



Evaluation of “No Parking Anytime”

Intersection of Main Street at Castle Street

April 19, 2023

Petition:	Stacie Brimmage request installation of No Parking from Here to Corner in front of 796 Main St. and 800 Main St. at the intersection of Main St. and Castle St.
Scheduled Committee Hearing:	April 26, 2023 Traffic & Parking Committee, Item 4c
Prepared by:	Todd M. Kirrane., Assistant Director

The petitioners have requested the installation of a posted No Parking Anytime sign on Main Street at its intersection with Castle Street to improve motor vehicle sightlines and safety for exiting vehicles.

Main Street is classified by the Massachusetts Department of Transportation (MassDOT) as a Urban Principal Arterial under City Jurisdiction. The roadway is 40 feet curb to curb, generally runs in a northeast-southwest direction, and provides a connection between Main South and communities to the west with downtown Worcester. This section of Main Street includes two-way motor vehicle operations with 1 general purpose travel lane in each direction. On Street parking is permitted on both sides of the street within the study area. The statutory (unposted) speed limit is 30 mph. Land use along this section of Main Street is primarily commercial with some mixed-use residential. There are sidewalks along both sides of the street and crosswalks across the east, west, and southern legs of the intersection.

Castle Street is classified by the Massachusetts Department of Transportation (MassDOT) as a Local Roadway under City Jurisdiction. The roadway is 26 feet curb to curb, generally runs in a east-west direction, and provides a residential connection to Main Street. Castle Street includes two-way motor vehicle operations with 1 general purpose travel lane in each direction and transitions to a private way approximately 380 feet west of Main Street and then dead ends at Oread Castle Park. On Street parking is permitted on both sides of the street within the study area. Castle Street is STOP controlled at its intersection with Main Street. The statutory (unposted) speed limit is 30 mph. Land use along Castle Street is multi-family residential. There are sidewalks along both sides of the street and a crosswalk across the eastern leg at its intersection with Main Street.

Currently City Ordinance Chapter 13, Section 37(h) prohibits parking “upon any roadway within twenty feet of a crosswalk, marked or unmarked, at any intersection.” Curbside parking on Main Street to the south of Castle Street, in front of 800 Main Street, is regulated under this City Ordinance for an additional 10 feet from the crosswalk. Curbside parking on Main Street to the north of Castle Street, in front of 796 Main Street, is regulated under this City Ordinance for 20 feet from the intersection even though there is no designated crosswalk. However, because it is not posted, staff observations and review of historic imagery from Google streetview and aerial imagery shows that this is often violated with vehicles parking within 8.5 feet of the intersection

on north and right up to the crosswalk on the south. These demonstrated parking habits present a safety concern as they significantly reduce the available sight distance for vehicles exiting Castle Street and turning onto Main Street. They also present a safety and access concern for pedestrians as they are hidden from vehicles traveling down Main Street by the parked vehicles.

On Castle Street parking is also regulated by this City Ordinance, though staff site visits showed that vehicles were often parking closer to Main Street. This is of particular concern because it does not allow the vehicles entering or exiting Castle Street to align properly in their own lane and is a risk for head on collisions as a result.

