



CITY OF NEWTON, MASSACHUSETTS

City Hall

1000 Commonwealth Avenue, Newton, MA 02459-1449

Telephone: (617) 796-1065 TDD/TTY: (617) 796-1089 Fax: (617) 796-1086
www.ci.newton.ma.us

Ruthanne Fuller
Mayor

ZONING BOARD OF APPEALS

To: Zoning Board of Appeals Members
From: Adrianna Henriquez, Clerk
Date: June 21, 2021
Subject: Materials for **June 28, 2021** Public Hearing

Packet 1

Hello,

Please see the following supplemental materials for the upcoming hearing on June 28, 2021 Public Hearing. The following board members are scheduled to sit: *Brooke Lipsitt (Chair), William McLaughlin, Treff LaFleche, Michael Rossi, Stuart Snyder and Elizabeth Sweet (Alternate).*

1. Memorandum from VHB dated June 3, 2021
2. Memorandum from Planning and Development dated June 21, 2021

Thank you,

Adrianna Henriquez

ahenriquez@newtonma.gov | (617) 796 1133



Memorandum

To: Michael Gleba
City of Newton

Date: June 3, 2021

Project #: 14517.00

From: Randall C. Hart, Principal
Noah Yoskowitz, P.E.

Re: Dunstan East
Program Modification Traffic Generation
Newton, Massachusetts

VHB, on behalf of Mark Development (The Proponent) has prepared a this "sensitivity" analysis memorandum to reflect some minor changes to the development program of the proposed Dunstan East redevelopment project in Newton, Massachusetts. While the overall building footprints and residential unit count have not changed, the retail space has been increased slightly (from 5,821 sf to 7,771 sf) based on feedback provided by the City of Newton and by members of the community. The additional retail space (approximately 1,950 sf) was gained by reducing the common area on the first floor of the eastern residential building. VHB submitted a full Traffic Impact and Access (TIA) study for the proposed project in April 2021 analyzing the project-related impacts at all study area intersections and identifying proposed mitigation and traffic demand management measures. This memorandum is a supplement to the April TIA to demonstrate the anticipated change based on the program tweak.

The proposed Project is on an approximately three-acre site adjacent to Dunstan Street, Kempton Place, and Washington Street in the West Newton neighborhood of Newton. The Site is currently home to various existing residential, retail, auto services, and office buildings that will be razed for the Project.

Since the changes in the breakdown of different uses is relatively minor and reflects the continued developed of the building designs and discussions with the community, a full update of the TIAS is not warranted and therefore the analyses and traffic volume networks presented in the April 2021 TIAS are still applicable. However, for the benefit of understanding the magnitude of the building program modifications, this supplemental memorandum has been prepared summarizing the anticipated traffic generation characteristics of the revised building program.

The proposed changes in the building program are summarized in Table 1.

Table 1 Proposed Changes in Building Program

Land Use	April 2021 TIAS Building Program ^a	May 2021 Updated Building Program	Change in Building Program
Residential	302 units	302 units	unchanged
Retail	5,821 sf	7,771 sf	+ 1,950 sf

^a Building Program as outlined in April TIAS for the Dunstan East Development.

As shown in Table 1, the revised building program results in the same number of residential units and an increase of approximately 1,950sf of additional retail space than previously proposed in the April 2021 TIA.

Trip Generation Summary

To assess the changes that would be expected as a result of the program modifications, traffic generation projections have been prepared for the revised program. The rate at which any development generates traffic is dependent upon the size, location, and concentration of surrounding developments. As mentioned previously, the Project is comprised

of residential and retail use. The ITE *Trip Generation Manual*¹ categorizes these land uses and provides weekday daily, weekday morning peak hour, weekday evening peak hour, Saturday daily, and Saturday midday peak hour unadjusted vehicle trip generation estimates for each use. The trip generation estimates for the proposed uses were projected using Land Use Code (LUC) 221 (Mid-Rise Residential) and LUC 820 (Shopping Center).

The change in total site-generated vehicle trips with the building program is summarized below in Table 2.

Table 2 Total Site-Generated Vehicle Trip Generation Comparison

Time Period	Direction	<u>April 2021 TIAS Building Program</u>		<u>Revised May 2021 Building Program</u>		Total Net New Trip Difference
		Total Unadjusted Trips ^a	Total Net New Vehicle Trips ^b	Total Unadjusted Trips ^c	Total Net New Vehicle Trips ^d	
Weekday Morning	Enter	122*	85*	123*	85*	0
Peak Hour	Exit	134	96	134	96	0
	Total	256	181	257	181	0
Weekday Evening	Enter	112	61	117	63	+ 2
Peak Hour	Exit	86	27	93	31	+ 4
	Total	198	88	210	94	+ 6
Saturday Midday	Enter	101	30	108	33	+ 3
Peak Hour	Exit	101	26	108	29	+ 3
	Total	202	56	216	62	+ 6

- a Unadjusted trip generation estimates based on ITE Trip Generation Manual; from Table 5 in the April 2021 TIA.
- b Total Net New trip generation estimate including credits for mode share, internal capture, pass-by, and existing trips; from Table 8 in the April 2021 TIA.
- c Unadjusted trip generation estimates based on ITE Trip Generation Manual; as described in Table 4 in this memorandum.
- d Total Net New trip generation estimate for entire building program and including credits for mode share, internal capture, pass-by, and existing trips; as described in Table 6 in this memorandum.

* The increase in retail space results in one additional unadjusted entering trip during the weekday morning peak hour, but the total net new trips remain the same. This is because by taking credits for mode share, internal capture, pass-by and existing trips, the entering trip is accounted for as a pass-by trip, which is accounted for as a trip credit and not a net new vehicle trip.

As shown in Table 2, the revised building program as compared to the previous building program will result in a negligible change in vehicle trips during the weekday morning peak hour, six more new vehicle trips (2 entering / 4 exiting) during the weekday evening peak hour, and six more new vehicle trips (3 entering / 3 exiting) during the Saturday midday peak hour. It should be noted that the Site-generated volumes do not include the office building at 1149 Washington Street, as there are not expected to be any changes to the square footage of that building due to the Project.

1 Trip Generation Manual, 10th Edition, Institute of Transportation Engineers, Washington, D.C., 2017.

A breakdown of the detailed trip generation analyses for the revised building program as following the format and methodology of the April 2021 TIA for consistency is described in the following sections.

Project-Generated Trips

Estimating future conditions volumes for the Site involved a review of the existing development on those parcels, along with the additional trip generation expected from the Project development.

Existing Site-Generated Traffic

Field observations conducted by VHB indicate that some of the planned development parcels currently are occupied including The Barn Family Shoe Store and The Kids Barn, which are both active retail uses located off Kempton Place. The other uses on planned development parcels were either observed to be inactive or were assumed to have a negligible trip generation.

The vehicular Site trip generation for the weekday morning, weekday evening, and Saturday midday peak hours under existing conditions was estimated based on turning movement counts conducted at the intersection of Washington Street and Kempton Place. While the existing auto glass shop that will remain in place with the Project on the northeast corner of the intersection of Washington Street and Kempton Place was observed to be active, it was determined that the level of activity was negligible during the peak hours, and therefore it was assumed that trips entering or exiting from Kempton Place during the peak hours was mainly attributed to traffic associated with The Barn Family Shoe Store and The Kids Barn. Table 3 summarizes the Project-related trips for the existing uses on Site.

Table 3 Existing Site Trip Generation

	Total Vehicle Trips ^a
Weekday Morning	
Enter	5
<u>Exit</u>	<u>0</u>
Total	5
Weekday Evening	
Enter	10
<u>Exit</u>	<u>25</u>
Total	35
Saturday Midday	
Enter	35
<u>Exit</u>	<u>40</u>
Total	75

a Based on turning movement counts conducted by VHB in April 2019.

