

September 24, 2024

NEX-2400158.00

Ms. Jacki Byerley, AICP, Town Planner  
Town of Andover  
Planning & Economic Development  
36 Bartlet Street  
Andover, MA 01810

SUBJECT: Special Permit Application – P&G Andover Manufacturing Center Enhancement Project  
30 Burt Road, Andover, MA  
Traffic Peer Review Letter #3

Dear Ms. Byerley and Members of the Planning Board:

Greenman-Pedersen, Inc. (GPI) previously performed a peer review of the transportation impacts associated with the Gillette Company, LLC P&G Andover Manufacturing Center Enhancement Project to be located at 30 Burt Road in Andover, Massachusetts in letters dated June 25, 2024<sup>1</sup> and September 10, 2024<sup>2</sup>. The review focused on the following documents:

- *Application for Special Permit*, prepared by The Gillette Company, LLC; dated April 16, 2024.
- *P&G Andover Manufacturing Center Enhancement Project – Zoning Compliance*; prepared by Greenberg Traurig; dated April 16, 2024.
- *Alta/NSPS Land Title Survey*; prepared by Green International Affiliates, Inc.; dated March 27, 2024.
- *P&G Andover Manufacturing Center Enhancement Project, Andover, MA, Planning Board Submission & Notice of Intent Filing – Site Plans*; prepared by Nitsch Engineering; dated April 16, 2024.
- *Architectural Plans & Elevations*; prepared by Fennick McCredie Architecture; dated April 16, 2024.
- *Traffic Impact Assessment, Proposed Manufacturing Center Enhancement Project, P&G Gillette Facility, 30 Burt Road, Andover, Massachusetts*; prepared by Vanasse & Associates, Inc. (VAI); dated April 2024.
- *VAI Response to Traffic Engineering Peer Review #2, Town Yard Redevelopment, Andover, MA*; prepared by VAI; dated May 24, 2024.
- *Response to Traffic Peer Review Letter #1, Proposed P&G Andover Manufacturing Center Enhancement Project, Andover, Massachusetts*; prepared by Vanasse & Associates, Inc. (VAI); July 31, 2024.
- *P&G Andover Manufacturing Center Enhancement Project – Permitting Set*; prepared by Nitsch Engineering; Revised July 30, 2024.
- *Application for Special Permit; The Gillette Company LLC; P&G Andover Manufacturing Center Enhancement project; 30 Burt Road, Andover, MA*; prepared by Greenburg Traurig; dated September 3, 2024.

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<sup>1</sup> *Special Permit Application – P&G Andover Manufacturing Center Enhancement Project, 30 Burt Road, Andover, MA, Traffic Peer Review Letter #1*; Greenman-Pedersen, Inc.; June 25, 2024.

<sup>2</sup> *Special Permit Application – P&G Manufacturing Center Enhancement Project, 30 Burt Road, Andover, MA, Traffic Peer Review Letter #2*; Greenman-Pedersen, Inc.; September 10, 2024.

Subsequent to this review, the Applicant has prepared the following additional documents to respond to GPI's review comments:

- *Transportation Peer Review Response No.2 to the GPI Letter dated September 10, 2024,, Proposed P&G Andover Manufacturing Center Enhancement Project, Andover, Massachusetts; prepared by Vanasse & Associates, Inc. (VAI); September 17, 2024.*

GPI has reviewed the additional documents provided by the Applicant and found that the documents generally address the comments contained in GPI's prior review letter with the exception of the items described in this letter. The original comment numbers have been retained for consistency.

### **Capacity and Queue Analysis**

20. GPI has the following comments related to the analysis of the Andover Street / River Street intersection:

- a. The Applicant has performed a signal warrant analysis based on only the four hours for which turning movement counts were collected at the Andover Street / River Street intersection and has asserted that the 4-Hour and 8-Hour warrants will not be met based on the limited hours of data collected. However, the Applicant conducted automatic traffic recorder (ATR) counts along River Street in July 2024 as part of the Applicant's first *Response to Traffic Peer Review* letter over a 48-hour period. GPI utilized the data collected at this ATR location to estimate the hourly traffic volume on each approach passing through the Andover Street / River Street intersection between 5:00 AM and 8:00 PM. The detailed traffic volumes and adjustments are included as an Attachment to this letter.

