



Evaluation of “Truck Ban” Petition

Ernest Avenue
June 20, 2023

Petition: Councilor George J. Russell on behalf of Joanne Papagni request installation of a restriction for through traffic of trucks on Ernest Ave. (# 7f CC January 25, 2022 # 8m CC August 9, 2022)

Scheduled Committee Hearing: June 21, 2023 Traffic & Parking Committee, Item 6b

Prepared by: Todd M. Kirrane., Assistant Director

The petitioners have requested altering Ernest Avenue by instituting a Truck Exclusion on the roadway. Truck exclusions only apply to through trucks, they do not apply to trucks going to a destination on the street or to those streets that have no other alternative than use of the street. Truck Exclusion requests are submitted by the City Council to the Commonwealth’s Secretary of Transportation and must meet the criteria established in the Massachusetts Amended Manual on Uniform Traffic Control Devices including:

One or more of the following criteria may be sufficient justification for truck exclusion:

- A. A volume of heavy commercial vehicles, usually in the range of 5% to 8% of the total traffic, reduces the utilization of the facility and is cause for a substantial reduction in capacity or safety.
- B. The condition of the pavement structure of the route to be excluded indicates that further repeated heavy wheel loads will result in severe deterioration of the roadway, subject to Department review.
- C. In certain instances where land use is primarily residential in nature and a municipality has requested exclusion only during hours of darkness, a nighttime exclusion may be granted.

Prior to considering an HCVE, a suitable alternate route must be available and must have an effective width and pavement structure which can safely accommodate the additional truck traffic. The alternate route shall meet one of the following conditions:

- A. The alternate route lies wholly within the community submitting the application.
- B. The alternate route lies partially in an adjacent community, but only on State Highway in the adjacent community.
- C. The alternate route lines wholly or partially in an adjacent community, but the adjacent community has provided written acceptance of the proposal.

The decision to exclude heavy commercial vehicles shall be based on an engineering study. The engineering study shall be submitted by the municipality to the Department, and shall include the following data:

- A. A 24-hour continuous count of all vehicles using the subject street. The count shall be broken into 30-minute intervals showing:
 1. Commercial vehicles with a carrying capacity over 2½ tons.
 2. All other vehicles.
- B. A map of the area, with the excluded street marked in red, the alternate route in green
- C. The physical characteristics of excluded and alternate streets in question, i.e., length, width, type and condition of surface and sidewalk.
- D. The types of buildings or property abutting street (residential dwellings, businesses, educational, playgrounds, etc.).
- E. The zoning of street (residential, industrial, etc.).
- F. The proximity of probable alternate route to the proposed excluded route and the additional distance to be traveled using the alternate route.
- G. The types of traffic control existing on street.
- H. The hours during which the proposed exclusion is to be in effect.
- I. A written statement from the municipality as to the need for the exclusion and an acknowledgement of acceptance of the responsibility for installation and maintenance of appropriate signage and enforcement.

Typically, the City uses a consultant to perform these studies and the expected fee is approximately \$25,000 per study. To determine whether the request will meet the criteria required by the Massachusetts Department of Transportation, and therefore worth the expenditure by the City, DTM staff has conducted an initial report to guide Council decision making process.

Ernest Avenue is classified by the Massachusetts Department of Transportation (MassDOT) as a Local Roadway under City Jurisdiction. The roadway is approximately 28 feet curb to curb, is approximately 2630 feet long, generally runs in a north-south direction, and provides a residential connection between Hamilton St. and Grafton St. The road includes two-way motor vehicle operations with 1 general purpose travel lane in each direction. On-street parking is not restricted. The statutory (unposted) speed limit is 30 mph. Land use along this section is single family residential with a Fire Station at the southern corner. There are no sidewalks provided along the street; all vulnerable roadway users are expected to share the road with motor vehicles. The pavement condition on the public portions of Ernest Avenue is in fair to good condition and is constructed to City specifications. Ernest Avenue has a small privately owned section that links the two public way portions. This section is shown in image 2 and the pavement condition in this area is poor with many potholes.

