

# ENVIRONMENTAL NOTIFICATION FORM

12/23/15

ASHLAND RAIL TRANSIT APARTMENTS  
ASHLAND, MA

*PREPARED FOR:*

CAMPANELLI II ACQUISITIONS, LLC  
C/O CAMPANELLI COMPANIES  
10 CAMPANELLI DRIVE  
BRAINTREE, MA 02184

*PREPARED BY:*



**KELLY ENGINEERING GROUP, INC.**  
CIVIL ENGINEERING CONSULTANTS

0 CAMPANELLI DRIVE BRAINTREE MA 02184

PHONE: 781 843 4333

FAX: 781 843 0028

---

## TABLE OF CONTENTS

### ENF DOCUMENT

Letter to Secretary  
ENF  
USGS Plan  
Circulation List

### FIGURES

Figure 1- Existing Conditions Plan  
Figure 2- Proposed Plan  
Figure 3- BMP Location Plan

### ATTACHMENTS

Attachment 1- Summary of Permits  
Attachment 2- Conformance with DEP Stormwater Management Regulations  
Attachment 3- Traffic Impact Access Study

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Letter to Secretary**



December 23, 2015

Secretary Matthew A. Beaton.  
Executive Office of Environmental Affairs  
Leverett Saltonstall Building, Suite 900  
100 Cambridge Street  
Boston, MA 02114

Attn: MEPA Unit

Re: Environmental Notification Form  
Ashland Rail Transit Apartments  
MBTA Access Road  
Ashland, MA

Dear Secretary Beaton;

On behalf of our client, Campanelli Acquisitions II LLC, One Campanelli Drive, Braintree MA 02184, we are pleased to submit the following documents:

- One (1) Original signed copy of the Environmental Notification Form (“ENF”).
- Two (2) copies of the signed ENF (Also contains copies of the USGS plans, site plans and Distribution list.)
- One (1) additional copy of the 1st three pages of the ENF.
- One (1) copy of the USGS map.

The approximately 29 acre site is located in off MBTA roadway in Ashland MA close to the MBTA commuter rail station. The site is part of the Town of Ashland’s approximately 200 acre Rail Transit Zoning District. The site is currently vacant.

The proposed 398 unit project will involve the construction of nine apartment buildings. The community will also feature a clubhouse a traditional village green, tree lined streets with sidewalks, and associated parking some of which is captured in detached garages accessed via a system of rear alleys. 22% of the 711 parking spaces are captured within these garages reducing the amount of exposed impervious cover on the site. The breakdown of apartment styles includes 149 one bedroom apartments and 249 two bedroom apartments (10% of which will be affordable). The project development requires an amendment to a previous site plan approval and special permits from the Town of Ashland, all of which have been applied for and are expected to be issued in due course.

The property contains two Bordering Vegetated Wetlands (BVW) systems, associated with intermittent streams. Since portions of the project are located within the 100’ buffer zone to the BVW an Order of Conditions under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and the Town of Ashland wetlands bylaw is required. A notice of Intent has been filed. It is expected that an Order of Conditions will be issued in due course.

The property was the subject of a previous filing with MEPA (EOEA 12375- “Jefferson at Ashland Station”). An ENF, DEIR and FEIR was submitted culminating in a certificate being issued on 10/15/2001. That project proposed 500 market rate units on approximately the same lot as the current petition. That project never occurred.

The project includes a stormwater management system designed in accordance with DEP's Stormwater Management Handbook. The Stormwater management system will incorporate many Best Management Practices (BMPs), which will include multiple deep sump catch basins, subsurface infiltration/detention basins, proprietary water quality devices and a long term pollution prevention operations and maintenance program for the entire site. The stormwater management system was reviewed by the town's consultant.

The project has been designed to minimize disturbance. As noted there will be no impacts to surrounding resource areas. Pavement is minimized by constructing only the minimum number of parking spaces (68 spaces are in reserve) and the minimum parking dimensions necessary to service the project and by providing approximately 22% of the parking in garages. The resultant reduction in impervious area is approximately 0.5 acres.

The proposed project exceeds a number of MEPA review thresholds -- "Land" 11.03(1)(b)2 (creation of greater than 5 acres of impervious and greater than 25 acres of land alteration) "Transportation", thresholds (301 CMR 11.03(6)(b)1) (construction of 300 or more New parking spaces at a single location) and 301 CMR 11.03(6)(b)15 (generation of 1,000 or more New ADT on roadways providing access to a single location and construction of 150 or more New parking spaces at a single location). The project will require NO state permits however it connects to the MBTA road which is being improved with bike paths and utilities pursuant to a MassWorks grant approved by the Commonwealth to the Town of Ashland.

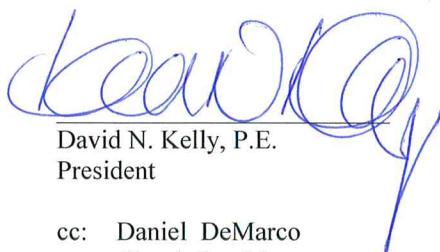
Traffic related impacts and associated mitigation are presented in the attached Traffic Impact and Access Study ("TIAS"), a copy of which is appended to this ENF as Attachment 3. The TIAS analysis indicates that ample roadway capacity is available to support the proposed project with no material degradation of traffic operations relative to No Build conditions. Pedestrian use of the site is enhanced by providing sidewalks throughout and by providing a "Hillevator" pedestrian conveyance system that will allow easy access from the property to the MBTA access road adjoining site and the MBTA commuter parking lot. The project proponent has committed to providing additional funding to improve surrounding infrastructure. This funding includes a package of signal equipment and timing/phasing enhancements that mirror those proposed to support the former (500-unit) development program and development of adjoining RTD Lot 2.

Since the only ENF thresholds reached are "Land" and "Transportation", since there are no State permits necessary, and since the project will provide mitigation as discussed in the ENF, it is respectfully requested that it be determined that no further MEPA review is necessary.

If you should have any questions or require additional information, please feel free to call

Sincerely,

KELLY ENGINEERING GROUP, INC.



David N. Kelly, P.E.  
President

cc: Daniel DeMarco  
Circulation List

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Environmental Notification Form**

**Commonwealth of Massachusetts**  
**Executive Office of Energy and Environmental Affairs**  
**Massachusetts Environmental Policy Act (MEPA) Office**

## Environmental Notification Form

**For Office Use Only**

EEA#: \_\_\_\_\_

MEPA Analyst: \_\_\_\_\_

*The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.*

Project Name: Ashland Rail Transit Apartments		
Street Address: MBTA Access Road		
Municipality: Ashland	Watershed: Concord	
Universal Transverse Mercator Coordinates: 4681563, 704775	Latitude: 42.259415 Longitude: 71.482642	
Estimated commencement date: March 2016	Estimated completion date: December 2017	
Project Type: Multi Family Residential	Status of project design: 80 %complete	
Proponent: Campanelli Acquisitions LLC		
Street Address: c/o One Campanelli Drive, Braintree MA 02184		
Municipality: Ashland	State: MA	Zip Code: 01721
Name of Contact Person: David N. Kelly		
Firm/Agency: Kelly Engineering Group, Inc.	Street Address: 0 Campanelli Drive	
Municipality: Braintree	State: MA	Zip Code: 02184
Phone: 781 843 4333	Fax: 781 843 0028	E-mail: dkelly@kellyengineeringgroup.com
Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:		
a Single EIR? (see 301 CMR 11.06(8))	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
a Special Review Procedure? (see 301 CMR 11.09)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
a Waiver of mandatory EIR? (see 301 CMR 11.11)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
a Phase I Waiver? (see 301 CMR 11.11)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)		
Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?		
The project will exceed the "Land" threshold 11.03(1)(b)2 (creation of greater than 5 acres of impervious and greater than 25 acres of land alteration), "Transportation" thresholds (301 CMR 11.03(6)(b)1) (construction of 300 or more New parking spaces at a single location) and 301 CMR 11.03(6)(b)15) (generation of 1,000 or more New ADT on roadways providing access to a single location and construction of 150 or more New parking spaces at a single location)		
Which State Agency Permits will the project require?		
The project will not require State Agency Permits		
Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres: This project is accessed via the MBTA Access Road. The Town of Ashland is concurrently seeking a MassWorks grant which will include funding to enhance the MBTA Access Road to include utility and bike path upgrades.		

<b>Summary of Project Size &amp; Environmental Impacts</b>	<b>Existing</b>	<b>Change</b>	<b>Total</b>
<b>LAND</b>			
Total site acreage	29.1		
New acres of land altered		29+/-	
Acres of impervious area	0.0	+12.9	12.9
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		0	
Acres of new non-water dependent use of tidelands or waterways		0	
<b>STRUCTURES</b>			
Gross square footage	0	+408,500+/-	408,500+/-
Number of housing units	0	+398	398
Maximum height (feet)	0	+62'+/-	62'+/-
<b>TRANSPORTATION</b>			
Vehicle trips per day <sup>1</sup>	0	+2,536	2,536
Parking spaces	2+/-	+717	717
<b>WASTEWATER</b>			
Water Use (Gallons per day) <sup>2</sup>	0	+78,287	78,287
Water withdrawal (GPD)	0	0	0
Wastewater generation/treatment <sup>3</sup> (GPD)	0	+71,170	71,170
Length of water mains (miles) <sup>4</sup>	0	0	0
Length of sewer mains (miles) <sup>5</sup>	0	0	0
Has this project been filed with MEPA before?			
<input type="checkbox"/> Yes (EEA # <u>                  </u> ) <input type="checkbox"/> No			
Has any project on this site been filed with MEPA before?			
<input checked="" type="checkbox"/> Yes (EEA # <u>12375</u> ) <input type="checkbox"/> No			

<sup>1</sup> Based on ITE LUC 220 (Apartment) trip rate applied to 398 units – See Traffic Impact and Access Study, Attachment 3

<sup>2</sup> Assume that water use is 110% of wastewater generation

<sup>3</sup> From Title 5: the design flow is 71,170 GPD (Calculated as 647 Bedrooms @ 110 GPD/Bedroom)

<sup>4</sup> It should be noted that the Town of Ashland has applied for MassWorks grant to extend the water main in MBTA Access Road 4800'+/-.

<sup>5</sup> It should be noted that the Town of Ashland has applied for MassWorks grant to extend the sewer main in MBTA Access Road 3100'+/-.

## **GENERAL PROJECT INFORMATION – all proponents must fill out this section**

### **PROJECT DESCRIPTION:**

Describe the existing conditions and land uses on the project site:

The 28 acre site is located off MBTA roadway in Ashland MA close to the MBTA commuter rail station. The site is part of the Town of Ashland's approximately 220 acre Rail Transit Zoning District("RTD"). The site is currently vacant.

Describe the proposed project and its programmatic and physical elements:

The proposed 398 unit project will involve the construction of nine apartment buildings. The community will also feature a clubhouse a traditional village green, tree lined streets with sidewalks, and associated parking some of which is captured in detached garages accessed via a system of rear alleys. 22% of the 717 parking spaces are captured within these garages reducing the amount of exposed impervious cover on the site. The breakdown of apartment styles includes 149 one bedroom apartments and 249 two bedroom apartments (10% of which will be affordable). The project development requires an amendment to a previous site plan approval and special permits from the Town of Ashland, all of which have been applied for and are expected to be issued in due course.

The property contains two Bordering Vegetated Wetlands (BVW) systems, associated with intermittent streams. Since portions of the project are located within the 100' buffer zone to the BVW an Order of Conditions under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and the Town of Ashland wetlands bylaw is required. A notice of Intent has been filed. It is expected that an Order of Conditions will be issued in due course.

The property was the subject of a previous filing with MEPA (EOEA 12375- "Jefferson at Ashland Station"). An ENF, DEIR and FEIR was submitted culminating in a certificate being issued on 10/15/2001. That project proposed 500 market rate units on approximately the same lot as the current petition. That project never occurred.

The project includes a stormwater management system designed in accordance with DEP's Stormwater Management Handbook. The Stormwater management system will incorporate many Best Management Practices (BMPs), which will include multiple deep sump catch basins, subsurface infiltration/detention basins, proprietary water quality devices and a long term pollution prevention operations and maintenance program for the entire site. The stormwater management system has been reviewed by the town's consultant.

The project has been designed to minimize disturbance. As noted there will be no impacts to surrounding resource areas. Pavement is minimized by constructing only the minimum number of parking spaces (68 spaces are in reserve) and the minimum parking dimensions necessary to service the project and by providing approximately 22% of the parking in garages. The resultant reduction in impervious area is approximately 0.5 acres.

The proposed project exceeds a number of MEPA review thresholds -- "Land" 11.03(1)(b)2 (creation of greater than 5 acres of impervious and greater than 25 acres of land alteration) "Transportation", thresholds (301 CMR 11.03(6)(b)1) (construction of 300 or more New parking spaces at a single location) and 301 CMR 11.03(6)(b)15 (generation of 1,000 or more New ADT on roadways providing access to a single

location and construction of 150 or more New parking spaces at a single location). The project will require NO state permits however it connects to the MBTA road which is being improved with bike paths and utilities pursuant to a MassWorks grant approved by the Commonwealth to the Town of Ashland.

Traffic related impacts and associated mitigation are presented in the attached Traffic Impact and Access Study (“TIAS”), a copy of which is appended to this ENF as **Attachment 3**. The TIAS analysis indicates that ample roadway capacity is available to support the proposed project with no material degradation of traffic operations relative to No Build conditions. Pedestrian use of the site is enhanced by providing sidewalks throughout and by providing a “Hillevator” pedestrian conveyance system that will allow easy access from the property to the MBTA access road adjoining site and the MBTA commuter parking lot. The project proponent has committed to providing additional funding to improve surrounding infrastructure. This funding includes a package of signal equipment and timing/phasing enhancements that mirror those proposed to support the former (500-unit) development program and development of adjoining RTD Lot 2.

*NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.*

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reason(s) that they were not selected as the preferred alternative:

A prior project was planned for this property. That project Jefferson at Ashland Station was the subject of a filing with MEPA (EOEA 12375). The previous project proposed to construct 500 market rate units on the property. The current project which is the preferred alternative proposes to build 398 units (20% less) of which 10% (40 units) will be affordable. The preferred alternative will consequently generate approximately 20% less wastewater, use approximately 20% less water and generate 20% less traffic. Additionally the previous project planned to drain to a centralized stormwater management area to be located east of the MBTA Access Road. The preferred alternative includes a more localized system that will include numerous roof recharge systems. The previous project proposed more impervious area and substantial retaining walls. The preferred alternative proposes less impervious area and minimizes pavement by placing parking spaces in reserve and utilizing vegetated slopes instead of retaining walls.

*NOTE: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.*

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

Traffic related impacts and associated mitigation are presented in the attached Traffic Impact and Access Study, a copy of which is appended to this ENF as **Attachment 3**. Proposed transportation mitigation includes measures to optimize operations at signalized study intersections and that promote the site as a pedestrian friendly transit-oriented development. Pedestrian use of the site is enhanced by providing sidewalks throughout and by a “Hillevator” pedestrian conveyance system that will allow easy access from the property to the MBTA access road adjoining the site and the MBTA commuter parking lot. The project proponent has committed to providing a package of signal equipment and timing/phasing enhancements that mirror those proposed to support the former (500-unit) development program and development of adjoining RTD Lot 2 as well as funding of additional study of off-site infrastructure improvements summarized below:

- Contribute \$50,000 toward a traffic study and/or remediation of the Olive Street, West Union and Frankland Road intersection.
- Add a southbound right-turn overlap phase with the eastbound left turn lead phase as well as green time reallocation at the West Union Street/Voyager's Lane/MBTA Access Road intersection.
- Enhance pavement markings on the southbound MBTA Access Roadway and the intersection of West Union Street/Voyager's Lane/MBTA Access Road to better delineate departure lanes, etc.
- Add a southbound right-turn overlap phase to the eastbound left-turn lead phase as well as green time reallocation to optimize future traffic operations at the intersection of West Union Street/Union Street at Summer Street.
- Implement green time reallocation at the intersection of Union Street at Main Street.
- Implement green time reallocation at the intersection of Main Street at Summer Street and Homer Avenue.

If the project is proposed to be constructed in phases, please describe each phase:  
The project will be constructed in one phase.

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN:**

Is the project within or adjacent to an Area of Critical Environmental Concern?

Yes (Specify The project is located in the Canoe River ACEC)  
 No

If yes, does the ACEC have an approved Resource Management Plan? Yes No; If yes, describe how the project complies with this plan.

Will there be stormwater runoff or discharge to the designated ACEC? Yes  No;

If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC. The project has been designed with an extensive stormwater management system. The system incorporated Best Management practices designed to comply with MADEP Stormwater Management Handbook. Please see **Attachment 2** for further details.

**RARE SPECIES:**

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see [http://www.mass.gov/dfwele/dfw/nhesp/regulatory\\_review/priority\\_habitat/priority\\_habitat\\_home.htm](http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm))

Yes (Specify \_\_\_\_\_)  No

**HISTORICAL /ARCHAEOLOGICAL RESOURCES:**

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

Yes  
 No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?  Yes(Specify \_\_\_\_\_)  No

**WATER RESOURCES:**

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? Yes  No; if yes, identify the ORW and its location.

*(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)*

Are there any impaired water bodies on or within a half-mile radius of the project site? Yes  No; if yes, identify the water body and pollutant(s) causing the impairment: \_\_\_\_\_.

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? Yes No ( A portion of the Concord River is classified as Medium Stressed)

### **STORMWATER MANAGEMENT:**

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

The proposed project will fully comply with the MADEP stormwater regulations. It will include Best Management Practices that will ensure protection of surrounding resource areas and properties. Please see **Attachment 2**

### **MASSACHUSETTS CONTINGENCY PLAN:**

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):\_\_\_\_\_

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes    No   X  ; if yes, describe which portion of the site and how the project will be consistent with the AUL: \_\_\_\_\_.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes    No   X  ; if yes, please describe:\_\_\_\_\_

### **SOLID AND HAZARDOUS WASTE:**

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:\_\_\_\_\_

*(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)*

Will your project disturb asbestos containing materials? Yes    No   X    
if yes, please consult state asbestos requirements at <http://mass.gov/MassDEP/air/asbhom01.htm>

Describe anti-idling and other measures to limit emissions from construction equipment: Will conform to State requirements

### **DESIGNATED WILD AND SCENIC RIVER:**

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes    No   X  ; if yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River? Yes    No   ; if yes, specify name of river and designation: \_\_\_\_\_; if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.

Yes    No   ; if yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

### **ATTACHMENTS:**

1. List of all attachments to this document.
2. U.S.G.S. map (good quality color copy, 8-1/2 x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.

- 3.. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
- 4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.
5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
7. List of municipal and federal permits and reviews required by the project, as applicable.

