

Downtown Middlebury Parking Study: Parking Demand Analysis Report

Introduction

The Downtown Middlebury Parking Study aims to support the town's vision for a vibrant, growing downtown by ensuring parking meets the needs of residents, businesses, and visitors. This study uses a data-driven approach to identify parking deficiencies, pinpoint key challenges, and inform future decisions on parking management and facility size.

This is the third technical report in the study, and it provides an in-depth analysis of existing and future parking demand patterns. This report presents the collection and evaluation of the following data sets:

- An inventory of all downtown buildings with the appropriate attribute data like total building square footage and the type of land use to understand the generated demand for parking.
 - A Walk Zone analysis that examines the existing parking demand patterns and a calculation of parking surplus or deficit for each zone to determine if there are sufficient on-street and off-street supply of parking.
 - A future parking demand analysis based on existing buildings generated demand for parking and future development scenario impacts to Middlebury's parking system.
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Assessment of Parking Conditions

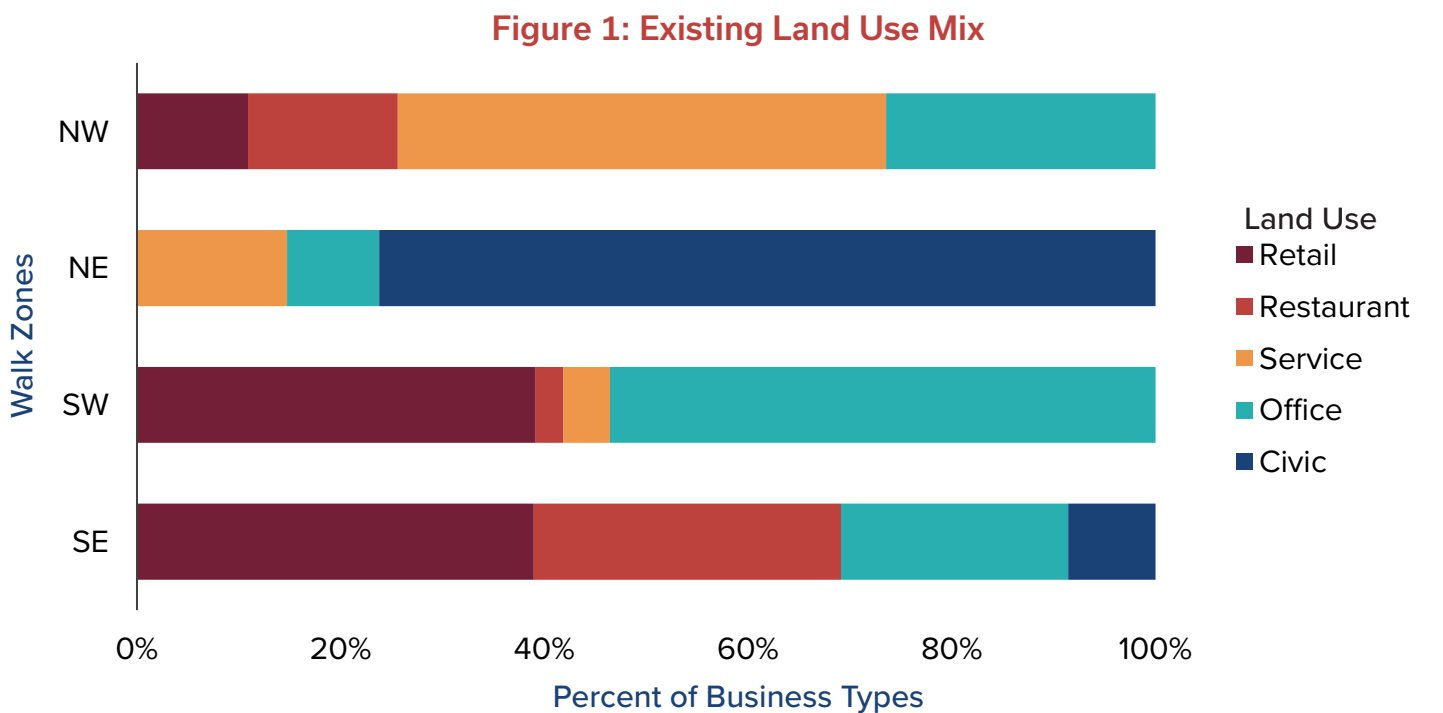
TRADITIONAL DEMAND MODELS