As shown in Table 3, the existing retail uses under existing conditions currently generate approximately five entering vehicular trips during the weekday morning peak hour, 35 vehicular trips (10 entering / 25 exiting) during the weekday evening peak hour, and 75 vehicular trips (35 entering / 40 exiting) during the Saturday midday peak hour. It is expected that these existing Site generated vehicular trips will be displaced by the Site under future conditions and were therefore taken as credit from future conditions.

Unadjusted Project-Generated Traffic

The proposed development will consist of approximately 302 residential units and 7,771 sf of retail space. Traffic associated with the residential units was estimated using ITE LUC 221 (Mid-Rise Residential) and traffic associated with the retail space was estimated using ITE LUC 820 (Shopping Center).

It should be noted that the retail uses are expected to be smaller, Main Street style businesses catering to the residential space on-Site and the adjacent neighborhoods as opposed to large big-box style retail stores. Potential uses will include small eating establishments, coffee shops, pharmacies, banks, convenience stores, or gallery uses. While these do not fit the exact description of a traditional ITE "Shopping Center", retail traffic was estimated using this land use code, which results in an overly conservative analysis.

The unadjusted new vehicle trip estimates are presented in Table 4 and trip generation worksheets are included in the Attachments to this memorandum.

Table 4 Project Trip Generation – New Unadjusted Vehicle Trips

	Residential ^a	Retail ^b	Total New Unadjusted Vehicle Trips
Weekday Daily			
Enter	822	529	1,351
<u>Exit</u>	<u>822</u>	<u>529</u>	<u>1,351</u>
Total	1,644	1,058	2,702
Weekday Morning			
Enter	26	97	123
<u>Exit</u>	<u>75</u>	<u>59</u>	<u>134</u>
Total	101	156	257
Weekday Evening			
Enter	78	39	117
<u>Exit</u>	<u>50</u>	<u>43</u>	<u>93</u>
Total	128	82	210
Saturday Daily			
Enter	668	914	1,582
<u>Exit</u>	<u>668</u>	<u>914</u>	<u>1,582</u>
Total	1,335	1,828	3,164
Saturday Midday			
Enter	65	43	108
<u>Exit</u>	<u>69</u>	<u>39</u>	<u>108</u>
Total	134	82	216

a Based on ITE LUC 221 (Mid-Rise Residential) for 302 residential units.

b Based on ITE LUC 820 (Shopping Center) for 7,771 sf

Person Trips

The unadjusted vehicle trips are converted into person trips by applying the average vehicle occupancy (AVO) of 1.18 for residential trips and of 1.82 for retail trips, as outlined by the U.S. Department of Transportation². The unadjusted vehicle trips were converted into person trips in order to apply internal capture credits and applicable mode share credits, as described below. Applying these credits to person trips allows for estimates to be made for the total number of Site-generated transit users, walkers, and bicyclists in addition to the total number of Site-generated vehicles.

Internal Capture Trips

Since the proposed development is a mixed-use project, the trip generation characteristics of the Site will be different from a single-use project. Some of the traffic to be generated by the proposed development will be contained on site as "internal" or "shared vehicle" trips. For example, residents who live in the development may also shop at the retail uses. While these shared trips represent new traffic to the individual uses, they would not show up as new vehicle trips on the surrounding roadway network.

As described in the ITE Trip Generation Handbook³ "because of the complementary nature of these land uses, some trips are made among the on-site uses. This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system (compared to the total number of trips generated by comparable land uses developed individually on stand-alone sites) an internal capture rate can generally be defined as the percentage of total person trips generated by a site that are made entirely within the site. The trip origin, destination, and travel path are all within the site."

Based on the methodology outlined in the ITE Trip Generation Handbook, internal capture rates were applied to the gross person trips and the calculations are included in the Attachments to this memorandum.

Mode Share

It is expected that residents, visitor, and commuters to the Site will use a variety of transportation options to reach the Site, including private vehicles, walking, bicycling, and public transportation. The Project is conveniently located within one-half mile of the West Newton MBTA Commuter Rail Station, providing direct access to Boston via the Framingham/Worcester line to South Station. Additionally, several MBTA bus routes are available in the vicinity of the Project. The Project is also located in a dense, walkable neighborhood with sidewalk connections to West Newton Village and Newtonville Village.

To determine the potential mode shares for the residential component of the site, mode share data from the US Census Bureau's 2013-2017 American Community Survey was reviewed⁴. Based on that data, approximately 79-percent of all Newton residents that commute to work travel via private vehicle, 13-percent commute via public transit, and 8-percent commute via walking or bicycling. To provide a conservative estimate, a 13-percent transit reduction credit and an 8-percent walk/bike reduction credit was applied to the vehicular trips related to the residential component of the Project. While the Project may have higher transit use than the average household in

² [Summary of Travel Trends: 2017 National Household Survey](#), US Department of Transportation, Federal Highway Administration, Washington D.C., 2017.

³ [Trip Generation Handbook, 3rd Edition](#), Institute of Transportation Engineers, Washington, D.C., 2017.

⁴ US Census Bureau, 2013-2017 American Community Survey, City of Newton

Newton due to the proximity to the commuter rail, applying a low residential mode share provides the City of Newton with a conservative assessment of future traffic and impacts.

In general, retail uses are expected to generate fewer transit trips than residential uses, as the main trip generator of retail uses are customers, not commuters. While there are expected to be some customers and employees of the retail establishments on Site that will take transit, walk, or bike, to present a conservative analysis, it was assumed that 90-percent of the retail-generated trips will be vehicular trips, 5-percent will be transit trips, and the remaining 5-percent will be walking or bicycle trips. These retail mode shares are consistent with the *2017 National Household Travel Survey* developed by the US Department of Transportation, which estimates that nationwide the mode share for all trips generated for the purpose of shopping or running errands was approximately 88.5-percent by private vehicle, 1.8-percent by public transit, 8.1-percent by walking, and 1.7-percent by other modes of transportation. Using a 90-percent retail vehicular mode share for this study provides a conservative assessment of future traffic impacts, while using a 5-percent mode share for transit takes into account the high level of public transit available in the area.

Table 5 provides a summary of the projected mode shares by land use. It should be noted that the same mode shares were used as in the April 2021 TIA in order to provide a consistent analysis.

Table 5 Project Mode Share

Use	Vehicle	Transit	Walk/Bike
Residential	79%	13%	8%
Retail	90%	5%	5%

The mode shares discussed above were applied to the net-new person trips to generate the adjusted Project trips by mode. The local average vehicle occupancy, based US Census data for each primary use, was then applied to the vehicle mode to reflect the number of vehicle trips generated by the Site.

Pass-By Trips

While the ITE rates provide estimates for all the traffic associated with each land use, not all the traffic generated by the Project will be new to the area roadways. A portion of the vehicle-trips generated by the retail land use will likely be drawn from the traffic volume roadways adjacent to the Project Site. For example, someone traveling on Washington Street may choose to deviate from their original travel path to visit the site retail as an intermediate stop on their way to their ultimate destination. For this evaluation, ITE pass-by rates for LUC 820 (Shopping Center) were utilized for the retail trip generation and applied to existing trips on Washington Street. Specifically, 34-percent of the retail trip generation was assumed to be drawn from the surrounding roadway network during the weekday evening peak hour and 26-percent if the retail trip generation as assumed to be drawn from the surrounding roadway network during the Saturday midday peak hour, as outlined in the ITE Trip Generation Handbook. For all other time periods studied, a 25-percent pass-by rate was assumed.