## **LAND SECTION – all proponents must fill out this section**

### **I. Thresholds / Permits**

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1))  
 Yes  No; if yes, specify each threshold: The project will exceed the “Land” threshold 11.03(1)(b)2 (creation of greater than 5 acres of impervious)

### **II. Impacts and Permits**

A. Describe, in acres, the current and proposed character of the project site, as follows:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Footprint of buildings	<u>0.00</u>	<u>+4.45</u>	<u>4.45</u>
Internal roadways	<u>0.00</u>	<u>+ 1.0</u>	<u>1.0</u>
Parking and other paved areas	<u>0.00</u>	<u>+ 11.9</u>	<u>11.9</u>
Other altered areas	<u>0.00</u>	<u>+11.75</u>	<u>11.75</u>
Undeveloped areas	<u>29.1</u>	<u>-29.1</u>	<u>0.0</u>
<b>Total: Project Site Acreage</b>	<b><u>29.1</u></b>	<b><u>0</u></b>	<b><u>29.1</u></b>

B. Has any part of the project site been in active agricultural use in the last five years?

Yes  No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?

Yes  No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97?  Yes  No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction?

Yes  No; if yes, does the project involve the release or modification of such restriction?  
 Yes  No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A?  Yes  No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B?  Yes  No; if yes, describe:

### **III. Consistency**

A. Identify the current municipal comprehensive land use plan

Title:2003 Comprehensive Plan Date 2003

B. Describe the project's consistency with that plan with regard to:

1) economic development: It is an objective of the 2003 plan to see the build out of the RTD and a strong connection between this district and the adjacent downtown. As the first piece of the RTD, the Ashland Rail Transit Apartments will help prove the economic viability of the district and provide 398 households who will shop and promote the RTD and downtown districts.

2) adequacy of infrastructure. A six million dollar Mass Works grant, issued in part as a result of the Smart Growth Planning principles incorporated into the 2003 Comprehensive Permit will improve the water, sewer and roadway network adjacent to this project.

3) open space impacts. In connection with this project important multi-modal pathways will be advanced connecting the project to downtown and constructing an important piece of the link to the Ashland State Park. These are stated objectives of the Comprehensive Plan.

4) compatibility with adjacent land uses. The Comprehensive Plan incorporated the entire Rail Transit District as a Smart Growth District within the town. This project will be the first development to be built.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)

RPA: MAPC

D. Title: "Metrofuture" Date May 2008 Describe the project's

E. consistency with that plan with regard to:

1) economic development

An objective of Metrofuture is that "more than two-thirds of new housing and jobs will be near existing train stops and bus routes". The proposed project is adjacent to the Ashland rail station and in the town's Rail Transit Zoning District. The proposed project will enhance the quality of life by providing high quality mixed income housing near a train stop, will enhance economic opportunity by providing homes conveniently located to regional infrastructure and by providing tax benefits and construction employment.

Another objective of Metrofuture is to provide that "growth near transit would also be as compact as possible, in order to create maximum ridership potential and make the most of transit investments". The proposed project meets this objective by providing greater density thereby limiting disturbance and by providing convenient pedestrian access to the MBTA rail station.

2) adequacy of infrastructure

"MetroFuture focuses growth in urban communities and developed suburban areas with the infrastructure to support it". The proposed development is located adjacent to the MBTA rail station and has access to municipal services that can support the use.

3) open space impacts

Metrofuture encourages land uses with "Compact growth and more coordinated land acquisition" that would ensure that the region's important open spaces are not lost  
The proposed project is compact and will minimize impacts and protect surrounding resources .

## **RARE SPECIES SECTION**

### **I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? Yes  No; if yes, specify, in quantitative terms:

*(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)*

B. Does the project require any state permits related to **rare species or habitat**? Yes  No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? Yes  No

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and**

**Tidelands Section.** If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

**II. Impacts and Permits**

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? Yes  No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? Yes  No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? Yes  No; if yes, attach the letter of determination to this submission.
2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? Yes  No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts
3. Which rare species are known to occur within the Priority or Estimated Habitat?
4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? Yes  No
4. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? Yes  No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? Yes  No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? Yes  No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

## **WETLANDS, WATERWAYS, AND TIDELANDS SECTION**

### **I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))?  Yes  No; if yes, specify, in quantitative terms:

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**?  Yes  No; if yes, specify which permit: Order of Conditions

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

### **II. Wetlands Impacts and Permits**

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)?  Yes  No; if yes, has a Notice of Intent been filed?  Yes  No; if yes, list the date and MassDEP file number: SE95-878 if yes, has a local Order of Conditions been issued?  Yes  No; Was the Order of Conditions appealed?  Yes  No. Will the project require a Variance from the Wetlands regulations?  Yes  No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:  
The project does not involve work within or impacts to any Wetland Resource Areas. A portion of the project will occur within the 100-foot Buffer Zone to a Bordering Vegetated Wetland (BVW). No permanent or temporary impacts to Wetland Resource Areas are proposed or anticipated.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent: No permanent or temporary impacts to Wetland Resource Areas are proposed or anticipated.

<u>Coastal Wetlands</u>	<u>Area (square feet) or Length (linear feet)</u>	<u>Temporary or Permanent Impact?</u>
Land Under the Ocean		
Designated Port Areas		
Coastal Beaches		
Coastal Dunes		
Barrier Beaches		
Coastal Banks		
Rocky Intertidal Shores		
Salt Marshes		
Land Under Salt Ponds		
Land Containing Shellfish		
Fish Runs		
Land Subject to Coastal Storm Flowage		
<u>Inland Wetlands</u>		
Bank (If)		
Bordering Vegetated Wetlands		
Isolated Vegetated Wetlands		
Land under Water		
Isolated Land Subject to Flooding		
Bordering Land Subject to Flooding		
Riverfront Area		

D. Is any part of the project:

1. proposed as a **limited project**?  Yes  No; if yes, what is the area (in sf)? \_\_\_\_\_
2. the construction or alteration of a **dam**?  Yes  No; if yes, describe:
3. fill or structure in a **velocity zone or regulatory floodway**?  Yes  No
4. dredging or disposal of dredged material?  Yes  No; if yes, describe the volume of dredged material and the proposed disposal site:
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**?  Yes  No
6. subject to a wetlands restriction order?  Yes  No; if yes, identify the area (in sf): \_\_\_\_\_
7. located in buffer zones?  Yes  No; if yes, how much (in sf) 36,000 SF+/-

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw?  Yes  No
2. alter any federally-protected wetlands not regulated under state law?  Yes  No; if yes, what is the area (sf)? \_\_\_\_\_

### **III. Waterways and Tidelands Impacts and Permits**

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91?  Yes  No; if yes, is there a current Chapter 91 License or Permit affecting the project site?  Yes  No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

B. Does the project require a new or modified license or permit under M.G.L.c.91?  Yes  No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current \_\_\_\_\_ Change \_\_\_\_\_ Total \_\_\_\_\_  
If yes, how many square feet of solid fill or pile-supported structures (in sf)? \_\_\_\_\_

C. For non-water-dependent use projects, indicate the following: N/A

Area of filled tidelands on the site: \_\_\_\_\_

Area of filled tidelands covered by buildings: \_\_\_\_\_

For portions of site on filled tidelands, list ground floor uses and area of each use:

Does the project include new non-water-dependent uses located over flowed tidelands?

Yes  No

Height of building on filled tidelands \_\_\_\_\_

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands?  Yes  No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations?  Yes  No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR?  Yes  No;

*(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)*

G. Does the project include dredging?  Yes  No; if yes, answer the following questions:

What type of dredging? Improvement  Maintenance  Both

What is the proposed dredge volume, in cubic yards (cys) \_\_\_\_\_

What is the proposed dredge footprint  length (ft)  width (ft)  depth (ft);

Will dredging impact the following resource areas?

Intertidal  Yes  No; if yes,  sq ft

Outstanding Resource Waters  Yes  No; if yes,  sq ft

Other resource area (i.e. shellfish beds, eel grass beds)  Yes  No; if yes  sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

**Sediment Characterization**

Existing gradation analysis results?  Yes  No; if yes, provide results.

Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6?  Yes  No; if yes, provide results.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment \_\_\_\_\_

Unconfined Ocean Disposal \_\_\_\_\_

**Confined Disposal:**

Confined Aquatic Disposal (CAD) \_\_\_\_\_

Confined Disposal Facility (CDF) \_\_\_\_\_

Landfill Reuse in accordance with COMM-97-001 \_\_\_\_\_

Shoreline Placement \_\_\_\_\_

Upland Material Reuse \_\_\_\_\_

In-State landfill disposal \_\_\_\_\_

Out-of-state landfill disposal \_\_\_\_\_

*(NOTE: This information is required for a 401 Water Quality Certification.)*

**IV. Consistency:**

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone?  Yes  No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan?  Yes  No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

## **WATER SUPPLY SECTION**

### **I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))?  Yes  No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**?  Yes  No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

### **II. Impacts and Permits**

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(*NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.*)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project?  Yes  No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted?  Yes  No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. \_\_\_\_\_

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? \_\_\_\_\_ Will the project require an increase in that withdrawal?  Yes  No; if yes, then how much of an increase (gpd)? \_\_\_\_\_

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility?  Yes  No. If yes, describe existing and proposed water supply facilities at the project site:

	<u>Permitted Flow</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district?  Yes  No
2. a Watershed Protection Act variance?  Yes  No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking

water supply for purpose of forest harvesting activities?  Yes  No

**III. Consistency**

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

## **WASTEWATER SECTION**

### **I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? Yes  No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? Yes  No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

### **II. Impacts and Permits**

#### **II. Impacts and Permits**

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
<b>TOTAL</b>	_____	_____	_____
	Existing	Change	Total
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
<b>TOTAL</b>	_____	_____	_____

B. Is the existing collection system at or near its capacity? Yes    No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? Yes    No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? Yes    No; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)	_____	_____	_____	_____

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district?  Yes  No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials?  Yes  No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

### **III. Consistency**

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

The proposed project will ultimately connect to the Town of Mansfield wastewater treatment facility. The project proponent had previously secured the necessary capacity through the Town of Norton Water and Sewer Commission.

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan?  Yes  No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

## **TRANSPORTATION SECTION (TRAFFIC GENERATION)**

### **I. Thresholds / Permit**

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))?   X   Yes    No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**?    Yes   X   No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

### **II. Traffic Impacts and Permits**

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Number of parking spaces	<u>0+-</u>	<u>+717</u>	<u>717</u>
Number of vehicle trips per day	<u>0</u>	<u>+2,536</u>	<u>2,536</u>
ITE Land Use Code(s):	<u>---</u>	<u>LUC220</u>	<u>---</u>

B. What is the estimated average daily traffic on roadways serving the site?

<u>Roadway</u>	<u>Existing</u>	<u>Change</u>	<u>Total</u>
1. <u>MBTA Access Road</u>	<u>860</u>	<u>+2,536</u>	<u>3,096</u>
2. <u>Rt 135 East of MBTA Access Rd</u>	<u>17,390</u>	<u>+2,029</u>	<u>19,419</u>
3. <u>Rt 135 West of MBTA Access Rd</u>	<u>17,390</u>	<u>+507</u>	<u>17,897</u>

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement: All study locations excepting the MBTA Access Road are under local jurisdiction. The MBTA Access Road is the subject of a \$6 Million Massworks grant to upgrade the road to Town standards and to upgrade bicycle and walking paths within Ashland's Rail Transit District.

C. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

The Proponent will improve pedestrian infrastructure by providing a sidewalk connection and "Hillevator" pedestrian conveyance system connection between the proposed on-Site sidewalk system and the MBTA access road which will facilitate access to the MBTA commuter rail station. ADA compliant ramps across the proposed driveway intersection with MBTA Access Road will also be included. On-site bike racks will be provided to promote bicycle use.

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site?    Yes   X   No; if yes, describe if and                    how will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities?    Yes   X   No; if yes, generally describe:

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed                    Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

### **III. Consistency**

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

Proposed roadway and sidewalk connections to the MBTA Access Road and commuter rail station will enhance pedestrian and motorist safety. Proposed pedestrian infrastructure includes a sidewalk and “Hillevtaor” pedestrian conveyance system connection between the proposed on-site sidewalk system and the MBTA Access Road. On-site bicycle racks will be provided to facilitate and promote bicycle use. These elements will promote pedestrian accessibility and use of public transportation as part of a transit-oriented development district.

## **TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)**

### **I. Thresholds**

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))?    Yes    No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**?    Yes    No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

### **II. Transportation Facility Impacts**

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? \_\_\_\_\_
2. Cutting of living public shade trees (number)? \_\_\_\_\_
3. Elimination of stone wall (in linear feet)? \_\_\_\_\_

### **III. Consistency** -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

## **ENERGY SECTION**

### **I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))?  
   Yes  No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**?    Yes  No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

### **II. Impacts and Permits**

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way?    Yes    No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

### **III. Consistency**

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

## **AIR QUALITY SECTION**

### **I. Thresholds**

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? Yes  No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? Yes  No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

### **II. Impacts and Permits**

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? Yes No; if yes, describe existing and proposed emissions (in tons per day) of:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

### **III. Consistency**

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

## **SOLID AND HAZARDOUS WASTE SECTION**

### **I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))?  Yes  No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**?  Yes  No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

### **II. Impacts and Permits**

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste?  Yes  No; if yes, what is the volume (in tons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste?  Yes  No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?  
 Yes  No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

### **III. Consistency**

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

## HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

### I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission?  Yes  No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources?  Yes  No; if yes, attach correspondence

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth?  Yes  No; if yes, does the project involve the demolition of all or any exterior part of such historic structure?  Yes  No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth?  Yes  No; if yes, does the project involve the destruction of all or any part of such archaeological site?  Yes  No; if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the Attachments and Certifications Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

### II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

### III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

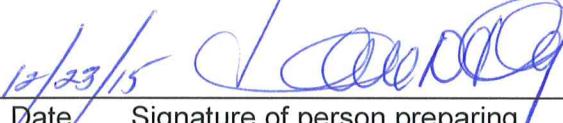
## CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

(Name) Metrowest Daily News (Date) 01/5/16

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

		12/23/15	12/23/15
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing NPC (if different from above)

<u>Daniel DeMarco</u>	<u>David N. Kelly</u>
Name (print or type)	Name (print or type)

<u>Campanelli Acquisitions II LLC</u>	<u>Kelly Engineering Group, Inc</u>
Firm/Agency	Firm/Agency

<u>c/o One Campanelli Drive</u>	<u>Zero Campanelli Drive</u>
Street	Street

<u>Braintree, MA 02184</u>	<u>Braintree, MA 02184</u>
Municipality/State/Zip	Municipality/State/Zip

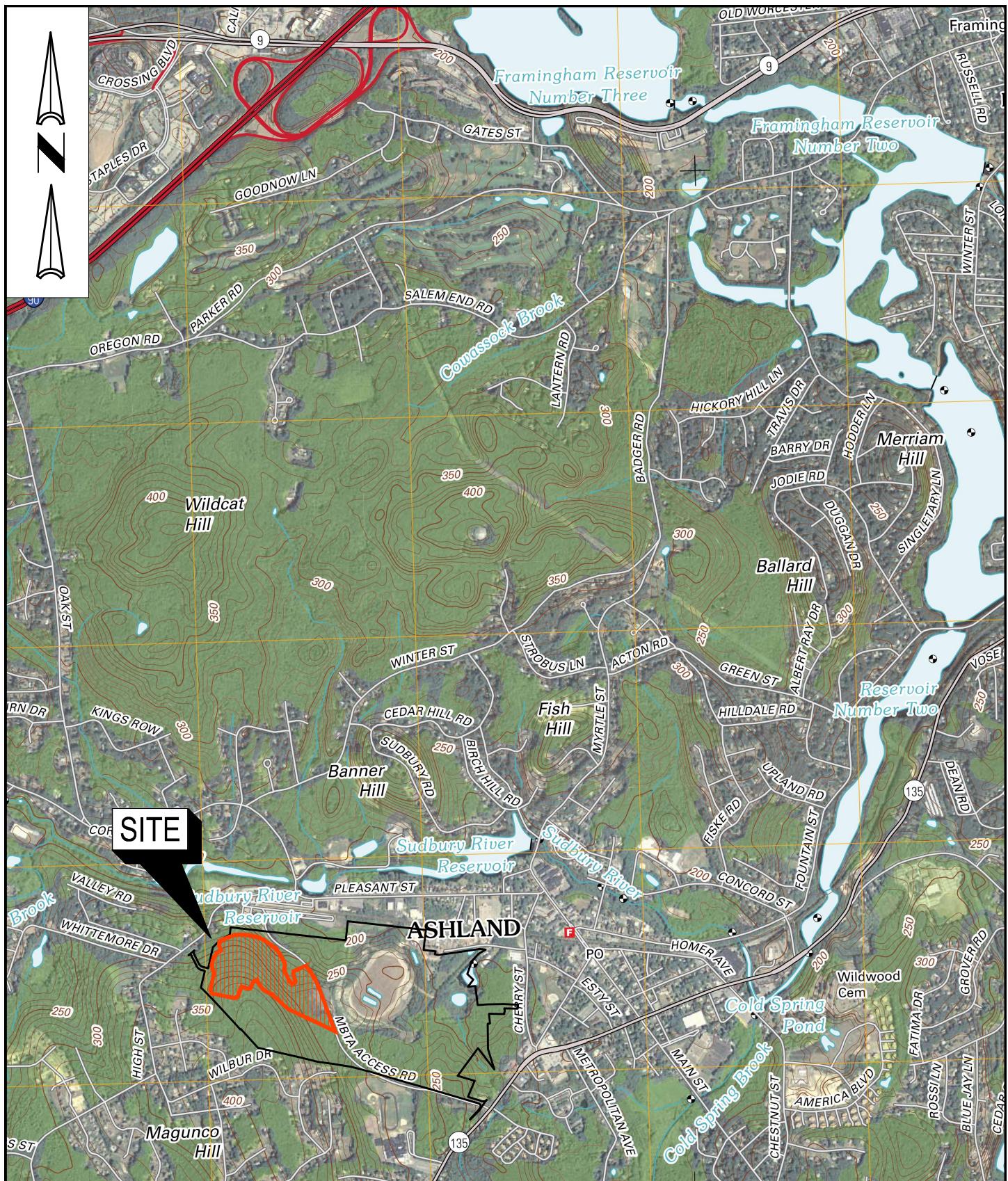
<u>978 310 7070</u>	<u>781 843 4333</u>
Phone	Phone

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**USGS Plan**



**M.B.T.A. ACCESS DRIVE**  
**ASHLAND, MA**

**LOCATION PLAN**

**SOURCE: USGS**

**KELLY ENGINEERING GROUP, INC.**  
**CIVIL ENGINEERING CONSULTANTS**

0 CAMPANELLI DRIVE, BRAINTREE, MA 02144  
PHONE: 781 843 4333 FAX: 781 843 0028



**DATE 12/23/15**

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Circulation List**

## **ENF DISTRIBUTION LIST:**

Massachusetts Water Resource Authority  
Attn: MEPA Coordinator  
100 First Avenue  
Charlestown Navy Yard  
Boston, MA 02129

DEP/Northeast Regional Office  
Attn: MEPA Coordinator  
205B Lowell Street  
Wilmington, MA 01887

MHD – District 3  
Attn: MEPA Coordinator  
403 Belmont St.  
Worcester, MA 01604

Massachusetts Historical Commission  
The MA Archives Building  
220 Morrissey Boulevard  
Boston, MA 02125