Traditionally, land use planners and civil engineers have utilized the Institute of Transportation Engineers (ITE) Parking Generation Manual peak parking demand rates to determine a development’s demand on parking. ITE rates are derived from several case studies around the nation and provide an analysis based on the size of development in an urban and suburban context and multiplies it with a standard peak parking rate to generate the maximum number of spaces each use or building needs.

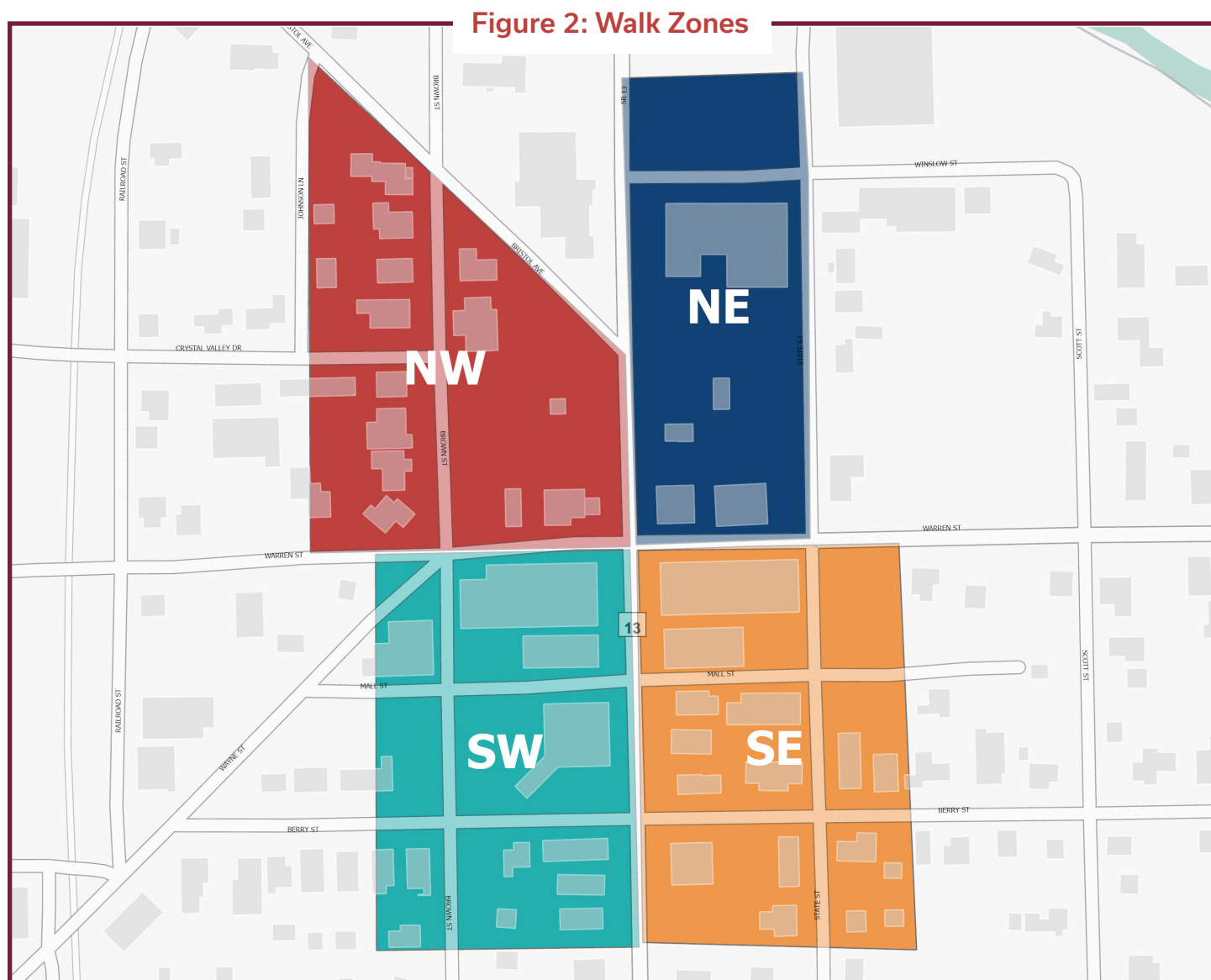
However, ITE rates and methodologies often fail to capture the actual parking behavior or demand and assumes that spaces are utilized at a constant rate throughout the day and calculates a peak demand rate for the worst-case scenario. The Michiana Area Council of Governments (MACOG) interviewed downtown businesses to gauge their needs, peak operations, and the location their employees and customers are likely parking. The survey indicated that downtown businesses have different peak demands throughout the day. Therefore, analyzing Middlebury’s parking system using only ITE rates and methodologies at the block level for the entire study area is not an efficient way to understand the actual parking behavior between the existing supply and demand of parking as calculations would show Middlebury would need to build an “oversupply” of parking spaces. This would likely cause available land for prime real estate development to be sacrificed for a surface lot to meet the calculated demand on parking, which would not reflect the Town’s vision and goals for downtown Middlebury of being a vibrant, walkable destination.