Project-Generated Trips

As described above, internal capture credit, mode share credit, and pass-by credit for the Project was applied to the unadjusted new vehicle trips presented in Table 4 to develop the net new trips expected to be generated by the Site. Table 6 presents the Project-generated net new peak hour trips by mode and Table 7 presents the Project-generated net new vehicle peak hour trips by land use.

Table 6 Net New Project-Generated Peak-Hour Trips by Mode

	Net New Vehicle Trips	Net New Transit Trips	Net New Walk and Bike Trips
Weekday Morning			
Enter	85	13	11
<u>Exit</u>	<u>96</u>	<u>16</u>	<u>12</u>
Total	181	29	23
Weekday Evening			
Enter	63	12	9
<u>Exit</u>	<u>31</u>	<u>10</u>	<u>7</u>
Total	94	22	16
Saturday Midday			
Enter	33	12	9
<u>Exit</u>	<u>29</u>	<u>12</u>	<u>9</u>
Total	62	24	18

As shown in Table 6, the Project is expected to generate 29 new transit trips and 23 new walk/bike trips during the weekday morning peak hour. During the weekday evening peak hour, the Project is expected to generate 22 new transit trips and 16 new walk/bike trips. During the Saturday peak hour, the Project is expected to generate 24 new transit trips and 18 new walk/bike trips. The breakdown of the vehicle trips by use are summarized below in Table 7.

Table 7 Project-Generated Peak-Hour Vehicle Trips by Use

	Residential^a	Retail^b	Existing Retail Uses^c	Total Net New Vehicle Trips^d	Pass-By^e	Total Net Vehicle Trips w/ Pass-By^f
Weekday Morning						
Enter	21	69	-5	85	18	103
Exit	<u>61</u>	<u>35</u>	<u>0</u>	<u>96</u>	<u>18</u>	<u>114</u>
Total	82	104	-5	181	36	217
Weekday Evening						
Enter	51	22	-10	63	10	73
Exit	<u>37</u>	<u>19</u>	<u>-25</u>	<u>31</u>	<u>10</u>	<u>41</u>
Total	88	41	-35	94	20	114
Saturday Midday						
Enter	41	27	-35	33	8	41
Exit	<u>51</u>	<u>18</u>	<u>-40</u>	<u>29</u>	<u>8</u>	<u>37</u>
Total	92	45	-75	62	16	78

- a Residential vehicle trips with internal capture and mode share credits applied.
- b Retail vehicle trips with internal capture and pass-by credits applied.
- c Existing retail uses include The Barn Family Shoe Store and The Kids Barn.
- d Sum of columns a, b, and c.
- e Pass-by Credits of 25% and 34% applied to weekday morning and weekday evening peak hour retail trip generation, respectively.
- f Sum of columns d and e.

As shown in Table 7, the Project is expected to generate a total of 217 vehicle trips (103 entering / 114 exiting) during the weekday morning peak hour, 114 vehicle trips (73 entering / 41 exiting) during the weekday evening peak hour, and 78 vehicle trips (41 entering / 37 exiting) during the Saturday midday peak hour.

Operational Analysis

To determine the relative impact of the new trips associated with the revised May 2021 building program compared to the building program presented in the April 2021 TIAS, capacity analyses were conducted for the four closest study intersections and at the site driveway, which is where most of the site-generated traffic is condensed. Table 8 below compares the results of the capacity analysis for the 2028 Build Conditions presented in the April 2021 TIAS to the results for the 2028 Build Conditions using the revised May 2021 building program. As can be seen, the changes in results between the two scenarios are negligible. The capacity analysis worksheets for the revised May 2021 building program are attached to this memorandum.

Table 7 Comparison of Capacity Analysis Results

Location / Movement	2028 Build Conditions April 2021 TIAS Building Program					2028 Build Conditions Revised May 2021 Building Program				
	D ^a	v/c ^b	Del ^c	LOS ^d	95 Q ^e	D	v/c	Del	LOS	95 Q
13: Washington Street at Dunstan Street										
<i>Weekday Morning</i>										
EB L	50	0.06	9	A	5	50	0.06	9	A	5
SB L/R	75	0.23	18	C	23	80	0.25	19	C	25
<i>Weekday Evening</i>										
EB L	45	0.05	9	A	5	45	0.05	9	A	5
SB L/R	65	0.21	18	C	20	65	0.21	18	C	20
<i>Saturday Midday</i>										
EB L	25	0.03	9	A	3	25	0.03	9	A	3
SB L/R	60	0.14	14	B	13	60	0.14	14	B	13
14: Washington Street at Kempton Place										
<i>Weekday Morning</i>										
EB L	20	0.02	9	A	3	25	0.03	9	A	3
SB L/R	40	0.12	16	C	10	45	0.14	17	C	13
<i>Weekday Evening</i>										
EB L	20	0.02	9	A	3	20	0.02	9	A	3
SB L/R	25	0.08	17	C	8	25	0.08	17	C	8
<i>Saturday Midday</i>										
EB L	20	0.02	9	A	3	20	0.02	9	A	3
SB L/R	25	0.07	15	B*	5	35	0.10	15	C*	8
21: Watertown Street at Dunstan Street										
<i>Weekday Morning</i>										
WB L	35	0.03	8	A	3	35	0.03	8	A	3
NB L/R	60	0.15	15	B	13	60	0.15	15	B	13
<i>Weekday Evening</i>										
WB L	30	0.03	8	A	3	30	0.03	8	A	3
NB L/R	55	0.14	14	B	13	55	0.14	14	B	13
<i>Saturday Midday</i>										
WB L	20	0.02	8	A	3	25	0.02	8	A	3
NB L/R	35	0.08	14	B	8	35	0.09	14	B	8
22: Watertown Street at Adella Avenue (west)										
<i>Weekday Morning</i>										
EB L	10	0.01	8	A	0	10	0.01	8	A	0
SB L/R	50	0.14	16	C	13	50	0.14	16	C	13
<i>Weekday Evening</i>										
EB L	10	0.01	8	A	0	10	0.01	8	A	0
SB L/R	30	0.09	16	C	8	30	0.09	16	C	8
<i>Saturday Midday</i>										
EB L	5	0.01	8	A	0	5	0.01	8	A	0
SB L/R	15	0.04	14	B	3	15	0.04	14	B	3
31: Dunstan Street at Brook Drive										
<i>Weekday Morning</i>										
WB L/R	5	0.01	9	A	0	5	0.01	9	A	0
SB L	5	0.01	7	A	0	5	0.01	7	A	0
<i>Weekday Evening</i>										
WB L/R	5	0.01	9	A	0	5	0.01	9	A	0
SB L	5	0.01	7	A	0	5	0.01	7	A	0
<i>Saturday Midday</i>										
WB L/R	5	0.01	9	A	0	5	0.01	9	A	0
SB L	5	0.01	7	A	0	5	0.01	7	A	0

a Demand. c Average total delay, in seconds per vehicle e 95th percentile queue, in feet
 b Volume to capacity ratio. d Level of service

* For intersection 15 during the Saturday midday peak hour, the overall delay in the April 2021 TIAS is 14.7 seconds and with the revised May 2021 building program is 15.3 seconds, which moves past the threshold of 15 seconds between LOS B and C

Conclusion

VHB has developed a memorandum to supplement the trip generation presented in the April 2021 TIAS. As presented in this memorandum, the slight change in building program is expected to have a minimal impact on the Project trip generation and as compared to the trip generation presented in April 2021, the revised building program is expected to generate no change in trips during the weekday morning peak hour, six new trips during the weekday evening peak hour, and six new trips during the Saturday midday peak hour. Since the changes in the breakdown of different uses is relatively minor and reflects the continued developed of the building designs and discussions with the community, a full update of the TIAS is not warranted and therefore the analyses and traffic volume networks presented in the April 2021 TIAS are still applicable and provide a conservative analysis of the impacts of the Project.



