Memorandum to Members of WestMetro HOME Consortium

WestMetro Parking Utilization Study
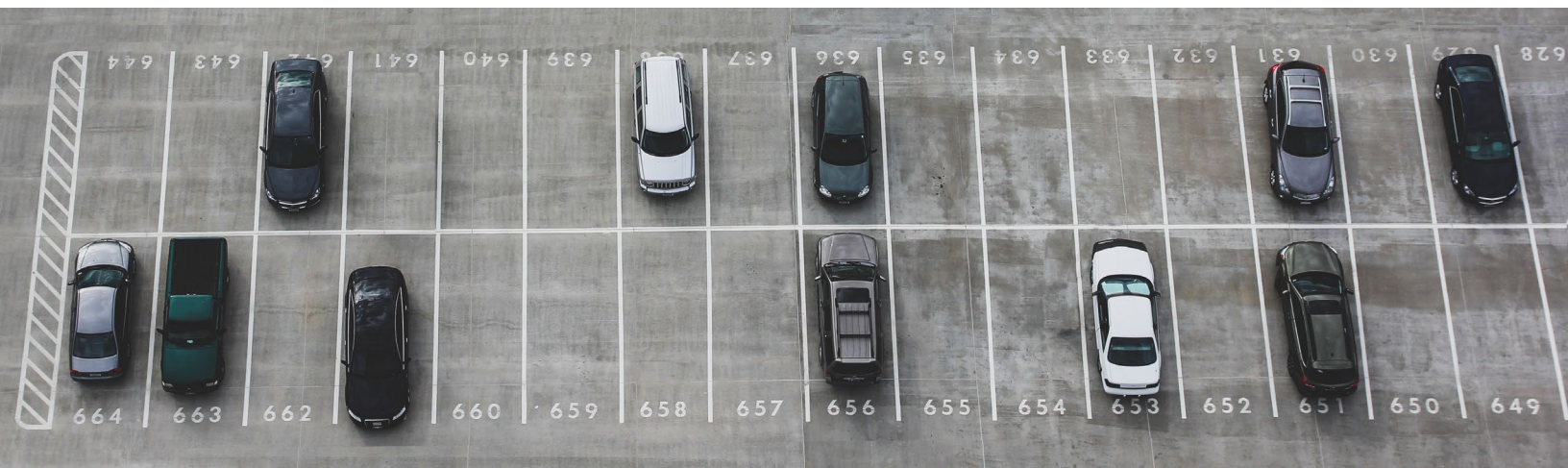## Perfect Fit Parking Initiative, Phase 4

Metropolitan Area Planning Council

July 2023

MAPC

Memorandum

Background

The WestMetro HOME Consortium approached MAPC in 2021 to request a parking utilization study at multifamily housing developments in the Consortium's member municipalities west of Boston (Bedford, Belmont, Brookline, Concord, Framingham, Lexington, Natick, Needham, Newton, Sudbury, Waltham, Watertown, and Wayland). The Consortium was motivated to pursue this study by their Analysis of Impediments to Fair Housing (2021-2025), which contends that excessive parking requirements are a barrier to multifamily housing development and recommends that municipalities reconsider their residential parking standards. In an August 20, 2021 memo regarding these issues, Consortium members noted that "requiring more off-street parking than needed to meet demand unnecessarily increases development costs and may, particularly when combined with other regulatory requirements, discourage such development."

As part of its Perfect Fit Parking Initiative, MAPC previously conducted three phases of parking utilization research at multifamily housing sites in Greater Boston between 2015 and 2020. Phases 1 and 2 collectively examined nearly 200 sites in 14 Inner Core municipalities (including 10 sites in the Consortium municipalities of Newton, Waltham and Watertown), while Phase 3 examined an additional 20 sites in four North Shore municipalities.

The Phase 1 and Phase 2 results showed that only 70% of the off-street parking spaces provided at multifamily developments were occupied during peak hours (in the middle of the night), while Phase 3 similarly found only 76% parking utilization during peak hours.

Detailed statistical modeling of the Phase 1 and Phase 2 results further found that parking supply was the single largest factor associated with parking demand — the more spaces provided, the more cars were parked there, all other things being equal. The analysis also found that good transit access to jobs and the presence of deed-restricted affordable units were both associated with reduced parking demand.

WestMetro Data Collection

Through a new round of Perfect Fit Parking research (hereafter referred to as "Phase 4"), the Consortium sought to better understand patterns of parking availability and utilization in their region, with the goal of creating more equitable and data-driven approaches to local parking policy. Data collection for the Phase 4 study took place during 2022 and replicated the methodology used in the prior phases of MAPC's parking utilization research. (All the Consortium's member municipalities participated in the study except for Wayland.) Municipal staff used an MAPC-provided survey to collect baseline data on multifamily housing sites from local property owners and managers. The staff then conducted overnight weeknight parking counts at sites to get data on peak parking utilization.

