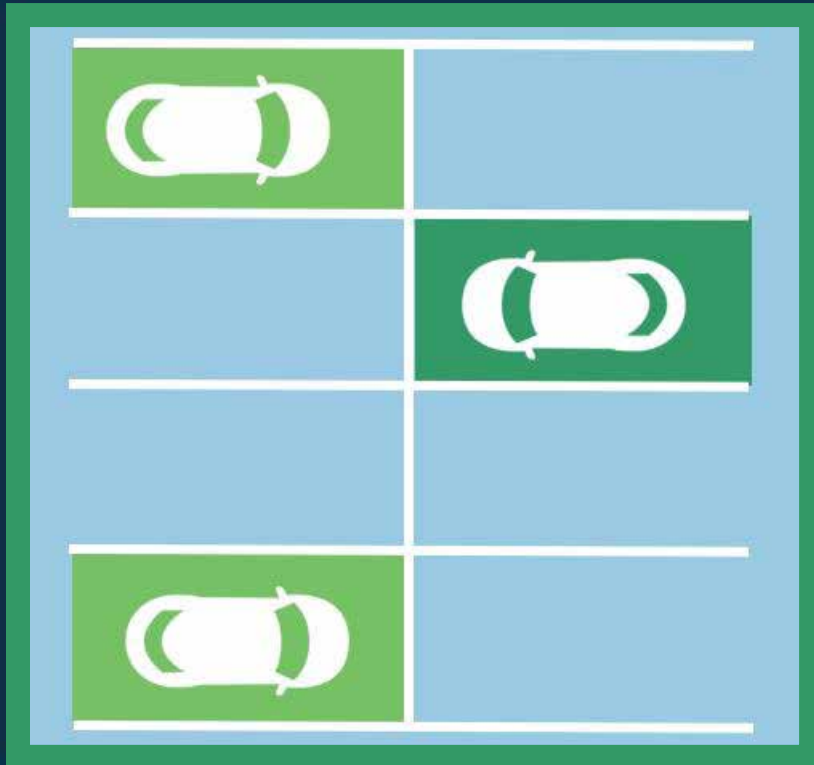




Needham Center + Needham Heights Parking Study

PREPARED FOR: THE TOWN OF NEEDHAM

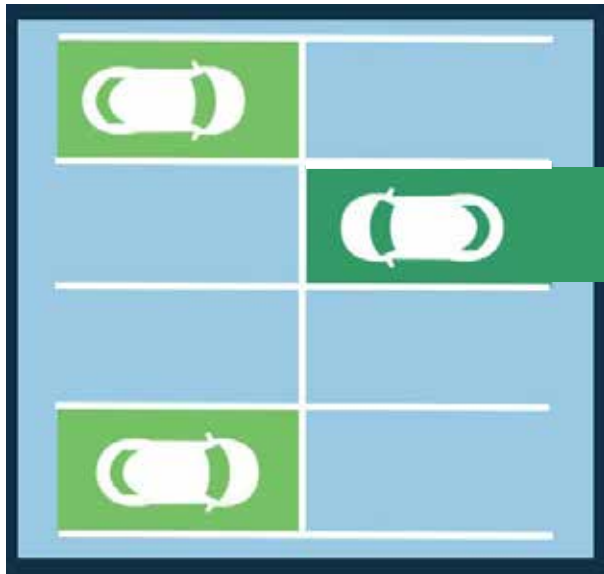




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APPENDICES



1

INTRODUCTION AND DATA

This report summarizes the findings and presents recommended strategies associated with the Needham Center and Needham Heights Parking Study. The Study included the following:

- **Review and evaluation of about 2,800 parking spaces** in Needham Center and Heights
- Counts at additional locations including some **multifamily residential developments** as well as a **commercial area close to Needham High School**
- Review and evaluation of the **Town's parking management practices**, from enforcement to regulations
- Public engagement through **workshops and a widely distributed survey**
- Assessment of the **Town's Zoning Code**

The consultant team worked with a Parking Study Working group to develop seven goals to guide the parking study, outlined to the right. These were also shared at a community meeting in the winter of 2023.

The outcomes of this effort are a series of recommendations, detailed later in this report, which generally seek to adjust the parking system to better meet the Town's goals.



1. Document existing parking supply and daily demand



2. Improve parking management system for residents, employees, customers, and visitors



3. Investigate efficiency and user-friendliness of parking meters and other payment methods and find opportunities to improve



4. Identify and recommend parking supply efficiencies/opportunities to unlock parking in areas of higher demand



5. Identify opportunities to better align policies with the long-term goals and growth of the two areas



6. Support the economies of the Needham Center and Needham Heights



7. Inform decision-making for future street improvement projects and zoning updates

Parking Today in Needham Center



A parking space on Great Plain Ave converted to welcome outdoor diners



Variation of private parking



Variation of private parking signage



Variation of private parking



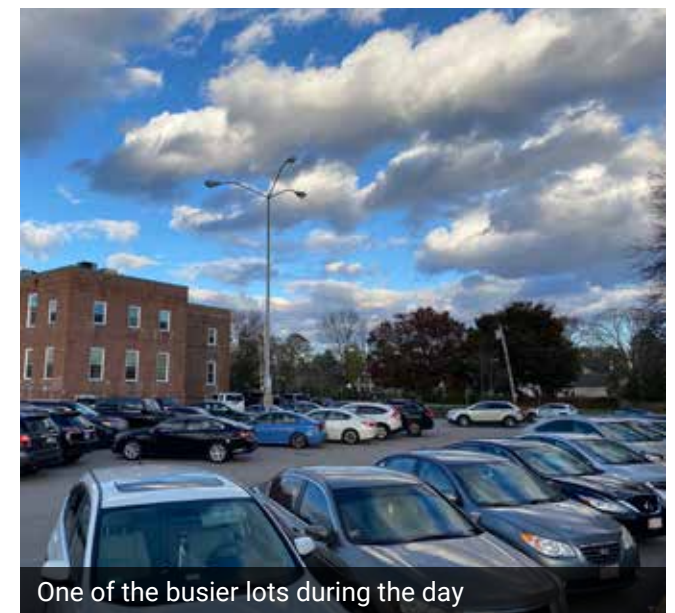
Typical on-street parking sign



An example of permit parking signage



EV parking is supported in Needham



One of the busier lots during the day

Parking Today in Needham Heights



One of the busier lots during the day



A lot with availability during the day



Drop-off zone in use for temporary loading/unloading



Informal "spaces" being occupied in spite of on-street availability



Typical residential street parking



Permit signage in residential area

I.1 INVENTORY OVERVIEW

This section is focused on the inventory for Needham Center and Needham Heights, which were the main focus of the study. The project team also gathered a parking inventory, and performed utilization counts at a small, defined area along Highland Avenue (see p.30).

An inventory of parking spaces was conducted separately for two areas of Needham with the understanding that the character for each and the demands for parking are slightly different. There are nearly 1,800 parking spaces in the Center and nearly 1,000 parking spaces in the Heights, respectively. Although not covering the entire boundary of each of these areas, this inventory is meant to represent parts of each where demand for parking between residents, employees, customers, and other types of visitors is mixed.

Evaluation of Needham's parking system overall reveals several key findings about how parking works in the community. These include:

- The consistent pricing for paid parking across the community and presence of two-hour time limits for most on-street parking speaks to a **uniform approach to parking management in the community**. A "one size fits all" approach like this requires those desiring longer visits (employees in particular) to move their cars or park in an on-street space that is free and located farther from the core. The lack of centralized, short-duration parking spaces (often limited to 15 minutes of free parking) is also particularly noticeable in the core of these two areas where businesses that attract shorter customer visits are concentrated.
- Today, **the Town offers annual permits to businesses and employees** in a number of Town-owned lots in the Center as a way to encourage optimization of the existing public parking supply.
- A **significant portion of the overall parking supply is privately-owned**.

- The Town has also **supported shared parking agreements between land owners as another tool to minimize the need of building additional private parking**. In Needham Heights, one landowner leases spaces within a private lot for use by local businesses and their employees. This was intended to "expand" long-term parking within the Town's private parking supply. The Town has observed that this arrangement could benefit from some potential adjustments/improvements but also that other existing Town-owned spaces might be able to accommodate long-term parking.
- **Overnight parking is not allowed on-street throughout Needham**. Specifically, no vehicles are allowed to be parked on the street for longer than one hour between 1:00 and 6:00 am. The Town can waive this under certain circumstances if a "hardship" condition exists.



Parking Inventory Key Takeaways

- Most parking is restricted today
- Overnight parking is not permitted on any street or in a public lot
- No long-term parking options without a permit
- Permits not available to residents
- At dinnertime, parking regulations change significantly
- On-street parking is free
- Permit parking is free but that is unclear
- Insufficient long-term supply remains a problem

Key inventory highlights...



The majority of off-street PUBLIC PARKING (237 spaces) are within a 5-minute walk to the Center's core.

Most parking is RESTRICTED today

In the Center, regulations change significantly between the daytime and evening

7%
of the inventory between both areas is for PERMIT PARKING

Without a permit, there are NO LONG-TERM PARKING options

67%
of on-street parking in the Center is PAID (metered)

21%
of on-street parking in the Heights is PAID (metered)

Regulation Definitions:

PUBLIC

These spaces are categorized as those available to all users regardless of their destination – they are not associated with a private business. This includes parking with a time limit.

PERMIT

These are categorized as public spaces available to users with a special permit during a specified time, and to the general public during non-specified times.

RESTRICTED

These spaces are privately-owned and often restricted to users of a certain business, i.e. “bank parking only.”

TIME-RESTRICTED

These spaces are available to any user for a designated period of time.

CENTER AT THE HEIGHTS

These spaces are available only to visitors of this public recreational and educational facility.

COMMUTER RAIL PARKING

The MBTA (through its contractor Keolis) manages these spaces, which are mainly targeted toward commuter rail riders.

Regulation Overview

To gather the most accurate understanding of Needham’s existing parking, the team recorded regulations within the two defined study areas as they would be viewed by a first-time “visitor” to Needham Center or Needham Heights. This study’s inventory represents the current signage and usage rather than the legal status of ownership of parking areas.

The maps and tables on the following pages illustrate how the parking in Needham Center and Needham Heights is distributed among a complex array of categories and user permissions. Overall, 73% of the Center and 83% of the Heights’ parking is ‘restricted,’ or in other words reserved for customers, tenants, or visitors of the business or establishment with which the parking is associated. The remainder of the overall parking supply for each area is available to the general public, but even then this does not always apply. For instance, there are no spaces specifically dedicated for use for more than two hours.

Generally, there is opportunity to simplify the number of regulation types in Needham. In parallel, there is opportunity to improve the clarity and consistency of how parking regulations are displayed in the Center and the Heights, or in directing users to parking. Confusion about where and how to park can lead to parkers occupying the closest available space to their destination (regardless of regulation/signage) and potentially displacing other parkers from spaces dedicated for their specific use. Time spent hunting for a parking space can also contribute to traffic congestion in higher-demand areas and can create unsafe driving conditions to both drivers and pedestrians when an unfamiliar visitor tries to navigate to parking.

There is significant opportunity to better clarify where user types can park in Needham Center and Needham Heights, along with an opportunity to improve the clarity and consistency of signage associated with parking. For visitors who are unfamiliar with Needham, inconsistent signage can lead to confusion about who is truly permitted to park in some locations. Signage that does not include explicit and complete information about overlapping regulations or when time limits are in effect, for example,, can force a parker to make their own interpretations, which may not be accurate.



The Trader Joe's/CVS lot during a busy period



**1,771
spaces***

Needham Center Parking Inventory and Regulations

On-Street Regulation

- 15 Min Limit, No Charge
- 2-Hr Parking, No Charge
- 2-Hr Parking, No Charge
- Parking: 7AM-9AM and 1PM-3PM, No Charge
- Metered Parking, 2-Hr Limit, 8AM-6PM, M-Sa, \$0.50/hr
- Metered Parking, No Time Limit, 8AM-6PM, M-Sa, \$0.50/hr
- Permit Parking, 8AM-2PM, M-F

Off-Street Regulation

- Restricted Parking
- Public Parking, 30-Min Limit, All Day, No Charge
- Public Parking, 2-Hr Limit, All Day, No Charge
- Permit Parking, 8AM-2PM, M-F

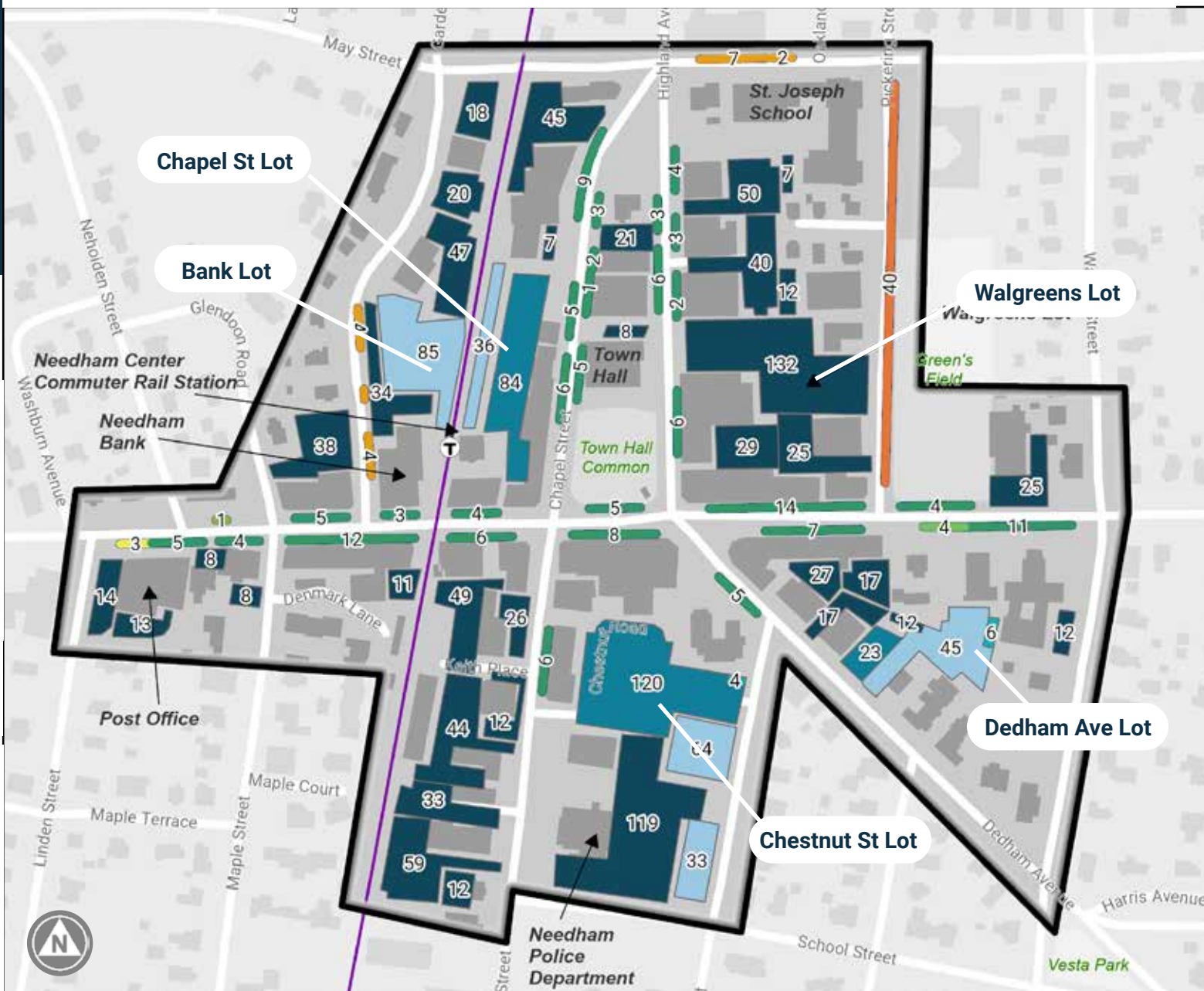
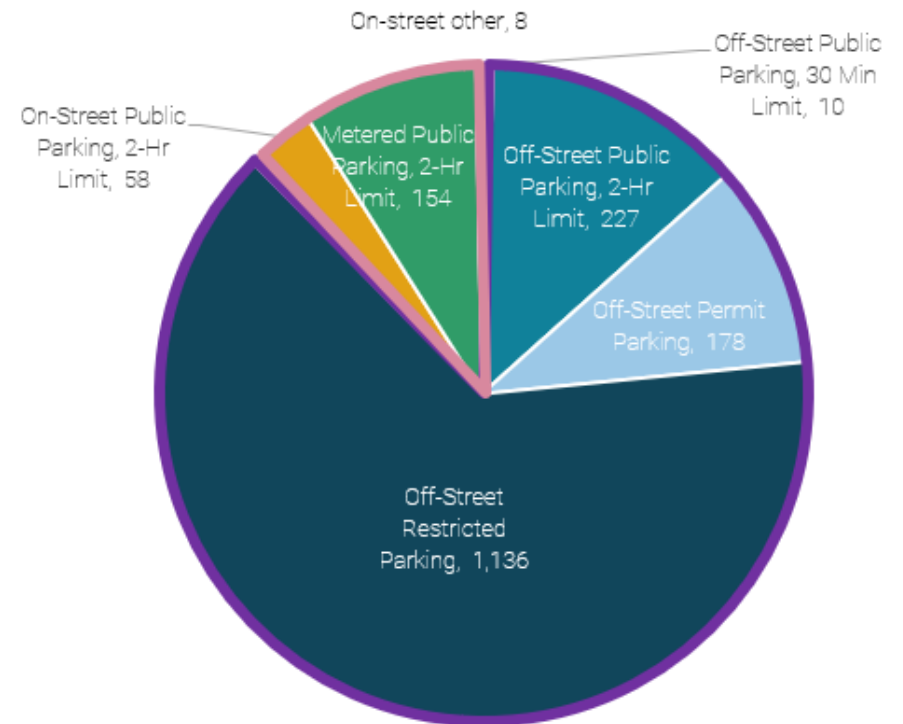


Table 1. Needham Center Parking Inventory by Regulation

Regulation	Inventory	% of Sub-Total
On-Street		
15 Min Limit, No Charge	3	1%
2-Hr Parking, No Charge	18	8%
2-Hr Parking, No Parking: 7AM-9AM and 1PM-3PM, No Charge	40	18%
Metered Parking, 2-Hr Limit, 8AM-6PM, M-Sa, \$0.50/hr	154	70%
Metered Parking, No Time Limit, 8AM-6PM, M-Sa, \$0.50/hr	1	0%
Permit Parking, 8AM-2PM, M-F	4	2%
Sub-Total	220	
Off-Street		
Restricted Parking	1,136	73%
Public Parking, 30-Min Limit, No Charge, All Day	10	1%
Public Parking, 2-Hr Limit, No Charge, All Day	227	15%
Permit Parking, 8AM-2PM, M-F	178	11%
Sub-Total	1,551	
Total	1,771	

Fig.1 - Needham Center Parking Inventory by Regulation

88% of the overall inventory is located off-street.

**Inventory excludes 11 on-street and 5 off-street spaces that were occupied by outdoor dining at the time of data collection.*

991
spaces

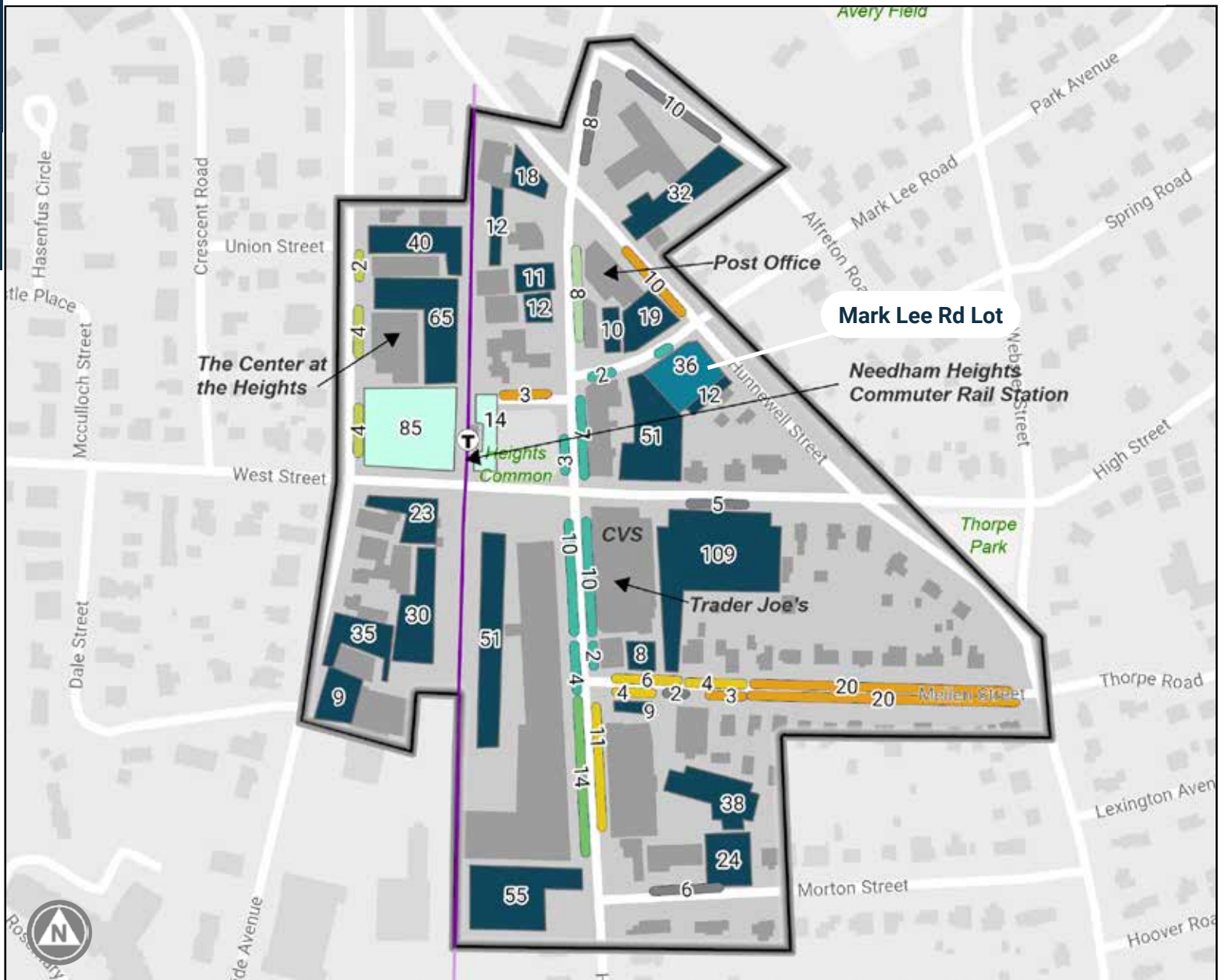
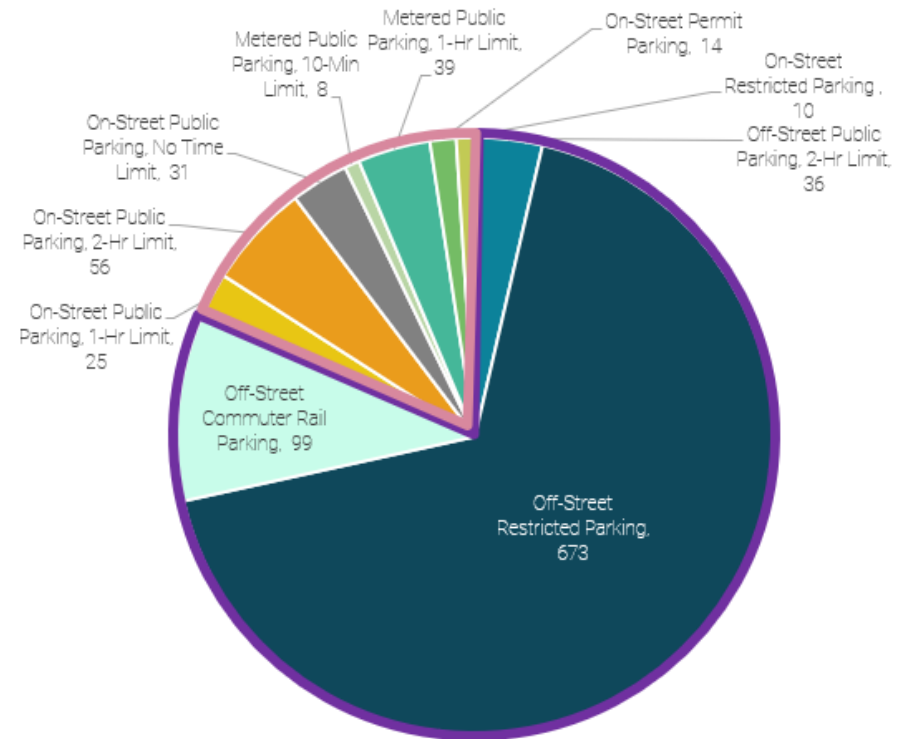


Table 2. Needham Heights Parking Inventory by Regulation

Regulation	Inventory	% of Sub-Total
On-Street		
1-Hr Parking, No Charge	25	14%
2-Hr Parking, No Charge	56	31%
Center at the Heights Parking, 8AM-PM, M-F	10	5%
Metered Parking, 10-Min Limit, 8AM-6PM, M-Sa, \$0.50/hr	8	4%
Metered Parking, 21Hr Limit, 8AM-6PM, M-Sa, \$0.50/hr	39	21%
Permit Parking, 8AM-2PM, M-F	14	8%
Unregulated Parking	31	17%
Sub-Total	183	
Off-Street		
Restricted Parking	673	83%
Public Parking, 2-Hr Limit, No Charge	36	4%
Commuter Rail Parking Only (Paid)	99	12%
Sub-Total	808	
Total	991	

**Inventory excludes 11 on-street and 5 off-street spaces that were occupied by outdoor dining at the time of data collection.*

Fig. 2- Needham Heights Parking Inventory by Regulation



78% of the overall inventory is located off-street.

Other Observations

CORE ACTIVITY AREAS

Although the study areas defined for Needham Center and Heights incorporated geographies across multiple blocks, the project team recognized that the areas where peak parking demand was being generated from could be concentrated to a much smaller core area as shown below. These areas will be referenced throughout this document as 'the core.'

Fig. 3- Walking Distance to the Core from Public Parking in Needham Center

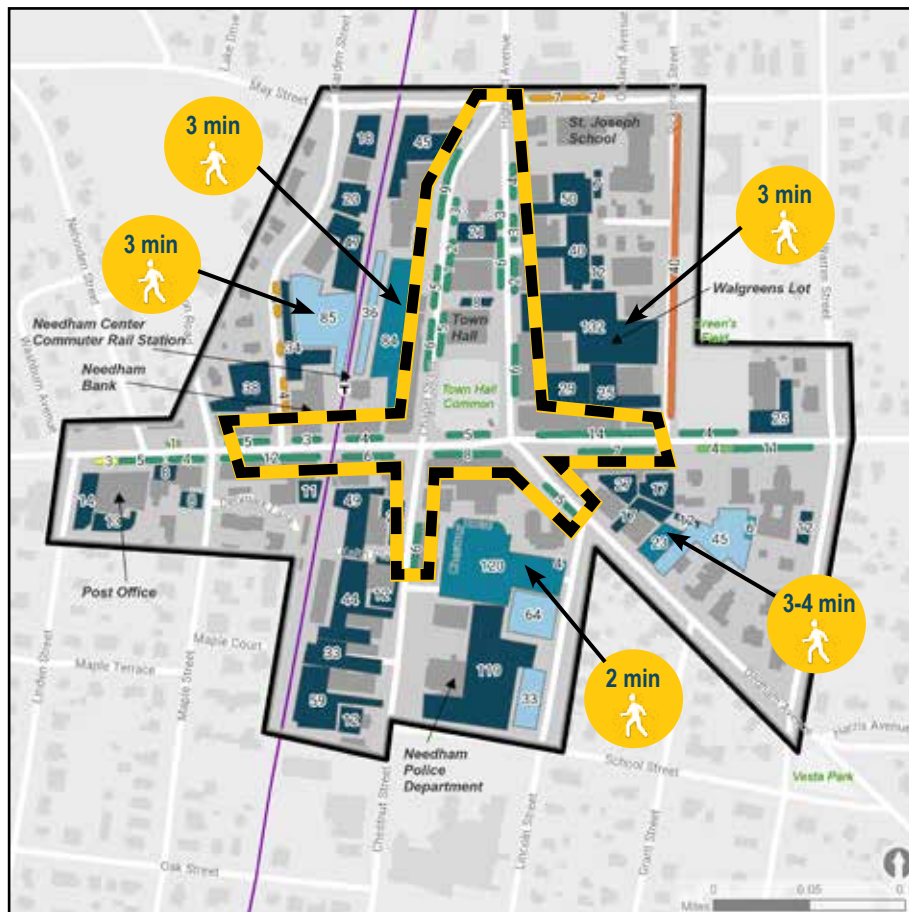
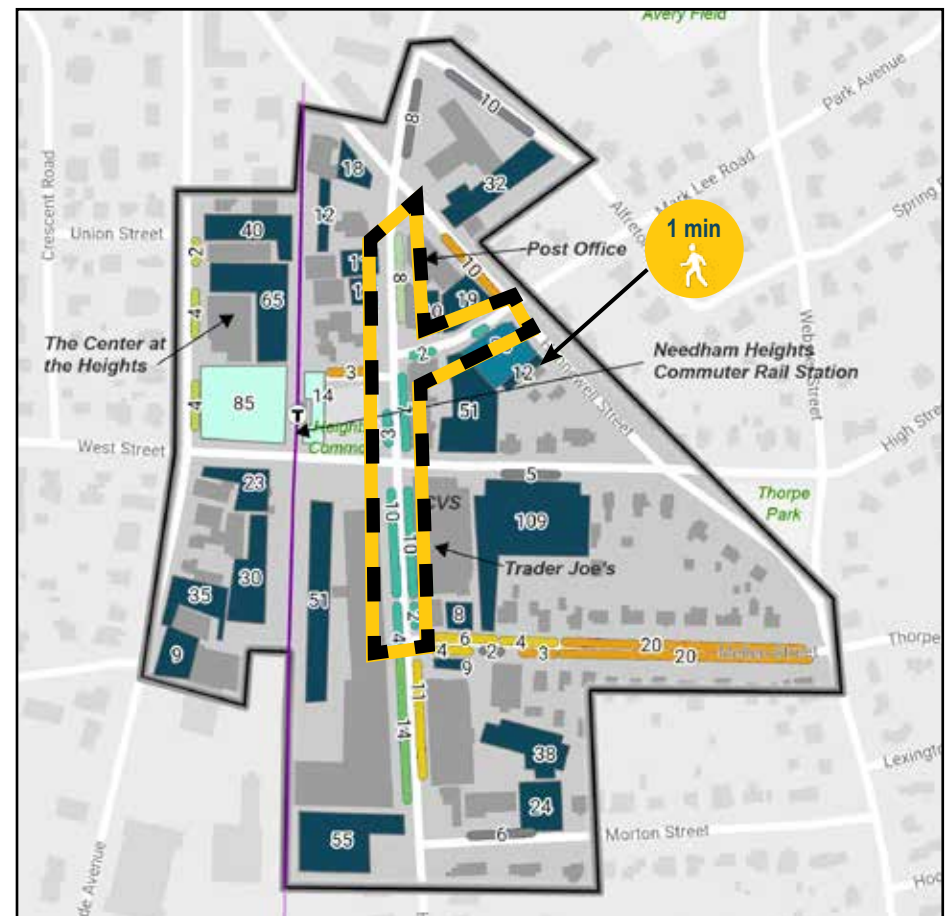


Fig. 4- Walking Distance to the Core from Public Parking in Needham Heights



PARKING WAYFINDING

How parking is signed is just as important as the existence of parking itself, in many cases of small towns and cities. As the project team conducted analysis in Needham, one of the most important observations was the lack of wayfinding signage (in scale and presence) to the town's largest public parking facilities.



With very small or no signage present at key access points, visitors seeking public parking (especially unfamiliar visitors) are likely to miss it.

1.2 UTILIZATION ANALYSIS

The study conducted parking utilization counts in all private and public facilities during a typical weekday (November 17, 2022) to represent usual conditions of parking demand in Needham Center and Needham Heights. Counts included six time periods to understand how demand changes throughout the day: 8:00 am, 10:00 am, 12:00 pm, 2:00 pm, 4:00 pm, and 6:00 pm.

To ensure efficient parking management operations in any urban area, it is ideal to maintain at least one empty space on each block of street parking to ensure easy visitor access to destinations. This typically equates to about one out of eight spaces free, or a target of 15% vacant per block. Similarly, a goal of at least 10% vacancy is considered ideal in off-street lots (this occupancy target assessment ensures that front-door spaces are available for those who need them - such as those with mobility challenges). If any facility has less availability than this, it is usually the case that users arrive to a full lot or have significant trouble finding space. However, if a facility has substantially more availability (especially in high-demand areas), this points to conditions or regulation that may be keeping potential parkers away, including lack of demand as well as practical factors such as walkability, price, time limits, or wayfinding.



Parking Utilization Key Takeaways

- Peak utilization of parking never exceeds 63% (Center) or 53% (Heights)
- Public parking never exceeds 70% (Center) or 50% (Heights)
- More remote spaces regularly under 60% utilized
- Prime on-street spaces fill up as soon as meters shut off
 - Proximate lots are nearly empty
- Commuter rail parking is in low demand, particularly in the Center

How to Read Utilization Maps

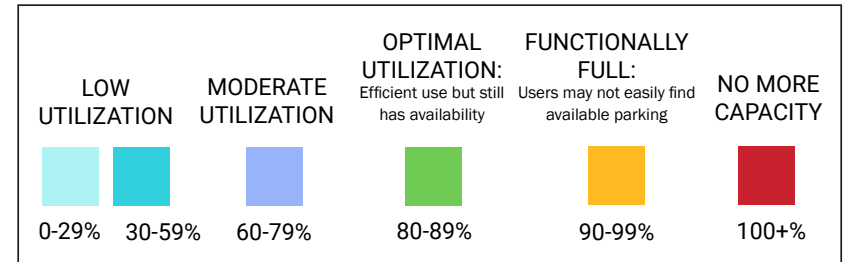
The series of maps and charts over the following pages illustrate the result of the in-person parking counts conducted for Needham Center and Needham Heights. The maps demonstrate utilization levels for each individual parking facility or space (see following page). The bar charts illustrate how utilization levels change throughout an entire day for different types of parking within the overall supply.

The parking utilization information can provide clarity about the accuracy of long-held community perceptions about parking availability but also identify opportunities to improve availability in targeted locations so that the optimal vacancy of 15% for any area within the parking system can be consistently maintained.

Fig. 5- Utilization Map Color Guide



The color scheme used here applies to the maps on the following pages.



Example of low utilization



Example of optimal utilization



Example of full utilization

Key Observations (Center)

8:00AM

- The only facilities at optimal utilization are the Hospital and Post Office lots. All other lots have significant capacity
- On-street spaces near Town Hall are nearly full

10:00AM

- The Walgreen's and Commuter Rail lots are now at optimal utilization
- Other lots are starting to fill up more but all still have significant capacity

12:00PM

- On-street spaces near Town Hall are full, also in front of food establishments on the southeastern end of Great Plain Ave
- The Chapel St lot is now full while the Chestnut St lot is at optimal utilization

2:00PM

- Demand for off-street spaces is decreasing, with no lots being near-full
- On-street spaces remain in demand near Town Hall and have increased in demand along other areas of Great Plain Ave

4:00PM

- Several on-street areas near Town Hall and along Great Plain Ave are full but all off-street facilities have capacity

6:00PM

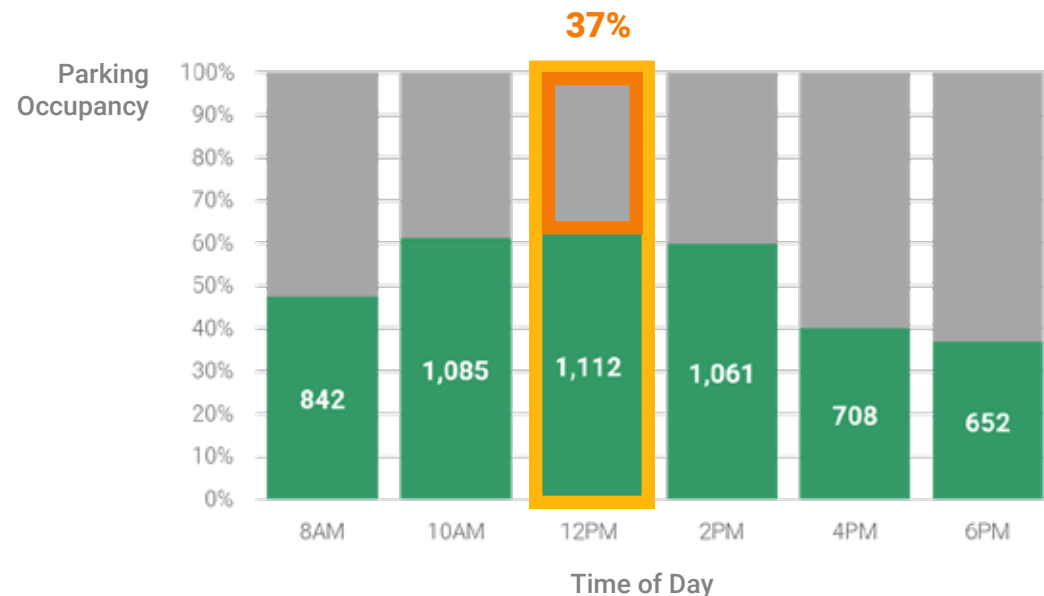
- All off-street facilities have further capacity, but Chestnut St lot is now full
- On-street areas are now at their highest demand of the day, with most areas in the core being full

Needham Center Utilization Summary

There is **significant capacity available across the Center throughout the entire day**. In spite of perceived demand, the Walgreen's lot never achieves optimal utilization throughout the day, even during the midday peak. On-street spaces near Walgreen's on Highland Ave and just west on Chestnut St however, see consistent higher levels of demand throughout the day. This particularly occurs during noon and at 6:00pm, which aligns with peak dining periods. The Chestnut St lot is also nearly full or full during these times, reflecting that it is being used as a walkable option to key dining options in the Center. The Post Office lot is full or nearly full during the morning and mid-afternoon. The Bank lot and the Dedham Ave lot are the largest public lots and neither reach optimal utilization throughout the entire day. This aligns with that they are less visible from the street as being parking options, particularly for those unfamiliar with the area.

Collectively, 63% of all parking in the Heights is occupied during the weekday midday peak period. On-street metered parking is utilized at 59% percent and off-street, private (restricted) parking is utilized at 56% percent, indicating excess capacity for this kind of parking.

Fig. 6- Overall Utilization at 12PM Peak- Needham Center



Key Observations (Heights)

8:00AM

- There is significant capacity available in all on- and off-street facilities, aside from all on-street spaces on Mark Lee Rd, right in front of the Center, and a few spaces on Mellen Street, all of which are full

10:00AM

- On-street spaces on Mark Lee Road have reduced in demand but additional spaces in front of the Center, and it's lot are full
- The Trader Joe's lot is optimally utilized

12:00PM

- The Center lot remains full, and the Trader Joe's and Mark Lee Rd lots are also full
- On- and off-street spaces nearer the core have increased in demand but still have capacity

2:00PM

- There is significant capacity in all spaces, besides the Trader Joe's lot and a small number of nearby spaces which are full
- Spaces in front of the Post Office are full

4:00PM

- Demand at Trader's Joe lot has slightly reduced and is now optimally utilized
- Significant capacity remains in all other areas, aside from a few, which are full

6:00PM

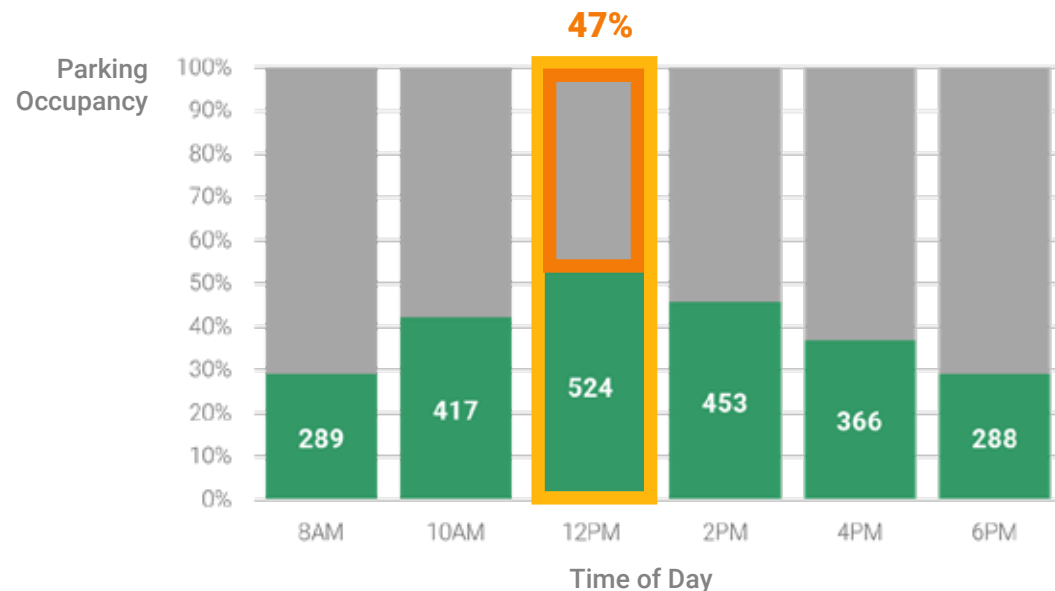
- Significant capacity has opened up in nearly all spaces, but on-street areas on Mark Lee Road and its lot are now full.
- Spaces on Mellen Road have maintained significant capacity throughout the day

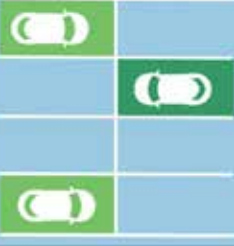
Needham Heights Utilization Summary

There is **significant capacity available across the Heights throughout the entire day**. The Trader Joe's lot is the only off-street facility that is full or nearly full through the majority of the day. The lot at the Center at the Heights and its nearby on-street spaces are full during the late morning and midday, which is in line with peak times for programming. These spaces open up with capacity for the remainder of the day. The Mark Lee Road lot is full during the lunch and dinner periods, which is in line with its proximity to dining destinations, nearby. The Commuter Rail Station is just below optimal utilization for the majority of the day before significant capacity becomes available at 6:00pm, which is in line when commuters have typically departed for the day. The majority of Mellen Street is significantly underutilized, with only a few areas near a pedestrian access point to/through the Trader Joe's lot seeing a higher level of demand throughout the day for those wanting to avoid the lot. Generally, on-street spaces see a broader rise in demand during the midday peak, particularly in the core. This aligns with parkers seeking convenient options as other nearby lots start to become more full.

Collectively, 53% of all parking in the Heights is occupied during the weekday midday peak period. On-street metered parking is utilized at 57% percent and off-street, private (restricted) parking is utilized at 53%, indicating excess capacity for this kind of parking.