Memorandum

Attachments

- Trip Generation Worksheets
- Trip Generation Calculations
- Capacity Analysis Worksheets



Ruthanne Fuller
Mayor

City of Newton, Massachusetts
Department of Planning and Development
1000 Commonwealth Avenue Newton, Massachusetts 02459

Telephone
(617) 796-1120
Telefax
(617) 796-1142
TDD/TTY
(617) 796-1089
www.newtonma.gov

Barney S. Heath
Director

PUBLIC HEARING MEMORANDUM

DATE: June 21, 2021
MEETING DATE: June 28, 2021
TO: Zoning Board of Appeals
FROM: Barney S. Heath, Director of Planning and Development
Neil Cronin, Chief Planner for Current Planning
Michael Gleba, Senior Planner
COPIED: Mayor Ruthanne Fuller
City Council

In response to questions raised at the Zoning Board of Appeals public hearings on April 28, 2021 and June 10, 2021 the Planning Department is providing the following information for the upcoming continued public hearing/working session. This information is supplemental to staff analysis previously provided at the public hearing.

PETITION #09-19(2)

Dunstan East

Dunstan East, LLC, applying to the Zoning Board of Appeals, pursuant to Massachusetts General Laws Chapter 40B, to amend and make substantial changes to the Comprehensive Permit previously granted to the applicant on July 8, 2020 for a project located in the Business 2 Zoning District at 1149, 1151, 1169, 1171-1173, 1179, and 1185 Washington Street, 12, 18, 24, and 25 Kempton Place, and 32 and 34 Dunstan Street in Newton, Massachusetts containing approximately 3.58 acres. The applicant proposes to incorporate the 6,983 square foot parcel located at 1157 Washington Street into the development parcel, demolish the building located at 1149 Washington Street, and increase the height of Building 3. The revised project will contain a 302-unit residential development, which includes 64 new units in Building 3, and 76 of the total number of units will be affordable. The revised project will contain approximately 5,821 square feet of retail space, and 338 parking stalls (42 of which are new).

The Zoning Board of Appeals (Board) opened the public hearing on this petition on April 28, 2021, which was held open for the petitioner to respond to questions and concerns raised in the Planning Department's Memorandum and at the public hearing by the Board as well as by members of the public. At that meeting the Board authorized peer reviews of the project.

EXECUTIVE SUMMARY

The Permit Holder, Dunstan East, LLC, was granted a comprehensive permit on July 8, 2020 by the Zoning Board of Appeals (ZBA) for a development including the construction of three buildings containing, in the aggregate, 234 residential units (including 59 Affordable Units) and 8,318 square feet of retail space, and 294 parking stalls. Also included in the approved development plan is an approximately 8,222 square foot existing office building at 1149-1151 Washington Street (the "Approved Project").

Subsequently, in February of 2021, the ZBA approved certain "insubstantial changes" to the proposed structures known as "Building 1" and "Building 2" (both located to the west of Kempton Place), which increased the number of residential units by four, to 238, and the number of parking stalls by two, raising the total to 296. The amount of retail space was reduced by 2,497 square feet to 5,821 square feet.

The Permit Holder is now proposing to expand the project site with the inclusion of 1157 Washington Street which would increase the lot area of the project by approximately 6,983 square feet. It proposes to demolish the existing building on that lot as well as the one located on the previously incorporated 1149-1151 Washington Street. As the latter building currently contains office space, its demolition would eliminate that use from the project.

The Permit Holder now seeks to develop the portion of the to-be expanded site east of Kempton Place with an expanded Building 3. This modification would increase the residential square footage of the development by 71,485 gross square feet. The new "Building 3" would include a sixth floor toward Washington Street, but its total height would be lower than the 81.10 foot approved by the comprehensive permit. Additional street level residential units would be located along the proposed Brook Drive along the northern portion of the site (the "Revised Project").

The number in units in the revised Building 3 would be 132, raising the total number of residential units in the overall development from 234 to 302. The number of proposed parking stalls has also been increased, by 42, enabling the project to have a 1:1 residential unit-parking stall ratio, while the remaining 36 stalls would be available to guests and the commercial uses.

This memo reflects an analysis of the transportation aspects of the project including traffic, parking, circulation, loading, bicycling facilities, and transportation demand management. Reflected in this memo are comments from The BETA Group ("BETA"), the consultant hired by the City to conduct a peer review of the Permit Holder's transportation and access study dated April of 2021, and subsequent memorandum dated June 3, 2021.

I. ANALYSIS

The attached memorandum details BETA's findings, comments, and recommendations (**Attachment A**). In summary, BETA found the analysis was done in accordance with industry standards and found the approach to trip generation to be acceptable. The project is expected to generate 215 trips during the weekday morning peak hour, 106 trips during the weekday

evening peak hour, and 70 trips during the Saturday midday peak hour. For reference, the project approved last year was expected to generate 200, 91, and 58 trips, respectively. Additionally, BETA agrees with the Permit Holder's sensitivity analysis for the additional 1,950 square feet of ground-floor commercial space in Building 3, as referenced in the Permit Holder's revised materials submitted May 27, 2021. As such, a revised traffic impact and access study is not necessary. Regarding Parking, BETA found the ratio of one parking stall per dwelling unit appropriate; however, more information is necessary to provide a better understanding of the parking supply. The Permit Holder should clarify the intended use of the ground-floor commercial space within Building 3 and submit a revised parking calculation. Additionally, the Permit Holder should clarify: whether a shared-parking arrangement would be employed; the transportation demand management initiatives, including the transit subsidy, would be available to the additional dwelling units; how on-street parking would be managed; and whether a car-share service would be provided. Lastly, BETA asked for more information regarding bicycle and pedestrian infrastructure as well as loading facilities.

II. ADDITIONAL INFORMATION AND MATERIALS

The Permit Holder should respond to all questions and requests for more information raised in this memo and the peer review by BETA in advance of future meetings.

III. CONCLUSION AND NEXT STEPS

The Planning Department will continue to review the proposal and as, where appropriate and authorized, coordinate reviews of the project by City agencies and consultants and provide updated and expanded memoranda in advance of future ZBA hearings. It is anticipated that the next meeting will focus on building design.

ATTACHMENTS

Attachment A: BETA peer review memorandum dated June 18, 2021

Newton, Massachusetts

The Dunstan Residences West Newton Redevelopment

Transportation Engineering Peer Review

June 2021

TRANSPORTATION ENGINEERING PEER REVIEW



315 Norwood Park South
2nd Floor
Norwood, Massachusetts 02062
781.255.1982
www.BETA-Inc.com

The Dunstan Residences West Newton Redevelopment
Newton, Massachusetts
Transportation Engineering Peer Review

**TRANSPORTATION ENGINEERING
PEER REVIEW**

Prepared by: BETA GROUP, INC.
Prepared for: City of Newton

June 2021

1.0 INTRODUCTION

Mark Development (Applicant) has proposed a mixed-use development to be located along Washington Street, Dunstan Street, and Kempton Place in Newton, Massachusetts. The three-acre site is currently home to various existing residential, retail, auto service, and office buildings.

In March 2020 BETA began a review of a mixed-use development known as “Dunstan East” which was approved in July 2020 and consisted of three new buildings with 324 residential units, 8,318 square feet of retail and 294 parking spaces. After the project approval an additional parcel at 1157 Washington Street was incorporated into the project site which would increase the square footage of Building 3. The Applicant is requesting Approval of Substantial Changes for the increase in apartment units. BETA Group, Inc. (BETA) has conducted a transportation peer review of the engineering documents submitted to the City of Newton for the proposed development.