Over 40 sites were covered by both the property surveys and the overnight parking counts, with 36 sites across six municipalities having sufficient data for full analysis (including the same statistical modeling used in Phases 1 and 2). **Table 1** shows the average parking supply, average parking demand, and average parking utilization percentage for each municipality, as well as the averages across all municipalities. These figures were calculated as follows:

Parking supply per unit: the total number of parking spaces divided by the total number of housing units

Parking demand per unit: the number of occupied parking spaces divided by the number of occupied housing units

Parking utilization: the number of occupied parking spaces divided by the total number of parking spaces

Table 1. Average Parking Supply, Demand, and Utilization by Municipality[1]

Municipality	Number of Sites	Parking Supply Per Unit (Total Spaces / Total Units)	Parking Demand Per Unit (Occupied Spaces / Occupied Units)	Parking Utilization % (Occupied Spaces / Total Spaces)
Brookline	2	0.80	0.65	87%
Concord	3	2.32	1.05	53%
Needham	2	1.59	0.62[2]	62%
Newton	10	1.52	0.83	50%
Sudbury	2	1.40	0.98	71%
Watertown	17	1.45	0.99	62%
All Sites	**36**	**1.58**	**1.00**	**61%**

The parking supply, demand, and utilization figures varied by municipality. Parking supply ranged from 0.80 spaces/unit in Brookline to 2.32 spaces/unit in Concord, parking demand ranged from 0.62 spaces/unit in Needham to 1.05 spaces/unit in Concord, and parking utilization ranged from 50% in Newton to 87% in Brookline. In every municipality and at every development, parking was oversupplied, with fewer than one-third of spaces being used in some cases. Those municipalities with the most parking per unit had the lowest utilization, meaning developers had to build hundreds of parking spaces that are not needed.

Overall, just 61% of the off-street parking spaces were utilized during peak hours — an even lower percentage than was observed during the first three phases of MAPC's Perfect Fit Parking research. The discrepancy between the average parking supply of 1.58 spaces/unit and the average parking demand of 1.00 spaces/unit further highlights that parking is overbuilt at the Phase 4 sites studied, to the detriment of providing more housing units (including more affordable units), improved transit access, and increased open space.

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1   The figures for individual municipalities in Table 1 are unweighted averages of local site-level data.

2   At one of the Needham sites, municipal staff were unable to count parked vehicles inside the garage. Parking utilization for this site was therefore calculated as surface vehicles observed divided by surface spaces. However, the parking demand calculation could not be similarly adjusted, and was therefore omitted from the municipal summary. Thus the parking demand of 0.62 spaces/unit for Needham reported in Table 1 is based only on the single site which had complete data. Parking utilization and parking supply statistics for Needham reflect survey data from both sites.

Analysis

To better understand the factors influencing parking demand across the Consortium municipalities, MAPC incorporated the results into the statistical model that was previously used in the Phase 1 and Phase 2 studies. This model is designed to predict parking demand per unit as a function of 25 building and neighborhood variables, which are summarized below in **Table 2**. MAPC ran the model in one configuration with just the Phase 4 data and in another configuration that included the Phase 4 data along with the broader regional dataset from the previous three phases. (The Phase 3 data were modeled for the first time ever as part of the latter configuration.)

Both model configurations produced results consistent with previous phases of MAPC's research. **Specifically, the same three variables explain most of the variation in parking demand: parking supply, transit access to jobs[3], and housing affordability.** Increased parking supply again was the dominant factor associated with increased parking demand, with each additional parking space per unit associated with an increase of 0.22 parked cars per household for the Phase 4 data alone.

Similarly, increased numbers of jobs accessible by transit and increased percentages of deed-restricted affordable units were again associated with reduced parking demand. The impact of transit-accessible jobs was very small, but statistically significant: every 100,000 additional jobs accessible by a 30-minute transit ride from the site was associated with a decrease in parking demand of 0.06 cars per household. The impact of affordable units was much larger: a one percent increase in the share of affordable units in the building was associated with a decrease in parking demand of 0.26 cars per household. This is likely a reflection of a correlation between vehicle ownership and income, but nonetheless remains a statistically significant finding of the analysis.

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3   While the study model did not include the presence of bus stops within a half-mile of the sites as a variable, the transit access variable included jobs accessible from the sites via all transit modes (bus, subway, rail).

Table 2. Evaluated Building and Neighborhood Characteristics

Building Features	Parking Features	Built Environment	Socioeconomic Context
• Percentage of units that are affordable • Year of construction • Average bedroom count • Average rent or purchase price • Number of units in building • Housing Tenure	• Presence of bicycle parking • Parking Cost • Ratio of parking cost to monthly rent cost per bedroom • Ratio of parking cost to monthly rent cost per unit • Percent of provided parking spaces that are garaged • Ratio of garage to surface parking spaces • Parking supply	• Number of jobs accessible by 30-minute transit trip • Neighborhood population density • Neighborhood employment density • Neighborhood population and employment density (cumulative) • Presence of MBTA commuter rail station within half-mile • Presence of MBTA rapid transit station within half-mile • WalkScore®	• Median annual income (Census tract) • Average household size for rental households (Census tract) • Average household size for ownership households • Share of households in U.S. Census tract that are renter-occupied • Share of households in U.S. Census tract with zero vehicle

Recommendations

While multifamily housing sites in suburban locations may have higher parking demand than sites in more transit-accessible locations in the Inner Core, MAPC's parking utilization research — now including the Phase 4 study — has consistently found that parking is oversupplied at these sites throughout Greater Boston. As such, the same policy prescriptions noted in earlier phases of Perfect Fit Parking research are applicable to the WestMetro HOME Consortium member municipalities as well.

These recommendations include the following:

Shifting from parking minimums to maximums	**Reducing parking ratios**	**Unbundling parking from housing costs**	**Exploring strategies for shared parking**

The results of MAPC's statistical modeling provide further insights into how municipalities might more specifically target their parking policies. Given that increased jobs accessible by transit and percentages of affordable units are associated with reduced parking demand, cities and towns can require less parking at transit-oriented sites and enable lower parking requirements in exchange for more affordable units.

Conclusion

The Perfect Fit Parking Phase 4 study marks another contribution to an increasingly robust regional dataset that highlights opportunities to right-size parking in line with affordable housing and transit goals. MAPC looks forward to continuing to work with the Consortium municipalities, as well as other cities and towns in Greater Boston, to implement data-driven local parking reforms that advance equity and access.