

April 30, 2020

Woburn City Council
Woburn City Hall
10 Common Street
Woburn, MA 01801

**Re: *Highland at Vale*, Townhome & Multifamily Community by Pulte Homes
Component of *The Vale*, Master Planned Redevelopment Project
Technology and Business Overlay District (TBOD)
Application for Special Permit with Site Plan Review**

Dear Councilors,

On behalf of Pulte Homes of New England, LLC (Pulte), Civil Design Group, LLC is pleased to submit the enclosed application materials for *Highland at Vale*, the townhome and multi-family residential components of the master-planned redevelopment project known as *The Vale* at the former Kraft Atlantic Gelatin Facility on Hill Street. We have enclosed the following information to facilitate the Board's review and approval of the enclosed application:

1. Application for Special Permit with Site Plan Review (24 copies);
2. Application Checklist (24 copies);
3. Deed/statement of prospective ownership/owner authorization (24 copies);
4. Certified abutters list and mailing labels (2 sets);
5. Site Plans for *Highland at Vale* – 4/30/2020 (24 copies);
6. Architectural Plans for *Highland at Vale* – 4/30/2020 (24 copies);
7. Sign package for *Highland at Vale* – 4/30/2020 (24 copies);
8. Stormwater Management Memorandum for *Highland at Vale* - 4/30/2020 (13 copies);
9. Traffic Memorandum – 5/4/2020 (24 copies).
10. Check No. 1713 in the amount of \$1,500.00 to the "City of Woburn" (filing fee);
11. Copy of Certification of Treasurer/Collector as submitted to the Treasurer (original filed with Treasurer and requested to be forwarded to the City Council upon certification); and
12. CD containing an electronic copy of all items listed above.

Project Description:

The 15.6± acre *Highland at Vale* project, which is the subject of this application, is part of a 60± acre master-planned redevelopment project known as *The Vale* located at the former Kraft Atlantic Gelatin Facility (Kraft Plant) on Hill Street. *The Vale* will revitalize the former Kraft Plant into a mixed-use development consisting of office/lab/flex/research and development, retail, hotel, institutional, and residential uses comprised of townhomes, multi-family housing, and senior housing. *Highland at Vale* represents the townhome and multi-family components of the *The Vale* that were approved as part of the master plan. This application only applies to *Highland at Vale* as the other master-planned components of *The Vale* are to be permitted under separate applications to be filed by others.

Highland at Vale is comprised of a portion of Assessor's Parcel 54-05-01 (Hill Street) and a portion of Assessor's Parcel 62-01-29 (1 Washington Avenue). The site is located in the Industrial General (I-G) district and within the Technology and Business Overlay District (TBOD) under which the subject Special Permit with Site Plan Review is being requested.

Highland at Vale includes 197 one, two, and three-bedroom condominium home-ownership units. Of the 197 total units, 75 will be townhome dwellings contained in two and three-unit buildings and 122 will be multi-family "garden style" units contained in two buildings each of 36 units and one 50-unit building. Thirty (30) of the 197 dwelling units (15%) will be affordable to persons and households of low and moderate income as defined by Massachusetts General Law ("MGL") Chapter 40B, Section 20. A listing of the designated affordable units has been included in the accompanying *Site Plans for Highland at Vale*.

All units will be for-sale condominiums; no rental units are proposed. Each of the three multi-family "garden style" buildings will contain four habitable stories over a basement level dedicated to underground parking. Within both the townhome and multi-family products there will be a mix of diverse floor plans from which future homeowners can choose. The proposed residences offer a design, both interior and exterior, that has proven itself in this market. Pulte has utilized these unit styles in other developments throughout eastern Massachusetts with great success. Architectural elevations and renderings are included within this submission package.

During construction, temporary trailers will be utilized by the construction team. These trailers will be moved around the site as the build-out evolves. Temporary sales office(s) will also be set up on-site throughout the sales phase, which also may be moved from time to time. These offices will be removed at the conclusion of sales.

Highland at Vale will be accessed from Hill Street via a private roadway that will serve the Pulte development as well the senior housing component of *The Vale*. The access road and senior housing will be designed, permitted, and constructed by others. The *Highland at Vale* project will be accessed via common driveway spurs which Pulte will tie into the main access road. A gated secondary means of access for emergency vehicles is proposed within *Highland at Vale* and will connect to Forest Street in Winchester. This connection will be gated and is only intended for use in the event of an emergency. The proposed traffic generation associated with the *Highland at Vale* project fits within the parameters of the comprehensive Traffic Impact Analysis that was reviewed as part of the approved master plan. A traffic memorandum confirming the same is included with this submission package.

The project is proposed to utilize municipal water, municipal sewer and other utilities including gas, electric, and cable. These utilities will be brought into the site by the master developer, who will leave stubs for each utility on the main access road to which Pulte will tie into. Utility demand/capacities for the *Highland at Vale* project are consistent with those assigned to the townhome and multi-family components of *The Vale* during the master plan process.

Highland at Vale includes a stormwater management system that has been designed to collect, convey, treat, and control stormwater discharges associated with the development. Stormwater peak rates of runoff associated with the *Highland at Vale* project fit within the post-development peak flow rates allotted to the

townhome and multi-family components of *The Vale* within the master stormwater report entitled *Stormwater Report: The Vale – Master Plan*, dated April 16, 2020. A stormwater memorandum confirming the same is included with this submission package along with a Stormwater Operation and Maintenance (O&M) plan for the *Highland at Vale* project.

On-site project elements including driveways, parking, stormwater management, utilities, and landscaping are proposed to be privately owned and maintained by the Homeowner's Association in perpetuity.

Project Permitting:

Table 1-4 (below) from the *Final Environmental Impact Report (FEIR) for The Vale* presents a listing of land use permits and approvals anticipated for *The Vale* master-planned development:

Table 1-4 Anticipated Project Permits and Approvals

Agency/Department	Permit/Approval/Action	Status
Federal		
U.S. Environmental Protection Agency	National Pollutant Discharge Elimination System ("NPDES") and Construction General Permit Remediation General Permit	› To be obtained prior to construction
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit	› To be obtained prior to relevant construction
State		
Executive Office of Energy and Environmental Affairs	Massachusetts Environmental Policy Act Review	› Ongoing
Massachusetts Department of Environmental Protection	Sewer Connection Permit (if required depending on future tenants) Notice of Construction/Demolition Asbestos Notices (if necessary) Clean Water Act Section 401 Permit	› Each to be obtained
Executive Office of Housing and Economic Development	MassWorks Infrastructure Program (If Required)	› To be obtained as required
Massachusetts Water Resources Authority	Section 8(m) permit	› To be obtained
Massachusetts Department of Transportation	Vehicular Access Permit (if required)	› To be obtained as required
City of Woburn		
Woburn City Council	Site Plan Review and Special Permits (as required within Technology and Business Mixed Use Overlay District)	› To be obtained as required
Woburn Fire Department	Permit for storage of inflammables, including vehicle tanks within structured parking	› To be obtained
Woburn Historical Commission	For demolition of any buildings more than 75 years old (As Required)	› To be obtained as required
Woburn Department of Public Works	Approvals for work within a public way (As Required) Approvals for water and sewer connections	› To be obtained as required › To be obtained

The *Highland at Vale* project will require the following land use permits, which will be sought directly by Pulte and will be specific to the Pulte project:

1. Special Permit/Site Plan Review under Woburn Zoning Ordinance Section 28.6.1.1 and 28.6.2.2, by the Woburn City Council (this application).
2. Order of Conditions for work within wetland jurisdictional areas, by the Woburn Conservation Commission. Pulte intends to pursue this approval concurrently with the Special Permit/Site Plan Review process.
3. Section 8M Permit from the Massachusetts Water Resources Authority (MWRA) to conduct work within property interest held by MWRA. Pulte intends to pursue this approval concurrently with the Special Permit/Site Plan Review process.
4. National Pollution Discharge Elimination System (NPDES) Construction General Permit by the U.S. EPA for site disturbance of over one acre, to be obtained prior to construction.

Requested Zoning Relief:

- The applicant requests relief from Woburn Zoning Ordinance Section 5.2.1.4: "Access to the buildable portion of a lot shall be gained from a lot's legal street frontage only. Access to lots by so called "common driveways" or access easements shall be prohibited." Relief will be needed as the *Highland at Vale* project obtains its frontage along Sunset Road from which there will be no vehicular access to the site. Instead, access to the site will be provided from Hill Street in a consistent fashion as approved by the master plan. Woburn Zoning Ordinance Section 28.11.6.1 provides the City Council the authority to grant this relief.
- The applicant requests relief from Woburn Zoning Ordinance Section 5.3.2: "no fence shall be built or maintained within the street setback requirements or the setback of the existing building over 3 feet high from the sidewalk or street level." Relief will be needed within the Sunset Road setback to construct a 7' tall solid cedar board fence along Sunset Road for screening purposes, retaining walls >6' for grading purposes, and 48" fall protection fencing on top of walls for safety purposes. Woburn Zoning Ordinance Section 28.3 provides the City Council the authority to grant this relief.
- The applicant requests relief from Woburn Zoning Ordinance Section 5.3.4: "the maximum height of any fence is 6 feet from the ground." Relief will be needed to construct retaining walls >6' tall for grading purposes, 48" fall protection fencing on top of walls for safety purposes, a 7' tall solid cedar board fence along Sunset Road for screening purposes, and a 7' tall solid cedar board fence around the recycling area for screening purposes. Woburn Zoning Ordinance Section 28.3 provides the City Council the authority to grant this relief.
- The applicant requests relief from Woburn Zoning Ordinance Section 28.8.3: "the minimum pavement width for any road, driveway or access aisle shall be 20 feet for one-way traffic and 24 feet for two-way traffic." Relief will be needed for the townhome common driveways which are

proposed to be two-way with a 20' paved width to minimize impervious surfaces. Woburn Zoning Ordinance Section 28.3 provides the City Council the authority to grant this relief.

Conclusion:

Highland at Vale is a key residential element of the thoughtfully designed and master-plan approved development known as *The Vale*, which represents an extraordinary economic development opportunity for the City and the region to clean up a site used for industrial purposes for over a century, to create new jobs within Woburn and the broader region, and to address a documented local need for market rate and affordable residential dwelling units. Pulte's residential communities have a long history of delivering quality homes to the region and Pulte looks forward to becoming part of the Woburn community.