WALK ZONE ANALYSIS

To accurately model downtown Middlebury’s parking behavior, MACOG divided the study area into four walk zones. These zones are based on major activity centers along Warren Street and SR 13/Main Street, providing a more precise way to analyze where people park and where they walk. **Figure 1** below summarizes the existing land use mix generating the demand for parking in each of the four walk zones.



These four walk zones provide a more accurate portrayal of where people are parking and the likely businesses they are walking to. Contrary to the ITE methodology of generating a peak demand rate by the individual use, MACOG generated demand rates by the walk zones to provide an observed peak rate. This allowed MACOG to understand the current and future parking needs identified in the next section of this report, and will later be used to provide strategic recommendations per zone rather than general strategies for the entire study area. **Figure 2** below displays the four walk zones.



To better understand the current parking situation, MACOG observed and analyzed both public and private parking locations, adjusting the existing supply to reflect a practical capacity of 85%. Industry standards indicate that parking facilities are optimally utilized when 85% of spaces are occupied. When occupancy exceeds this threshold, motorists often struggle to find available parking, leading to longer search times and increased circulation. This can also contribute to higher congestion levels, longer travel times, and potential safety concerns.

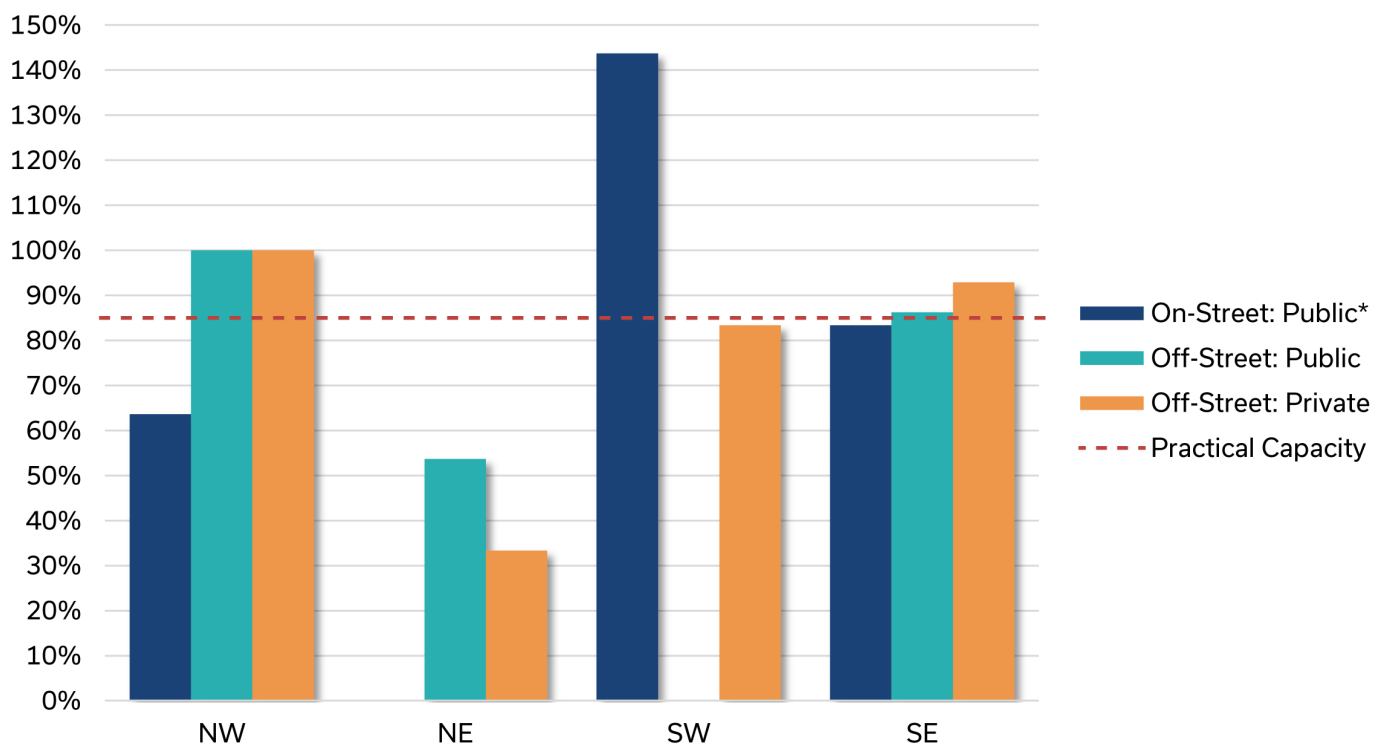
