



Traffic Study Petitions

Fourth Street
June 20, 2023

Petition:	Joseph Zwirblia request traffic study for Fourth St. be conducted. (# 9t CC July 20, 2021)
Scheduled Committee Hearing:	June 21, 2023 Traffic & Parking Committee, Item 10a
Prepared by:	Todd M. Kirrane., Assistant Director

The purpose of this study is to establish and review baseline conditions for Fourth Street to identify any safety or operational deficiencies and determine if safety improvements are warranted. Recommendations will be based on federal, state, and industry best practices.

Fourth Street is classified by the Massachusetts Department of Transportation (MassDOT) as a Local Roadway under City jurisdiction. The roadway is approximately 29 feet curb to curb and provides residential connections to Mill Street. Fourth Street is two way and provides one general purpose motor vehicle travel lane in each direction. On Street parking is restricted only December 1 to March 31st during the overnight hours on the even side of the street. The statutory (unposted) speed limit is 30 mph. Land use is primarily single and multi-family residential. There are no sidewalks along the street requiring vulnerable roadway users to share the road with motor vehicles. The street has a steep change in slope as it steps up between the low point with Mill Street and the high point at its intersection with Scandinavia Avenue.

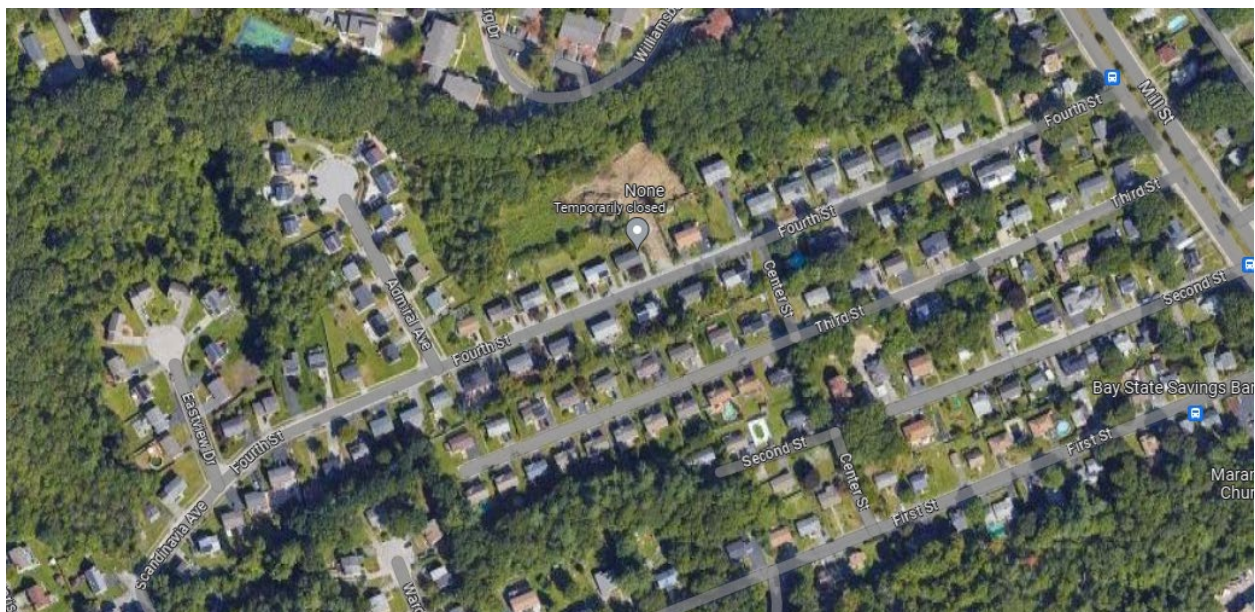


IMAGE 1: AERIAL IMAGE OF LOCATION



IMAGE 2: STREET VIEW IMAGE OF LOCATION

SPEED STUDY

A speed study was conducted using StreetLight Insight vehicle volume data. StreetLight vehicle speeds are calculated by StreetLight's machine learning algorithm. The learning algorithm gathers anonymized location records from smart phones and navigation devices 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.

The unposted statutory speed limit for all streets within the study area 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. 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 was an Average speed of 13 to 20 mph and an 85th percentile speed of 22 to 23 mph. The 95th percentile range was 25 to 26 mph. These speeds are within expected range for a local residential roadway within an urban environment.

TRAFFIC VOLUMES

Daily Traffic

A traffic volume study was conducted also using StreetLight vehicle volume data.

As reviewed earlier, Fourth Street is classified as a Local Roadway under City jurisdiction by the Massachusetts Department of Transportation (MassDOT). Local roadways within an urban setting typically carry fewer than 1000 vehicles per day, on average. The results for 2021 data

shows and average daily traffic volume of 798 vehicles, which is within expected ranges for a residential Local roadway within an urban environment.

CRASH SUMMARY

In order to identify crash trends and safety characteristics for the study area, crash reports were obtained from MassDOT Crash Database for the latest five-year period available. Five crashes were reported in the MassDOT Crash database for the study for the latest five-year period available from 2018 to 2022. Out of those five crashes, three occurred at the intersection of Fourth Street and Mill Street, all remaining crashes took place at mid-block locations. One of the mid-block crashes took place during winter weather conditions and the other involved side swiping a parked motor vehicle. One of the crashes at the intersection took place during winter weather conditions, one involved a single motor vehicle striking a tree, and the third involved a motor vehicle crashing into a pedestrian – though there were no reported injuries as part of that crash. The crash data does not indicate an elevated level of collisions.

CONCLUSION

The initial data collection does not present any history of demonstrated safety concerns as it relates to motor vehicle speeds, volumes, or crash history. The changes that are expected to take place this year on Mill Street as it relates to a road diet, motor vehicle speed reduction, and improved safety and access for pedestrians and cyclists should further improve safety at the intersection of Fourth Street and Mill Street.

Recommendation: Based on the data collected, DTM staff recommend Council vote to File this requested Safety Study.