1.1 PROJECT DESCRIPTION

As proposed, the Applicant is requesting Approval of Substantial Changes to construct a mixed-use development with 302 residential units (studio units to three bedrooms), 5,821 square feet (SF) of retail space and 338 total parking spaces (322 off-street and 16 on-street).

Vehicle access to the garages will be provided from Dunstan Street and Kempton Place. A new roadway (Brook Street) is proposed at the back of Buildings 1 and 2 and will connect Dunstan Street with Kempton Place. Pedestrian access to the buildings will be provided from Washington Street, Dunstan Street, Kempton Place, and Brook Street.

1.2 BASIS OF REVIEW

In conducting this peer review, the BETA team reviewed the following items:

- Transportation Impact and Access Study (TIAS): The Dunstan Residences West Newton redevelopment, Newton, Massachusetts, dated April 2021, prepared by VHB, Inc.
- Site Plans, issued April 28, 2020, revised April 8, 2021, VHB, Inc. (14 sheets)
- Program Modification Traffic Generation Memorandum, Newton, Massachusetts, dated June 3, 2021, prepared by VHB, Inc.
- City of Newton Zoning Board of Appeals Comprehensive Permit Application, Dunstan East, LLC
- Newton Street Design Guide, A Living Document, June 2018
- Zoning Review Memorandum, City of Newton, December 19, 2019
- Newton City Ordinances Volume II – Chapter 30: Zoning Ordinance, December 31, 2017
- Applicable federal, state, and industry guidelines, standards, and regulations

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This peer review document outlines BETA’s findings, comments, and recommendations on the engineering plans and studies submitted to the City of Newton for The Dunstan Residences West Newton Redevelopment. The peer includes the following transportation related elements:

- Traffic
- Public Transportation
- Pedestrian and Bicycle Facilities
- Internal Circulation and Parking
- Loading and Curbside Activity
- Transportation Demand Management Strategies
- Consistency with Newton Street Design Guide
- Other

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

The following 30 locations, within the City of Newton, were identified as study intersections in the TIAS based on the engineer’s knowledge of the area and input provided by City of Newton:

1. Washington Street/Auburn Street – signalized
2. Washington Street/Prospect Street – signalized
3. Washington Street/Perkins Street – signalized
4. Washington Street/I-90 EB On-Ramp – signalized
5. Washington Street/I-90 WB Off-Ramp – signalized
6. Washington Street/Putnam Street - unsignalized
7. Washington Street/Elm Street - signalized
8. Washington Street/Cherry Street - signalized
9. Washington Street/Highland Street - signalized
10. Washington Street/Waltham Street/Watertown Street - signalized
11. Washington Street/Chestnut Street - signalized
12. Washington Street/Davis Court/Jacob’s Auto Sales Driveway – unsignalized
13. Washington Street/Dunstan Street - unsignalized
14. Washington Street/Kempton Place - unsignalized
15. Washington Street/Cross Street - unsignalized
16. Washington Street/Lowell Avenue – signalized
17. Washington Street/Walnut Street – signalized
18. Watertown Street/Eden Avenue – unsignalized
19. Watertown Street/Davis Court – unsignalized
20. Watertown Street/Davis Avenue – unsignalized
21. Watertown Street/Dunstan Street – unsignalized
22. Watertown Street/Adella Avenue (west) – unsignalized
23. Watertown Street/Cross Street/Adella Avenue (east) – unsignalized
24. Watertown Street/Albemarle Road – signalized

- 25. Watertown Street/Walnut Street – signalized
- 26. Webster Street/Elm Street – unsignalized
- 27. Webster Street/Cherry Street – signalized
- 28. Waltham Street/Webster Street – unsignalized
- 29. Waltham Street/River Street – unsignalized
- 30. Chestnut Street/Austin Street – unsignalized

In lieu of locally preferred thresholds, ITE methodologies¹ and Massachusetts Department of Transportation’s (MassDOT’s) *Transportation Impact Assessment Guidelines*² suggest that an intersection should be evaluated when site-generated trips are projected to experience a noticeable increase in peak-hour traffic volumes (i.e., ≥ 100 vehicles and/or $\geq 5\%$). The rationale is that an increase of 100 vehicles per hour or 5% could impact the vehicular operations on an intersection approach. Based on the trip generation and distribution projections (as reflected on Figure 11: Trip Distribution) and the site-generated traffic-volume networks provided in the Appendix, BETA finds the study area intersections evaluated to be appropriate to determine the traffic impacts associated with the proposed development.

2.2 TRAFFIC VOLUMES

Manual turning movement counts (TMCs) were collected on Thursday, April 11th, 2019 from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM and Saturday, April 27th, 2019 from 11:00AM to 2:00PM. Data indicates the weekday AM peak hour occurs from 7:30 AM to 8:30 AM, the PM peak hour occurs from 5:00 PM to 6:00 PM, and the Saturday peak occurs from 12:00-1:00PM. The City of Newton school vacation was April 15th to April 19th, 2019. BETA concurs with the traffic data collection time periods.

Traffic volume data were also collected via automatic traffic recorder (ATR) on the same days as the TMC’s on Washington Street west of Dunstan Street and Watertown Street, and west of Davis Avenue over 24-hour periods. Typically, ATR data is collected over a consecutive 48-hour period, however BETA finds the two separate data collection days adequate.

Comment 2.1: Upon review of the ATR data provided in the Appendix and the Traffic Volume section of the report there are inconsistencies between Table 1 – Observed Traffic Volumes and the rest of the ATR data. **The Saturday daily volume for Watertown Street should be 6,980 vehicles per day in the table. Also, the Saturday K-factors should be revised to 8.7% for Washington Street and 8.3% for Watertown Street.**

2.2.1 SEASONAL ADJUSTMENT

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. To determine if the traffic-count data needed to be adjusted to account for this fluctuation, the seasonal traffic-volume data from MassDOT Permanent Count Stations located along Interstate 90 (I-90) and Interstate 95 (I-95) in Newton and Weston were analyzed. This information revealed that traffic volumes in April were found to be slightly above average conditions; and therefore, the volumes were not

¹ *Transportation Impact Analyses for Site Development: An ITE Proposed Recommended Practice*. Washington, DC: Institute of Transportation Engineers, 2010.

² Massachusetts Department of Transportation. “Transportation Impact Assessment (TIA) Guidelines.” *MassDOT Development Review – Planning Process*. Commonwealth of Massachusetts, March 13, 2014.

adjusted in order to provide a more conservative analysis condition. BETA finds this methodology appropriate.

2.2.2 YEAR 2021 ADJUSTMENT

The 2019 traffic volumes were increased by 0.5 percent per year to provide 2021 Existing Condition volumes.

As a result of the ongoing pandemic, MassDOT has issued an Engineering Directive E-20-005 in April 2020 which introduces a *Guidance on Traffic Count Data* memorandum. The intent of this guidance is to provide a procedure by which historical data collected after January 1, 2014 but prior to the pandemic is acceptable without any additional approval required. The guidance considers traffic volumes for the year 2019 (Pre-COVID) to be current. No further guidance has been provided by MassDOT related to traffic volumes, so it is not required that a growth rate be applied to the 2019 volumes to bring them to the year 2021. **This approach likely provides a more conservative assessment of the traffic volumes in the year 2021 and is acceptable.**

2.2.3 VEHICLE SPEEDS

Vehicle speeds were collected via ATR along Washington Street and Watertown Street in the vicinity of the development roadways. The posted speed limit on Washington Street is 35 miles per hour (mph) and on Watertown Street is 25 mph.