Commissioner's Office  
DEP Boston Office  
One Winter Street  
Boston, MA 02108

MAPC  
60 Temple Place/6th floor  
Boston, MA 02111

Massachusetts Bay Transit Authority  
Attn: MEPA Coordinator  
10 Park Plaza, Sixth Floor  
Boston, MA 02116-3966

Massachusetts Highway Department  
Attn: Public/Private Development Unit  
10 Park Plaza  
Boston, MA 02116

Board of Health  
Town of Westwood  
101 Main Street, 2nd Floor  
Ashland, MA 01721

Conservation Commission  
Town of Westwood  
101 Main Street, 2nd Floor  
Ashland, MA 01721

Planning Board  
Town of Westwood  
101 Main Street, 2nd Floor  
Ashland, MA 01721

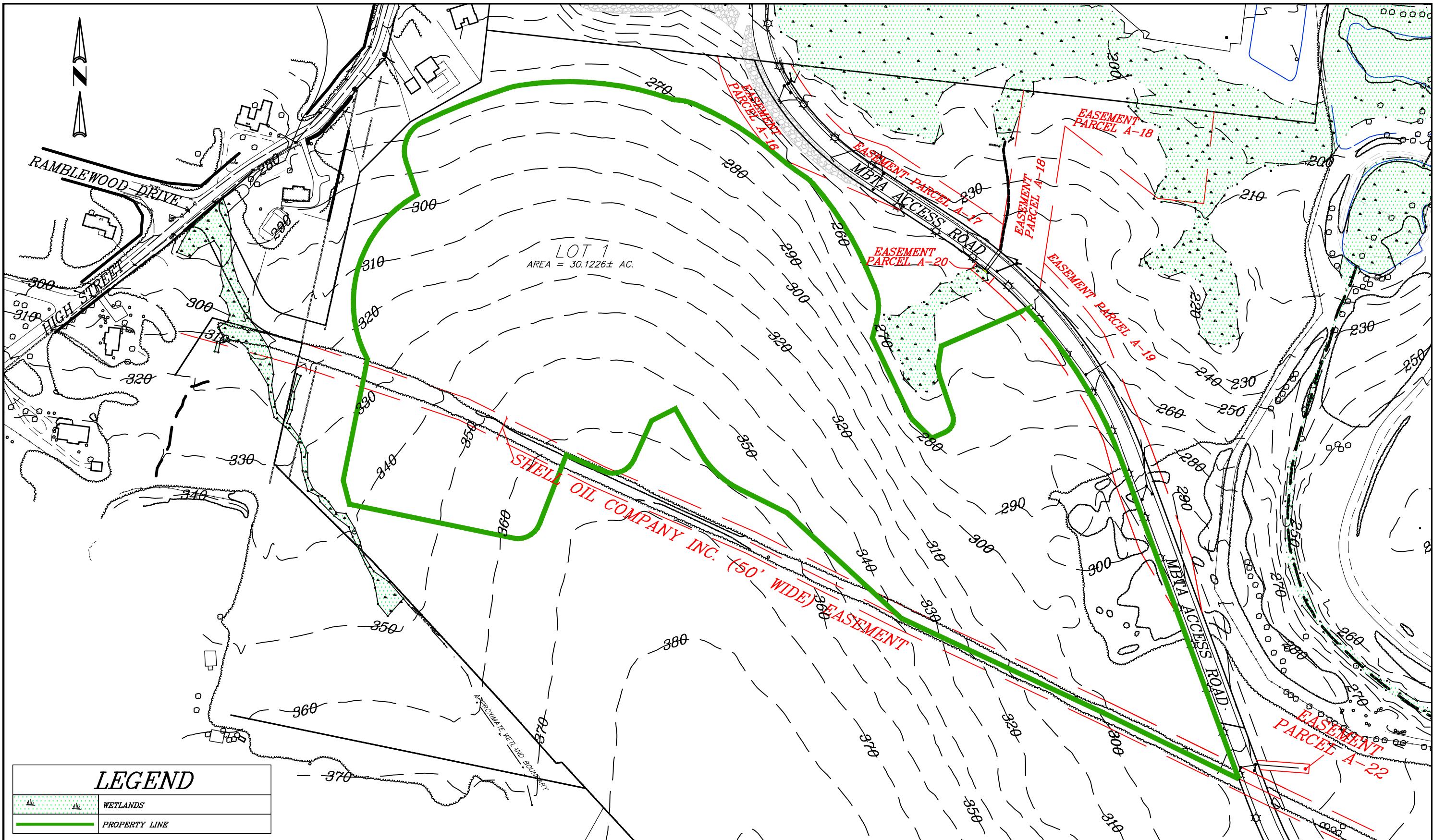
Board of Selectman  
Town of Westwood  
101 Main Street, 2nd Floor  
Ashland, MA 01721

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Figure 1-Existing Conditions Plan**



ASHLAND RAIL  
TRANSIT APARTMENTS  
ASHLAND, MA

SCALE: 1" = 200'  
DATE: 12/22/15  
2015-042-MEPA-EX

EXISTING  
CONDITIONS  
EXHIBIT

KELLY ENGINEERING GROUP, INC.  
CIVIL ENGINEERING CONSULTANTS  
0 CAMPANELLI DRIVE · BRAINTREE MA · 02184  
PHONE: 781 843 4333 FAX: 781 843 0028

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Figure 2-Proposed Plan**

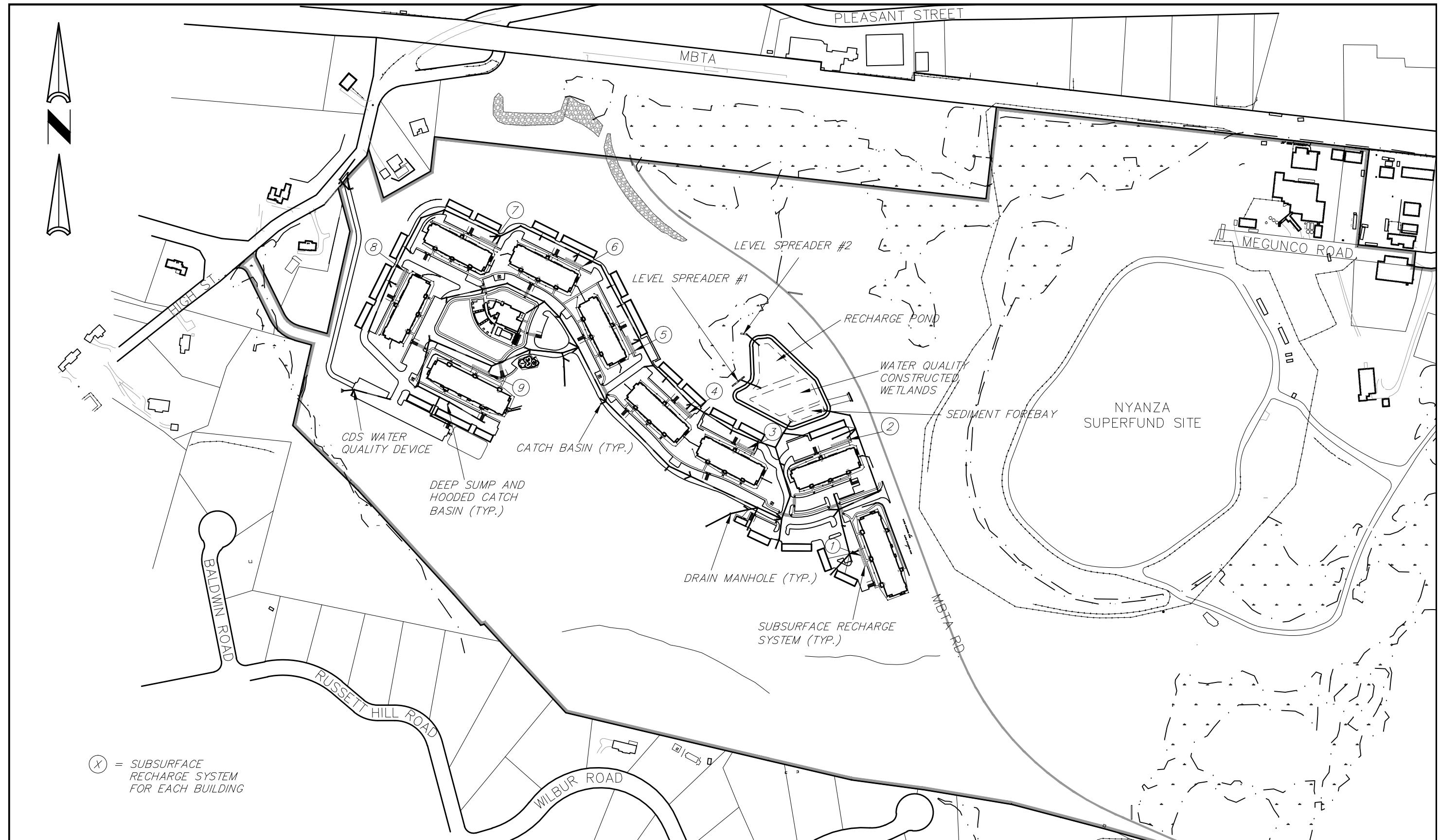


**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Figure 3-BMP Location Plan**



**ASHLAND RAIL  
TRANSIT APARTMENTS  
ASHLAND, MA**

SCALE: 1" = 300'  
DATE: 09/28/15  
2015-042-BMPOO

**BMP  
LOCATION  
MAP**

**KELLY ENGINEERING GROUP, INC.**  
CIVIL ENGINEERING CONSULTANTS  
0 CAMPANELLI DRIVE · BRAINTREE MA · 02184  
PHONE: 781 843 4333 FAX: 781 843 0028



**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Attachments 1-3**

**ENF ATTACHMENT 1:**

**Summary of Anticipated Permits and Approvals – Ashland Rail Transit Apartments**

The following is a list of potential permits/actions for construction of the proposed project

**AGENCY NAME**

**PERMIT/ACTION(Status)**

**Federal**

1. Environmental Protection Agency.	NPDES General Permit for Stormwater Discharges from Construction Activities (To be filed prior to construction)
-------------------------------------	--

**Commonwealth Of Massachusetts**

1. Executive Office of Environmental Affairs :	Massachusetts Environmental Policy Act (MEPA) (Under Review)
--	--

**Town of Ashland**

1. Planning Board	Special Permits, Site Plan Review (Under Review)
2. Conservation Commission	Order of Conditions (Under Review)
2. Building Department	Building Permits (To be filed prior to construction)

## **ENF ATTACHMENT 2:**

### **Conformance with DEP's Stormwater Management Policy**

#### **SUMMARY:**

An extensive stormwater management system will be designed and constructed which fully complies with DEP Guidelines for Stormwater Management and the Town Norton stormwater requirements. The system will consist of the following Best Management Practices (BMP's):

- An on-site recharge system will insure that pre-existing levels of recharge to the ground are maintained or exceeded. This recharge system will take clean roof runoff from the proposed buildings (or pretreated paved area runoff) and recharge it to the maximum extent allowed by the existing soils. The recharge system will consist of subsurface recharge chambers and a surface recharge system.
- Proprietary Storm Treatment devices are proposed that have been sized to treat in excess of the 0.5" "First Flush" volume.
- Catch basins with deep sumps and oil separating elbows will be installed at each drainage inlet.
- A pavement maintenance and operation program will be incorporated that will insure that a minimum of solids enters the stormwater management system.

These measures will insure that the DEP goal of 80% total suspended solids reduction is met. Suitable outlet energy dissipation structures were constructed at outlets to ensure that there is no erosion of downstream soils or vegetation.

During construction, the stormwater pollution prevention/erosion control plan will be instituted which will insure that no silt leaves the site. This erosion control plan will include tracking pads at the access points to the site, hay bale and silt fence lines that will prevent erosion of the surrounding vegetation, and temporary sediment stilling basins during construction.

#### **CONFORMANCE STORMWATER MANAGEMENT STANDARDS**

The following is a discussion of the Massachusetts Stormwater Management Standards

#### ***STANDARD 1: NO NEW UNTREATED DISCHARGES***

The proposed project has been designed for no new untreated discharges from the site. The proposed pavement areas will be treated by proprietary water quality devices or biofilter swales.

#### ***STANDARD 2: PEAK RATE ATTENUATION***

Existing and developed sites were modeled using Hydraflow Hydrographs 10 computer program by AutoCAD Civil 3D 2013. This computer software uses the TR55/TR20 tabular method of computing peak flows, hydrograph addition, and pond routing. The curve numbers for the existing conditions analysis were determined using soil survey maps which show hydrologic group A and D soils.

Peak flows from the design storm on the site will be reduced as a result of this project. Peak flow mitigation is provided within the stormwater management pond.

#### *STANDARD 3: RECHARGE*

The project site contains hydrologic group A and D soils according to the NRCS soil maps and confirmed by on site soil testing by others. Based on DEP guidelines for recharge, the required recharge volume for hydrologic group A soils is 0.6" and the required recharge volume for Group D soil is 0.1". The project complies with the DEP guidelines for the Static Method that requires the total required recharge volume be provided below the lowest overflow and drain down within 72 hours after a rain event.

The dedicated recharge volume has been provided in the 9 subsurface recharge basins and one recharge pond.

#### *STANDARD 4: STORMWATER QUALITY*

Stormwater runoff from the site will be enhanced by means of a number of Best Management Practices (BMP's), which have been designed to comply with the DEP Stormwater Management Guidelines. In order to achieve a Total Suspended Solids (TSS) removal rate of 80%, the following BMP's will be incorporated:

- o Pavement sweeping and maintenance program
- o Proprietary Water Quality Devices
- o Deep Sump Catch Basins
- o Constructed Wetland Water Quality Pond with Sediment Forebay.
- o Infiltration basins including 9 subsurface and one surface basin.

The total TSS removal is expected to be greater than 80%.

#### *STANDARD 5: Land Uses with Higher Potential Pollutant Loads (LUHPPL's)*

The proposed project is considered a land use with higher potential pollutant loads due to 1,000 average daily traffic trips. The proposed use is not an industrial use and is not subject to a NPDES Multi-Sector General Permit.

#### *STANDARD 6: CRITICAL AREAS*

The site is not in an active public water supply, surface water protection area, nor groundwater protection area, and is not in an area of critical environmental concern.

#### *STANDARD 7: REDEVELOPMENT*

The proposed project is not a redevelopment.

***STANDARD 8: CONSTRUCTION PERIOD POLLUTION PREVENTION AND EROSION CONTROL***

A construction phasing plan will be established when a site contractor is consulted. At that time a construction phasing plan and the associated Stormwater Pollution Prevention Plan will be prepared and submitted to the Town of Framingham and the EPA.

***STANDARD 9: OPERATIONS AND MAINTENANCE PLAN***

A Stormwater Management System Operation and Maintenance Plan and Long Term Pollution Prevention Plan, Operations has been prepared.

***STANDARD 10: ILLICIT DISCHARGES***

No Illicit Discharge will result from this project.

**ENF ATTACHMENT 3:**

**Transportation**

**KELLY ENGINEERING GROUP, INC.**

0 Campanelli Drive-Braintree-MA 02184 Phone 781 843 4333

---

**Attachments 3- Traffic Impact  
Access Study**

## **TRAFFIC IMPACT AND ACCESS STUDY**

*ENF Transportation Component*

## ***PROPOSED ASHLAND RAIL TRANSIT APARTMENTS***

***MBTA Access Road***  
***Ashland, Massachusetts***

***Prepared for:***  
***Campanelli and Thorndike Development***

**December 2015**

**MDM** TRANSPORTATION CONSULTANTS, INC.  
Planners & Engineers

## TRAFFIC IMPACT AND ACCESS STUDY

### **PROPOSED ASHLAND RAIL TRANSIT APARTMENTS**

*MBTA Access Road  
Ashland, Massachusetts*

*Prepared for:  
Campanelli and Thorndike Development  
Hudson, MA*

*Prepared by:  
MDM Transportation Consultants, Inc.  
28 Lord Road, Suite 280  
Marlborough, Massachusetts 01752  
Phone: (508) 303-0370  
Fax: (508) 303-0371*

*December 2015*

**MDM**

## **CONTENTS**

---

<i>EXECUTIVE SUMMARY</i> .....	1
<i>1.0 INTRODUCTION</i> .....	7
1.1 PROPOSED DEVELOPMENT .....	7
1.2 STUDY METHODOLOGY .....	8
1.3 STUDY AREA .....	9
<i>2.0 EXISTING CONDITIONS</i> .....	10
2.1 STUDY AREA ROADWAY NETWORK .....	10
2.2 BASELINE TRAFFIC VOLUMES .....	12
2.3 MEASURED TRAVEL SPEEDS .....	14
2.4 SAFETY .....	15
2.5 PUBLIC TRANSPORTATION FACILITIES .....	17
2.6 SIGHT LINE ANALYSIS .....	18
<i>3.0 FUTURE CONDITIONS</i> .....	21
3.1 PLANNED AREA ROADWAY IMPROVEMENTS .....	21
3.2 BACKGROUND TRAFFIC GROWTH .....	22
3.3 NO-BUILD TRAFFIC VOLUMES .....	24
3.4 SITE-GENERATED TRAFFIC – ITE BASIS .....	24
3.5 TRIP DISTRIBUTION AND ASSIGNMENT .....	26
3.6 BUILD TRAFFIC VOLUMES .....	26
<i>4.0 TRAFFIC OPERATIONS ANALYSIS</i> .....	27
4.1 CAPACITY ANALYSIS PROCEDURES .....	27
4.2 INTERSECTION CAPACITY ANALYSIS RESULTS .....	27
<i>5.0 RECOMMENDATIONS AND CONCLUSIONS</i> .....	34
5.1 ACCESS IMPROVEMENTS .....	34
5.2 OFF-SITE / PEDESTRIAN IMPROVEMENTS .....	35
5.3 CONCLUSIONS .....	40

## **FIGURES**

---

<b>Number</b>	<b>Title</b>
1	<i>Site Location</i>
2	<i>Preliminary Site Layout</i>
3	<i>2015 Baseline Weekday Peak Hour Traffic Volumes</i>
4	<i>2022 No-Build Weekday Morning Peak Hour Traffic Volumes</i>
5	<i>2022 No-Build Weekday Evening Peak Hour Traffic Volumes</i>
6	<i>Trip Distribution</i>
7	<i>Site-Generated Trips – Weekday Morning Peak Hour Traffic Volumes</i>
8	<i>Site-Generated Trips – Weekday Evening Peak Hour Traffic Volumes</i>
9	<i>2022 Build Weekday Morning Peak Hour Traffic Volumes</i>
10	<i>2022 Build Weekday Evening Peak Hour Traffic Volumes</i>

## TABLES

---

Number	Title
1	<i>Baseline Traffic-Volume Summary</i>
2	<i>Speed Study Results</i>
3	<i>Intersection Crash Summary</i>
4	<i>Stopping Sight Distance Summary</i>
5	<i>Intersection Sight Distance Summary</i>
6	<i>Trip-Generation</i>
7	<i>Trip-Generation Comparison</i>
8	<i>Intersection Capacity Analysis Results – Weekday Morning Peak Hour</i>
9	<i>Intersection Capacity Analysis Results – Weekday Evening Peak Hour</i>
10	<i>Vehicle Queue Analysis Summary – West Union Street at MBTA Access Road</i>
11	<i>Vehicle Queue Analysis Summary – West Union Street at Summer Street</i>
12	<i>Vehicle Queue Analysis Summary – Union Street at Main Street</i>
13	<i>Vehicle Queue Analysis Summary – Main Street at Summer Street</i>
14	<i>Mitigated Intersection Capacity Analysis Results – Weekday Morning Peak Hour</i>
15	<i>Mitigated Intersection Capacity Analysis Results – Weekday Evening Peak Hour</i>
16	<i>Vehicle Queue Analysis Summary – West Union Street at MBTA Access Road</i>
17	<i>Mitigated Vehicle Queue Analysis Summary – West Union Street at Summer Street</i>
18	<i>Mitigated Vehicle Queue Analysis Summary – Union Street at Main Street</i>

## **EXECUTIVE SUMMARY**

---

MDM Transportation Consultants, Inc. (MDM) has prepared this Traffic Impact and Access Study (TIAS) for a proposed residential apartment development to be located along the MBTA Access Road in Ashland, Massachusetts. This report documents existing operational and safety-related characteristics of roadways serving the development Site, estimates future year operating characteristics of these roadways independent of the development, estimates development-related trip generation, and identifies incremental impacts of Site-related traffic. Access improvements are identified for the development to meet operational needs of the Site and the adjacent roadways.

