

Traffic Impact Assessment

One East Pleasant Street

Amherst, MA

Prepared for:

Archipelago Investments, LLC
Amherst, Massachusetts

TRAFFIC IMPACT ASSESSMENT

ONE EAST PLEASANT STREET
AMHERST, MASSACHUSETTS

Prepared for:

Archipelago Investments, LLC
Amherst, Massachusetts

September 2014

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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has prepared this Traffic Impact Assessment (TIA) to evaluate the traffic impacts and traffic safety characteristics associated with the proposed redevelopment of an existing commercial development, in order to accommodate a mixed-use residential and commercial development off East Pleasant Street in Amherst, Massachusetts. This report identifies existing traffic conditions along roadways serving the project site and identifies anticipated traffic increases associated with the proposed redevelopment project. This report also provides an analysis of the safety characteristics of the site including a review of the motor vehicle crash history in the vicinity of the site and an evaluation of sight distances at the proposed site access drive location onto East Pleasant Street.

As documented in this report, the proposed redevelopment project is not projected to result in a notable increase to area traffic volumes, with minimal increases in peak hour traffic volumes compared to existing use of the site and existing traffic volumes along the East Pleasant Street corridor. Given the proximity of the site to available area transit services and the site's location within walking distance to nearby commercial traffic generators, it is anticipated that a significant percentage of project-related traffic will be either transit, bicycle or pedestrian in nature and not result in new vehicle trips along the East Pleasant Street corridor.

A review of the site access reveals that the site driveway location provides adequate sight distances to provide safe and efficient access and egress for entering and exiting traffic flows. A review of the motor vehicle crash history within the study area reveals no safety deficiencies, with only four reported motor vehicles collisions along East Pleasant Street, in the vicinity of the project site, over the last five years of available crash data.

Based on the findings of this assessment, the proposed One Pleasant Street redevelopment project can be constructed with safe and efficient site access and minimal impacts to area traffic operations.

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has prepared this Traffic Impact Assessment (TIA) to evaluate the traffic impacts and traffic safety characteristics associated with the proposed redevelopment of an existing commercial development, in order to accommodate a mixed-use residential and commercial development off East Pleasant Street in Amherst, Massachusetts. This report identifies existing traffic conditions along roadways serving the project site and identifies anticipated traffic increases associated with the proposed redevelopment project. This report also provides an analysis of the safety characteristics of the site including a review of the motor vehicle crash history in the vicinity of the site and an evaluation of sight distances at the proposed site access drive onto East Pleasant Street.

As documented in this report, the proposed development is not projected to result in a notable increase to area traffic volumes, with minimal projected impacts to traffic volumes along roadways and intersections serving the project site.

A review of the site access reveals that the proposed site driveway location provides adequate sight distance to provide safe and efficient access and egress for entering and exiting traffic flows. A review of the motor vehicle crash history within the study area reveals no safety deficiencies, with only four reported motor vehicles collisions along East Pleasant Street, in the vicinity of the project site, over the last five years of available crash data.

Based on the findings of this assessment, the proposed One Pleasant Street development can be constructed with safe and efficient site access and egress and minimal impacts to area traffic conditions.

PROJECT DESCRIPTION

The proposed project entails the redevelopment of an existing approximate 17,400 square foot (sf) multi-tenant commercial condominium development in order to accommodate a mixed-use residential development with limited ground level commercial uses. Currently the project site provides a total of 50 condominium units within three separate buildings, ranging from approximately 300 to 600 sf, that house a mix of retail and office uses. Access and egress to the site is currently provided by two separate driveways onto the eastern side of East Pleasant Street, with the southern driveway serving as an entrance only driveway and the northern driveway serving as an exit only driveway. The site currently provides parking for 40 vehicles.

The proposed redevelopment project entails the razing of the existing structures on site and the construction of a new five-story structure that will provide limited commercial uses on the ground level and four stories of residential apartments, totaling 78 units on the upper levels. As part of the site redevelopment the existing site access will be consolidated to a single access point located at the northern end of the project site, opposite Hallock Street.