Following estimation of hourly traffic volumes through the Andover Street / River Street intersection for a sufficient period of time to assess a signal warrant, GPI performed an analysis of the warranting conditions for a traffic signal under two scenarios:

- Existing Geometry – Assumes River Street is the minor street and Andover Street is the major street movements; and
- Realignment – Assumes Andover Street WB is the minor street, and Andover Street EB and River Street NB are the major street movements.

The results of the signal warrant analysis indicate that under the existing geometry, the warranting criteria for the 4-Hour warrant will be met for six hours of the day, while the warranting criteria for the Peak-Hour warrant will be met for three hours of the day. The warranting criteria for an 8-Hour warrant will only be met for two hours of the day. Therefore, the existing geometric layout of the intersection is anticipated to exceed the warranting conditions for both Warrant 2 – Four Hour and Warrant 3 – Peak Hour.

The results of the signal warrant analysis also indicate that under the realignment scenario where Andover Street westbound becomes the minor street, all three of the volume-related warrants will be met. Warrant 1 – Eight Hour for the combination of Warrants 1A and 1B will be met for eight hours of the day, Warrant 2 – Four-Hour will be met for six hours, and Warrant 3 – Peak Hour will be met for two hours.

- b. The Applicant provided a sight line assessment for the crosswalk at the Andover Street / River Street intersection, as well as for the intersection sight distance (ISD) exiting Andover Street Westbound with the proposed realignment option. However, the Applicant did not provide the requested sight line assessment for vehicles exiting the driveway of #205-209 Andover Street or for the Andover Street eastbound left-turn movement. However, the Applicant did note that the current location of the crosswalk on Andover Street would not provide sufficient sight distance. GPI performed a review of the sight distance looking east exiting the driveway of #205-209 Andover Street and estimate the ISD to be approximately 95 feet based on the proposed layout of Option 2. This distance is not sufficient to provide safe operations for traffic exiting the driveway. Similarly, the intersection sight distance for

a driver turning left from Andover Street eastbound onto Andover Street is estimated to be approximately 100 feet with the proposed realignment. This distance will also not be sufficient to provide safe operations for vehicles turning onto Andover Street due to the presence of the building at #205-209 Andover Street immediately adjacent to the road on the southwest corner of the intersection.

Based on the information provided above, it appears that the installation of a traffic signal at the Andover Street / River Street intersection may provide the greatest benefit from a traffic operations and safety perspective, as compared to realignment of the intersection.

### **Parking**

21-25. The Applicant has revised the site plan to convert some of the parking spaces to compact spaces and increase the parking supply by 13 spaces to 667 parking spaces. This parking supply will ensure that the peak parking demand will not exceed 90 percent of the total parking supply on the site based on the Applicant's prior estimates of parking demand. GPI notes that the Applicant's prior estimates included only employee parking and did not account for any visitor parking that may occur. **Therefore, GPI continues to recommend that the Applicant perform a post-occupancy monitoring study to verify that the provided parking supply is adequate to accommodate the peak parking demand generated by the development. This study should be conducted at least six months and not more than one year following issuance of a Certificate of Occupancy for the proposed expansion.**

### **Mitigation**

33. The Applicant performed an estimate of the costs associated with design and construction of Options 2 and 3 for the Andover Street / River Street intersection, which indicated that Option 2 (Realignment and RRFB) is estimated to cost \$235,000, while Option 3 (Signalization) is estimated to cost \$500,000. The design of the improvements associated with Option 3 is estimated to be \$65,000.