Comment 2.2: **Revise Table – Existing Traffic Speed Summary to reflect the correct Watertown Street ATR location.**

The average and 85th percentile speeds along Washington Street were within range of expectations for a posted 35 mph speed limit. The average and 85th percentile speeds along Watertown Street were 29 mph and 34 mph, respectively, which is four (4) miles and nine (9) miles over the posted speed limit. **This data highlights a speed issue along Watertown Street in the study area.**

2.2.4 CRASH HISTORY

Crash data for the study area intersections were obtained from MassDOT between 2014 and 2018. Incident occurrence was also compared to the volume of traffic through each intersection to determine significance and whether potential safety problems exist. Accordingly, crash rates were calculated for each study area intersection and compared with the district wide (MassDOT District 6) average of 0.52 MEV and 0.71 MEV for unsignalized and signalized intersections, respectively. Based on this evaluation, the following six study area intersections were noted to have experienced crash rates that exceeded the district-wide averages.

- Location 9 - Washington Street/Highland Street
- Location 10 - Washington Street/Waltham Street/Watertown Street
- Location 11 - Washington Street/Chestnut Street
- Location 26 - Webster Street/Elm Street
- Location 27 - Webster Street/Cherry Street
- Location 28 - Waltham Street/Webster Street

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The same intersections experienced higher than average crash rates during the last review for the years 2013-2017. Out of the six intersections, intersection locations 9, 10, and 11 are currently under construction through the West Newton Square project.

Comment 2.3: **As noted in the prior review of this site, a Road Safety Audit should be considered for the remaining higher than average crash locations 26, 27, and 28.**

2.2.5 HIGHWAY SAFETY IMPROVEMENT PROGRAM

In addition, the following intersections are listed in MassDOT’s Highway Safety Improvement Program (HSIP) database such that they are eligible for federal and state funds to alleviate safety deficiencies.

- Location 6 - Washington Street/Elm Street
- Location 8 - Washington Street/Cherry Street
- Location 9 - Washington Street/Highland Street
- Location 10 - Washington Street/Waltham Street/Watertown Street
- Location 11 - Washington Street/Chestnut Street
- Location 12 - Washington Street/Davis Court/Jacob’s Auto Sales Driveway
- Location 17 - Washington Street/Walnut Street
- Location 18 - Watertown Street/Eden Avenue
- Location 19 - Watertown Street/Davis Court
- Location 30 - Chestnut Street/Austin Street

The intersections of Washington Street/Highland Street, Washington Street/Waltham Street/Watertown Street, and Washington Street/Chestnut Street are both high crash locations, MassDOT HSIP eligible, and currently being redesigned.

3.0 FUTURE CONDITIONS

3.1 BACKGROUND TRAFFIC GROWTH

3.2.1 HISTORIC TRAFFIC GROWTH

The TIAS stated that comparing historic traffic volumes from several studies over the last several years for other developments and researching projects in proximity to the subject site revealed an annual growth rate of 0.5% or less for the study area would be reasonable.

Work from home abilities and mandates have increased because of the Covid-19 pandemic and may continue for an extended time. This will continue to have an impact on the peak traffic volumes and time periods. **Therefore, for this project and at this time, BETA finds the 0.5% annual traffic growth rate to be reasonable.**

3.2.2 SITE-SPECIFIC TRAFFIC GROWTH

In addition to utilizing a historical growth rate, traffic generated by other planned developments was considered in developing the 2028 No-Build traffic volumes. Based on discussions with City of Newton, the TIAS identified more than 20 other developments that would were considered to add traffic to the project study roadways and intersections. Traffic generated for each of these developments was taken

from filed traffic impact studies or estimated based Institute of Transportation Engineers, *Trip Generation*, 10th Edition. These vehicle trips were then added to the study roadways and intersections.

Comment 3.1: Many of site developments listed provide approval or construction updates as of 2019. **Consider updating the status of these developments.**

3.2 ROADWAY IMPROVEMENTS

Based on discussions with City of Newton, the TIAS identified the following roadway improvement projects that may impact transportation operations in the study area and within the seven-year design horizon which were incorporated into the analyses:

- *West Newton Square Enhancements*: This project is currently under construction and has been included in the No-Build and Build analyses.
- *Washington Street at Walnut Street and Lowell Avenue Improvements*: The TIAS states that the roadway and signal improvements were recently installed, however these improvements were not incorporated into the existing condition analyses but only in the No-Build and other future analyses.

Comment 3.2: The roadway and signal improvements installed at the intersection of Walnut Street and Washington Street were not included in the Existing condition analyses. **The Existing conditions analyses should be revised for the intersection of Walnut Street and Washington Street to reflect the existing conditions.**

3.3 NO-BUILD TRAFFIC VOLUMES

A 0.5% annual growth rate was applied to the 2019 traffic volumes over a nine-year period to reflect 2028 baseline No-Build traffic volumes. Additionally, many background developments and roadway improvement projects were added to the No-Build volumes for background development-related growth. Site-specific growth for major projects and projects near the site were reviewed and determined to be performed correctly.

3.4 TRIP GENERATION

3.4.1 PROJECT-GENERATED TRIPS

The proposed project consists of 302 apartments (studio units to three bedrooms), 5,821 SF of retail space, and 338 parking spaces.

3.4.1.1 EXISTING SITE-GENERATED TRAFFIC

Some of the project parcels are currently occupied including:

- The Barn Family Shoe Store and The Kids Barn, which are both active retail uses located off Kempton Place.
- Eastern Insurance and Greatest Age Fitness, Inc. in the office building at 1149 Washington Street.

The other uses on planned development parcels were either observed to be inactive or had negligible trip generation. Trip generation for the existing site uses was estimated based on traffic turning movements

counts conducted at the intersection of Washington Street/Kempton Place for weekday morning and evening and Saturday midday periods. The vehicle trips entering and exiting Kempton Place during peak hours were attributed mainly to The Barn Shoe Store and The Kids Barn. **BETA finds this methodology to be acceptable.**

3.4.1.2 UNADJUSTED PROJECT-GENERATED TRAFFIC

The base/unadjusted project-generated traffic volumes were determined by utilizing trip-generation statistics published by the Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition*. Land Use Code (LUC) 221 Multifamily Housing (Mid-Rise) and LUC 820 Shopping Center were used. **The land uses are consistent with industry standards considering the tenants of the retail are unknown currently.**

Comment 3.3: The backup data sheets in the Appendix show that 6,250 square feet was used to determine the number of retail trips. This value is more than the proposed retail space, so further effort is not necessary, and the unadjusted trips are on the conservative side.

3.4.1.3 PERSON TRIPS

The TIAS states that the ITE trips were then converted into person trips by applying the average vehicle occupancy (AVO) of 1.18 for residential trips and 1.82 for retail trips. **BETA finds the methodology to be reasonable.**

3.4.1.4 INTERNAL CAPTURE TRIPS

The vehicle trips calculated for each of the proposed uses represent single-use trips to the site on the study area system. Based on the ITE *Trip Generation Handbook*, studies have shown that for developments of mixed-use or multi-use sites, it is realistic to assume that there will be some internal trips within the site itself. This concept means that some patrons could visit more than one of the uses on the site. The ITE internal capture rates were then applied to the person trips generated by the proposed development to determine the number of person trips occurring entirely within the site. The resulting trips represent the persons entering and exiting the site from the adjacent roadway system. **BETA finds this methodology to be reasonable.**

3.4.1.5 MODE SHARE SPLITS

The TIAS presents mode shares based on US Census Bureau *2013-2017 American Community Survey* data for the City of Newton for residences and assumptions for retail consistent with the USDOT *2017 National Household Travel Survey*: These mode share percentages were then applied to the net-new person trips to be generated by the proposed development to determine the adjusted project trips by mode.