We respectfully request that the Council place this matter on your next available meeting agenda. Please do not hesitate to contact me should you have any questions or require any additional information.

Respectfully Submitted,
CIVIL DESIGN GROUP, LLC



Matthew A. Leidner, P.E.
Principal

**APPLICATION FOR
SITE PLAN REVIEW OR SPECIAL PERMIT WITH SITE PLAN REVIEW
TECHNOLOGY AND BUSINESS DISTRICT**

See Sections 28.11 and 28.12 of the Zoning Ordinance for filing information.

1. Applicant Contact Information

- a. Name: Pulte Homes of New England, LLC (Mark Mastroianni)
- b. Address: 115 Flanders Road, Suite 200, Westborough, MA 01581
- c. Telephone: (508) 621-0876
- d. E-mail: Mark.Mastroianni@PulteGroup.com

2. Property Owner Contact Information

- a. Name: Montvale Land LLC c/o Leggat McCall Properties LLC (Chad Reynolds)
- b. Address: 10 Post Office Square, Boston, MA 02109
- c. Telephone: (617) 875-6892
- d. E-mail: Chad.Reynolds@Imp.com

3. Attorney or Legal Representative Contact Information

- a. Name: Murtha Cullina LLP (Joseph Tarby, III, Esq.)
- b. Address: 600 Unicorn Park Drive, Woburn, MA 01801
- c. Telephone: (781) 879-4980
- d. E-mail: jtarby@murthalaw.com

4. Engineer, Designer or Architect Contact Information

- a. Name: Civil Design Group, LLC (Matthew Leidner, P.E.)
- b. Address: 21 High Street, Suite 207, North Andover, MA 01845
- c. Telephone: (978) 794-5400
- d. E-mail: matt.leidner@cdgengineering.com

5. Property Address: Hill Street & 1 Washington Avenue (portions thereof)

6. Assessors Map/Block/Lot Numbers: 54-05-01 & 62-01-29 (portions thereof)

7. This is an application for: Site Plan Review Special Permit With Site Plan Review



City of Woburn, Massachusetts

City Council

City Hall, 10 Common Street

Woburn, MA 01801

Phone: 781-897-5850 Fax: 781-897-5859

APPLICATION CHECKLIST TECHNOLOGY AND BUSINESS DISTRICT DEVELOPMENT

*An application that fails to meet the requirements of Sections 28.12 and 28.13 of the Woburn Zoning Ordinances **shall be deemed incomplete and shall not be assigned for public hearing.***

I. Application Requirements					
Section Number Reference	Item Description	Applicant Certification (Initial)	Employee Certification (Initial)	Notes	Provided
28.12.1	Twenty-four (24) copies of a Technology and Business District Site Plan Review/Special Permit with Site Plan Review Application	MM			<input checked="" type="checkbox"/>
28.12.1	Two (2) copies of an Application Checklist for Technology and Business District Development	MM			<input checked="" type="checkbox"/>
28.12.2	Two (2) copies of a deed certifying ownership and, where applicable, a statement certifying prospective ownership of the premises involved, as well as evidence that the applicant has the permission of the owner to make such application if the applicant is not the owner	MM			<input checked="" type="checkbox"/>
28.12.3	Legal description, street address(es) and/or other description of the location of the premises involved	MM			<input checked="" type="checkbox"/>
28.12.4	Two (2) sets of mailing labels showing the names and addresses of all "parties in interest," as defined by M. G. L. Chapter 40A Section 11 (this list must be certified by the Woburn Assessors' Office)	MM			<input checked="" type="checkbox"/>

28.12.5	Twenty-four (24) copies of plans meeting all of the requirements of Section 27-10, at a minimum size of 24"x36", drawn to scale and dimensionally correct. Required plans are all those applicable to the establishment of the findings and conditions specified in Sections 27.11.5 below. Such plans shall include building floor and façade plans, plot plans showing existing conditions and lot lines, traffic circulation, landscaping and topographical plans	MM			<input checked="" type="checkbox"/>
28.12.6	Two (2) copies of any variances or special permit decisions that were previously issued for the property including the status of any on-going appeal period and any appeal(s) and, where necessary, proof that any applicable appeal period has expired with no appeals having been filed or with any filed appeal having been finally disposed of	NOT APPLICABLE			<input type="checkbox"/>
28.12.7	Evidence as required to show the effects of the proposed project upon traffic, drainage, road capacity and city utilities, including studies such as traffic generation and parking utilization analyses	MM			<input checked="" type="checkbox"/>
28.12.8	Evidence as to the status of all permit applications to/decisions from other City, State or Federal agencies concerning the project including the Woburn Board of Appeals, Woburn Conservation Commission and MassDEP	MM			<input checked="" type="checkbox"/>
28.12.9	Any information not listed herein but which is required in order to properly consider all of the requested special permit(s) and waiver(s)	OTHER INFORMATION PROVIDED UPON REQUEST			<input type="checkbox"/>
28.12.9	A filing fee of \$1,500.00	MM			<input checked="" type="checkbox"/>
28.12.10	Electronic copy of entire application package (including all documents and plans) in Word and PDF formats	MM			<input checked="" type="checkbox"/>

II. Plan Content Requirements

Section Number Reference	Item Description	Applicant Certification (Initial)	Employee Certification (Initial)	Notes	Provided
28.13.1	A locus map drawn at a scale of 1" = 800' that shows the subject property and all zoning and historic district boundary lines that lie within the locus	MM			<input checked="" type="checkbox"/>
28.13.2	The location and name of all streets in the immediate vicinity of the proposed project with a notation as to whether the street is a public or privately-owned right-of-way	MM			<input checked="" type="checkbox"/>
28.13.3	The location and dimensions of all existing and proposed buildings on the site and the general location of buildings on abutting properties	MM			<input checked="" type="checkbox"/>
28.13.4	Existing and proposed setbacks of all existing and proposed buildings	MM			<input checked="" type="checkbox"/>
28.13.5	Existing and proposed contour elevations in two (2) foot increments	MM			<input checked="" type="checkbox"/>
28.13.6	A table calculating the amount of parking required for all existing and proposed uses, and the location, size and type of parking spaces, parking areas, loading and unloading and service areas	MM			<input checked="" type="checkbox"/>
28.13.7	Information sufficient to demonstrate that satisfactory arrangements will be made to facilitate vehicular and pedestrian movement to, from and within the site including information on driveways, parking lot aisles, walkways, and sidewalks	MM			<input checked="" type="checkbox"/>

28.13.8	Information on the location, size, and capacity of existing and proposed utilities which will service the project (water and sewer service, hydrant locations, drainage, electrical, cable, etc.)	MM			<input checked="" type="checkbox"/>
28.13.9	Information on the method of surface and subsurface drainage disposal	MM			<input checked="" type="checkbox"/>
28.13.10	Location, size, type and number of existing and proposed landscaping features, including trees to be retained or removed	MM			<input checked="" type="checkbox"/>
28.13.11	Information on the type, number, and intensity of lighting	MM			<input checked="" type="checkbox"/>
28.13.12	A table displaying all applicable use and dimensional regulations and corresponding specifications of the proposal	MM			<input checked="" type="checkbox"/>
28.13.13	Provisions for refuse removal and snow removal/storage	MM			<input checked="" type="checkbox"/>
	reserved				<input type="checkbox"/>
28.13.14	Any additional information the City Council deems necessary to evaluate the proposed project as it relates to any special permit or waiver requests, surrounding areas, anticipated traffic and public safety issues and the intent of the Zoning Ordinance	<i>To be Determined by City Council During Permitting Process</i>			<input type="checkbox"/>



Bk: 70603 Pg: 125 Doc: DEED
Page: 1 of 10 02/07/2018 10:21 AM

Above for Registry use only

QUITCLAIM DEED

Kraft Heinz Foods Company, a Pennsylvania limited liability company, d/b/a Kraft Heinz Foods Company (LLC) ("Grantor"), successor to Kraft Heinz Foods Company, a Pennsylvania corporation, successor by merger to Kite Merger Sub LLC, a Delaware limited liability company, successor by merger to Kraft Foods Group, Inc., a Virginia corporation, successor by domestication to Kraft Foods Global, Inc., a Delaware corporation, successor by conversion to Kraft Foods Global, Inc., a Delaware corporation, having an address of 200 East Randolph Street, Chicago, Illinois 60601, for consideration paid and in full consideration of One Million Dollars (\$1,000,000.00), **GRANTS** to **Montvale Land LLC**, a Delaware limited liability company ("Grantee"), having a principal place of business c/o Leggat McCall Properties LLC, 10 Post Office Square, Boston, Massachusetts 02109, with **QUITCLAIM COVENANTS**, the tracts of land located in the City of Woburn, the Town of Stoneham and the Town of Winchester, Middlesex County, Massachusetts that are described in Exhibit A attached hereto and made a part hereof, together with all buildings, structures and other improvements on such tracts (such tracts and such buildings, structures and other improvements being herein collectively referred to as the "Real Property").

The Real Property is conveyed together with and subject to all recorded easements, restrictions, reservations and other matters of record insofar as the same are now in force and applicable to the Real Property or any part thereof.

The Real Property is conveyed together with all right, title and interest of Grantor in and to (i) any land lying in the bed of any street, road or avenue, opened or proposed, in front of or adjoining the Real Property or any portion thereof, to the center line thereof, (ii) any strips and gores adjacent to the Real Property, (iii) any award made or to be made in lieu thereof and in and to any unpaid award for damage to the Real Property or any portion thereof by reason of any change of grade of any street; (iv) all mineral rights, subsurface rights, development rights, air rights, and similar rights appurtenant to Grantor's interest in the Real Property,

BK 70603 PG-114

Sup. Ld. Ct

Address of Real Property: 2 Hill Street, Woburn, MA

10-0

and (v) all privileges, grants and easements appurtenant to Grantor's interest in the Real Property, if any, including, without limitation, all of Grantor's right, title and interest, if any, in and to all easements, licenses, covenants and other rights-of-way or other appurtenances used in connection with the beneficial use and enjoyment of the Real Property.

Grantor has elected to be treated as a corporation for federal tax purposes.