The Applicant has committed to installing the pavement markings and signage necessary to implement an All-Way STOP condition at the Lowell Junction Road / Connector Road intersection. In addition, the Applicant has committed to providing a contribution of \$25,000 to the Town of Andover toward the installation of a Rectangular Rapid Flash Beacon (RRFB) along River Street at a location of the Town's choosing. The Applicant previously committed to providing a contribution of \$100,000 toward the reconfiguration of the Andover Street / River Street intersection to offset the Project's impacts on the intersection.

### **Recommended Conditions of Approval**

Based on the findings of the transportation peer review, should the Town of Andover decide to grant approval to the Applicant for the proposed development, GPI recommends the Town consider the following conditions of approval:

A. Prior to the issuance of a building permit, the Applicant shall provide a monetary contribution to the Town of Andover in the amount of \$\_\_\_\_\_ to be utilized for the design and construction of improvements at the Andover Street / River Street intersection, as well as installation of Rectangular Rapid Flash Beacons (RRFBs) at one location of the Town's choosing along Andover Street. These funds shall remain in an escrow account until utilized by the Town to advance at project at the subject locations. Should a project not have proceeded beyond 25-percent design within five years of issuance of a Certificate of Occupancy for the proposed expansion, any remaining funds in the account will be returned to the Applicant.

- B. Prior to the issuance of a Certificate of Occupancy, the Applicant shall install all pavement markings and signage necessary to implement an All-Way STOP condition at the Lowell Junction Road / Connector Road intersection.
- C. Within one year of issuance of a Certificate of Occupancy, the Applicant shall conduct a post-occupancy parking study to assess the adequacy of the available parking supply to accommodate peak parking demand on the site. The study shall be conducted on a peak day between 7:00 AM and 6:00 PM. The results of the study shall be submitted to the Andover Planning Department and Planning Board for review. The Town reserves the right to hire a third party consultant to review the findings of the post-occupancy parking study.

Should you have any questions or require additional information, please contact me directly at (603) 766-5223 or by email to [rebeccabrown@gpinet.com](mailto:rebeccabrown@gpinet.com).

Sincerely,

**GREENMAN-PEDERSEN, INC.**



Rebecca L. Brown, P.E.  
Senior Project Manager

Enclosures:

- Signal Warrant Analysis

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### TMC Volumes

Time	EB LT	EB TH	EB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	SB LT	SB TH	SB RT	SUM	
5:00	1	133	385	54	92	3				0	0	1	669	11
6:00	2	172	487	68	120	4				0	0	1	854	7
<b>7:00</b>	<b>2</b>	<b>184</b>	<b>514</b>	<b>72</b>	<b>128</b>	<b>4</b>	<b>80</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>999</b>	<b>5</b>
<b>8:00</b>	<b>6</b>	<b>238</b>	<b>442</b>	<b>85</b>	<b>242</b>	<b>1</b>	<b>64</b>	<b>1</b>	<b>23</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>1,107</b>	<b>3</b>
9:00	1	112	248	35	78	2	128	0	14	0	0	1	619	10
10:00	1	90	139	19	63	2	182	0	20	0	0	0	516	11
11:00	1	125	233	33	87	3	198	0	21	0	0	1	702	9
12:00	2	117	233	33	126	0	306	0	33	6	0	18	874	6
13:00	2	101	174	24	109	0	300	0	33	5	0	15	763	8
14:00	2	137	159	22	148	0	507	0	55	7	0	21	1,058	4
15:00	3	187	181	25	203	0	740	0	80	9	0	28	1,456	1
<b>16:00</b>	<b>3</b>	<b>165</b>	<b>76</b>	<b>21</b>	<b>179</b>	<b>0</b>	<b>571</b>	<b>0</b>	<b>62</b>	<b>8</b>	<b>0</b>	<b>25</b>	<b>1,110</b>	<b>2</b>
<b>17:00</b>	<b>0</b>	<b>148</b>	<b>76</b>	<b>20</b>	<b>206</b>	<b>1</b>	<b>342</b>	<b>0</b>	<b>53</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>851</b>	<b>7</b>
18:00	1	50	57	8	55	0	188	0	20	2	0	8	389	12
19:00	1	42	72	10	45	0	124	0	14	2	0	6	316	13