This TIAS has been prepared in accordance with requirements and standards for the preparation of traffic studies as jointly issued by the Commonwealth of Massachusetts Executive Office of Energy & Environmental Affairs/ Massachusetts Department of Transportation (EEA/MassDOT).

### **E.1 PROJECT DESCRIPTION**

#### *Existing Conditions*

The Site comprises 30± undeveloped acres within the 200± acre Ashland Rail Transit Zoning District (RTD) along the western side of the MBTA Access Road in Ashland, Massachusetts.

#### *Permitted (No-Build) Conditions*

The Ashland Rail Transit Apartments (formerly known as Jefferson at Ashland Station have undergone permitting under the Massachusetts Environmental Policy Act (MEPA), including submittal of an Environmental Notification Form (ENF) as EOEA #12375 in December 2000 and Final Environmental Impact Report (FEIR) in September 2001. Subsequently, the project submitted a Request for Advisory Opinion on the need to re-issue an ENF was required for lapse in time in commencement of construction (>5 years from issuance of FIER Certificate.) In July 2007, MEPA determined that the submission of a new ENF was not required. The

Apartment component (500 units) then underwent the local review process and was granted approval in June 2008. At the time, the proposed Site programming consisted of developing the Site to include 500 residential apartments and 190 age restricted townhomes. On-site parking was planned to include  $1,320 \pm$  total marked parking spaces (940 $\pm$  apartment parking spaces and 380 $\pm$  townhome parking spaces). Planned Site access/egress included two (2) unsignalized driveways along the MBTA Access Road and a gated emergency only access via High Street. No proposals for the development of the remaining acreage by others within the RTD have been developed or reviewed through MEPA to date.

#### *Proposed (Build) Conditions*

Under the proposed development plan, the project includes only an apartment complex which will be reduced in size to include 398 $\pm$  residential apartments. Access/egress for the apartment complex is proposed via an unsignalized driveway along the MBTA Access Road and a gated emergency only access via High Street.

While there is no current plan to develop the adjacent parcel, for planning purposes it is assumed that the 190-unit age restricted townhomes will be permitted and constructed by others within the 7-year study horizon period and is included as a background project in the No Build analysis of this study. It is assumed that a future unsignalized driveway along the MBTA Access Road will be constructed by others for the age restricted development.

## E.2 STUDY AREA

This TIAS evaluates transportation characteristics of roadways and intersections that provide a primary means of access to the Site, and that are likely to sustain a measurable level of traffic impact from the development, including locations with proposed mitigation as part of the original site permitting. The study includes the following intersections serving the Site:

- 1 - Route 135 at MBTA Access Rd/Voyagers Ln (Signalized)
- 2 - Route 135 at Summer St (Signalized)
- 3 - Route 135 at Main St (Signalized)
- 4 - Main St at Summer St/ Homer St (Signalized)
- 5 - MBTA Access Rd at Northern Site Driveway (Unsignalized)
- 6 - MBTA Access Rd at Southern Site Driveway (Unsignalized)
- 7 - MBTA Access Rd at Future Age Restricted Driveway – By Others (Unsignalized)

## E.3 SUMMARY OF ANALYSIS AND FINDINGS

Capacity analyses were conducted for each study area intersection to quantify existing and future year traffic operations with and without the development for the weekday morning and weekday evening peak hours. These time periods represent the highest activity periods of the proposed project and the adjacent roadway system.

Under existing conditions the study intersections operate below capacity at an overall LOS D or better during the weekday morning and weekday evening peak hours.

Under future No-Build conditions, capacity analysis results indicate that the study intersections will incur increases in delay due to general background growth and several site-specific projects in the area (including potential development of an adjacent 190-unit age restricted residential development), but will continue to operate below capacity at an overall LOS D or better during the peak hours.

Under the proposed development plan, the project will reduce the apartment complex to include 398± residential apartments. The analyses presented in this TIAS are based on industry-standard trip rates published by the Institute of Transportation Engineers (ITE) and are applied to the proposed development. On that basis the project was estimated to generate approximately 199 vehicle trips during the weekday morning peak hour (40 entering and 159 exiting) and 237 vehicle trips during the weekday evening peak hour (154 entering and 83 exiting). On a daily basis, the development is estimated to generate approximately 2,536 vehicle trips on a weekday. Given the reduced build-out of apartment units by approximately 102 units, the proposed project will result in an approximate 20% reduction in trips compared to the 2008 permitted project which included 500 apartments.

Given the close proximity of the Site to Ashland Station, a portion of the site generated traffic is likely to use the MBTA Commuter Rail via the Ashland Station. Based on Journey to Work 2010 census data approximately 30 percent of the residents are likely to work in Towns and Cities that are located directly along the Worcester/Framingham Commuter Rail line with at least one Commuter Rail Station. A review of data published in ITE's Trip Generation Handbook<sup>1</sup> indicates a 10% reduction for a residential use in close proximity to a commuter rail station. For purposes of this study and to remain somewhat conservative it was assumed that 10% of the Apartment related trips that would utilize the Ashland MBTA Station. Said trips were assumed to be via automobile and not pedestrian, however, it is likely that a significant percentage would walk given the close proximity and daily parking fee. Furthermore, there was no adjustment to trips associated with the potential future age-restricted units to be built by others.

Under Build conditions, the proposed development without mitigation results in a measurable change in operations along Route 135 and Main Street compared to No-Build conditions.

---

<sup>1</sup> *Trip Generation Handbook*; Institute of Transportation Engineers; Washington, DC; 2012.

Therefore, the Proponent is committed to intersection improvements as outlined in *Section 5.2 Off-Site Improvements* that will enhance safety and operations with regards to the proposed development and will off-set the impacts of the project.

#### **E.4 RECOMMENDATIONS AND CONCLUSIONS**

Roadway improvements that support projected traffic increases associated with the proposed development are identified that minimize/offset project-related traffic impacts and address access needs for the Site. Recommended improvements include (a) access-related improvements, (b) off-site improvements, and pedestrian improvements.

##### **Access Improvements**

MDM recommends access-related improvements aimed at enhancing traffic operations and/or travel safety including the following:

- STOP signs (R1-1) and STOP line pavement markings are recommended on the driveway approaches to MBTA Access Road. The signs and pavement markings shall be compliant with the Manual on Uniform Traffic Control Devices (MUTCD).
- Plantings (shrubs, bushes) and structures (walls, fences, etc.) should be maintained at a height of 2 feet or less within the sight lines in vicinity of the Site driveway intersections with MBTA Access Road and internal site intersections to provide unobstructed sight lines. Furthermore, the existing vegetation and structures within the sight lines should be cleared when the Site driveways are constructed and the terrain shall be graded as required to ensure minimum recommended sight line requirements are met or exceeded.
- Driveway alignment, widths and curb radii should be designed to achieve (a) approximate perpendicular orientation with MBTA Access Road; (b) total minimum width of 24 feet; and (c) minimum curb radii required depending on final driveway width to accommodate standard SU-30 and emergency apparatus design vehicles. In all cases, driveway grading and orientation should meet or exceed minimum recommended stopping sight distance presented herein.

##### **Off-Site/ Pedestrian Improvements**

MDM recommends offsite and pedestrian-related improvements aimed at enhancing traffic operations and/or travel safety. While the current build-out plan will reduce the number of apartment units at the Site from 500 units to 398 units, the Proponent is committed to implementing the same off-site traffic mitigation as outlined for the permitted project as follows:

*West Union Street at MBTA Access Road/ Voyagers Lane*

The Proponent commits to re-striping the MBTA Access Road to formally provide a two lane approach to West Union Street, installing traffic signal equipment needed to provide a southbound right turn overlap phase to run concurrent with the existing protected West Union Street eastbound left turn phase and designing and implementing an optimized traffic signal timing plan.

With mitigation the intersection will operate at an overall LOS C or better during the peak hours with all approaches operating at LOS D or better. The 95<sup>th</sup> percentile vehicle queues have been shown to be accommodated within the available storage areas.

*West Union Street at Summer Street*

The Proponent commits to installing traffic signal equipment needed to provide a southbound right turn overlap phase to run concurrent with the existing protected West Union Street eastbound left turn phase and designing and implementing an optimized traffic signal timing plan.

With mitigation the intersection will operate at an overall LOS C or better during the peak hours with all approaches operating at LOS D or better. The mitigation has been shown to provide an enhanced queue management. MDM notes that a phasing change to allow permitted and protected phasing for the West Union Street eastbound left turn lane would provide an additional benefit. Said improvement will be examined further for feasibility during the design phase.

*Union Street at Main Street*

The Proponent commits designing and implementing an optimized traffic signal timing plan.

With mitigation the intersection will operate at an overall LOS D or better during the peak hours with all approaches operating at LOS D or better. The mitigation has been shown to provide an enhanced queue management.

*Main Street at Summer Street*

The Proponent previously committed to designing and implementing an optimized traffic signal timing plan. The analysis provided indicates that mitigation is not currently warranted. Therefore, the Proponent will commit to providing traffic monitoring of said location upon occupancy of the project and designing and implementing an optimized traffic signal timing plan if required.

### **Pedestrian Access Improvements**

Sidewalks and ADA compliant crosswalks are recommended where feasible to connect the on-site buildings and parking areas to the future sidewalk system along MBTA Access Road to accommodate and promote pedestrian activity. The preliminary site plan envisions a system of interconnected trails and walkways that achieve this objective, including connections to the planned sidewalk system along MBTA Access Road. In addition, the Proponent will construct a "Hillevator" pedestrian conveyance system that connects the development to the MBTA station to provide a convenient and more direct pedestrian access option.

### **Conclusions**

The current build-out plan will reduce the number of apartment units at the Site from 500 units to 398 units. The Proponent is committed to implementing the same off-site traffic mitigation as outlined for the permitted project. With the implementation of traffic mitigation, there will be adequate capacity along MBTA Access Road and at the study intersections to accommodate the proposed development. Proposed access and off-site improvements will provide ample capacity to accommodate site-generated traffic while also enhancing safety and capacity in the study area. In addition, proposed access/egress along MBTA Access Road will be designed to ensure that adequate sight lines are provided in accordance with AASHTO criteria based on ambient travel speeds.

## **1.0 INTRODUCTION**

---

MDM Transportation Consultants, Inc. (MDM) has prepared this Traffic Impact and Access Study (TIAS) for a proposed residential apartment development to be located along the MBTA Access Road in Ashland, Massachusetts. This report documents existing operational and safety-related characteristics of roadways serving the development Site, estimates future year operating characteristics of these roadways independent of the development, estimates development-related trip generation, and identifies incremental impacts of Site-related traffic. Access improvements are identified for the development to meet operational needs of the Site and the adjacent roadways.

This TIAS has been prepared in accordance with requirements and standards for the preparation of traffic studies as jointly issued by the Commonwealth of Massachusetts Executive Office of Energy & Environmental Affairs/Massachusetts Department of Transportation (EEA/MassDOT).

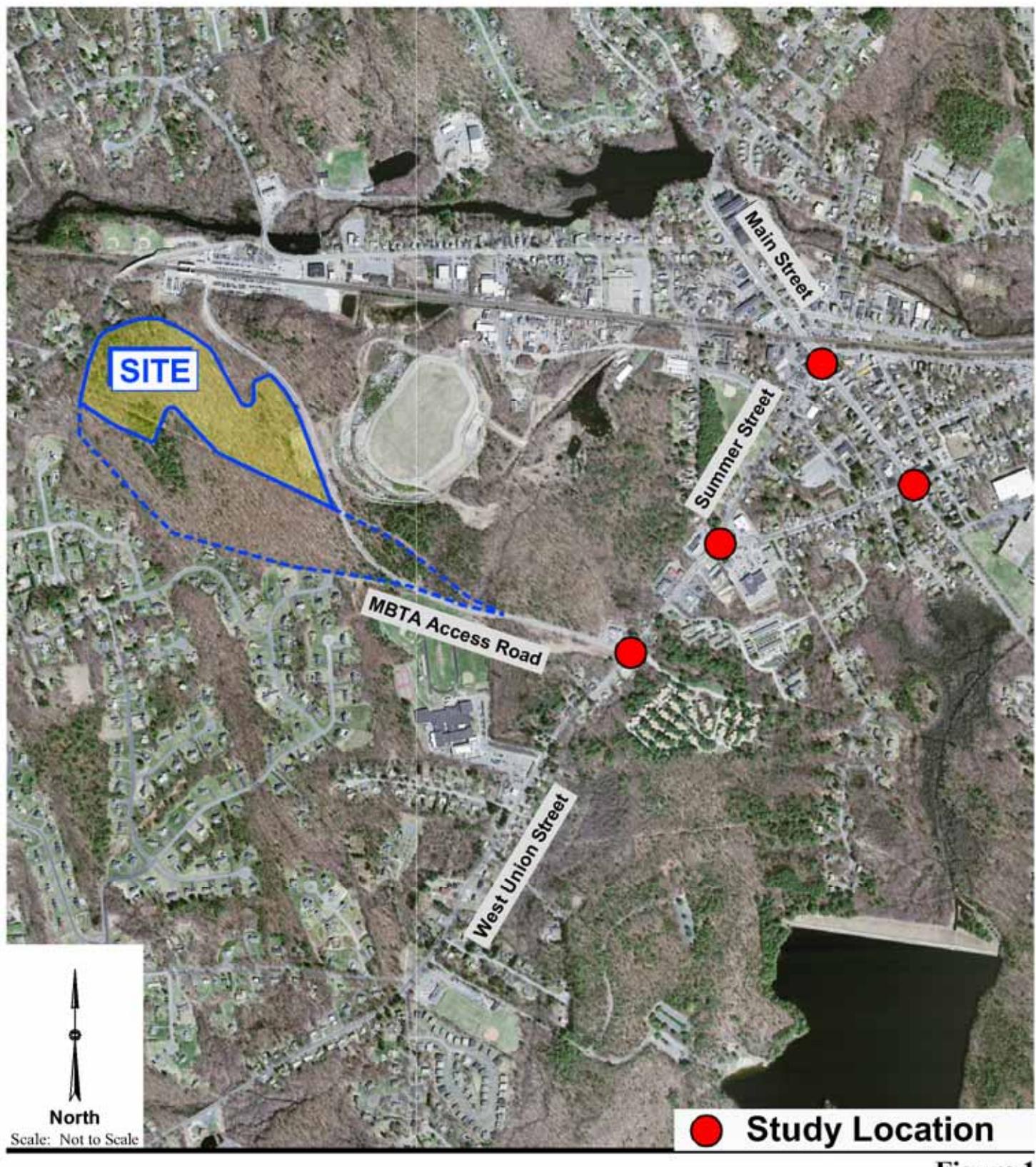
### **1.1 PROPOSED DEVELOPMENT**

#### *Existing Conditions*

The Site comprises 30± undeveloped acres within the 200± acre Ashland Rail Transit Zoning District (RTD) along the western side of the MBTA Access Road in Ashland, Massachusetts. The proximity of the Site in relation to the regional transportation system is shown in **Figure 1**.

#### *Permitted (No-Build) Conditions*

The Ashland Rail Transit Apartments development has undergone permitting under the Massachusetts Environmental Policy Act (MEPA), including submittal of an Environmental Notification Form (ENF) as EOEA #12375 in December 2000 and Final Environmental Impact Report (FEIR) in September 2001. Subsequently, the project submitted a Request for Advisory Opinion on the need to re-issue an ENF was required for lapse in time in commencement of construction (>5 years from issuance of FIER Certificate.) In July 2007, MEPA determined that



**MDM** TRANSPORTATION CONSULTANTS, INC.  
Planners & Engineers

Figure 1

Site Location

the submission of a new ENF was not required. The Apartment component (500 units) then underwent the local review process and was granted approval in June 2008. At the time, the proposed Site programming consisted of developing the Site to include 500 residential apartments and 190 age restricted townhomes. On-site parking was planned to include  $1,320 \pm$  total marked parking spaces (940 $\pm$  apartment parking spaces and 380 $\pm$  townhome parking spaces). Planned Site access/egress included two (2) unsignalized driveways along the MBTA Access Road and a gated emergency only access via High Street. No proposals for the development of the remaining acreage by others within the RTD have been developed or reviewed through MEPA to date.