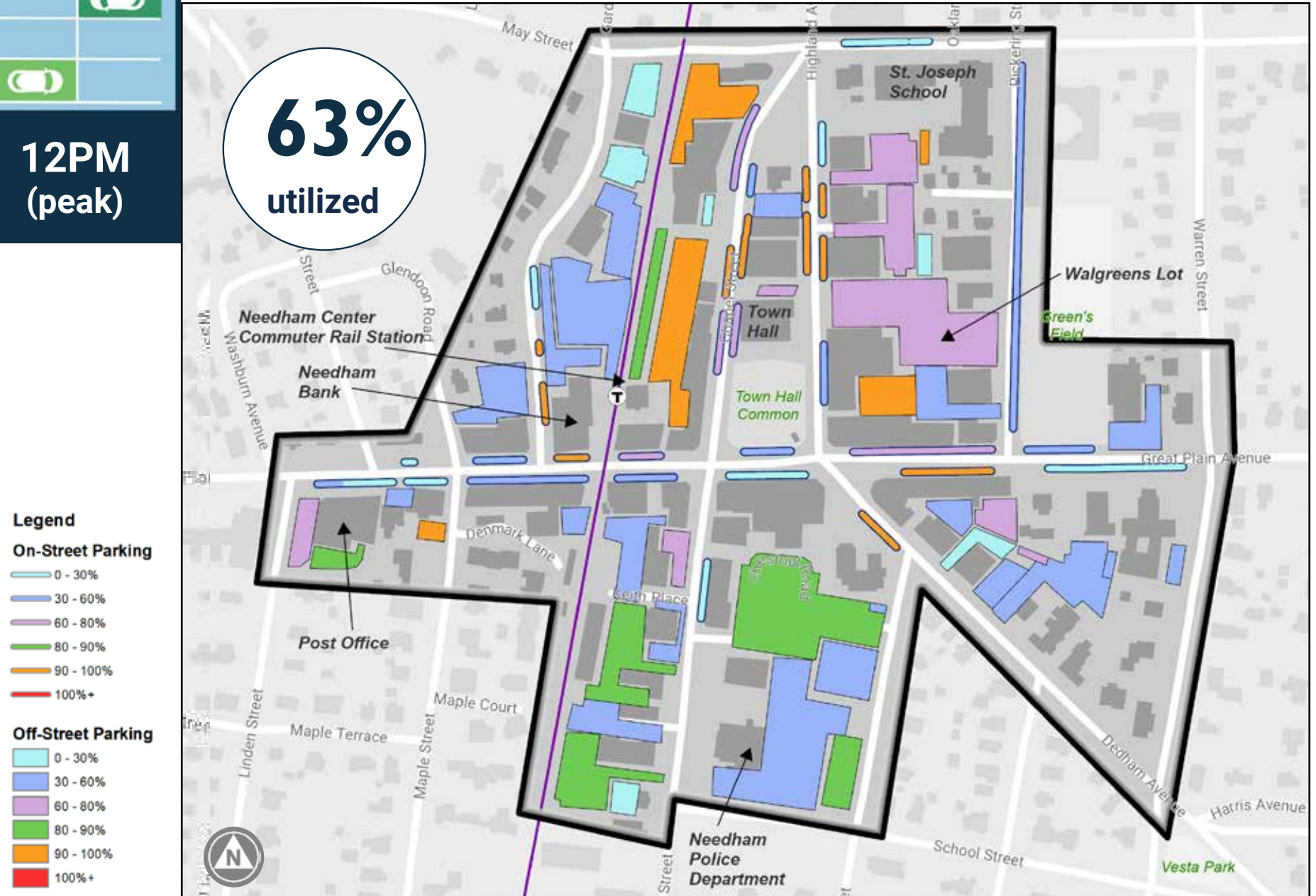
Fig. 7- Overall Utilization at 12PM Peak- Needham Heights

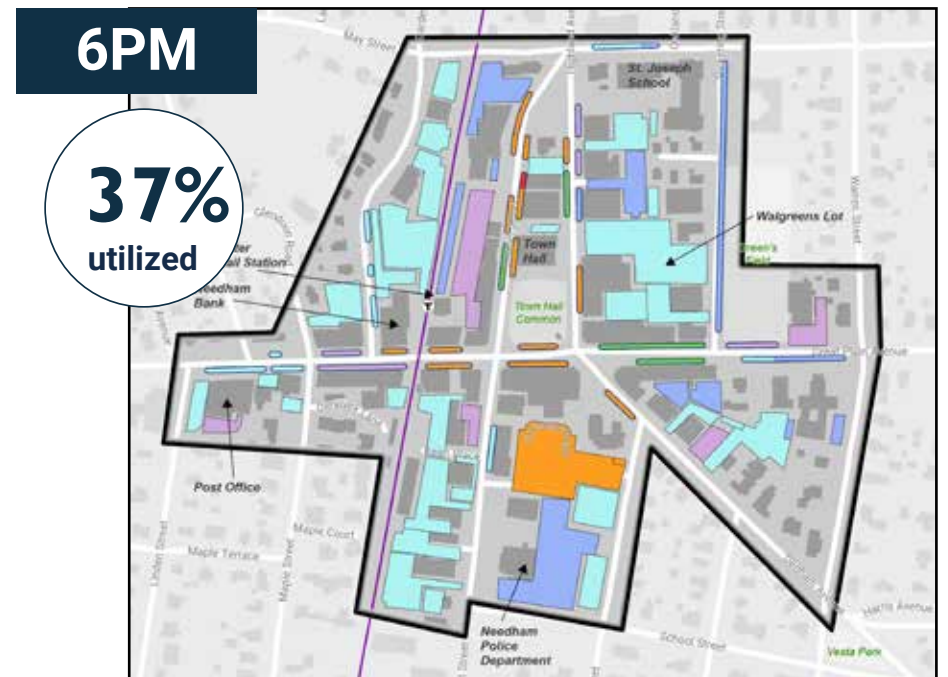
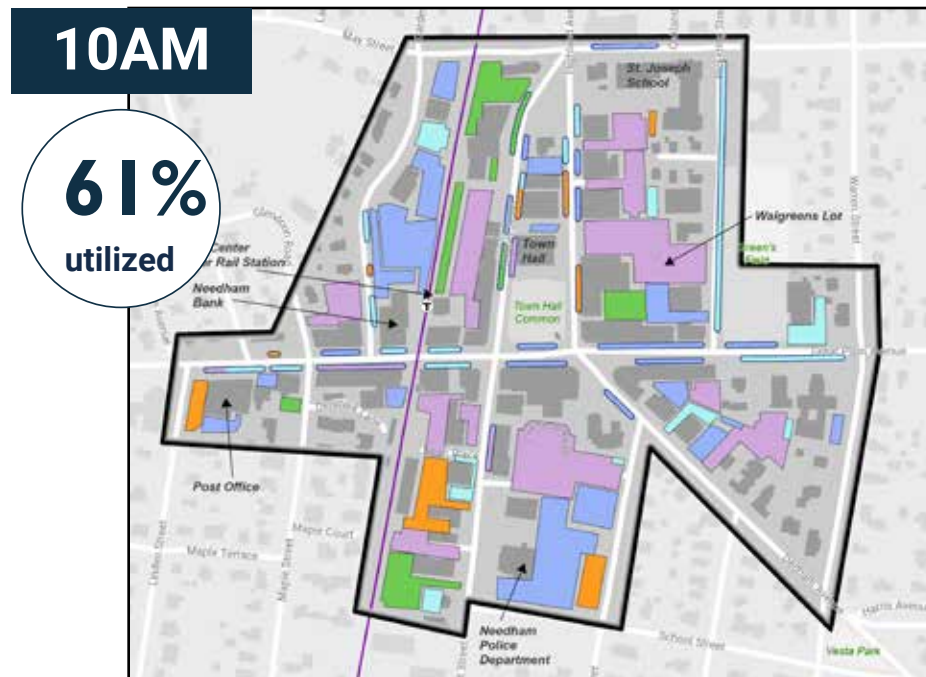
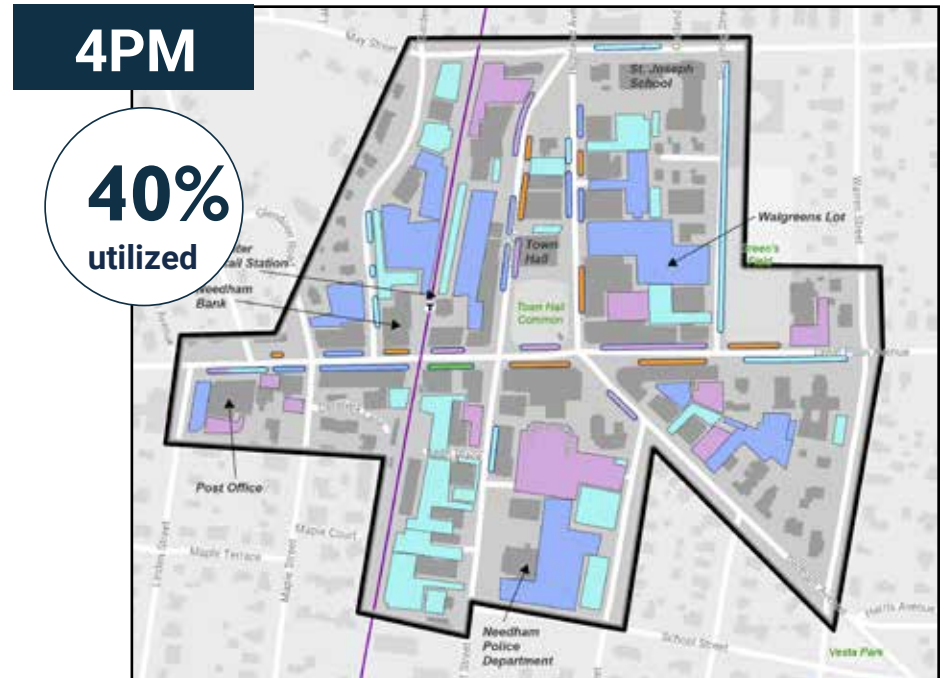
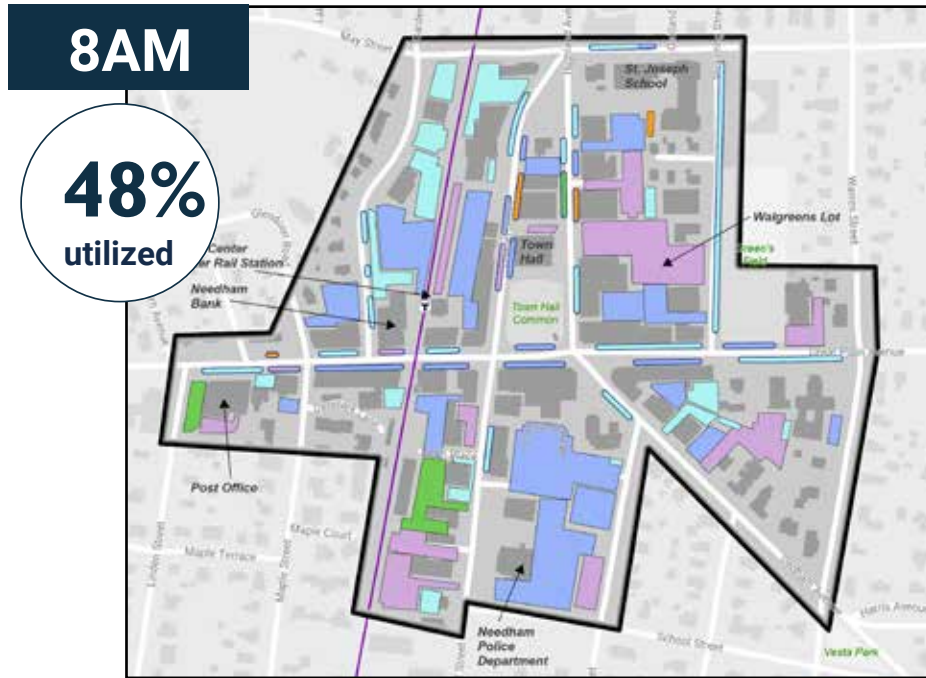


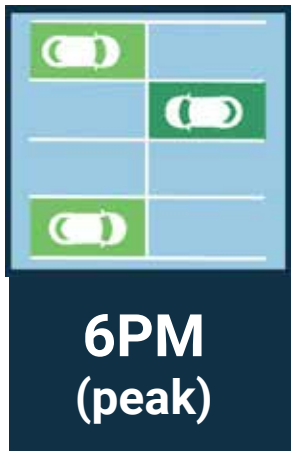


**12PM
(peak)**

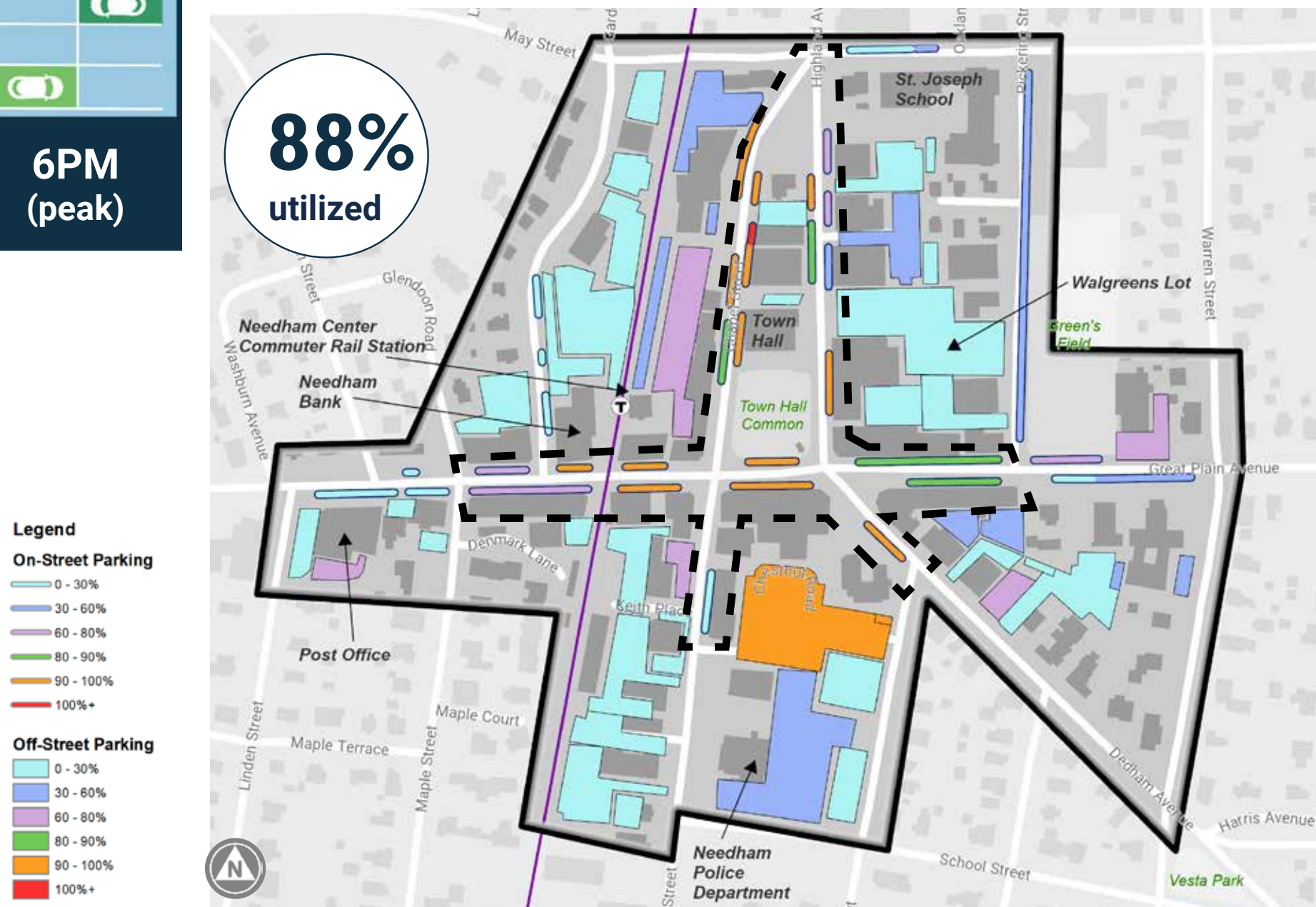
Needham Center Weekday Parking Utilization





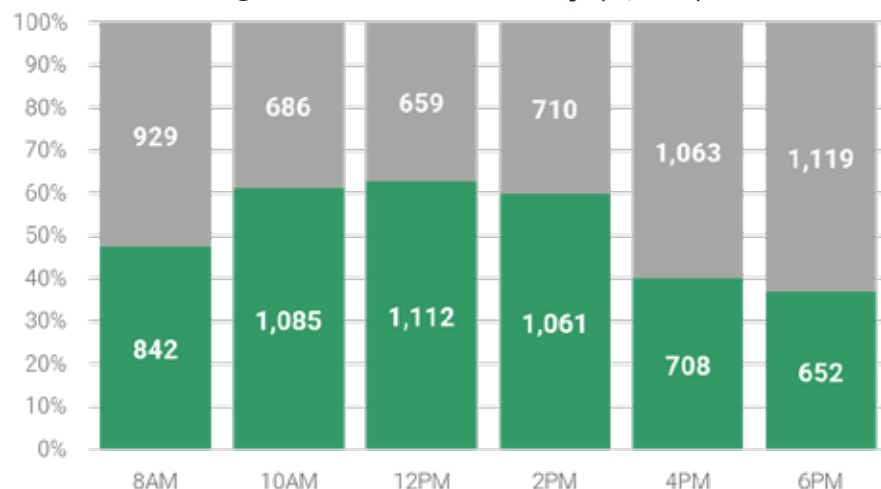


Needham Center Weekday Parking Utilization- Core Area



Analyzing Utilization by Parking Type

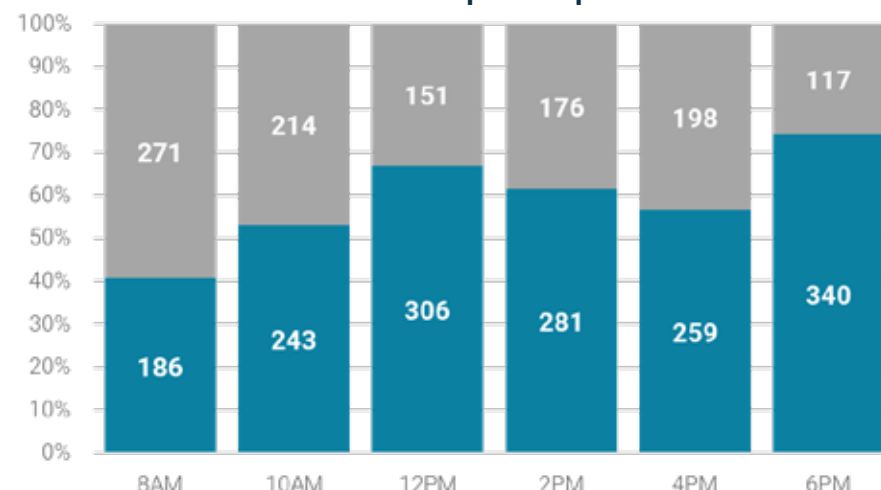
Fig. 8- Overall Inventory (1,771)



A significant number of spaces is available, even at the peak period, but why some types of parking are utilized more is dependent on a range of factors.

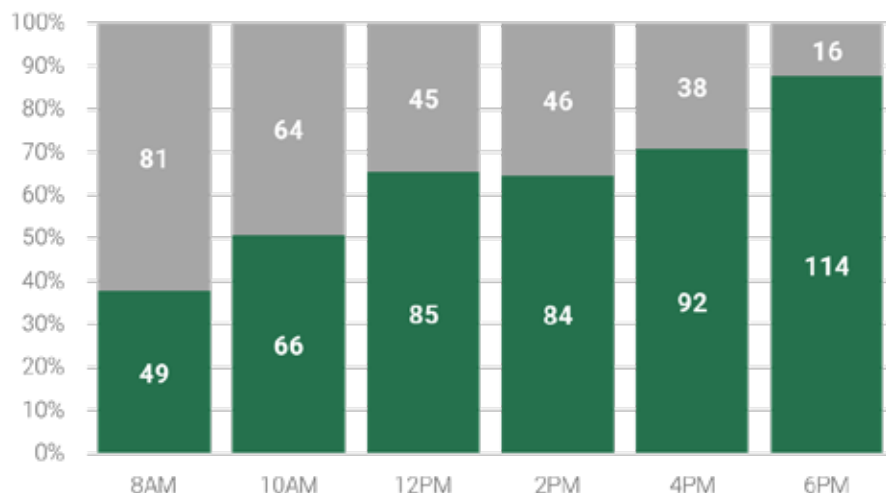
Fig. 9- Public Inventory (457)

Does not include permit spaces.



These spaces see a similar level of demand at noon and at 6PM, when there is a particularly high number of available spaces in the overall inventory.

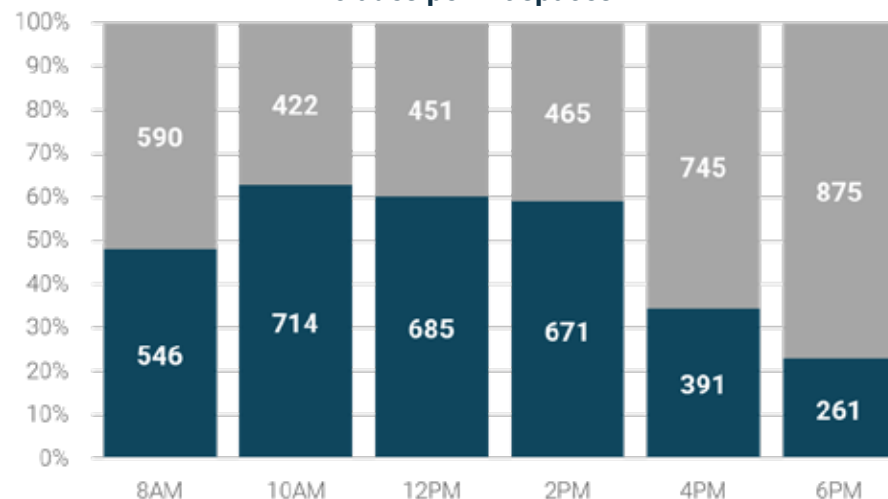
Fig.10- Core Area: On-Street 2-Hr Metered Inventory (130)



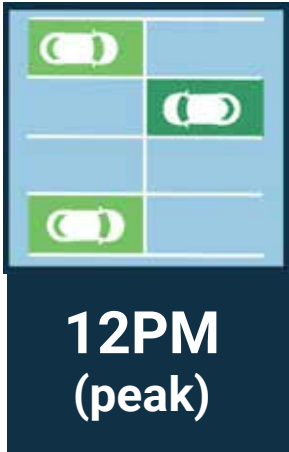
The highest utilization of spaces occurs at 6PM, correlating with these spaces 1) becoming free, and 2) being located next to key dining locations.

Fig. 11- Restricted Inventory (1,136)

Includes permit spaces.



This pattern shows that spaces which are designated for specific users drops off at 6PM just as on-street spaces are being pressed for demand.



Needham Heights Weekday Parking Utilization

63%
utilized

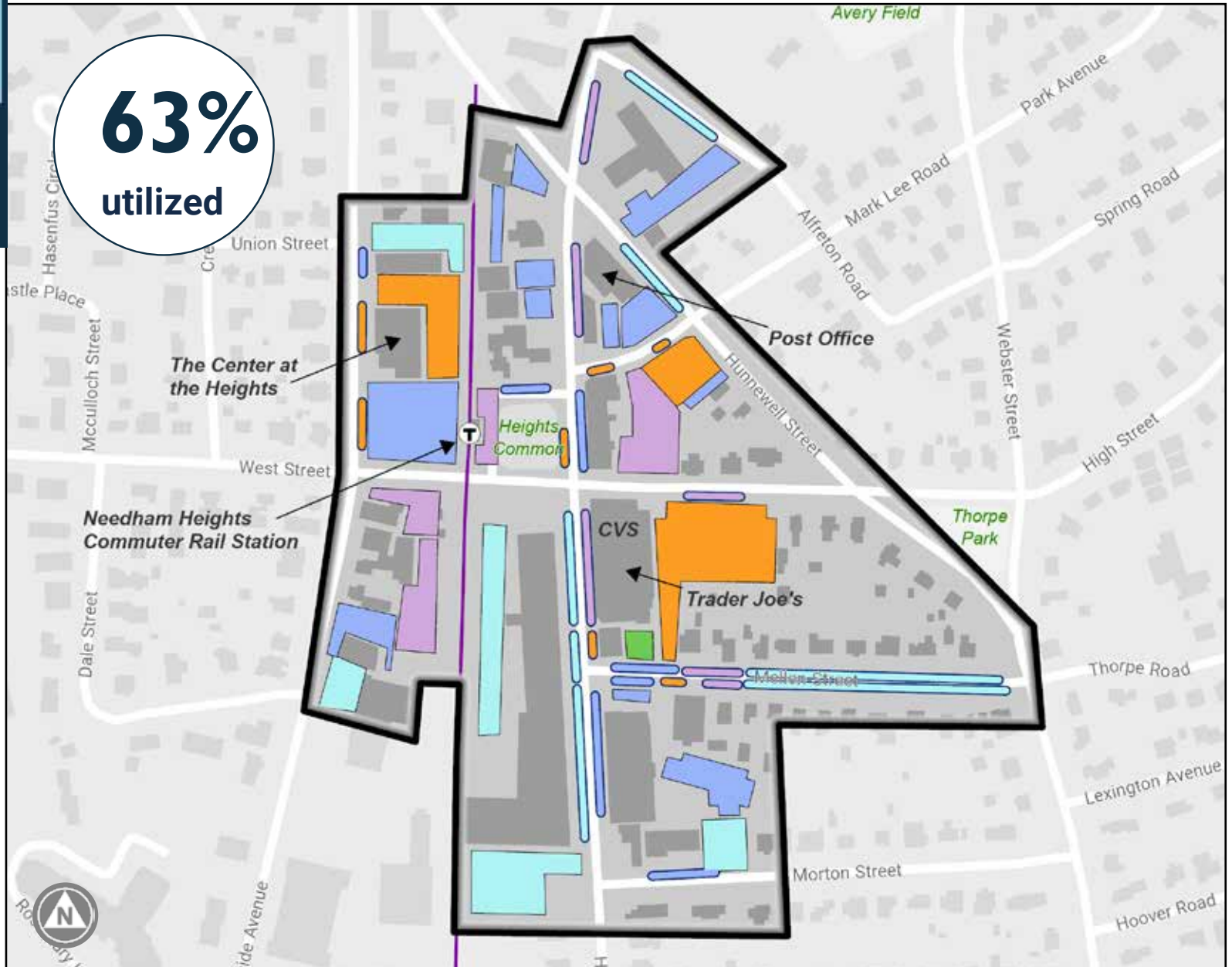
Legend

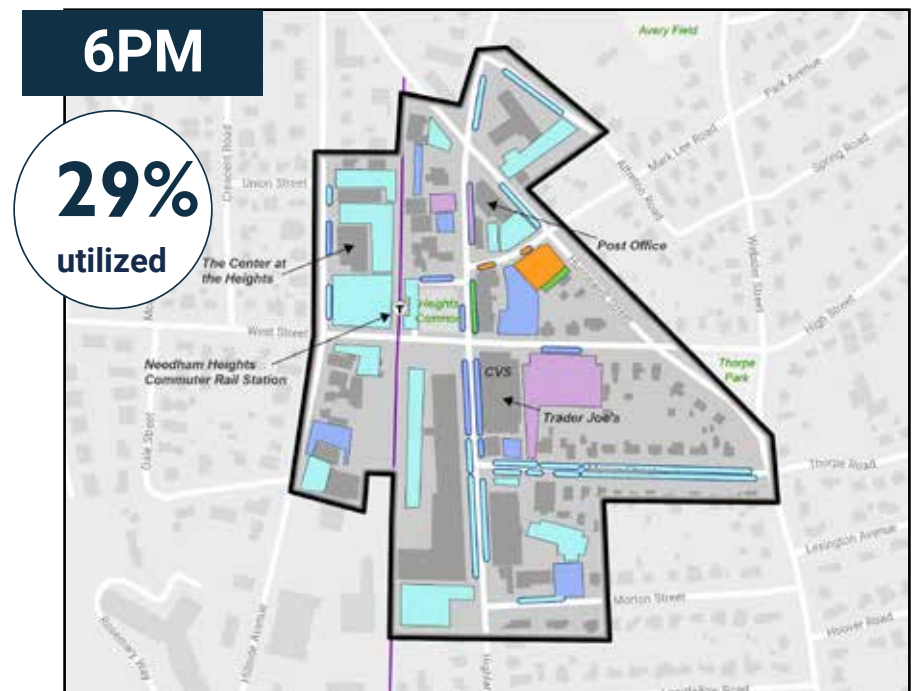
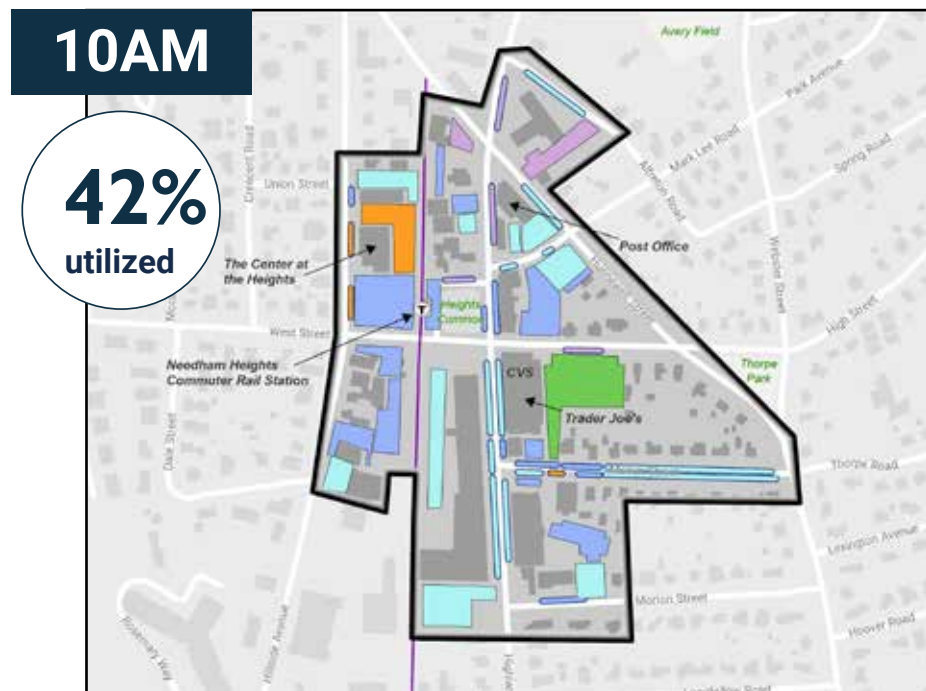
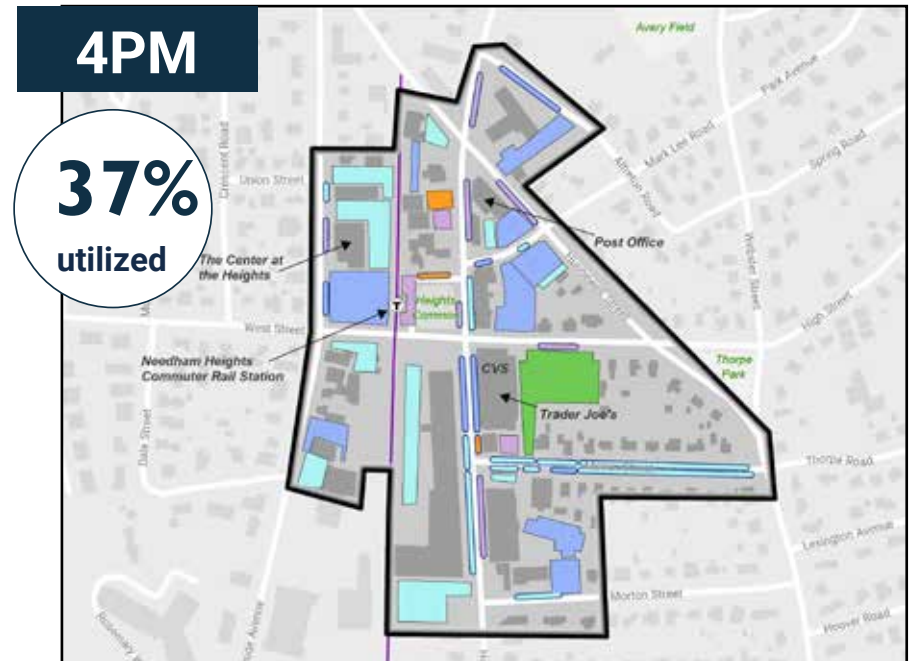
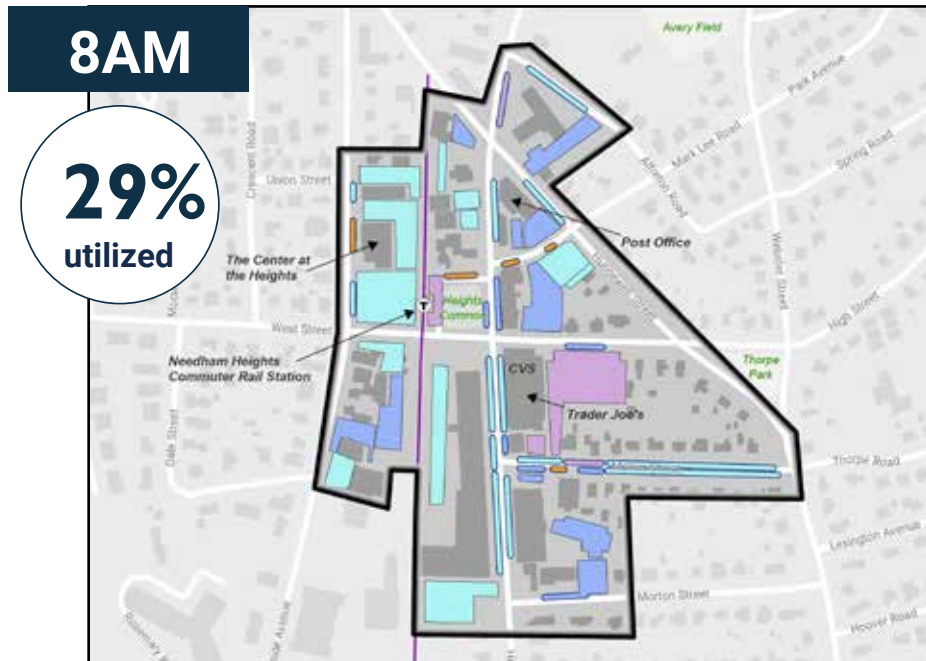
On-Street Parking

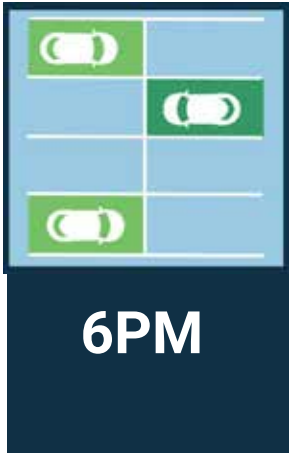
- 0 - 30%
- 30 - 60%
- 60 - 80%
- 80 - 90%
- 90 - 100%
- 100%+

Off-Street Parking

- 0 - 30%
- 30 - 60%
- 60 - 80%
- 80 - 90%
- 90 - 100%
- 100%+







Needham Heights Weekday Parking Utilization- Core Area

47%
utilized

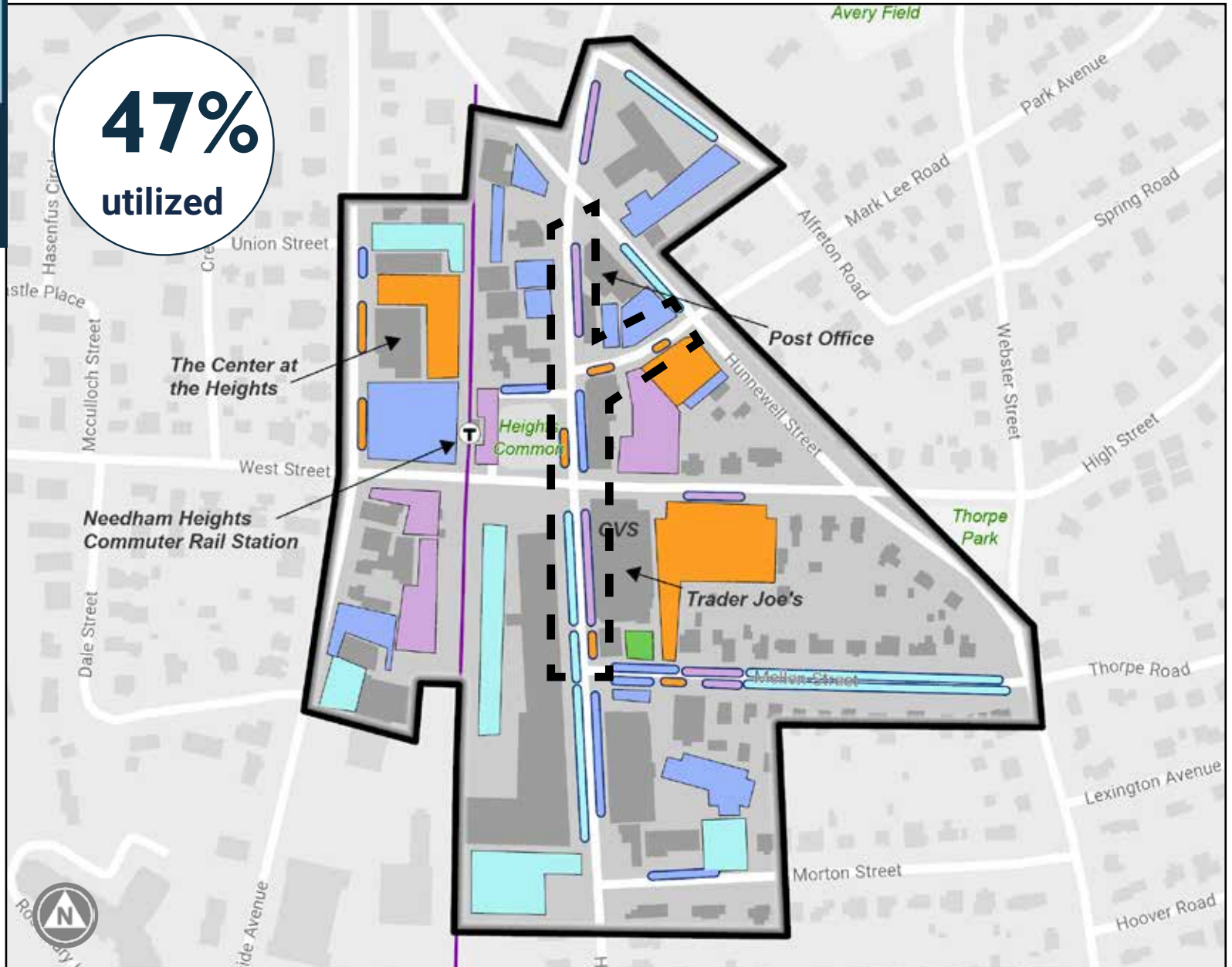
Legend

On-Street Parking

- 0 - 30%
- 30 - 60%
- 60 - 80%
- 80 - 90%
- 90 - 100%
- 100%+

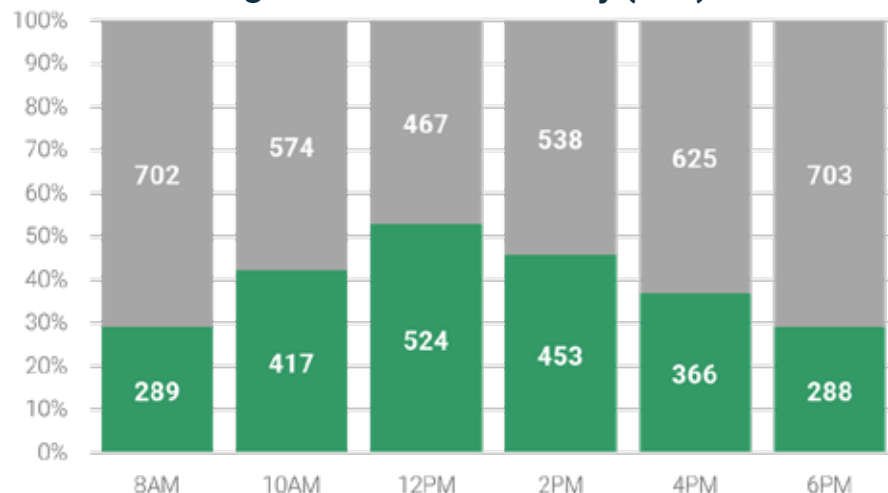
Off-Street Parking

- 0 - 30%
- 30 - 60%
- 60 - 80%
- 80 - 90%
- 90 - 100%
- 100%+



Analyzing Utilization by Parking Type

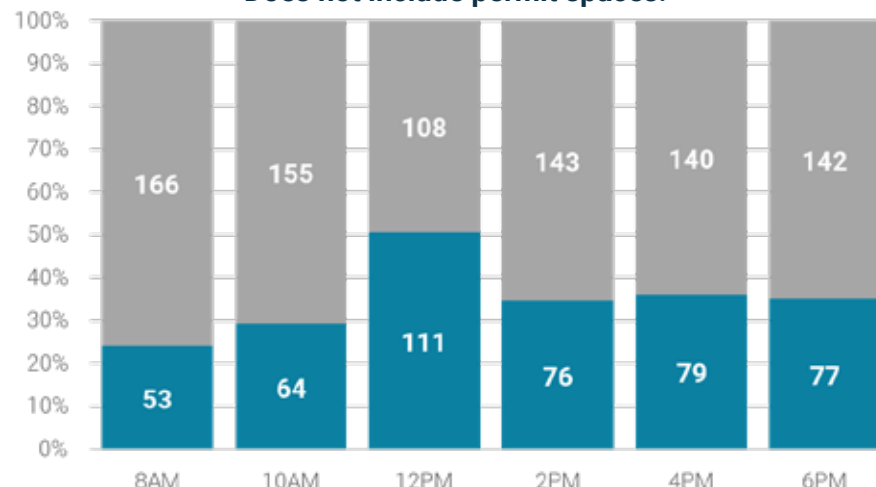
Fig. 12- Overall Inventory (991)



This chart demonstrates that overall, the Heights only encounters one peak demand period throughout the day, with 47% of its inventory still available.

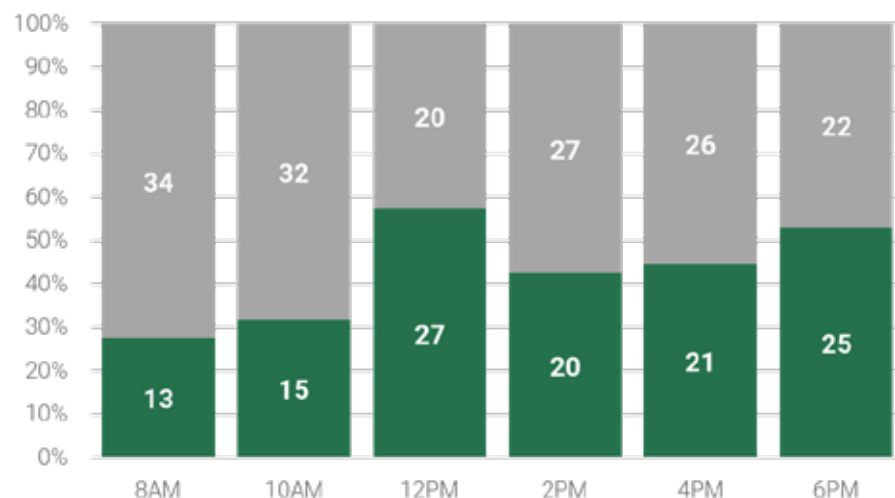
Fig. 13- Public Inventory (219)

Does not include permit spaces.