It's important to note that the Town has been made aware from the Indiana Department of Transportation (INDOT) that in the near future, SR 13/Main St. is planned to be reconstructed and that the 19 available on-street parking spaces between Winslow St. and Berry St. will be removed. Therefore, MACOG removed the 19 on-street spaces from the parking demand analysis. The location

and quantities of the on-street spaces that are being removed on SR 13/Main St. include:

- 5 spaces in the NE zone next to East Park;
- 10 spaces in the SW zone next to Varns & Hoover Hardware Store, Gohn Brothers, Village Inn restaurant, and First State Bank; and,
- 4 spaces in the SE zone next to the Global Tax & Accounting office and the Graber Law Firm, PC office.

This will help the Town have an understanding of what zones are generating the most activity and where parking is likely needed to support that demand. This, in turn, will aid in identifying targeted parking management strategies for these zones. **Figure 3** below illustrates the observed parking demand by walk zone along with each zone's practical capacity.

Figure 3: Observed Parking Demand by Walk Zone



**Removes the on-street parking on SR 13/Main St.*

Based on the data collected, the NW, SW, and SE zones are either over or close to their practical capacities.

Within these three zones, here is a breakdown of where the challenges are.

- In the NW zone, the public lot on the east side of Brown Street next to East Memorial Park, is at 100 percent occupancy and the on-street spaces on the west side of Brown Street is at 64% occupancy. The on-street spaces on the north side of Warren Street is at 100% occupancy.
- In the SW zone, the on-street spaces on Warren Street and Main Street are at 100 percent occupancy, and the on-street spaces on Berry Street is at 75% occupancy. The private lots owned by First State Bank is at 83% occupancy.