The Real Property consists of registered and unregistered land. The Real Property is a portion of the registered and unregistered property conveyed to Grantor by the following deeds:

Deed dated December 30, 1946, and recorded in Book 7084, Page 403; Deed dated March 10, 1947 recorded in Book 7106, Page 165; Deed dated June 12, 1947, recorded in Book 7143, Page 38; Deed dated May 10, 1963, recorded in Book 10270, Page 376; Deeds dated April 22, 1969, recorded in Book 11670, Page 229 and Page 230; Deed dated December 10, 2004, recorded in Book 44416, Page 4; and Document 209876 noted on Certificate of Title No. 60576.

NOTICE: A PORTION OF THE INTEREST IN (I) TRACT I, PARCEL 2, BEING SHOWN AS LOT 3 ON A PLAN ENTITLED, "SUBDIVISION PLAN OF LAND IN STONEHAM, WINCHESTER AND WOBURN," DATED NOVEMBER SEPTEMBER 13, 1958, PREPARED BY C.M. ANDERSON, ENGINEER, AND FILED WITH THE MIDDLESEX SOUTH DISTRICT OF LAND COURT ON LAND COURT PLAN 14642C AND (II) TRACT III, PARCEL 1, EACH REFERENCED IN EXHIBIT A HERETO, CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL RELEASE AS SET FORTH IN A MEMORANDUM EXECUTED BY GRANTOR AND GRANTEE AND WHICH HAS BEEN RECORDED IMMEDIATELY PRIOR TO THE RECORDING OF THIS DEED. SUCH RELEASE SHALL RUN WITH THE AFFECTED LAND AND SHALL BE BINDING UPON GRANTEE'S AFFILIATES AND ITS SUCCESSORS AND ASSIGNS IN TITLE TO SUCH AFFECTED LAND.

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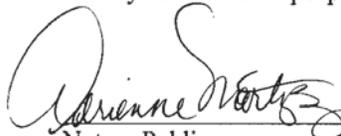
Executed as an instrument under seal as of the 26th day of January, 2018.

KRAFT HEINZ FOODS COMPANY, a
Pennsylvania limited liability company,
d/b/a KRAFT HEINZ FOODS COMPANY (LLC)

By 
Name: Eric Kaufold
Title: Senior Manager – Indirect Logistics

STATE OF ILLINOIS §
COUNTY OF COOK § ss.

On this 26th day of January, 2018, before me, the undersigned notary public, personally appeared Eric Kaufold, proved to me through satisfactory evidence of identification, which was an Illinois driver's license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.


Notary Public:
My commission expires: 8-19-2021

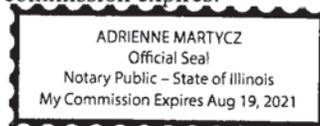


EXHIBIT A

Description of the Real Property

Tract I:

Parcel One:

The land in Winchester and Woburn, Middlesex County, Massachusetts, being shown as Lots B-2 and B-3 on a plan entitled, "Plan of Land in Winchester and Woburn," dated January 11, 1934, prepared by C.B. Humphrey, Engineer, and filed with the Middlesex South District of Land Court on Land Court Plan 14642B, to which plan reference is hereby made for a more particular description.

Parcel Two:

The land in Winchester and Woburn, Middlesex County, Massachusetts, being shown as Lot 3 on a plan entitled, "Subdivision Plan of Land in Stoneham, Winchester and Woburn," dated November September 13, 1958, prepared by C.M. Anderson, Engineer, and filed with the Middlesex South District of Land Court on Land Court Plan 14642c, to which plan reference is hereby made for a more particular description.

Tract II:

The following parcels of land situate in Woburn in the County of Middlesex and Commonwealth of Massachusetts, bounded and described as follows:

FIRST: A parcel of land situated in the City of Woburn, County of Middlesex, Massachusetts, adjoining the Stoneham Branch of the Boston & Maine Railroad between Hill and Albany Streets, bounded and described as follows:

Commencing at the intersection of the easterly property line of the Eastern Massachusetts Street Railway Company with the westerly property line of land now or formerly of Atlantic Gelatin Company, Inc., and the southerly property line of the Stoneham Branch of the Boston and Maine Railroad and running southerly by land now or formerly of Atlantic Gelatin, Inc., thirty-five (35) feet; then turning and running Westerly by land of Eastern Massachusetts Street Railway Company ninety-one (91) feet, more or less, to the southerly property line of the Boston and Maine Railroad; then running easterly by a curved line along the southerly property line of the Boston and Maine Railroad eighty-eight (88) feet to the point of beginning and containing about 1570 square feet.

SECOND: The land with the buildings thereon in said Woburn bounded and described as follows, namely:

Beginning at the Southeasterly corner of the premises on Hill Street and at land of the Boston and Maine Railroad Corporation, known as the Stoneham Branch; thence the line runs Northerly by said Hill Street, one hundred (100) feet to a

stake at other land now or formerly belonging to Eerie LeBlanc and Josephine M. LeBlanc;

thence turning the line runs Westerly by land last named and parallel with the Northerly side line of said Railroad land and keeping one hundred (100) feet distant therefrom, about three hundred (300) feet to land now or formerly of Smith Wallace Company to a point one hundred (100) feet distant from the Northerly side, line of said Railroad Company's land;

thence turning the line runs Southerly by said land now or formerly of said Smith Wallace Company, one hundred (100) feet to the Northerly side line of said Railroad Company's land;

thence turning the line runs Easterly by the Northerly side' line of said Railroad Company on two, lines, one hundred thirty and $7/10$ (130.7) feet and one hundred seventy- nine and $40/100$ (179.40) feet, respectively, to said Hill Street and the point of beginning.

THIRD: That certain parcel of land in the Montvale Section of Woburn located on the Northerly side of Montvale Avenue, and containing within its limits a pond known as Paddock Pond and bounded and described as follows:

Beginning at a point on the Northerly side line on Montvale Avenue and at land of the Boston and Lowell RR. Corporation; thence the line runs Northerly by and with the land of said Railroad Corporation eleven hundred thirty-three (1133) feet to an angle;

thence Southwesterly still by and with the land of said Corporation about seventeen (17) feet to an angle;

thence Northerly still by and with the land of said Corporation seventy (70) feet to land now of late of Willard Welch;

thence turning the line nips Northeasterly by and with the land of said Welch two hundred thirty-three (233) feet to a corner of land of the City of Woburn;

thence turning the line runs Southeasterly by land of the City of Woburn two hundred eighty-one (281) feet to the center of a ditch;

thence turning the line flirts Northeasterly by the center of said ditch three hundred thirteen and $28/100$ (313.28) feet to the land of one Smith;

thence turning the line runs Southerly by land of said Smith two hundred nineteen and $52/100$ (219.52) feet to a corner;

thence turning the line runs Easterly still by and with the land of said Smith sixty-seven and $20/100$ (67.20) feet to land now or formerly of Guy E. Bealey;

thence turning the line runs Southerly by land now or formerly of Guy S. Healey one hundred eight (108) feet to a corner;

thence turning the line runs Easterly by land now or formerly of Guy B. Healey seventy-two (72) feet to a corner;

thence turning the line runs Southeasterly by and with the land now or formerly of Guy E Healey seventy-five (75) feet a corner;

thence turning the line runs Southerly sixty- seven and $5/100$ (67.05) feet to land now or late of one Davidson;

thence a little more Southerly the line runs Southerly by land of said Davidson one hundred thirty-eight and $6/100$ (138.06) feet to land now or formerly of Guy E. Healey;

thence the line runs Southerly by land formerly of Grigg one hundred seventeen and $17/100$ (117.17) feet;

thence the line runs Southwesterly by land of Grigg fifty (50) feet;

thence the line runs Easterly by two courses, by land of Grigg two hundred seventy-two and $41/100$ (272.41)feet to Central Street;

thence the line turns and runs Southerly on Central Street thirty-three (33) feet; thence the line turns and runs Westerly one hundred ninety-four (194) feet bounded by the school lot of the City of Woburn; thence the line runs Southwesterly bounded by the said school lot one hundred sixty-six (166) feet to an angle; thence from this angle the line runs Southerly bounded by said school lot two hundred thirty (230) feet to a concrete post on Montvale Avenue; thence turning the line runs Westerly by and with said Montvale Avenue three hundred fifteen (315) feet to the point of beginning. Said parcel contains approximately thirteen (13) acres and comprises the land and pond as shown on a plan made by William S. Crocker, C.E., dated June 15, 1942 and recorded with Middlesex Deeds as Plan 377 of 1942, to which plan reference is made for a more particular description

TRACT III:

Two certain parcels of land in Woburn, Middlesex County, more particularly described as follows:

FIRST:

Beginning at a point where the Aberjona River intersects the southerly side line of the location of the Boston and Maine Railroad; thence running easterly by land of the Boston and Maine Railroad one hundred sixty-two (162) feet by a curve to the left of 1457.33 feet radius to land of the Atlantic Gelatin Company, Inc.; thence turning and running southeasterly by land of said Atlantic Gelatin Company, Inc., ninety-one (91) feet to a point; thence turning and running southerly by land of said Atlantic Gelatin Company, Inc., six hundred seventy and 9/10 (670.9) feet to a point; thence turning and running westerly by land now or formerly of Baeder Adamson & Co. one hundred (100) feet to the Aberjona River; thence turning and running in a northerly direction by the Aberjona River about seven hundred and eighty-five (785) feet to the point of beginning and containing two and 62/100 (2.62) acres more or less.

SECOND:

Beginning at a point on the southerly line of location of the Boston and Maine Railroad two hundred (200) feet easterly of the easterly line, of a private way called Henshaw Street as shown on a plan recorded with Middlesex South District Deeds Plan Book 2, Plan 29; thence running easterly about thirty-eight (38) feet to the Aberjona River; thence turning and running southerly by the said river and the First Parcel above described about two hundred seventy-six and 5/10 (276.5) feet to land now or formerly of Mary Rafferty; thence turning and running westerly by land of said Rafferty about one hundred thirty-six (136) feet to a point, said point being two hundred (200) feet easterly of the easterly line of Henshaw Street above mentioned; thence turning end running northerly by other land of the grantor about two hundred forty (240) feet to the southerly location line of the Boston and Maine Railroad end the point of beginning, and containing 0.65 acres more or less.