### River Street

SB	NB	Total
155	11	166
196	19	215
<b>207</b>	<b>23</b>	<b>230</b>
158	40	198
100	40	140
56	57	113
94	62	156
94	96	190
70	94	164
64	159	223
73	232	305
<b>90</b>	<b>179</b>	<b>269</b>
56	167	223
23	59	82
29	39	68

For TMC Volumes, analyst may use formulas reading from 'Raw Counts' tab once proper counts have been brought in.  
 If not, manually enter volumes for each movement/hour.  
**Please review and edit all formulas as necessary before moving onto 'Warrant Analysis' tab.**

# Traffic Control Signal Warrant Analyses

(Based on MUTCD-2009 Edition)

Intersection: **Andover Street and River Street**

Pop. <10,000? (Y/N) **N** Count Date: **7/9/2024** Analysis Date: **09/23/24**

Speed (in mph): **30 mph** Analysis Year: **2031** Analyst: **RLB**

Is Major?\* #Lanes\* Adjustment Factor: **1** Raw counts

(Y/N) (one way)

EB	<b>Y</b>	<b>1</b>
WB	<b>Y</b>	<b>1</b>
NB	<b>N</b>	<b>1</b>
SB	<b>N</b>	<b>1</b>

Major Lanes: **1** Enter the higher number of lanes for the major street approach

Minor Lanes: **1** Enter the number of lanes for the minor street approach you want to analyze

\*Note: If intersection is a "T" intersection, leave cells blank for the non-existent approach

Time	EB LT	EB TH	EB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	SB LT	SB TH	SB RT
7:00	2	184	514	72	128	4	80	0	14	0	0	1
8:00	6	238	442	85	242	1	64	1	23	0	2	3
9:00	1	112	248	35	78	2	128	0	14	0	0	1
10:00	1	90	139	19	63	2	182	0	20	0	0	0
11:00	1	125	233	33	87	3	198	0	21	0	0	1
12:00	2	117	233	33	126	0	306	0	33	6	0	18
13:00	2	101	174	24	109	0	300	0	33	5	0	15
14:00	2	137	159	22	148	0	507	0	55	7	0	21
15:00	3	187	181	25	203	0	740	0	80	9	0	28
16:00	3	165	76	21	179	0	571	0	62	8	0	25
17:00	0	148	76	20	206	1	342	0	53	1	1	3
18:00	1	50	57	8	55	0	188	0	20	2	0	8
19:00	1	42	72	10	45	0	124	0	14	2	0	6

Time	Σ EB	Σ WB	Σ NB	Σ SB	Σ Major	Σ Minor	Σ Max Minor	W1 A	W1 B	W1combo	W2	W3
7:00	700	204	94	1	904	95	94	N	Y	N	N	N
8:00	686	328	88	5	1014	93	88	N	Y	N	N	N
9:00	361	115	142	1	476	143	142	N	N	N	N	N
10:00	230	84	202	0	314	202	202	N	N	N	N	N
11:00	359	123	219	1	482	220	219	N	N	N	N	N
12:00	352	159	339	24	511	363	339	Y	N	N	Y	N
13:00	277	133	333	20	410	353	333	N	N	N	Y	N
14:00	298	170	562	28	468	590	562	N	N	N	Y	Y
15:00	371	228	820	37	599	857	820	Y	N	N	Y	Y
16:00	244	200	633	33	444	666	633	N	N	N	Y	Y
17:00	224	227	395	5	451	400	395	N	N	N	Y	N
18:00	108	63	208	10	171	218	208	N	N	N	N	N
19:00	115	55	138	8	170	146	138	N	N	N	N	N
								2 of 8	2 of 8	0 of 8	6 of 4	3 of 1