- In the SE zone, the public lot at the corner of Warren Street and State Street is at 91% occupancy and the on-street spaces had 67% occupancy. The private lot owned by the Legacy Furniture & the Legendary Grind is at 93% occupancy.

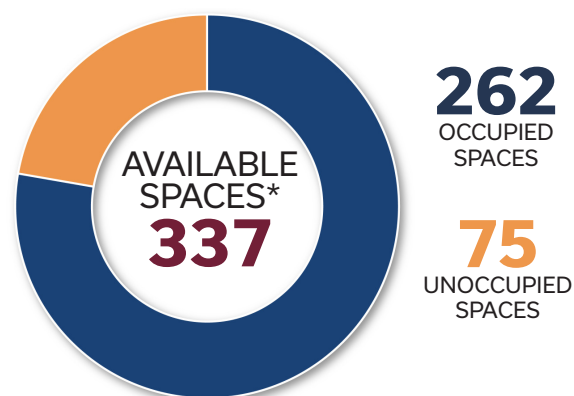
With many on-street and off-street spaces over or near the 85% practical capacity limit in these three zones, very few spots are left. This creates the perception that there is no parking available, causing customers to search longer and drive farther to find a space.

From MACOG’s observations, it’s estimated that the total number of available spaces in the four walk zones is 337 spaces, with 262 spaces observed to be occupied, leaving a total of 75 unoccupied spaces, see **Figure 4**. The unoccupied spaces can be translated as an estimated parking surplus.

The next section summarizes the parking demand analysis to identify the current observed situation and examined future scenarios to see what will happen to the current situation if demand continues to grow.

For this analysis, MACOG adjusted the existing parking supply by 85% for each zone to reflect its practical capacity, see **Table 3** below. Although the data analysis is showing that there is available parking in each of the zones, a total estimated surplus of 75 empty spaces. While 75 empty spaces might sound like a lot, they can be hard to find. This highlights the concept of “practical capacity” thus presenting perceived deficiencies.

Figure 24: Total Observed Demand



**Removes the on-street parking on SR 13/Main St.*

Table 1: Observed Parking Demand

Walk Zone	Available Capacity*	Practical Capacity	Occupied Spaces	Percent Occupied	Percent Occupied - Practical Capacity	Surplus/ Deficit
NW	63	54	47	75%	88%	16
NE	85	72	45	53%	62%	40
SW	106	90	98	92%	109%	8
SE	83	71	72	87%	102%	11
Total	337	286	262	78%	91%	75

**Removes the on-street parking on SR 13/Main St.*

Parking Demand Analysis

Current Parking Demand

To establish the current parking demand of what is actually occurring in downtown today, MACOG obtained the buildings' square footage and the land use classification in each of the walk zones, and used the current supply to calculate a zone's total building area, a parking supply rate, an observed demand rate, and the number of spaces needed to support the peak demands, see **Table 2** below.

Table 2: Current Parking Demand

Walk Zone	Available Capacity*	Occupied Spaces	Total Building Area (Sq. Ft.)**	Parking Supply Rate	Observed Peak Demand Rate	Calculated Spaces Needed	Percent Spaces Needed	Surplus/Deficit
NW	63	47	8,803	7.16	5.34	47	75%	16
NE	85	45	27,728	3.07	1.62	45	53%	40
SW	106	98	70,048	1.51	1.40	98	92%	8
SE	83	72	49,270	1.68	1.46	72	87%	11
Total	337	262	155,849	2.16	1.68	262	78%	75

*Removed the on-street parking on SR 13/Main St.

**Excluded any residential properties.

MACOG calculated the overall parking supply rate by dividing the 337 available spaces from the total building area, multiplied it by 1,000 square feet, to estimate that approximately 2.16 parking spaces are provided per 1,000 square feet of the uses in downtown. Next, MACOG calculated the observed peak demand rate by dividing the 262 occupied spaces from the total building area, multiplied it by 1,000 square feet, to estimate that approximately 1.68 parking spaces are demanded per 1,000 square feet of the uses in downtown. Next, MACOG calculated a zone's deficiency to know how many spaces are needed to support the demand rate by multiplying the total building area by the 1.68 observed peak demand rate to estimate that approximately 262 are needed to support the current demand, leaving a total surplus of 75 spaces.