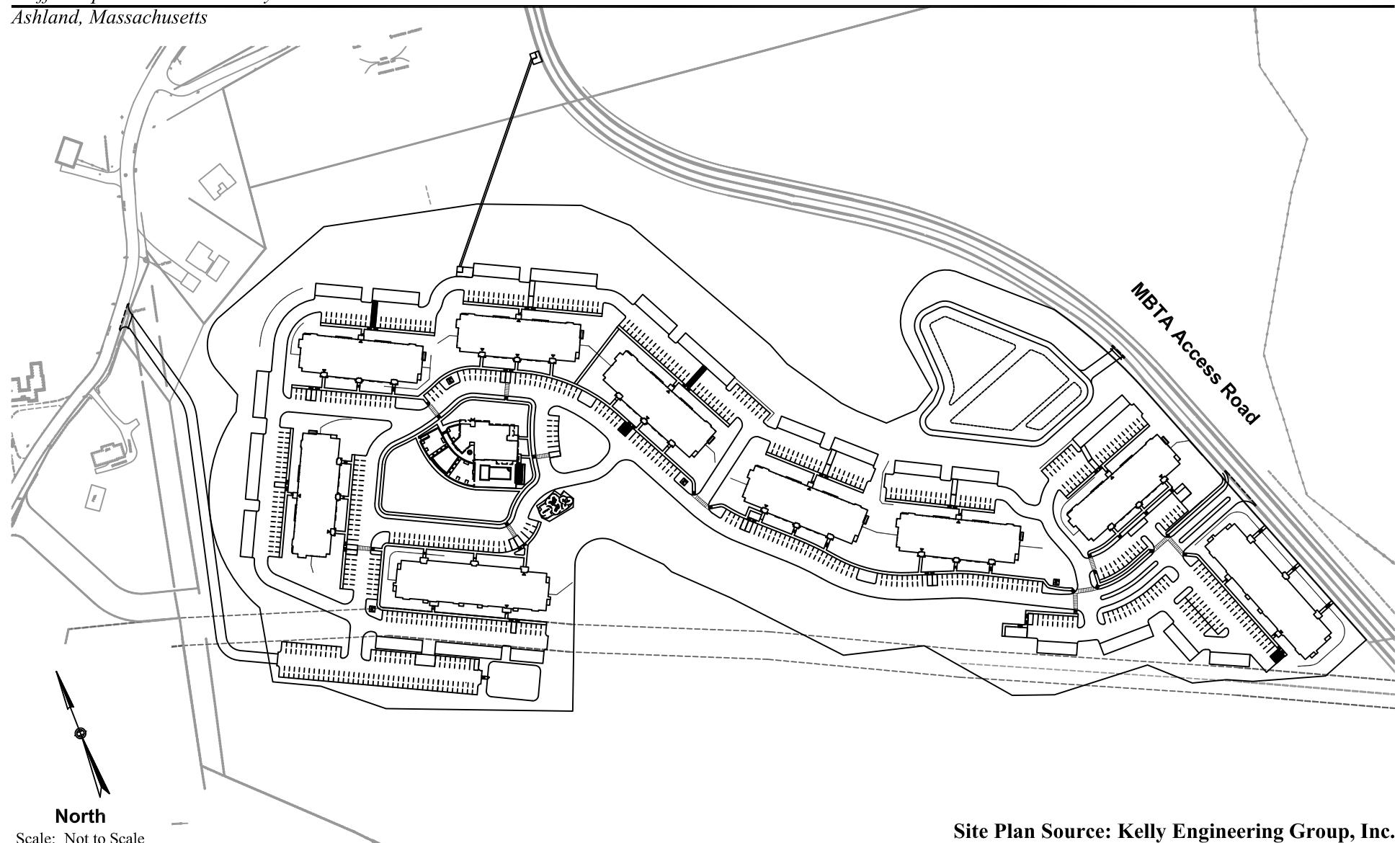
#### *Proposed (Build) Conditions*

Under the proposed development plan, the project includes only an apartment complex which will be reduced in size to include 398 $\pm$  residential apartments. Access/egress for the apartment complex is proposed via an unsignalized driveway along the MBTA Access Road and a gated emergency only access via High Street. The preliminary Site layout plan prepared by Kelly Engineering is presented in **Figure 2**.

While there is no current plan to develop the adjacent parcel, for planning purposes it is assumed that the 190-unit age restricted townhomes will be permitted and constructed by others within the 7-year study horizon period and is included as a background project in the No Build analysis of this study. It is assumed that a future unsignalized driveway along the MBTA Access Road will be constructed by others for the age restricted development.

## 1.2 STUDY METHODOLOGY

This transportation impact and access evaluation is conducted in accordance with EEA/MassDOT guidelines, and consists of several steps. The first step documents existing conditions in the transportation study area including an inventory of roadway geometry, observed traffic volumes, public transportation, and safety characteristics. Next, future year traffic conditions are forecast that account for other planned area developments, normal area growth, and development-related traffic increases. The third step quantifies operating characteristics of the study intersection. Specific attention is given to the incremental impacts of the proposed development. Finally, improvements are identified to address specific development-related requirements as needed.



**MDM** TRANSPORTATION CONSULTANTS, INC.  
Planners & Engineers

**Figure 2**  
**Preliminary Site Layout**

### 1.3 STUDY AREA

This TIAS evaluates transportation characteristics of roadways and intersections that provide a primary means of access to the Site, and that are likely to sustain a measurable level of traffic impact from the development, including locations with proposed mitigation as part of the original site permitting. The study includes the following intersections serving the Site as shown in **Figure 1**:

- 1 - Route 135 at MBTA Access Rd/Voyagers Ln (Signalized)
- 2 - Route 135 at Summer St (Signalized)
- 3 - Route 135 at Main St (Signalized)
- 4 - Main St at Summer St/ Homer St (Signalized)
- 5 - MBTA Access Rd at Northern Site Driveway (Unsignalized)
- 6 - MBTA Access Rd at Southern Site Driveway (Unsignalized)
- 7 - MBTA Access Rd at Future Age Restricted Driveway – By Others (Unsignalized)

## **2.0 EXISTING CONDITIONS**

---

In order to provide a basis for quantifying the transportation impacts of the development, the existing roadway system and the existing traffic operations of study area roadways were reviewed. This section describes the existing traffic characteristics and operations of roadways and intersection within the study area. Specifically, this section presents an overview of the traffic data collection program, existing traffic volumes, safety issues and public transportation systems serving the area.

### **2.1 STUDY AREA ROADWAY NETWORK**

The study area roadways and intersection are described briefly in this section. A general description of the physical roadway and intersection features is provided. The study area includes roadways under local jurisdiction. The study area and intersection are depicted in **Figure 1**.

#### **2.1.1 Roadways**

##### **West Union Street (Route 135)**

West Union Street is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Other Principal Arterial roadway under local (Town) jurisdiction within the site vicinity. West Union Street is generally an east-west roadway within the site vicinity and connects East Main Street (Route 135) in the Town of Ashland to the west and Union Street (Route 135) to the east. West Union Street generally provides one travel lane in each direction with additional turn lanes provided at its major intersections. The regulatory speed limit is 35 mph with the exception of a 20 mph school zone designated for the section of roadway adjacent to the Ashland Middle School. Land use along West Union Street in the study area consists of a mix of commercial and residential uses. Non-residential uses include the Ashland Middle School, Dunkin Donuts, the Town of Ashland Community Center, two pharmacies and several retail/restaurant plazas to the east of the MBTA Access Road.

## **MBTA Access Road**

MBTA Access Road is a north-south roadway classified by MassDOT as a local roadway under State (MBTA) jurisdiction that connects West Union Street (Route 135) to the south with the Ashland Commuter Rail Station to the north. MBTA Access Road provides a single 15-foot wide travel lane in each direction with additional turn lanes provided at Route 135. The regulatory speed limit is 30 mph in both directions and no sidewalks are provided. Land uses along MBTA Access Road include undeveloped parcels that are part of the Town of Ashland Rail Transit Zoning District (RTD), a Dunkin Donuts near Route 135, the Ashland Commuter Rail Station and athletic fields at the Ashland Middle School.

## **Summer Street**

Summer Street is a northeast-southwest roadway classified by MassDOT as an Urban Collector roadway under local (Town) jurisdiction that connects West Union Street (Route 135) to the southwest with Main Street to the northeast. Summer Street provides a single travel lane in each direction with additional turn lanes provided at Route 135 and Main Street. The regulatory speed limit is 25 mph in both directions and sidewalks are provided on both sides of the roadway. Land uses along Summer Street include a Rite Aid Pharmacy, Stone Park, commercial properties, the Ashland Post Office and residential homes.

## **Main Street**

Main Street is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Minor Arterial roadway and is under local (Town) jurisdiction within the study area. Main Street is generally a north-south roadway in the project area which connects Route 135 with Prospect Street and Pleasant Street. The roadway in the immediate project area provides a single travel lane in each direction with additional turn lanes at signalized intersections. Sidewalks are provided along both sides of Main Street within the study area. On-street parking is provided in marked parking spaces along the westerly side of Main Street in the study area. A 25 miles per hour (mph) speed limit sign is posted along the northbound side of Main Street at its intersection with Summer Street. Land use along Main Street in the immediate project area is primarily commercial and municipal type uses, including but not limited to, Lunkers Bait Shop and the Ashland Police and Fire Departments. A public transportation and commercial railroad crossing is located across Main Street between its intersections with Front Street and Homer Avenue/Summer Street.

## 2.1.2 Intersections

### **Route 135 at MBTA Access Road/Voyagers Lane**

Route 135 meets MBTA Access Road/Voyagers Lane to form a four-legged, signalized intersection under local jurisdiction. The eastbound Route 135 approach provides an exclusive left turn lane and a shared through/right travel lane. The westbound Route 135 approach provides a shared left/through travel lane and an exclusive right turn lane. The Voyagers Lane northbound approach provides a shared left/through travel lane and an exclusive right turn lane. The MBTA Access Road southbound approach provides a shared left/through travel lane and an exclusive right turn lane. Land uses at the intersection include a Dunkin Donuts and several undeveloped parcels.

### **Route 135 at Summer Street**

Route 135 meets Summer Street to form a three-legged, signalized intersection under local jurisdiction. The eastbound Route 135 approach provides an exclusive left turn lane and an exclusive through travel lane. The westbound Route 135 approach provides a shared through/right turn lane. The Summer Street southbound approach provides an exclusive left turn lane and an exclusive right turn lane. Land uses at the intersection include several commercial plazas and a Rite Aid Pharmacy.

### **Route 135 at Main Street**

Route 135 meets Main Street to form a four-legged, signalized intersection under local jurisdiction. All of the approaches include an exclusive left turn lane and a shared through/right turn lane. Land uses at the intersection include a funeral home, several residential homes, and a utility building occupied by Verizon.

## 2.2 BASELINE TRAFFIC VOLUMES

Traffic-volume data used in this study were obtained by mechanical and manual methods in August 2014 and May 2015. Automatic traffic recorder counts (ATRs) were conducted along West Union Street and MBTA Access Road while manual turning movement counts (TMCs) were conducted at the existing study intersections. Traffic data were collected during the weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods. These hours represent the combination of busiest activity periods of the Site and adjacent roadway network.

## 2.2.1 Daily Traffic

Daily traffic volumes along West Union Street and MBTA Access Road in the Site vicinity were collected in May 2015 and are summarized in **Table 1** and included in the **Appendix**.

**TABLE 1**  
**BASELINE TRAFFIC VOLUME SUMMARY**

Time Period	Daily Volume (vpd) <sup>1</sup>	Percent Daily Traffic <sup>2</sup>	Peak Hour Volume (vph) <sup>3</sup>	Peak Flow Direction <sup>4</sup>	Peak Hour Directional Volume (vph)
<i>West Union Street west of MBTA Access Road</i>					
Weekday Morning Peak Hour	17,390	8%	1,360	67% EB	912
Weekday Evening Peak Hour	17,390	8%	1,330	61% WB	805
<i>MBTA Access Road north of Ashland Middle School Athletic Fields</i>					
Weekday Morning Peak Hour	860	20%	170	89% NB	152
Weekday Evening Peak Hour	860	14%	120	89% SB	107

<sup>1</sup>Two-way daily traffic expressed in vehicles per day without seasonal adjustment.

<sup>2</sup>The percent of daily traffic that occurs during the peak hour.

<sup>3</sup>Two-way peak-hour volume expressed in vehicles per hour.

<sup>4</sup>EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

As summarized in **Table 1**:

- *West Union Street.* The weekday daily traffic volume on West Union Street to the west of MBTA Access Road was approximately 17,390 vehicles per day (vpd) during a typical weekday. Peak hour traffic flow on West Union Street ranges from approximately 1,330 to 1,360 vehicles per hour (vph) to the west of MBTA Access Road which represents approximately 8 percent of daily traffic flow. The traffic flow on West Union Street is significantly higher in the eastbound direction during the weekday morning peak hour and significantly higher in the westbound direction during the weekday evening peak hour. The travel pattern is consistent with commuter traffic relative to major travel routes in the area.
- *MBTA Access Road.* The weekday daily traffic volume on MBTA Access Road adjacent to the Site was approximately 860 vehicles per day (vpd) during a typical weekday. Peak hour traffic flow on MBTA Access Road ranges from approximately 120 to 170 vehicles per hour (vph) adjacent to the Site which represents 14 to 20 percent of daily traffic flow. The traffic flow on MBTA Access Road is significantly higher in the northbound direction during the weekday morning peak hour and significantly higher in the southbound direction during the weekday evening peak hour. The travel pattern is consistent with commuter traffic relative to Ashland Commuter Rail Station.

## 2.2.2 Peak-Hour Traffic

Peak-hour traffic volumes at the study area intersections were collected in August 2014 and May 2015. Comparison of the traffic count data maintained by MassDOT for nearby permanent count stations indicates that August and May are representative of slightly above-average volume conditions. In order to provide a conservative planning based analysis for the project, the observed August 2014 traffic volumes were grown by an annual growth rate of a half percent (0.5% for one year) to obtain the 2015 Baseline conditions networks. Permanent count station data is provided in the **Appendix**. The resulting 2015 Baseline weekday morning and weekday evening peak hour traffic volume networks for study intersections are depicted in **Figure 3**.

## 2.3 MEASURED TRAVEL SPEEDS

Vehicle speeds were obtained for the West Union Street eastbound and westbound travel directions and MBTA Access Road northbound and southbound travel directions using radar-equipped ATR's in May 2015. **Table 2** summarizes the average and 85<sup>th</sup> percentile speeds for West Union Street to the west of MBTA Access Road and MBTA Access Road adjacent to the Site. This MBTA Access Road speed data provides a basis for determining appropriate sight lines for the proposed driveways. Field data are provided in the **Appendix**.

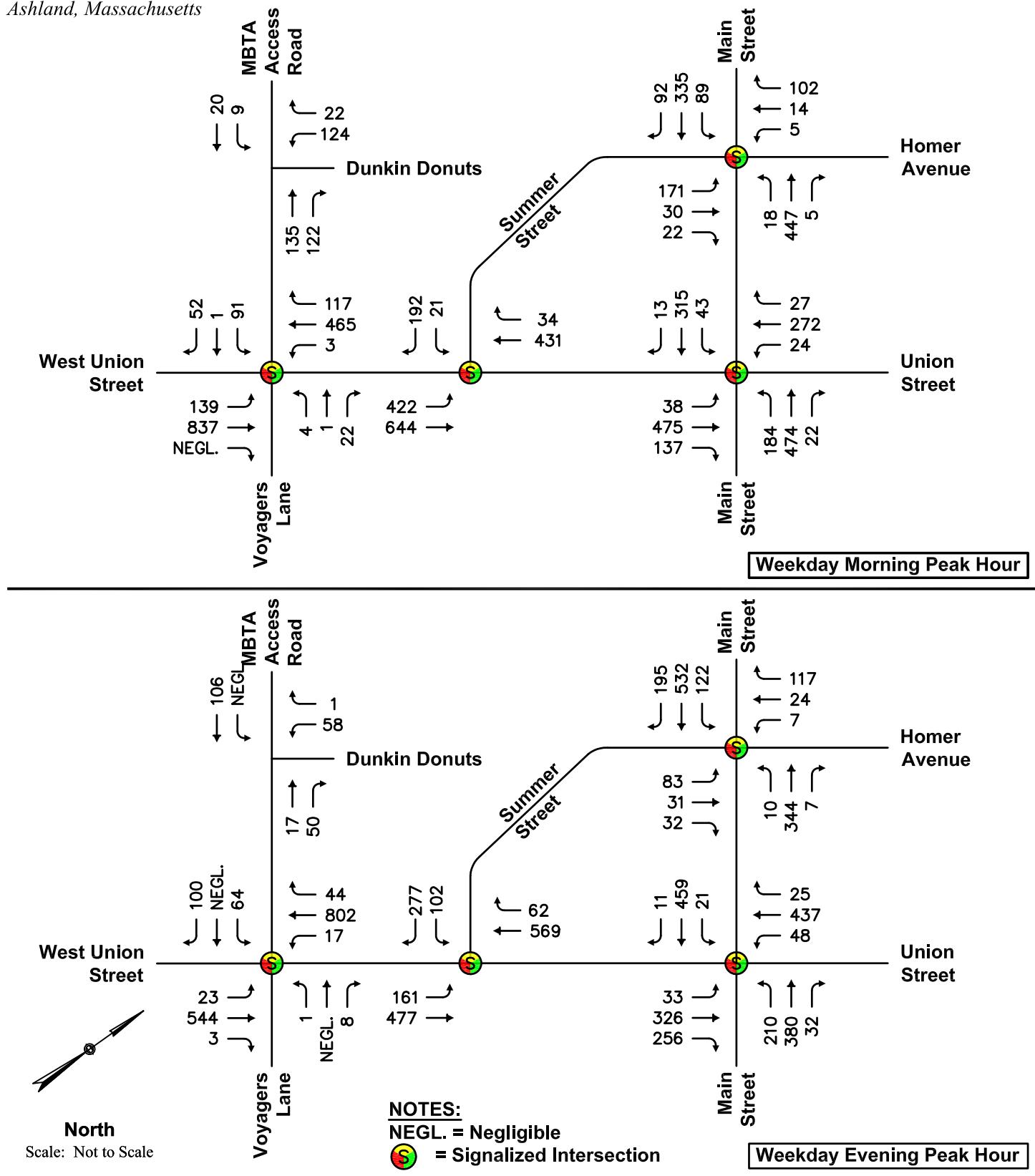
**TABLE 2**  
**SPEED STUDY RESULTS**

Travel Direction	Travel Speeds		
	Posted <sup>1</sup>	Mean <sup>2</sup>	85 <sup>th</sup> Percentile <sup>3</sup>
<i>West Union Street west of MBTA Access Road</i>			
Eastbound	35	34	39
Westbound	35	34	39
<i>MBTA Access Road north of Ashland Middle School Fields</i>			
Northbound	30	37	42
Southbound	30	33	37

<sup>1</sup>Regulatory posted speed limit (mph)

<sup>2</sup>Arithmetic mean (mph)

<sup>3</sup>The speed at or below which 85 percent of the vehicles are traveling (mph)



As summarized in **Table 2**:

- *West Union Street.* The mean (average) travel speed on West Union Street traveling eastbound and westbound is 34 mph and the 85<sup>th</sup> percentile travel speed is 39 mph.
- *MBTA Access Road.* The mean (average) travel speed on MBTA Access Road traveling northbound is 37 mph and the 85<sup>th</sup> percentile travel speed is 42 mph. In the southbound direction, the mean travel speed is 33 mph and the 85<sup>th</sup> percentile travel speed is 37 mph.

## 2.4 SAFETY

In order to identify crash trends and safety characteristics for study area intersections, crash data were obtained from MassDOT for the Town of Ashland for the three-year period 2009 through 2012 (the most recent data currently available from MassDOT). Crash data for the study intersections is summarized in **Table 3** with detailed data provided in the **Appendix**.

Crash rates were calculated for the study area intersections as reported in **Table 3**. This rate quantifies the number of crashes per million entering vehicles. MassDOT has determined the official District 3 (which includes the Town of Ashland) crash rate to be 0.66 for unsignalized intersections and 0.89 for signalized intersections. This rate represents MassDOT's "average" crash experience for District 3 communities and serves as a basis for comparing reported crash rates for the study intersections. Where calculated crash rates notably exceed the district average, some form of safety countermeasures may be warranted.