Warrant Analyses												
<b>Warrant 1: Condition A Minimum Vehicular Volume Warrant is Not Met</b>												
<b>Warrant 1: Condition B Interruption of Continuous Traffic Warrant is Not Met</b>												
<b>Warrant 1: Combination of Warrants 1A and 1B is Not Met</b>												
<b>Warrant 2: Four-Hour Warrant is Met</b>												
<b>Warrant 3: One-Hour Warrant is Met</b>												

# Traffic Control Signal Warrant Analyses

(Based on MUTCD-2009 Edition)

Intersection: **Andover Street and River Street**

Pop. <10,000? (Y/N) **N** Count Date: **7/9/2024** Analysis Date: **09/23/24**

Speed (in mph): **30 mph** Analysis Year: **2031** Analyst: **RLB**

Is Major?\* **(Y/N)** #Lanes\* **(one way)** Adjustment Factor: **1** Raw counts

EB	<b>Y</b>	<b>1</b>	Major Lanes: <b>1</b>	Enter the higher number of lanes for the major street approach
WB	<b>N</b>	<b>1</b>	Minor Lanes: <b>1</b>	Enter the number of lanes for the minor street approach you want to analyze
NB	<b>Y</b>	<b>1</b>		
SB	<b>N</b>	<b>1</b>		

*\*Note: If intersection is a "T" intersection, leave cells blank for the non-existent approach*

Time	EB LT	EB TH	EB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	SB LT	SB TH	SB RT
7:00	2	184	514	72	128	4	80	0	14	0	0	1
8:00	6	238	442	85	242	1	64	1	23	0	2	3
9:00	1	112	248	35	78	2	128	0	14	0	0	1
10:00	1	90	139	19	63	2	182	0	20	0	0	0
11:00	1	125	233	33	87	3	198	0	21	0	0	1
12:00	2	117	233	33	126	0	306	0	33	6	0	18
13:00	2	101	174	24	109	0	300	0	33	5	0	15
14:00	2	137	159	22	148	0	507	0	55	7	0	21
15:00	3	187	181	25	203	0	740	0	80	9	0	28
16:00	3	165	76	21	179	0	571	0	62	8	0	25
17:00	0	148	76	20	206	1	342	0	53	1	1	3
18:00	1	50	57	8	55	0	188	0	20	2	0	8
19:00	1	42	72	10	45	0	124	0	14	2	0	6

Time	Σ EB	Σ WB	Σ NB	Σ SB	Σ Major	Σ Minor	Σ Max Minor	W1 A	W1 B	W1combo	W2	W3
7:00	700	204	94	1	794	205	204	Y	Y	Y	Y	N
8:00	686	328	88	5	774	333	328	Y	Y	Y	Y	Y
9:00	361	115	142	1	503	116	115	N	N	N	N	N
10:00	230	84	202	0	432	84	84	N	N	N	N	N
11:00	359	123	219	1	578	124	123	N	N	N	N	N
12:00	352	159	339	24	691	183	159	Y	N	Y	N	N
13:00	277	133	333	20	610	153	133	N	N	Y	N	N
14:00	298	170	562	28	860	198	170	Y	Y	Y	Y	N
15:00	371	228	820	37	1191	265	228	Y	Y	Y	Y	Y
16:00	244	200	633	33	877	233	200	Y	Y	Y	Y	N
17:00	224	227	395	5	619	232	227	Y	N	Y	Y	N
18:00	108	63	208	10	316	73	63	N	N	N	N	N
19:00	115	55	138	8	253	63	55	N	N	N	N	N

7 of 8      5 of 8      8 of 8      6 of 4      2 of 1

Warrant Analyses
<b>Warrant 1: Condition A Minimum Vehicular Volume Warrant is Not Met</b>
<b>Warrant 1: Condition B Interruption of Continuous Traffic Warrant is Not Met</b>
<b>Warrant 1: Combination of Warrants 1A and 1B is Met</b>
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