

MEMORANDUM

TO: Mr. Matthew Roman

FROM: Bryan Zimolka, PE, ENV SP
Kristen Antunes, EIT

DATE: April 22, 2022

RE: 148 Myrtle Street, Melrose, MA Parking Generation

Nitsch Project # 15029

Introduction

Nitsch Engineering has completed this Parking Generation Assessment for the proposed residential development located at 148 Myrtle Street in Melrose, MA. The existing site, comprising a two-unit residential home, will be redeveloped to include a five-unit townhouse building with five proposed parking spaces. The City of Melrose Zoning Ordinance requires two off-street parking spaces per dwelling unit. Nitsch Engineering conducted a parking generation assessment for the development to evaluate the feasibility of the proposed parking.

Existing Conditions

148 Myrtle Street is bounded by Myrtle Street to the east; and residences to the north and south. Myrtle Street is a north-south, local roadway under the jurisdiction of the City of Melrose. The roadway runs from its northern terminus at West Emerson Street to its southern terminus at Grove Street. Within the project vicinity, Myrtle Street is a two-way roadway with parking permitted on the eastern side of the street. Sidewalks are provided on both sides of the roadway and no bicycle accommodations are present.

The existing site consists of a two-unit, three-story residential home, a paved driveway, and a garage located at the rear of the property. Access to the site is provided by a driveway on Myrtle Street.

The project site is located 0.4 miles from downtown Melrose which contains restaurants, shops, recreational facilities, and other community destinations. Figure 1 shows the locus map of the project.

Proposed Development

The proposed project is a five-unit townhouse building, each unit consisting of four bedrooms. One parking space is proposed for each of the five units located on the southern side of the site. Ingress and egress to the site will be consistent with the existing site layout, with a driveway providing access to the building from Myrtle Street.



Figure 1: Locus Map

Myrtle Street
148 Myrtle Street
Melrose, MA

Data Source: BingMaps
Nitsch Project #: 15029



Public Transportation

The study area is located within proximity to Massachusetts Bay Transportation Authority (MBTA) commuter rail and bus service locations. The Melrose/Cedar Park Station, 0.3 miles from the project site, is located on the MBTA Haverhill line, providing commuter rail service between Haverhill Station and North Station in Boston. The MBTA Bus Routes #131, #132, and #137 serve the area surrounding the project site. The MBTA bus stops are located on Main Street, 0.2 miles from the project site.

Parking Demand

To determine if the proposed development will provide adequate parking, parking generation projections have been prepared based on the project program. The standard methodology used to determine parking generation of a site is the Institute of Transportation Engineers' (ITE) *Parking Generation, 5th Edition*. The ITE Parking Generation Manual categorizes land uses and provides associated parking demands. For this development, Nitsch used Land Use Code (LUC) 220 – “Multifamily Housing (Low-Rise).”

Table 1 shows the parking generation for the site based on the ITE Methodology.

Table 1 – Parking Generation

Land Use Code	Site-Specific Required Spaces
LUC 220 Multifamily Housing (Low-Rise) 5 dwelling units	6

The ITE Parking Generation Methodology predicts an average rate of 1.21 spaces/unit, or 6 spaces total for the proposed development.

As shown, the anticipated parking demand per ITE Methodology exceeds the proposed number of parking spaces. However, this calculated demand is based on a General Urban/Suburban setting with no nearby rail transit. The proposed development is within close proximity to the MBTA Commuter Rail and bus services, therefore, the five proposed parking spaces are deemed sufficient for the development. Furthermore, the Zoning/Special Permit which permits 1 space per unit is based on the presence of certain provisions. This project meets many of the provisions.

When looking at comparable projects in terms of use and location, it has been found that in an urban area with multiple transit options, parking accommodations of 1 space per unit or less is common as a means to reduce the use of single occupancy vehicles.

Sight Distance Analysis

Stopping Sight Distance (SSD) is the length of the roadway ahead that is visible to the driver and should be long enough to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Stopping sight distance is the sum of the distance traversed by the vehicle from the instant the driver sights an object necessitating a stop to the instant the brakes are applied, and the distance needed to stop the vehicle from the instant brake application begins.

Intersection Sight Distance (ISD) is the length of the leg of the departure sight triangle along the major road in both directions for a vehicle stopped on the minor road waiting to depart. The SSD and ISD values associated with a given design speed are shown in Table .

Table 2– Sight Distance Criteria

Design Speed (mph)	Design Stopping Sight Distance ¹ (feet)	Recommended Intersection Sight Distance ² (feet)
15	80	170
20	115	225
25	155	280
30	200	335
35	250	390
40	305	445
45	360	500
50	425	555
55	495	610
60	570	665
65	645	720
70	730	775
75	820	830
80	910	885

Source: A Policy on Geometric Design of Highways and Streets, AASHTO, Washington DC (2011)
¹Design value based on a grade of less than 3%, a brake reaction distance predicted on a time of 2.5 seconds and a deceleration rate of 11.2 feet per second squared
²Recommended value based on Case B1 - a stopped passenger car to turn left onto a two-lane highway with no median and grades 3% or less

The speed limit for Myrtle Street approaching the site driveway northbound and southbound is 25 MPH. According to their respective speed limit, the sight distances were selected for comparison between the site-measured and the calculated. Table 3 summarizes the sight distance evaluation.

Table 3 – Sight Distance Evaluation

Intersecting Street	Stopping Sight Distance (SSD)			Intersection Sight Distance (ISD)		
	Traveling	Calculated	Measured	Looking	Calculated	Measured
Myrtle Street and Site Driveway	NB	155'	> 500'	Left	280'	>500'
	SB	155'	> 500'	Right	280'	>500'

As shown in Table 3, the SSD is adequate for both the northbound and southbound traffic on Myrtle Street approaching the site driveway. The ISD is also adequate for vehicles exiting the site driveway onto Myrtle Street. Additionally, parking is not permitted on the western side of the roadway adjacent to the driveway so no parking obstructions will occur.

Conclusion

The proposed development at 148 Myrtle Street, consisting of a five-unit townhouse building with five parking spaces does not meet the City of Melrose Zoning Board requirement. The Zoning Board requires 2 spaces per dwelling unit; however, based on the ITE Methodology and the proximity to public transportation, one space per unit is deemed sufficient for the proposed housing development. Furthermore, the Zoning/Special Permit which permits 1 space per unit is based on the presence of certain provisions. This project meets many of the provisions. Given that the 1 space per unit for a residential development with multiple nearby transit options is sufficient to meet the anticipated demand, it is deemed acceptable for the development to provide five total parking spaces.

Ingress and egress will remain consistent with the existing site layout and sight distances are adequate for vehicles to access the driveway.