The public inventory also only encounters one daily peak demand period, with 49% of its inventory still available.

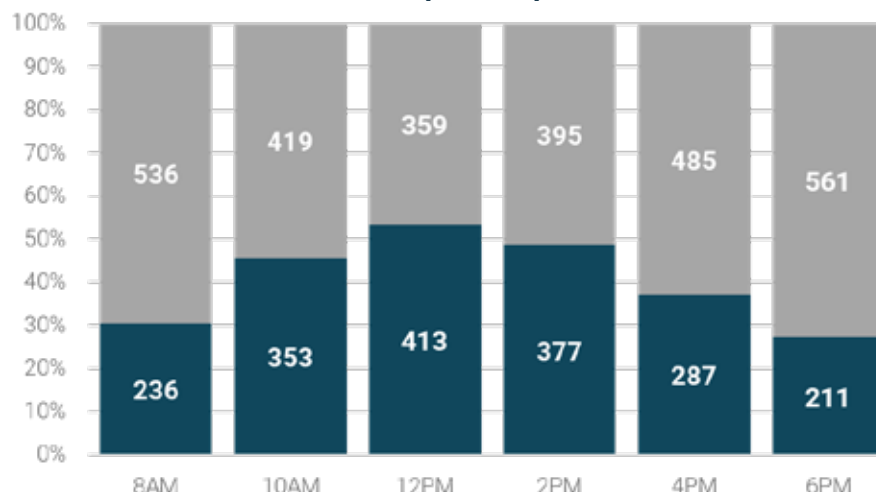
Fig. 14- Core Area: On-Street 2-Hr Metered Inventory (47)



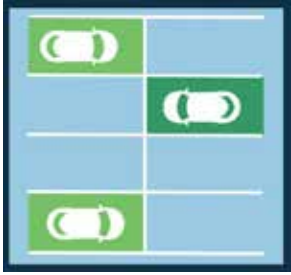
This inventory demonstrates two peak periods (in line with lunch/dinner periods) but there is opportunity to absorb additional demand in the core.

Fig. 15- Restricted Inventory (772)

Includes permit spaces.



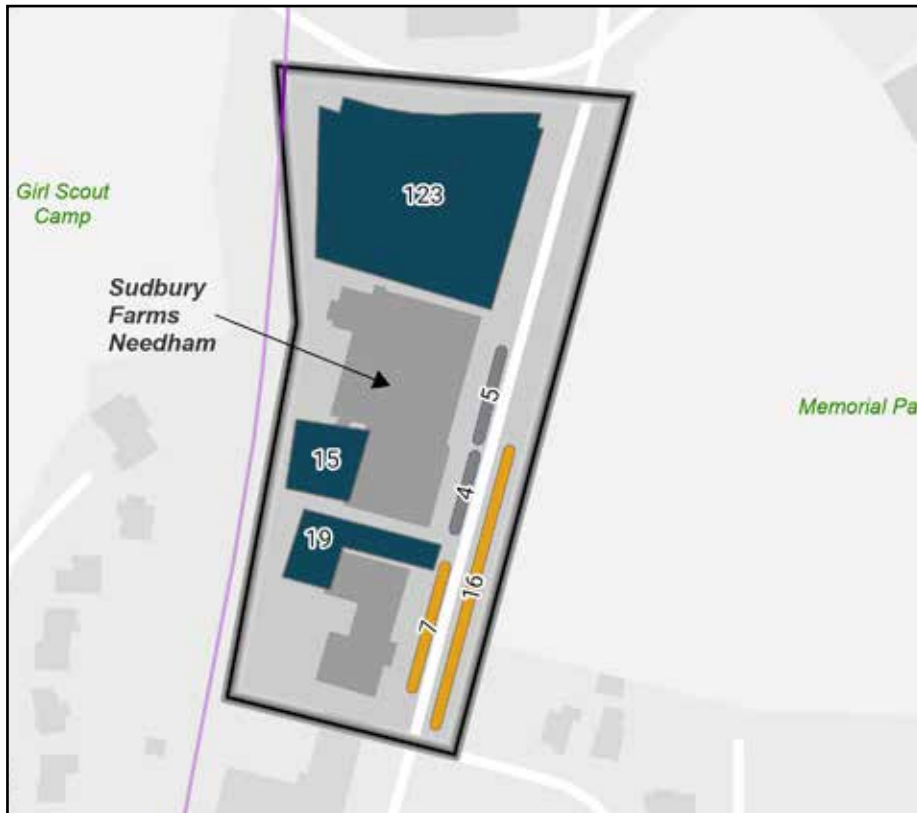
This inventory closely matches the all-day pattern of the overall inventory, and is lowest just outside of typical 9-5 business hours.



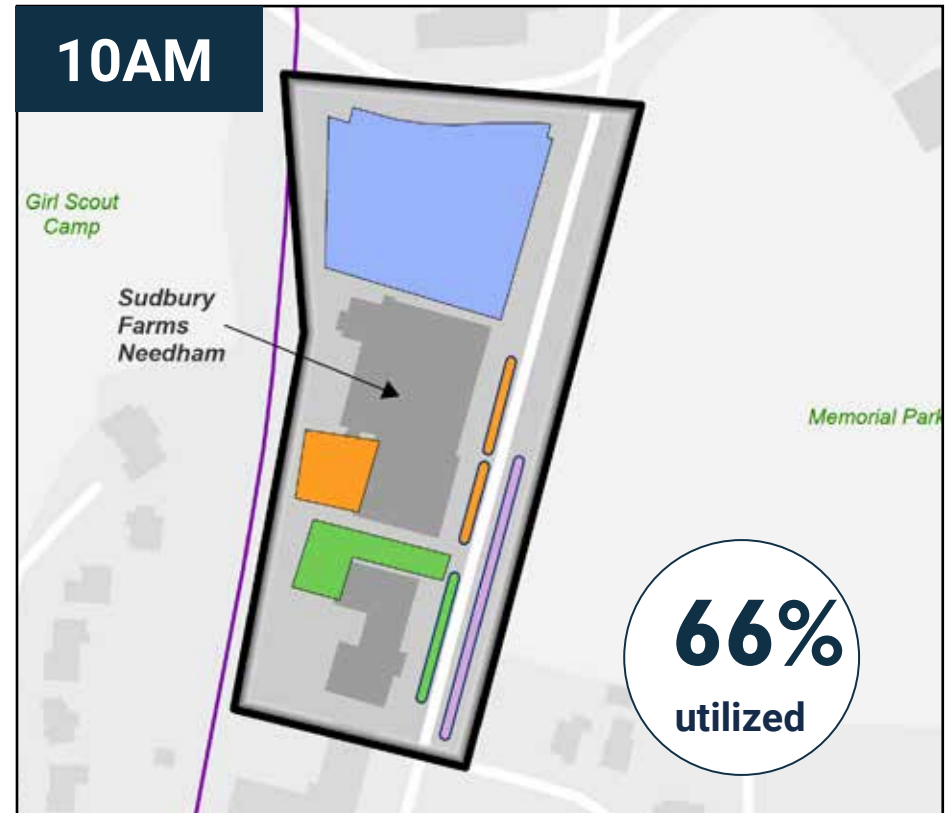
Highland Ave/High School Inventory and Weekday Parking Utilization

Although this study largely focuses on the Needham Center and Needham Heights study areas, the project team also gathered a parking inventory and performed utilization counts at a small, defined area along Highland Avenue. This area was investigated because of the concentration of businesses, the proximity to Needham High School, and known safety challenges along this part of the street.

Parking Inventory



Parking Utilization- Peak Period



On-Street Regulation

— 2-Hr Parking

— Unregulated Parking

Off-Street Regulation

■ Restricted Parking

Analyzing Utilization by Parking Type

The utilization patterns for all types of parking is similar throughout the day, with a level amount of demand at 8:00 am, 12:00 pm, and 2:00 pm, when the high school is in session. The 10:00 am peak demand period is also similar, when visitors to Sudbury Farms are likely highest. As business activity closes for the day, all parking spaces are nearly empty.

Fig. 16- Overall Inventory (189)

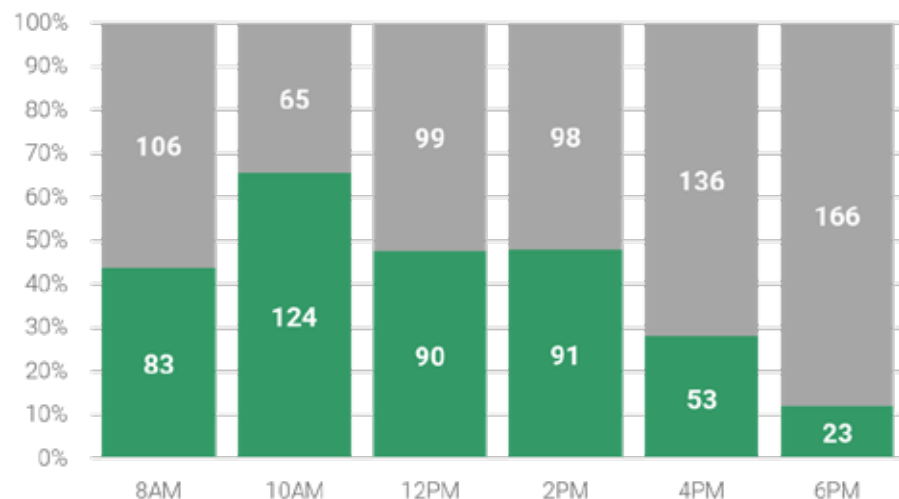


Fig. 17- Restricted Inventory (157)
Includes permit spaces.

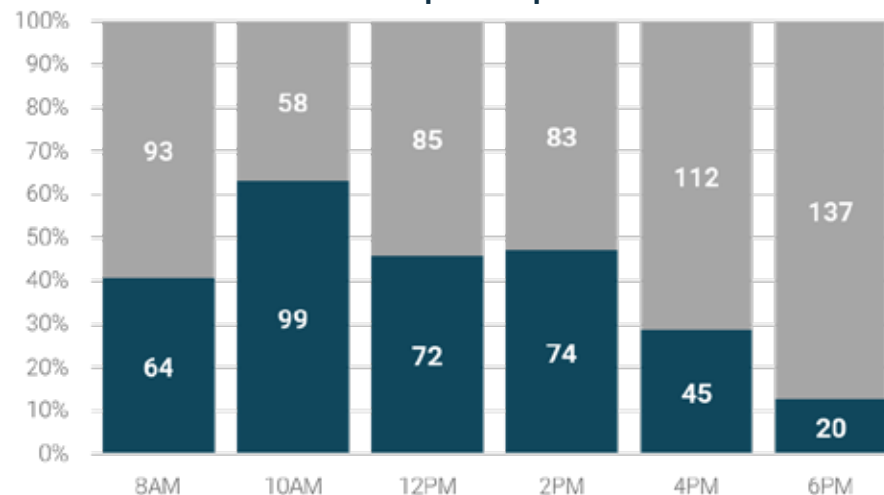
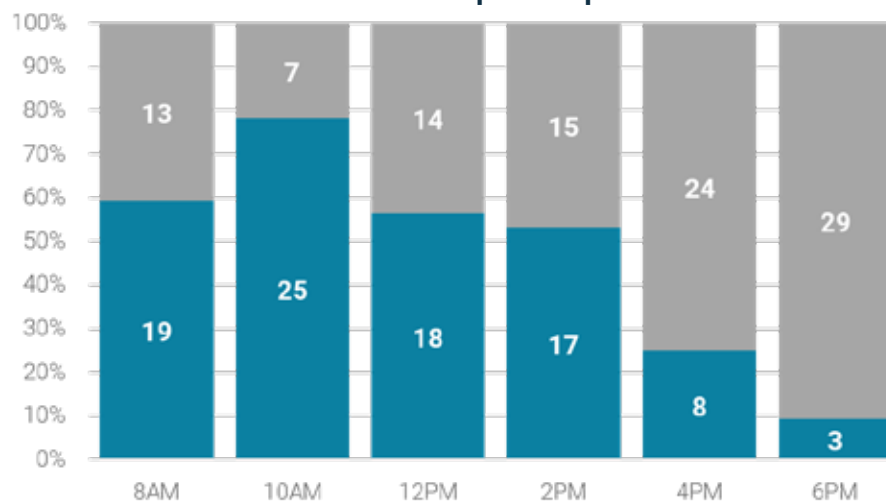


Fig. 18- Public Inventory (32)
Does not include permit spaces.



1.3 PARKING USER EXPERIENCE

Whether a first-time visitor or a long-term resident, parking is often the first point of interaction that any visitor will have when arriving to Needham Center or Needham Heights. It is therefore, very important to make a good impression through a positive parking experience to encourage return visits.

Components of the user experience include things such as:

- How easy it is to pay for parking, and the range of payment options available to accommodate the needs of different types of visitors
- How *reliable* payment options are to provide for a seamless visit every time
- The availability and clarity of information about the “rules” of parking and how enforcement works
- (For residents), the ease of the process for securing a parking permit for their particular needs
- The financial impact of parking in Needham (i.e. cost of meters, cost of permits, cost of violations)

The parking user experience is directly related to the options provided through the Town’s management of the overall system. While there are often limits in capacity of municipal staffing and budgets, being proactive and responsive to changes in visitor preferences and changes in technology can ensure a more consistently positive association with parking in Needham.

This study investigated how parking is managed and how a visitor experiences parking to better understand opportunities for improving efficiencies in the system and meeting the needs of its many different users.



User Experience Key Takeaways

PRICING

- Permits are not available to downtown residents, hurting viability of needed infill housing
- Annual permit purchase is not a realistic option for part-time workers, resulting in meter-feeding & “rolling”
- Enforcement mostly chases workers, not legitimate violators
- 6pm meter end results in restaurant workers claiming prime on-street spaces before customers arrive

TIME LIMITS

- Most on-street spaces have a 2-hour maximum limit which aligns with the vast majority of (surveyed) visitor trips being less than 2-hours
- Public lots also are generally signed for shorter visits
- However, long-term visitors do not have parking options without a permit

ENFORCEMENT

- Enforcement currently limited to daytime
- Staying overtime (including overnight) is one of the most frequent parking violations
- Tickets can be paid online
- Span of enforcement does not match hours of ‘parking crunch’ (after 6pm)

Parking Meters

PAYMENT OPTIONS

- Meters accept nickels (5 minutes), dimes (10 minutes) and quarters (30 minutes)
- No credit card or pay-by-smartphone app options are currently available

FUNCTIONALITY

- All metered spaces have “electro-mechanical” meters
- Currently, one meter head per space is installed
- Current meters do not include the number of minutes in violation, if surpassed
- Parking sessions do not reset upon turnover



Typical meter in Needham

Permits

SUPPLY

- 60 (free) permits are issued to the Town staff (for free)
- 460-480 (paid) permits are purchased by business owners, annually

ELIGIBILITY

- Local employees (Businesses' responsibility to purchase employee permits)
- Center and Height businesses (No clear method on how these are distributed)

PURCHASING/RENEWALS

- Permit cost is \$200
- Purchased annually (even if only used for a portion of the year)
- Can be paid by cash or check, in-person or through the mail (no online option)
- Re-application required every year (January 1)
 - Town sends renewal notice
 - Renewal is easier than first-time application

DISPLAY/PRACTICE

- Physical permit, displayed on the dashboard
- Not associated with a license plate
 - Can be shared between multiple vehicles



Typical hanging-style permit offered in Needham

Sell Rate and Revenue

More permits are sold than spaces available (this is a best practice to achieve utilization throughout the year)

- Utilization indicates that not everyone uses permit every day
- Permits sold remain very consistent every year
- Revenue from permits is about \$100,000/annually
- Permits cost about \$17/month, or \$0.10-0.20/hr*
 - By comparison, a monthly MBTA bus pass is \$55/month

Table 3. Permit Sell Rate and Revenue

Fiscal Year	Permit Holder	Needham Heights Permits Issued (14 on-street spaces available)	Needham Center Permits Issued (178 spaces available)	Cost	Total Permits	Total Revenue
2020-2021	Business/Employee	18	442	\$200	520	\$92,000
	City Staff	0	50	\$0		
2021-2022	Business/Employee	20	471	\$200	568	\$92,800
	City Staff	17	60	\$0		
2022-2023	Business/Employee	16	442	\$200	530	\$91,600
	City Staff	12	60	\$0		

Enforcement/Tickets

STAFF

- Enforcement is conducted by Community Relations officers in the Police Department
 - The officers also serve as crossing guards, which dictates enforcement times
- There are currently five Parking Enforcement Officers (PEOs)

ENFORCEMENT PERIOD

- A total of 31-35 hours are spread throughout the week to monitor the violations of meter parking and permit parking
- Enforcement generally ends at 2pm

PRACTICE

- The number of violations/tickets that are issued in a week varies greatly.
 - PEOs issue tickets for a subset of police-enforced violations
 - Handheld system PEOs use is glitchy
- Turnover and utilization is not currently tracked with the current enforcement system

VIOLATIONS

- The most expensive violations are for blocking bus stops and handicapped spaces
- The most frequent violations are related to staying over time and/or violating meters
 - This includes overnight parking
- Permit violations (enforced by Town) are not listed on Table 4.

Table 4. Needham Parking Violations (2018)

Violation	Fee	Frequency (2018)
Meter Violation	\$15.00	1874
Overtime Meter*	\$15.00	1500
Overtime*	\$15.00	900
Restricted	\$15.00	401
Improper*	\$15.00	276
All Night	\$15.00	224
Fire Hydrant	\$25.00	35
Wrong Direction*	\$15.00	32
Obstructing Sidewalk	\$15.00	29
20ft Intersection	\$15.00	24
Fire Lane	\$25.00	21
Bus Stop	\$100.00	13
Handicapped*	\$100.00	12
Obstructing Driveway	\$15.00	11
Foot from Curb	\$15.00	11
Impede Snow Removal	\$20.00	10
Obstructing Crosswalk	\$20.00	5
Double	\$15.00	2
Blocking Handicapped*	\$100.00	2

*Enforced by Needham PEOs. Source: Town Finance Officer

Revenue Summary

- During a typical year, the revenue from parking meters and parking permits is almost equal
- Overnight parking fees represent applications for temporary overnight parking. The fee is \$35, and rarely more than 10 are issued in a year.

Table 5. Needham Annual Parking Revenue

Fiscal Year	Parking Meter Receipts	Parking Permits Revenue	Overnight Parking Fee	Parking Fines Issued
2018	\$105,003	\$106,720	\$350	\$86,538
2019	\$107,524	\$107,000	\$385	\$105,722
2020	\$86,700	\$5,260*	\$315	\$159,297
2021	\$8,699*	\$149,020	\$35	\$25,349
2022	\$64,999	\$97,867	\$175	\$59,946
2023	\$32,662	\$3,010**	\$175**	\$27,035

* Low figures due to COVID-19

** Annual renewal is May 1; for FY23, most of receipts will be collected in April 2023.



Needham Town Hall

I.4 ZONING ANALYSIS

Summary

(see Appendix for full memorandum)

REQUIREMENT OVERVIEW

Needham's parking ratio requirements are relatively high compared to national standards for parking generation (Table 6). The code allows for some flexibility to account for context, but it is limited. Flexibility includes:

Best Practice Downtown Zoning Flexibility	Needham Application
Removal of all minimum requirements	In Needham Center, no parking requirements for small retail land uses. Slight reductions for upper levels of multi-story buildings.
No change use requirements	In Needham Center and Needham Heights, exemptions for certain changes of use
	<i>Additional Options by Special Permit</i>
Off-site parking allowed within 2,000 feet and no ownership requirement	Off-site parking allowed within 300 ft and if under same ownership
Tiered fee schedule to promote use	Off-street parking fund exists for payment in-lieu, but isn't actively used
One bicycle parking space required for every parking space	One bicycle space required for every 20 parking spaces
Municipal-wide TDM ordinance	TDM plans required in some districts, but not Needham Center or Heights - NEBC, HC-128, and MU-128 Districts

Table 6. Needham Zoning Requirements in Comparison to Best Practice National Standards

Land Use	Needham Requirement	National Standards	Comparison
Residential	1.5 spaces per unit (1 space per unit for affordable units w/ no more than 1 bed.)	1.15 spaces per unit ¹	Higher
Office	3.33 spaces per 1,000 square feet	2.39 spaces per 1,000 square feet	Higher
Medical Office	5 spaces per 1,000 square feet	3.23 spaces per 1,000 square feet	Higher
Retail	3.33 spaces per 1,000 square feet	1.94 spaces per 1,000 square feet	Higher
Restaurant	1 space/3 seats, plus 10 spaces/ takeout service station	1 space per 3 seats	Comparable

¹ Assumes 2 spaces per bedroom unit



Zoning Key Takeaways

- Requirements are relatively high
- Waiver requests are frequent, indicating requirements don't match the market
- Limited options for reductions as of right; lengthy review process required
- Although some flexibility exists, it is limited
- Parts of Needham Center/Heights do not fall into these areas

WAIVER REQUESTS IN THE CENTRAL BUSINESS DISTRICT FROM 2018-2022

There have been multiple waivers requested to waive parking requirements recently in downtown Needham areas. This indicates that parking requirements do not match with market demands.

Details include:

- 9 waivers requested, all approved
- 7 of 9 provided no off-street parking (retail/medical office/restaurant/gym)
- **Up to 158 parking spaces waived**
- Common justifications:
 - Off-street parking not currently available at the property
 - Minor modifications to the property wouldn't impact vehicle/pedestrian movement
 - Properties in close proximity to municipal lots for employee and/or customer parking
 - Employers would be ordered to purchase parking stickers

MULTI-FAMILY RESIDENTIAL DEMAND

Based on data from select multi-family properties, the average residential demand in Needham is about 0.84 per unit. The team collected overnight data as part of this study in December 2022 to gain a general understanding of parking demand at peak at a residential location. In addition, the Metropolitan Area Planning Council (MAPC) also conducted counts as part of the HOME Consortium Parking Study. The table below provides additional detail.



View of the southern lot of the Rosemary Ridge property at midnight.

Table 7. Sample Overnight Multi-family Residential Parking Demand Ratio

Property Address	Total # Vehicles	# Units	Ratio
275 2nd Avenue*	242	390	0.63
757 Highland Avenue	84	77	1.10
100 Rosemary Way	88	105	0.84
50 Dedham Avenue	13	10	1.30

*Data courtesy of MAPC, June 2022

Fig. 19- Needham Center Zoning Overlay/Districts

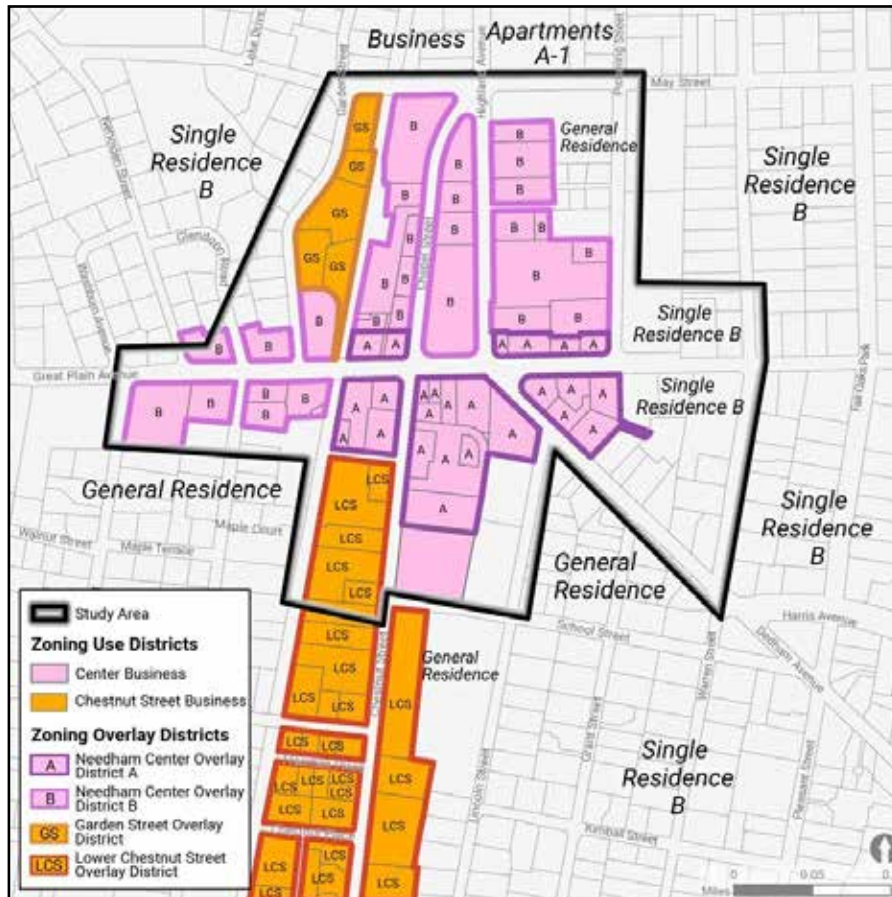


Fig. 20- Needham Heights Zoning Overlay/Districts

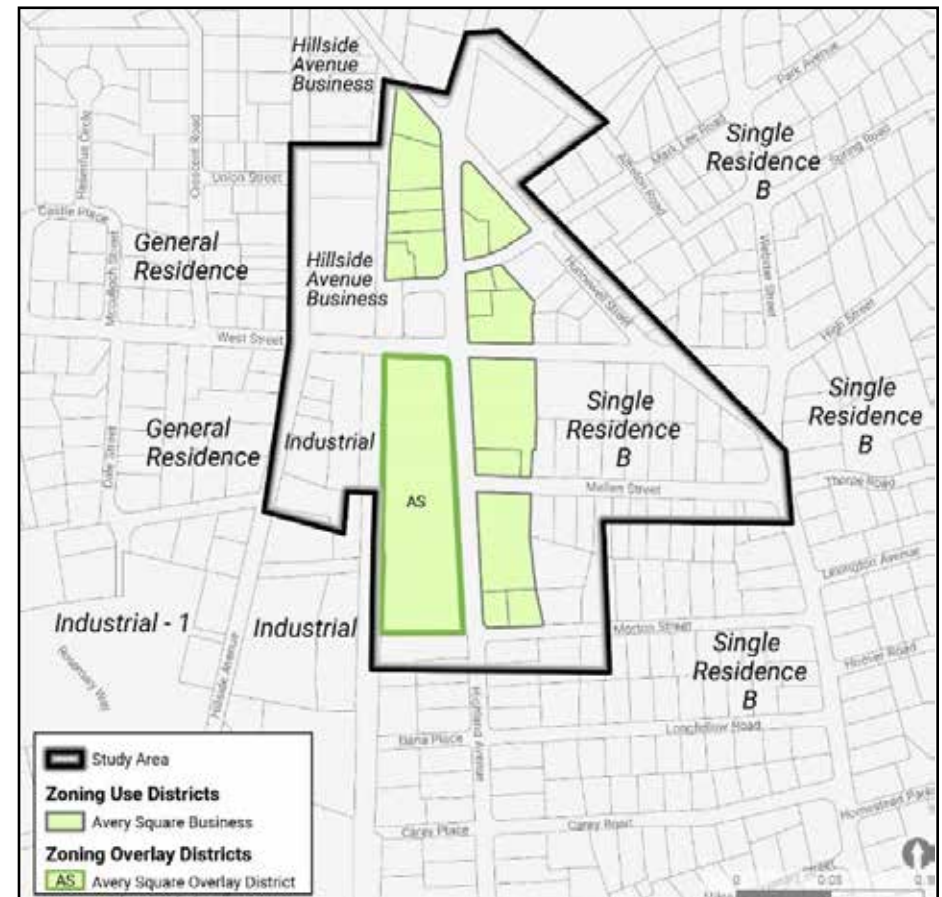


Table 8. Zoning Requirement Comparison Between Needham Zoning Overlays/Districts

	Center Business District	Needham Center Overlay	Lower Chestnut St Overlay	Garden St Overlay	Avery Sq Business District
Relief from Requirement by Right					
Retail uses > 800 sf of floor area	X	X			
Buildings with 40% or more of its usable floor area above the ground floor, upper-story non-medical uses only need to provide 80% of the parking requirement	X	X	X	X	
Change of use requires nine or fewer additional off-street parking spaces for compliance	X	X	X	X	X
Special permit to relieve or waive parking requirements if:					
Project replaces or substantially improves an existing building or site	X	X			
Promotes the goal of preserving and enhancing the Center Business District as a pedestrian-oriented local shopping and business district	X	X			
Incorporates the recommendations of the Design Review Board	X	X			
Demonstrates that the maximum number of off-street parking spaces practicable are provided	X	X			
Applicant demonstrates it cannot accommodate parking in an economical way (in-lieu fee required)		X	X		
Applicant demonstrates it cannot accommodate parking via adjoining shared parking (in-lieu fee required)		X	X		
Project has been designed to reduce required parking (in-lieu fee required)		X	X		
Complementary uses (Shared parking), or other reduction devices pursued					X
Off-site parking to meet requirement for non-residential					X

I.5 MULTIMODAL ANALYSIS

Pedestrian/Bicycle Experience

Parking is one component of the overall transportation system, and the quality of the multimodal environment impacts parking demand. A multimodal environment that emphasizes car travel will encourage parking demand. In addition, poor walking connections from parking facilities to the core can dissuade people from using the entire system as certain facilities feel much farther away than they actually are. With these patterns in mind, this study assessed the multimodal environment for its potential impact on parking demand.

SAFETY/ACCESSIBILITY

- The existing transportation network in Needham is car-centric but there is some infrastructure in place to support and encourage walking and bicycling
- Sidewalks are complete and in generally good condition, however some areas and crosswalks need improvement to increase safety and comfort
- Crosswalks are also needed at key locations near the Chestnut St and Dedham Ave lots

OTHER AMENITIES

- The presence of consistent streetscaping, park pathways, historic lighting, and a good amount of benches (particularly in the Center) improves the experience of pedestrians
- Sharrow markings are present but dedicated bike lanes would be more desirable for some riders
- Bike racks are present in some areas but might not be in locations convenient to destinations desired
- There is a lack of signage to direct people to bike parking



Multimodal Key Takeaways

- Connectivity to/from public parking can be significantly enhanced to increase the utilization of public facilities, and to create a more walkable downtown
- Several pedestrian amenities are generally present throughout Needham but are lacking in some areas, which contributes to a sense of inconsistency
- Larger, more centralized bike rack areas are needed to attract bicyclists to visit key destinations where parking is in higher demand



The ride can be somewhat uncomfortable for young bicyclists like this one who are traveling from Greene's Field along Pickering St (Source: Google)



One of the more attractive and well-maintained intersection corners of Needham Center, which contributes to a more pleasant atmosphere for pedestrians and bicyclists (Source: Google)



An ideal location for a high-visibility crosswalk on Dedham Ave (Chestnut St lot is on the left) (Source: Google)



EV parking spaces in Needham provide another travel alternative for visitors who would like options (Source: Google)

I.6 SUMMARY ANALYSIS



**Supply is available,
but not always easy to
understand**



**Utilization is uneven,
and some lots have
capacity all day**



**There are limited
opportunities for
long-term parking**





Enforcement ends early and may be 'chasing' employees

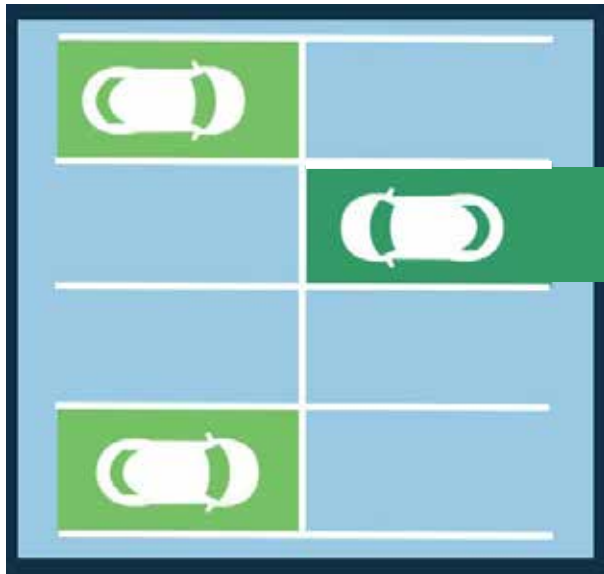


Pricing does not match demand and ends on-street just as dining gets busy



Long and/or difficult crossings limit access to parking





2

PUBLIC OUTREACH

Public outreach was conducted at regular intervals throughout the study to better understand how parking functions, with a specific emphasis on Needham Center and Needham Heights. Meetings were held both in-person and virtually, so as to reach the broadest range of residents, employees, business owners, or visitors. The feedback collected from all outreach efforts helped to provide insight on Needham's parking system and ultimately inform the project recommendations.

Online Survey

The study posted and promoted an online survey to gain input from Needham residents and other stakeholders about their experiences finding and using parking in Needham Center and/or Needham Heights. The Town promoted the survey through flyers, postcards, and directly e-mailing various groups and agencies. The survey received 1,049 responses between November 23, 2022 and January 19, 2023. Participants were able to take the survey for the Center, the Heights, or for both areas. Questions were asked covering the following topics:

- How frequently respondents visited either area
- Where respondents parked most frequently when they drove to either area
- How close to their destinations respondents typically parked in either area
- What influenced where respondents parked when they visited either area
- Whether respondents were residents, employees, or business owners in either area

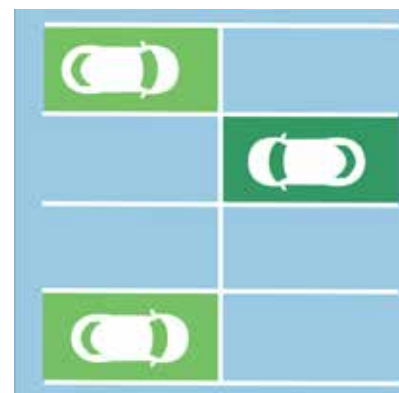
629
participants

WHO DID WE HEAR FROM?

46	Visitors to Needham
322	Residents of greater Needham
230	Residents of Needham Center or Needham Heights
35	Business owners
23	Employees
7	Commuter Rail riders
6	Hospital workers/visitors

AGES OF PARTICIPANTS

2	18-24
237	25-44
443	45-64
327	65 and over
28	Prefer not to say



Needham Center + Needham Heights Parking Study PUBLIC SURVEY

Whether you live, work, or play in Needham Center and Needham Heights, we want to hear about your parking experience!

The Town of Needham is conducting a parking study in these two areas to better

- Do we need better access to parking?
- Can we better use the parking that we have?
- What kind of parking payment options are preferred?
- Is the parking system meeting other Town goals?
- Can improved walking help parking?
- Can finding parking become easier?

understand:

The study involves an in-depth process of data collection and analysis. This is your chance to be heard about parking-related concerns. Your survey input will be used to

WHEN?

The survey will be open between November 23, 2022- January 3, 2023

HOW?

- Visit this website link- <https://tinyurl.com/NeedhamParking>
- Scan the QR code to the right



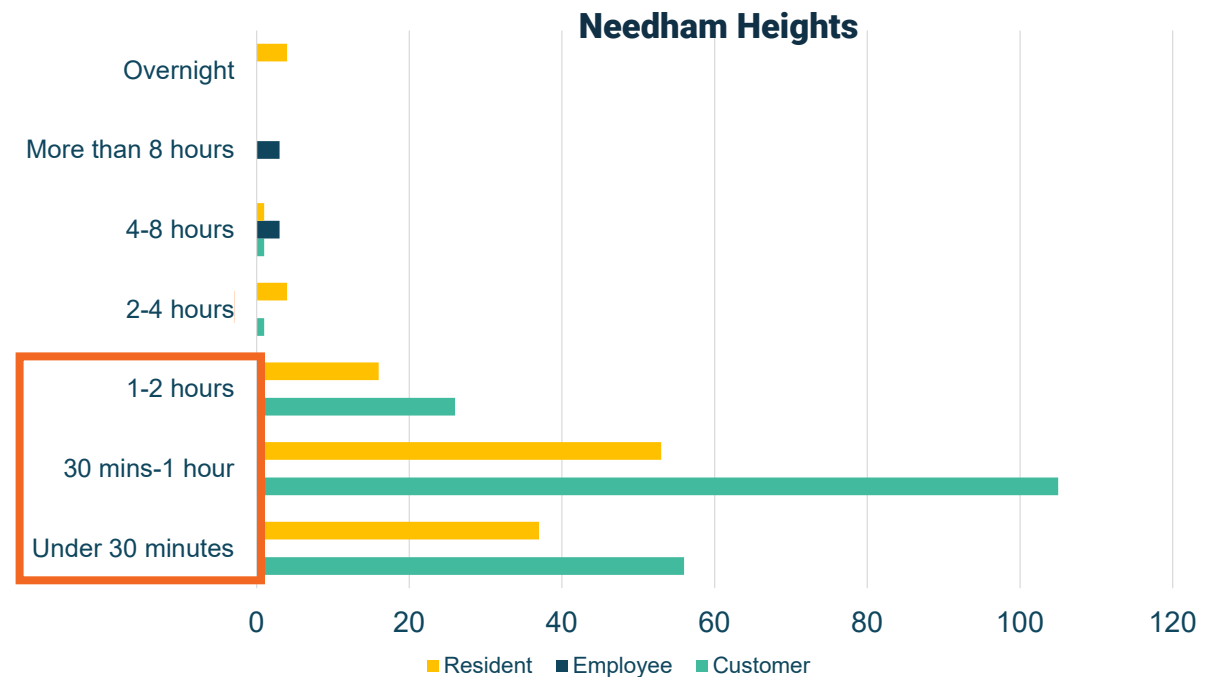
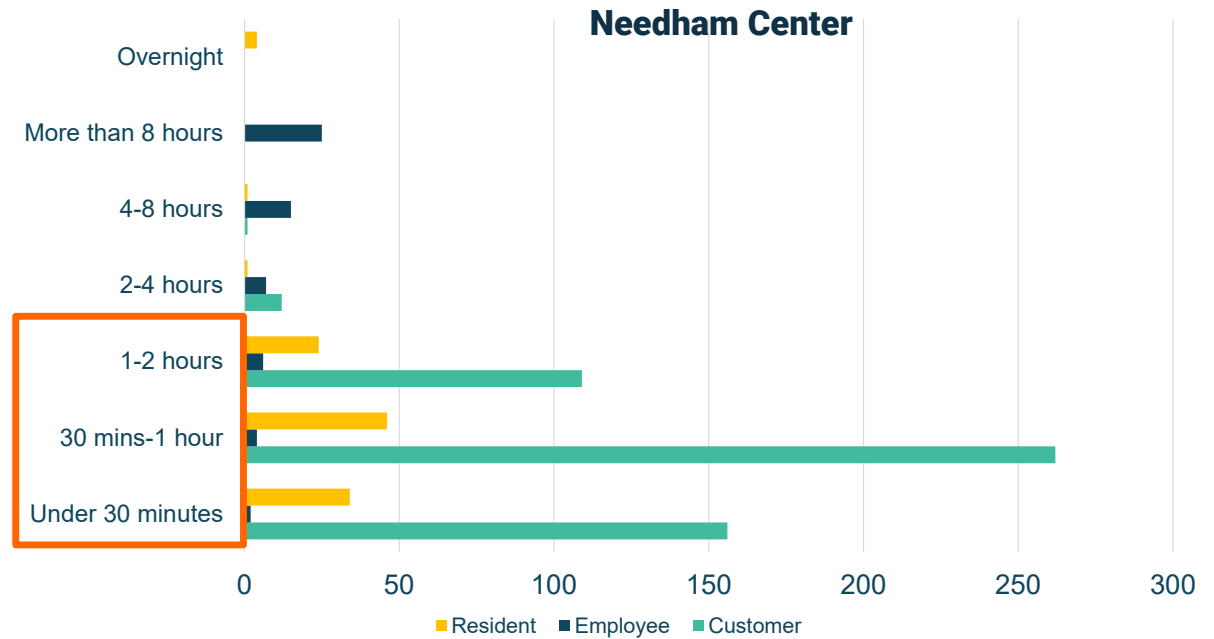
QUESTIONS?

Contact Amy Haelsen, Economic Development Manager- ahaelsen@needhamma.gov



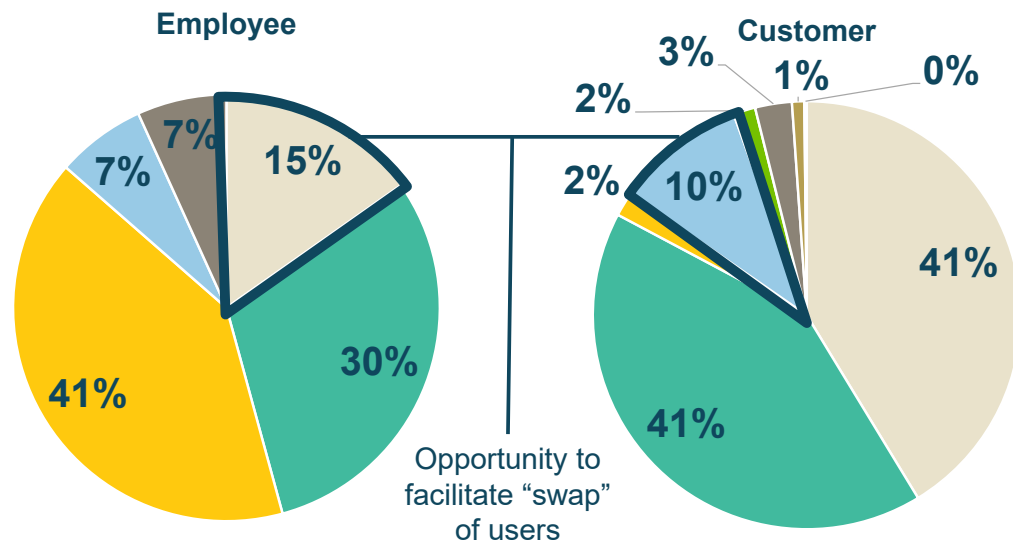
Q. How long do you spend on a typical visit?

These responses reveal that short-term spaces (less than 2 hours) are in much higher demand for both the Center and the Heights than any other time periods.



Q. When you drive, where do you park most frequently?

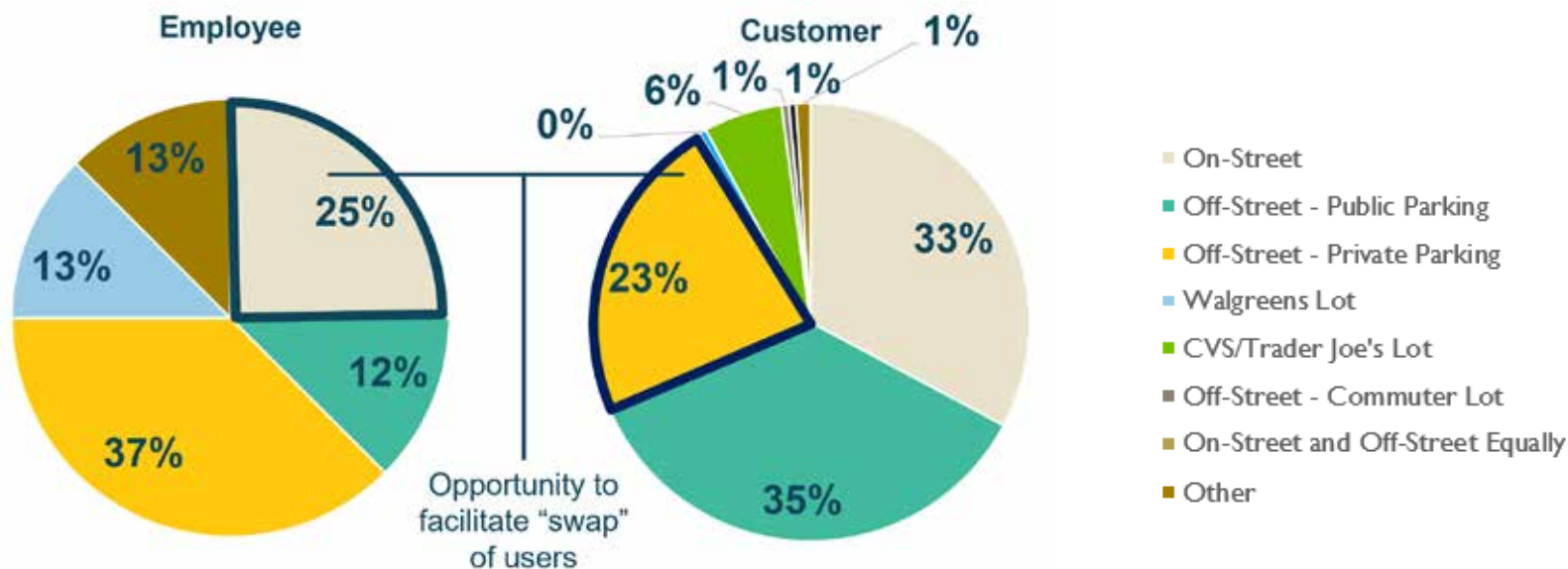
Needham Center



These responses reveal that, in the Center, a considerable portion of employees claim to park on-street, which is ideally targeted for customers. These occupied spaces then force customers to park elsewhere, such as in the Walgreens Lot, as reflected.

