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April 15, 2020

Mr. Christopher Wider, Chairman
Norfolk Zoning Board of Appeals
Town Hall
One Liberty Lane
Norfolk, MA 02056

Subject: Proposed Abbyville 40B Development
Response to Traffic Peer Review Comments

Dear Mr. Wider:

We are in receipt of Beta's Peer Review comments in a letter dated March 27, 2020 and on behalf of the applicant, we have prepared the following responses as needed. In general, it appears to us that the review comments were relatively minor and for the most part, the review found that the updated traffic analysis for the currently proposed Abbyville development was completed in general conformance to standard practices and there was concurrence with our key findings. The comments that require responses are repeated below with the associated response. Where necessary, additional information is attached to this letter.

Comment T1. MassDOT requires traffic data to be less than two years old; however, additional counts are not recommended at this time due to the ongoing health crisis, which has notably impacted traffic volumes in the Commonwealth. Updated counts could be conducted at when traffic volumes and patterns return to typical levels.

Response: Over the past several years, we have collected a substantial amount of data in the project area in response to comments and requests. For this update, an additional 2019 count was collected at a location of the proposed site drive. Data from 2017 as well as 2015 were also utilized and as Beta has indicated, our approach to adjusting the data to create a reasonable estimate of existing base conditions for the study area for this updated analysis was reasonable. While MassDOT suggests having data no more than two years old, it is a guideline and they themselves have been known to accept older date in certain locations. In this case, data for two of the three study locations was two years old or less and then we used historical information to adjust the third location. In our opinion, there is no need to collect additional data in order to understand the potential traffic impacts of this proposed project.

Comment T2. Provide a discussion for the development in Franklin

Response: The discussion related to No-Build Development contained in the traffic report (Sections 3.1.2 and 3.1.3) was not as clear as it should have been. For this update study, new research and contact was completed with the abutting town planning departments. The two site specific projects included in the update were Park Place (92 homes) and a project in Franklin off Chestnut Street known as the Chestnut Street Senior Village (33 units of age restricted use). While Park Place has been under construction for some time now and there is some current occupancy, we estimated traffic for the entire 92 units since we were not sure how many homes were occupied at the time of the 2019 counts.

Related to the Franklin project, it has not started construction and while it is a small generator of traffic and could have been assumed to be in the background growth rate, it was included as a site specific project with some traffic added to Chestnut Street which would pass by Mill Street.

Comment T3. Provide backup information in the Appendix for the nearby development trips

Response: The backup information for the No Build growth developments is attached to this letter.

Comment T4. There appears to be a typo on page 19 which refers to "Chestnut Hill Street".

Response: That was a typographical error and should have simply said "Chestnut Street".

Comment T5. Analysis sheets provided in the Appendix were found to have mismatched parameters between AM and PM peak hours. Revise accordingly.

Response: The tables were corrected and are attached to this letter. The corrections were relatively minor and did not change our findings or conclusions.

Comment T6. Analysis sheets provided in the Appendix were not found to match results presented in Table 5 and Table 6 of the TIAS. Clarify and revise accordingly.

Response: The tables were corrected and are attached to this letter. Again, the corrections were relatively minor and did not change our findings or conclusions. We apologize for the confusion.

Comment T7. See Comment T1 relating to the age of data. Similarly, collecting new data is not recommended at this time due to the unstable/unusual conditions.

Response: As indicated in our response to T1, it is our opinion that additional data is not necessary to understand the potential impacts of the proposed revised development project. And while traffic volumes could potentially change in a short timeframe especially if there were significant development and growth that occurred in the project area, it is highly unlikely that travel speed data on a local low volume road such as Lawrence Street would change substantially over a short or even a long timeframe unless there was a significant change such as modified speed limits or extensive speed enforcement put in place. That said, the sight distance analysis for the proposed site drive was based on both the posted speed of 30 mph but also 35 mph that approximated the 85th percentile speed. There Is no need to collect additional travel speed data for this project area as the available information is more than sufficient to assess the site access point on Lawrence Street in terms of visibility. Sight line triangle plans have been submitted previously for the project.

Comment T8. Verify that a legal speed regulation exists for the posted 30 mph speed limit signs. If no such regulation exists, signs should be removed in accordance with MGL90.18

Response: Multiple signs have been installed by the town along Lawrence Street. We have attempted to confirm through state sources on validity but as of now, we have assumed they are legally installed. If not, that would be an issue between the town and MassDOT to resolve and not the responsibility of the applicant.

Comment T9. Verify that Lawrence Street meets the criteria for "Thickly Settled " as defined in MGL 90.17.

