



Evaluation of "Truck Ban" Petition

Hadwen Road (June to Chandler)
June 20, 2023

Petition:	Christine Parcher request installation of No Trucks Over 2 Tons signage on Hadwen St. at the intersection of June St. and Hadwen St. (# 8k CC April 26, 2022)
Scheduled Committee Hearing:	June 21, 2023 Traffic & Parking Committee, Item 6d
Prepared by:	Todd M. Kirrane., Assistant Director

The petitioners have requested altering Hadwen Road by instituting a Truck Exclusion on the roadway between June Street and Chandler Street. 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.

Hadwen Road is classified by the Massachusetts Department of Transportation (MassDOT) as a Local Roadway under City Jurisdiction. The roadway is approximately 28.5 feet curb to curb in this segment, is approximately 2300 feet long, generally runs in a northeast-southwest direction, and provides a residential connection between Chandler Street and June Street. The road includes two-way motor vehicle operations with 1 general purpose travel lane in each direction. On-street parking along both curblines is restricted during the overnight hours as part of the permanent Winter Ban from December 1st to March 31st. The statutory (unposted) speed limit is 30 mph. Land use along this section is single & multi-family residential. There are sidewalks provided along the street, although they are not all ADA compliant. The pavement condition on the public portions of Hadwen Road is in fair to poor condition and is constructed to City specifications.

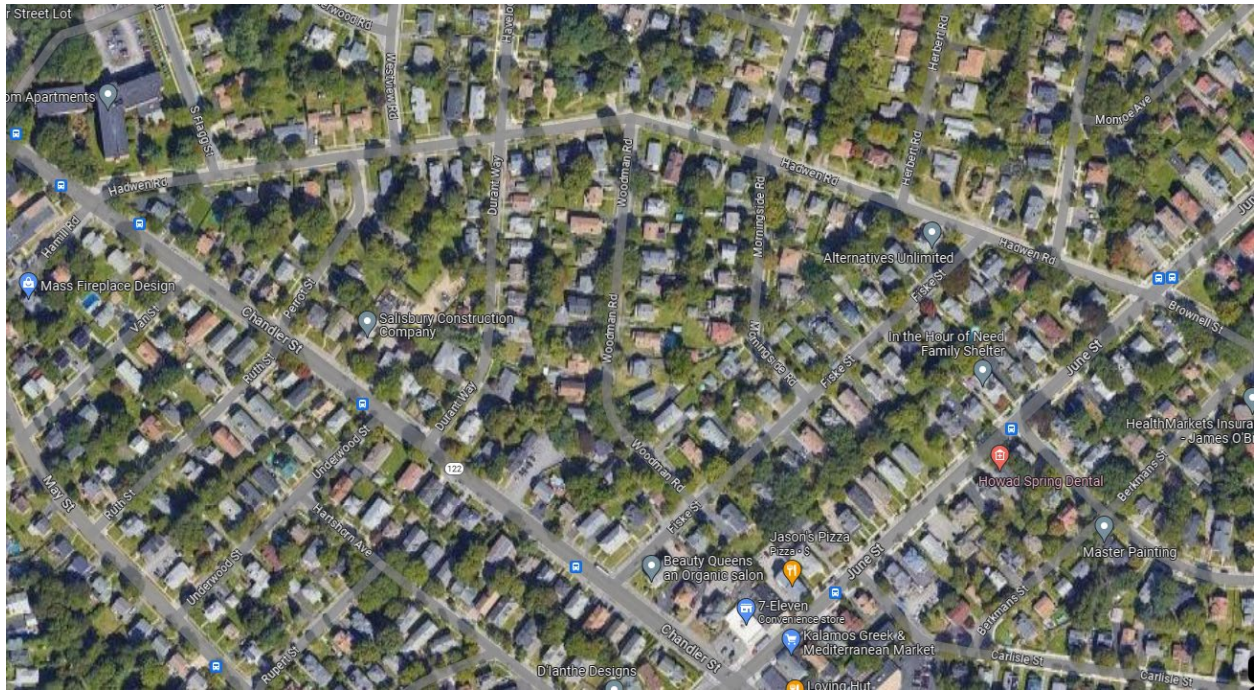


IMAGE 1: AERIAL VIEW OF LOCATION



IMAGE 2: STREET VIEW OF LOCATION

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, Hadwen Road 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 3110 vehicles, which is higher than the range for a Local Roadway in an urban environment and is likely attributed to the fact that it acts as more of a collector roadway. There is an average of 57 heavy duty trucks per day, less than 2% of the average daily volume.