Figure 1 depicts the site location in relation to the local roadway network.

STUDY METHODOLOGY

This study was conducted in three distinct stages. The first stage involved an assessment of existing traffic conditions in the study area and included an inventory of roadway geometrics and existing site access conditions at the project site. The existing traffic safety characteristics of the site were also reviewed, including an inventory of reported motor vehicle collisions within in the general study area and an assessment of existing sight distances at the proposed site driveway location.

In the second stage of the study, future traffic conditions were projected. Specific travel demand projections were identified for the project based on the projected level of site activity following the redevelopment of the site. The traffic analysis conducted in stage two identifies the anticipated impact of project related traffic increases, and provides a comparison to the existing use of the project site.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any, identified in stage two of the study.

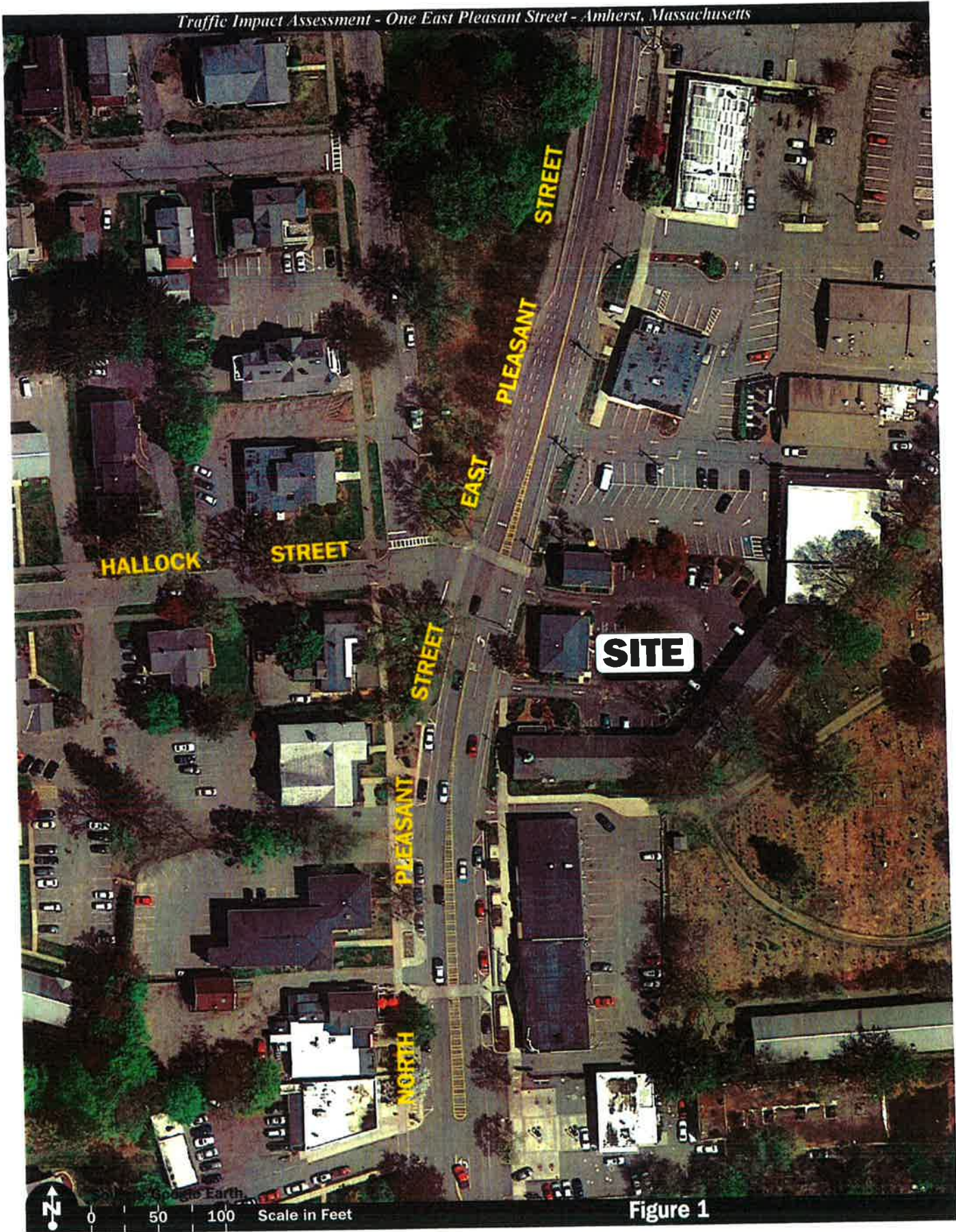


Figure 1

Site Location Map



Vanasse & Associates, Inc.
Transportation Engineers & Planners

EXISTING CONDITIONS

A comprehensive field inventory of existing traffic conditions on the study area roadways was conducted in August of 2014. The field investigation consisted of an inventory of existing roadway geometrics, posted speed limits and land use information within the study area. The study area for the project was selected to contain East Pleasant Street, the primary roadway providing access to the project site.

GEOMETRY

Roadways

East Pleasant Street

East Pleasant Street is a rural minor arterial under the jurisdiction of the Town of Amherst that traverses the study area in a general north-south orientation and provides connections between downtown Amherst to the south and Pine Street to the north. East Pleasant Street provides connections to North Pleasant Street to the north, which travels through the nearby University of Massachusetts at Amherst campus. To the south East Pleasant Street continues onto North Pleasant Street and South Pleasant Street, providing connections to the Main Street, College Street and Northampton Road (Route 9) corridors, which provide connections to the adjacent communities of Belchertown, Hadley and Northampton. The posted speed limit along East Pleasant Street, in the vicinity of the project site is 25 miles per hour (mph).