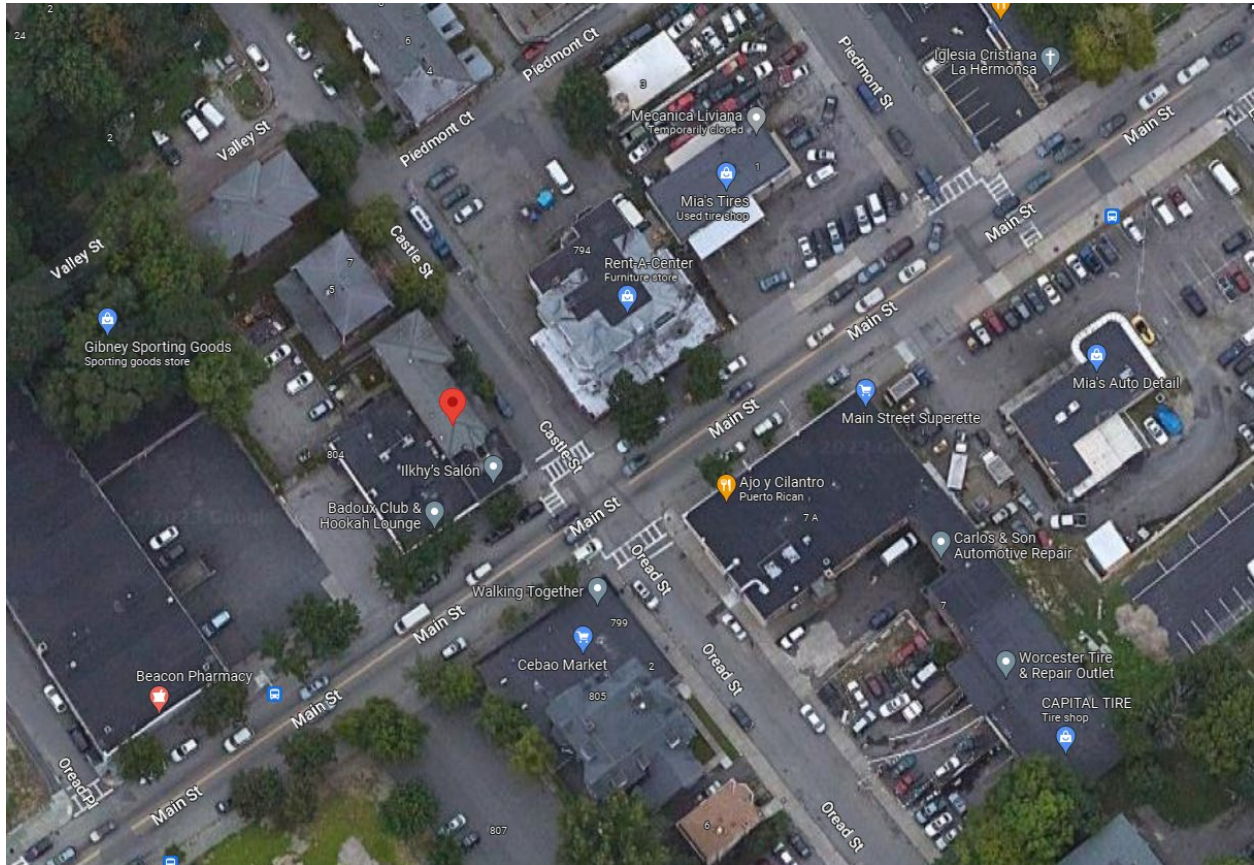


IMAGE 1: AERIAL VIEW OF INTERSECTION

The American Association of State and Transportation Officials (AASHTO) standards reference two types of sight distances which are relevant for the intersection of Main Street and Castle Street: Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD). Stopping sight distance pertains to roadway segments and is applicable for vehicles traveling on Main Street approaching the intersection and intersection sight distance, as the name implies, relates specifically to intersections and applies to vehicles turning from Castle Street. Sight lines for critical vehicle movements at the intersection for Main Street and Castle Street were compared to minimum AASHTO recommended Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD) guidelines for the 85th percentile speed. The evaluation is based on field measurements of available sight lines conducted in April 2023 and average speed from Streetlight software. Sight line calculations are summarized below in Table 1.

Table 1
Sight Distance

Approach /Travel Direction	Available Sight Distance	AASHTO Recommended ¹ 85 th Percentile Speed (24 mph)
Stopping Sight Distance		
Northbound	>350'	143'
Southbound	>350'	143'
Intersection Sight Distance - Stop Control – Parked Vehicles		
Looking left	<25'	240'
Looking right	<25'	240'
Intersection Sight Distance - Stop Control – No Parked Vehicles		
Looking left	90'	240'
Looking right	100'	240'

¹Recommended sight distance based on A Policy on Geometric Design of Highways and Streets, AASHTO, 4th edition 2001. Based on driver height of eye of 3.5 feet to object height of 2.0 feet for SSD or 3.5 feet for ISD.

As demonstrated, the intersection as currently utilized with parked motor vehicles violating the unposted City Ordinance is significantly below the recommended Stopping Sight Distance and Intersection Sight Distance. Although still below the recommended distances, both improve significantly with the removal of 20 feet of parking from the intersection to a level that is more in line with expected conditions for an urban small business commercial district.

In addition to reviewing the existing conditions, stopping sight distance, and intersection sight distance, DTM staff have analyzed the available crash data from the Massachusetts Department of Transportation Crash Database. Between January 2018 and March 2023 there have been 5 crashes on Main Street at the intersection with Castle Street. All four crashes involving vehicles were angle style crashes that may have been avoided with improved sightlines and one involved a pedestrian crossing the street that was struck by a turning vehicle.

Recommendation: Based on the documented crash history and the restricted sightlines caused by parked motor vehicles, DTM staff recommends approval of the following:

- A posted NO PARKING ANYTIME zone on the western curblineline of Main Street beginning at its intersection with Castle Street and extending 20 feet to the south.
- A posted NO PARKING ANYTIME zone on the western curblineline of Main Street beginning at its intersection with Castle Street and extending 20 feet to the north.
- A posted NO PARKING ANYTIME zone on the northern curblineline of Castle Street beginning at its intersection with Main Street and extending 20 feet to the west.
- A posted NO PARKING ANYTIME zone on the southern curblineline of Castle Street beginning at its intersection with Main Street and extending 20 feet to the east.