Tract IV:

Parcel #1 — About forty -eight thousand two hundred and five (48,205) square feet of land situated in said Woburn being lots 1 to 5, 8 to 18, recorded South Middlesex District, Registry of Deeds, Plan Book 85, Plan 48, being bounded and described as follows, Northerly by A Street; easterly by Martin Street; southerly by B Street; westerly by Washington Street and lots 6 and 7 said plan.

Parcel #2 — About fifty-two thousand two hundred and twenty-six (52,226) square feet of land situated in said Woburn, being lots 19 to 28 and 30 to 36, recorded with South Middlesex District Registry of Deeds, Book 85, Plan 48, being bounded and described as follows; Northerly by A Street; easterly by Albany Street; southerly by B Street; westerly by Martin Street.

Note: Lot 29 is missing from the numerical listing of the lots, but the bounding description includes it.

Parcel #3 — About three thousand and three (3003) square feet of land situated in said Woburn, being lot 6, shown on Plan of House Lots in Woburn, belonging to B. W. Foster, dated May 1, 1894, recorded with Middlesex South District Deeds, Book of Plans 85, Plan.48, bounded as follows, via; northerly by lot 5 on said plan; easterly by lot 13, on said plan; southerly by lot 7 on said plan; westerly by Washington Street.

Parcel #4 — About six thousand three hundred and seventy-four (6,374) square feet of land situated in said Woburn, being Lots 7 and 8, on a plan recorded with the Middlesex South District Registry of Deeds in Book 94, Plan 50.

Parcel #5 — About seven thousand two hundred and seventy-eight (7,278) square feet of land with buildings thereon situated in said Woburn on Middlesex Avenue being Lots 37 and 38 on a plan of Middlesex Park recorded with the Middlesex South District Registry of Deeds in Book 94, Plan 50.

Parcel #6 — About fourteen thousand three hundred and twenty (14,320) square feet of land situated in said Woburn, on Albany Street, being lots 1, 2, 3, 4, Section B, on a plan recorded with the Middlesex South District Registry of Deeds in Book 94, Plan 50.

Parcel #7 — About five thousand five hundred and seventy-two (5,572) square feet of land situated in said Woburn, on Albany Street and Middlesex Avenue, being Lots 5 and 6, Section 8, on a plan recorded with Middlesex South District Registry of Deeds in Book 94, Plan 50.

Parcel #8 — About two thousand seven hundred and eighty-six (2,786) square feet of land situated in said Woburn, on Middlesex Avenue being lot 13, Section B, on a plan of Middlesex Park recorded with the Middlesex South District Registry of Deeds in Book 94, Plan 50.

Parcel #9 — About three thousand one hundred and seventy (3,170) square of land situated in said Woburn on Cedar Street and being Lot 12 on Plan of land of Rome Park Land Company and recorded with Middlesex South District Registry of Deeds, Book of Plans 98, Plan 49.

Parcel #10 — Intentionally omitted.

Parcel #11 — About twenty-seven thousand one hundred and sixty-one (27,161) square feet of land situated in said Woburn on Washington Avenue, being lots 67 to 71 inclusive on a plan recorded with the Middlesex South District Registry of Deeds in Book 98 Plan 49.

Parcel #12 — About twenty-five thousand three hundred and sixty (25,360) square feet of land situated in said Woburn, being lots 37, 38, 39, 40, on a plan of Home Park, recorded with Middlesex South District Registry of Deeds, Book 98, Page 49, excepting and excluding so much of Lot 37 as is included within a parcel of land shown as Lot 1 on a plan recorded as Plan 372 of 2007 that was conveyed to E.B Rotondi & Sons, Inc. by deed recorded in Book 51669, Page 22.

Parcel #13 — About ten thousand three hundred and seventy-two (10,372) square feet of land situated in said Woburn, being lots 56, 67, 60, on a plan of Home Park, recorded with Middlesex South District Registry of Deeds, Book 98, Page 49.

Parcel #14 — About six thousand nine hundred and eighty-five (6,985) square feet of land situated in said Woburn, being lots 58, 59, on a plan of Home Park, recorded with Middlesex South District Registry of Deeds, Book 98, Page 49.

Parcel #15 — About twelve thousand one hundred and nine (12,109) square feet of land situated in said Woburn, being lots 63, 64, 65, on a plan of Home Park, recorded with Middlesex South District Registry of Deeds, Book 98, Page 49.

Parcel #16 — About five thousand eight hundred and sixty-six (5,866) square feet of land situated in said Woburn, being lot 54, on Plan of Home Park, Woburn, Massachusetts recorded with Middlesex South District Deeds, Book of Plans 98, Plan 49.

Parcel #17 — About two thousand seven hundred and eighty-six (2,786) square feet of land situated in said Woburn on Middlesex Avenue, and being Lot 12, Plan Book 94, Plan 50 on Plan of Middlesex Park, Section B, bounded as follows: Northerly by Lot 11; Southerly by Middlesex Avenue; Easterly by Lot 13; westerly by Lots 7 and 8.

Tract V:

A certain parcel of land situated in Woburn, Stoneham, and Winchester, and bounded: Partly on the Southerly side of Forest Street in Winchester, partly on the easterly side of Hill Street and Route 93 in Stoneham; and partly on its northerly and westerly side of the land by General Foods Corporation, formerly Atlantic Gelatin. Said land is about 11.02 acres of land, more or less.

Said premises are further described as follows, namely beginning at a point on the northerly side of Forest Street, Winchester, Mass. at land owned by General Foods Corporation (Atlantic Gelatin); Northwesterly by land of General Food Corporation, by a stone wall, 1,015 feet more or less; thence Northeasterly by the same by a stone wall, 409 feet more or less; thence Southeasterly by said land of the same by a stone wall, 324 feet more or less; thence Easterly by the same by a stone wall, 120 feet more or less to Hill Street, in said Stoneham;

thence Southerly by Hill Street, 436 feet more or less, to an intersection point of Hill Street and Interstate Route 93; thence Southerly by Interstate Route 93, 450 feet more or less to a stone bound on the northerly side of Forest Street in said Winchester; thence Westerly by Forest Street, 110 feet more or less to land now or formerly of Creamer; thence Northeasterly by said land of Creamer, 75 feet more or less; thence Northwesterly by the same, 55 feet more or less; thence Westerly by the same 118 feet, more or less; thence Southerly by the same, 145 feet more or less, to a point on the northerly side of said Forest Street; thence Westerly by said Forest Street, 210 feet, more or less to the point of beginning.

Tract VI:

A certain parcel of land situated in said Winchester, bounded and described as follows:

Southeasterly by remaining land of the grantors conveyed to them by Mary G. Rotondi (sometimes called Mary G. Rotundi) by deed dated February 6, 1956, recorded with Middlesex South District Deeds, Book 8665, Page 204, eighteen and 37/100 (18.37) feet;

Southwesterly by land of the grantee, shown as Lot B on Land Court Subdivision Plan 14642A two hundred seventy-six and 98/100 (276.98) feet;

Northwesterly by land of Earl R. Allen, eighteen and 37/100 (18.37) feet; and

Northeasterly by land of the grantee, shown as Lot A on said Land Court Subdivision Plan 14642A two hundred eighty-one and 24/100 (281.24) feet.

Tract VII:

Land containing 3.63 acres, more or less, bounded and described as follows:

Beginning at a point on the Woburn-Winchester line, thence running

Northerly 287 feet, more or less, by land now or formerly of General Foods Corporation;

Easterly 680 feet, more or less, by land now or formerly of General Foods Corporation;

Southerly 192 feet, more or less;

Westerly 782 feet, more or less, by land now or formerly of Forestdale Realty Trust, to the point of beginning.

Tract VIII:

Together with an easement over the following described parcel contained in an Easement from Earl R. Allen to General Foods Corporation dated December 13, 1962, recorded in Book 10198, Page 467 over land partly in said Winchester and partly in said Woburn, bounded and described as follows:

NORTHWESTERLY by Aberjona Canal on remaining land now or formerly of General Foods Corporation, sixteen and no/100 (16.00) feet;

NORTHEASTERLY by land of the grantee shown as Lot A on Land Court Subdivision Plan 14642A, seventy-six and 80/100 (76.80) feet;

SOUTHEASTERLY by land now or formerly of Rotondi, eighteen and 37/100 (18.37) feet; and

SOUTHWESTERLY by land of the grantee, shown as lot B on said Land Court Subdivision Plan 14642A and by Lot B1 and Lot B3 on Land Court Subdivision Plan No. 14642B about eighty-three and 20/100 (83.20) feet.

Said parcel is a portion of the premises marked "Josephine Capone" on the above-mentioned Land Court Subdivision Plan and is also a portion of the premises shown on a plan entitled "Plan of Land Winchester & Woburn, Mass.", dated December 7, 1953, by Parker Holbrook, duly recorded with Middlesex South District Deeds.

**MONTVALE LAND LLC
C/O LEGGAT MCCALL PROPERTIES
10 POST OFFICE SQUARE
BOSTON, MA 02109**

April 29, 2020

Mark Mastroianni
Pulte Homes of New England LLC
115 Flanders Road, Suite 200
Westborough, MA 01581

Re: Application for Special Permit with Site Plan Review, Technology and Business District ("TBOD")

Dear Mark:

Pursuant to Section 28.12.2 of the 1985 City of Woburn Zoning Ordinance, as amended, Montvale Land LLC ("Montvale") the owner of the property within the TBOD, hereby authorizes Pulte Homes of New England LLC ("Pulte") to file the above-referenced Application with the City Clerk. In addition this will also confirm that Montvale and Pulte have executed a Purchase and Sale Agreement for the sale of a portion of Assessor's Parcel 54-05-01 and a portion of Assessor's Parcel 62-01-29 to Pulte.

MONTVALE LAND LLC

By:



William Gause, duly authorized



Memorandum

To: Mr. Chad Reynolds
Sr Vice President
Leggat-McCall Properties
10 Post Office Square
Boston, MA 02109

Date: May 4, 2020

Project #: 13391.02

From: Robert L. Nagi, PE
Principal

Re: Traffic Impact Memorandum
Trip Generation Comparison
The Vale – Residential Phase I Program
Woburn, Massachusetts

Christine M. Trearchis, PE, PTOE
Senior Project Engineer

Introduction

On behalf of Pulte Homes of New England LLC and Montvale Land, LLC, c/o Leggat McCall Properties LLC (the Proponent), VHB has prepared a trip generation and access evaluation in support of the Special Permit in the City of Woburn for the Phase I multi-family residential component of The Vale, the approved master-planned redevelopment project located in Woburn, Massachusetts.

