

Traffic Study

(February, 2017)

Proposed 194 Unit Residential Units on Essex Road (Route 133), Ipswich

Complete report available upon request

SECTION 1: EXECUTIVE SUMMARY

Bayside Engineering has prepared a Traffic Impact and Access Study (TIAS) for the proposed multi-family development to be located on Essex Road (Route 133) in Ipswich, MA. The project is to contain 194 apartment units with two access points to Essex Road.

The study has been prepared to conform to the March 2014 MassDOT/EOEEA *Transportation Impact Assessment (TIA) Guidelines*. This report identifies existing traffic operating parameters on key roadways and intersections within the study area, evaluates the anticipated traffic volume increases as a result of the proposed project, analyzes the project's traffic-related impacts, determines the projects access/egress requirements and identifies appropriate mitigating measures designed to minimize the traffic-related impacts created by the project. The following provides a brief summary of the study findings.

PROJECT DESCRIPTION

The project site is located on the north side of Essex Road, east of County Street (Route 1A). Currently the site contains a single family home and is located behind a small mixed-use development (which includes the Lahey Health Primary Care Ipswich facility and Bruni Marketplace (small commercial space)).

The development will consist of the construction of 194 residential apartment units. Under proposed conditions, one additional curb cut will be constructed to Essex Road, east of the Bruni Market Place driveway. The existing driveway to the single family home (#28 Essex Road) will be modified to accommodate the western entrance to the project. 345 parking spaces are proposed for the apartments.

Figure 1 shows the site location in relation to the surrounding area.

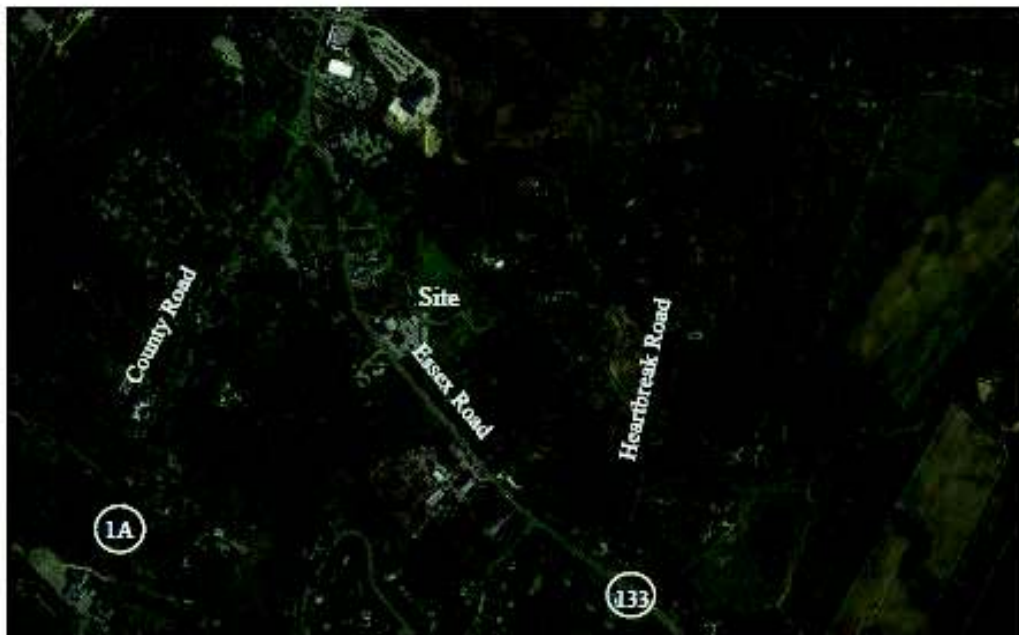


Figure 1
Site Location Map

STUDY AREA

Roadway geometry and traffic control information was collected for the following locations:

- County Road (Route 1A) and Essex Road (Route 133)
- Essex Road and driveway to #28 Essex Road
- Essex Road and existing Bruni Marketplace driveways
- Essex Road and Ruth Way
- Essex Road and Heartbreak Road

EXISTING CONDITIONS

Evaluation of existing conditions within the study area includes a description of roadway geometrics, traffic constraints, land uses at the intersections, and quantification of traffic volumes.

Existing Traffic Volumes

To establish base traffic conditions within the study area, manual turning movement and vehicle classification counts were obtained in June 2015. Peak-period turning movement counts were conducted during the weekday morning peak period (7:00 to 9:00 AM) and

weekday evening period (4:00 to 6:00 PM). Daily traffic counts were conducted on Essex Road for a two-day period using automatic traffic recorders (ATR).

The traffic-volume data gathered as part of this study was collected during the month of June 2015. Data from the MassDOT was reviewed to determine the appropriate seasonal adjustments. Based on the MassDOT data, June represents slightly higher than average month conditions (approximately 0.2% higher). The June volumes were used to represent average month conditions.

Essex Road was recorded to carry approximately 10,900 vehicles per day (vpd) east of Ruth Way. During the weekday morning peak hour, approximately 826 vehicles per hour (vph) were recorded, and during the weekday evening peak hour, approximately 1,034 vph were recorded.