The US Census Bureau released 2018 data (January 23, 2020). As part of the original review BETA requested that the proponent evaluate mode share with the new data. The proponent provided mode share comparison and the results showed that the transit mode share for Newton overall increased from 12% (not including work at home trips) to 13%, but the mode share for the project census block is only 10%. The proponent suggested continuing to use 12% transit mode share for the residential portion of the project. BETA acknowledges that the 12% transit mode share is reasonable to use for the analysis, and there would be no significant differences between 10% and 13% transit mode share. It is also noted that due to Transportation Demand Management strategies proposed as part of the project, the transit mode share may increase above 13% in the future, but the 12% is reasonable for analysis purposes.

3.4.1.6 PASS-BY TRIPS

Not all the vehicle trips expected to be generated by the proposed retail component of the development represents *new* trips on the study area roadway system. A substantial portion of the vehicles visiting commercial/retail developments have been found to already be present in the adjacent passing traffic stream or are diverted from another route to the subject site. Based on data presented in the ITE *Trip Generation Handbook*, the average pass-by trip percentage for Land Use Code 820 (Shopping Center) is 34% during the Weekday PM peak hour and 26% during the Saturday Midday peak hour. **BETA concurs with this methodology.**

Comment 3.4: **Change Grove Street to Washington Street in Pass-By Trips text on page 40 of the TIAS.**

3.4.1.7 PROJECT-GENERATED TRIPS – BUILD CONDITIONS

The next step in determining the project-generated trip impacts on the adjacent roadway system was to apply the mode share splits to the person trips and then to recalculate these values back to vehicle trips from person trips. **BETA reviewed the information and finds the methodology to be reasonable.**

3.4.1.8 RIDE SHARE TRIP GENERATION

The TIAS did not estimate the level of vehicle trips generated by transportation network companies (TNC) such as Uber and Lyft. The operations of TNC pick-ups and drop-offs are discussed in Section 5, page 73 of the TIAS. **BETA finds this approach acceptable.**

3.4.1.9 TRIP DISTRIBUTION

Trips were assigned to the study area based on existing traffic patterns, population densities, locations of employment, and the efficiency of the nearby roadway system. Journey-to-Work data for the City of Newton based on the U.S. Census Data (2012-2016) were used to estimate the trip-distribution of the proposed residential trips. For the proposed retail component of the overall development, travel patterns are anticipated to be similar to the existing traffic patterns. **BETA finds this methodology to be reasonable.**

3.5 BUILD TRAFFIC VOLUMES

The project related traffic volumes were applied to the 2028 No-Build traffic volumes to reflect 2028 Build traffic volumes. **The 2028 Build traffic volumes were reviewed and found to be acceptable.**

4.0 TRANSPORTATION OPERATIONS ANALYSIS

4.1 INTERSECTION CAPACITY ANALYSIS

Capacity analyses were performed for the study intersections with the 2021 Existing, 2028 No-Build, and 2028 Build traffic volumes during the weekday AM, weekday PM, and Saturday midday peak hours.

4.1.1 *SIGNALIZED INTERSECTION CAPACITY ANALYSIS*

Many of the intersections with a movement or overall intersection level-of-service (LOS) F under the Build conditions are in the process of redesign. However, the following signalized intersections are within the

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study area with no planned intersection improvements, and have movements currently at LOS F and would continue to operate at LOS F for the No-Build and Build conditions:

- Washington Street/Auburn Street
- Washington Street/Prospect Street
- Washington Street/I-90 EB On-Ramp
- Washington Street/Albemarle Street NB
- Washington Street/Albemarle Street SB
- Watertown Street/Walnut Street

4.1.2 UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS

The majority of unsignalized intersection movements would operate at a LOS D or better under the Build conditions. However, the following movements at unsignalized intersections would continue to operate at LOS E or worse under Build conditions.

- Waltham Street/River Street: Weekday Morning and Evening – Eastbound LOS F
- Chestnut Street/Austin Street: Weekday Evening – Westbound LOS E

The Washington Street Vision Plan analyses were included in the Appendix. Based upon review of the analyses, all side streets on Washington Street within the vision plan would operate at LOS D or better under this concept which is reasonable.

4.1.3 SIGHT DISTANCE

Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD) were measured by VHB at the project access and egress roadways on Washington Street at Dunstan Street and Kempton Place and Watertown Street at Dunstan Street. BETA staff independently measured SSD and ISD at the project access and egress roadways. BETA concurs that adequate SSD and ISD is available for the project access and access roadways on Washington and Watertown Streets.

4.1.4 SIGNAL WARRANT ANALYSIS

As part of the TIAS, traffic signal warrants were examined. A signal warrant analysis was performed for the following intersections adjacent to the site in accordance with the procedures and criteria described in the MUTCD:

- Washington Street/Dunstan Street
- Washington Street/Kempton Place

Warrant 1 - Eight-Hour, Warrant 2 – Four Hour, and Warrant 3 – Peak Hour were examined. Signal warrant criteria, which was based on future Build volumes, was not met for any of the three warrants. The results of Warrant 1 were extrapolated based on the four hours of traffic volume data collected by turning movement counts. The reason being that if the 4-hour warrant criteria were not met with the peak four hours of a day, then the volumes for the remaining hours would be lower and the 8-hour warrant would not meet.

5.0 PROPOSED MITIGATION AND SITE ACCESS

5.1 PROPOSED SIGNAL TIMING MITIGATION AND OPERATIONS WITH MITIGATION

Signal timing modifications were proposed by the Applicant at the following seven intersections and associated time periods to improve the overall or individual movements level-of-service (LOS).

- Washington Street/Prospect Street – Weekday Evening
- Washington Street/I-90 Eastbound On-Ramp – Weekday Evening
- Washington Street/Elm Street – Weekday Morning
- Washington Street/Lowell Avenue – Weekday Evening
- Washington Street/Walnut Street – Weekday Morning
- Watertown Street/Albemarle Street Southbound – Weekday Morning
- Watertown Street/Albemarle Street Northbound – Weekday Evening

The signal timing modifications would minimally improve the above-mentioned intersections. As a Condition of Approval for the previous project, the Board required the Applicant to revise traffic signal timing, phasing, splits, and offsets at Watertown Street at Albemarle Road and Washington Street at Prospect Street.

Comment 5.1 **Signal timing for both the AM and PM peak periods should be included in the revised traffic signal timing, phasing, splits, and offsets for the seven intersections listed above and the intersection of Washington Street and Auburn Street which experiences an overall LOS F during the weekday evening peak.**

As noted in Section 2.2.5 above, the following intersections within the study area are part of an HSIP cluster and in close proximity to the site.

- Location 12 - Washington Street/Davis Court/Jacob's Auto Sales Driveway
- Location 18 - Watertown Street/Eden Avenue
- Location 19 - Watertown Street/Davis Court

5.2 PEDESTRIAN AND BICYCLE FACILITIES

The review of this section focused on site issues for the proposed Building 3.