This memorandum includes an evaluation of the trip generation and access needs for the currently proposed first phase of residential development at the Project site. Specifically, this memo focuses on the multi-family residential component and assesses any changes to the program from the previously reviewed and approved development that was the focus of a detailed traffic impact and access study submitted as part of the Environmental Impact Reports^{1,2} filed with the Commonwealth through the Massachusetts Environmental Policy Act (MEPA). As detailed herein, the current residential program is generally consistent with the approved master plan redevelopment and is expected to have only minor impacts on local traffic operations.

Project Description

The overall master plan consists of the redevelopment of the Project Site, which encompasses approximately 77-acres in the City of Woburn along Interstate 93, with limited, undeveloped portions of the land extending into the adjacent Towns of Winchester and Stoneham Massachusetts at the site of the former Kraft Food Processing Plant. The full build program for the Project, as described in Table 1, will ultimately consist of up to 1,639,100 square feet of complementary mixed uses, anticipated to include residential, hotel, office/lab/flex/research & development, retail and restaurant uses.

This memo focuses on the traffic impacts associated with the first phase of the development, specifically the Townhomes and multifamily garden style apartment units within the overall development program. The other elements will each be evaluated separately through their own design review process with the City. This portion of the development will include a total of 75 town homes (each town home will have 4 parking spaces available, 2 garage and 2 driveway spaces) and 122 multifamily garden-style apartment units in three buildings. For the multifamily

¹ Final Environmental Impact Report, The Vale, Woburn, MA; VHB, Inc; August 15, 2019.

² Draft Environmental Impact Report, The Vale, Woburn, MA; VHB, Inc; April 1, 2019.

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garden apartment units, Buildings 1 and 2 will each have 36 units and will provide 40 garage and 32 surface spaces; Building 3 will house 50 units and will provide 50 garage and 50 surface spaces. In total, the proposal calls for 197 units (112 multifamily garden-style apartments and 75 townhomes) and is shown in the accompanying site plans prepared by the Applicant’s civil engineer.

▪ **Table 1 Originally Proposed Project Phasing**

Development Component	Phase I	Phase II	Phase III / Full Build	Final Development
Townhomes	75 units	-	-	75 units
Apartments	125 units	-	-	125 units
Senior Housing	100 units	-	-	100 units
Assisted Living	105 beds	-	-	105 beds
Medical Office Building	45,000 SF ±	-	-	45,000 SF ±
Hotel	135 keys	-	-	135 keys
R&D/Lab	-	360,000 sf ±	474,200 sf ±	834,200 SF ±
Retail/Restaurant	-	20,000 sf ±	63,200 sf ±	83,200 SF ±

As noted in Table 1, the development of the overall Project was divided into three specific phases. Phase 1 focused on the development of the residential, hotel, and medical office building and formed the basis for the initial buildout of the site. Accompanying the Phase 1 improvements was a series of additional construction activities on the site aimed at decommissioning the former Kraft Food processing plant and constructing access improvements. Phase 2 of the development focused on a significant amount of commercial Research & Development/office space along with some supporting retail uses. The final phase would see the construction of over a half-million SF of the same commercial space on the site. Each phase was accompanied by a series of incremental off-site roadway improvements that have been reviewed and accepted by the Massachusetts Department of Transportation (MassDOT) which was the focus of the transportation sections of the MEPA submissions to the Commonwealth.

Trip Generation Changes

As shown in Table 1 above, the current proposed program for this component includes 75 townhomes and 122 apartments with 472 parking spaces, reflecting a slight decrease (3 less units) in the number of residential units.

The Transportation Study contained in the DEIR included trip generation estimates for the proposed uses, projected using trip generation rates published by the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition³.

³ Trip Generation, 10th Edition, Institute of Transportation Engineers, Washington, D.C., 2017.

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Trip generation estimates were provided for each development Phase as well as the Full Build condition. As it relates to the proposed development, trips were estimated using the following Land Use Codes (LUC):

- LUC 210 (Single Family Detached Housing)
- LUC 220 (Multifamily Housing - Low-Rise)

Table 2, as approved, shows that the currently proposed multi-family component of Phase I results in an estimate of between 81 to 103 peak hour trips to the Project Site. Given the slight decrease in the proposed multi-family residential units, a revised trip generation analysis was conducted for the current proposal of 75 townhomes and 122 apartments. The results of this analysis are presented in Table 2.

▪ **Table 2 Phase I Trip Generation**

	MEPA Estimates for Multi-Family Residential ^b	Currently Proposed Multi-Family Residential ^b
Weekday		
Enter	603	595
Exit	<u>603</u>	<u>595</u>
Total	1,206	1,190
Weekday Morning		
Enter	20	19
Exit	<u>61</u>	<u>61</u>
Total	81	80
Weekday Evening		
Enter	63	62
Exit	<u>38</u>	<u>38</u>
Total	101	100
Saturday		
Enter	572	565
Exit	<u>572</u>	<u>565</u>
Total	1,144	1,130
Saturday Midday		
Enter	51	50
Exit	<u>52</u>	<u>51</u>
Total	103	101

a As presented in the DEIR. Trip generation for Phase I based on ITE LUC 220 for 75 units, ITE LUC 221 for 125 units, ITE LUC 252 for 100 units, ITE LUC 254 for 105 beds, ITE LUC 720 for 45,000 sf and ITE LUC 310 for 135 rooms, internal trip credit taken.

b Trip generation for Phase I based on ITE LUC 220 for 75 units, ITE LUC 221 for 122 units, no internal trip credit taken.

As shown in Table 2, the currently proposed multi-family program results in slightly fewer trips than the approved Phase I program from the DEIR filing. The slight decrease in program size is expected to result one to two *fewer* trips during each of the peak hours.

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Traffic Operations Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic within the study area. To assess quality of flow, roadway capacity analyses were conducted for a revised 2026 Phase I Build condition with only the multi-family residential component of Phase I included at the intersection of Montvale Avenue at Hill Street / I-93 Southbound Off-Ramps. This condition reflects the existing infrastructure Existing conditions at the intersection and the projected 2026 Build traffic volume for the multi-family residential. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed on them. Calculated levels of service classify roadway operating conditions.

Level-of-Service Criteria

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

For signalized intersections, the evaluation criteria used to analyze study area intersections are based on the percentile-delay method (SYNCHRO results).

Intersection Capacity Analysis

Table 3 summarizes the capacity analyses for the signalized intersection of Montvale Avenue at Hill Street / I-93 Southbound Off-Ramp. The Table presents the revised Phase I Build conditions alongside the previously presented 2018 Existing and projected 2026 No-Build conditions.

As shown in Table 3, under 2026 Build conditions, the study area intersection is expected to operate at the same overall LOS than under 2026 No-Build conditions. With the addition of the projected multi-family residential trips, some individual movements are expected to show a slight degradation in LOS, without any proposed roadway mitigation in place. The Hill Street northbound approach experiences the largest increase in delay and queue, with a maximum of five (5) vehicles added to the 95th percentile queue during the peak hours.



Table 3 Signalized Intersection Capacity Analysis

Location / Movement	2018 Existing Conditions					2026 No-Build Conditions					Phase I Multi-Family Residential Build Conditions				
	v/c ^a	Del ^b	LOS ^c	50 Q ^d	95 Q ^e	v/c	Del	LOS	50 Q	95 Q	v/c	Del	LOS	50 Q	95 Q
Montvale Avenue at Hill Street and I-93 SB Off-Ramp															
<i>Weekday Morning</i>															
EB T/R	0.57	26	C	133	199	0.65	31	C	187	247	0.66	32	C	195	249
WB L/U	0.37	44	D	29	76	0.65	57	E	81	151	0.68	60	E	88	158
WB T	0.57	18	B	158	234	0.57	19	B	214	278	0.58	20	C	220	278
NB L/T/R	0.49	13	B	0	52	0.76	35	C	65	#177	0.88	49	D	115	#289
SB L	0.94	65	E	205	#501	1.16	>120	F	~336	#596	>1.20	>120	F	~355	#593
SB T	0.94	66	E	207	#504	1.14	>120	F	~331	#586	>1.20	>120	F	~357	#595
SB R	0.91	38	D	138	#414	1.15	116	F	~321	#582	>1.20	>120	F	~366	#612
Overall		35	D				65	E				76	E		
<i>Weekday Evening</i>															
EB T/R	0.80	31	C	306	409	0.95	49	D	393	#528	0.99	57	E	411	#543
WB L/U	0.35	50	D	28	68	0.65	63	E	81	142	0.72	67	E	97	165
WB T	0.47	19	B	150	220	0.45	20	B	182	233	0.46	20	B	182	233
NB L/T/R	0.54	17	B	5	50	0.84	46	D	93	#231	0.93	61	E	130	#307
SB L	0.61	39	D	158	275	0.72	50	D	196	#333	0.77	54	D	209	#352
SB T	0.61	39	D	160	277	0.72	50	D	196	#331	0.76	54	D	210	#353
SB R	0.82	27	C	139	#352	1.01	69	E	~285	#517	1.06	82	F	~311	#537
Overall		29	C				46	D				54	D		
<i>Saturday Midday</i>															
EB T/R	0.64	28	C	195	282	0.78	36	D	284	341	0.79	36	D	290	348
WB L/U	0.48	50	D	49	104	0.81	71	E	123	#229	0.85	75	E	135	#255
WB T	0.49	17	B	151	223	0.46	18	B	177	227	0.45	18	B	177	227
NB L/T/R	0.61	22	C	25	91	1.01	78	E	~179	#367	1.16	>120	F	~258	#453
SB L	0.46	38	D	96	191	0.59	48	D	126	206	0.61	49	D	131	213
SB T	0.45	38	D	96	190	0.59	48	D	128	208	0.62	49	D	134	216
SB R	0.74	24	C	85	#265	1.01	74	E	~222	#422	1.05	84	F	~239	#439
Overall		26	C				44	D				52	D		

Phase I Traffic Improvements

As part of the proposed redevelopment project, a phased mitigation program has been approved which addresses the specific capacity needs for each of the development phases. Below is a description of the approved Phase I mitigation measures.