Motor Vehicle Crash Data

Motor vehicle crash data for the study area intersections and roadways were obtained from MassDOT from 2010 to 2014. The motor vehicle crash data was reviewed to determine crash trends in the study area. Eight (8) crashes were reported during the five and year interval. All of the crashes occurred at the intersection of County Road and Essex Road. Of these crashes, Five (5) were rear-end type collisions, There was one (1) angle-type collision, one (1) head-on collision and one (1) single-vehicle collision. The intersection does not experience a significant crash rate. No fatalities were reported at the intersection.

PROBABLE IMPACTS OF THE PROJECT

No-Build Traffic Volumes

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 the year 2023. Traffic volumes on the roadway network at that time, in the absence of the proposed project, would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific developments by others expected to be completed by 2023. The Metropolitan Area Planning Council and the Central Transportation Planning Staff were contacted to determine planning growth. Based on the CTPS modeling, growth is forecast at a rate of 0.4 percent per year. To be conservative, a one (1.0) percent compounded growth rate was used to develop future No-Build baseline conditions.

Discussions with the Town of Ipswich indicate that at this time there is one other potential project that has been identified that would need to be included in the No-Build projections. This is the proposed mixed-use on County Street. Potential traffic from this project was obtained from the traffic study prepared for the project and included in the background projections.

Build Traffic Volumes

Site generated traffic was based on trip-generation data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation* manual¹. The trip generation data for Land Use Code (LUC) 220 – Apartments, published by the ITE were evaluated to determine the expected trip generation for the project's components.

On a typical weekday, the proposed apartments are expected to generate 1,300 daily vehicle trips (650 vehicles entering and 650 vehicles exiting). During the weekday morning peak hour, 99 vehicle trips (20 vehicles entering and 79 vehicles exiting) are expected. During the weekday evening peak hour, 124 vehicle trips (81 vehicles entering and 43 vehicles exiting) are expected. Most of this traffic is expected to be automobiles.

TRAFFIC OPERATIONS ANALYSIS

In order to assess the impacts of the proposed project on the roadway network, traffic operations analyses were performed at the study area intersections under 2015 Existing, 2022 No-Build and 2022 Build conditions. These analyses indicate that proposed project will not result in a significant impact on traffic operations at the study area intersections over No-Build conditions.

RECOMMENDATIONS

The project Proponent has proposed a combination of structural and non-structural mitigation measures to address the potential impacts of the proposed project. The proposed mitigation measures are identified below.

County Road and Essex Road

The critical movements at this intersection are projected to operate at level of service F during the weekday morning and evening peak hours, with or without the project. Observations of existing conditions indicate that actual operations are not as poor as the HCS model indicates. As part of the mitigation, the project proponent will monitor this intersection 12 and 24 months after issuance of the Final Certificate of Occupancy for the Project. If the resulting level of service is poor (resulting from the project), the Project proponent will commit to providing design plans for the signalization of the intersection.

Essex Road and West Site Driveway

It is recommended that the site driveway consist of one entering and one exiting lane. The exiting lane should be under STOP sign control. To improve sight distances to the east, it is recommended that approximately 12 feet of the existing retail building located within Bruni Marketplace be removed and landscaped. Landscaping should not exceed

¹ *Trip Generation*, Ninth Edition; Institute of Transportation Engineers, Washington, DC; 2012.

three (3) feet in height and be maintained so as to not impact sight distances.

Essex Road and East Site Driveway

It is recommended that the site driveway consist of one entering and one exiting lane. The exiting lane should be under STOP sign control. Landscaping in the vicinity of the driveway should not exceed three (3) feet in height and be maintained so as to not impact sight distances.

Transportation Demand Management

A Transportation Demand Management (TDM) plan will be implemented to reduce the project's overall traffic impact through the implementation of measures that are aimed at minimizing the use of single occupancy vehicles the Proponent will implement a number of measures that will contribute toward the reduction of vehicular traffic to and from the site. As part of the TDM program, a transportation coordinator (commercial accommodations staff member) will be responsible for overseeing the TDM program. The program will include ridesharing opportunities.

Ridesharing - The Proponent will promote ridesharing to its tenants by way of carpools. Information regarding carpooling and its benefits will be distributed to all residents and posted in common areas. The on-site transportation coordinator will be responsible to ensure that the ridesharing program is promoted and provided.

Carpool Parking Spaces - Two parking spaces will be designated as "Carpool Only". Signage will be provided for each space clearly marking them as carpool spaces only.

Bicycle Facilities - Provide secure bicycle racks, which provides the cyclist with a degree of comfort, knowing their bicycle is safe, and as such more likely to be used as a means of travel to/from work or for recreation.

Monitoring - The applicant shall, in consultation with the Town of Ipswich, conduct a traffic monitoring and reporting program which will include a survey of residents and employee participation in the TDM program. The traffic monitoring program will include measuring traffic volumes at the access points to the project over a continuous 7-day, week-long period and will be conducted at 12 and 24 months after issuance of the Final Certificate of Occupancy for the project.

Zip Car - Explore the potential to provide one parking space reserved for Zipcar (Zipcar is a nationwide car-sharing service which is also used extensively in the Boston metropolitan area) or other similar ride share program. This will encourage people who do not own a vehicle to use the service and be rewarded with a parking spot when they come back to the site.

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SUMMARY

Review of the proposed project and access plan shows that in relation to roadway capacity, traffic safety, and traffic impacts upon the surrounding roadway network, the proposed residential development will have minimal impact on the surrounding roadways and intersections. The existing roadway system has sufficient capacity for the proposed project.