**TABLE 3**  
**INTERSECTION CRASH SUMMARY**  
**2010 THROUGH 2012<sup>1</sup>**

Data Category	STUDY LOCATIONS			
	Route 135 at MBTA Access Rd	Route 135 at Summer St	Route 135 at Main St	Main St at Summer St
	Signalized	Signalized	Signalized	Signalized
Traffic Control				
Crash Rate <sup>2</sup>	<b>0.05</b>	<b>0.04</b>	<b>0.26</b>	<b>0.29</b>
MassDOT Avg. Rate <sup>3</sup>	0.89	0.89	0.89	0.89
<i>Year:</i>				
2010	0	0	0	1
2011	0	1	5	2
<u>2012</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>3</u>
Total	<b>1</b>	<b>1</b>	<b>8</b>	<b>6</b>
<i>Type:</i>				
Angle	1	0	2	3
Rear-End	0	0	3	0
Head-On	0	1	0	1
Sideswipe	0	0	3	1
Single Vehicle	0	0	0	1
<i>Severity:</i>				
P. Damage Only	0	1	5	5
Personal Injury	1	0	3	1
Fatality	0	0	0	0
<i>Conditions:</i>				
Dry	1	1	7	4
Wet	0	0	1	2
Snow	0	0	0	0
<i>Time:</i>				
7:00 to 9:00 AM	1	0	3	1
4:00 to 6:00 PM	0	0	3	0
Rest of Day	0	1	2	5

<sup>1</sup>Source: MassDOT Crash Database

<sup>2</sup>Crashes per million entering vehicles

<sup>3</sup>District 3 Average Crash Rate

As summarized in **Table 3**:

- *West Union Street at MBTA Access Road*: One crash was reported for the West Union Street signalized intersection with MBTA Access Road. The resulting crash rate of 0.05 is lower than the District 3 average. The reported crash included an angle type collision between a westbound and southbound vehicle under dry roadway conditions which occurred during the weekday morning peak period. The resulting crash resulting in a non-fatal personal injury type crash.
- *West Union Street at Summer Street*: One crash was reported for the West Union Street signalized intersection with Summer Street. The resulting crash rate of 0.04 is lower than the District 3 average. The reported crash included a sideswipe type collision between two southbound vehicles under dry roadway conditions. The resulting crash resulting in a property damage type crash.
- *Union Street at Main Street*: A total of eight (8) crashes were reported for the Union Street signalized intersection with Main Street. The resulting crash rate of 0.26 is lower than the District 3 average. The reported crashes included five (5) angle/sideswipe type collisions and three (3) rear-end type collisions. The majority (75%) of the crashes occurred during the commuter peak periods. No fatalities or pedestrian-related incidents were reported during the study period.
- *Main Street at Summer Street*: A total of six (6) crashes were reported for the Main Street signalized intersection with Main Street. The resulting crash rate of 0.29 is lower than the District 3 average. The reported crashes included four (4) angle/sideswipe type collisions; one (1) head-on type collision and one (1) single vehicle collisions. The majority (83%) of the crashes occurred outside the commuter peak periods. No fatalities or pedestrian-related incidents were reported during the study period.

In summary, based on extensive review of MassDOT crash data, the study intersections all experienced crash rates that are below the MassDOT District 3 averages. No additional safety countermeasures are warranted based on the review of the crash records and associated crash rates.

## 2.5 PUBLIC TRANSPORTATION FACILITIES

The Massachusetts Bay Transit Authority (MBTA) operates the Worcester/Framingham commuter rail service approximately 1/3 mile from the Site at the Ashland Station with access from the MBTA Access Road. The Metro-West Regional Transit Authority (MWRTA) provides a connecting fixed route bus service, Route 5, between Hopkinton (South and Hayward Street) and Framingham (Central Hub – 37 Waverly Street) with stops in Hopkinton, Ashland, and Framingham including the Framingham MBTA Station. Specific route and schedule information is provided in the **Appendix**.

## 2.6 SIGHT LINE ANALYSIS

An evaluation of sight lines was conducted at the proposed Site driveway locations to ensure that minimum recommended sight lines are available at the proposed Site driveway intersections with MBTA Access Road. The evaluation documents existing sight lines for vehicles as they relate to the two (2) driveways along MBTA Access Road with comparison to recommended guidelines.

The American Association of State Highway and Transportation Officials' (AASHTO) standards<sup>2</sup> reference two types of sight distance which are relevant at the proposed Site driveway intersections: stopping sight distance (SSD) and intersection sight distance (ISD). Sight lines for critical vehicle movements at the proposed Site driveway intersections were compared to minimum SSD and ISD recommendations for the travel speeds in the Site vicinity.

### **Stopping Sight Distance**

Sight distance is the length of roadway visible to the motorist to a fixed object. The minimum sight distance available on a roadway should be sufficiently long enough to enable a below-average operator, traveling at or near a regulatory speed limit, to stop safely before reaching a stationary object in its path, in this case, a vehicle exiting onto MBTA Access Road. The SSD criteria are defined by AASHTO based on design and operating speeds, anticipated driver behavior and vehicle performance, as well as physical roadway conditions. SSD includes the length of roadway traveled during the perception and reaction time of a driver to an object, and the distance traveled during brake application on wet level pavement. Adjustment factors are applied to account for roadway grades when applicable.

SSD was estimated in the field using AASHTO standards for driver's eye (3.5 feet) and object height equivalent to the taillight height of a passenger car (2.0 feet) for the northbound and southbound MBTA Access Road approaches to the proposed Site driveways. **Table 4** presents a summary of the available SSD as they relate to MBTA Access Road and AASHTO's recommended SSD.

---

<sup>2</sup>*A policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials (AASHTO), 2011.

**TABLE 4**  
**STOPPING SIGHT DISTANCE SUMMARY**  
**APPROACHES TO SITE DRIVEWAYS**

		AASHTO Recommended <sup>1</sup>		
Approach/ Travel Direction	Available SSD	Posted Speed <sup>2</sup>	Average Travel Speed <sup>3</sup>	85 <sup>th</sup> Percentile Travel Speed <sup>4</sup>
<i>MBTA Access Road at Proposed Site Drive (Northern)</i>				
<i>Northbound</i>	410± Feet	200 Feet	270 Feet	325 Feet
<i>Southbound</i>	360± Feet	190 Feet	215 Feet	255 Feet
<i>MBTA Access Road at Proposed Site Drive (Southern)</i>				
<i>Northbound</i>	410± Feet	200 Feet	270 Feet	325 Feet
<i>Southbound</i>	480± Feet	190 Feet	215 Feet	255 Feet

<sup>1</sup>Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet to object height of 2.0 feet.

<sup>2</sup>Posted Speed = 30 mph on MBTA Access Road.

<sup>3</sup>Average Speed on MBTA Access Road: 37 mph NB & 33 mph SB.

<sup>4</sup>85<sup>th</sup> Percentile travel speed on MBTA Access Road: 42 mph NB & 37 mph SB.

As summarized in **Table 4** analysis results indicate that with clearing and re-grading associated with the installation of the proposed driveways the available sight lines will exceed AASHTO's recommended SSD criteria for both travel directions along MBTA Access Road based on the regulatory posted speed limit and observed travel speeds.

### Intersection Sight Distance

Clear sight lines provide sufficient sight distance for a stopped driver on a minor-road approach to depart from the intersection and enter or cross the major road. As stated under AASHTO's Intersection Sight Distance (ISD) considerations, "...If the available sight distance for an entering ...vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to avoid collisions...To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road." AASHTO's ISD criteria are defined into several "cases". For the unsignalized Site driveway locations which are proposed to be under STOP sign control, the ISD in question relates to the ability to turn left or turn right from the proposed driveways at their intersections with MBTA Access Road.

Available ISD was estimated in the field using AASHTO standards for driver's eye (3.5 feet), object height (3.5 feet) and decision point (14.5 feet from the edge of the travel way) for the northbound and southbound directions along MBTA Access Road and for the northbound and southbound travel directions along MBTA Access Road. **Table 5** presents a summary of the available ISD for the departure from the Site driveways and AASHTO's recommended ISD.

**TABLE 5**  
**INTERSECTION SIGHT DISTANCE SUMMARY**  
**SITE DRIVEWAY DEPARTURES TO MBTA ACCESS ROAD**

View Direction	Available ISD	AASHTO Minimum <sup>1</sup>		AASHTO Ideal <sup>1</sup>
		Posted Speed <sup>2</sup>	85 <sup>th</sup> Percentile Travel Speed <sup>3</sup>	Posted Speed <sup>2</sup>
<i>MBTA Access Road at Proposed Site Drive (Northern)</i>				
<i>Looking North</i>	290+ Feet	190 Feet	215 Feet	290 Feet
<i>Looking South</i>	410± Feet	200 Feet	270 Feet	335 Feet
<i>MBTA Access Road at Proposed Site Drive (Southern)</i>				
<i>Looking North</i>	450± Feet	190 Feet	215 Feet	290 Feet
<i>Looking South</i>	485± Feet	200 Feet	270 Feet	335 Feet

<sup>1</sup>Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet and an object height of 3.5 feet. Minimum value as noted represents SSD per AASHTO guidance.

<sup>2</sup>Posted Speed = 30 mph on MBTA Access Road.

<sup>3</sup>85<sup>th</sup> Percentile travel speed on MBTA Access Road: 42 mph NB & 37 mph SB.

The results of the ISD analysis presented in **Table 5** indicate that the available sight lines looking north and south from the proposed Site driveways onto MBTA Access Road will exceed the recommended minimum sight line requirements from AASHTO for the travel speeds with clearing and grading associated with the installation of said driveways. MDM recommends that any new plantings (shrubs, bushes) or physical landscape features to be located within the driveway sight lines should also be maintained at a height of 2 feet or less above the adjacent existing roadway grade to ensure unobstructed lines of sight.

## ***3.0 FUTURE CONDITIONS***

---

Evaluation of the proposed development impacts requires the establishment of a future baseline analysis condition. This section estimates future roadway and traffic conditions with and without the proposed development. To be consistent with EEA/MassDOT guidelines, a seven-year planning horizon was selected.

To determine the impact of Site-generated traffic volumes on the roadway network under future conditions, baseline traffic volumes in the study area were projected to a future year condition. Traffic volumes on the roadway network at that time, in the absence of the development (that is, the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific development by others that is currently under review at the local and/or state level. Consideration of these factors resulted in the development of No-Build traffic volumes. Anticipated Site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop future Build conditions.

The following sections provide an overview of planned area roadway improvements, future No-Build traffic volumes and projected Build traffic volumes.

### **3.1 PLANNED AREA ROADWAY IMPROVEMENTS**

#### **MBTA Access Road**

The Town of Ashland received a 6 million dollar MassWorks grant to upgrade MBTA Access Road to Town standards and to upgrade bicycle and walking paths within Ashland's Rail Transit District. As part of the project, sidewalk(s) will be constructed along the MBTA Access Road that connects the Ashland Commuter Rail Station to the existing sidewalk system along West Union Street (Route 135). The improvement project has been assumed to be complete under future No-Build and Build conditions.

## 3.2 BACKGROUND TRAFFIC GROWTH

Background traffic includes demand generated by other planned developments in the area as well as demand increases caused by external factors. External factors are general increases in traffic not attributable to a specific development and are determined using historical data.

### 3.2.1 Historical Area Growth

Nearby permanent count station data published by MassDOT indicates a declining (-0.7 percent per year) growth rate. For purposes of this evaluation, a 0.5 percent compounded annual growth rate was used (3.6 percent increase over a 7-year horizon). This growth rate is higher than historic rates and is also expected to account for any small fluctuation in hourly traffic as may occur from time to time in the study area and traffic associated with other potential small developments or vacancies in the area. MassDOT permanent count station data and background growth calculations are provided in the **Attachments**.

### 3.2.2 Background Development-Related Growth

Development of future No-Build traffic volumes also considers traffic generated through the study area from other specific area developments. Review of Massachusetts Environmental Policy Act (MEPA) files, consultation with the Town of Ashland Planning Staff, and field inventory indicates that there are several Site-specific development projects in the area that may increase baseline traffic at the study intersections as follows:

- **Legacy Farms:** This mixed-use project includes the redevelopment of the Weston Nursery of Hopkinton to include approximately 240 apartments, 50 single family homes, 650 multi-family units and 450,000 sf of commercial space. The project includes access/egress points along East Main Street near the Ashland Town Line in Hopkinton. Recently the Town approved the reduction of the 200,000 sf of commercial space and constructing approximately 180 additional age restricted housing units. Traffic associated with the full build-out of this development was estimated based on the traffic study provided for the project<sup>3</sup> which has been adjusted to reflect the change in commercial space to housing units. The Site-specific trip tracings are provided in the **Appendix**.
- **Needham Bank:** Under the proposed development plan the existing on-site building located at 41 Front Street will be renovated and re-occupied by a bank with a dual-service drive-thru facility (1 drive-up ATM machine and a separate teller window) plus a by-pass lane supported by an 8-space parking field. Access/egress for the bank use includes modification of the existing access driveways on Front Street. The existing

---

<sup>3</sup> *Traffic Impact and Access Study, Legacy Farms, Hopkinton, Massachusetts*, prepared by Vanasse Hangen Brustlin, Inc., dated March 2008 (Updated October 2008).

cross-connection with the adjacent municipal parking lot will be eliminated. Three marked parking spaces are proposed to be added to the municipal parking lot in the location of the existing cross-connection. The easterly driveway is proposed to be restricted to entering movements and the westerly driveway is proposed to be restricted to exiting movements with clockwise circulation through the parking field.<sup>4</sup> The Site-specific trip tracings are provided in the **Appendix**.

- **21 Main Street Mixed-Use Development:** This development is a proposed mixed-used development consisting of 9 apartment units and 3,300± sf of commercial office space located just north of the study area at 21 Main Street. Traffic associated with this development was estimated using ITE standard rates. The site-specific trip tracings are provided in the **Appendix**.
- **10 – 50 Main Street:** This existing commercial building located just north of the study area at 10-50 Main Street consists of approximately 10,000 sf of vacant office space and 35,000 sf of vacant industrial space. Traffic associated with the re-occupancy of this vacant office and commercial space was estimated using ITE standard rates. The site-specific trip tracings are provided in the **Appendix**.
- **Ashland Technology Centre:** This existing technology center located at 200 Homer Avenue (intersection of Route 135 and Homer Avenue) consists of approximately 95,000 sf of vacant industrial/manufacturing/R&D/office space in 2 of the center's 3 buildings. Traffic associated with the re-occupancy of this vacant commercial space was estimated using ITE standard rates. As a conservative measure, all vacant space was assumed to be office space. The site-specific trip tracings are provided in the **Appendix**.
- **250 West Union Street:** This development is a proposed mixed-used development consisting of 103 bed nursing home. Given the low trip generation characteristics of the use, traffic associated with this development was estimated be accounted for by the general background growth rate.
- **Rail Transit District Age Restricted Development:** The adjoining parcel within the RTD known as "Lot 2" has been previously identified for development of 190-units of age restricted residential use. While no specific development plans have advanced for Lot 2, this development scenario is assumed as a background project for purposes of this traffic evaluation so as to properly size/evaluate roadway infrastructure needs for planning purposes. Trips for Lot 2 are estimated based on ITE LUC 251 – Senior Residential (Detached) trip rates and trip distribution patterns that reflect existing trip patterns on area roadways and US Census Journey-to-Work data. The site-specific trip tracings are provided in the **Appendix**.

---

<sup>4</sup> *Traffic Impact Assessment (TIA), Proposed Bank, Ashland, Massachusetts*, prepared by MDM, Inc., dated April 14, 2014.

### 3.3 NO-BUILD TRAFFIC VOLUMES

In summary, to account for future traffic growth in the study area future No-Build traffic volumes are developed by increasing the baseline (2015) volumes by approximately 3.6 percent (0.5 percent compounded annually over 7 years), as well as traffic associated with specific area developments. The resulting 2022 No-Build traffic volumes are displayed in **Figure 4** and **Figure 5**.

### 3.4 SITE-GENERATED TRAFFIC – ITE BASIS

Future Build condition traffic volumes were developed by estimating the number of peak-hour trips expected to be generated by the proposed development and distributing this additional traffic onto the local roadway network. These future development-related trips were added to future No-Build traffic volumes to evaluate future traffic operations with the proposed development in place. The methodology utilized to estimate the future trip-generation characteristics of the proposed development are summarized below. In accordance with EEA/MassDOT guidelines, the traffic generated by the proposed development was estimated using trip rates published in ITE's *Trip Generation* for the Land Use Code (LUC) based on trip rates for Apartment (LUC 220).

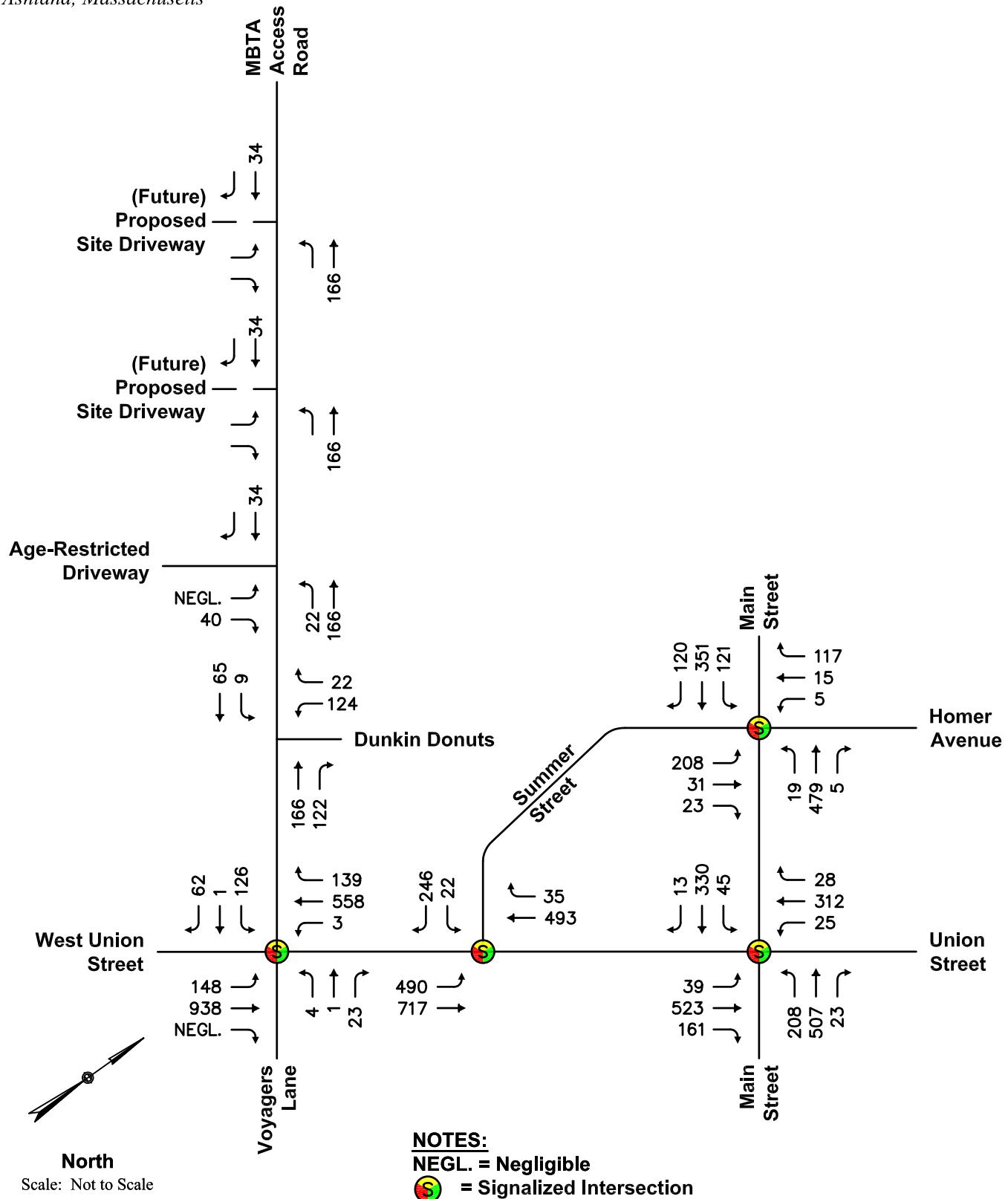
Given the close proximity of the Site to Ashland Station, a portion of the site generated traffic is likely to use the MBTA Commuter Rail via the Ashland Station. Based on Journey to Work 2010 census data approximately 30 percent of the residents are likely to work in Towns and Cities that are located directly along the Worcester/ Framingham Commuter Rail line with at least one Commuter Rail Station. A review of data published in ITE's *Trip Generation Handbook*<sup>5</sup> indicates at least a 10% reduction for a residential use in close proximity to a commuter rail station. For purposes of this study and to remain somewhat conservative it was assumed that 10% of the Apartment related trips that would utilize the Ashland MBTA Station. Said trips were assumed to be via automobile and not pedestrian, however, it is likely that a significant percentage would walk given the close proximity and daily parking fee.