Within the study area East Pleasant Street generally provides a single approximate 12-foot travel lane in each direction, separated by a painted double-yellow centerline. In the vicinity of the project site, approximate 5-foot painted bicycle lanes are also provided along both the eastern and western sides of the corridor. Sidewalks are provided along both the eastern and western sides of East Pleasant Street, with a grass strip separating the sidewalk from the East Pleasant Street travel way on the eastern side of the roadway, adjacent to the project site. On both the eastern and western sides of the corridor, bus stops are provided in close proximity to the site, including shelters provided by the Pioneer Valley Transit Authority (PVRTA). Crosswalks are provided at a number of locations along East Pleasant Street and North Pleasant Street, in the downtown area, including an inlaid brick crosswalk located opposite Hallock Street, whose eastern terminus is located adjacent to the project site. In the vicinity of the project site illumination is provided along the corridor by way of overhead street lights located on the eastern side of the roadway.

Land use along East Pleasant Street, in the vicinity of the project site is predominantly commercial and residential in nature including several restaurants, a gas station, convenience store and other commercial uses.

MOTOR VEHICLE CRASH SUMMARY

Motor vehicle crash data were obtained from the Massachusetts Department of Transportation (MassDOT) Safety Management/Traffic Operations Unit for the five most recent years of data available (2007 to 2011) in order to identify reported crash trends and/or safety deficiencies within the study area. Motor vehicle crash data for each location were researched to determine the type of motor vehicle crash, severity, and roadway conditions for each incident.

Based on a review of the MassDOT crash data, a total of four motor vehicle collisions were reported along East Pleasant Street or North Pleasant Street, in the vicinity of the project site. Two of the reported incidents involved rear-end collisions, one in the northbound direction south of the project in the vicinity of the Zanna clothing store and one in the southbound direction in the vicinity of the project site. A third single-vehicle collision was reported that involved a bus colliding with an overhead sign support while traveling in the southbound. The fourth collision involved a motorist colliding with a bicyclist while turning right into the People's United Bank property located north of the project site.