The study revealed that during peak hours, the NW, SW, and SE zones are at or over the practical capacity. In particular, the SE zone sees the highest demand, given the existing mixture of retail and restaurants in this zone.

Parking Demand Scenarios

Now that we have an understanding of the current parking situation in downtown, if the Town didn't have these deficiencies, MACOG analyzed future scenarios to assess the potential impacts on the current demand.

The first scenario is a comparison to the data summarized in **Table 1**, using the engineering standards from the ITE Parking Generation Manual. The ITE rates are derived from several case studies around the nation and provide an analysis based on the size of development in an urban and suburban context and multiplies it with a standard peak parking rate to generate the maximum number of

spaces each use or building needs. **Table 3** below summarizes what the ITE demand rates are for each zone based on the current mix of land uses in downtown.

Table 3: Current Parking Demand Based on ITE Demand Rates

Walk Zone	Available Capacity*	Total Building Area (Sq. Ft.)**	Parking Supply Rate	ITE Demand Rate	Calculated Spaces Needed	Percent Spaces Needed	Surplus/Deficit
NW	63	8,803	7.16	3.75	33	52%	30
NE	85	27,728	3.25	3.21	89	105%	-4
SW	106	70,048	1.66	2.78	195	184%	-89
SE	83	49,270	1.77	3.69	182	219%	-99
Total	337	155,849	2.28	3.20	499	148%	-162

*Removed the on-street parking on SR 13/Main St.

**Excluded any residential properties.

This scenario shows that under ITE standards, the current supply of parking is insufficient. The Town would need to add 499 spaces to meet the ITE-projected demand, resulting in a deficiency of 162 spaces.

Given the current conditions and limited land for new development, MACOG developed three future redevelopment scenarios based on a continuation of the current mix of land uses. We projected low, medium, and high growth scenarios based on a likely percentage of new activity.

- **Low Redevelopment (adding 20,000 sq. ft.):** A low activity level would likely add a 10 percent increase to the parking demand.
- **Medium Redevelopment (adding 35,000 sq. ft.):** A medium activity level would likely add a 20 percent increase to the parking demand.
- **High Redevelopment (adding 50,000 sq. ft.):** A high activity level would likely add a 30 percent increase to the parking demand.

The anticipated impacts from the three redevelopment scenarios are summarized in **Table 4** and **Figure 5** on the next page.

Table 4 summarizes the added demands and the surpluses or deficiencies for the established redevelopment scenarios.

The three redevelopment scenarios illustrate that adding more buildings with a similar mix of land uses will only exacerbate existing deficiencies.

Table 4: Future Growth Scenarios

Scenario	Total Building Area (Sq. Ft.)	Parking Supply (Available Capacity)	Calculated Spaces Needed	Added Demand	Percent Occupied	Surplus/Deficit
Current (Observed Peak Demand)	155,849	337	262	0	78%	75
Current (ITE Demand)	155,849	337	499	237	148%	-162
Low Redevelopment (adds 20,000 sq. ft.)	155,849	337	563	64	167%	-226
Medium Redevelopment (adds 35,000 sq. ft.)	155,849	337	610	47	181%	-273
High Redevelopment (adds 50,000 sq. ft.)	155,849	337	659	49	196%	-322

MACOG does not recommend building the full amount of spaces shown in **Table 4**. Instead, we recommend that the Town focus on targeted parking additions, particularly in the SE zone. As shown in **Figure 5**, this zone has the greatest need, largely due to its concentration of restaurants, which generate the highest parking demand.

Figure 5: Parking Demand Based on the Redevelopment Scenarios