This same practice is echoed in the Heights, with an even larger portion of employees occupying on-street spaces. The portion of the overall on-street inventory used by employees or customers is similar.

Needham Heights

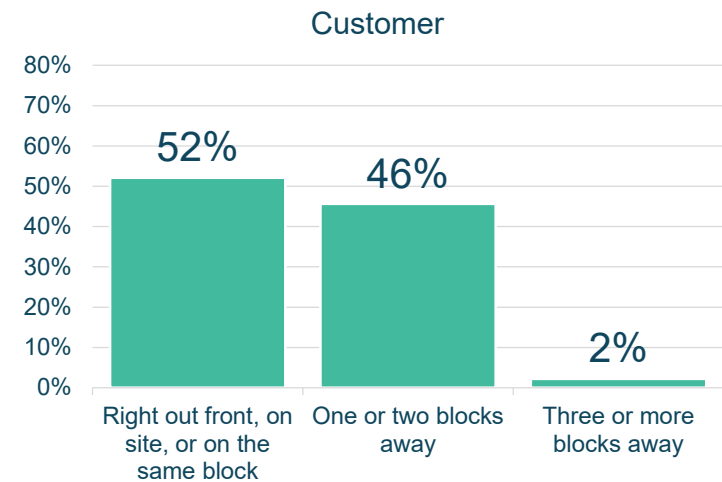
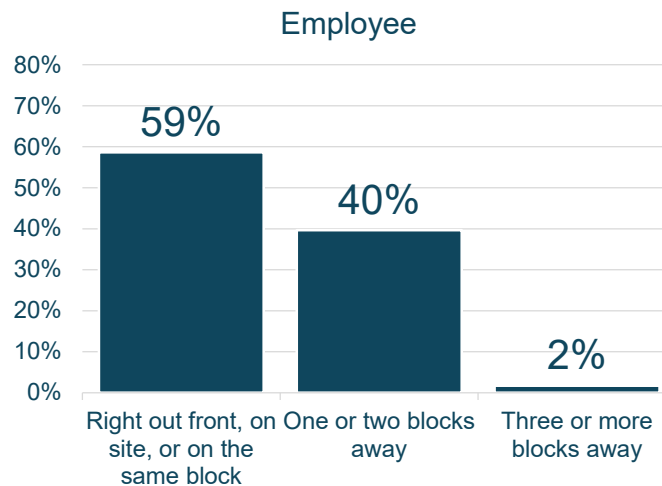


- On-Street
- Off-Street - Public Parking
- Off-Street - Private Parking
- Walgreens Lot
- CVS/Trader Joe's Lot
- Off-Street - Commuter Lot
- On-Street and Off-Street Equally
- Other

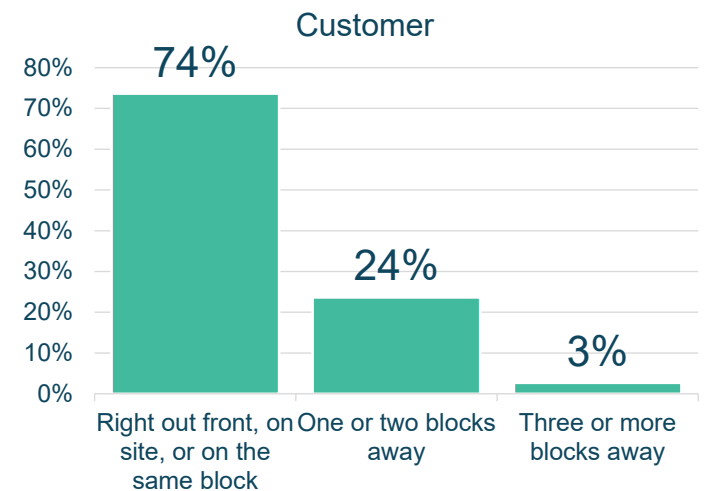
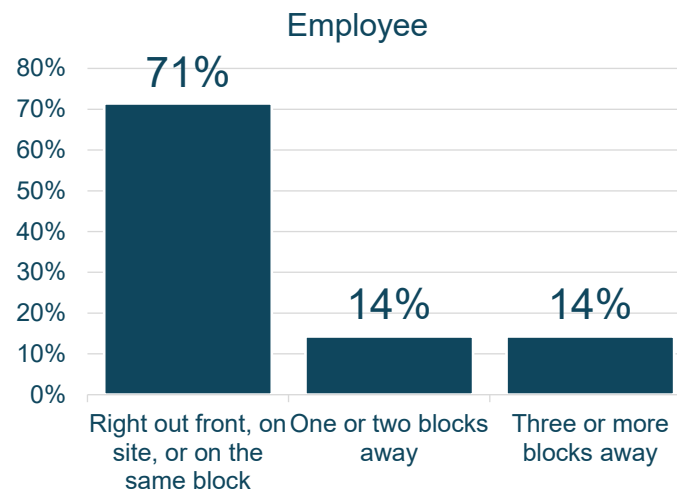
Q. How close to your destination do you typically park?

These responses reveal that, in the Center, customers are more willing to park a few blocks away from their destinations than employees. In the Heights, a much larger portion of respondents prefer parking right in front of their destination but again, customers are more willing than employees to park a little farther away.

Needham Center



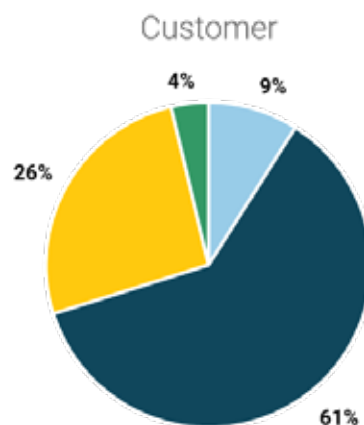
Needham Heights



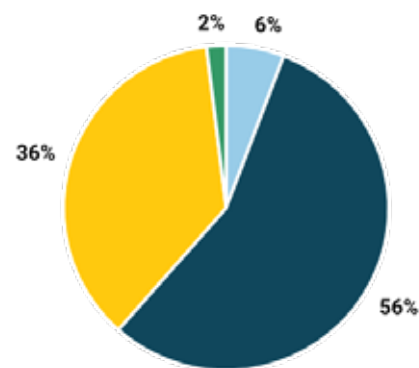
Q. How does paid parking influence your parking choice?

These responses reveal that in both Center and the Heights, 70% of the customers will park further away in order to pay less for parking. Approximately 28% of all users in both study areas are willing to pay more to park closer to their destinations.

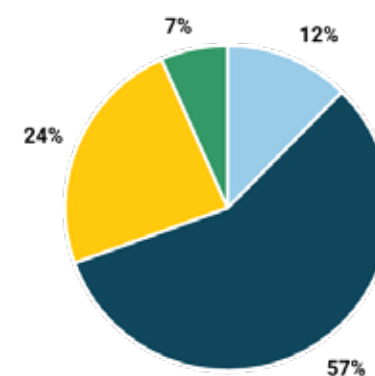
Needham Center



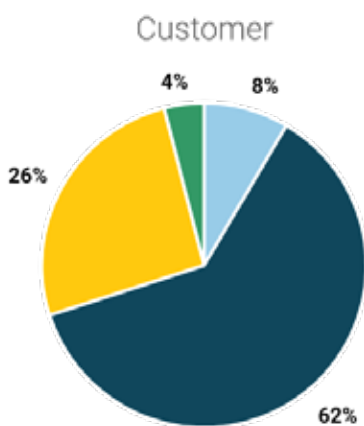
Employee



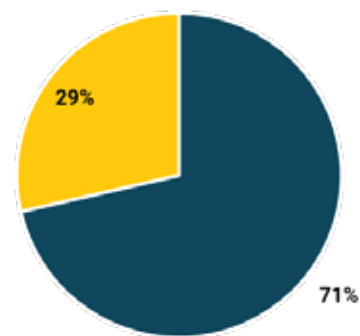
Resident



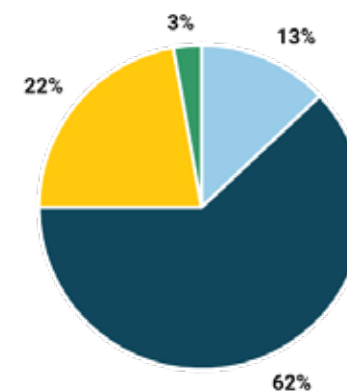
Needham Heights



Employee



Resident



- I will choose to drive elsewhere
- I will park farther away from my destination for less expensive or free parking
- I will pay more to park closer to my destination
- I will walk, bike, or take a bus, taxi or rideshare instead of paying to park

Community Open House

An in-person public meeting was held for the project on January 26, 2023 at Town Hall in Needham Center. The Town advertised the meeting with a postcard, through direct e-mails, and social media posts. The meeting was intended for a general audience with a goal of sharing project information, including **the study goals, project schedule, parking inventory and utilization data, and results from the public survey**. The meeting was attended by 50 people.

The meeting also focused on collecting feedback in an open house style format, and provided all attendees the opportunity to participate through interactive exercises and conversations with the project team. Some of the key points from these discussions are highlighted below.

NEEDHAM CENTER

- Parking signage is confusing and wayfinding is difficult for off-street lots
- Parking is imbalanced- there is too much at private lots or the police station, but not enough public parking
- MBTA Commuter Lot lacks clarity on who can park where
- More focus is needed on non-car transportation, including bike lanes, bike parking, and improving the pedestrian experience

NEEDHAM HEIGHTS

- The MBTA lot has been underutilized, post-pandemic
- The Trader Joe's lot is always full and dangerous to maneuver through
- There is a lack of parking signage, generally
- Walking and biking infrastructure needs improvement



Stakeholder Roundtables

The study team hosted two stakeholder meetings in February 2023, which targeted businesses in Needham Center and Needham Heights. The meetings were held virtually to best accommodate the available times of attendees, and focused on gaining individual feedback. Similar to the Community Meeting, the team shared an overview of the project and some high-level findings, then held an open discussion.

These meetings gave business owners the opportunity to learn about parking demand and regulations in their neighborhood, voice their issues and concerns about how they and their employees are impacted by parking, and to provide input on opportunities for the parking system. Some of the key points from these discussions are highlighted below.

NEEDHAM CENTER / NEEDHAM HEIGHTS

- Enforcement varies
- Legal permit parkers are getting ticketed
- There are limited employee parking passes
- Loading/short-term parking spaces are desired
- Employees occupy prime spaces in front of businesses
- Centralized employee parking area is desired (Mark Lee Road has potential to accommodate)
- Leased spaces need better signage
- Employee permit costs can add up



WHO DID WE TALK TO?

NEEDHAM CENTER

- Abbot's Frozen Custard
- Barre 3
- French Press Bakery
- House of Pizza
- Michelsen's Shoes
- Needham Music
- Proud Mary's Gifts

NEEDHAM HEIGHTS

- Blue on Highland
- Cafe Fresh Bagel
- Koko Fit Club
- Town Pizza

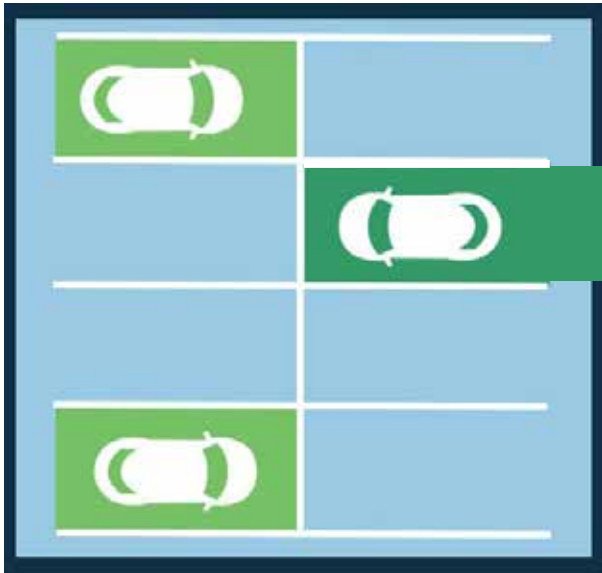


Community Outreach Key Takeaways

- People generally feel there is enough parking in the Center or the Heights but not enough clarity about how to find it or who can use it
- The user experience of parking could be improved by making parking easier to find, and increasing options for how to pay for parking
- Some parking areas and the connections to/from them are uncomfortable to use because of safety challenges
- The local business community feels the identification of new short-term and long-term spaces are a priority
- The community perceives enforcement practices are inconsistent and not enforcing true parking violators

3

RECOMMENDATIONS



Historic communities such as Needham were not built around the car but became car-centric over time as travel patterns and policies changed. Fortunately, Needham has successfully held a strong line in limiting the growth of its off-street parking supply, attracting compatible development which has sought to limit its parking footprint.

Like most historic downtowns, Needham's parking system has evolved over time in a somewhat ad hoc way. This has resulted in a disjointed and at times confusing system that does not respond to today's travel patterns. As consumer spending rebounds following the worst of the COVID-19 pandemic, and new, mixed-use and denser development emerges in both the Center and the Heights, the time is right for a more coordinated approach to the parking system and how it can best support community goals over the coming years.

The following recommendations will help create a parking system that better meets Needham's goals while building in additional flexibility for the system to adapt as travel patterns continue to change and evolve.

GOALS



1. Document existing parking supply and daily demand



2. Improve parking management system for residents, employees, customers, and visitors



3. Investigate efficiency and user-friendliness of parking meters and other payment methods and find opportunities to improve



4. Identify and recommend parking supply efficiencies/ opportunities to unlock parking in areas of higher demand



5. Identify opportunities to better align policies with the long-term goals and growth of the two areas



6. Support the economies of the Needham Center and Needham Heights



7. Inform decision-making for future street improvement projects and zoning updates

RECOMMENDATIONS OVERVIEW

DRAFT RECOMMENDATIONS

- 1 Performance-based pricing
- 2 Permit spaces
- 3 Long-term parking
- 4 Shared parking opportunities
- 5 Enforcement
- 6 Create more active curbs
- 7 Improve parking signage and wayfinding

- 8 Payment technologies
- 9 Introduce flexibility in zoning
- 10 Parking supply opportunities
- 11 Multimodal improvements
- 12 Bike parking infrastructure
- 13 Clarity of regulations

 Short-Term  Long-Term  Periodic Evaluation Required

Best Practice Opportunities for Needham

Recommendation	Best Practice	Needham's Existing Practice
Downtown Parking Management		
Performance-based Pricing	Parking in a downtown should implement performance-based pricing to spread parking demand. All parking facilities should be well advertised and connected to the downtown.	Needham's one-size-fits-all pricing results in excess demand of prime spaces, while nearby spaces are highly underutilized.
Introduce Flexibility in Zoning	A progressive zoning code can ensure that growth in travel demand is absorbed by other travel modes, and that those requiring vehicle access utilize nearby parking resources and only construct new parking as needed.	The Town's zoning policy requirements are significantly higher than best practice, and don't incentivize non-vehicle modes and their connectivity/access.
Pursue Shared Parking Opportunities	Broadening the use of shared parking agreements between private landholders can ensure that growth in the restricted, off-street parking supply is kept to a minimum.	Needham does not currently have a parking district but has successfully supported shared parking agreements.
Parking Regulations and Permit Management		
Long-Term Parking Options + Permit Spaces	Pricing should be performance-based, using the cost of parking to achieve ideal parking availability by setting the cost of parking to allow users to pay more for the most desirable spaces. Permit spaces may be able to be shared by other users to maximize their use.	Unclear signage and the designated permit parking times in Needham reduce the optimal utilization of these designated spaces. Permit pricing does not align with their demand.
Update Payment Technologies	Mechanisms should provide an array of options for users (i.e. coins, credit card, smartphone). Mechanisms should use the same billing systems.	Needham's meters only accept a specific combination of coins, which is inconvenient and doesn't allow for flexibility to extend parking time.
Clearly Sign Regulations	Time limits are several hours or discouraged entirely to allow for more flexibility for visits; cost is a more appropriate mechanism to ensure parking spaces are valued appropriately by drivers.	Parking signage in Needham is present but unclear language can leave some regulations open to interpretation.
Focus Enforcement on Customer Service	Enforcement practices should be consistent and conducted during peak periods of demand. Officer training should include clarification about regulation signage, permit systems, and should emphasize education to parkers.	Parking enforcement in Needham is conducted during a limited period that doesn't include peak evening times. Variation of revenue alludes to a lack of consistency in practice.
Parking Supply Optimization		
Create Simple Long-Term Parking	Long-term parking areas can be identified in areas that are underutilized at the rear of lots or on-street areas that are less in demand, in order to maximize on existing supply and minimize the practice of prime customer spaces being utilized by employees.	Currently, there are no designated long-term parking areas that are centralized or advertised to incentivize employees from using spaces better matched for customers.
Create More Active Curbs	In strategic areas of high activity, some on-street spaces can be converted into uses that support other modes of travel, act as short-term/loading areas, or that contribute to street vitality and a stronger sense of place.	There are no short-term parking spaces in areas where short customer visits or rideshare pick-up/drop-off is higher in demand.
Consolidate Lots to Expand Supply	Opportunities to expand parking supply through consolidation of adjacent lots with existing barriers is a simple approach that should be prioritized before pursuing building new supply.	Several of the lots in Needham are divided by a minor physical barrier that limits the optimal use and access of either facility.
Improve Parking Signage + Wayfinding	Signage directing to parking should be located at various key locations throughout town, and signage at individual lots should be highly visible and informative. The signs should be recognizable, legible, and work in tandem with parking information on digital platforms.	Needham does not have a comprehensive, branded wayfinding signage system, and the few signs directing to parking are lacking visibility. The Town doesn't have a parking map available.
Encouraging Other Uses		
Improve the Multimodal Network	Connections to/from parking should be welcoming to pedestrians and bicyclists and prioritize their safety.	Sidewalk repairs/connections are needed at some locations, and crosswalks to/from key public parking areas is missing.
Increase Bike Parking Infrastructure	Bicycle parking should be located throughout town, especially concentrated near key destinations. Signage should be incorporated to direct bicyclists to these areas.	Bike parking is present at some locations throughout Needham but is not centralized and is lacking signage to direct bicyclists.

Performance-Based Pricing

Goals Aligned: 1 2 3 4 5 6 7



WHAT IS RECOMMENDED

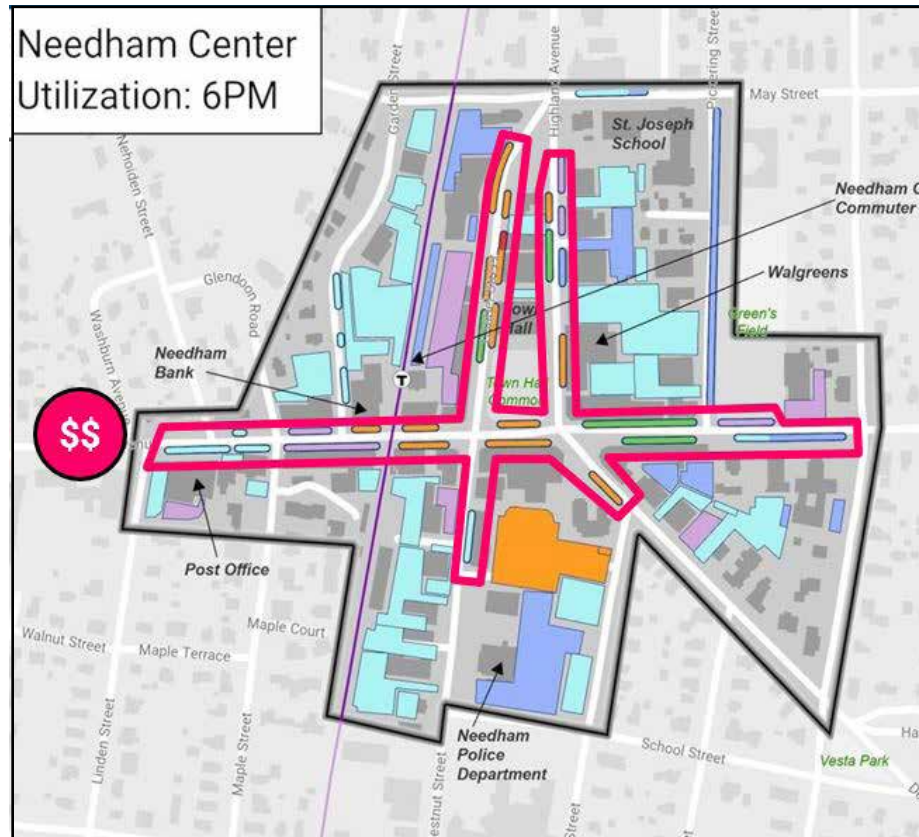
A performance-based pricing structure follows best practice in many communities across the country in better managing systemwide demand for user-friendliness. It involves tiered pricing adjusted on a periodic basis in response to demand, helping to ensure some amount of availability is always present. Many motorists will be sensitive to pricing and happy to seek a cheaper, more remote alternative, which creates availability for others—particularly those seeking a shorter stay. In a performance-based system, some parking will remain inexpensive or even free as compared to peer communities, while other spaces will increase in price depending on the time of day. Operating spans are also adjusted to match demand, such as extending hours into the evening when dinnertime parking demand increases.

By pricing parking around a performance target—typically 85% occupied, drivers can understand that a space will be available where they need it or choose to pay less by parking further away.

WHY IT IS RECOMMENDED

A key challenge faced with parking operations in Needham today is managing system demand during peak periods in a small number of localized areas (generally, the 'core'). The current meter pricing and operating span has led to a parking crunch in certain areas while other spaces go underutilized. In addition, spaces are 'claimed' in these prime areas early in the evening when they become free with no time limits, while there is no incentive to use off-street spaces a little farther away.

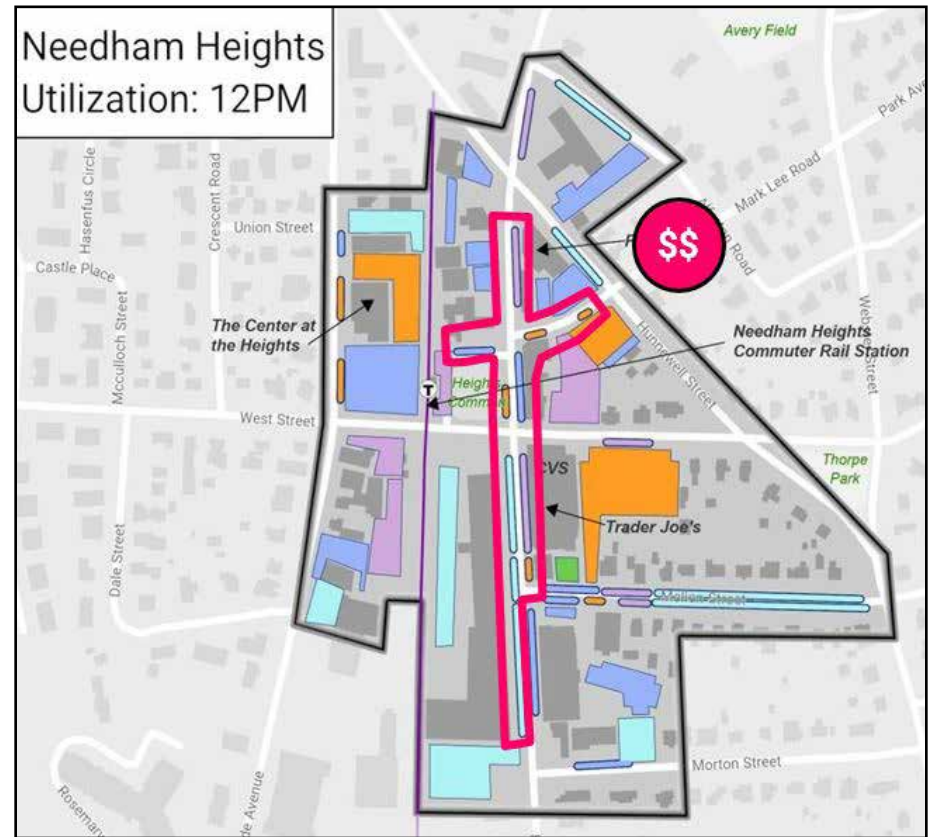
Fig. 21- Needham Center- Existing Price Structure



Existing Price Structure	Existing Time Limit	Time Span
\$\$- All meters	2 hours (until 6PM)	8AM-6PM



Fig. 22- Needham Heights- Existing Price Structure

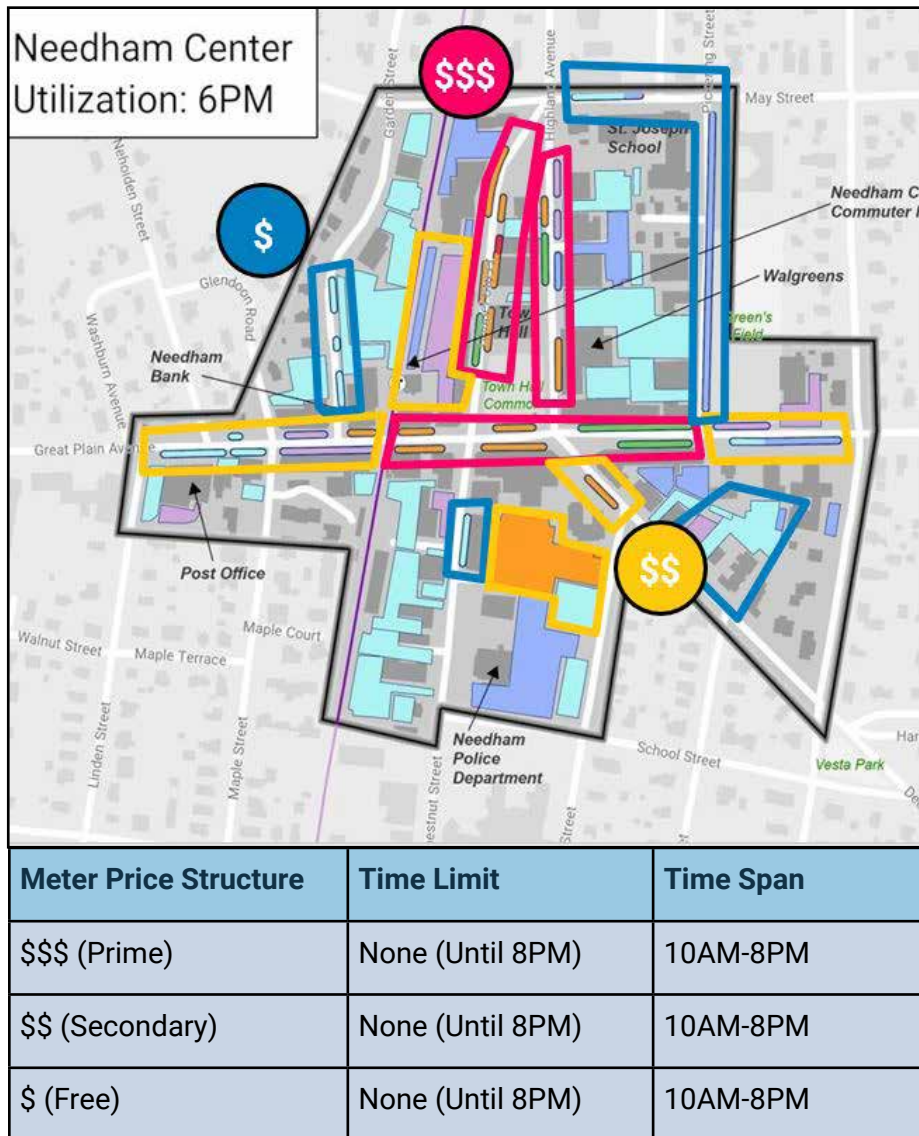


Existing Price Structure	Existing Time Limit	Time Span
\$\$- All meters	2 hours (until 6PM)	8AM-6PM

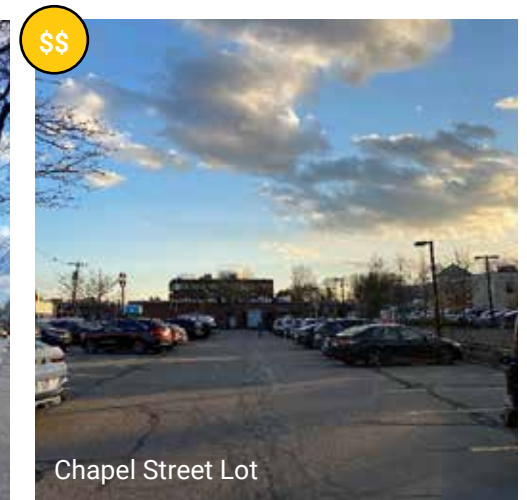
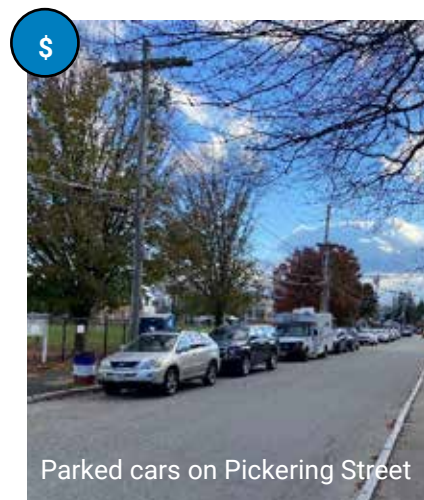
◀ Metered parking doesn't currently exist along Highland Avenue near Needham High School, where front-of-business spaces are more in demand by customers of the nearby businesses.

HOW IT WOULD WORK

Fig. 23- Needham Center- Proposed Price Structure



Tiered pricing in the Center would align the pricing of parking areas with their observed demand. This would increase the availability of the most in-demand areas in the core, and incentivize the use of more remote on-street spaces or lower-cost facilities, such as the Dedham Avenue lot, that are within a walkable distance to key destinations. In addition, the pricing acts as a limit on parking duration, and therefore advertised time limits on the meters are unnecessary, eliminating the need for time-consuming overtime enforcement. Examples of these areas in the Center are shown below.



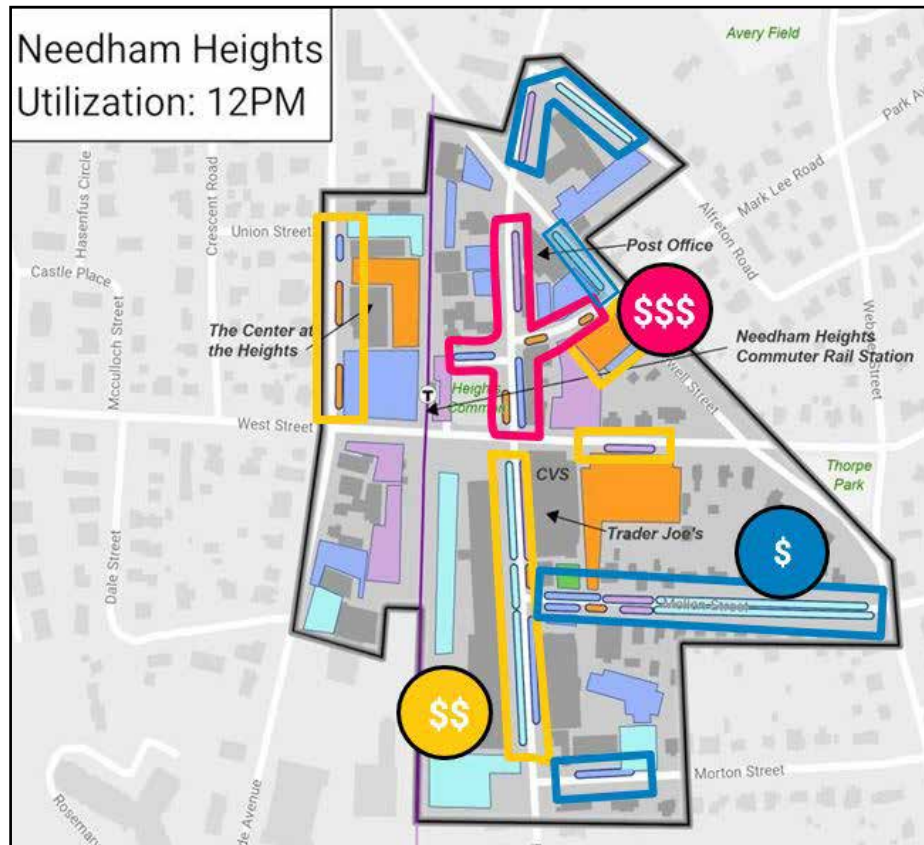


In both study areas, parking demand did not pick up until close to 10am but continued through dinner hours, so the current pricing time span of 8am-6pm should be adjusted accordingly to 10am-8pm.



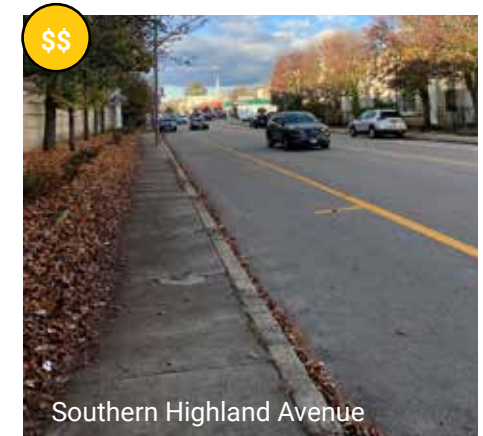
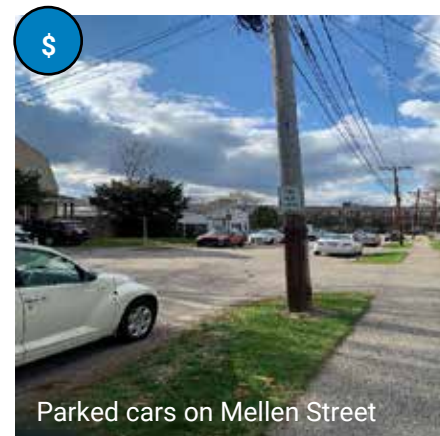
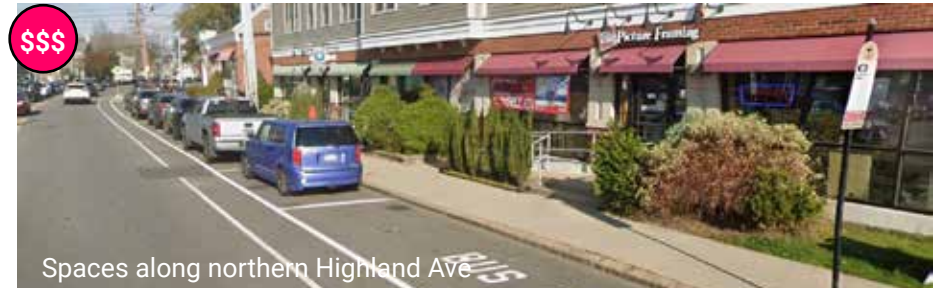
Transparency around parking rates, such as on signs, through the Town's website or at parking meters, is required to allow drivers to make informed decisions.

Fig. 24- Needham Heights- Proposed Price Structure



Meter Price Structure	Time Limit	Time Span
\$\$\$ (Prime)	None (Until 8PM)	10AM-8PM
\$\$ (Secondary)	None (Until 8PM)	10AM-8PM
\$ (Free)	None (Until 8PM)	10AM-8PM

A performance-based approach to pricing in the Heights would similarly decongest core areas to alleviate negative perceptions about parking availability. The area of highest cost would be substantially smaller than that in the Center.



Beyond the Center and the Heights, metered parking along Highland Avenue near Needham High School could also be considered, as needed, to encourage availability on-street.

2

Long-Term Parking Options + Permit Spaces

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Various Locations

Description: To seamlessly share parking spaces for multiple users, this sign simply consolidates the information for both types of parking available

WHAT IS RECOMMENDED

Reconsider long-term parking, including who can access permits and permit holder spaces, and where non-permit holders can park for longer periods of time. Specifically:

- Establish some long-term spaces outside the core that do not require permits (see Rec. #3). This will create a system that can easily and cost-effectively accommodate those who need longer term parking but don't need full-day access every day, such as part-time employees.
- Expand eligibility of permit-holders to include downtown residents. This would allow the system to support residential development without new parking required.
- Allow paid parking in permit only spaces to maximize current underutilized facilities. (See Rec. #1)
- Adjust permit pricing for specific areas based on proximity to the core, in order to better reflect the value of parking spaces in terms of how close they are to the core.

WHY IT IS RECOMMENDED

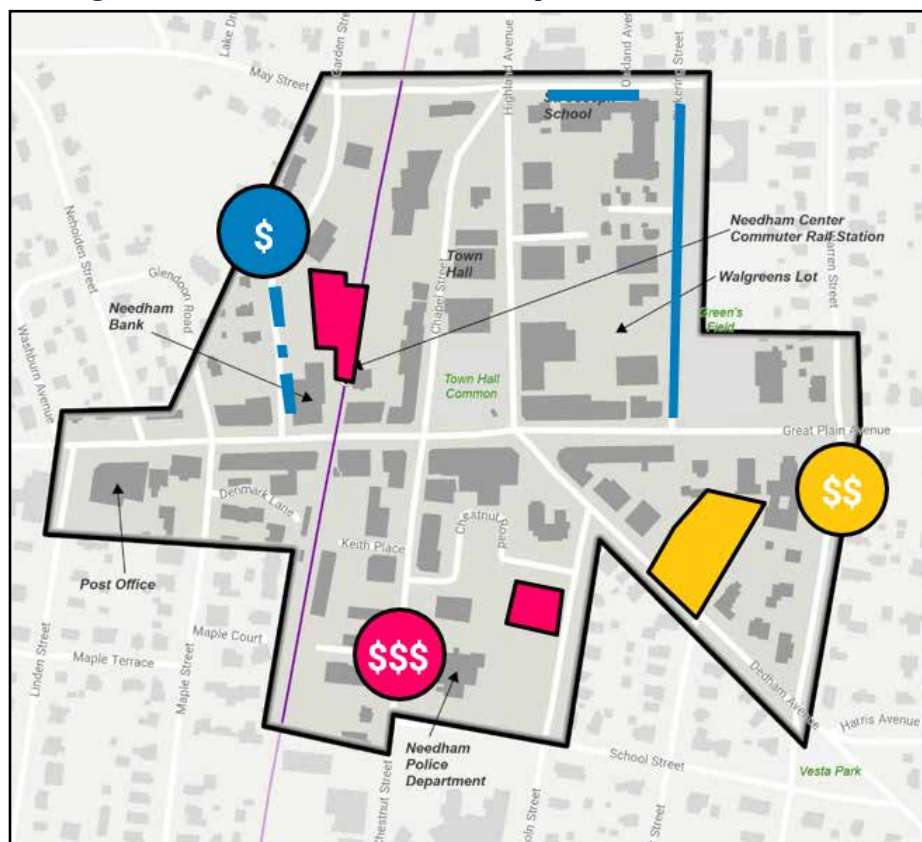
Needham's parking permit system requires users to purchase permits annually, regardless of how many days/weeks/months the permit holder actually intends to use the permit. In addition, many permit spaces throughout Needham are consistently underutilized but are currently only open to permit users.

In addition, Needham's permit system restricts eligibility of permits only to local businesses and employees. This limits the parking system from supporting residential development downtown, despite the fact that many facilities are underutilized in the evening and early morning hours, when residential parking demand peaks.

HOW IT WOULD WORK

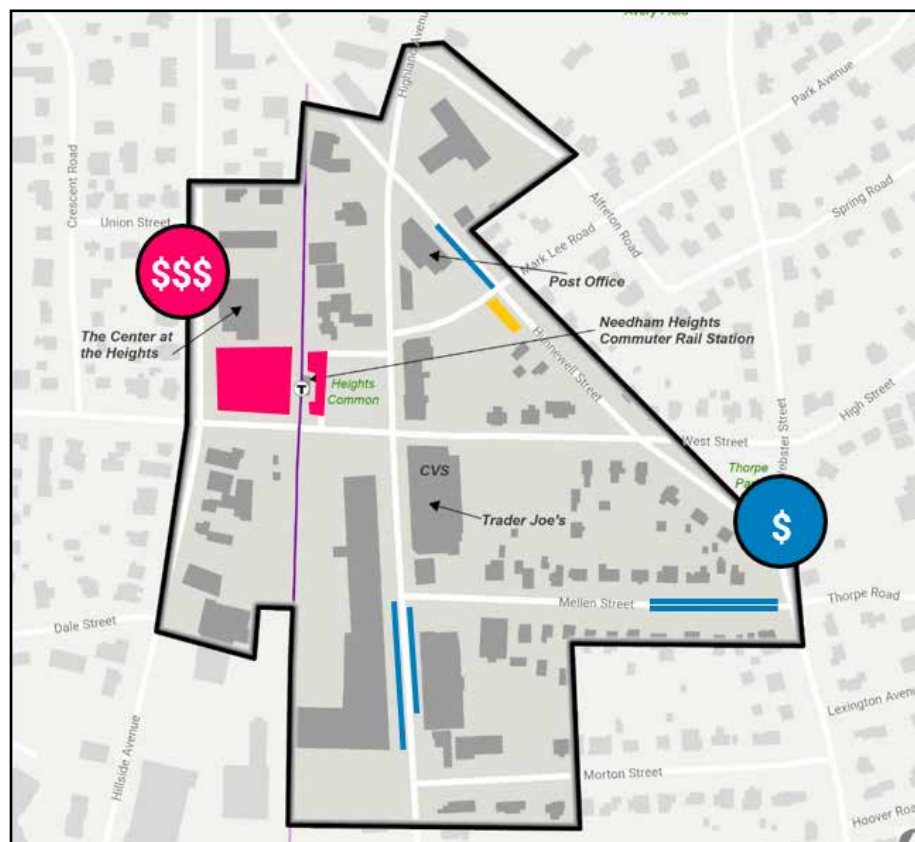
These maps highlight the recommended tiered permit pricing approach, which would apply to new monthly permits and any remaining annual permits. It includes new free spaces. The pricing should be regularly monitored and adjusted, as needed, depending on demand.