No motor vehicle collisions were reported for the existing site driveways that serve the project site. No fatalities were reported within the study area over the five years of reported data. Given the level of traffic along the East Pleasant Street corridor, the reported frequency of collisions falls below the Massachusetts Department of Transportation's average crash rate.

SIGHT DISTANCE ANALYSIS

As part of the site redevelopment it is proposed that the existing site access and egress driveways be consolidated and relocated to the north. In order to ensure that safe access and egress will be provided, sight distances were collected at this location along East Pleasant Street to determine whether adequate sight distance is available at this location.

Available sight distance, as recorded in the field is compared to minimum requirements, as established by the American Association of State Highway and Transportation Officials (AASHTO).¹ The stopping sight distance (SSD) is a function of the perception/reaction time of an approaching motorist and the required braking distance, which is a function of vehicular speed. As previously noted, the posted speed limit along East Pleasant Street is 25 mph. Observed sight distances from the proposed site driveway location and the minimum required distance are displayed in Table 1.

¹A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials (AASHTO); 2011.

**Table 1
SIGHT DISTANCE SUMMARY**

Location	Direction	Available Sight Distance	AASHTO ^a Required
Proposed Site Driveway on East Pleasant Street	North of Drive	>500 Feet	155 Feet
	South of Drive	245 Feet	155 Feet

^aBased on AASHTO *A Policy on Geometric Design Sight Distance Requirements*. Required distance computed for 25 mph posted speed limit.

As summarized in Table 1, available sight distance at the proposed site driveway location on East Pleasant Street meets the minimum required stopping sight distance in both the northbound and southbound directions.

FUTURE CONDITIONS

SITE-GENERATED TRAFFIC

In order to develop the traffic characteristics of the project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)² were reviewed. Specifically, trip generation data for Land Use Code (LUC) 220 – Apartment and LUC 820 – Shopping Center were utilized. These land use codes are most representative for the proposed residential and ground level commercial portions of the proposed One East Pleasant Street redevelopment project.

Trip generation calculations were also performed for the existing 17,400 sf of commercial space located within the project site in order to provide a comparison between the existing and proposed redeveloped use of the site. Traffic counts were not conducted at the existing site as area schools and colleges were not in session during the preparation of this assessment and a number of tenants have already vacated the existing commercial space.

Trip generation calculations were performed for a typical weekday and Saturday, as well as the weekday morning, weekday evening and Saturday midday peak hours, which represent the critical time periods for project-related traffic activity. Table 2 provides a summary of the trip generation characteristics of the existing and proposed uses of the site.

²*Trip Generation*, Ninth Edition; Institute of Transportation Engineers; Washington, DC; 2013.

Table 2
TRIP-GENERATION SUMMARY

Time Period/Direction	Existing Commercial Trips ^a	Proposed Residential Trips ^b	Proposed Commercial Trips ^c	Delta
Average Weekday Traffic	744	520	334	110
Average Saturday Traffic	870	498	390	18
<i>Weekday Morning Peak Hour:</i>				
Entering	11	8	4	1
<u>Exiting</u>	<u>6</u>	<u>32</u>	<u>3</u>	<u>29</u>
Total	17	40	7	30
<i>Weekday Evening Peak Hour:</i>				
Entering	31	31	14	14
<u>Exiting</u>	<u>34</u>	<u>17</u>	<u>15</u>	<u>-2</u>
Total	65	48	29	12
<i>Saturday Midday Peak Hour:</i>				
Entering	44	22	20	-2
<u>Exiting</u>	<u>40</u>	<u>19</u>	<u>18</u>	<u>-3</u>
Total	84	41	38	-5