At the conclusion of the first phase of roadway upgrades, the improvements will focus on modernizing and upgrading the traffic signal system along Montvale Avenue in front of the Project Site and widening Hill Street. The Proponent has committed to upgrading the following three signalized intersections to provide for a fully adaptive signal system that is compliant with the other adaptive signal systems within the City of Woburn:

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- Montvale Avenue at Hill Street/ I-93 SB Off-Ramp.
- Montvale Avenue at I-93 NB Ramps.
- Montvale Avenue at Maple Street/ Unicorn Park Drive.

Additional intersection improvements will also be implemented during the first phase of development and will focus on upgrading the intersection of Montvale Avenue and the I-93 southbound off-ramps with Hill Street. Specifically, proposed geometric improvements include:

- Widening Hill Street to provide for an adequate cross-section which will provide at least two exit lanes and one entrance lane;
- Pedestrian accommodations along Hill Street that integrate with the current Montvale Avenue pedestrian network; and
- Necessary transitioning from Hill Street onto Montvale Avenue of pedestrian and bicycle accommodations.

These Phase I measures are the responsibility of the master developer of the site (Montvale Land LLC) and they are required to be fully operational prior to full occupancy of the entire Phase I development (see Table 1 previously). The capacity analysis presented in Table 3 indicates that the multi-family residential component will only have minor impacts on the intersection if constructed prior to the implementation of Phase I improvements. At the conclusion of the Phase 1 improvements being in place, all signals and approaches are expected to operate at or above LOS D.

Conclusion & Recommendations

The proposed change in size to the multi-family component of Phase I of the development is expected to result in slightly fewer vehicle trips to and from the Project Site during the peak hours. Based on the revised capacity analysis, the intersection of Montvale Avenue at Hill Street / I-93 Southbound Off-Ramp is expected to operate at the same overall LOS than under 2026 No-Build conditions. With the addition of the projected multi-family residential trips, while some individual movements are expected to show a slight degradation in LOS, overall the intersection has the capacity to accommodate the additional trips. VHB recommends that the Applicant consider the following:

- At 75% occupancy of the proposed residential units, the master developer (Montvale Land LLC) and City should review the signal operations and, if warranted, adjust the signal timings to account for the additional traffic along Hill Street; and
- Develop a clear wayfinding plan for residential visitors and deliveries arriving via Hill Street through the Project site to avoid on-going construction within the site.

From the traffic study outlined above, the proposed residential development is not expected to have a significant traffic delay/impact on the surrounding area roadways.

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Attachments

- Trip Generation
- Intersection Capacity Analyses



PHASE I TRIP GENERATION INPUTS

Land Use	Size	Units
Townhomes	75	dwelling units
Apartments	122	dwelling units
Independent Senior Housing	100	dwelling units
Assisted / Memory Care	105	beds
Medical Office Building	45,000	sf
Lab Space	0	sf
Office	0	sf
Hotel	135	rooms

PHASE I TRIP GENERATION SUMMARY

	Residential								Office				Hotel			Total Unadjusted Trips	Total Gross New Trips	Total Adjusted Trips	Pass-By	Internal Capture
	Townhomes LUC 220 Rate ¹	Apartments LUC 221 Rate ²	Total Townhouse & Apt	Senior Housing LUC 252 Rate ³	Assisted Living LUC 254 Rate ⁴	Total Gross Residential	Internal Capture	Net Residential	Medical Office LUC 720 Rate ⁵	Total Gross Office	Internal Capture	Net Office	Hotel LUC 310 Rate ⁶	Internal Capture	Net Hotel					
Weekday Daily																				
Enter	263	332	595	188	137	1,515	12	1,503	821	821	-	821	549	4	545	2,885	2,869	2,869	-	16
Exit	263	332	595	188	137	1,515	-	1,515	821	821	16	805	549	-	549	2,885	2,869	2,869	-	16
Total	526	664	1,190	376	274	3,030	12	3,018	1,642	1,642	16	1,626	1,098	4	1,094	5,770	5,738	5,738	-	32
Weekday Morning - Adjacent Street																				
Enter	8	11	19	7	13	58	-	58	86	86	6	80	37	-	37	181	175	175	-	6
Exit	28	33	61	13	7	142	3	139	24	24	-	24	25	3	22	191	185	185	-	6
Total	36	44	80	20	20	200	3	197	110	110	6	104	62	3	59	372	360	360	-	12
Weekday Evening - Adjacent Street																				
Enter	29	33	62	14	10	148	2	146	44	44	4	40	38	3	35	230	221	221	-	9
Exit	17	21	38	12	17	105	7	98	112	112	2	110	37	-	37	254	245	245	-	9
Total	46	54	100	26	27	253	9	244	156	156	6	150	75	3	72	484	466	466	-	18
Saturday Daily																				
Enter	265	300	565	168	154	1,452	3	1,449	193	193	-	193	502	1	501	2,147	2,143	2,143	-	4
Exit	265	300	565	168	154	1,452	-	1,452	193	193	4	189	502	-	502	2,147	2,143	2,143	-	4
Total	530	600	1,130	336	308	2,904	3	2,901	386	386	4	382	1,004	1	1,003	4,294	4,286	4,286	-	8
Saturday Midday - Peak of Generator																				
Enter	24	26	50	21	13	134	1	133	80	80	5	75	55	4	51	269	259	259	-	10
Exit	24	27	51	13	15	130	9	121	60	60	1	59	43	-	43	233	223	223	-	10
Total	48	53	101	34	28	264	10	254	140	140	6	134	98	4	94	502	482	482	-	20

1 Trip generation rate based on ITE LUC 220 (Multifamily Housing - Low-Rise)
 2 Trip generation rate based on ITE LUC 221 (Multifamily Housing - Mid-Rise)
 3 Trip generation rate based on ITE LUC 252 (Senior Adult Housing Attached)
 4 Trip generation rate based on ITE LUC 254 (Assisted Living)
 5 Trip generation rate based on ITE LUC 720 (Medical-Dental Office Building)
 6 Trip generation rate based on ITE LUC 310 (Hotel)

ITE TRIP GENERATION WORKSHEET
 (10th Edition, Updated 2017)

LANDUSE: Multi-Family Housing (Low-Rise - 1-2 Story)
LANDUSE CODE: 220 Independent Variable --- Number of Units
SETTING/LOCATION: General Urban/Suburban
JOB NAME: _____ 75 units
JOB NUMBER: _____

WEEKDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	29	0.96	7.32	4.45	10.97	168	5	590	50%	50%
AM PEAK (ADJACENT ST)	42	0.90	0.46	0.18	0.74	199	5	650	23%	77%
PM PEAK (ADJACENT ST)	50	0.86	0.56	0.18	1.25	187	5	650	63%	37%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	549	275	275	526	263	263
	AM PEAK (ADJACENT ST)	35	8	27	36	8	28
	PM PEAK (ADJACENT ST)	42	26	16	46	29	17

SATURDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	0.93	8.14	3.36	11.40	89	48	148	50%	50%
PEAK OF GENERATOR	5	0.92	0.70	0.41	0.93	89	48	148	N/A	N/A

TRIPS:		BY AVERAGE			BY REGRESSION			
		Total	Enter	Exit	Total	Enter	Exit	
	DAILY	611	305	305	529	265	265	Caution - Small
	PEAK OF GENERATOR	53	N/A	N/A	48	N/A	N/A	Caution - Small

SUNDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	0.96	6.28	2.61	8.22	89	48	148	50%	50%
PEAK OF GENERATOR	5	0.93	0.67	0.36	0.93	89	48	148	N/A	N/A

TRIPS:		BY AVERAGE			BY REGRESSION			
		Total	Enter	Exit	Total	Enter	Exit	
	DAILY	471	236	236	418	209	209	Caution - Small
	PEAK OF GENERATOR	50	N/A	N/A	44	N/A	N/A	Caution - Small

ITE TRIP GENERATION WORKSHEET
 (10th Edition, Updated 2017)

LANDUSE: Mid-Rise Residential
LANDUSE CODE: 221
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:

Independent Variable --- Number of Units

122 units

WEEKDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	27	0.77	5.44	1.27	12.50	205	21	494	50%	50%
AM PEAK (ADJACENT ST)	53	0.67	0.36	0.06	1.61	207	26	703	26%	74%
PM PEAK (ADJACENT ST)	60	0.72	0.44	0.15	1.11	208	26	703	61%	39%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	664	332	332	663	332	332
	AM PEAK (ADJACENT ST)	44	11	33	42	11	31
	PM PEAK (ADJACENT ST)	54	33	21	54	33	21

SATURDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.73	4.91	4.03	8.51	224	111	336	50%	50%
PEAK OF GENERATOR	8	0.89	0.44	0.34	0.73	264	111	462	49%	51%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	599	300	300	788	394	394
	PEAK OF GENERATOR	54	26	27	58	28	30

SUNDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	--	4.09	3.06	8.41	224	111	336	50%	50%
PEAK OF GENERATOR	6	--	0.39	0.26	1.07	224	111	336	62%	38%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	499	249	249	N/A	N/A	N/A
	PEAK OF GENERATOR	48	29	18	N/A	N/A	N/A

ITE TRIP GENERATION WORKSHEET
 (10th Edition, Updated 2017)

LANDUSE: Senior Adult Housing - Attached
LANDUSE CODE: 252 Independent Variable --- Dwelling Units
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:
DWELLING UNITS (#): 100

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.99	3.70	2.59	4.79	81	28	256	50%	50%
AM PEAK (ADJACENT ST)	11	0.98	0.20	0.06	0.27	148	28	684	35%	65%
PM PEAK (ADJACENT ST)	11	0.96	0.26	0.08	0.43	148	28	684	55%	45%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	370	185	185	377	188	188
AM PEAK (ADJACENT ST)	20	7	13	20	7	13
PM PEAK (ADJACENT ST)	26	14	12	26	14	12

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.99	3.23	1.84	4.07	81	28	256	50%	50%
PEAK OF GENERATOR	7	0.99	0.33	0.23	0.43	91	28	256	62%	38%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	323	162	162	337	168	168
PEAK OF GENERATOR	33	20	13	33	21	13

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.99	3.14	2.20	4.25	81	28	256	50%	50%
PEAK OF GENERATOR	6	0.95	0.36	0.27	0.55	81	28	256	64%	36%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	314	157	157	321	160	160
PEAK OF GENERATOR	36	23	13	35	22	13