**Table 6** presents the trip-generation estimates for the proposed development based on ITE methodology and EEA/MassDOT guidelines.

Based on industry-standard trip rates, the proposed development is estimated to generate approximately 199 trips during the weekday morning peak hour (40 entering and 159 exiting) and 237 trips during the weekday evening peak hour (154 entering and 83 exiting). On a daily basis, the development is estimated to generate approximately 2,536 trips on a weekday. As shown 10% of the project trips were estimated to utilize the adjacent Ashland MBTA train station, thus reducing the impact to the adjacent roadways and intersections.

---

<sup>5</sup> *Trip Generation Handbook*; Institute of Transportation Engineers; Washington, DC; 2012.



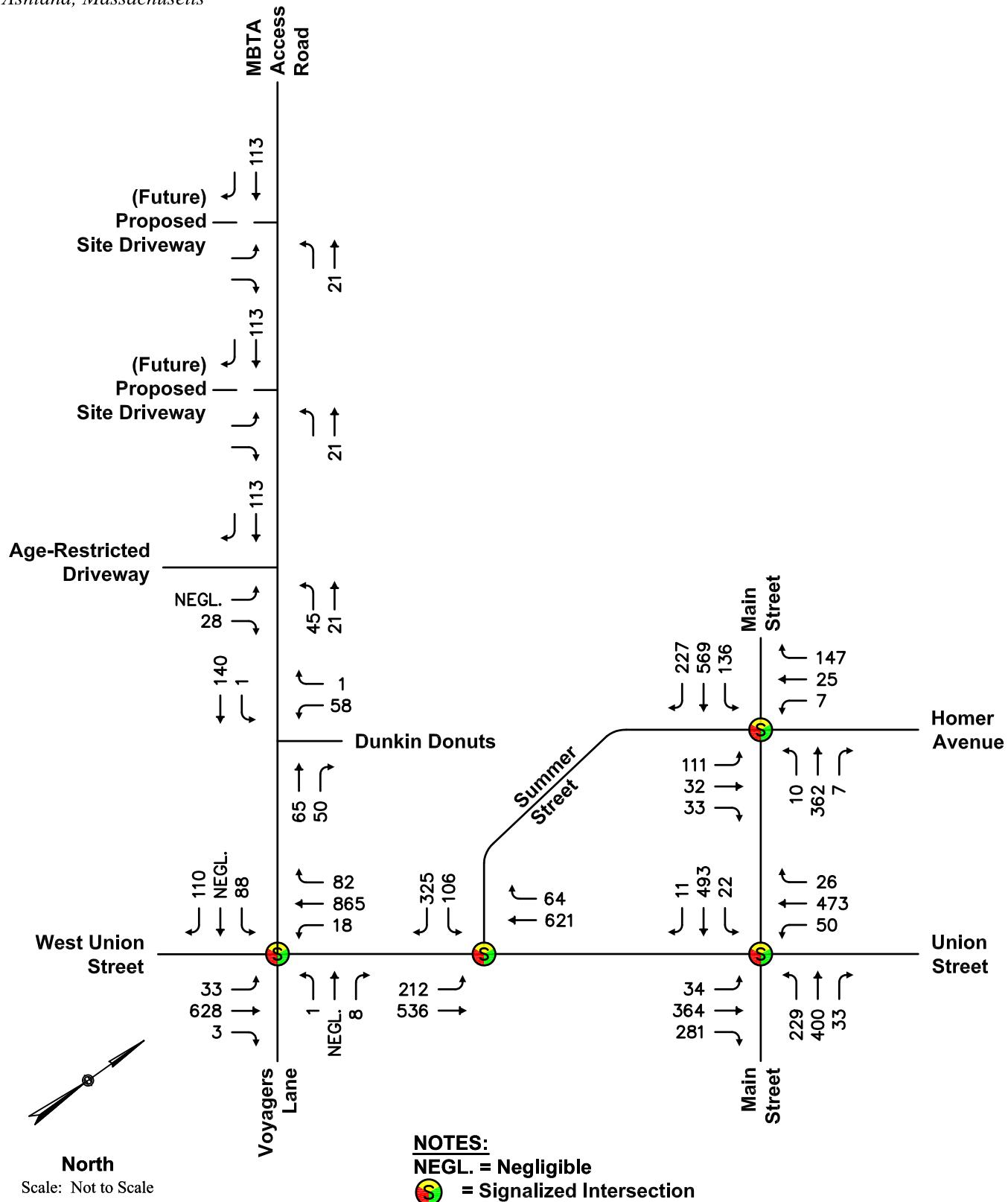
---

**Figure 4**

# MDM TRANSPORTATION CONSULTANTS, INC.

Planners & Engineers

## 2022 No-Build Condition Weekday Morning Peak Hour Traffic Volumes



**TABLE 6**  
**TRIP-GENERATION SUMMARY**

Period/Direction	Site Trips		
	Apartments <sup>1</sup>	Transit Trips <sup>2</sup>	Total External Trips <sup>3</sup>
<i>Weekday Morning Peak Hour</i>			
Entering	40	-4	36
<u>Exiting</u>	<u>159</u>	<u>-16</u>	<u>143</u>
Total	199	-20	179
<i>Weekday Evening Peak Hour</i>			
Entering	154	-15	139
<u>Exiting</u>	<u>83</u>	<u>-8</u>	<u>75</u>
Total	237	-23	214
<i>Weekday Daily</i>	2,536	-254	2,282

Source: ITE *Trip Generation*, Ninth Edition; 2009.

<sup>1</sup>Based on ITE LUC 220 (Apartment) trip rates applied to 398 units.

<sup>2</sup>10% transit use for Apartment component based on ITE Trip Generation Handbook.

These trips were then compared to projected trip generation levels under the 2008 Permitted project, concluding that trips at full occupancy will fall below the cited permitted levels. The trip generation comparison is summarized in **Table 7**.

**TABLE 7**  
**TRIP-GENERATION COMPARISON**

Period/Direction	Site Trips		
	Permitted <sup>1</sup>	Proposed <sup>2</sup>	Difference
<i>Weekday Morning Peak Hour</i>			
Entering	50	40	-10
<u>Exiting</u>	<u>199</u>	<u>159</u>	<u>-40</u>
Total	249	199	-50 (-20%)
<i>Weekday Evening Peak Hour</i>			
Entering	190	154	-36
<u>Exiting</u>	<u>103</u>	<u>83</u>	<u>-20</u>
Total	293	237	-56 (-19%)
<i>Weekday Daily</i>	3,154	2,536	-618 (-20%)

Source: ITE *Trip Generation*, Ninth Edition; 2009.

<sup>1</sup>Based on ITE LUC 220 trip rates applied to 500 units.

<sup>2</sup>Based on ITE LUC 220 trip rates applied to 398 units.

As summarized in **Table 7**, given the reduced build-out of apartment units by approximately 102 units, the proposed project will result in an approximate 20% reduction in trips compared to the 2008 permitted project which included 500 apartments.

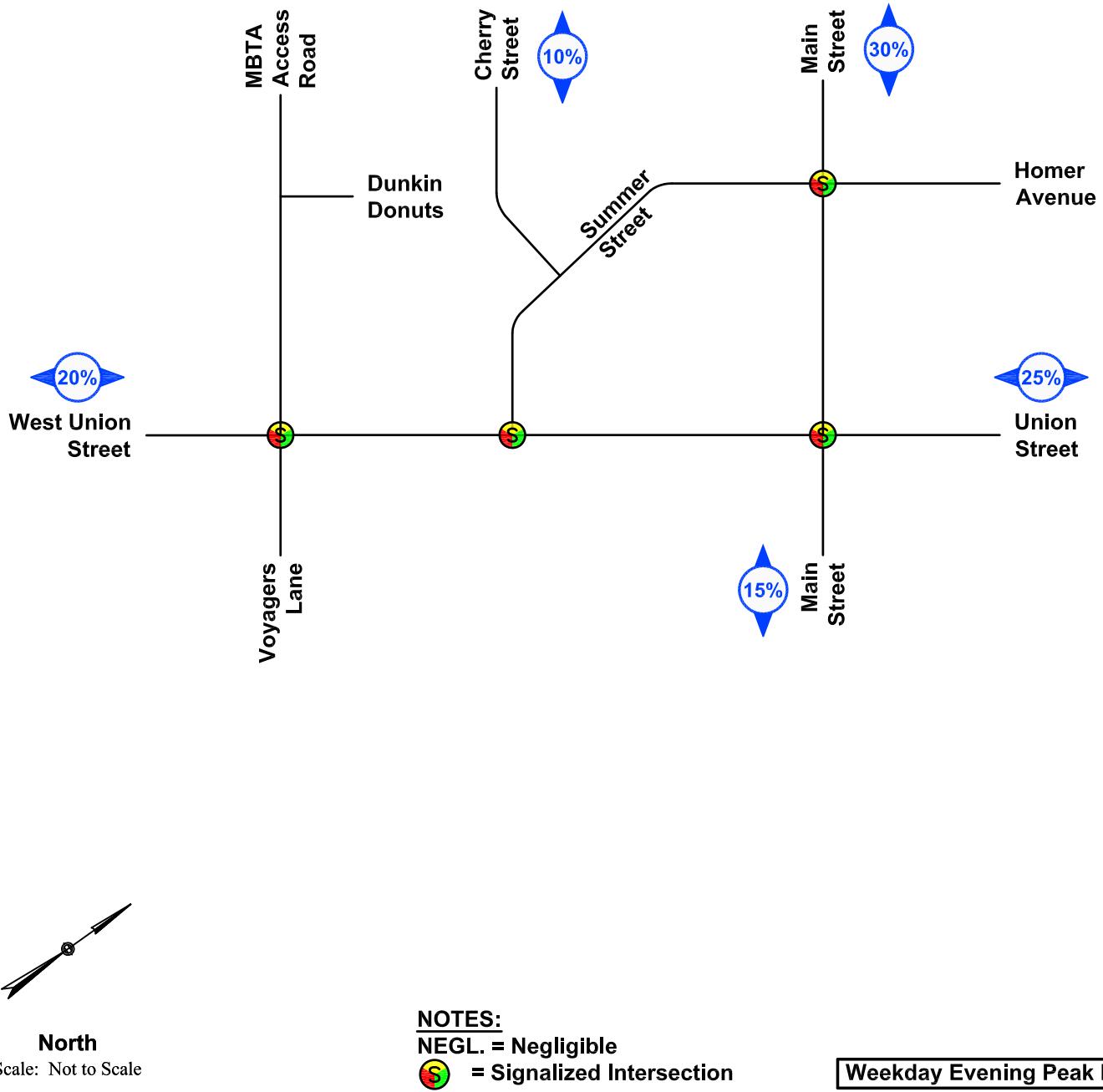
### 3.5 TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of development-generated trips on the roadway network is a function of a number of variables including area population centers and the efficiency of these roadways leading to the Site. The distribution for projected traffic for the proposed residential development is based Journey to Work data for residents of Ashland and existing travel patterns and volumes of the adjacent roadway system. The resulting trip distribution for new trips is presented in **Figure 6**. Trip distribution calculations are provided in the **Appendix**.

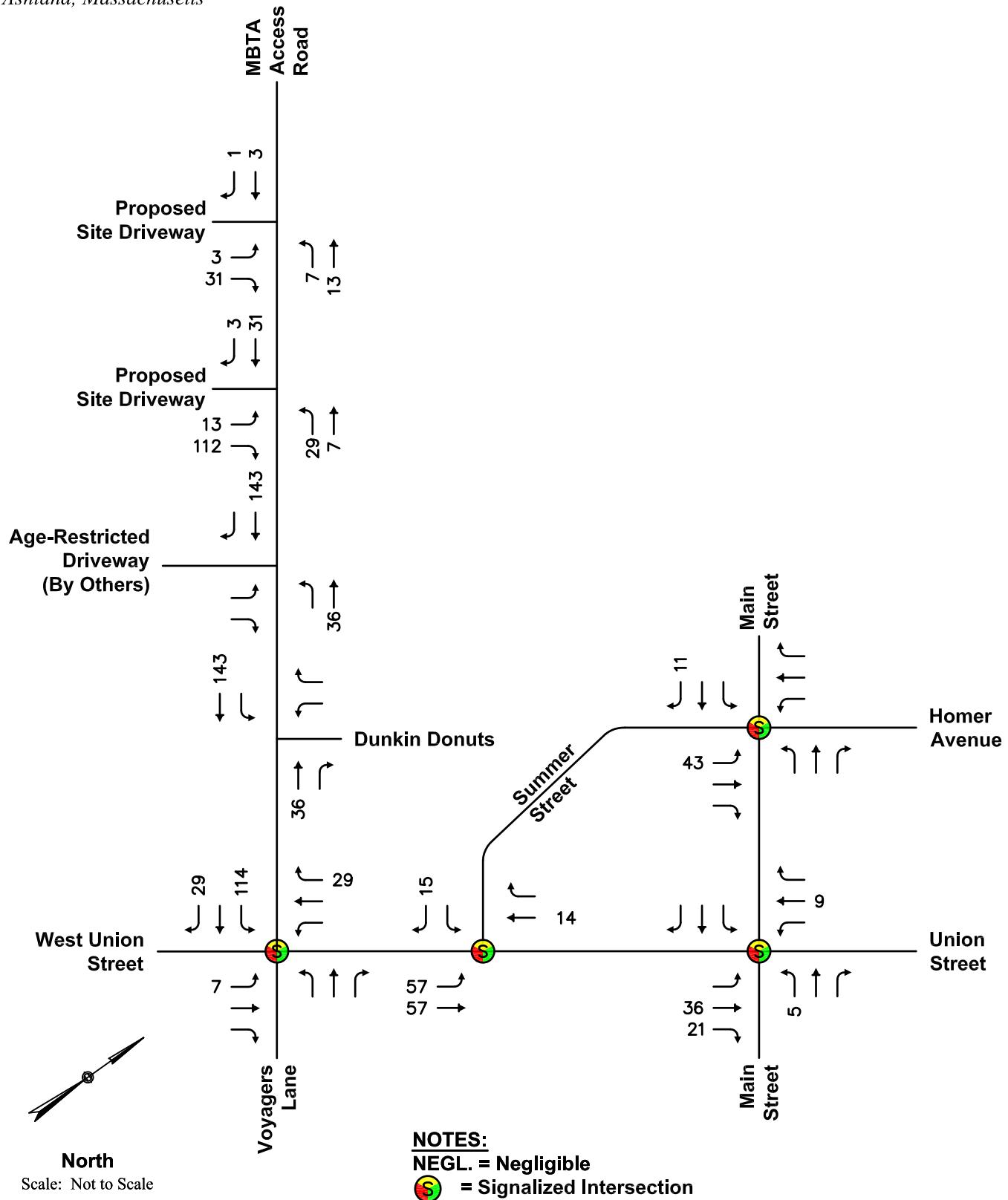
Development-related trips destined to/from the adjacent Ashland MBTA Station (10%) were first assigned to the roadway network based on the location of the adjacent commuter rail station. Then vehicles trips which will not utilize the adjacent MBTA Station were then assigned to the roadway network using the distribution patterns presented in **Figure 6**. Development-related trips at each intersection approach for the weekday morning and weekday evening peak hours are quantified in **Figure 7** and **Figure 8**.