Fig. 25- Needham Center- Proposed Price Structure



Recommended Structure	Recommended Time Limit
\$\$\$ (Prime)	None
\$\$ (Secondary)	None
\$ (Free)	12-hour

Fig. 26- Needham Heights- Proposed Price Structure

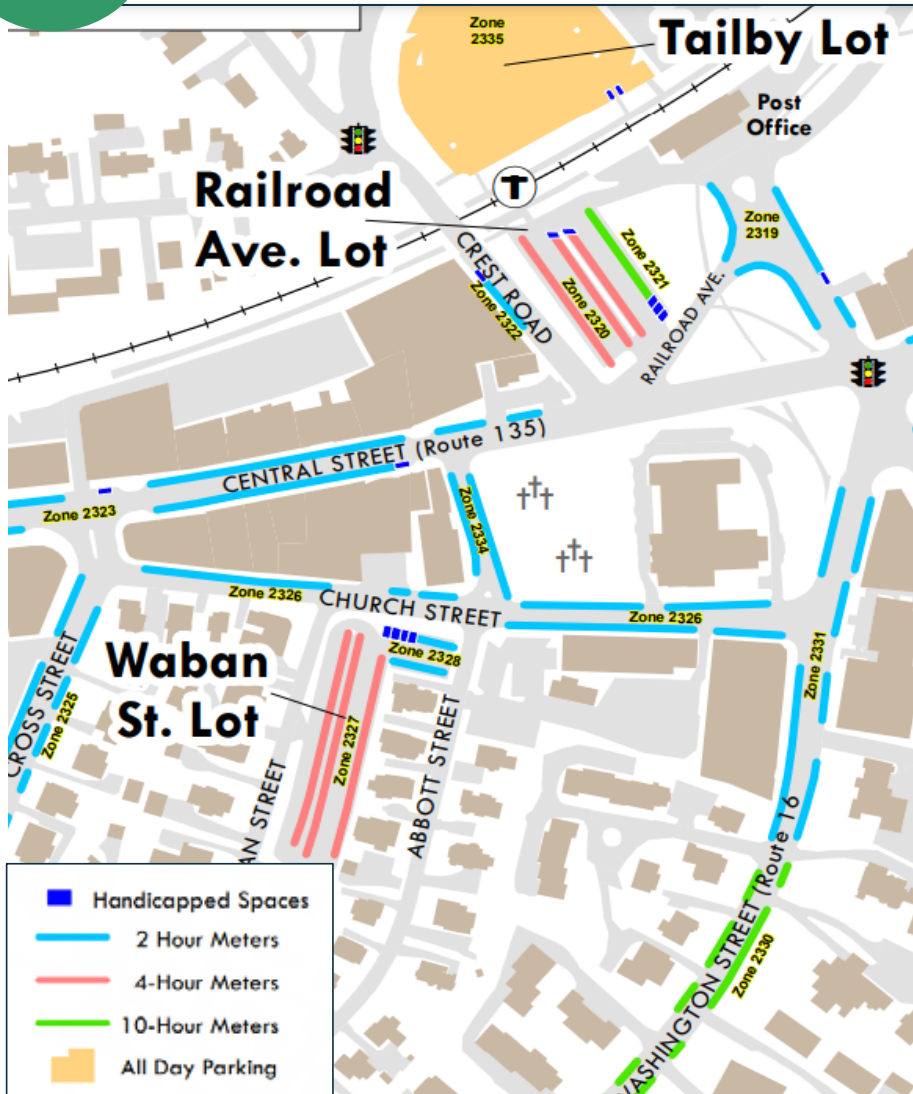


Recommended Structure	Recommended Time Limit
\$\$\$ (Prime) MBTA-operated	None
\$\$ (Secondary)	None
\$ (Free)	12-hour

3

Create Simple Long-Term Parking

Goals Aligned: 1 2 3 4 5 6 7



WHAT IS RECOMMENDED

Designating areas of existing on- or off-street facilities to accommodate long-term parkers (i.e. employee, business owners, residents). This would require signing individual spaces or areas to clarify the regulation and establishing wayfinding signage to direct parkers to long-term areas. These could have a 12-hour time limit, or be restricted from overnight parking in to ensure that they are free for daily needs only and not car storage. Time-limits could be shortened if commuters from the rail stations abuse the resource.

In addition to these designated daytime long-term spaces, removing the overall ban on overnight parking can extend the reach of the parking system to support current and future Downtown residents. The ordinance can be adjusted to prevent long-term vehicle storage on public roads.

WHY IT IS RECOMMENDED

A key challenge of Needham's parking inventory is the lack of long-term parking areas that don't require a permit and could be utilized by part-time employees or others who cannot afford a permit or prefer a free option and are willing to walk further. As such, employees, business owners, or other visitors to the commercial centers who need to stay for more than two hours are often utilizing short-term customer spaces in prime locations by feeding meters and "rolling" their car every two hours. In addition, the overnight parking restriction eliminates spaces from the parking inventory every night, limiting residential access in particular. Furthermore, each study area currently has underutilized on-street parking within walkable distances to businesses in the core. This indicates that the regulations of these spaces may not match demand, and they could support longer-term parkers to decongest prime spaces.

Case Study: Newton, MA

Description: Simple online maps such as this one can help visitors identify the most appropriate places to park ahead of time.

HOW IT WOULD WORK



Snow Procedures: With the removal of the general overnight ban, the Town may need to devote more resources to communicating and planning during a snow event. This includes identifying lots that residents can use for off-street parking, direct outreach to affected residents, and voicemail/social media postings regarding snow emergencies.

The spaces highlighted on the maps below identify potential areas which are currently underutilized but still walkable to nearby businesses. These could easily be designated for longer-term parking without a fee, alleviating core congestion. This recommendation also requires the communication to, and coordination with, business owners to identify appropriate areas for their employees to park, and dialogue with the Town about specific considerations or concerns—especially for part-time employees.

Fig. 27- Needham Center- Potential Long-Term Spaces

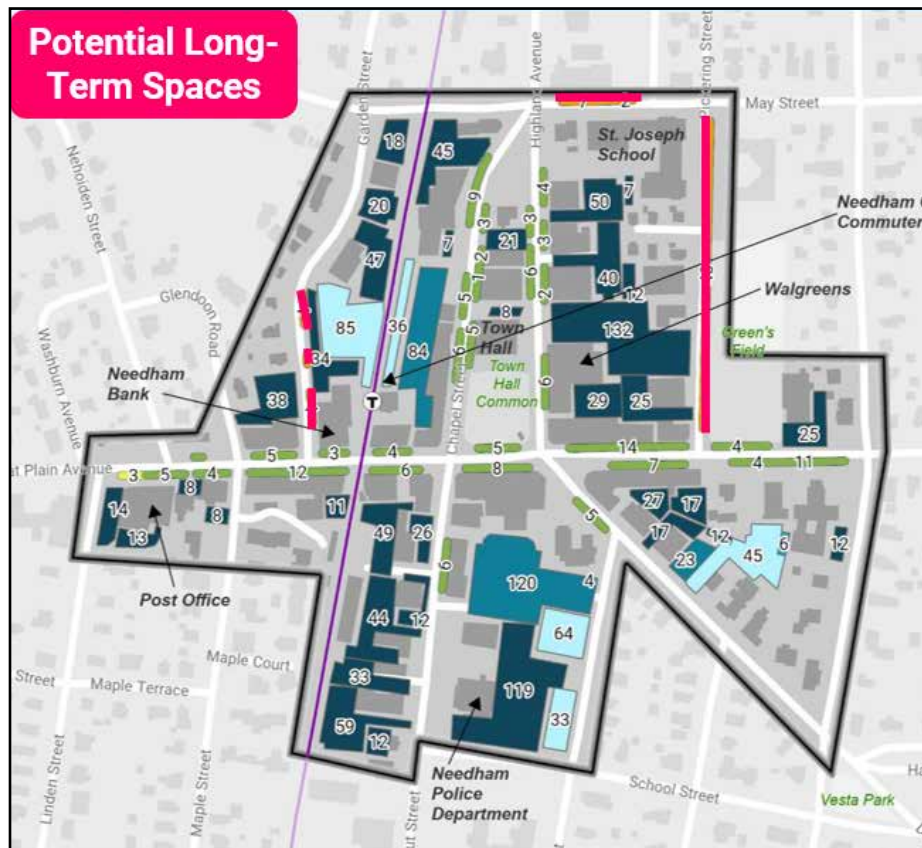
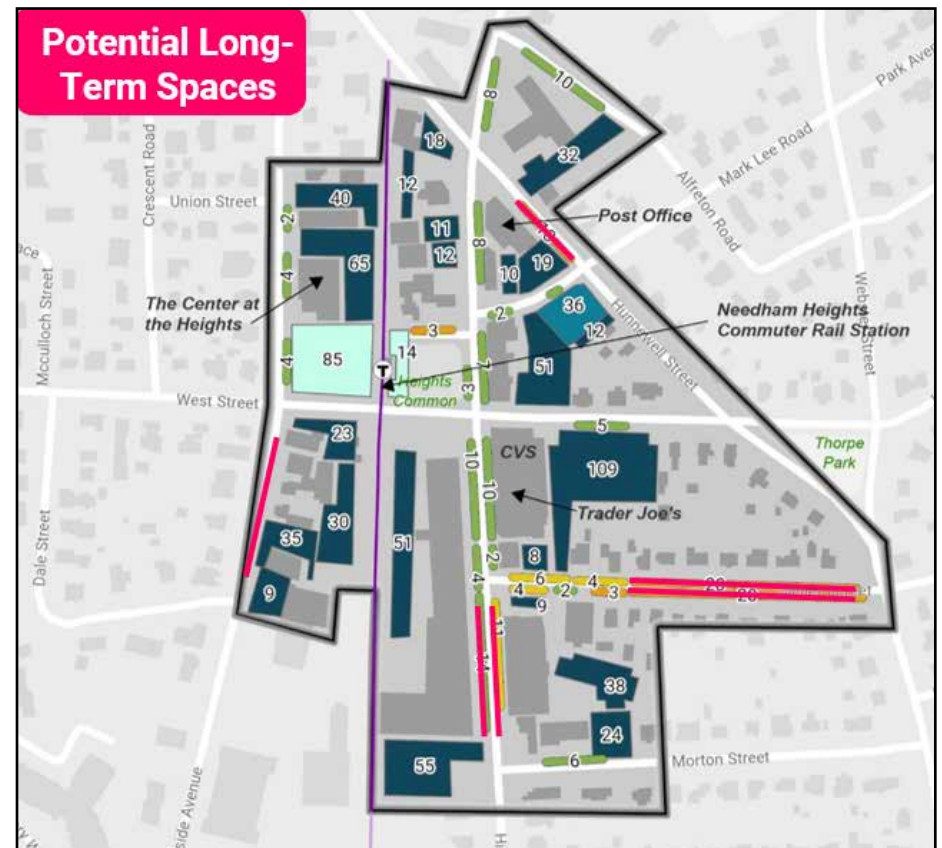


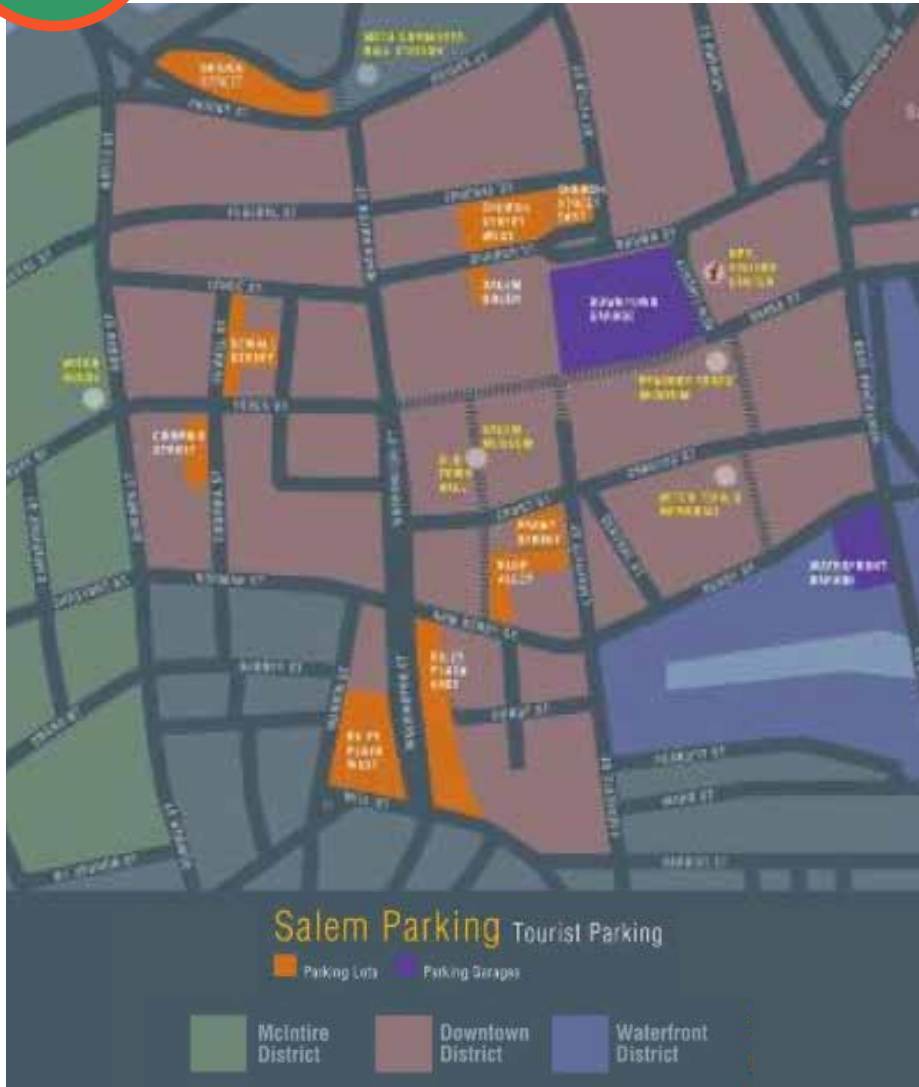
Fig. 28- Needham Heights- Potential Long-Term Spaces



4

Pursue Shared Parking Opportunities

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Salem, MA

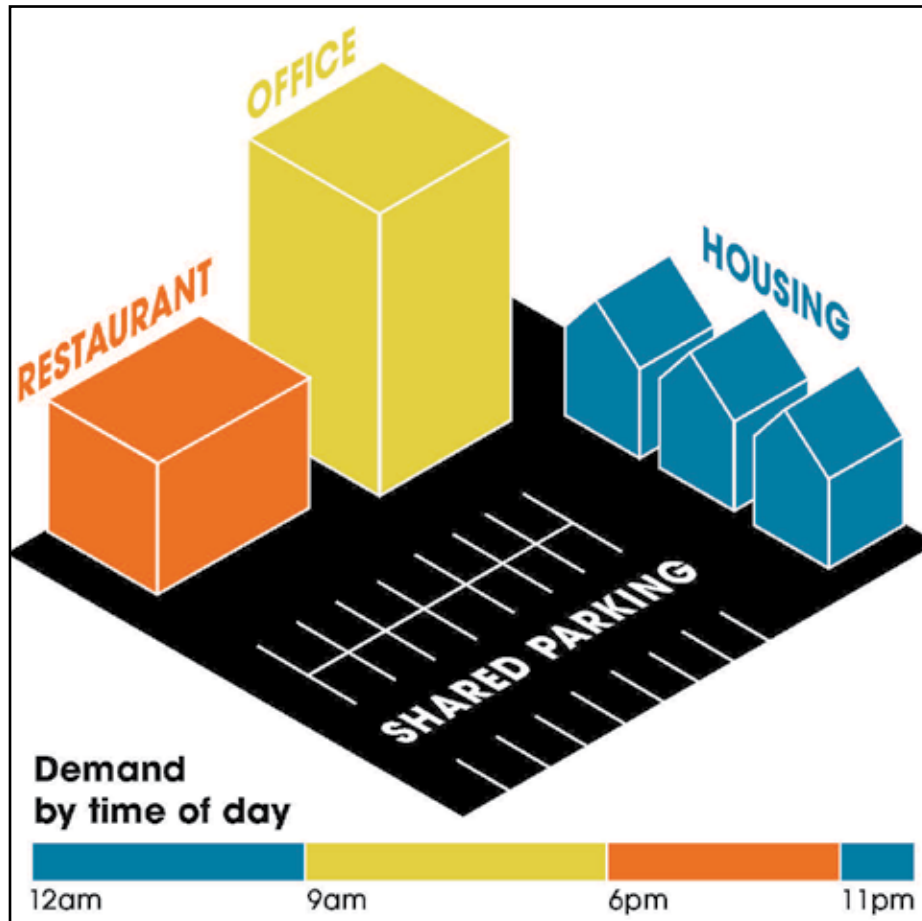
Description: The City's Shared Parking District expands on the idea of looking at parking as shared assets that can benefit different types of owners and users

WHAT IS RECOMMENDED

Shared parking requires identifying and filling underutilized parking at times of the day when other kinds of parking, such as metered parking or restricted off-street spaces, are full or do not meet the needs of users. This can include employees desiring longer-term parking when metered parking is time-limited, retail proprietors who desire additional parking for their customers, and residents of Needham Center or Needham Heights for whom sufficient on-site parking is not available. A shared parking district in Needham would bring as many public and private parking resources together under one system as possible, helping to better manage availability, costs, and pricing. Parking ownership may still be disparate but the Town would take the lead in working with private parking owners to develop a coordinated system with various levels of incentives to participate partially or in full, including offering different levels of revenue sharing or in-kind services and improvements. The Town may also support, partial or full operational needs for private landowners, including staffing and equipment. Once operational, parking areas are branded and signage is provided to note the regulation (visitor parking, reserved parking, etc.).

WHY IT IS RECOMMENDED

Overall, in both Needham Heights and Needham Center, the parking system has significant availability. Much of that availability is in 'restricted' private spaces. These spaces take up space in Needham's dense commercial cores, but may not be the best use of space if they remain underutilized. Meanwhile, at certain hours and in certain locations, the average user experiences a parking 'crunch' while hundreds of private spaces remain vacant.



▲ Shared parking is a natural synergy among mixed uses, especially in a downtown. Multiple sharing opportunities exist in Needham between daytime office uses and nighttime restaurant uses.

The Citizens Bank in Needham Center informally allows public parking in customer spaces after banking hours in return for lot maintenance from the Town. ►

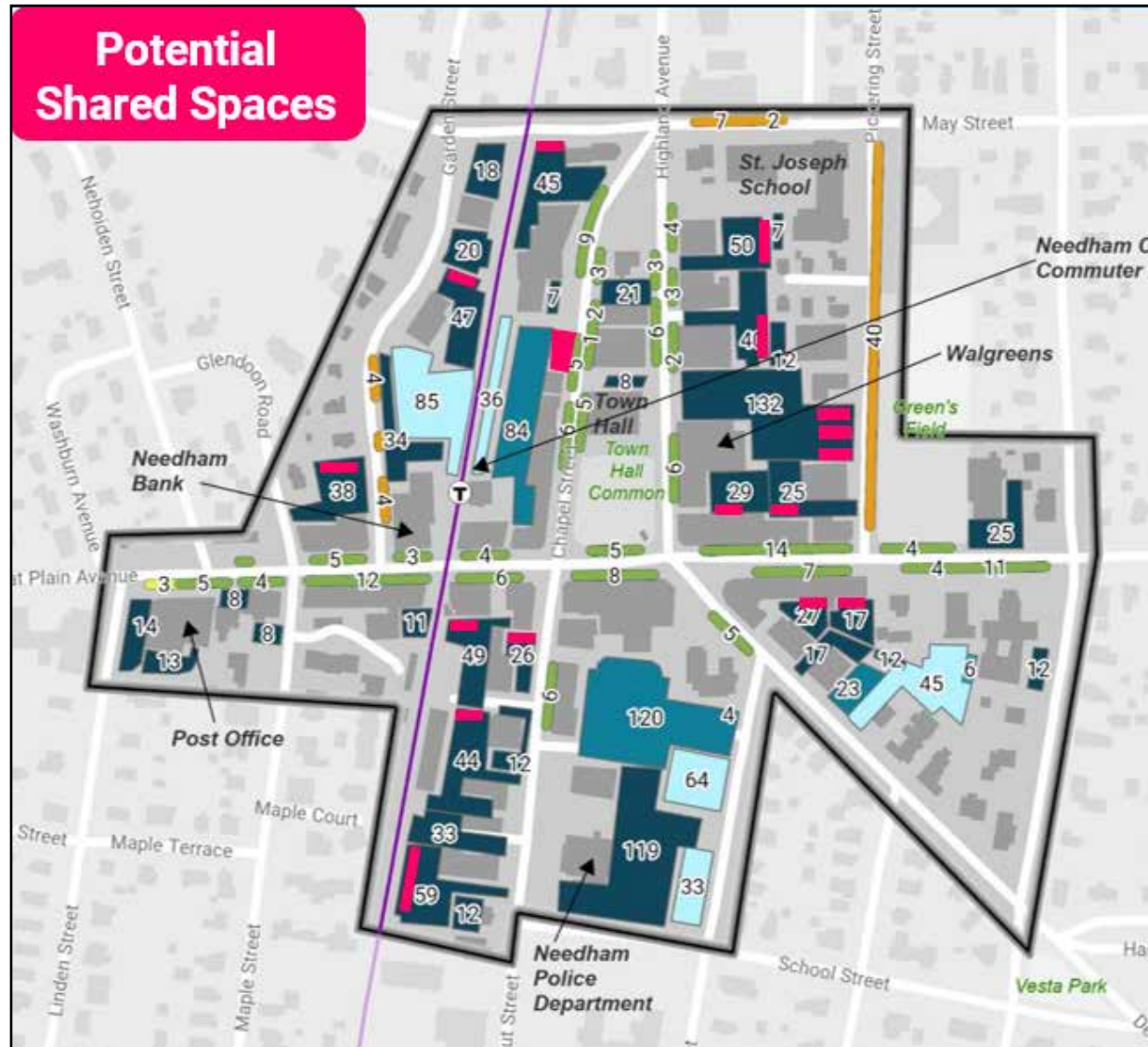


▲ The Post Office lot in Needham Heights shown above is currently already successfully practicing a shared approach with its business neighbor, Koko Fit Club. In practice, the post office closes for business and its parking spaces open up just as visitors to the Fit Club start to increase in volume in the evening and are in need of parking.

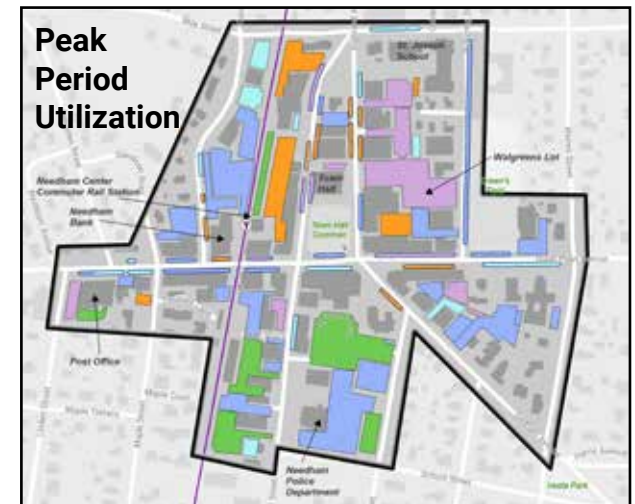


HOW IT WOULD WORK

Fig. 29- Needham Center- Potential Shared Spaces



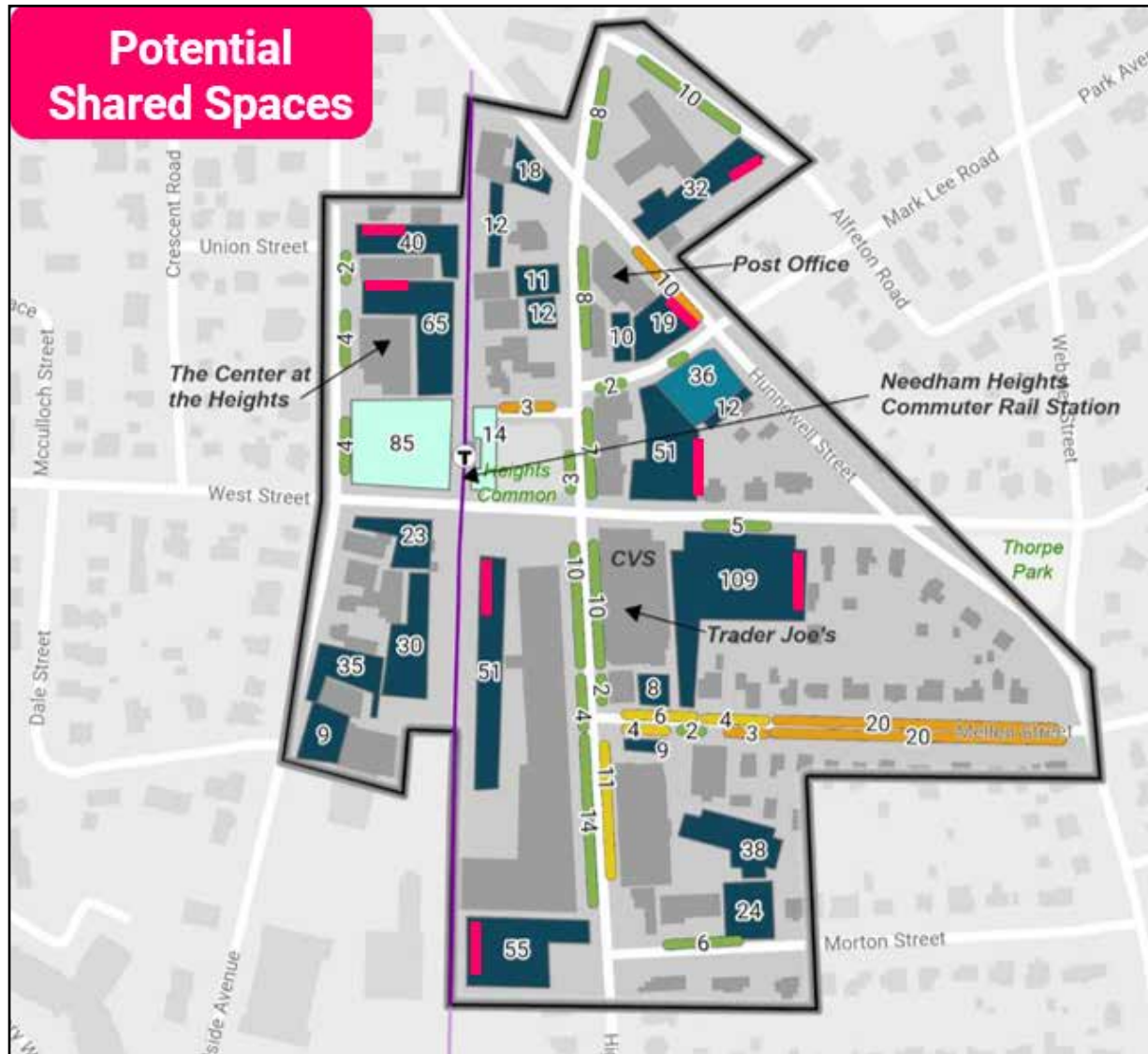
The maps on this and the following page very roughly identify areas that may have potential for being shared with other users. Generally, these spaces are located at the rear of private facilities and are less utilized than other spaces nearer the entrance of the associated destination, enabling the spare capacity to be shared.



A potential priority option for consideration in the Center is the Walgreens Lot (below), which is already informally shared, today.

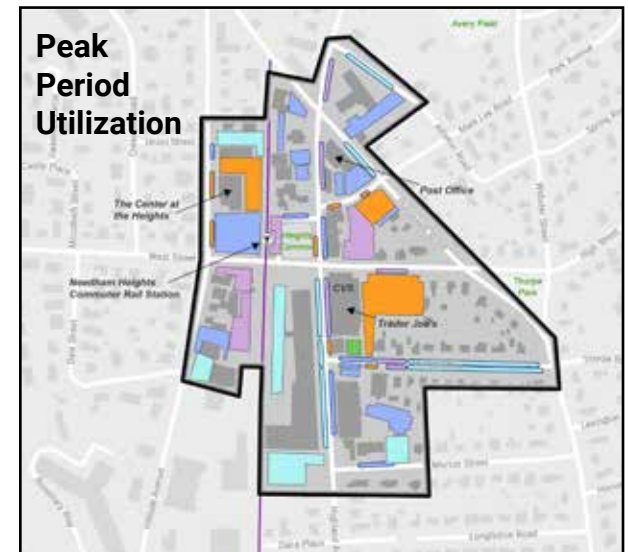


Fig. 30- Needham Heights- Potential Shared Spaces



For potential shared spaces in both the Center and the Heights, the Town could approach owners and offer in-kind improvements to make the facilities safer and more welcoming at different times of the day, such as:

- Increase lighting at rear
- Paint high-visibility crosswalks
- Re-stripe to improve flow



A potential priority option for consideration in the Heights is the Starbucks Lot (below).



In addition to these areas, the Sudbury Farms lot on Highland Avenue may also be a good location for shared parking, as needed, when there are events at Memorial Park.

5

Focus Enforcement on Customer Service

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Pittsfield, MA
 Description: The City hires students to act as seasonal parking ambassadors. They hand out parking information and assist visitors with using the parking kiosk.

WHAT IS RECOMMENDED

Enforcement is a challenging yet critical part of any parking system as staff are often the front line between customers and the parking system. It is important that they have the right mission, equipment, and staffing. Needham needs several changes:

- Adjust enforcement hours to match the recommended metering time span (10AM - 8PM). Any double-staffing can focus on the peak which is both noon and the dinner hours.
- Upgrade enforcement technology to address glitches or issues. Consider incorporating License Plate Recognition (LPR) to clearly record violations and simplify tracking. This can also be integrated seamlessly with both new meters and a new permit system.
- Consider a policy where the first ticket is free, and instead a notice is provided that includes parking information or a parking map. This helps encourage first-time visitors in particular to return.

WHY IT IS RECOMMENDED

Currently, enforcement often ends much earlier than when meters stop operating (6PM) and well before the dinnertime peak demand period in the core areas when cars fill the free meter spaces.

Recent concerns have recently been raised from permit-holders who have legally parked in a 'permit only' space but have still been ticketed due to a lack of clarity on the regulation signage. Other concerns have been raised by local businesses who have observed variation in enforcement practices.

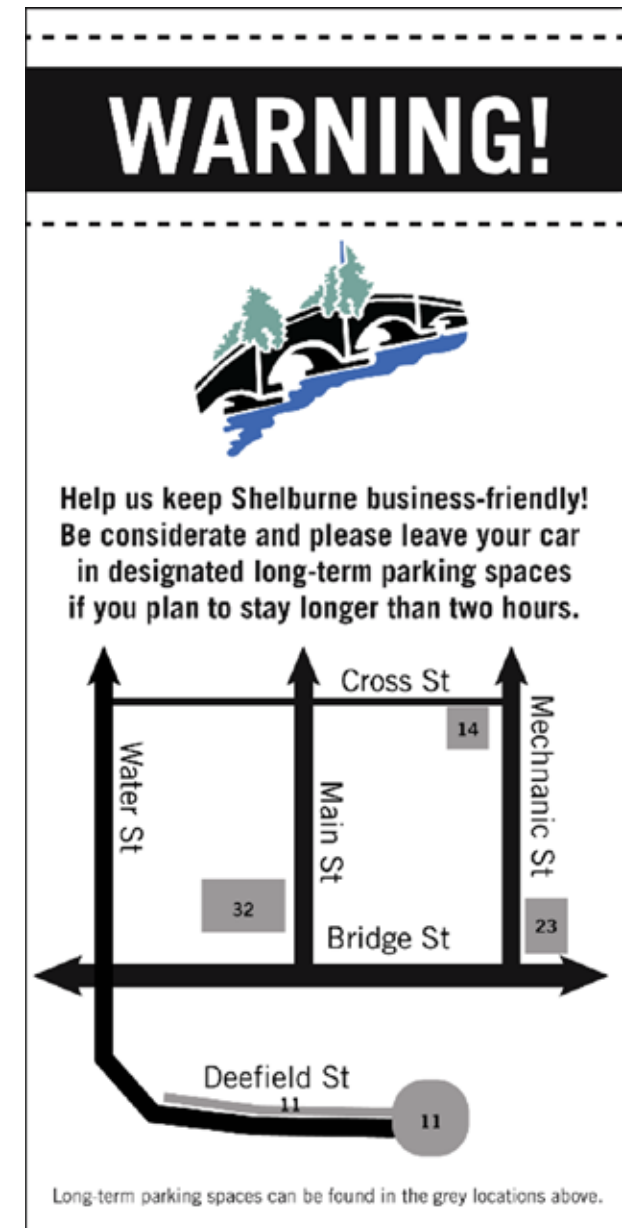
HOW IT WOULD WORK



Parking tickets could be re-imagined/ re-designed to include parking maps or other information to educate motorists. A sample is shown to the right.



Handheld License Plate Recognition (LPR) devices or the use of LPR apps can greatly improve the ease and efficiency of monitoring for enforcement officers.



6

Create More Active Curbs

Goals Aligned: **1** **2** **3** **4** **5** **6** **7**



Case Study: Boston, MA

Description: The City's signage encourages high-turnover with pick-up/drop off areas, while bike corrals are another option in some areas for generating activity.

WHAT IS RECOMMENDED

With the rapid increase in gig economy rides and deliveries, electrified mobility devices, and the use of shared bikes, municipalities are designating centralized, on-street parking spaces for: **Uber/Lyft/DoorDash; Pick-up/Drop-off; Loading zones; Bike parking; Taxi stands; and Valet parking.**

Many also are converting parking spaces to: **Bicycle lanes; Bus stops; Bicycle parking; EV parking; and other uses.**

Any of these options require coordination with adjacent business owners and ride share providers, additional public surveys to gauge preferences, posting of new signage, and/or installing materials to define the new curbside uses including paint striping, furniture, etc.

WHY IT IS RECOMMENDED

Needham Center and Needham Heights both feature some infrastructure that is supportive of non-auto modes, but the curb can play a more active role in supporting the growing multimodal demands in each study area.

Discussions with the public at the open house revealed an openness to seeing some existing on-street parking spaces being potentially used for other purposes that contribute vitality to streets and sidewalks. Additionally, business owners vocalized a desire to see the integration of more short-term/loading zone spaces to be able to facilitate very short visits that some businesses generate.

HOW IT WOULD WORK

An analysis of utilization data (Table 9) shows that at peak, if the Town removed some lanes of parking from key streets, the 'spillover' demand would be about 50 vehicles max, which could be accommodated in public lots.

The maps below identify spaces in strategic locations that could potentially be ideal for accommodating alternative curb uses. These areas have recurring demand for quick visits by rideshare and delivery vehicles or are well-suited for passenger drop-off or bike parking.

Fig. 31- Needham Center- Potential Short-Term Spaces

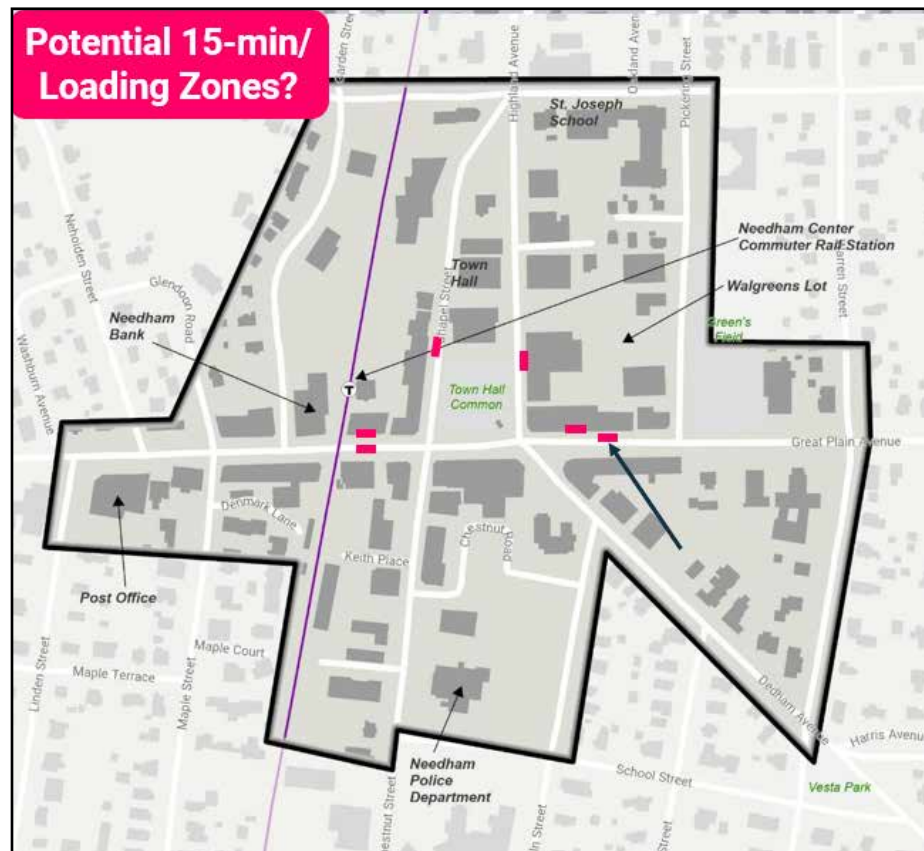


Fig. 32- Needham Heights- Potential Short-Term Spaces

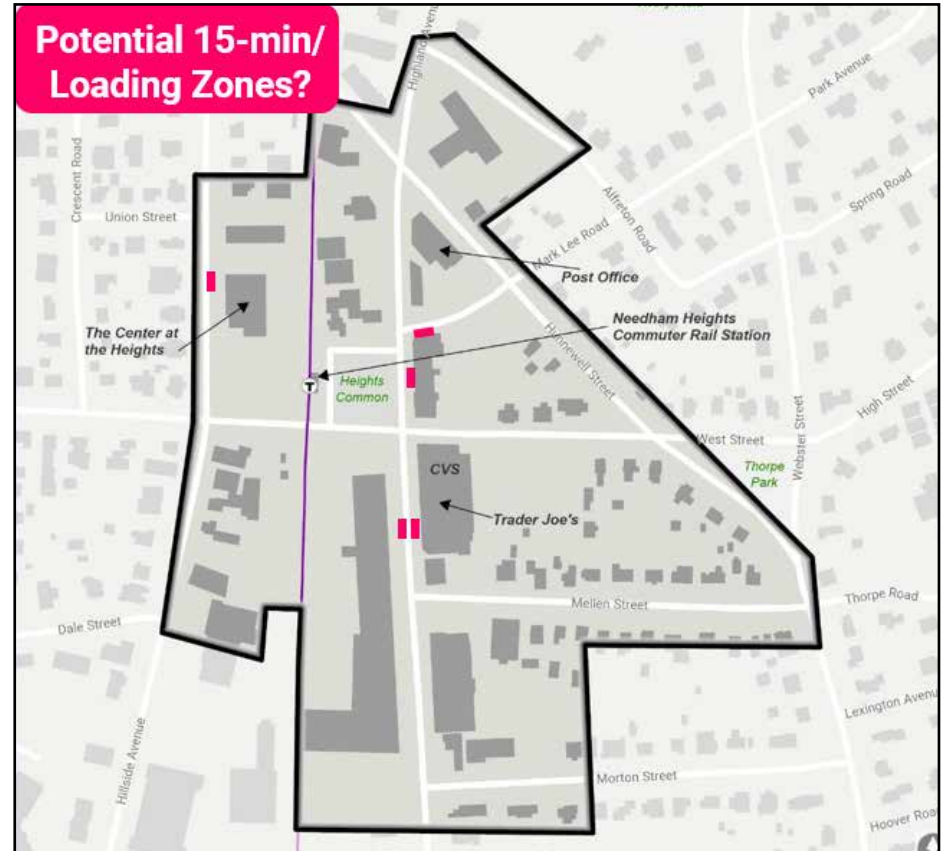


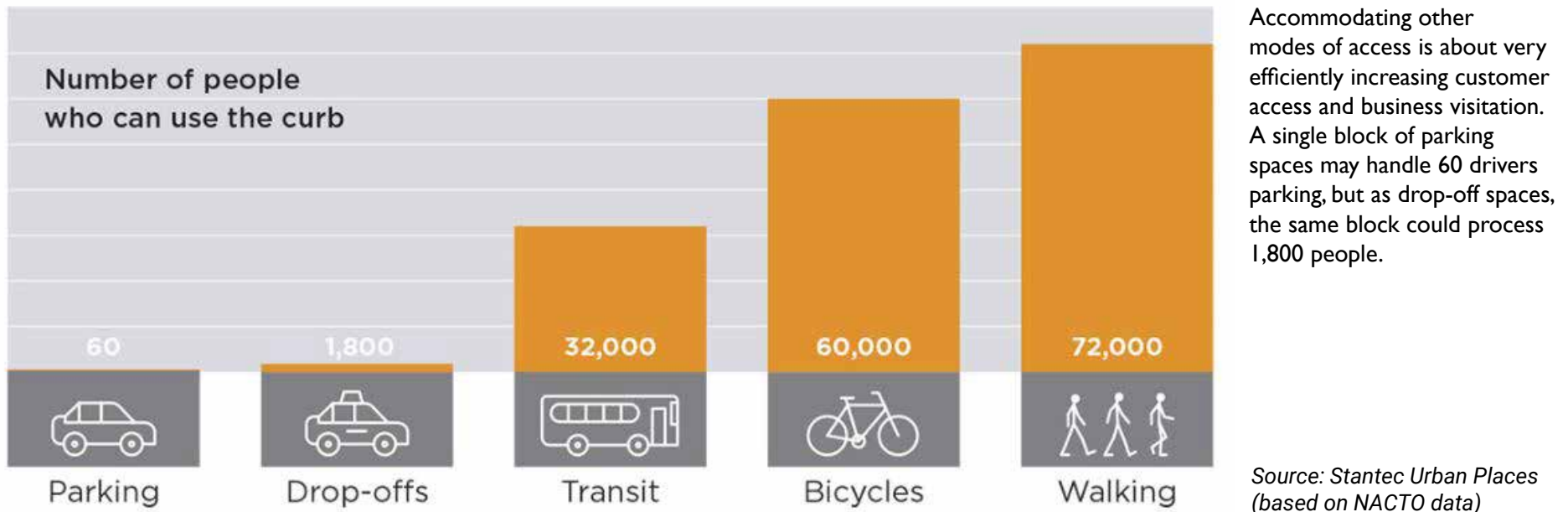
Table 9. Analysis of Utilization if Parking Became Something Else

Street	Peak Utilization	Parking Available	Parking Utilization w/ One Parking Lane Removed*	Potential Spillover w/ One parking lane removed (90% occupancy)
Great Plain Ave	12PM: 47 6PM: 64	96	12PM: 97% 6PM: 133%	12PM: 4 6PM: 21
Chapel St	12PM: 25 6PM: 33	37	12PM: 135% 6PM: 178%	12PM: 9 6PM: 17
Highland Ave (Center)	12PM: 16 6PM: 20	24	12PM: 133% 6PM: 167%	12PM: 6 6PM: 10
Highland Ave (Heights)	12PM: 30	69	12PM: 87%	12PM: 0

Total:
12 pm: 19
6 pm: 48

* Assumes equal parking distribution on street

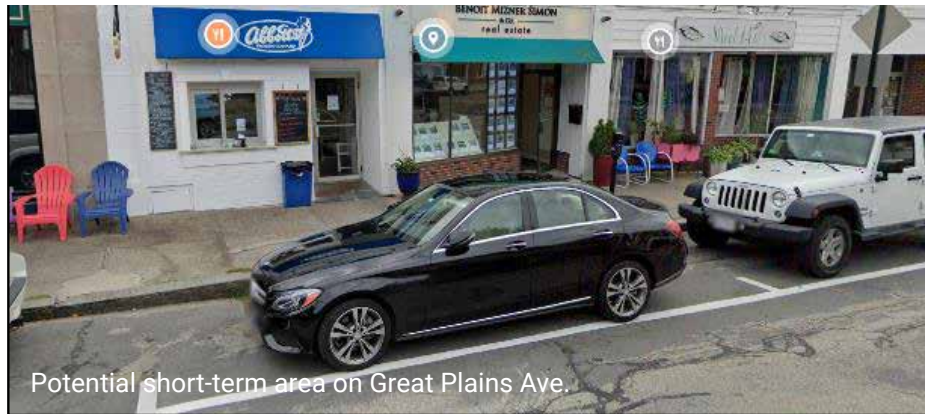
Fig. 33- Understanding Hourly Curbside Capacity by Block



Needham Center- How Potential Short-Term Spaces Look Today



Potential short-term area on Chapel Street

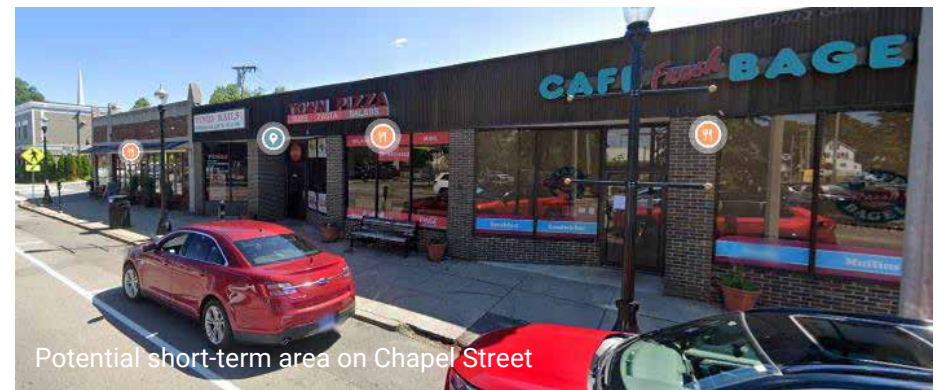


Potential short-term area on Great Plains Ave.