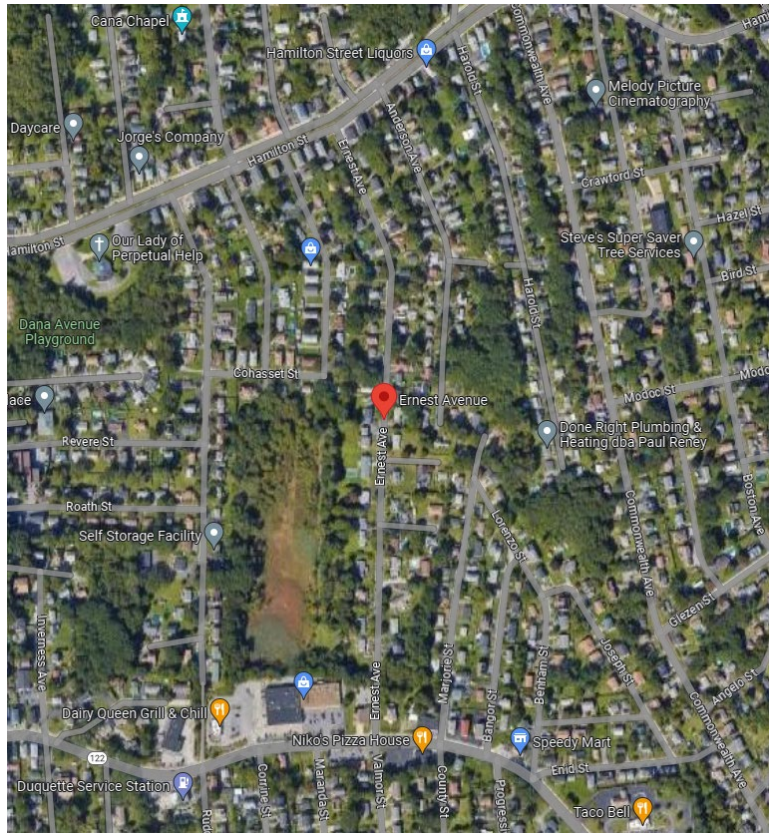


IMAGE 1: AERIAL VIEW OF LOCATION



IMAGE 2: AERIAL VIEW OF PRIVATE WAY PORTION



IMAGE 3: STREET VIEW OF LOCATION



IMAGE 4: STREET VIEW OF PRIVATE WAY PORTION

TRAFFIC VOLUME

Daily Traffic

A traffic volume study was conducted using StreetLight vehicle volume data. StreetLight vehicle volume are calculated by StreetLight's machine learning algorithm. The learning algorithm gathers anonymized location records from smart phones and navigation device in connected cars and trucks. The data is processed using StreetLight Route Science algorithm which uses the location data points over time into contextualized, aggregated, and normalized travel patterns.

As reviewed earlier, Ernest Avenue is classified as a Local roadway under City jurisdiction by the Massachusetts Department of Transportation (MassDOT). A two-lane Local roadway typically carries 1000 vehicles per day, on average. The results for 2021 data indicate an Average Daily Volume of 279 vehicles, which is within range for a Local Roadway in an urban environment. There is an average of 7 heavy duty trucks per day, roughly 2% of the average daily volume.

SPEED DATA

As stated earlier, the unposted statutory speed limit for Ernest Avenue is 30 mph per Chapter 90, Section 17 of the Massachusetts General Laws. To evaluate the incidence and severity of speeding, two measures are evaluated using Streetlight Insight. The average speed is as the name implies, the average or mean speed of all travelers on a particular roadway segment. The 85th percentile speed is the speed below which 85% of the vehicles on the road are traveling (conversely, 15% of drivers are traveling faster than the 85th percentile speed). The results for 2021 data are an Average Speed of 11 to 16 mph and an 85th percentile speed of 19 to 25 mph. These speeds are within expected limits for a residential side street in an urban setting.

ALTERNATIVE ROUTE

As a Local Road, Ernest Avenue would not typically be identified as a designated Truck Route as these routes are typically on Urban Collector and Arterial Roadways. However, in this case, if trucks are using it for cut-through purposes it is because it is the first street that travels between Grafton Street and Hamilton Street in a straight manner. However, the alternative does exist to the west at Plantation Street, which is classified as an Urban Collector Roadway and to the east at Jennings/Commonwealth, though these are classified as Local Roadways. That being said, if Ernest Avenue is to be restricted it is likely that cut through trucks would use the 9 Local Streets between Ernest and Plantation to travel between Grafton St and Hamilton Street.