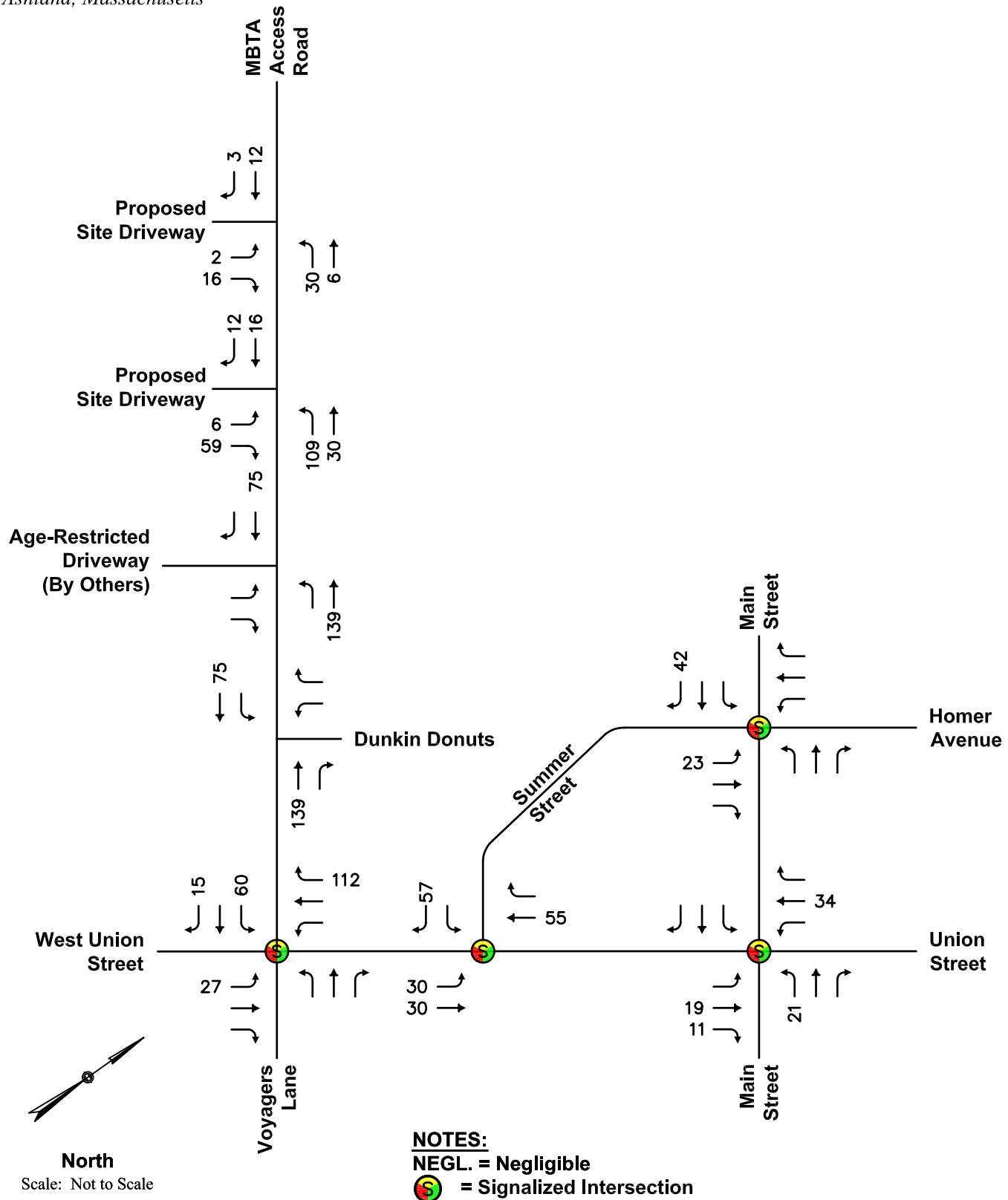
### 3.6 BUILD TRAFFIC VOLUMES

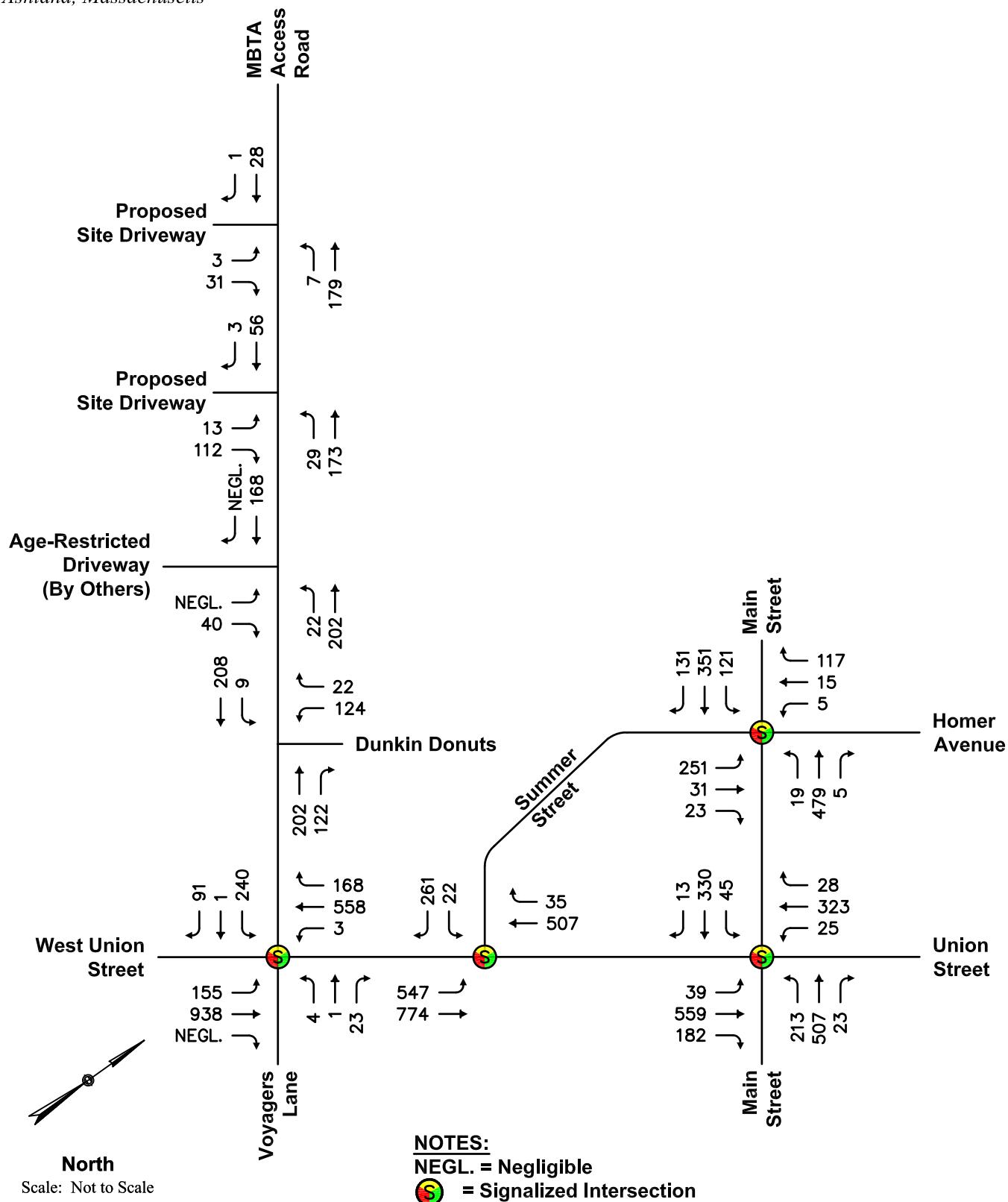
Future Build condition traffic volumes were arrived at by adding development-specific traffic volumes to the 2022 No-Build conditions. The 2022 Build condition traffic-volume networks for the weekday morning and weekday evening peak hours are displayed in **Figure 9** and **Figure 10**, respectively.

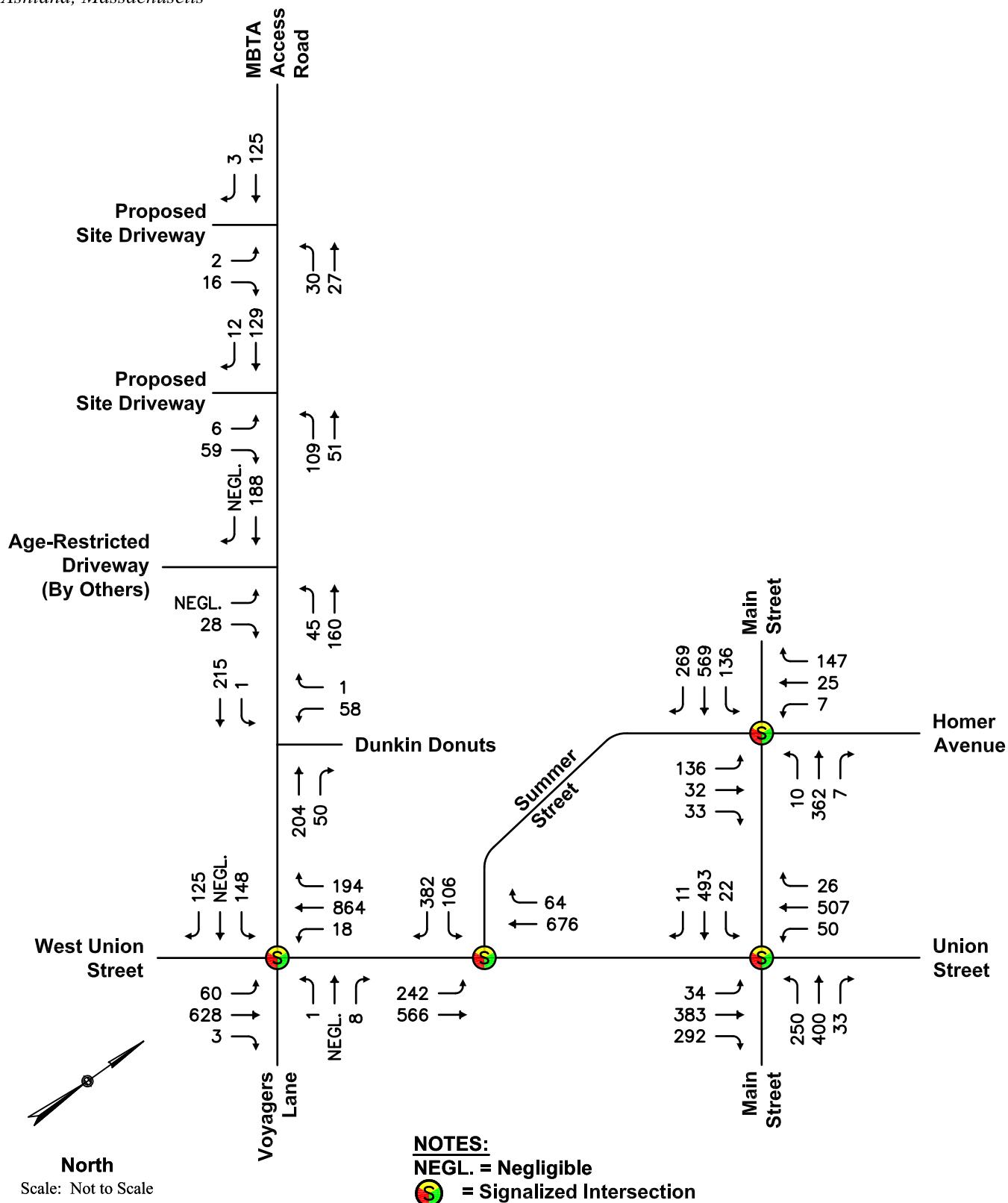


Trip Distribution









**Figure 10**  
**2020 Build Condition**  
**Weekday Evening Peak Hour**  
**Traffic Volumes**

## **4.0 TRAFFIC OPERATIONS ANALYSIS**

---

Intersection capacity analyses for the primary study intersections are presented in this section for the Existing, No-Build, and Build traffic-volume conditions. Capacity analyses, conducted in accordance with EEA/MassDOT guidelines, provide an index of how well the roadway facilities serve the traffic demands placed upon them. The operational results provide the basis for recommended access and roadway improvements in the following section.

### **4.1 CAPACITY ANALYSIS PROCEDURES**

Capacity analysis of intersections is developed using the Synchro® computer software, which implements the methods of the 2010 Highway Capacity Manual (HCM). The resulting analysis presents a level-of-service (LOS) designation for individual intersection movements. The LOS is a letter designation that provides a qualitative measure of operating conditions based on several factors including roadway geometry, speeds, ambient traffic volumes, traffic controls, and driver characteristics. Since the LOS of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of LOS, depending on the time of day, day of week, or period of year. A range of six levels of service are defined on the basis of average delay, ranging from LOS A (the least delay) to LOS F (delays greater than 50 seconds for unsignalized movements and 80 seconds for signalized movements). The specific control delays and associated LOS designations are presented in the **Appendix**.

### **4.2 INTERSECTION CAPACITY ANALYSIS RESULTS**

Capacity analysis results for the weekday morning and weekday evening peak hour capacity analysis results for the study intersections are described below, with detailed analysis results presented in the **Appendix**.

#### 4.2.1 Level of Service Analysis

The capacity analysis results for the intersections in the study area are summarized in **Table 8** and **Table 9** for the weekday morning and weekday evening peak hours, respectively. Detailed analysis results are presented in the **Appendix**.

**TABLE 8**  
**INTERSECTION CAPACITY ANALYSIS RESULTS**  
**WEEKDAY MORNING PEAK HOUR**

Intersection	Approach	2015 Baseline			2022 No-Build			2022 Build		
		v/c <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	v/c	Delay	LOS	v/c	Delay	LOS
West Union Street at MBTA Access Road/ Voyagers Lane	Eastbound	0.76	16	B	0.75	16	B	0.80	22	C
	Westbound	0.71	22	C	0.62	19	B	0.68	25	C
	Northbound	0.12	10	B	0.15	13	B	0.16	14	B
	<u>Southbound</u>	<u>0.41</u>	<u>30</u>	<u>C</u>	<u>0.65</u>	<u>47</u>	<u>D</u>	<u>0.83</u>	<u>57</u>	<u>E</u>
	<b>OVERALL</b>	<b>0.76</b>	<b>19</b>	<b>B</b>	<b>0.75</b>	<b>20</b>	<b>B</b>	<b>0.83</b>	<b>28</b>	<b>C</b>
West Union Street at Summer Street	Eastbound	0.75	15	B	0.82	18	B	0.84	20	B
	Westbound	0.74	32	C	0.79	37	D	0.83	42	D
	<u>Southbound</u>	<u>0.60</u>	<u>17</u>	<u>B</u>	<u>0.69</u>	<u>18</u>	<u>B</u>	<u>0.72</u>	<u>19</u>	<u>B</u>
	<b>OVERALL</b>	<b>0.75</b>	<b>20</b>	<b>B</b>	<b>0.82</b>	<b>23</b>	<b>C</b>	<b>0.84</b>	<b>25</b>	<b>C</b>
Union Street at Main Street	Eastbound	0.82	42	D	0.87	60	E	0.95	>80	F
	Westbound	0.39	27	C	0.44	30	C	0.46	30	C
	Northbound	0.75	39	D	0.82	45	D	0.82	45	D
	<u>Southbound</u>	<u>0.68</u>	<u>44</u>	<u>D</u>	<u>0.75</u>	<u>50</u>	<u>D</u>	<u>0.76</u>	<u>51</u>	<u>D</u>
	<b>OVERALL</b>	<b>0.82</b>	<b>39</b>	<b>D</b>	<b>0.87</b>	<b>48</b>	<b>D</b>	<b>0.95</b>	<b>59</b>	<b>E</b>
Main Street at Summer Street	Eastbound	0.67	43	D	0.72	43	D	0.75	43	D
	Westbound	0.27	12	B	0.28	10	B	0.25	9	A
	Northbound	0.35	9	A	0.39	11	B	0.41	12	B
	<u>Southbound</u>	<u>0.44</u>	<u>9</u>	<u>A</u>	<u>0.53</u>	<u>11</u>	<u>B</u>	<u>0.56</u>	<u>13</u>	<u>B</u>
	<b>OVERALL</b>	<b>0.67</b>	<b>15</b>	<b>B</b>	<b>0.72</b>	<b>16</b>	<b>B</b>	<b>0.75</b>	<b>18</b>	<b>B</b>
Future Age-Restricted Driveway (By Others)	EB Exit L/R	n/a <sup>4</sup>	n/a	n/a	0.04	9	A	0.05	9	A
	NB L/T	n/a	n/a	n/a	0.02	<5	A	0.02	<5	A
MBTA Access Road at Site Driveway (Northern)	EB Exit L/R	n/a	n/a	n/a	n/a	n/a	n/a	0.04	9	A
	NB L/T	n/a	n/a	n/a	n/a	n/a	n/a	0.01	<5	A
MBTA Access Road at Site Driveway (Southern)	EB Exit L/T	n/a	n/a	n/a	n/a	n/a	n/a	0.14	9	A
	NB L/T	n/a	n/a	n/a	n/a	n/a	n/a	0.02	<5	A

<sup>1</sup>Volume-to-capacity ratio

<sup>2</sup>Average control delay per vehicle (in seconds)

<sup>3</sup>Level of service

<sup>4</sup>n/a = not applicable

**TABLE 9**  
**INTERSECTION CAPACITY ANALYSIS RESULTS**  
**WEEKDAY EVENING PEAK HOUR**

Intersection	Approach	2015 Baseline			2022 No-Build			2022 Build		
		v/c <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	v/c	Delay	LOS	v/c	Delay	LOS
West Union Street at MBTA Access Road/ Voyagers Lane	Eastbound	0.41	6	A	0.48	8	A	0.49	10	A
	Westbound	0.74	19	B	0.81	27	C	0.88	46	D
	Northbound	0.05	6	A	0.05	6	A	0.05	7	A
	<u>Southbound</u>	<u>0.45</u>	<u>32</u>	<u>C</u>	<u>0.53</u>	<u>35</u>	<u>C</u>	<u>0.66</u>	<u>45</u>	<u>D</u>
	<b>OVERALL</b>	<b>0.74</b>	<b>16</b>	<b>B</b>	<b>0.81</b>	<b>21</b>	<b>C</b>	<b>0.88</b>	<b>33</b>	<b>C</b>
West Union Street at Summer Street	Eastbound	0.53	11	B	0.61	13	B	0.65	14	B
	Westbound	0.67	20	B	0.76	25	C	0.84	30	C
	<u>Southbound</u>	<u>0.59</u>	<u>16</u>	<u>B</u>	<u>0.63</u>	<u>16</u>	<u>B</u>	<u>0.68</u>	<u>15</u>	<u>B</u>
	<b>OVERALL</b>	<b>0.67</b>	<b>16</b>	<b>B</b>	<b>0.76</b>	<b>18</b>	<b>B</b>	<b>0.84</b>	<b>20</b>	<b>B</b>
Union Street at Main Street	Eastbound	0.84	39	D	0.87	42	D	0.89	46	D
	Westbound	0.58	27	C	0.60	28	C	0.62	28	C
	Northbound	0.80	36	D	>1.0	57	E	>1.0	73	E
	<u>Southbound</u>	<u>0.83</u>	<u>48</u>	<u>D</u>	<u>0.87</u>	<u>55</u>	<u>D</u>	<u>0.88</u>	<u>57</u>	<u>E</u>
	<b>OVERALL</b>	<b>0.83</b>	<b>37</b>	<b>D</b>	<b>&gt;1.0</b>	<b>46</b>	<b>D</b>	<b>&gt;1.0</b>	<b>52</b>	<b>D</b>
Main Street at Summer Street	Eastbound	0.49	38	D	0.57	39	D	0.63	40	D
	Westbound	0.40	17	B	0.42	14	B	0.40	13	B
	Northbound	0.26	5	A	0.28	6	A	0.29	7	A
	<u>Southbound</u>	<u>0.63</u>	<u>9</u>	<u>A</u>	<u>0.69</u>	<u>11</u>	<u>B</u>	<u>0.70</u>	<u>12</u>	<u>B</u>
	<b>OVERALL</b>	<b>0.63</b>	<b>11</b>	<b>B</b>	<b>0.69</b>	<b>13</b>	<b>B</b>	<b>0.70</b>	<b>14</b>	<b>B</b>
Future Age-Restricted Driveway (By Others)	EB Exit L/R	n/a <sup>4</sup>	n/a	n/a	0.03	9	A	0.04	9	A
	NB L/T	n/a	n/a	n/a	0.03	5	A	0.03	5	A
MBTA Access Road at Site Driveway (Northern)	EB Exit L/R	n/a	n/a	n/a	n/a	n/a	n/a	0.02	9	A
	NB L/T	n/a	n/a	n/a	n/a	n/a	n/a	0.02	<5	A
MBTA Access Road at Site Driveway (Southern)	EB Exit L/T	n/a	n/a	n/a	n/a	n/a	n/a	0.08	10	A
	NB L/T	n/a	n/a	n/a	n/a	n/a	n/a	0.08	5	A

<sup>1</sup>Volume-to-capacity ratio

<sup>2</sup>Average control delay per vehicle (in seconds)

<sup>3</sup>Level of service

<sup>4</sup>n/a = not applicable