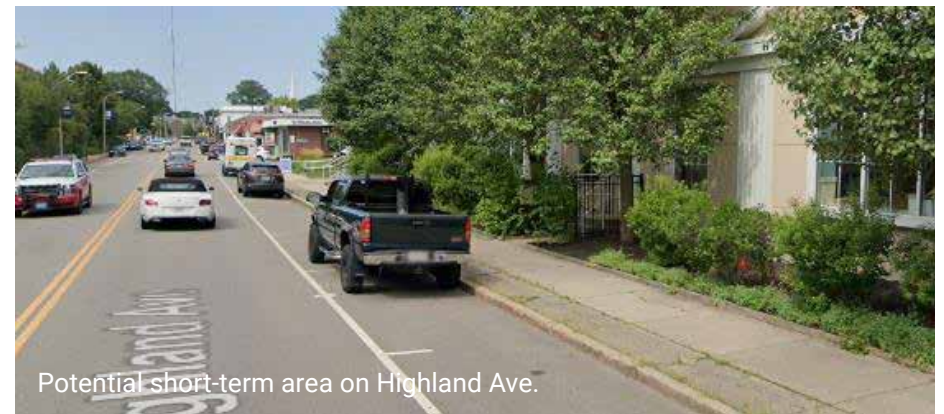


Potential short-term area on Highland Ave.

Needham Heights- How Potential Short-Term Spaces Look Today



Potential short-term area on Chapel Street



Potential short-term area on Highland Ave.

7

Improve Parking + Wayfinding Signage

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Hanover, NH

Description: Wayfinding signage such as this is highly visible and very clearly directs visitors to the type of parking that is right for their needs.

WHAT IS RECOMMENDED

As a short-term approach, this recommendation involves improving the clarity of directional and entry signage at public lots, as well as improving the clarity of existing permit parking signage (by type, zone, time in effect, and that paid parking is permitted, as explained in Recommendation #2). This recommendation also includes expanding Information available about the parking system on various platforms, including online and through physical maps.

As a long-term approach, this recommendation encourages the eventual development of an overall, streamlined parking signage system that completely replaces the existing signs, and is clear and recognizable.

WHY IT IS RECOMMENDED

Currently, there is very limited or non-existent signage to direct motorists to Needham's public parking facilities, which are convenient to visitor destinations but consistently underutilized. In addition, the signage currently present in the Center and the Heights is too small, lacking information, and is not reflective of a cohesive Town "brand" to make these facilities easier for motorists to quickly recognize. Nearly 80 respondents in the public survey stated that it has taken them over 5 minutes to find parking,

As the parking utilization data shown earlier in this report indicates, a few on-street areas are particularly busy, when nearby public lots have availability. Strong wayfinding signage located at strategic places where motorists are seeking parking can improve awareness about public parking and increase the utilization of these facilities.

HOW IT WOULD WORK

For each area, establish a wayfinding signage system that is highly visible and includes these two, key signage types-

* Directional Signs

- Clearly directs to public parking from key intersections and access points where visibility of the facility from primary roads is limited

i Identification Signs

- Located at the entrance of public lots, including information, like:
 - Price to park
 - Time limits
 - Hours of operation

The Town should also develop a simplified map of public parking facilities for the Needham website, to be included with parking tickets, distributed by merchants to their customers, etc.

Fig. 34- Needham Center- Recommended Sign Locations

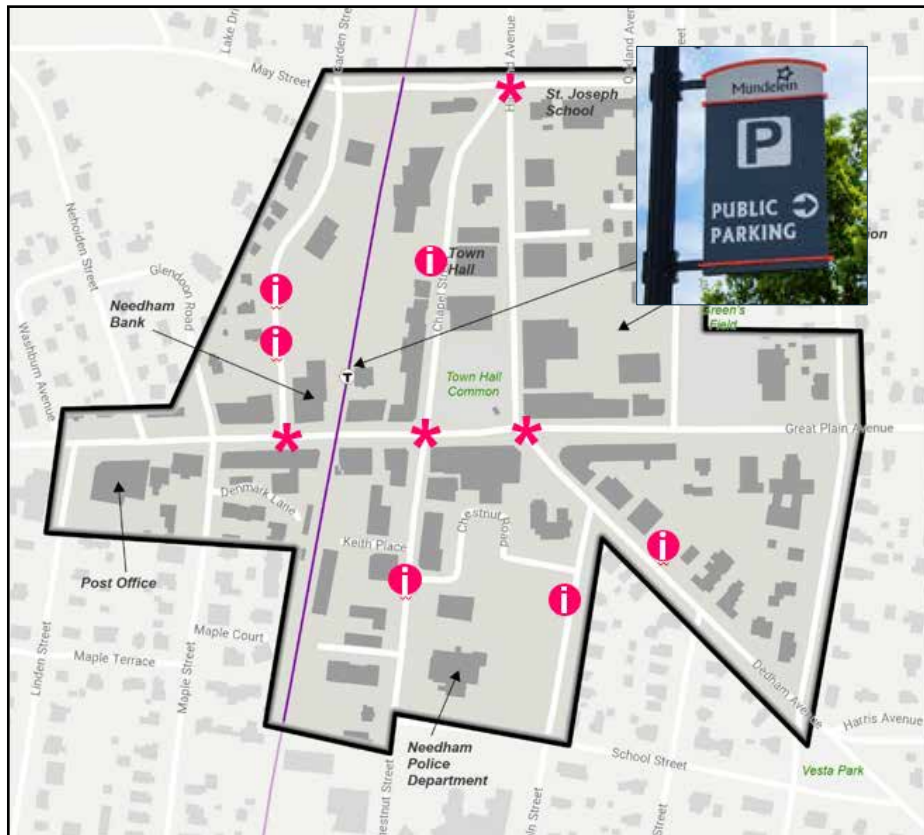
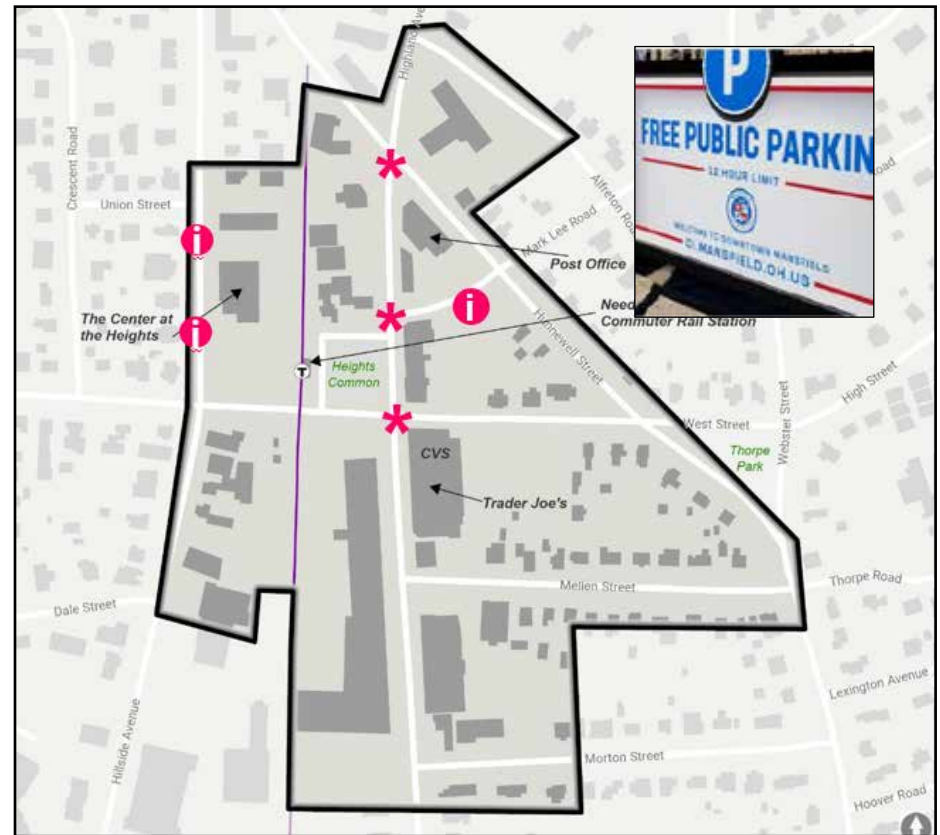


Fig. 35- Needham Heights Recommended Sign Locations



Update Payment Technologies

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Various Locations

Description: In recent years, meters like these that accept multiple payment options have become available in various municipalities throughout New England.

WHAT IS RECOMMENDED

Updating meters or installing kiosks in Needham to be able to offer multiple payment options (i.e. cash, card, and pay-by-smartphone) would remove the inconvenience of needing specific coins available for payment, improving the user experience. This should also provide more efficient ways for the Town to track how parking is used and enforced.

This recommendation also includes allowing the sale of virtual permits to long-term users, with the transactional data being tracked/shared with parking enforcement and management. License Plate Recognition (LPR) devices or apps could be used by enforcement officers.

With better recording capabilities, this electronic option for tracking violations can improve Needham's understanding of true violations and how best to mitigate and enforce them.

WHY IT IS RECOMMENDED

Needham's current parking meters offer only coin payment options, meaning that people parking have to have quarters, nickles, and/or dimes on hand. The survey as part of this study revealed that 'better meters/ technology' was the first-choice Town improvement that respondents in the Center would like to see, and the third-choice improvement for respondents in the Heights. 40% of all survey-takers would also prefer meters that accept coins and credit cards, while an additional 36% would prefer to pay using a smartphone app. Stakeholders also raised concerns about inconsistent enforcement, whether it is valid permit parkers being ticketed or enforcement equipment being glitchy for staff.

HOW IT WOULD WORK

STEP 1.

The Town should weigh the options of pursuing either new meters or kiosks (and within those options, the different features, pricing, and agreements available through different potential vendors).

STEP 2.

The Town should select a preferred meter or kiosk and vendor through a process that includes feedback from relevant departments.

STEP 3.

The Town should identify how many meters or kiosks are needed for both the Center and the Heights based on existing priced areas and recommended placement for the fixtures (e.g., 1 per 6 spaces, etc.).

STEP 4.

Once an overall cost has been identified for the fixtures, the Town should initiate the necessary processes of securing budget approval.

STEP 5.

If the overall budget of the fixtures can only be secured in part, initially, the Town should identify priority locations for replacing the existing meters, and a rollout/budget plan for installing the remaining locations.

STEP 6.

Concurrently with Step 5, the Police Department should pursue and identify a preferred approach for using LPR in their practices. Enforcement officers should be trained on the new devices and enforcement protocol.

The Town's Permit program should also be updated to be able to accommodate virtual permits.

STEP 7.

A public information campaign should be developed ahead of time to alert visitors to Needham on the changes to the meters, and to provide information on how to use them. Clear directions should be present on the fixtures, as well.

STEP 8.

The selected fixtures are installed.

Table 10. Considerations When Selecting a Parking Payment Fixture

Feature	Meters	Kiosks
Capital cost per parking space	\$\$	\$\$\$
Operating cost per parking space	\$\$	\$\$\$
Maintenance/Lifespan	More units to maintain/long	Fewer units to maintain/long
Convenience/User-friendliness	Right at space Convenient Limited screen options	Large screen - more information More options - confusing
Ease of revenue/Data collection	More units to track	Fewer units to track

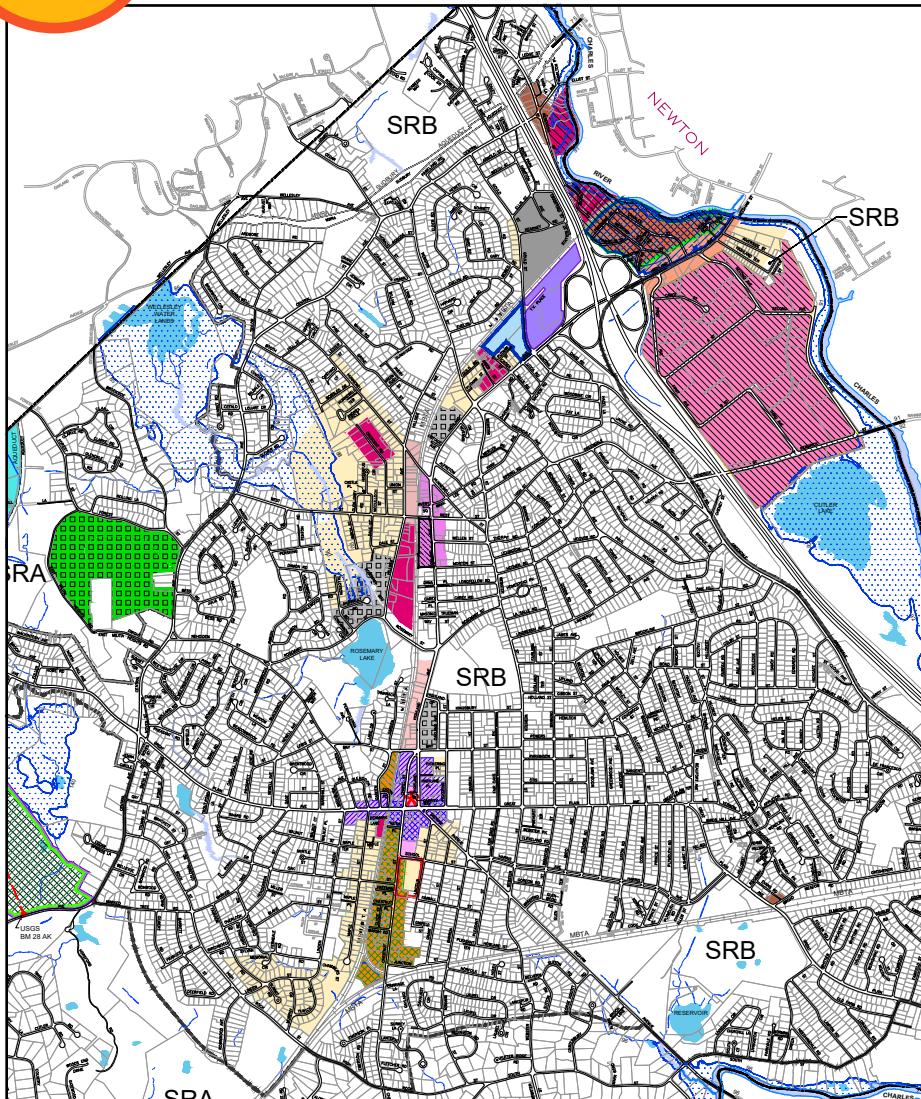


Source: Adobe

9

Introduce Flexibility in Zoning

Goals Aligned: 1 2 3 4 5 6 7



Description: A snapshot of Needham's zoning map

WHAT IS RECOMMENDED

This recommendation is to introduce flexibility and standardization into Needham's zoning code in the study areas - and potentially beyond - by:

- Standardizing regulations across the study areas
- Considering eliminating or lowering minimums
- Considering implementation of maximums
- Allowing reductions for mixed-use projects
- Expanding off-site parking allowances
- Expanding the use of the existing in-lieu fee program
- Considering the incorporation/expansion of transportation demand management elements

Together, these changes would allow parking to support rather than stand in the way of broader goals for the study areas and beyond.

WHY IT IS RECOMMENDED

Needham's minimum parking guidance exceeds observed demand and any national standards and offers limited flexibility for context. This may be limiting development downtown and/or encouraging developments to overbuild parking. This is evidenced by the number of zoning waivers requested recently in the area; the majority were requests to build no new parking. (See Appendix)

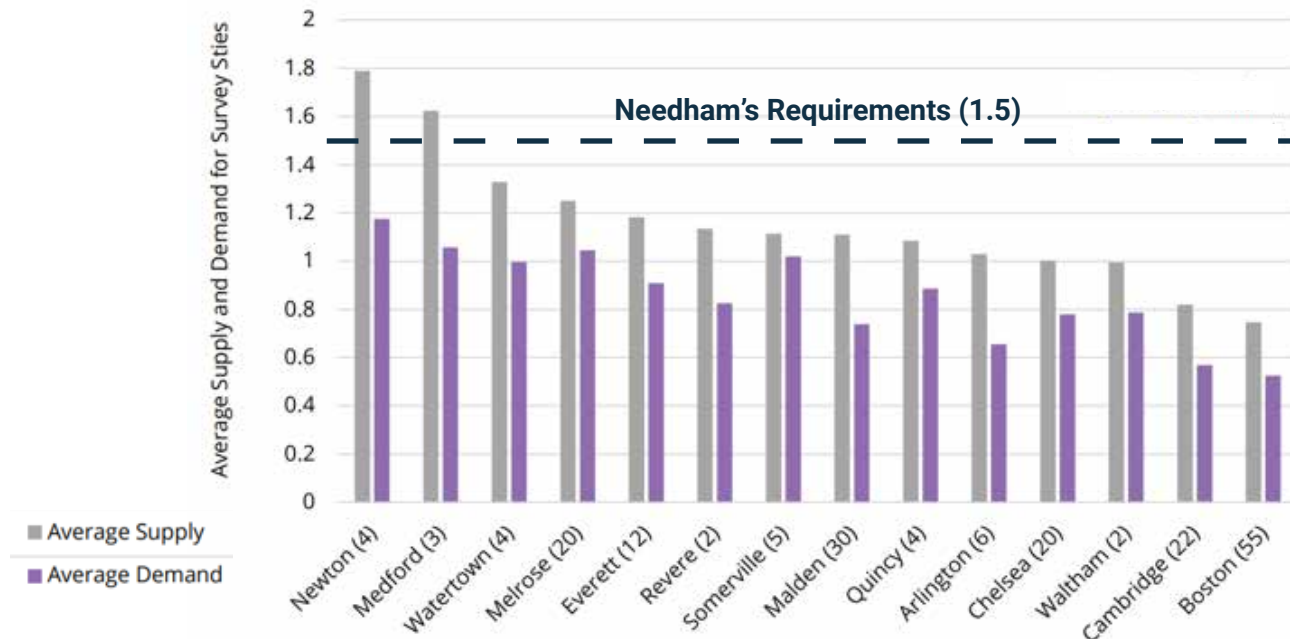
HOW IT WOULD WORK

Table 11. CASE STUDY- Somerville, MA
Zoning Ordinance Mixed-Use Reduction Table

Time of Day	Commercial	Evening Commercial	Residential	Total
6AM-9AM	(X) * 25%	(X) * 0%	(Y) * 100%	= row sum
9AM-7PM	(X) * 100%	(X) * 50%	(Y) * 65%	= row sum
7PM-11PM	(X) * 25%	(X) * 100%	(Y) * 100%	= row sum
11PM-6AM	(X) * 0%	(X) * 25%	(Y) * 100%	= row sum

A typical parking zoning regulation in mixed-use districts is to allow shared parking reductions, like those calculated in this example from Somerville.

Fig. 36- Average Residential Supply and Demand by Massachusetts Municipality

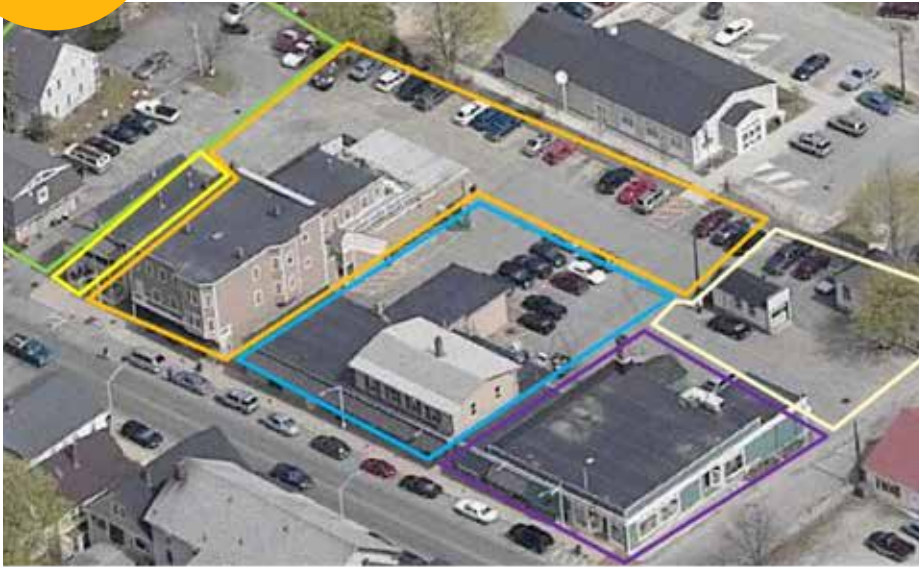


Needham's residential parking requirement of 1.5 spaces per unit far exceeds observed demand locally (only 0.9 cars per unit) or anywhere else in the region.

Source: Perfect Fit Parking Study
Numbers in parentheses indicate number of sites surveyed in each municipality

Consolidate Lots to Expand Supply

Goals Aligned: 1 2 3 4 5 6 7



Case Study: West Concord, MA

Description: Private landowners identified an opportunity to increase parking supply by removing fences and re-envisioning their lots as a consolidated public lot.

WHAT IS RECOMMENDED

Identifying opportunities to increase parking supply through lot consolidation, such as removing fences and redundant aisles to remove redundancies and inefficiencies that have developed on adjacent lots over time. Like shared parking, this recommendation would require an agreement between adjacent landowners, but nearly all insurance agreements already cover public access, making the process simple to complete. Agreements with the Town and a private lot owner may involve potential incentives to participate, including lease payments or revenue sharing.

Like other municipalities, Needham can benefit from optimizing its existing supply through creative strategies like this, which are low-risk and low-cost to parties involved.

WHY IT IS RECOMMENDED

Currently there are a number of locations in Needham Center and Needham Heights where adjacent lots are imbalanced in their respective utilization but could be more efficiently used and see a combined supply increase by making minor adjustments to remove the boundary between them and re-striping new spaces in place of redundant aisles.

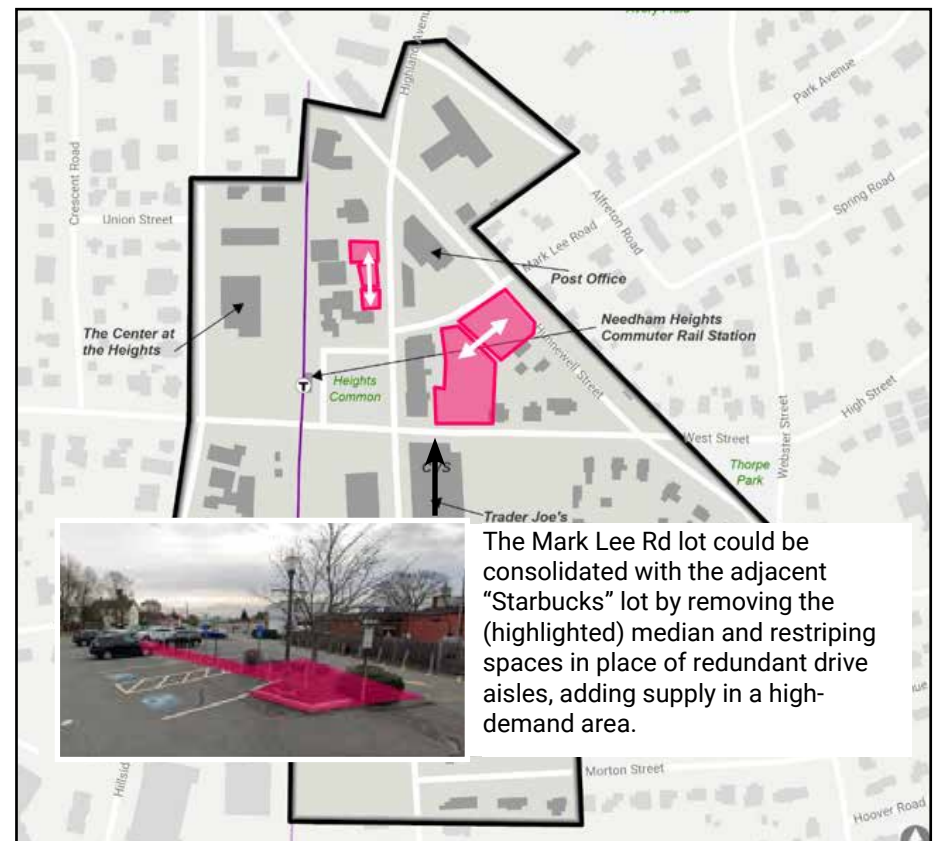
HOW IT WOULD WORK

The maps below identify potential lots that could be consolidated with only minor physical adjustments. Two areas are described below, as an example. While many opportunities are between adjacent private property owners, some can be facilitated between the Town and an adjacent private lot. In order for such consolidated lots to be effectively operated/managed, the Town would first need to pursue agreements that identify potential lease payments or in-kind services the Town could offer in exchange for shared use of the lot. These might include revenue sharing, updating signage, installing lighting, or offering periodic maintenance, for example. The Town would also review the zoning rights of the property and develop any needed documentation to ensure they are preserved.

Fig. 37- Needham Center- Potential Merged Lots



Fig. 38- Needham Heights- Potential Merged Lots



Improve the Multimodal Network

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Bourne, MA

Description: A lot located in the heart of the Town that had undergone significant improvements to increase safety and improve the user experience.

WHAT IS RECOMMENDED

Improving the infrastructure and amenities to better connect remote parking areas to core districts, including improvements that support walking or biking in general to incentivize these modes as an option for nearby residents and even visitors.

This includes:

- Improving the pedestrian conditions/ user experience of existing parking facilities
- Improving walkways and sidewalks between parking facilities and core destinations
- Accommodating bicycle parking at public lots

Needham's public facilities can benefit from simple adjustments that will increase pedestrian safety, create a more pleasant user experience, support bicyclists, and therefore make underutilized parking assets more accessible on foot while encouraging a more multimodal-friendly environment.

WHY IT IS RECOMMENDED

Comments from the public throughout this study process, along with the utilization data, reinforce that many people are not aware of some of the public parking facilities available in Needham. In addition, observations and comments received through the survey demonstrate a desire for improvements of some facilities and their access routes to make them more inviting. Currently, the road geometry forces longer walking routes to/from key destinations, such as the Chestnut St lot because of the absence of a crosswalk along Dedham Ave. Similarly, a fence in an adjacent lot forces users of the Dedham Ave lot to take a long route around the block.

HOW IT WOULD WORK

The rendering below demonstrates best practice guidance when designing a parking lot with consideration of how pedestrians move through it. These practices can be incorporated into Needham's existing facilities individually over a period of time, or as a more comprehensive upgrade.

SAFE PEDESTRIAN CIRCULATION

Traffic-calming features, such as speed tables and clearly delineated crosswalks, slow traffic

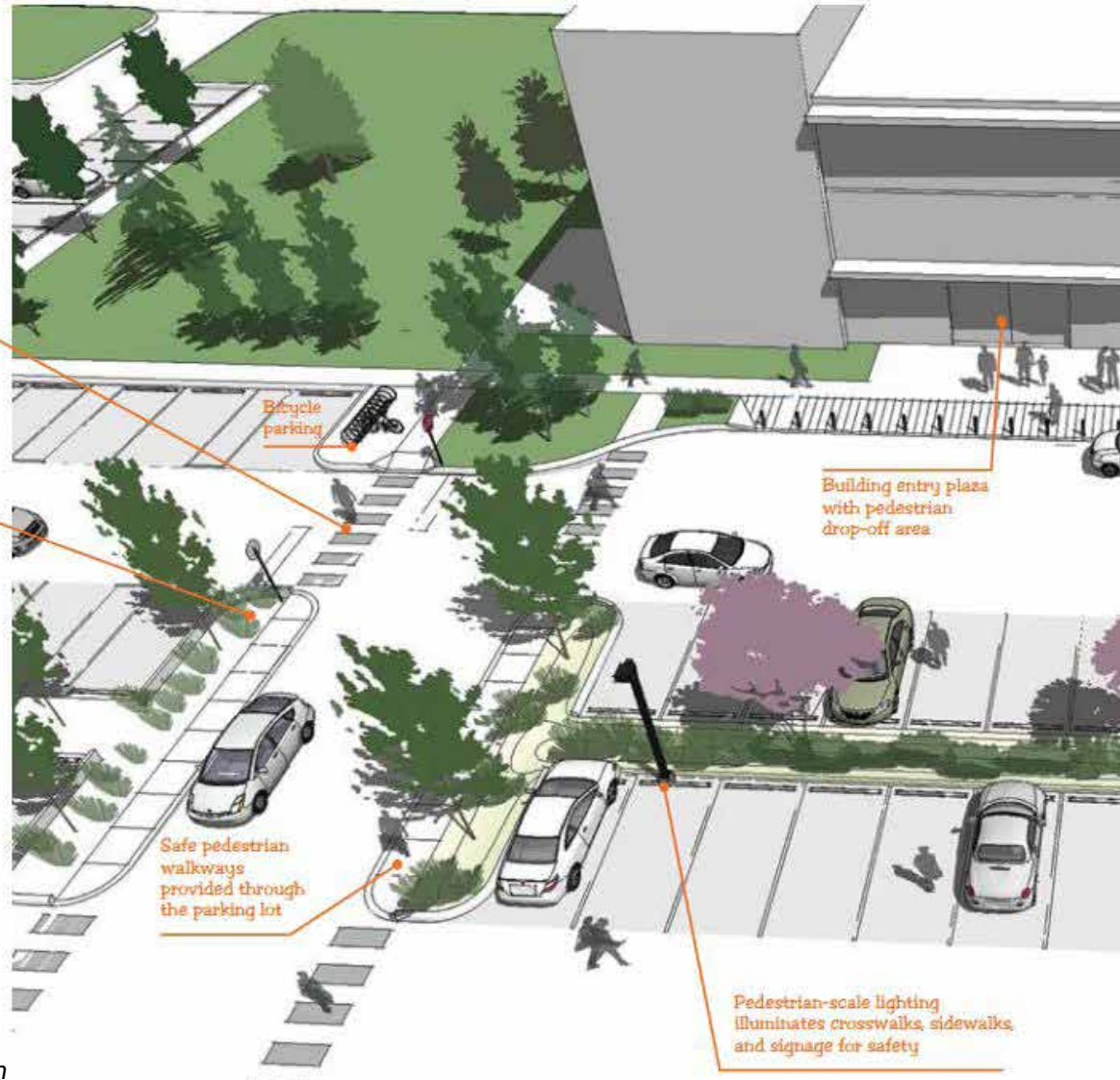
Pedestrian crossing signs and other intersection controls

Bicycle parking

Building entry plaza with pedestrian drop-off area

Safe pedestrian walkways provided through the parking lot

Pedestrian-scale lighting illuminates crosswalks, sidewalks, and signage for safety



Source: Montgomery County Planning Commission

The images on this and the following page outline some of the simple improvements in Needham Center and Needham Heights that could be pursued to improve pedestrian connectivity and access. In addition to these, improved advertisement of bike parking areas (see Recommendation #12) is also recommended.

Needham Center- Potential Pedestrian Connectivity Improvements



This rendering demonstrates how a high-visibility crosswalk along Dedham Avenue near the entrance of the Dedham Ave and Chestnut St lots, can reduce the walking time for pedestrians who would otherwise need to walk up to/down from Great Plain Ave to cross the street.



These images demonstrate that the entrance to this (highlighted) walkway to parking could benefit from the clarity of even a simple sign to indicate access to Dedham Street lot if an opening in the single fence dividing it from Great Plain Ave were made.

Needham Heights- Potential Pedestrian Connectivity Improvements

CURRENT CONDITIONS



PROPOSED IMPROVEMENTS



This rendering demonstrates how high-visibility crosswalks at Highland Ave and Mellen St can greatly improve access to parking on the opposite side of the street.



This image highlights a large sidewalk gap in Needham Heights which is directly adjacent to the public parking lot.

Increase Bike Parking Infrastructure

Goals Aligned: 1 2 3 4 5 6 7



WHAT IS RECOMMENDED

Installing bike racks in visible and accessible places near key destinations to encourage more bicycling. This could mean replacing a car parking space with bicycle parking. To encourage their visibility and accessibility, Needham could benefit from an increased number of smaller racks, as well as a few, highly-visible areas designated for a larger number of racks (i.e. bike corrals) that are centrally-located and potentially combined with other active uses.

Bike parking wayfinding signage should also be included at key locations to help bicyclists find parking.

Locations of bike racks (at least larger corrals) should be included on parking maps and information made available through the Town website or other platforms.



WHY IT IS RECOMMENDED

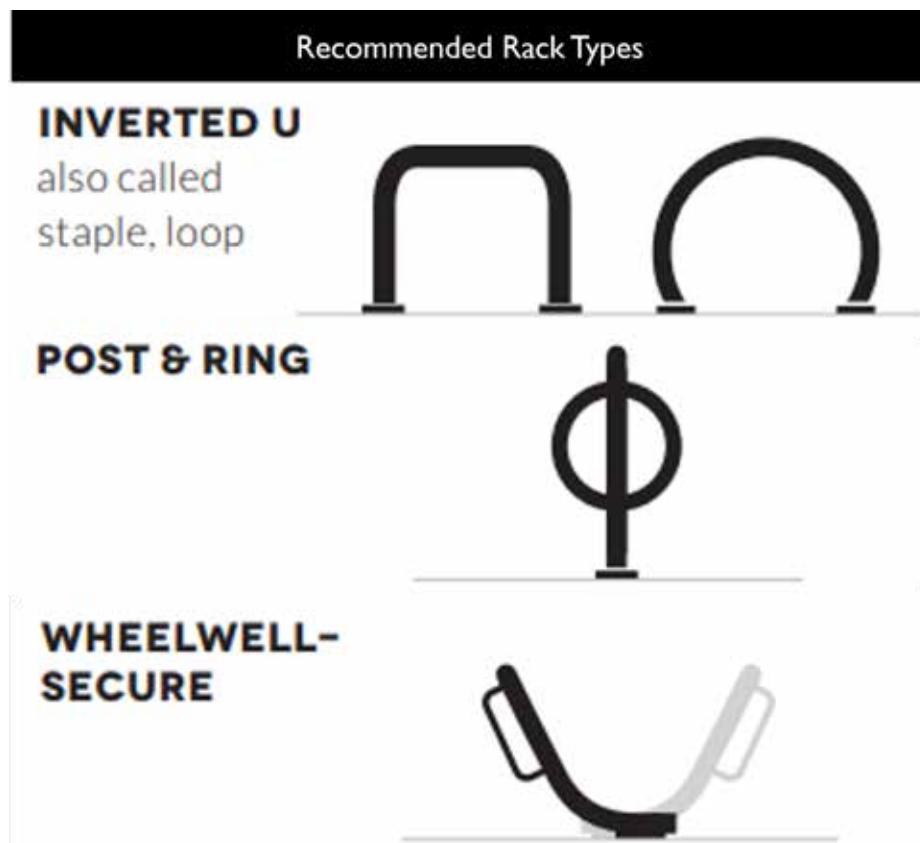
Currently, Needham hosts a number of post and ring bike racks at various locations throughout the Center, however they are not always located in the most convenient areas. Furthermore, there is currently no signage or information to indicate to bicyclists where parking is available. Comments received from the public survey were in favor of converting some parking spaces into other uses, such as those shown on the left.

Case Study: Cambridge, MA

Description: The City demonstrates how using parking spaces to accommodate more bicycle visitors in a central area increases the likeliness of it being used.

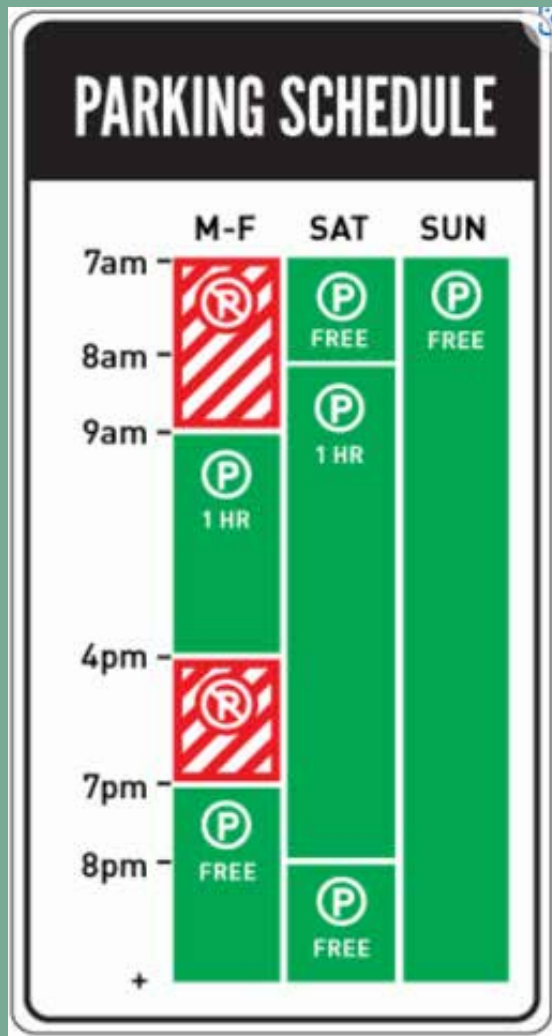
HOW IT WOULD WORK

Installing more frequent signage and bike racks throughout Needham Center and the Heights is recommended, however specific locations are not included in this plan. The bike racks shown below are generally recommended by the Association of Pedestrian and Bicycle Professionals (APBP) for their ability to stabilize a parked bicycle at two points, preventing the bike from falling over.. Other sources are available for guidance on best practice design and placement for bike corrals. The sign example below demonstrates typical best practice standards for size and clarity, however the Town could customize their approach to signage once defining a broader, cohesive wayfinding system (see Recommendation #7).



Clarity of Regulations

Goals Aligned: 1 2 3 4 5 6 7



Case Study: Various locations, including New York City and Los Angeles

Description: Regulation schedule signage such as this is one of many options for helping users quickly understand how parking rules may vary throughout the day and/or week.

WHAT IS RECOMMENDED

Including essential information on all parking signs, particularly including the time span of regulation (i.e., 8:00 am – 6:00 pm). This also includes improving the clarity of language on signage where regulations are combined or overlapping (e.g., Loading Zone and 15 minute parking that switches to unregulated in the evening) and establishing signage that provides direction during snow events.

WHY IT IS RECOMMENDED

Currently, the Town does not host a parking map with regulations on its website and motorists must rely on signage to understand regulations. However, many signs in Needham are lacking information, which leaves some signs open to interpretation in when parking can be used and by whom. 'Permit Parking Only' signs in particular have caused confusion about who is allowed to park in these spaces after the 2:00 pm mark passes. Similarly, many time-limit signs have no hours of operation posted.

HOW IT WOULD WORK

The Town should prioritize replacement of signs with unclear language (such as the examples shown below) with signs that more explicitly define who can park, how, and when (sample language shown to the right). These simple adjustments can be pursued as a short-term, relatively low-cost solution that should incorporate earlier recommendations in this report relating to proposed time limit adjustments, paid parking areas, and shared spaces between permit and paid parking.

Existing Signage Examples in Needham That Require Clarity



What time is this in effect?



7 days a week?



Free parking after 2?



At what times/days?

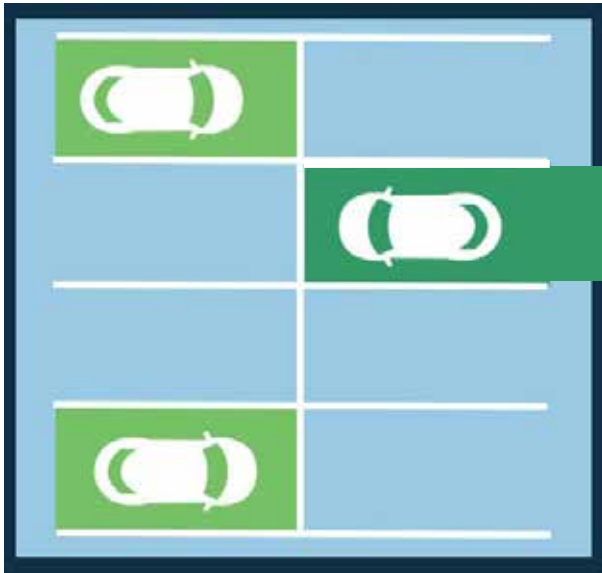
**Proposed
Chestnut St.
Lot permit
area sign**



**Proposed on-
street Sign**



4



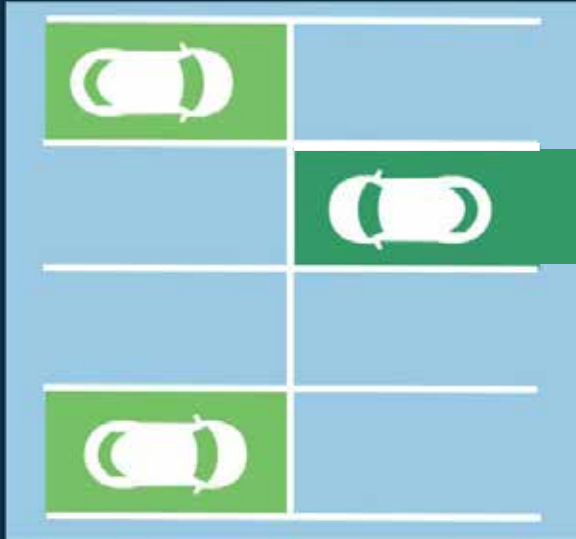
NEXT STEPS

There are several steps which must be realized in order to implement the changes detailed in this study. Some of these include procurement of new technology and signs, administrative changes to best carry out new programs, and legislative changes to enable parking rates to be tied to performance. Critical paths to success include:

- **Coordinate with Town Select Board:** The Select Board has reviewed the recommendations included in this report at its session on March 14, 2023. As needed, the Town should check in with this body for feedback.
- **Ongoing Public and Staff Engagement:** Many of the changes proposed will require continuing to coordinate with the public as well as particular stakeholders, such as Needham Center/Heights businesses and the Town's enforcement staff. It may be useful to convene a Parking Working Group to review potential changes, or to check-in with select stakeholders such as existing permit-holders to review changes to the permit program.
- **Pilot Early Changes, Monitor, and Report:** Providing several months to test new changes, such as pricing changes or even temporary adjustments to the walking network, coupled with monitoring and reporting back in a public manner, can help increase user buy-in.