SPEED DATA

As stated earlier, the unposted statutory speed limit for Hadwen Road 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 20 to 22 mph and an 85th percentile speed of 26 to 35 mph. These speeds are within expected limits for a residential side street in an urban setting.

ALTERNATIVE ROUTE

As a Local Road, Hadwen Road 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 Chandler Street and June Street in a direct manner. The preferred route is Chandler Street to June Street directly which is approximately 1170 feet to the south or 1700 feet to the east depending on the direction one is traveling. If this section of Hadwen Road has a truck exclusion it is unlikely to divert trucks to other Local roadways because there is no alternative than the main roadways.

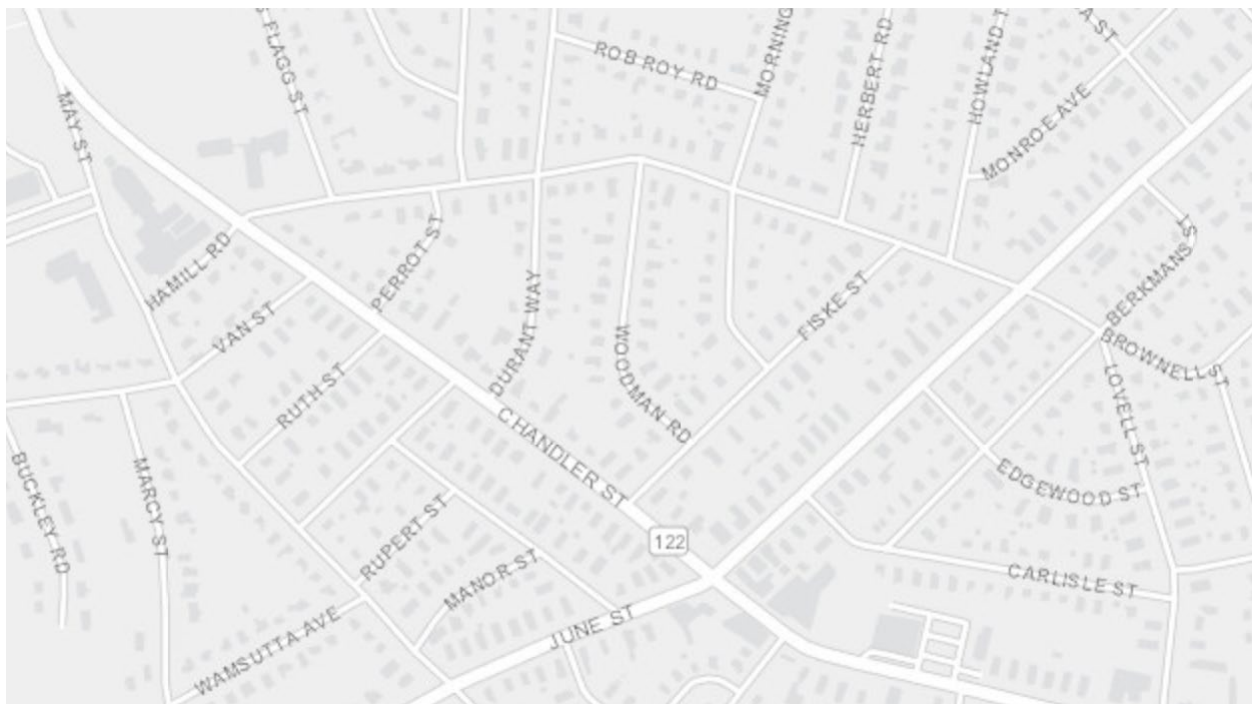


IMAGE 3: GRID NETWORK

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 less than 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. – *Given the extremely low truck volume, less than 2% of the average daily volume, it is unlikely to 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. However, given the low truck volume of less than 2% of the roadway it may not warrant the cost of the study and may be rejected by MassDOT because of the low volume.*

Recommendation: Based on the initial data collection the likelihood that a complete ban would be approved by the Massachusetts Department of Transportation is low. Staff recommends a vote to FILE this request.