Comment 5.2: The Newton Street Design Guide (June 2018) requires a five-foot wide sidewalk pedestrian zone and an additional two feet of width to accommodate amenities such as trees and streetscape elements on local streets. **Confirm that all sidewalks will provide a minimum five feet clear effective width and ensure that the design of the sidewalks along Washington Street include a furniture zone flexible enough to incorporate bike racks that provide convenient access to the retail businesses.**

Comment 5.3: **The minimum offsets for sidewalk amenities and furniture shown in the Newton Street Design Guide should be followed.**

Comment 5.4: **Detectable warning panels should be added across the Dunstan Street garage driveway and the two garage driveways on Kempton Place. Crosswalks can also be considered at these locations.**

Comment 5.5: A total of 110 bicycle parking spaces in Building 3 are noted on Sheet A131. This exceeds the zoning requirement 5.1.11 for 30 bicycle parking spaces. **The site plan shows there may be more than 110 bicycle parking spaces in Building 3. Confirm the number of total bicycle spaces in Building 3. Will access to bicycle parking in the Building 3 garage be restricted to Building 3 residents? Will outside bicycle parking be provided for visitors to Building 3?**

Comment 5.6 **Along with constructing a new sidewalk on the north side of Washington Street along the project's frontage, the Applicant should construct a protected bicycle lane that is consistent with the City's Washington Street vision plan and as directed by the City's Engineer.**

5.3 SITE ACCESS AND CIRCULATION

The review of the following sections focused on site issues for the proposed Building 3.

5.3.1 PROPOSED SITE ACCESS

Access to the project will be provided by four locations:

- One garage driveway on the east side of Dunstan Street at Building 1
- One garage driveway on the west side of Kempton Place at Building 2
- One garage driveway on the east side of Kempton Place at Building 3
- Brook Street – a private road proposed as part of the project that provides access to the rear of the project site and access between Dunstan Street and Kempton Place

Comment 5.7: Each of the garage driveways is shown as 20 feet wide, which meets zoning standard 5.1.7.D.

Comment 5.8: **Has the Newton Fire Department reviewed the site plan for emergency vehicle access?**

5.3.2 CURBSIDE AND SERVICE/LOADING ACTIVITY

Comment 5.9: **Will the loading/drop-off/pick-up area on the west side of Kempton Place also serve Building 3?**

Comment 5.10: Site Plan C-3.0 shows pick-up/drop-off area on Washington Street between Buildings 1 and 2. **How will truck loading/deliveries be handled for Building 3?**

5.4 SITE PARKING

5.4.1 NUMBER OF PARKING SPACES REQUIRED

Comment 5.11: The project is proposing a total of 302 parking spaces for residents (one space per dwelling unit) and 36 parking spaces for commercial and residential visitor use, for a total of 338 parking spaces. The Board granted waivers for the previous project for reduced parking of one stall per multi-family unit. **The proposed 302 parking spaces per dwelling unit is appropriate.**

Comment 5.12: The Board granted waivers for the previous project for reduced parking for 49 stalls for commercial/retail where 164 were required per Newton Zoning Code. As noted in the *Program Modification Traffic Generation Memorandum, VHB, June 3, 2021*, the retail

space has been increased from 5,821 square feet to 7,771 square feet (+1,950 square feet). **Will the increase in retail space necessitate increasing the number spaces for retail uses?**

Comment 5.13: Using shared parking areas with different peak parking demands for land uses within a mixed-use development can reduce the total number of parking spaces required. **Would a shared-parking arrangement be provided in the garages to accommodate peaking parking demand for the mix of land uses on-site?**

Comment 5.14: **Will the 16 on-street parking spaces proposed on Kempton Place, which is a private roadway, primarily serve retail customers and visitors? Will these spaces be signed for short-term use?**

5.4.2 PARKING DESIGN AND LAYOUT

The review of the following sections focused on site issues for the proposed Building 3.

Comment 5.15: Based on the City of Newton Zoning Ordinance (Articles 5.1.8.B.1 and 5.1.8.B.2), parking stalls must be a minimum of 9 feet wide, and 19 feet deep for angle/perpendicular parking. The spaces in the Building 3 parking garage are shown to be typically 18 feet long and 9 feet wide. This meets the City's minimum width requirement, but not the 19-foot depth requirement. The Board granted waivers for the previous project for parking stalls less than 19 feet long. **There are three parking spaces marked with a "C" on the site plan. Are these for compact vehicles and what are the dimensions?**

Comment 5.16: The site plan shows three handicap spaces in the Building 3 garage which are 12 feet wide and 19 feet long. **This meets the City's requirements.**

Comment 5.17: The parking aisles shown in the Site Plan for the Building 3 garage are 22 feet wide which does not meet the City's minimum width of 24 feet. **The Board granted waivers for the previous project for maneuvering aisle dimensions.**

Comment 5.18: In accordance with the City of Newton Zoning Ordinance (Article 5.1.8.B.3 and Article 5.1.8.B.4), accessible parking facilities should be incorporated within the site plan. A total of 16 on-street parking spaces are proposed on Kempton Place. **The applicant should consider designating one of these spaces for handicap parking.**

5.5 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) measures were summarized in the TIAS and stated to include the following programs:

- Reduced parking supply
- Transportation Coordinator
- Liaison with MassRides
- Carpool/ride share program
- Disseminating information on alternate travel modes
- Hosting occasional transportation-related events
- Distributing transit maps, schedules, and passes
- Monitor TDM effectiveness through surveys and other tools and adjust as necessary
- Complete regulatory reports to state and city agencies as required

- Implement a website providing travel-related information and promoting awareness alternative travel modes
- Advocating with state and local governments to improve transportation infrastructure
- Provide information at a central commuter information center
- Pedestrian-friendly layout to encourage walking on-site
- Indoor bike storage and fix-it station and bike racks outdoors
- Bike-sharing on-site
- Preferential electric vehicle/low emission car parking in parking garages by designating spaces and providing electric vehicle charging stations
- Shared parking for retail uses
- “Unbundling” of parking costs from rent/leases so that residents with vehicles will pay more to allow access to the parking garage
- Financial incentives for alternative transportation modes, such as discounted MBTA passes

Comment 5:19: The Applicant Has proposed a robust set of TDM measures which have been approved by the Board as part of the previous project. **Will car-sharing (such as ZipCar) be considered on-site for Building 3? If so, where would these spaces be provided? Does the Building 3 TDM plan include reimbursement of two months of public transportation cost that was conditioned by the Board for the previous project? The public transportation reimbursement should include transit, as well as use of car-share and bike share.**

Comment 5.20: **Are any bicycle racks proposed along the Building 3 frontage on Washington Street? If so, where?**

Comment 5.21: **How many electric vehicle charging stations will be provided? Where will these be located?**

Comment 5.22 The TIS notes that the City uses the dock-less Limebike system. **It should be noted that Newton now uses the Bluebikes system.**

5.6 CONSISTENCY WITH THE WASHINGTON STREET VISION PLAN

Comment 5.23: **The Applicant should agree to coordinate with the City as needed as the Washington Vision Plan progresses. This includes the coordination of a planned road diet test on Washington Street by the City of Newton.**

OTHER COMMENTS

Comment 6.1: **A transportation management plan will need to be developed for the project to reduce trucks impacts to roadways and intersections. The plan will need to be approved by the City of Newton.**

PROGRAM MODIFICATION TRAFFIC GENERATION MEMORANDUM

The proponent prepared a memorandum, dated June 2021, which summarizes the “sensitivity” analysis performed for an increase in retail space on the Dunstan East site compared to the retail space square footage noted in the TIAS dated April 2021. The retail space in the April 2021 TIAS consists of 5,821 square feet (SF) and the retail space for the Program Modification sensitivity analysis consists of 7,771 SF for an increase of 1,950 SF. The 302 residential units remain the same. The memorandum outlines the same steps as Section 2.4 Trip Generation above for the retail space increase. The project-generated vehicle trip results show a minimal increase in the total number of net vehicles trips which is no more than 8 trips during the individual peak periods. The increase in trips minimally impacts the adjacent intersections. BETA concurs that a full update to the TIAS is not necessary due to the minor change.