Recommendation Implementation Strategy

Recommendation	Short-Term	Mid-Term	Long-Term
Performance-Based Pricing	Confirm price adjustment areas	Adjust prices and time span	Monitor, report, and adjust
Adjust Permit System	Confirm price adjustment areas	Implement adjusted permit prices, expand permit program eligibility	Monitor, report, and adjust
Pursue Shared Parking Opportunities	Identify a few key property owners for a shared parking pilot, hold initial meetings	Implement shared parking via agreement	Expand program
Provide Long-Term Parking	Meet with enforcement staff as needed, adjust signage to implement long-term parking	Monitor, report, and adjust	
Focus Enforcement on Customer Service	Meet with enforcement staff, develop new protocols and customer information	Adjust enforcement hours & protocols	Readjust enforcement patterns to new pricing, etc.
Create More Active Curbs	Pilot loading zones in the Heights and Center	Coordinate with stakeholders	Consider changing parking lanes to other users
Improve Parking + Wayfinding Signage	Review existing signage and create template for updated signage	Implement signage as needed in coordination with any changes in pricing/ regulations	Continue to update signage
Update Payment Technologies	Coordinate with vendors to understand costs and fees. Consider community “test” of technology.	Develop operating standards, advertise, Procure, implement	
Introduce Flexibility in Zoning	Coordination with Town boards and local developers	Develop proposed zoning language / amendments	Implement zoning changes
Consolidate Lots to Expand Supply	Coordinate with landowners to develop rough design as “proof of concept”	Implement initial pilot	Expand program
Improve the Multimodal Network	Prioritized list of targeted improvements	Include in Town budgets as needed and implement	Continue implementation and improvements
Increase Bike Parking Infrastructure	Identify locations, consider part-time summer bicycle corrals	Implement, monitor	Continue to adjust as needed
Clearly Sign Regulations	Review existing signage and create template for updated signage	Implement signage as needed in coordination with any changes in pricing/ regulation	Continue to update signage



APPENDICES

- Zoning Memorandum
- Survey Results

To:	Amy Haelsen Town of Needham	From:	Liza Cohen Stantec
File:	Needham Parking Study – Zoning Review	Date:	March 21, 2023

Reference: Needham Parking Study – Zoning Review

As part of the Needham Parking Study, Stantec completed a review of parking standards in the Zoning By-Law of the Town of Needham. This summary memorandum defines:

- How Needham’s minimum parking requirements compare with observed activity in Needham Center and Needham Heights, as well as against national standards.
- How the Zoning By-Law currently provides for reduced parking provision with new projects based on location, land use types, and other factors.
- How the town’s parking requirements and by-laws compare against the existing parking supply in Needham Center and Needham Heights.
- How parking standards support or detract from the Town’s planning and community development vision.
- What policies and mechanisms are available for Needham to adopt which have been used elsewhere.

Recommendations for adjusting Zoning By-Laws to adopt more progressive parking management practices in line with the goals of the study are outlined in the last section.

PARKING REQUIREMENTS

Parking requirements are used by communities to ensure that a development’s parking supply is appropriate to meet the demands of the project. Many communities employ minimum parking requirements, mandating that parking be provided on the basis of a project’s square footage or number of housing units.

Standards in several communities have been found to be too permissive of new parking construction and have remained unchanged for several decades. Furthermore, many communities base these standards on national best practices, which tend to favor larger lot sizes, car-centric land use patterns, and single-use projects. In a town like Needham, using national-level standards as inspiration for minimum parking requirements is inadvisable based on:

- The Town’s centuries-old development pattern promoting mixed-use buildings, which is incongruent with the greenfield, single-use projects constructed in the late-20th century where automobile travel took precedent.
- The intense mix of land uses within walking distance of one another within Needham Center, Needham Heights, and surrounding neighborhoods.
- The multimodal travel environment of Needham Center and Needham Heights, with Commuter Rail stations, bus services, a robust sidewalk network, and streets which facilitate bicycle use.

Reference: Needham Parking Study – Zoning Review

Nevertheless, Needham's minimum parking requirements exceed standards cited in the Institute of Transportation Engineers' (ITE) Parking Generation Manual, 5th edition. Table 1 references these standards:

Table 1 – Needham Parking Requirements Compared Against ITE Rates

Land Use	Needham Requirement	ITE Land Use Code	ITE Projection
Residential	1.5 spaces per unit (1 space per unit for affordable units with no more than one bedroom)	221 (Multifamily Housing, Mid-Rise)	1.15 spaces per unit ¹
Nursing Home	1 space per 2 beds, plus 1 space per 2 employees during peak shift	254 (Assisted Living)	1-1.25 spaces per 1,000 square feet ²
Office	1 space per 300 square feet	710 (General Office Building)	1 space per 420 square feet
Medical Office	1 space per 200 square feet	720 (Medical-Dental Office Building)	1 space per 310 square feet
Retail	1 space per 300 square feet	820 (Shopping Center)	1 space per 515 square feet
Restaurant	1 space per 3 seats, plus 10 spaces per takeout service station	932 (High-Turnover, Sit Down Restaurant)	1 space per 5 seats

These comparisons found that Town parking requirements trend more conservatively than national standards. However, as noted elsewhere in this memo, requirements in zoning and overlay districts in the study area allow for reductions of these requirements for development projects.

Given the mixing of different use types (office, retail, restaurant) in Needham Center and Needham Heights, the study team was limited to an evaluation of observed parking demand at three multi-unit residential

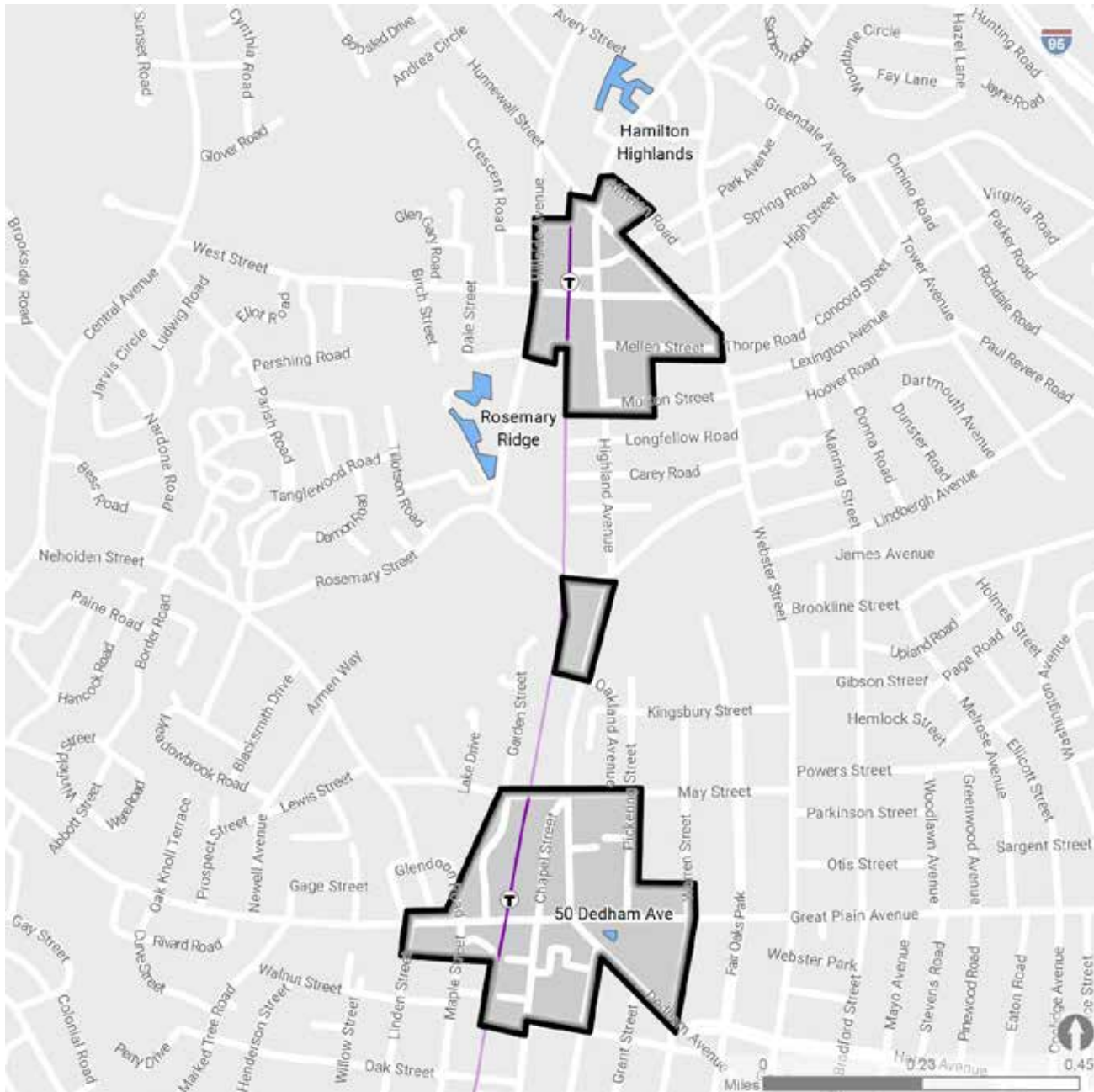
¹ Assumes 2 bedrooms per housing unit

² Assumes 400-500 building square feet per bed (<https://seniorcare.levinassociates.com/2017/07/03/paying-square-footage-skilled-nursing/>)

Reference: Needham Parking Study – Zoning Review

complexes in or adjacent to Needham Center and Needham Heights to compare this demand with the parking requirement. A map of the three apartment complexes is shown in Figure 1. This analysis found:

Figure 1 – Apartment Complexes with Overnight Residential Parking Demand Data



Reference: Needham Parking Study – Zoning Review

- Of the 212 housing units present at the Hamilton Highlands and Rosemary Ridge projects adjacent to Needham Heights, 172 vehicles were counted; this reflects a parking demand of 0.81 spaces per unit compared against the 1.5 space per unit requirement.
- Of the 10 housing units present at the 50 Dedham Avenue project in Needham Center, 13 vehicles were counted; this reflects a parking demand of 1.3 spaces per unit compared against the 1.5 space per unit requirement.

Additionally, the Metropolitan Area Planning Council (MAPC) conducted parking counts at two apartment complexes on 2nd Avenue, within the New England Business Center Zoning District, in June 2022. Of the 740 housing units present in these projects, 1,147 vehicles were counted. This equates to 1.55 spaces per unit, similar to the Town's Zoning By-Law requirement; it is noted that these apartment complexes are in more automobile-oriented areas of the community than Needham Center or Needham Heights.

EXCEPTIONS FOR PARKING REQUIREMENTS

The Zoning By-Law allows for several provisions where minimum parking requirements may be waived. These provisions often differ by zoning district and require approval by the Zoning Board of Appeals in a way which can be seen as subjective and risky for developers to pursue. Conversations with Town staff indicated that waivers are frequently requested and granted for commercial establishments in Needham Center and Needham Heights.

The maps of zoning districts and overlays can be found in Figure 2 and Figure 3. Note that the Avery Square Overlay district is targeted primarily towards senior housing and does not contain special provisions for parking outside of these uses.

Reference: Needham Parking Study – Zoning Review

Figure 2 – Zoning Districts and Overlays in Needham Center

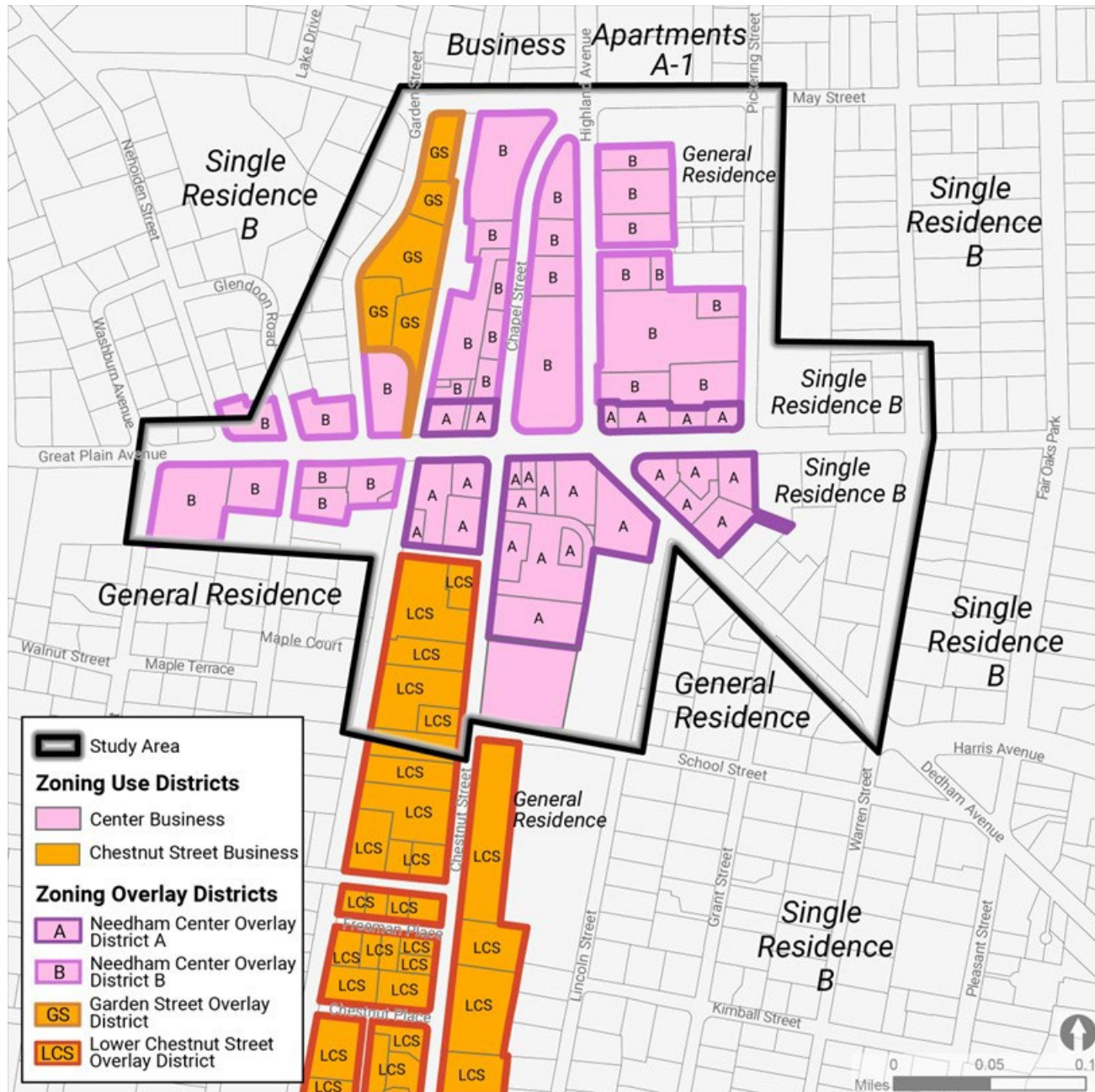
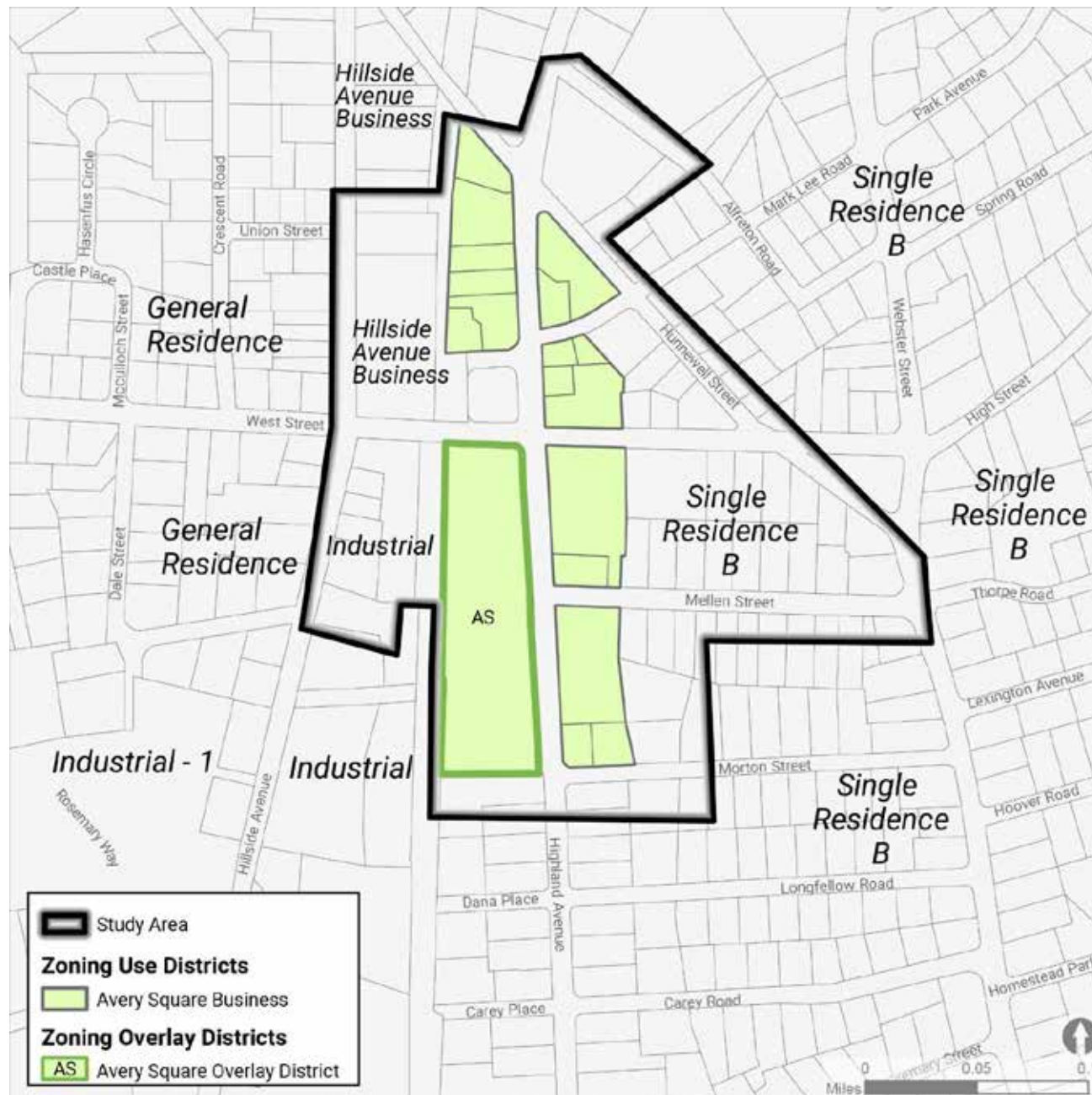


Figure 3 – Zoning Districts and Overlays in Needham Heights



Reference: Needham Parking Study – Zoning Review

Table 2 – Exceptions to Parking Requirements in Selected Zoning Districts and Overlays

District/Overlay	Exceptions to Parking Requirements
Center Business District	• Parking requirements relieved or waived for the following instances: ○ Retail uses under 800 square feet of floor area do not need to provide off-street parking. ○ Buildings with 40% or more of its usable floor area above the ground floor, upper-story uses only need to provide 80% of the parking requirement, with the exception of medical office uses. • Special permit to relieve or waive parking requirements if project: ○ Replaces or substantially improves an existing building or site; ○ Promotes the goal of preserving and enhancing the Center Business District as a pedestrian-oriented local shopping and business district; ○ Incorporates the recommendations of the Design Review Board; and ○ Demonstrates that the maximum number of off-street parking spaces practicable are provided. • Changes of use excepted when the change of use requires nine or fewer additional off-street parking spaces for compliance without requiring Special Permit.
Needham Center Overlay District	• Parking requirements relieved or waived for the following instances: ○ Retail uses under 800 square feet of floor area do not need to provide off-street parking. ○ Buildings with 40% or more of its usable floor area above the ground floor, upper-story uses only need to provide 80% of the parking requirement, with the exception of medical office uses. • Special permit to relieve or waive parking requirements if project: ○ Replaces or substantially improves an existing building or site; ○ Promotes the goal of preserving and enhancing the Center Business District as a pedestrian-oriented local shopping and business district; ○ Incorporates the recommendations of the Design Review Board; and

Reference: Needham Parking Study – Zoning Review

	○ Demonstrates that the maximum number of off-street parking spaces practicable are provided. • Changes of use excepted when the change of use requires nine or fewer additional off-street parking spaces for compliance without requiring Special Permit. • Special Permit to allow for payment of a fee in lieu of meeting the minimum number of parking spaces if the Planning Board determines: ○ The applicant has demonstrated it cannot accommodate the required parking spaces on a surface lot or under the building in an economical way. ○ The applicant has demonstrated it cannot accommodate the required parking spaces through a combination of on-site parking and shared parking with an adjoining property. ○ The project has been designed to the extent feasible to reduce the required number of off-street parking spaces.
Chestnut Street Business	• Changes of use excepted when the change of use requires nine or fewer additional off-street parking spaces for compliance without requiring Special Permit.
Lower Chestnut Street Overlay District	• Changes of use excepted when the change of use requires nine or fewer additional off-street parking spaces for compliance without requiring Special Permit. • Parking requirements relieved or waived for the following instances: ○ Buildings with 40% or more of its usable floor area above the ground floor, upper-story uses only need to provide 80% of the parking requirement, with the exception of medical office uses. • Special Permit to allow for payment of a fee in lieu of meeting the minimum number of parking spaces if the Planning Board determines: ○ The applicant has demonstrated it cannot accommodate the required parking spaces on a surface lot or under the building in an economical way. ○ The applicant has demonstrated it cannot accommodate the required parking spaces through a combination of on-site parking and shared parking with an adjoining property.

Reference: **Needham Parking Study – Zoning Review**

	○ The project has been designed to the extent feasible to reduce the required number of off-street parking spaces.
Garden Street Overlay District	• Changes of use excepted when the change of use requires nine or fewer additional off-street parking spaces for compliance without requiring Special Permit. • Parking requirements relieved or waived for the following instances: ○ Buildings with 40% or more of its usable floor area above the ground floor, upper-story uses only need to provide 80% of the parking requirement, with the exception of medical office uses.
Avery Square Business District	• Justification for relieved or waived requirements if shared parking for uses having peak demands at different types, unusual age or other characteristics of site users, or user-sponsored demand reduction devices are being pursued. • Allowance for off-site parking (parking on a separate parcel serving more than one user) for non-residential uses at distances up to 500 feet for general parking, or 800 feet for employee parking, including for limited encroachment into adjacent residential districts. • Changes of use excepted when the change of use requires nine or fewer additional off-street parking spaces for compliance without requiring Special Permit.

Waiver from Minimum Parking Requirements

The Board of Appeals may provide a special permit exempting projects from meeting minimum parking requirements if fitting one of the following conditions:

- The particular use of the structure does not warrant the minimum number of spaces; or
- The extent of the building coverage on a particular lot is such that in laying out parking spaces in accordance with design requirements that the minimum number of spaces can not be met.

The Board of Appeals considers the following in granting Special Permits:

- The permit will not be detrimental to the Town or to the general character and visual appearance of the surrounding neighborhood and abutting uses
- Changes that would alter the special circumstances contributing to the reduced parking need or demand are precluded

Reference: Needham Parking Study – Zoning Review

- In some business districts (including Avery Square, but not Center Business), shared parking for uses having peak demands at different types, unusual age or other characteristics of site users, or user-sponsored demand reduction devices are being pursued
- The ability to provide for additional parking is demonstrated
- A structure, use, or lot is not exempted from future compliance with parking standards

These subjectively-written standards, even if carried out in a consistent way by the Board of Appeals for prospective commercial development projects, introduce a high degree of risk for developers. Developers must demonstrate that it is possible to be compliant with minimum parking requirements, requiring a flexible approach to design and precluding prospective projects for which meeting this condition is not possible.

Waiver Review

The Town provided decisions for nine special permit applications from the Zoning Board of Appeals for commercial projects seeking relief from parking standards in the Center Business District. The decisions reflect a four-year period between May 2018 and April 2022. Seven of the nine applications involved a request to provide no new off-street parking for a project; all but one project (which involved a farmer's market) were for redevelopment of an existing property.

All nine projects were granted approval by the Board; the list of projects is detailed in Table 3.

Several common justifications were provided by the Board of Appeals in granting waivers to these developers, including:

- Off-street parking is not currently available at the property
- Only minor modifications to the property were sought which would not affect vehicular or pedestrian movements
- Properties were in close proximity to municipal lots for employee and/or customer parking
- Employers would be ordered to purchase parking stickers to allow for employees to park in municipal lots

Up to 156 parking spaces were waived from construction requirements as a result of these decisions.

Off-Site Parking Arrangements

The Town allows for off-street parking to be provided up to 300 feet away from the subject building; this lot must be under the same ownership. This in addition to the Avery Square Business District allowing for shared parking (parking on a separate parcel serving more than one user) at distances up to 500 feet for general parking, or 800 feet for employee parking.

Although cited above as justification for granting a waiver from minimum parking requirements, provisions for shared parking in other zoning districts and overlays are not referenced in the Zoning By-Law.

Reference: Needham Parking Study – Zoning Review

Table 3 – List of Projects for Waiver Review

Date	Business Name	Business Type	Address	Parking Required	Parking Requested/Granted
June 2018	Eat Well	Restaurant	946 Great Plain Avenue	30 spaces	0 spaces
October 2018	PEX Health and Fitness	Gym	1451 Highland Avenue	Up to 16 spaces	0 spaces
October 2018	Rx2Care Clinic	Medical Office	1498 Highland Avenue	6 spaces	4 spaces
November 2018	Gyro and Kebab House	Restaurant	1056 Great Plain Avenue	14 spaces	0 spaces
February 2019	Pancho's Taqueria	Restaurant	1450 Highland Avenue	Up to 23 spaces	Up to 4 spaces
October 2019	PM Story Corporation	Restaurant	946 Great Plain Avenue	24 spaces	0 spaces
June 2021	Klein Orthodontist	Medical Office	30-50 Chestnut Street	9 spaces	0 spaces
October 2021	Needham Nutrition	Retail	915 Great Plain Avenue	16 spaces	0 spaces
April 2022	Needham Farmer's Market	Retail	Greene's Field	26 spaces	0 spaces

Needham Center Off-Street Parking Fund

The Zoning By-Law allows for a Special Permit to allow for payment of a fee in lieu of meeting the minimum number of parking spaces in the Needham Center, Lower Chestnut Street, and Garden Street Overlay Districts. The Planning Board must determine that:

- The applicant has demonstrated it cannot accommodate the required parking spaces on a surface lot or under the building in an economical way.
- The applicant has demonstrated it cannot accommodate the required parking spaces through a combination of on-site parking and shared parking with an adjoining property.
- The project has been designed to the extent feasible to reduce the required number of off-street parking spaces.

The fee is computed on a per-space basis and paid into a special revenue fund known as the Needham Center Off-Street Parking Fund. The Fund is meant to be used towards providing shared or public parking benefiting uses within the area covered by the Needham Center Development Plan. The amount of the fee is determined by the Planning Board in accordance with the Needham Center Development Plan or the Town of Needham Capital Improvements Plan.

Reference: Needham Parking Study – Zoning Review

Although considered a best practice for managing a downtown's parking system, conversations with Town staff indicated that the Parking Fund is not actively contributed towards or drawn from.

PLACING NEEDHAM'S PARKING REQUIREMENTS IN CONTEXT

An analysis of Needham's parking requirements was compared against the existing land uses and the existing parking supply in Needham Center and Needham Heights by employing a customized shared parking demand model. This section covers the inputs to this model and its findings to demonstrate how Needham's parking requirements are misaligned with how residents, customers, and employees currently access Needham Center and Needham Heights, particularly given the existing parking supply.

A core component of this analysis is an understanding of the land uses present in the community. Parcel-level land use and assessing data from the Town of Needham was shared with the project team and verified through a combination of staff feedback, online research, and "windshield" surveys on Google Maps. Square footages for Needham Center and Needham Heights land uses are shown in Table 4 and Table 5, respectively.

A typical approach to estimating parking demand, also reflected in Needham's current off-street parking requirements, assumes that each land use in a downtown needs its own supply of parking and thus simply adds together the amount of parking demand "required" for each use to estimate demand. This level of analysis assumes that demand for each land use is constant throughout the day and that the parking supply for each parcel is at a quantity needed to accommodate its highest demand. As shown in Figure 4, whereas there are 1,771 existing spaces in Needham Center, an industry standard approach using ITE requirements (see Table 1) would yield construction of 2,748 spaces if all of Needham Center's land uses were built to this standard. In Needham Heights the supply of 991 spaces is in closer alignment with the industry standard of 1,007 spaces, as shown in Figure 5.

Table 4 – Land Uses in Needham Center

Land Use	Square Footage	Units
Apartments	88	Dwelling Units
Auto Shop	9,717	Square Feet
Bank	53,362	Square Feet
Church	98,010	Square Feet
Government Office	129,235	Square Feet
Medical Office	28,914	Square Feet
Office	117,019	Square Feet
Restaurant	39,024	Square Feet
Retail	327,437	Square Feet
School	62	Students
Warehouse	26,307	Square Feet
TOTAL	1,026,615	Square Feet
	88	Dwelling Units
	62	Students

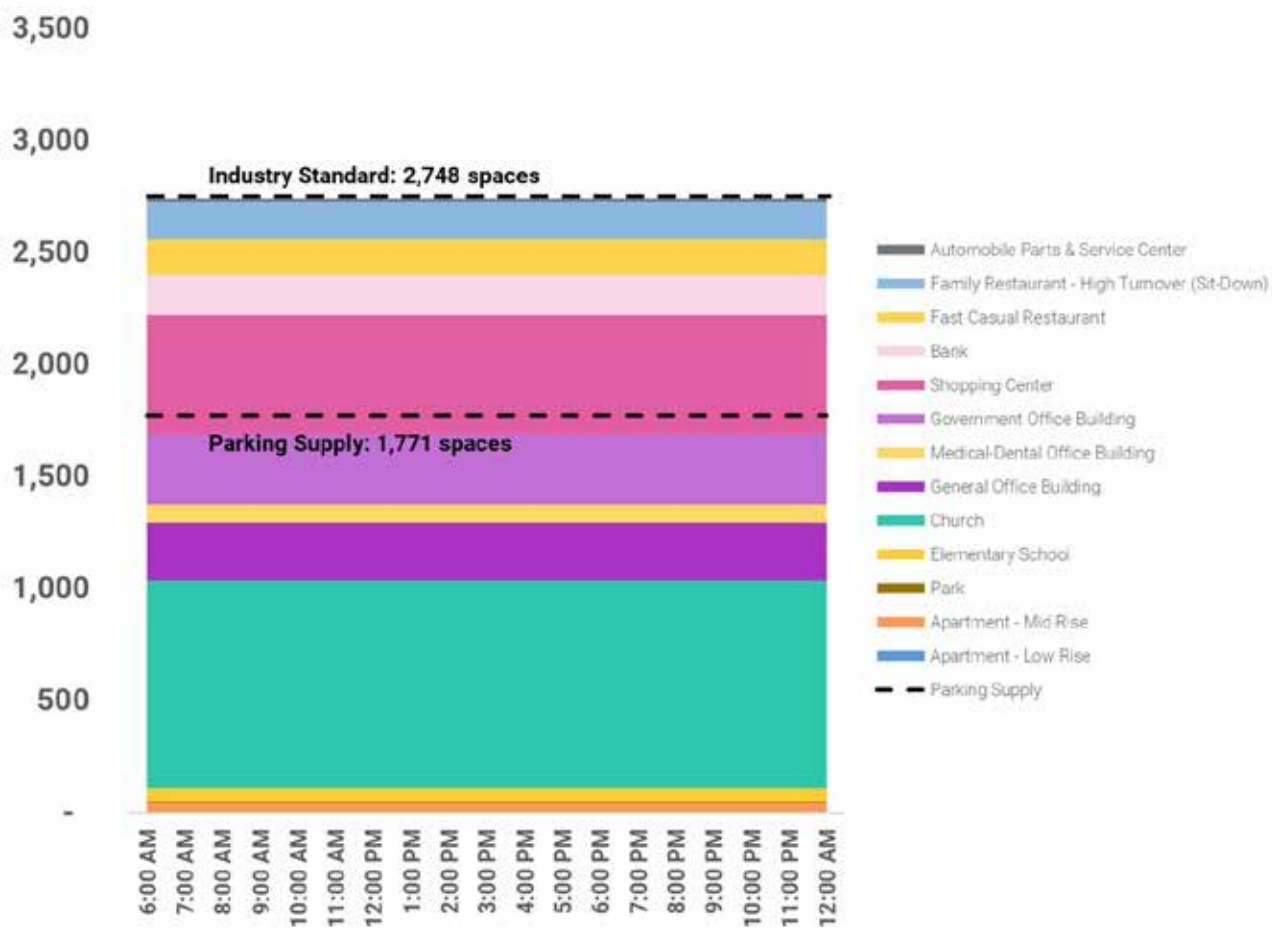
Reference: Needham Parking Study – Zoning Review

Table 5 – Land Uses in Needham Heights

Land Use	Square Footage	Units
Apartments	14	Dwelling Units
Auto Shops	9,903	Square Feet
Bank	12,348	Square Feet
Church	35,034	Square Feet
Day Care	4,224	Square Feet
Government Office	23,780	Square Feet
Health/Fitness Club	6,440	Square Feet
Medical Clinic	3,360	Square Feet
Nursing Home	160,742	Square Feet
Office	77,780	Square Feet
Restaurant	6,664	Square Feet
Retail	64,396	Square Feet
Warehouse	19,800	Square Feet
TOTAL	424,485 14	Square Feet Dwelling Units

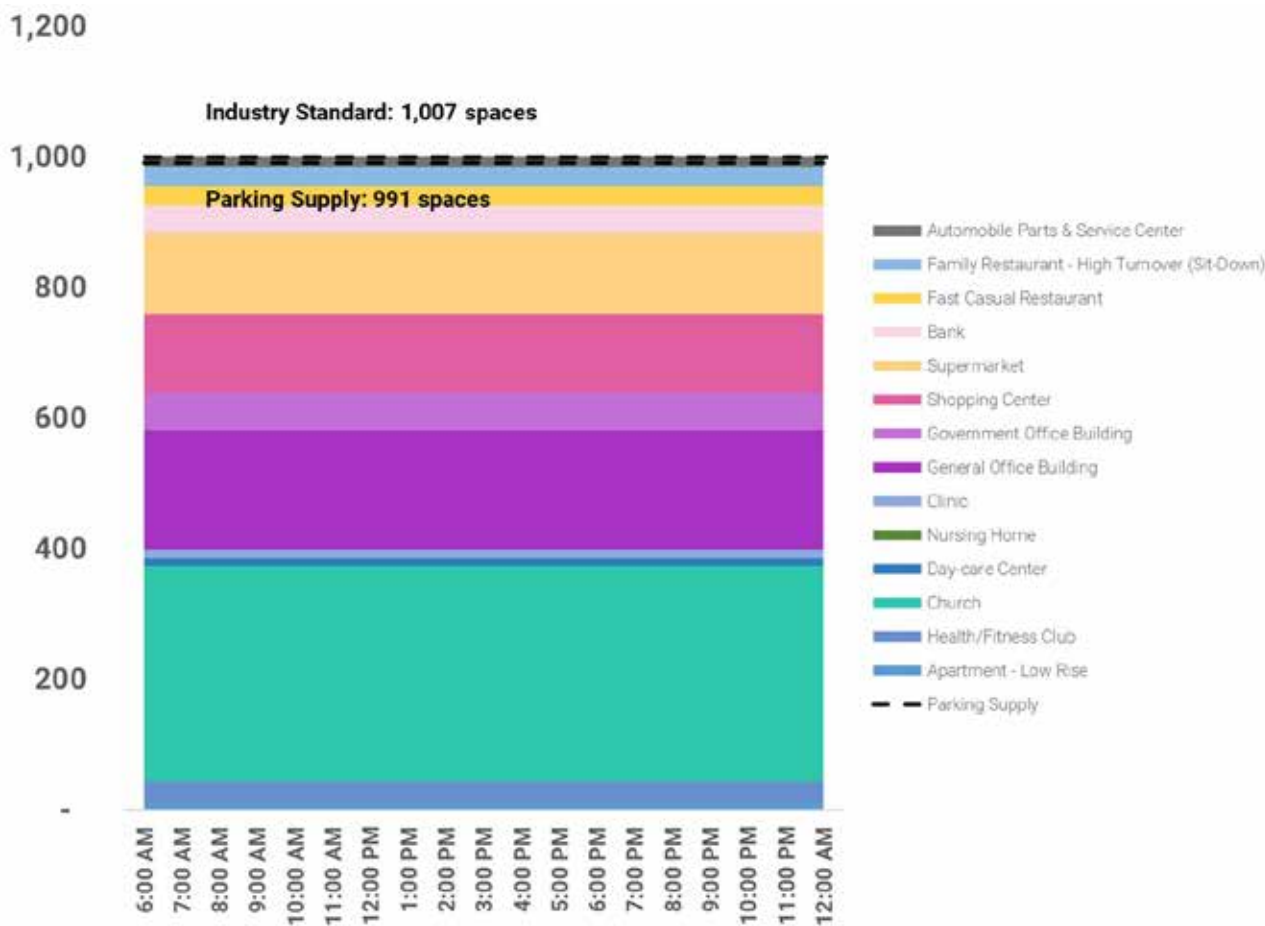
Reference: Needham Parking Study – Zoning Review

Figure 4 – Needham Center Parking Supply Compared Against Industry Standard



Reference: Needham Parking Study – Zoning Review

Figure 5 – Needham Heights Parking Supply Compared Against Industry Standard



As Table 1 demonstrates, commonly-observed land uses in Needham are subject to more conservative requirements than this industry standard. Needham Center and Needham Heights land uses were compared against Needham's parking requirements after adjusting for reductions allowed by-right in the study areas. This includes:

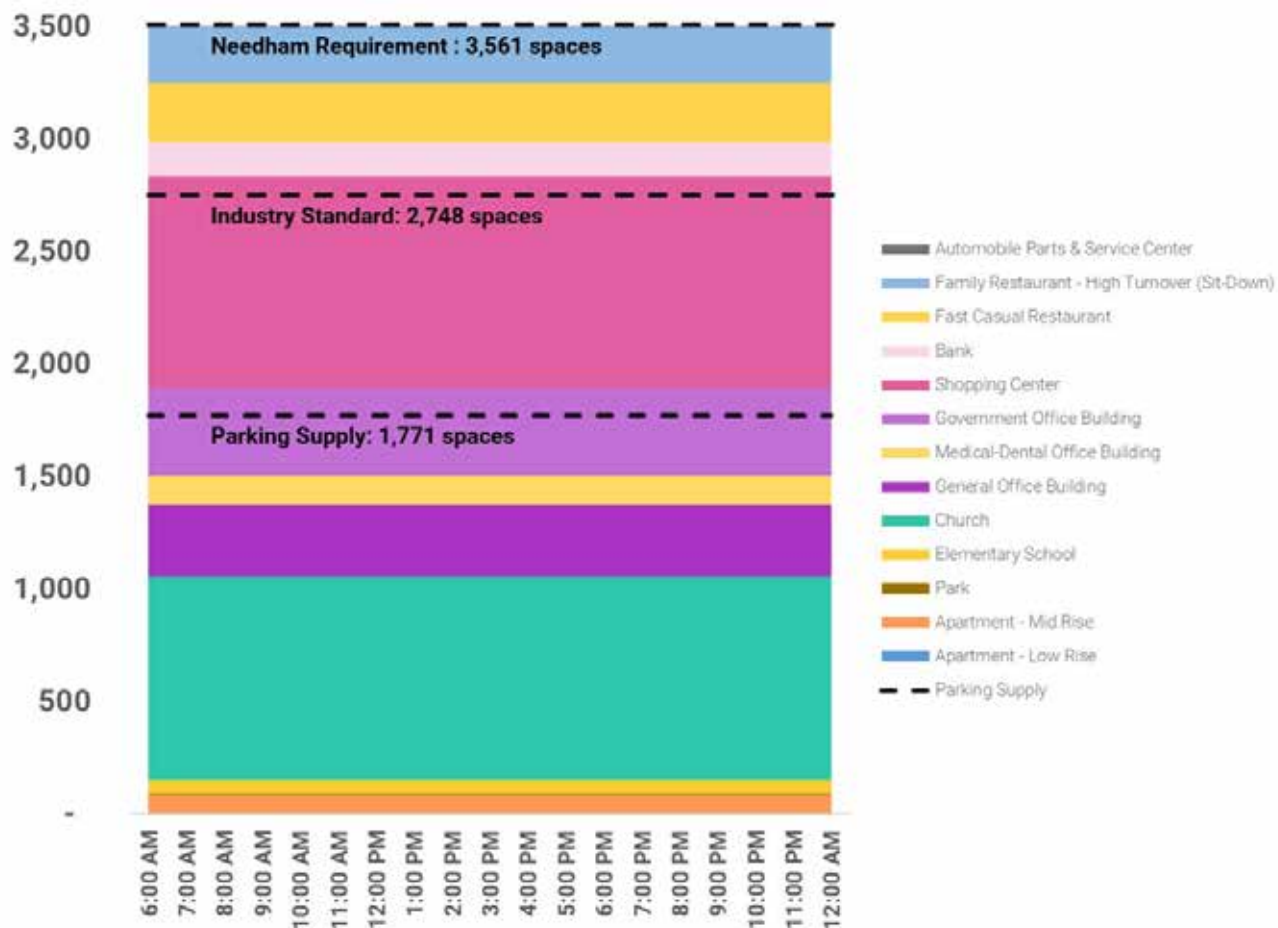
- Exception for retail uses under 800 square feet of floor area to require off-street parking
 - Given assessing data, only one retail use with under 800 square feet of gross floor area was identified
- Allowance for buildings with 40% or more of its usable floor area above the ground floor to meet 80% of the parking requirement for upper-story uses, with the exception of medical office uses
 - A windshield survey on Google Maps, followed by cross-checking with assessing data, identified 286,000 of square feet (approximately 28% of the Needham Heights study area) to subject to 80% of the parking requirement rather than 100%.

Reference: Needham Parking Study – Zoning Review

Reductions were only applied in Needham Center; no buildings and/or land uses in Needham Heights were found to meet these provisions.