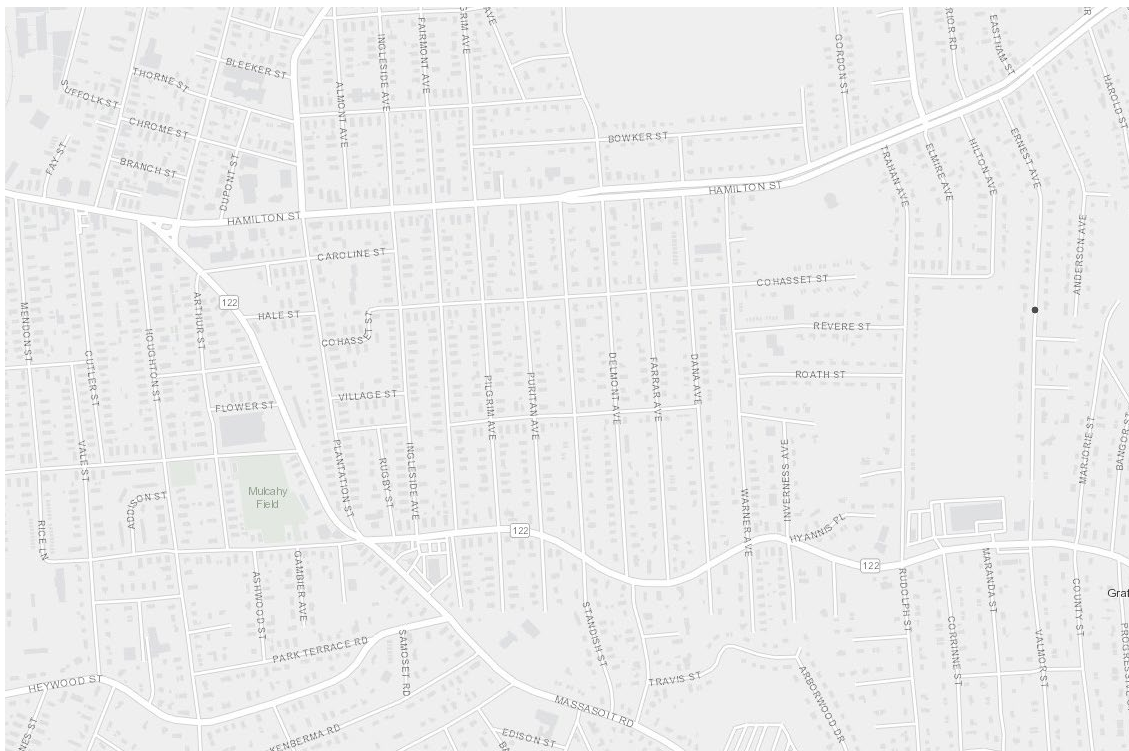


IMAGE 5: GRID NETWORK

CRITERIA

Below is an initial analysis of the 3 criteria for the Truck Exclusion based on staff knowledge of the area and the existing conditions based on Streetlight Data:

- A. A volume of heavy commercial vehicles, usually in the range of 5% to 8% of the total traffic, reduces the utilization of the facility and is cause for a substantial reduction in capacity or safety. – *The truck volume is only 2% of the average daily volume and does not meet the threshold established by the criteria. The volume level would not be determined to be detrimental to the utilization of the facility.*
- B. The condition of the pavement structure of the route to be excluded indicates that further repeated heavy wheel loads will result in severe deterioration of the roadway, subject to Department review. – *Other than the private section, the pavement condition is built to City specifications for a local roadway and the pavement condition is in good condition. The low truck volume does not result in severe premature deterioration of the pavement condition, though the severely deteriorated portion of the private segment may meet this criterion.*
- C. In certain instances where land use is primarily residential in nature and a municipality has requested exclusion only during hours of darkness, a nighttime exclusion may be granted. – *The primary use is residential, and should the Council decide to establish an evening/overnight restriction this likely would be met.*

Recommendation: Based on the initial data collection the likelihood that a complete ban would be approved by the Massachusetts Department of Transportation is unlikely unless they consider the pavement condition of the private segment. However, it is likely that an evening ban would be approved based on the residential nature of the street – though even this requires the full study and staff would recommend seeing if residents who attend the meeting to gauge interest in this option before recommending moving forward with the study.

If the Council would like to move forward with a study, then we recommend approval of a Chair's Order requesting that City Manager commission a Truck Exclusion Study for Ernest Avenue.