ITE TRIP GENERATION WORKSHEET
(10th Edition, Updated 2017)

HAS NOT BEEN REVIEWED (QAQC) - AS OF 07/12/2018

LANDUSE: Assisted Living
 LANDUSE CODE: 254
 SETTING/LOCATION: General Urban/Suburban
 JOB NAME:
 JOB NUMBER:

Independent Variable --- Beds

DWELLING UNITS (#): 105

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	2	--	2.60	1.86	4.14	135	87	183	50%	50%
AM PEAK (ADJACENT ST)	9	--	0.19	0.08	0.43	123	83	183	63%	37%
PM PEAK (ADJACENT ST)	9	--	0.26	0.11	0.53	123	83	183	38%	62%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	273	137	137	--	--	--
AM PEAK (ADJACENT ST)	20	13	7	--	--	--
PM PEAK (ADJACENT ST)	27	10	17	--	--	--

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	1	--	2.93	2.93	2.93	87	87	87	50%	50%
PEAK OF GENERATOR	6	--	0.27	0.17	0.44	111	83	154	46%	54%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	308	154	154	--	--	--
PEAK OF GENERATOR	28	13	15	--	--	--

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	1	--	3.15	3.15	3.15	87	87	87	50%	50%
PEAK OF GENERATOR	6	--	0.28	0.13	0.36	111	83	154	43%	57%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	331	165	165	--	--	--
PEAK OF GENERATOR	29	13	17	--	--	--

ITE TRIP GENERATION WORKSHEET
 (10th Edition, Updated 2017)

LANDUSE: Medical-Dental Office Building
LANDUSE CODE: 720
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

FLOOR AREA (KSF): 45

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	28	0.95	34.80	9.14	100.75	24	2	111	50%	50%
AM PEAK OF GENERATOR	36	0.90	3.53	1.21	19.28	27	0	175	62%	38%
PM PEAK OF GENERATOR	42	0.91	4.10	1.49	15.55	26	0	175	39%	61%
AM PEAK (ADJACENT ST)	44	0.80	2.78	0.85	14.30	32	2	112	78%	22%
PM PEAK (ADJACENT ST)	65	0.73	3.46	0.25	8.86	28	2	112	28%	72%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	1,566	783	783	1641	821	821
AM PEAK OF GENERATOR	159	98	60	157	97	60
PM PEAK OF GENERATOR	185	72	113	188	73	114
AM PEAK (ADJACENT ST)	125	98	28	110	86	24
PM PEAK (ADJACENT ST)	156	44	112	155	43	111

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	--	8.57	1.10	21.93	41	18	111	50%	50%
PEAK OF GENERATOR	4	0.78	3.10	1.33	4.02	28	18	43	57%	43%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	386	193	193	N/A	N/A	N/A
PEAK OF GENERATOR	140	80	60	172	98	74

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	--	1.42	0.39	5.11	44	18	111	50%	50%
PEAK OF GENERATOR	3	--	0.32	0.12	0.63	31	24	43	52%	48%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	64	32	32	N/A	N/A	N/A
PEAK OF GENERATOR	14	7	7	N/A	N/A	N/A

ITE TRIP GENERATION WORKSHEET
 (10th Edition, Updated 2017)

LANDUSE: Hotel
LANDUSE CODE: 310
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:

Independent Variable --- Number of Rooms

135 rooms

WEEKDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.92	8.36	5.31	9.53	146	100	260	50%	50%
AM PEAK OF GENERATOR	30	0.64	0.54	0.25	1.42	288	86	575	54%	46%
PM PEAK OF GENERATOR	29	0.71	0.61	0.22	0.97	292	86	575	58%	42%
AM PEAK (ADJACENT ST)	25	0.85	0.47	0.20	0.84	178	74	426	59%	41%
PM PEAK (ADJACENT ST)	28	0.80	0.60	0.26	1.06	183	74	426	51%	49%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	1,129	564	564	1,097	549	549
AM PEAK OF GENERATOR	73	39	34	79	43	36
PM PEAK OF GENERATOR	82	48	35	83	48	35
AM PEAK (ADJACENT ST)	63	37	26	62	37	25
PM PEAK (ADJACENT ST)	81	41	40	75	38	37

SATURDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	8	0.93	8.19	6.35	9.79	206	100	355	50%	50%
PEAK OF GENERATOR	9	0.80	0.72	0.49	1.23	194	100	355	56%	44%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	1,106	553	553	1,004	502	502
PEAK OF GENERATOR	97	54	43	97	55	43

SUNDAY

RATES:	# Studies	R ²	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	8	0.90	5.95	4.01	8.48	206	100	355	50%	50%
PEAK OF GENERATOR	8	0.87	0.56	0.39	0.72	206	100	355	46%	54%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	803	402	402	617	309	309
PEAK OF GENERATOR	76	35	41	65	30	35

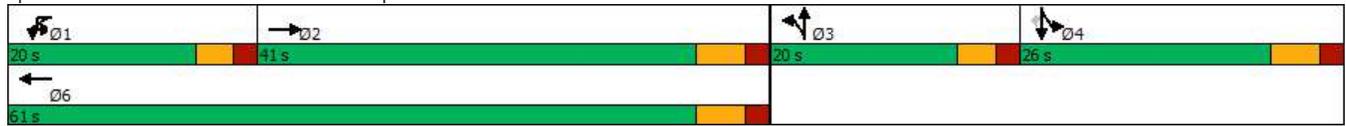




Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↑↑			↑↓		↑↓	↑↓	↑↓
Traffic Volume (vph)	0	830	70	5	125	875	0	105	0	190	710	60	510
Future Volume (vph)	0	830	70	5	125	875	0	105	0	190	710	60	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		80		180		0	0		0	160		185
Storage Lanes	0		1		1		0	0		0	1		1
Taper Length (ft)	25				25			25			25		
Satd. Flow (prot)	0	4826	0	0	1736	3471	0	0	1672	0	1681	1697	1583
Flt Permitted					0.950				0.983		0.950	0.959	
Satd. Flow (perm)	0	4826	0	0	1734	3471	0	0	1671	0	1681	1697	1561
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)		13							143				160
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		1061				363			744			422	
Travel Time (s)		24.1				8.3			16.9			9.6	
Confl. Peds. (#/hr)			1		1			1					1
Confl. Bikes (#/hr)			1				1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	6%	4%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)											46%		
Lane Group Flow (vph)	0	978	0	0	141	951	0	0	321	0	417	420	554
Turn Type		NA		Prot	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	1	6		3	3		4	4	
Permitted Phases													4
Detector Phase		2		1	1	6		3	3		4	4	4
Switch Phase													
Minimum Initial (s)		10.0		6.0	6.0	20.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)		26.0		11.0	11.0	26.0		11.0	11.0		21.0	21.0	21.0
Total Split (s)		41.0		20.0	20.0	61.0		20.0	20.0		26.0	26.0	26.0
Total Split (%)		38.3%		18.7%	18.7%	57.0%		18.7%	18.7%		24.3%	24.3%	24.3%
Yellow Time (s)		4.0		3.0	3.0	4.0		3.0	3.0		4.0	4.0	4.0
All-Red Time (s)		2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.0		5.0	5.0	6.0		5.0	5.0		6.0	6.0	6.0
Lead/Lag		Lag		Lead	Lead			Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes	Yes			Yes	Yes		Yes	Yes	Yes
Recall Mode		Min		None	None	Min		None	None		Max	Max	Max
Act Effect Green (s)		29.9		11.7	11.7	46.6		14.3	14.3		20.2	20.2	20.2
Actuated g/C Ratio		0.30		0.12	0.12	0.47		0.15	0.15		0.21	0.21	0.21
v/c Ratio		0.66		0.68	0.68	0.58		0.88	0.88		1.21	1.21	1.24
Control Delay		32.0		59.8	59.8	20.0		49.4	49.4		154.7	153.3	151.7
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		32.0		59.8	59.8	20.0		49.4	49.4		154.7	153.3	151.7
LOS		C		E	E	C		D	D		F	F	F
Approach Delay		32.0				25.2		49.4	49.4			153.0	
Approach LOS		C				C		D	D			F	
Queue Length 50th (ft)		195			88	220		115	115		~355	~357	~366
Queue Length 95th (ft)		249			158	278		#289	#289		#593	#595	#612
Internal Link Dist (ft)		981				283		664	664			342	
Turn Bay Length (ft)					180						160		185
Base Capacity (vph)		1742			267	1960		378	378		345	348	447
Starvation Cap Reductn		0			0	0		0	0		0	0	0
Spillback Cap Reductn		0			0	0		0	0		0	0	0
Storage Cap Reductn		0			0	0		0	0		0	0	0
Reduced v/c Ratio		0.56			0.53	0.49		0.85	0.85		1.21	1.21	1.24

Intersection Summary
 Area Type: Other
 Cycle Length: 107
 Actuated Cycle Length: 98.3
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 76.0 Intersection LOS: E
 Intersection Capacity Utilization 87.5% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Hill Street/I-93 SB Off-Ramp & Montvale Ave