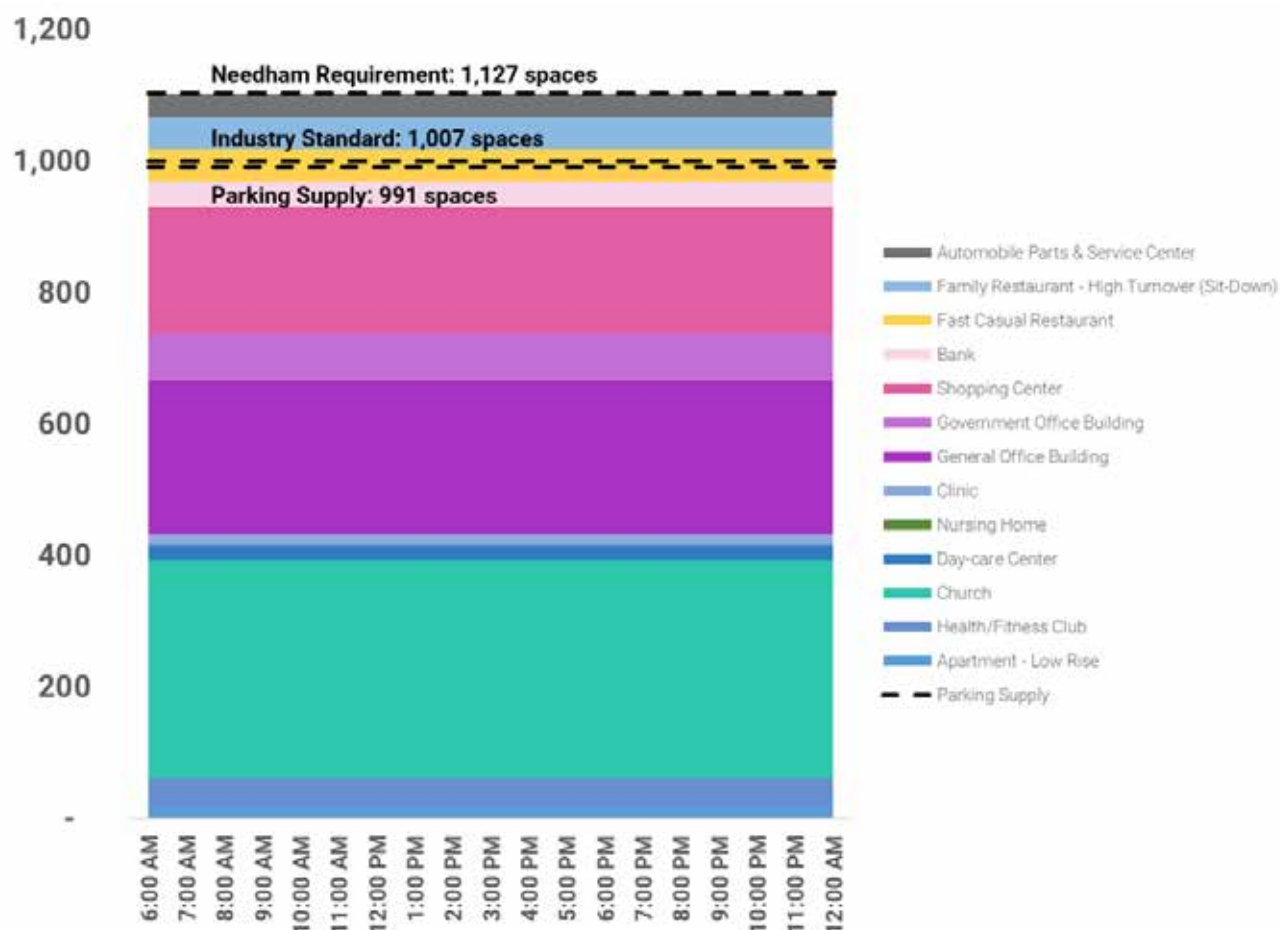
Figure 6 shows that in Needham Center, if all existing land uses were built to Needham's parking requirements with provision for by-right reductions, a total of 3,344 parking spaces would need to be constructed; compare this against the 1,771 spaces currently in use. In Needham Heights, Figure 7 shows 1,127 spaces would be required for construction compared against the existing supply of 991 spaces.

Figure 6 – Needham Center Parking Supply Compared Against Needham Parking Requirements



Reference: Needham Parking Study – Zoning Review

Figure 7 – Needham Heights Parking Supply Compared Against Needham Parking Requirements



This analysis shows that both the industry standard and Needham’s requirement for off-street parking construction would yield more parking spaces than is currently supplied in both Needham Center and Needham Heights. In reality, this study has shown that peak utilization of parking in the Needham Center and Needham Heights study areas does not approach the capacity of the parking supply. An analysis based on this “real demand” more accurately reflects demand patterns that vary by use throughout the day.

The Urban Land Institute (ULI) publishes the Shared Parking Manual, which provides analysts with a methodology to estimate real parking demand over time in mixed-use areas like Needham Center and Needham Heights. The Shared Parking Manual was referenced to create a model of demand if parking supply were to be shared across the entire Needham Center and Needham Heights study areas.

For example, demand at an office is low in the middle of the night, hits its peak in the middle of the day, and drops off again in the early evening. Conversely, a restaurant may have little to no demand during the day but peak around the dinner hour. Modeling parking demand of these land uses applies a time-of-day percentage to the peak parking demand rates to create a more realistic estimate of demand in mixed-use environments like Needham Center and Needham Heights.

Reference: Needham Parking Study – Zoning Review

Parking demand is further reduced in downtown environments because retail, commercial, office, and residential uses are closer together and more walkable. Users that opt to walk within the study areas to get from one destination to another (without parking their vehicle) are considered “internally captured.” Depending on the use, this can reduce total parking demand from stand-alone uses an average of 15%. In addition, Needham Center and Needham Heights may each generate trips from outside these geographies that don’t need a car at all, so additional reductions can be taken for some users. Finally, certain vacancy assumptions for housing, office, retail, and restaurant uses are also incorporated into the model.

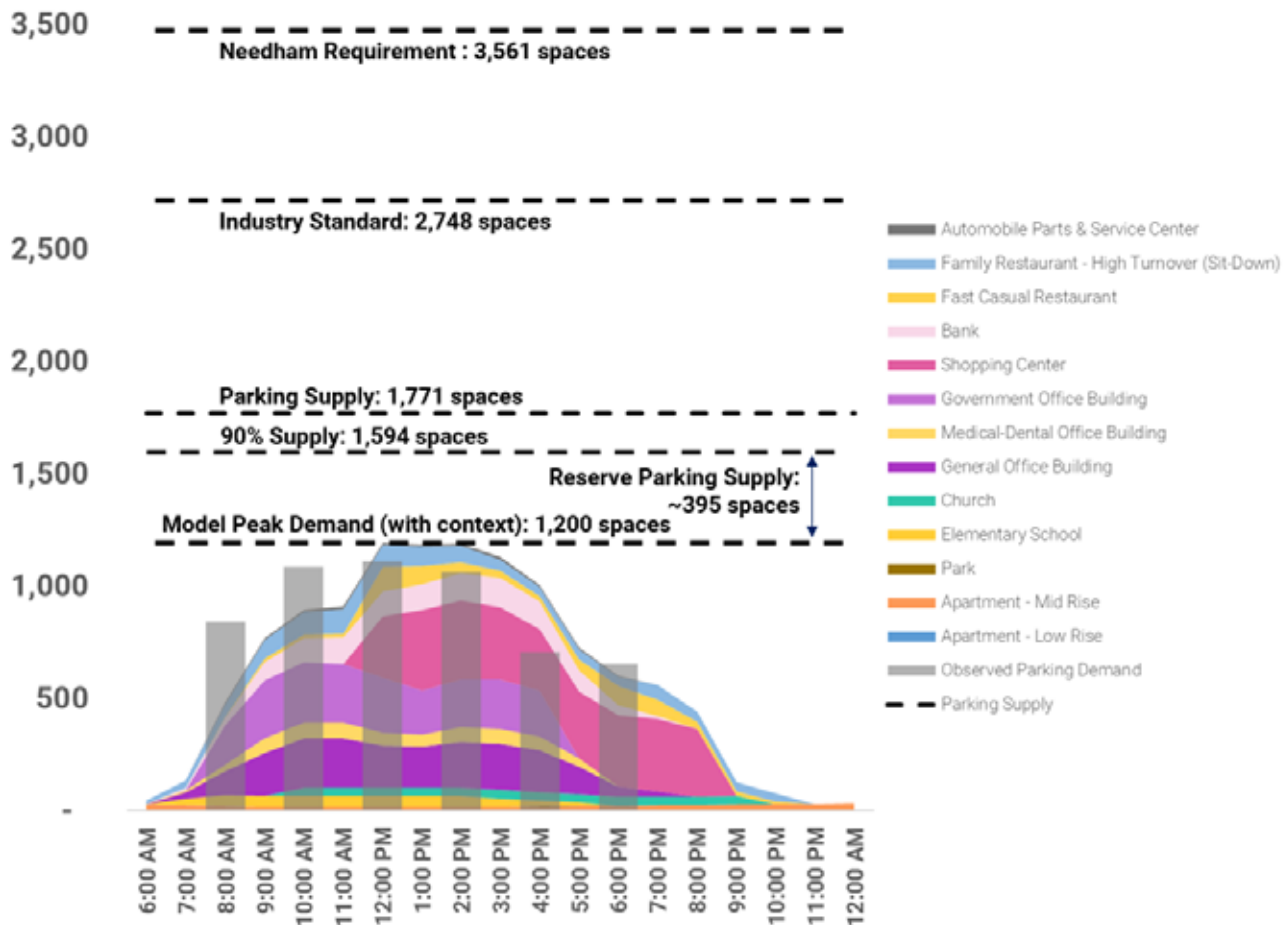
Using the ULI methodology together with these local context reductions applied to industry standard parking requirements, parking demand was modeled for the Needham Center and Needham Heights study areas. Parking utilization counts captured for the study were used to calibrate the model, resulting in a model that is based off of observed demand. The modeled peak demand falls above the study’s observations to provide a conservative estimate of the amount of parking needed for existing land uses in the study area.

The results of this exercise point to the existing parking supply in Needham being approximately 395 spaces larger than the need at the weekday midday peak, assuming that 10% of this supply should be held in reserve. This is reflected in Figure 8. In Needham Heights, Figure 9 shows that peak demand yields approximately 370 fewer spaces than the 90% supply.

It is important to note that not all parking is in the exact right location or currently regulated appropriately to support the additional development that this oversupply of parking could generate. However, strategies discussed in this report involve use of some of this excess parking to support new development would save significant financial and land costs compared to building new parking.

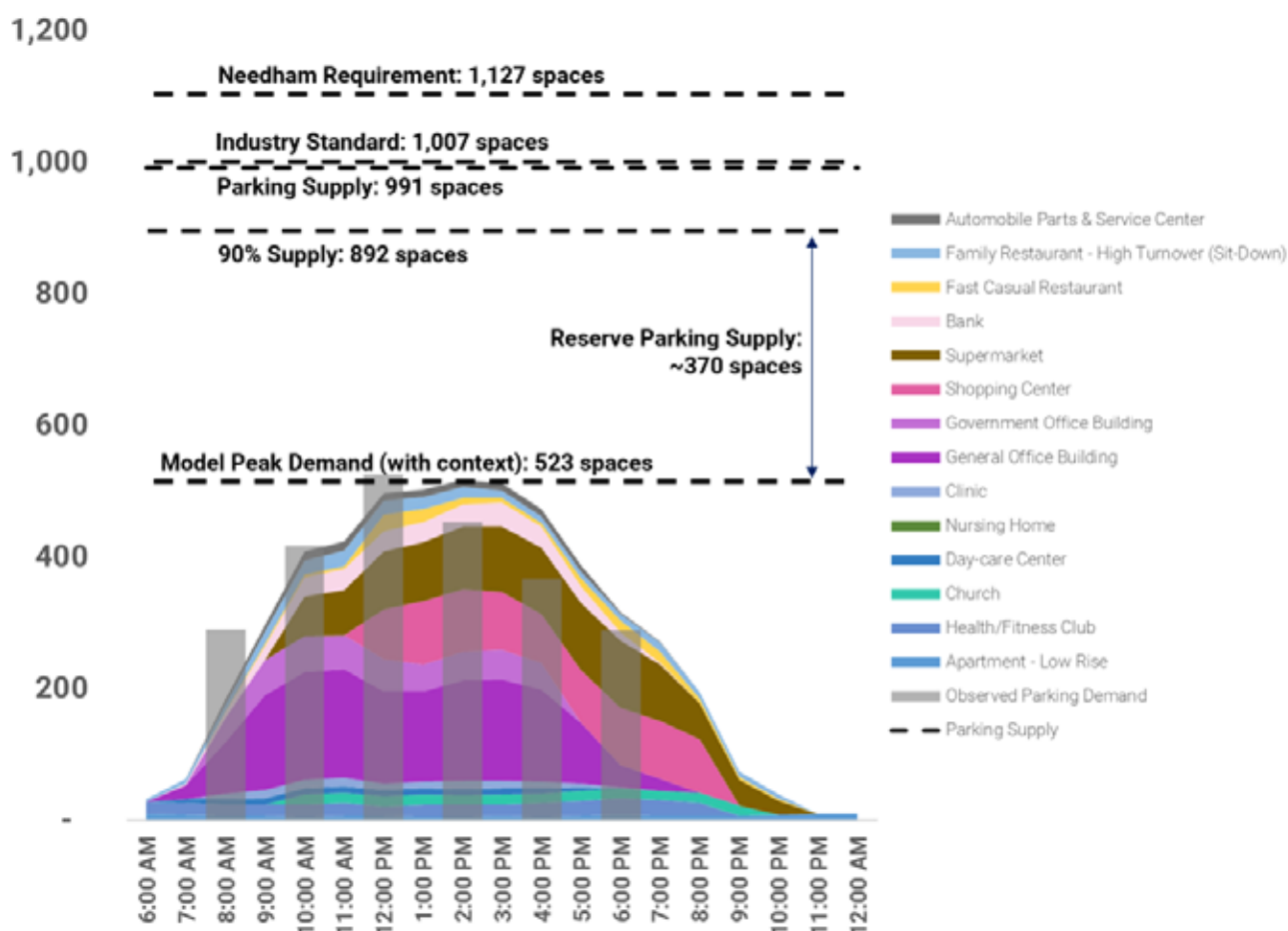
Reference: Needham Parking Study – Zoning Review

Figure 8 – Calibrated Parking Demand in Needham Center Compared Against Parking Supply



Reference: Needham Parking Study – Zoning Review

Figure 9 – Calibrated Parking Demand in Needham Heights Compared Against Parking Supply



ALTERNATIVE PARKING STANDARDS

Parking standards in Needham were reviewed to identify where listed standards support or detract from community goals and the vision encouraged as part of this parking study.

Several requirements relating to parking space dimensions and driveways were found to be in harmony with encouraging a pedestrian-scale in Needham Center and Needham Heights, including:

- Prohibition on new curb cuts in the Center Business District along Chapel Street, Chestnut Street, Great Plain Avenue, and Highland Avenue
- Limitations on the number of curb cuts based on project site frontage (no more than two for every 150 feet or less of frontage)
- Floor-to-area ratio (FAR) bonuses for vehicular access for providing parking and loading area access from an existing shared or common access driveway

Design with community in mind

Reference: Needham Parking Study – Zoning Review

- Lot coverage bonuses for enclosed parking provided underground and/or within building itself
- Front setbacks are strongly restricted in the Center Business District (with the exception for providing a pedestrian plaza or similar amenity) and limited to no more than 15 feet in the Avery Square Business District, effectively prohibiting parking in the front setback area
- Driveway openings are restricted to no more than 18 feet of width for one-way travel and 25 feet of width for two-way travel

Several other topic areas were identified for potential changes to the Zoning By-Law to lessen construction burdens for developers, better promote multimodal travel in the study areas, and conserve land area for uses other than parking.

LOADING AREAS

The Zoning By-Law requires adequate off-street loading space for all new construction or building additions greater than 100 square feet of floor area. No trucks may be on the public way while loading, unloading, or waiting to do so.

This provision constrains the introduction of new retail uses, particularly restaurants, reliant upon deliveries to sustain daily operations. Existing properties with off-street loading facilities, or off-street parking which can accommodate vans and trucks, are able to be re-developed to introduce new retail or restaurant uses. However, new construction must accommodate parking capacity for deliveries regardless of the property's need for parking or feasibility in providing access to parking from the street.

A remedy for this restriction are flexible parking regulations in commercial districts which impose time restrictions at certain segments of the day where deliveries are expected. The ordinance would need to be revised to allow for trucks to reside in the public way; however, trucks would be able to complete deliveries without blocking travel lanes.

BICYCLE RACKS

One bicycle space must be provided for every 20 parking spaces constructed for a new development; this threshold applies only when at least 40 parking spaces are constructed. In the Center Business District, mixed-use buildings with dwelling units must provide bicycle racks facilitating locking to accommodate one bicycle for every two dwelling units.

Requiring transportation demand management (TDM) measures for new development projects is a standard practice to encourage travel by means other than non-single occupancy driving. The Zoning By-Law requires TDM plans associated with new development projects in select business districts, but not in Needham Center or Needham Heights.

While justification for TDM planning may be applied elsewhere in the community given the lack of infrastructure to support multimodal travel, supporting bicycle, pedestrian, and transit usage in Needham Center and Needham Heights is a worthy goal in and of itself. Tying measures such as provision of bicycle racks or subsidizing transit passes to building square footage or employee count can support the adoption of TDM practices without such an explicit tie-in to parking.

Reference: **Needham Parking Study – Zoning Review**

PARKING LOT DESIGN

Dimensional standards in parking lots trend slightly towards granting an excess of space for vehicles, which risks encouraging vehicle speeding and increases the total square footage needed for a parking area. It is noted that:

- Parking space dimensions could be reduced to a minimum of 8 feet in width and 16 feet in length, consistent with existing requirements for compact spaces.
- The minimum width for drive aisles in one-way lots with spaces of 60-degree angles or less be reduced to 12 feet.

POLICY AND MECHANISM RECOMMENDATIONS

Needham's Zoning By-Law includes several provisions which relieve burdens from developers to provide off-street parking at a rate which demand may not generate. These provisions spur economic development by reducing development costs as well as conserve land in Needham Center and Needham Heights to be used for more efficient purposes than parking. Additionally, the Zoning Board of Appeals has demonstrated a precedence for granting waivers from minimum parking requirements for commercial developers when requested.

The review of the Zoning By-Law found that the zoning ordinance often applies parking standards in a way which can be challenging for developers to navigate and can be out of line with progressive municipal parking planning and management. This section defines new or revised policy measures with the aim of:

- Providing consistency with the application of policies across zoning districts and overlay areas which are each primarily associated with commercial and/or mixed-use buildings.
- Reducing time and cost delays for developers seeking exceptions to zoning standards which have a strong precedent of being granted.
- Advancing best practice standards from other local communities which help meet townwide transportation, community development, and economic development goals.

REDUCE PARKING REQUIREMENTS

Many communities across the country have sought to lower, or outright eliminate, their minimum parking requirements to spur development or ease the burdens faced by developers, municipal staff, and elected officials in advancing projects with reduced parking provision.

As the study has shown, Needham's parking requirements skew more conservative (higher minimums) than national standards and do not reflect observed parking demand in Needham Center and Needham Heights. While minimum parking requirements may have once reflected a sensible approach to ensuring developers were addressing the parking demands generated by projects, today they represent an artificial requirement which commercial projects in Needham often seek to get out of.

Many municipalities across Greater Boston have lowered or waived parking requirements in portions of their communities, including Walpole (no commercial parking requirements within the central business district),

Reference: Needham Parking Study – Zoning Review

Ipswich (no requirements within the central business district or within 500 feet of municipal parking), and Brookline (reduced residential requirements in close proximity to transit).

When enacted in combination with other measures detailed in this section, common concerns raised by community members related to parking can be sufficiently addressed to allow lowered parking requirements to move forward.

ALLOW REDUCTIONS FOR MIXED-USE PROJECTS

Under Needham's Zoning By-Law projects with more than one use must meet minimum requirements for all uses, regardless of whether these uses place similar demands on the parking network at different points of the day. Many communities acknowledge that a mixed-use project, such as a retail building with above-ground apartments, will almost never see peak demand for each of these components realized at the same time.

A sample table allowing for mixed-use reductions from the Somerville Zoning Ordinance is defined below:

Time of Day	Commercial	Evening Commercial	Residential	Total
6am - 9am	(X) * 25%	(X) * 0%	(Y) * 100%	= sum of this row
9am - 7pm	(X) * 100%	(X) * 50%	(Y) * 65%	= sum of this row
7pm - 11pm	(X) * 25%	(X) * 100%	(Y) * 100%	= sum of this row
11pm - 6am	(X) * 0%	(X) * 25%	(Y) * 100%	= sum of this row

Mixed-use computation applies percentages at different points of the day to estimate parking demand under different use types. For instance, an office project may be required to meet 100% of the minimum parking demand during weekday working hours but have no requirement during overnight hours. A related residential project may require 100% compliance during overnight hours but only 65% during weekday days, as shown in the Somerville example, reflecting those commuting to work or using their vehicle for other purposes. A mixed-use residential and office project in this instance would have a peak demand reflecting the greater sum of:

- 100% of the office use and 65% of the residential use or
- 0% of the office use and 100% of the residential use

The parking requirement would be customized to meet this level of demand.

EXPAND OFF-SITE PARKING ALLOWANCES

Needham's Zoning By-Law allows limited use of off-site parking provided the lot and subject building are no more than 300 feet apart and under the same ownership. The By-Law does not allow for the use of public parking to satisfy this condition, whether for on-street or off-street spaces.

Many communities allow development projects to tap into public parking resources or enter into arrangements with private parties (explored in the following measure) to use off-site parking to satisfy parking requirements. These provisions typically require projects to demonstrate that estimated parking demand can be satisfied using these resources, such as by showing that the satellite parking location can accommodate some or all of the subject project's demand at different points of the day. Protections are often built into by-laws requiring

Reference: Needham Parking Study – Zoning Review

the off-site location to fall within a similar zoning district, to retain the character of nearby residential neighborhoods.

The review of waivers for recent Needham commercial development projects found several instances where the Town obligated businesses to purchase employee permits to park in municipal lots, an example of using off-site parking to satisfy off-street parking requirements.

CODIFY SHARED PARKING AGREEMENTS

Shared parking agreements enable separate properties to share a common parking area within some established distance of the property. This allows for the private parking supply at a single location to be opened up to a greater number of users, helping to limit the future growth of the parking supply associated with new development projects.

Needham allows for shared parking in the Avery Square Business District for non-residential users at up to an 800-foot distance for employees; many nearby communities have similar provisions in their zoning ordinances. In Needham, developers must demonstrate that shared parking is for uses with peak demands at different times, there exists unusual age or other characteristics of site users, or feature user-sponsored demand reduction devices such as car-pooling.

Shared parking agreements can take on many forms, including:

- Shared parking between two complementary uses to unlock “restricted” parking facilities
- Shared parking at specific times of the day or week for specific users, such as restaurant employees using bank parking at night through an agreement between limited entities
- Active involvement from the Town to work with private property owners to open underutilized parking to the general public

Agreements between private parties often take on the form of a lease, where one user pays the other for access to parking. The Town can serve as a mediator between involved parties to provide fair protections and exit clauses to agreements, ensure land rights are protected, and to maintain any grandfathered zoning privileges. The Town’s involvement can also inventory the status of parking areas and serve as a facilitator for parties seeking to obtain or lease parking. These actions help relieve developers of the effort involved in facilitating a shared parking arrangement and encourage continued adoption of the practice.

When an agreement takes place between the Town and a private party, such as for general parking on a private lot during off-hours, the Town can provide “in-kind” services such as improvements to and maintenance of surface areas, lighting, and signage, as well as commitments to provide snow clearance during winter weather.

In many communities, shared parking is already informally practiced; a formal agreement ensures that the party “providing” parking is monetized for doing so and clarity is provided for users to park in designated areas without the fear of being towed.

EXPAND TRANSPORTATION DEMAND MANAGEMENT

Reference: Needham Parking Study – Zoning Review

Transportation demand management (TDM) speaks broadly to measures constructed as part of development projects or practiced by multi-unit residences, offices, and retail stores to encourage non-single occupancy vehicle travel by employees, residents, and visitors. In Needham, TDM measures are required for projects in some commercial districts, but not those in Needham Center or Needham Heights.

Requiring TDM measures for all projects can further encourage multimodal travel throughout Needham; individuals will be more likely to walk, bike, or take transit with assurances that bike parking will be available at destinations, incentives will be in place for those carpooling or vanpooling, and transit users will be supported with subsidies or other means to encourage travel by train or bus.

An effective TDM strategy should be clear and attainable; developers should not be incentivized to seek exceptions or skirt requirements which cannot be well enacted or tracked. Many municipalities throughout Greater Boston feature a static list of measures to enact or to choose from, much like Needham has for projects which require TDM action.

ALLOW BY-RIGHT REDUCTIONS

Special permits to relieve developers from meeting minimum parking requirements are granted by the Board of Appeals; as stated earlier, the Board may consider factors such as the ability of a project to demonstrate it can be compliant with parking standards if need be, or that a future change of use does not preclude meeting requirements.

These strictly-worded provisions, requiring projects to plan for the provision of parking it has no intention of meeting or removing from consideration projects with no ability to meet parking requirements, introduce a high level of uncertainty for developers seeking waivers from meeting parking requirements. Town staff indicated that most commercial projects end up at the Board of Appeals seeking a waiver from minimum parking requirements.

Clear, objective standards which developers can meet to reduce their on-site parking provision can simplify the development review process and provide peace of mind to the community that providing less parking with development projects will not produce harmful outcomes. These can include requirements to satisfy other measures detailed in this memo, such as seeking off-site parking or shared parking agreements and enacting transportation demand management strategies. If a developer satisfies these requests, a waiver to forego meeting minimum parking requirements can be obtained by-right rather than via request from the Board of Appeals.

ADOPT IN-LIEU FEE PROGRAM

More active use and management of the Needham Center Off-Street Parking Fund can ensure that developers seeking waivers from minimum parking requirements are creating community benefits by some other means, in much the same way that the minimum parking standard is meant to retain parking availability and prevent overflow parking throughout Needham's commercial areas and its edges.

A transparent fee, which can be tied to the per space cost of a surface or structured parking space in a way which can incentivize forgoing parking construction (rather than one tied to Planning Board approval, on a case-by-case basis, as practiced today), can be requested and used to fund transportation improvements in Needham's commercial districts. These can include:

- Maintenance and improvements (landscaping, lighting) to public parking assets

Reference: Needham Parking Study – Zoning Review

- Improvements to the multimodal transportation network to encourage greater walking and bicycling activity
- Beautification for Needham Center and Needham Heights to spur economic activity

Many communities throughout Greater Boston have enacted parking benefit districts, which use revenues from sources like in-lieu fees to fund local improvements, including Natick, Brookline, and Arlington.

CONSIDER PARKING MAXIMUMS

Parking maximums help ensure that developers can opt into supplying parking at a rate commensurate with new development projects, but not at a rate above this. By placing a restriction on the number of spaces a developer can provide with a project, the community limits the negative impacts that an oversupply of parking can impose.

Where stakeholders might resist the introduction of parking maximums, softer measures such as in-lieu fees or shared parking arrangements can ensure that an overprovision of parking for a development project can help advance one or more community benefits. For instance, where a developer will build parking at a rate that the community feels would result in an underutilization of the space, the developer can be made to share a portion of the parking or pay a per-space fee to help advance community transportation and/or economic development initiatives.

The City of Boston recently instituted citywide parking maximums tailored towards a project's location and land use mix. Developments must demonstrate that the off-street parking provision is below listed maximum provided by the City. In more suburban settings, Belmont (in specific districts) and Burlington (throughout the community) each provide for parking maximums.

Entity

SenderName

Phone:

Fax: Fax Number

Attachment:

Attachment

c. C.C.

1. Would you like to take the parking survey for Needham Center or Needham Heights? Note that if you would like to do both, simply take the survey twice and answer this question differently each time.

[More Details](#)

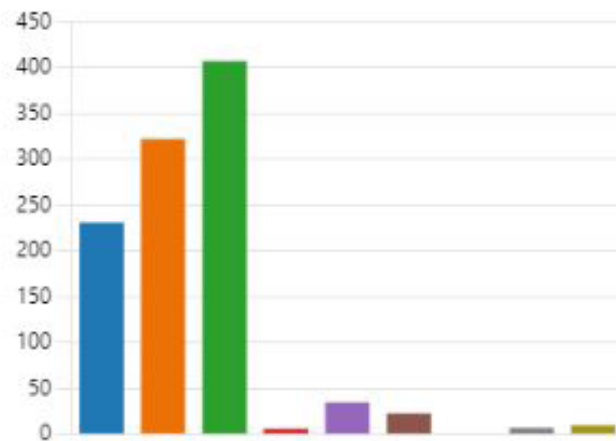
Needham Center	710
Needham Heights	313



2. Which of these best describes you? If multiple, pick the one that is the most frequent reason that brings you to the Needham Center or Needham Heights study area.

[More Details](#)

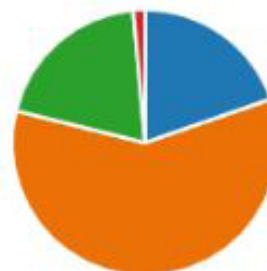
I live in the Needham Center or ...	231
I live elsewhere in Needham	322
I visit the study area to shop, di...	407
I work at/visit the hospital	6
I am a business owner in the stu...	35
I am an employee in the study a...	23
I go to school or drop my child ...	1
I go to take the commuter rail	7
Other	10



3. How often do you visit Needham Center/Needham Heights? (Select one)

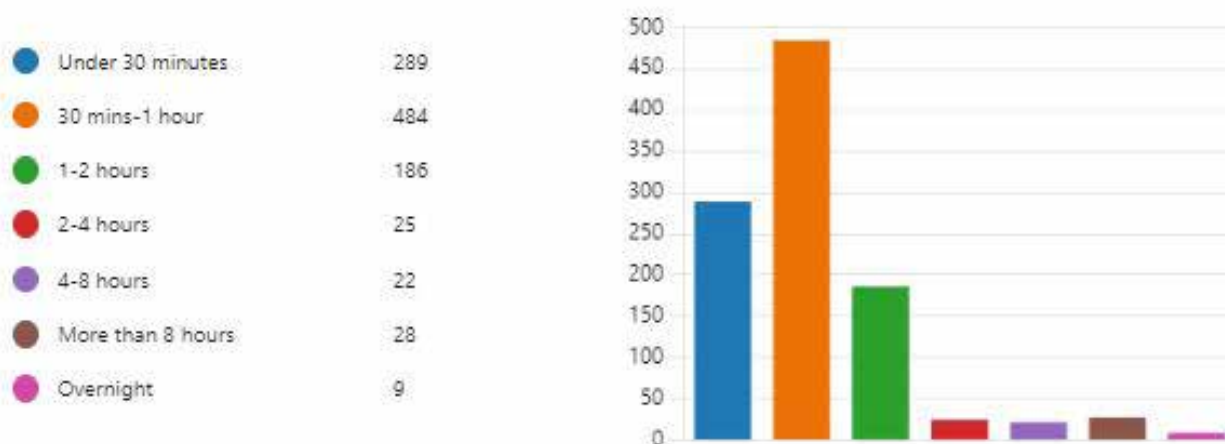
[More Details](#)

Every day	205
Multiple times per week	616
A few times a month	205
Once a month or less	15



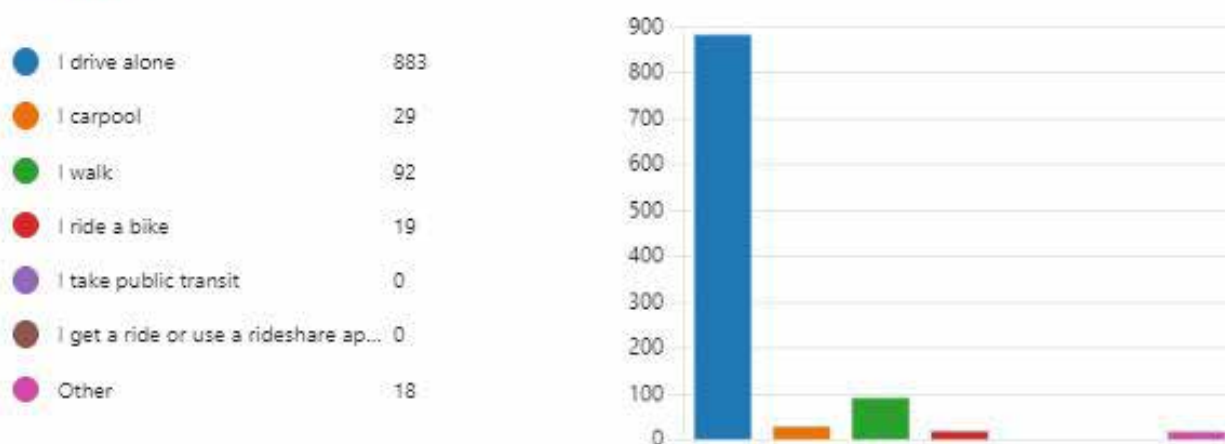
4. How long do you spend on a typical visit to Needham Center/Needham Heights? (Select one)

[More Details](#)



5. How do you typically travel to Needham Center/Needham Heights? (Select one)

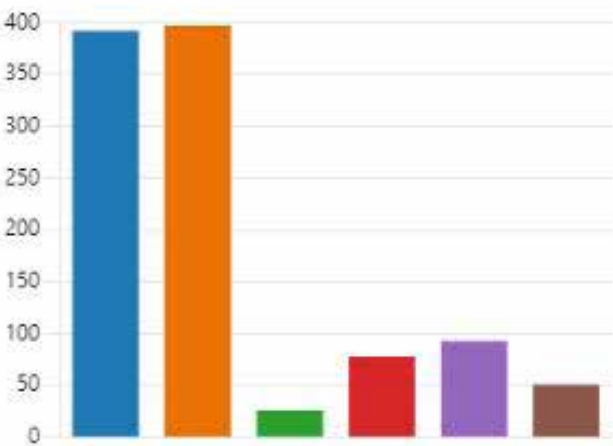
[More Details](#)



6. When you drive to Needham Center/Needham Heights, where do you park most frequently? (Select one)

[More Details](#)

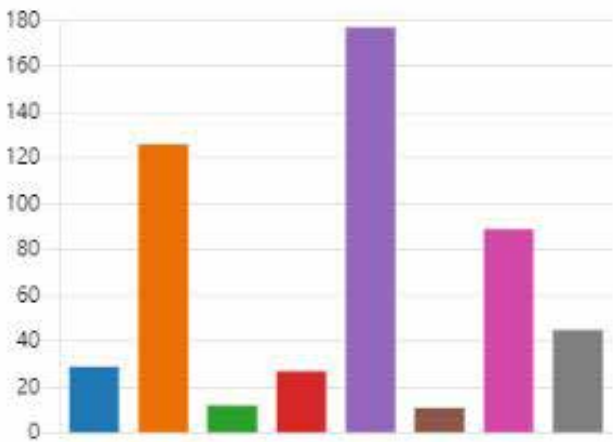
On-street	392
Off-street in a public lot (NOT a ...	397
Off-street in a Commuter Rail Lot	26
Walgreens Lot	78
Off-street in a private lot (includ...	93
Other	51



7. Which of the off-street public lots do you most frequently park? (Select all that apply)

[More Details](#)

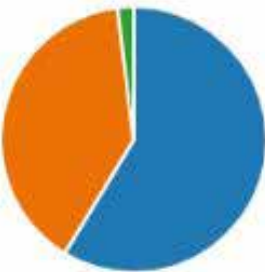
Needham Center- Eaton Square...	29
Needham Center- Chapel Street...	126
Needham Center- Dedham Ave...	12
Needham Center- Lincoln/Stree...	27
Needham Center- Lincoln/Chest...	177
Needham Center- I'm unsure of ...	11
Needham Heights- Mark Lee/H...	89
Other	45



8. How close to your destination do you typically park? (Select one)

[More Details](#)

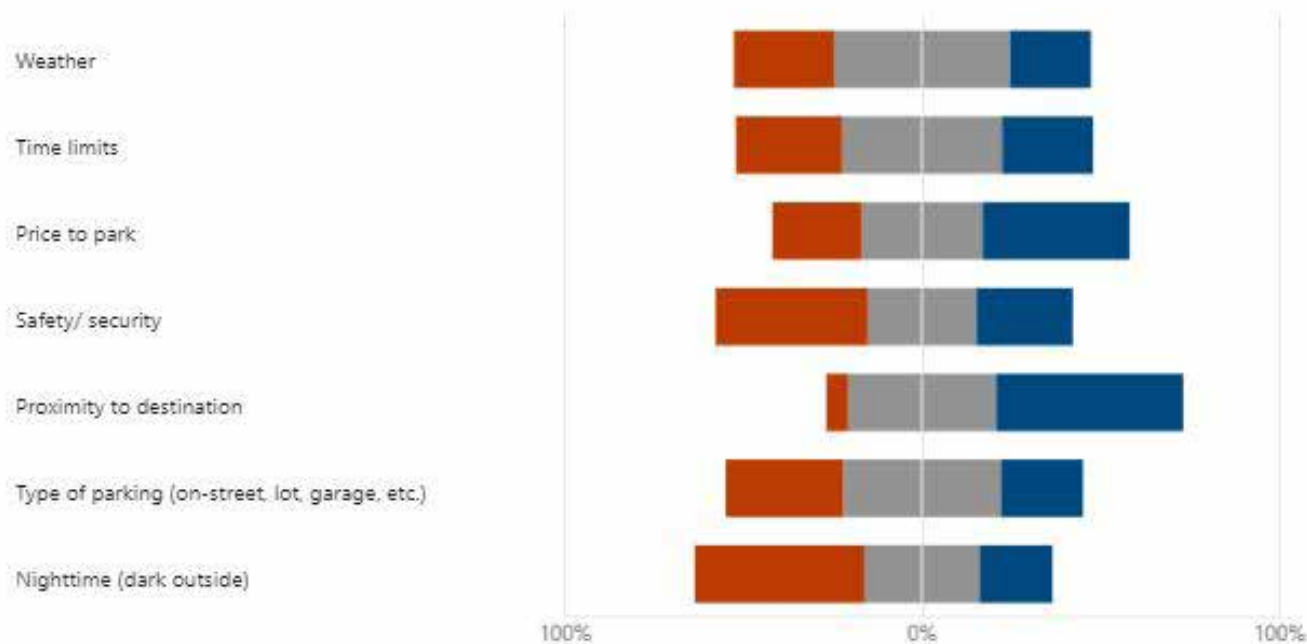
Right out front, on site, or on th...	607
One or two blocks away	407
Three or more blocks away	20



9. When you are looking for a space to park, what influences your choice? Please mark one circle per row.

[More Details](#)

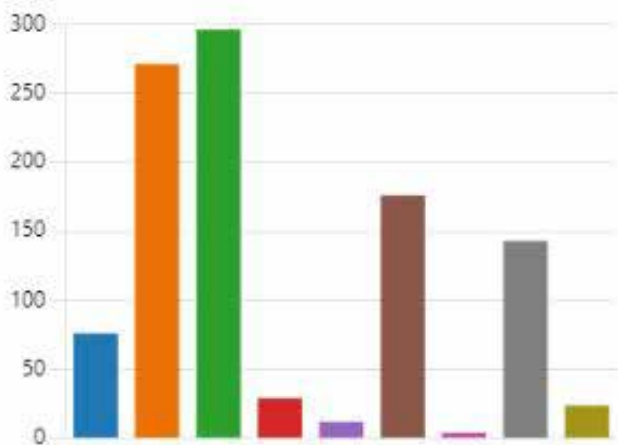
Does not matter to me Somewhat matters to me Highly influential



10. What type of parking do you use most often when you visit? (Select one)

[More Details](#)

10 or 15-minute parking	76
30 min or 1-hour parking	271
2-hour parking	296
Permit parking (employee, com...	29
Employee-designated parking w...	12
Customer-designated parking w...	176
Tenant-designated parking (suc...	4
Unregulated parking (no time li...	143
Other	24



11. Which of the following most applies to your typical visit? (Select one)

[More Details](#)

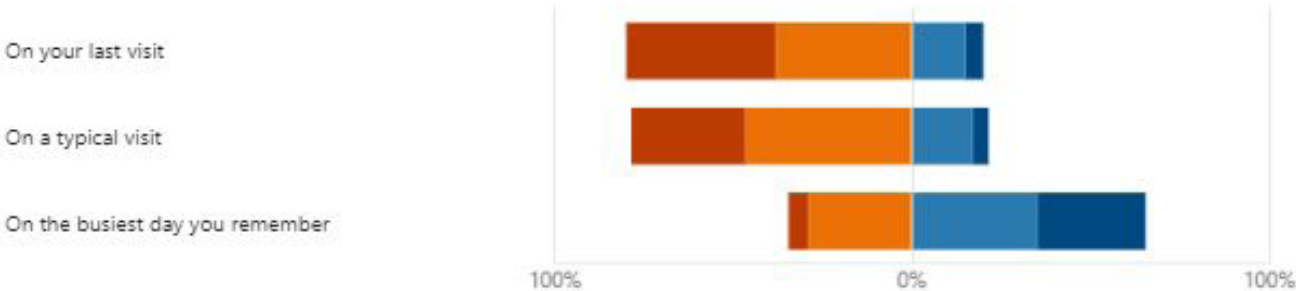
- I visit one destination only 360
- I visit multiple destinations, drivi... 162
- I visit multiple destinations, park... 502
- Other 10



12. How long does it take to find a space...

[More Details](#)

- I find a space right away every time
- An extra minute or so
- It can take up to 5 minutes to find a space
- It takes over 5 minutes to find a space



13. In the question above, if you selected that it takes over 5 minutes to find a space when you visit Needham Center/Needham Heights, where are you typically going? (e.g., Town Hall)?

[More Details](#)

397

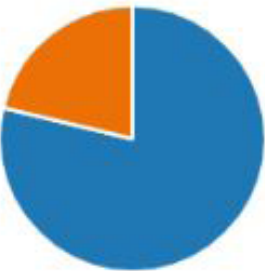
Responses

Latest Responses

14. Have you ever paid for parking using one of the available parking meters in Needham Center/Needham Heights?

[More Details](#)

Yes	811
No	219



15. On a scale of 1-5, indicate your level of agreement with the following statements regarding your experience with parking meters when visiting Needham Center/Needham Heights?

1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree)

[More Details](#)

1 2 3 4 5



16. How does paid parking impact your parking choice?

[More Details](#)

- I will park farther away from my ... 597
- I will pay more to park closer to ... 255
- I will walk, bike, or take a bus, ta... 37
- I will choose to drive elsewhere 95



17. If the Town were to investigate different options for paying for parking in the future, which of the following would be your preference? (Select one)

[More Details](#)

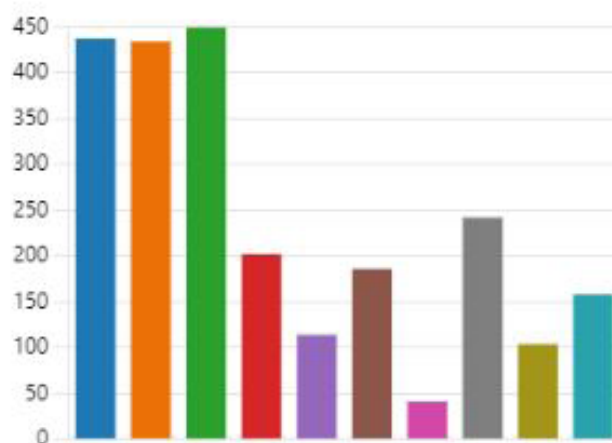
- Meters that accept coins only 51
- Meters that accept both coins a... 403
- Meters that accept coins, bills a... 153
- Meters that accept credit cards ... 32
- Pay by smartphone app 368



18. If the City were to invest in improvements, which of the following would be your top three (3) choices?

[More Details](#)

- More parking 437
- Improvements to the walking e... 434
- Better parking meters/technolo... 449
- Better lighting 202
- Better parking signage 114
- Better information about parkin... 186
- Better parking enforcement 41
- Establish a Parking Benefit Distri... 242
- Longer parking hours 104
- No time limits 158



19. What else would you like to tell us about parking in Needham Center/Needham Heights?

[More Details](#)

430
Responses

Latest Responses
"Issues arise from approving new buildings and businesses without enough p...

20. What is your zip code of residence?

[More Details](#)

1012
Responses

Latest Responses
"02492"
"02494"

21. What is your age?

[More Details](#)

18-24	2
25-44	237
45-64	444
65 and over	327
Prefer not to say	29