Response: MGL 90.1 defines "Thickly Settled" is an area where "a territory contiguous to any way …. where dwelling houses are situated at such distances as will average less than 200 feet between them for a distance of ¼ mile" or over. A quick review of the homes and distances along the stretch of Lawrence Street in the project area supports that definition. As noted in the report and above, the road is posted for 30 mph. The suggestion for additional THICKLY SETTLED signs as one enters this more densely populated section in both directions was to provide more emphasis and awareness to motorists to keep travel speeds to the intended limit. They are not essential since posted speed limit signs exist but were supplemental safety measures. The applicant will install if that is the pleasure of the Board or if peer review consultant concurs.

Comment T10. Consider installing "Intersection Ahead" (W2-1) signs in advance of the proposed Bretts Farm Road and site Driveway intersection to alert drivers of the new four legged intersection configuration.

Response: In addition to the proposed list of traffic mitigation actions listed in the traffic report that Beta has concurred with, we on behalf of the Applicant have no issue with adding this to the set of actions that will be done as a condition of the project.

Thank you for the opportunity to prepare this response. We believe all the questions and request for additional information has been adequately provided. We are available to respond to any further questions.

Very truly yours,
GREEN INTERNATIONAL AFFILIATES, INC.

William J Scully

William J. Scully, P.E.
Vice President

cc: T. DiPlacido
W. McGrath

WJS/-

19107/DiPlacido/Norfolk Abbyville/Response to Comments041520

TRIP GENERATION WORKSHEET

LAND USE: *Single Family Detached Housing*
LAND USE CODE: 210 Independent Variable---Trips per DU

JOB: (Background growth estimate - Park Place, Wrentham)
JOB NUMBER: 15078 Number of Units: 92

WEEKDAY

RATES:	Total Trip Ends			Directional Dist.		Number
	Average	Low	High	Enter	Exit	of Studies
DAILY	9.52	4.31	21.85	50%	50%	355
AM PEAK	0.75	0.33	2.27	25%	75%	292
PM PEAK	1.00	0.42	2.98	63%	37%	321
PK GEN AM	0.77	0.33	2.27	26%	74%	343
PK GEN PM	1.02	0.42	2.98	64%	36%	362

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	R^2
DAILY	876	438	438	973	487	487	0.95
AM PEAK	69	17	52	74	19	56	0.89
PM PEAK	92	58	34	97	61	36	0.91
PK GEN AM	71	18	53	77	20	57	0.89
PK GEN PM	94	60	34	99	63	36	0.91

SATURDAY

RATES:	Total Trip Ends			Directional Dist.		Number
	Average	Low	High	Enter	Exit	of Studies
DAILY	9.91	5.32	15.25	50%	50%	77
PEAK HR	0.93	0.50	1.75	54%	46%	54

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	R^2
DAILY	912	456	456	939	470	470	0.92
PEAK HR	86	46	40	91	49	42	91

SUNDAY

RATES:	Total Trip Ends			Directional Dist.		Number
	Average	Low	High	Enter	Exit	of Studies
DAILY	8.62	4.74	12.31	50%	50%	73
PEAK HR	0.86	0.55	1.48	53%	47%	53

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	R^2
DAILY	793	397	397	793	397	397	0.95
PEAK HR	79	42	37	83	44	39	0.88

SOURCE: Trip Generation, 9th Edition, Institute of Transportation Engineers, 2012.

TRIP GENERATION WORKSHEET

LAND USE: *Senior Adult Housing - Attached*
LAND USE CODE: 252 Independent Variable---Dwelling Units
SETTING/LOCATION: General Urban / Suburban

JOB:
JOB NUMBER: Number of Units: 33

WEEKDAY

RATES:	Total Trip Ends			Directional Dist.		Number
	Average	Low	High	Enter	Exit	of Studies
DAILY	3.7	2.59	4.79	50%	50%	6
AM PEAK	0.74	0.33	2.27	25%	75%	173
PM PEAK	0.99	0.44	2.98	63%	37%	190
PK GEN AM	0.76	0.36	2.27	26%	74%	157
PK GEN PM	1.00	0.49	2.98	64%	36%	165

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	R^2
DAILY	120	60	60	16	54	54	0.95
AM PEAK	24	6	18	28	7	21	0.89
PM PEAK	33	21	12	12	22	13	0.92
PK GEN AM	25	7	18	29	8	21	0.89
PK GEN PM	33	21	12	38	24	14	0.92

Assuming 70/30 directional split for this development (s/N)

	AM	PM
NBR	5	16
SBL	2	6
WBR	6	4
WBL	15	9

SATURDAY

RATES:	Total Trip Ends			Directional Dist.		Number
	Average	Low	High	Enter	Exit	of Studies
DAILY	9.54	5.32	15.25	50%	50%	52
PEAK HR	0.93	0.64	1.75	54%	46%	31

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	R^2
DAILY	315	158	158	346	173	173	0.91
PEAK HR	31	17	14	46	25	21	0.87

SUNDAY

RATES:	Total Trip Ends			Directional Dist.		Number
	Average	Low	High	Enter	Exit	of Studies
DAILY	8.55	4.74	11.82	50%	50%	51
PEAK HR	0.85	0.6	1.45	53%	47%	31

	BY AVERAGE			BY REGRESSION			
	Total	Enter	Exit	Total	Enter	Exit	R^2
DAILY	282	141	141	228	114	114	0.94
PEAK HR	28	15	13	37	20	17	0.88

SOURCE: Trip Generation, 10th Edition, Institute of Transportation Engineers, 2017.