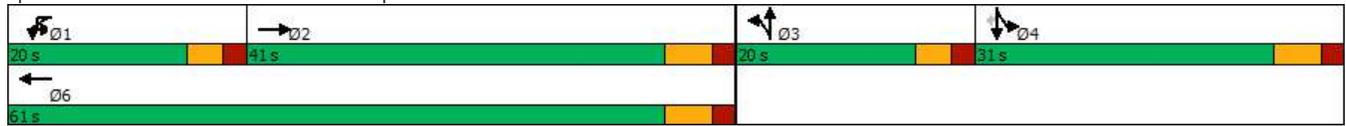


Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑				↑↑			↑↓		↑↓	↑↓	↑↓
Traffic Volume (vph)	0	1395	80	5	125	705	0	95	0	195	490	60	505
Future Volume (vph)	0	1395	80	5	125	705	0	95	0	195	490	60	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		80		180		0	0		0	160		185
Storage Lanes	0		1		1		0	0		0	1		1
Taper Length (ft)	25				25			25			25		
Satd. Flow (prot)	0	5038	0	0	1752	3505	0	0	1644	0	1698	1719	1599
Flt Permitted					0.950				0.984		0.950	0.962	
Satd. Flow (perm)	0	5038	0	0	1752	3505	0	0	1644	0	1673	1700	1599
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)		8							136				200
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		1060				363			744			422	
Travel Time (s)		24.1				8.3			16.9			9.6	
Confl. Peds. (#/hr)	1		1		1		1			10	10		
Confl. Bikes (#/hr)			1				1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)											44%		
Lane Group Flow (vph)	0	1603	0	0	141	766	0	0	315	0	298	300	549
Turn Type		NA		Prot	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	1	6		3	3		4	4	
Permitted Phases													4
Detector Phase		2		1	1	6		3	3		4	4	4
Switch Phase													
Minimum Initial (s)		10.0		6.0	6.0	20.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)		26.0		11.0	11.0	26.0		11.0	11.0		21.0	21.0	21.0
Total Split (s)		41.0		20.0	20.0	61.0		20.0	20.0		31.0	31.0	31.0
Total Split (%)		36.6%		17.9%	17.9%	54.5%		17.9%	17.9%		27.7%	27.7%	27.7%
Yellow Time (s)		4.0		3.0	3.0	4.0		3.0	3.0		4.0	4.0	4.0
All-Red Time (s)		2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.0		5.0	5.0	6.0		5.0	5.0		6.0	6.0	6.0
Lead/Lag		Lag		Lead	Lead			Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes	Yes			Yes	Yes		Yes	Yes	Yes
Recall Mode		Min		None	None	Min		None	None		Max	Max	Max
Act Effect Green (s)		35.0		12.3	12.3	52.3		14.8	14.8		25.0	25.0	25.0
Actuated g/C Ratio		0.32		0.11	0.11	0.48		0.14	0.14		0.23	0.23	0.23
v/c Ratio		0.99		0.72	0.72	0.46		0.93	0.93		0.77	0.76	1.06
Control Delay		57.2		67.1	67.1	19.9		60.9	60.9		54.3	53.9	82.0
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		57.2		67.1	67.1	19.9		60.9	60.9		54.3	53.9	82.0
LOS		E		E	E	B		E	E		D	D	F
Approach Delay		57.2				27.3		60.9			67.4		
Approach LOS		E				C		E			E		
Queue Length 50th (ft)		411			97	182		130			209	210	~311
Queue Length 95th (ft)		#543			165	233		#307			#352	#353	#537
Internal Link Dist (ft)		980				283		664			342		
Turn Bay Length (ft)					180						160		185
Base Capacity (vph)		1621			240	1767		343			389	393	520
Starvation Cap Reductn		0			0	0		0			0	0	0
Spillback Cap Reductn		0			0	0		0			0	0	0
Storage Cap Reductn		0			0	0		0			0	0	0
Reduced v/c Ratio		0.99			0.59	0.43		0.92			0.77	0.76	1.06

Intersection Summary

Area Type: Other
 Cycle Length: 112
 Actuated Cycle Length: 109.2
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 53.6
 Intersection LOS: D
 Intersection Capacity Utilization 85.4%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Hill Street/I-93 SB Off-Ramp & Montvale Ave





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↓	↑↑			↑↓		↓	↑	↑
Traffic Volume (vph)	0	1095	100	10	175	750	0	145	0	245	305	60	410
Future Volume (vph)	0	1095	100	10	175	750	0	145	0	245	305	60	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		80		180		0	0		0	160		185
Storage Lanes	0		1		1		0	0		0	1		1
Taper Length (ft)	25				25			25			25		
Satd. Flow (prot)	0	5008	0	0	1770	3539	0	0	1707	0	1681	1711	1583
Flt Permitted					0.950				0.982		0.950	0.967	
Satd. Flow (perm)	0	5008	0	0	1766	3539	0	0	1706	0	1681	1711	1561
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)		15							143				161
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		1060				363			744			422	
Travel Time (s)		24.1				8.3			16.9			9.6	
Confl. Peds. (#/hr)	1		3		3		1	1					1
Confl. Bikes (#/hr)			1				1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)											41%		
Lane Group Flow (vph)	0	1299	0	0	201	815	0	0	424	0	196	201	446
Turn Type		NA		Prot	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	1	6		3	3		4	4	
Permitted Phases													4
Detector Phase		2		1	1	6		3	3		4	4	4
Switch Phase													
Minimum Initial (s)		10.0		6.0	6.0	20.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)		26.0		11.0	11.0	26.0		11.0	11.0		21.0	21.0	21.0
Total Split (s)		41.0		20.0	20.0	61.0		20.0	20.0		26.0	26.0	26.0
Total Split (%)		38.3%		18.7%	18.7%	57.0%		18.7%	18.7%		24.3%	24.3%	24.3%
Yellow Time (s)		4.0		3.0	3.0	4.0		3.0	3.0		4.0	4.0	4.0
All-Red Time (s)		2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.0		5.0	5.0	6.0		5.0	5.0		6.0	6.0	6.0
Lead/Lag		Lag		Lead	Lead			Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes	Yes			Yes	Yes		Yes	Yes	Yes
Recall Mode		Min		None	None	Min		None	None		Max	Max	Max
Act Effect Green (s)		34.3		14.1	14.1	53.4		15.0	15.0		20.0	20.0	20.0
Actuated g/C Ratio		0.33		0.13	0.13	0.51		0.14	0.14		0.19	0.19	0.19
v/c Ratio		0.79		0.85	0.85	0.45		1.16	1.16		0.61	0.62	1.05
Control Delay		36.3		75.4	75.4	17.6		126.5	126.5		49.0	49.1	84.4
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		36.3		75.4	75.4	17.6		126.5	126.5		49.0	49.1	84.4
LOS		D		E	E	B		F	F		D	D	F
Approach Delay		36.3				29.0		126.5	126.5			67.7	
Approach LOS		D				C		F	F			E	
Queue Length 50th (ft)		290			135	177		~258	~258		131	134	~239
Queue Length 95th (ft)		348			#255	227		#453	#453		213	216	#439
Internal Link Dist (ft)		980				283		664	664			342	
Turn Bay Length (ft)					180						160		185
Base Capacity (vph)		1673			252	1847		365	365		319	324	426
Starvation Cap Reductn		0			0	0		0	0		0	0	0
Spillback Cap Reductn		0			0	0		0	0		0	0	0
Storage Cap Reductn		0			0	0		0	0		0	0	0
Reduced v/c Ratio		0.78			0.80	0.44		1.16	1.16		0.61	0.62	1.05

Intersection Summary

Area Type: Other
 Cycle Length: 107
 Actuated Cycle Length: 105.5
 Natural Cycle: 80
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 52.3 Intersection LOS: D
 Intersection Capacity Utilization 83.5% ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Hill Street/I-93 SB Off-Ramp & Montvale Ave



SECURITY FEATURES INCLUDE TRUE WATERMARK PAPER, HEAT SENSITIVE ICON AND FOIL HOLOGRAM

Civil Design Group, LLC
21 High Street
North Andover, MA 01845

Bank of America
54-49/114

1713

5/6/2020

PAY TO THE ORDER OF City of Woburn

\$ **1,500.00

One Thousand Five Hundred and 00/100*****

DOLLARS

City of Woburn

MEMO



[Signature]
AUTHORIZED SIGNATURE

HEAT SENSITIVE

⑈001713⑈ ⑆011400495⑆ 388002632415⑈

Details on Back. Security Features Included

Civil Design Group, LLC
City of Woburn

5/6/2020

1713

1,500.00

Bank of America

1,500.00

CERTIFICATION OF TREASURER/COLLECTOR
(MGL c.40,§57; WMC 3-24)

Office Use Only: DEPARTMENT

NOTE - ALL LINES MUST BE COMPLETED BY APPLICANT.

1. Parcel which directly relates to the application filed. (This numeric Parcel I.D. can be found: on the tax bill, or in Street Listing Records at the Building or Assessor's office. Web: <http://data.visionappraisal.com/WoburnMA/>.)

(Example I.D.: 12-34-56) Map 54 Block 05 Lot 01
Map 62 Block 01 Lot 29

2. Does Real Estate owner and/or tenant own or have a beneficial or financial interest in any other real estate properties within the city of Woburn?

Circle one: NO **YES** SEE ATTACHED

A beneficial interest can be as an individual, partnership, trust, LLP, LLC etc. If YES, insert Map, Block, and Lot below for each property. Use back of form, if necessary.

Map _____ Block _____ Lot _____
Map _____ Block _____ Lot _____

3. Property Address where permit is sought:

Real Estate Owner Name(s): Montvale Land LLC
Real Estate Owner(s) Legal Business Name (if any): c/o Leggat McCall Properties LLC
Real Estate Owner's Residential Address (if different): 10 Post Office Square, Boston< MA 02109
Telephone Number: (617)875-6892

Tenant/Lessee Name: _____
Legal Business Name (if any): _____
Tenant's Address: _____ Telephone Number: _____

4. Check one: Residential Individual/Sole Proprietor Corporation
 Trust LLC/LLP Other _____

5. I certify under the penalties of perjury that I am the record owner or tenant of the within described property and the above information is accurate and complete.

4.2.20 Date [Signature] Signature of Applicant Property Owner or Tenant (Not contractor)

Sr. VP Title T.C. Reynolds for Montvale Land LLC Print Name

(For Office Use Only) CERTIFICATION OF TREASURER/COLLECTOR
The records of this office indicate that there are no unpaid real estate taxes, municipal fees, liens or other municipal charges outstanding and unpaid, or for the payment of which the owner has entered into a payment agreement with this office, on the above described parcels as of: _____
EXPIRES: _____
Certification Date _____
Treasurer/Collector _____

Question 2 - List of Additional Parcels Owned by the Applicant

Address	Property ID
0 Washington Avenue	Parcel 62-01-25
0 Washington Avenue	Parcel 62-01-21
0 Washington Avenue	Parcel 62-01-22
0 Washington Avenue	Parcel 62-01-19
1 Washington Avenue	Parcel 62-01-29
0 Washington Avenue - Parcel B	Parcel 61-09-04
0 Albany Street	Parcel 62-01-05
0 Albany Street	Parcel 62-01-17
0 Cedar Street	Parcel 61-07-05
0 Albany & A Street	Parcel 61-05-01
0 Washington Avenue	Parcel 61-04-01
0 Central St R	Parcel 53-03-05
0 Henshaw St R	Parcel 54-05-19
0 Hill Street	Parcel 54-05-01
0 Hill Street	Parcel 54-05-04