: The applicant has reviewed and analyzed the potential for the Commercial Street entrance to be blocked by queuing from the adjacent signalized intersection. The proposed Commercial Street entrance is an existing Street (Foundry Lane) that is being utilized as a full-access entrance for the proposed mixed-use development. The entrance is located approximately 150 ft west of the intersection of Commercial Street at Center Street. To determine the potential for blocking by queues from the adjacent signalized intersection, staff from Milone & MacBroom (MMI) made field observations during the weekday AM and PM peak hours. These peak hours were identified when traffic counts were taken as part of the Traffic Movement Permit application. The traffic counts identified the AM peak hour as 7:45-8:45 AM and the PM peak hour as 4:45-5:45 PM. The Queue observations were completed on December 19<sup>th</sup> and 20<sup>th</sup>.

In general, we found that the queue from the thru lane on Commercial Street occasionally blocked the entrance during our observations. The queue in the left-turn lane on Commercial Street did not block the entrance. Our observations indicated that a queue of approximately 7 to 8 cars would block the entrance. Our field observations are summarized in Table 1 attached at the end of this memo. The table

summarizes; the time, number of signal cycles completed, number of vehicles in each queue, if the entrance was blocked, the duration in seconds the entrance was blocked and the reason for the blockage. In general there were three (3) conditions that could potentially cause the queues on Commercial Street to block the proposed Commercial Street entrance. These included:

- Sidestreet phase with enough demand to cause blockage
- The pedestrian phase was activated at the intersection
- The queue from upstream traffic signal at Union Street backed-up to Center St

In summary during the AM peak hour observations there were:

- 51 traffic signal cycles completed.
- The site entrance was blocked during 12 of the 51 cycles
- The site entrance was blocked only 23.5 % of the cycles.
- Out of the observation hour the site entrance was blocked a total of 4.7 minutes
- Of the 12 times the site entrance was blocked it was blocked an average of 24 seconds
- The average length of the Queue during blocking was 15 vehicles
- The average queue was 6.4 vehicles overall during the observation hour

In summary during the PM peak hour observations there were:

- 39 traffic signal cycles completed.
- The site entrance was blocked during 14 of the 39 cycles
- The site entrance was blocked 35.9 % of the cycles.
- Out of the observation hour the site entrance was blocked a total of 6.5 minutes
- Of the 14 times the site entrance was blocked it was blocked an average of 28 seconds
- The average length of the Queue during blocking was 12 vehicles
- The average queue was 6.9 vehicles overall during the observation hour

The results indicate that the site entrance was blocked during approximately ¼ of the signal cycles during the AM peak hour and approximately 1/3 of the cycles during the PM peak hour. Overall during the AM and PM observation hours the average queue was less than the 7 to 8 vehicles necessary to block the entrance. During the AM and PM peak hours of observation the site entrance was blocked 4.7 minutes and 6.5 minutes, respectively.

Based on the results of our Queue analysis it is our opinion that the site entrance will function adequately during the AM and PM peak hours. During other portions of the day the queuing will generally be less than the queues observed during the peak hours. In addition, the majority of the vehicles (approx. 2/3) exiting the site on Commercial Street will be turning right. If there are times when left-turning vehicles experience excessive delays due to queuing there are several other options available to exit the site. These options include:

- Turning right out of the Commercial Street site entrance and then turning right onto Maple Street and then right onto York Street which will give them access to Commercial Street or Franklin Arterial
- Vehicles exiting the site can also utilize the Maple Street site entrance to access Commercial Street where the queues on Commercial Street will have less impact to vehicles turning left

- Vehicles can use the Maple Street site entrance to turn right onto Maple Street and then right onto York Street which will give them access to Commercial Street or Franklin Arterial

We trust we have addressed your comments and concerns. Please contact us should you have any questions or needs for additional information.

cc: Tom Errico, City Traffic Engineer  
J. B. Brown & Sons, Inc.  
Opechee Construction Corp., Inc.

**Additional Response to Traffic Comment**  
**December 28, 2012**  
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**TABLE 1**

**Queue Observations**  
**Commercial Street at Center Street, Portland, Maine**  
**MMI# 5002-01**

Red Light Start Time	Vehicle Queue	Exit Blocked	Traffic Flow Resumes (sec)	Comments - Cause
7:45	15	Yes	22	Sidestreet Phase
7:46	1	No		
7:47	1	No		
7:48	2	No		
7:49	8	No		
7:51	1	No		
7:52	3	No		
7:53	4	No		
7:54	6	No		
7:56	10	Yes	11	Sidestreet Phase
7:57	6	No		
7:58	2	No		
7:59	6	No		
8:00	3	No		
8:01	18	Yes	32	Sidestreet Phase
8:03	2	No		
8:04	10	Yes	12	Upstream Signal
8:05	22	Yes	29	Sidestreet Phase
8:07	14	Yes	14	Sidestreet Phase
8:08	6	No		
8:09	11	Yes	15	Upstream Signal
8:10	10	Yes	18	Sidestreet Phase
8:12	3	No		
8:13	1	No		
8:14	4	No		
8:14	3	No		
8:15	5	No		
8:17	14	Yes	20	Sidestreet Phase
8:18	8	No		
8:20	4	No		
8:21	18	Yes	48	Sidestreet Phase
8:22	7	No		
8:24	14	Yes	25	Upstream Signal
8:25	24	Yes	38	Sidestreet Phase
8:27	9	No		
8:28	4	No		
8:29	3	No		
8:30	7	No		
8:32	2	No		
8:33	3	No		
8:34	2	No		
8:34	2	No		
8:36	2	No		
8:37	1	No		
8:38	4	No		
8:39	1	No		
8:40	7	No		
8:41	7	No		
8:42	2	No		
8:43	3	No		
8:45	2	No		

Red Light Start Time	Vehicle Queue	Exit Blocked	Traffic Flow Resumes (sec)	Comments - Cause
4:51	5	No		
4:53	11	Yes	20	Sidestreet Phase
4:55	4	No		
4:57	3	No		
4:59	3	No		
5:00	3	No		
5:02	3	No		
5:04	7	Yes	17	Sidestreet Phase
5:07	6	No		
5:08	17	Yes	38	Sidestreet Phase
5:10	11	Yes	27	Sidestreet Phase
5:12	7	No		
5:15	7	No		
5:16	20	Yes	51	Pedestrian Phase
5:18	8	Yes	18	Sidestreet Phase
5:20	12	Yes	33	Pedestrian Phase
5:21	15	Yes	32	Upstream Signal
5:24	10	Yes	21	Sidestreet Phase
5:26	6	No		
5:27	1	No		
5:29	2	No		
5:30	2	No		
5:31	7	No		
5:32	10	Yes	18	Truck from Side Street
5:33	3	No		
5:34	4	No		
5:36	17	Yes	50	Pedestrian Phase
5:38	10	Yes	43	Pedestrian Phase
5:39	3	No		
5:41	9	Yes	10	Sidestreet Phase
5:42	9	Yes	11	Sidestreet Phase
5:43	4	No		
5:45	5	No		
5:46	4	No		
5:47	6	No		
5:49	2	No		
5:50	4	No		
5:51	5	No		
5:52	5	No		

**Notes:**

1. AM Observations conducted on 12-19-2012
2. PM Observations conducted on 12-20-2012
3. Queue of 7-8 cars generally prohibited left turns out of proposed site entrance