Table 5 – Summary of Level of Service Analysis Period: Weekday AM Peak Hour

	2019 Existing Conditions				2026 No-Build Conditions				2026 Build Conditions			
	Delay (S)	LOS	V/C	95th Q (FT)	Delay (S)	LOS	V/C	95th Q (FT)	Delay (S)	LOS	V/C	95th Q (FT)
Lawrence Street at Bretts Farm Road and Site Drive												
Bretts Farm Road NB	8.9	A	0.02	3	8.9	A	0.02	3	9.0	A	0.02	3
Lawrence Street EBL	0.0	A	-	0	0.0	A	-	0	7.3	A	0.00	0
Lawrence Street WBL	7.3	A	0.00	0	7.4	A	0.00	0	7.3	A	0.00	0
Site Drive SB	-	-	-	-	-	-	-	-	9.6	A	0.16	15
Chestnut Street at Martha's Way/Mill Street												
Chestnut Street NBL	0	A	-	0	0.0	A	-	0	0	A	-	0
Martha's Way EB	14.8	B	0.02	3	15.8	C	0.02	3	16.2	C	0.02	3
Mill Street WB	18.5	C	0.24	23	20.8	C	0.28	28	22.7	C	0.35	38
Chestnut Street SBL	8.6	A	0.01	0	8.8	A	0.01	0	8.8	A	0.01	0
Lawrence Street at Park Street												
Park Street NBL	7.6	A	0.02	3	7.7	A	0.03	3	7.6	A	0.03	3
Lawrence Street EB	10.4	B	0.10	8	11.0	B	0.12	10	11.3	B	0.18	18

Abbreviations:

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound
L = Left
T = Through
R = Right
S = Seconds
FT = Feet
LOS = Level of Service
v/c = Volume-to-Capacity Ratio

Notes:

Delay = Average delay per vehicle (measured in seconds)
50th Q = 50th percentile queue length (measured in feet), assumes 25 feet per vehicle
95th Q = 95th percentile queue length (measured in feet), assumes 25 feet per vehicle

Table 6 – Summary of Level of Service Analysis Period: Weekday PM Peak Hour

	2019 Existing Conditions				2026 No-Build Conditions				2026 Build Conditions			
	Delay (S)	LOS	V/C	95th Q (FT)	Delay (S)	LOS	V/C	95th Q (FT)	Delay (S)	LOS	V/C	95th Q (FT)
Lawrence Street at Bretts Farm Road and Site Drive												
Bretts Farm Road NB	8.7	A	0.02	0	8.7	A	0.01	0	9.0	A	0.01	0
Lawrence Street EBL	0.0	A	-	0	0.0	A	-	0	7.4	A	0.01	0
Lawrence Street WBL	7.3	A	0.00	0	7.3	A	0.00	0	7.3	A	0.00	0
Site Drive SB	-	-	-	-	-	-	-	-	9.5	A	0.11	10
Chestnut Street at Martha's Way/Mill Street												
Chestnut Street NBL	8.7	A	0.01	0	8.8	A	0.01	0	8.8	A	0.01	0
Martha's Way EB	14.9	B	0.02	3	15.9	C	0.02	3	16.2	C	0.02	3
Mill Street WB	20.2	C	0.20	18	22.9	C	0.24	23	25.5	D	0.31	33
Chestnut Street SBL	8.3	A	0.02	3	8.4	A	0.02	3	8.4	A	0.03	3
Lawrence Street at Park Street												
Park Street NBL	7.7	A	0.02	3	7.9	A	0.03	3	7.9	A	0.04	3
Lawrence Street EB	10.4	B	0.06	5	11.0	B	0.08	8	11.5	B	0.11	10

Abbreviations:

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound
L = Left
T = Through
R = Right
S = Seconds
FT = Feet
LOS = Level of Service
v/c = Volume-to-Capacity Ratio

Notes:

Delay = Average delay per vehicle (measured in seconds)

50th Q = 50th percentile queue length (measured in feet), assumes 25 feet per vehicle

95th Q = 95th percentile queue length (measured in feet), assumes 25 feet per vehicle