a – Based on LUC 820 trip rates applied to 17,400 sf of commercial space

b – Based on LUC 220 trip rates applied to 78 units of apartments

c – Based on LUC 820 trip rates applied to 7,800 sf of commercial space

As summarized in Table 2, the proposed One Pleasant Street redevelopment is expected to generate approximately 110 additional vehicle trips (55 entering and 55 exiting) on an average weekday and 18 additional vehicle trips (9 entering and 9 exiting) on an average Saturday, as compared to the existing use of the site. During the weekday morning peak hour the proposed redevelopment project is projected to generate 30 additional trips (1 entering and 29 exiting) as compared to the existing use of the site. During the weekday evening peak hour the proposed redevelopment project is projected to generate 12 additional trips (14 additional entering and 2 fewer exiting) as compared to the existing use of the site. During the Saturday midday peak hour the proposed redevelopment project is projected to generate 5 fewer trips (2 fewer entering and 3 fewer exiting) as compared to the existing use of the site.

It is noted that not all of the additional trips associated with the proposed redevelopment project will consist of vehicle trips. Based on a review of U.S. Census Journey to Work data for the Amherst Center area, only 44 percent of commuters utilized automobile as a means of transportation. A significant percentage of trips were instead made via other means including transit trips, bicycle trips and walking trips. As such, it is anticipated that the actual increase in vehicular traffic, as summarized in Table 2 is conservative.

CONCLUSIONS AND RECOMMENDATIONS

As documented in this study, the proposed One East Pleasant Street redevelopment is projected to result in minimal increases to area traffic volumes as compared to the existing use of the project site. During peak hours of roadway traffic, project-related traffic increases are expected to result one new vehicle trip every other minute or less, as compared to the existing use of the site. These projected increases likely overstate project-related traffic given the availability of area transit and the proximity of nearby commercial traffic generators that are within walking distance of the project site.

A review of the safety characteristics of the site reveal no existing safety deficiencies with regard to reported motor vehicle crashes in the vicinity of the project site. During the last five years of reported data less than one collision per year on average has been reported, with no reported collisions at the existing site access drives. A review of the proposed site driveway location indicates available sight lines meet the requirements to provide safe access and egress to and from the project site.

In order to ensure safe and efficient access and egress are provided, the following recommendations are provided.

Site Access

Access to the proposed One Pleasant Street redevelopment will be provided by way of a single access drive at the northern end of the site that will replace the two existing driveways that currently serve as entrance and exit only driveways. The proposed access design adheres to industry access management guidelines by consolidating movements to a single location, minimizing the number of conflicts between vehicular and pedestrian traffic and aligning the proposed access driveway with Hallock Street, on the opposite side of East Pleasant Street.

It is recommended that the proposed site access driveway provide a single entrance and exit travel lane, separated by a painted centerline. The proposed driveway should be placed under STOP-sign (MUTCD R1-1) control, with a painted STOP-bar installed on the driveway approach to East Pleasant Street. All proposed signage and pavement markings should be installed in accordance with Manual on Uniform Traffic Control (MUTCD) guidelines. Any existing or proposed vegetation at the site driveway should be regularly maintained to ensure adequate sight lines are provided along the corridor.

Pedestrian and Bicycle Accommodations

In order to promote the use of non-automobile travel by residents and guests of the residential project, as well as employees and customers of the limited ground level retail, it is recommended that the proponent install bicycle racks within the project site. Additionally, to the extent feasible it is recommended that PVTA maps and schedules be provided within the project to promote the use of area transit by residents, guests, employees and customers of the project.

The site access driveway is proposed in the vicinity of the existing crosswalk across East Pleasant Street from Hallock Street. The Town of Amherst is proposing significant improvements to the Kendrick Park property located opposite the site between East Pleasant Street and North Pleasant Street including new landscaping and sidewalk treatment. It is recommended that the project proponent coordinate with the Town of Amherst to relocate the existing crosswalk to be compatible with the Kendrick Park improvement plan and to eliminate potential conflicts with site driveway traffic.

CONCLUSION

In summary, the addition of project-related traffic to the study area roadways, and intersections is not anticipated to significantly impact traffic operations within the study area. With implementation of the above recommendations, safe and efficient site access will be provided and the proposed project can be built with minimal traffic impact on the roadway system.

TRIP GENERATION CALCULATIONS
