



Memorandum

To: Mr. Barney Heath
Director of Planning

Date: March 27, 2019

Project #: 12239.00

From: VHB, Inc.

Re: The Northland Newton Development
Right-Sized Parking

This memorandum presents an evaluation of the parking for the proposed mixed-use development project on Needham Street. It is an update of a memorandum dated October 12, 2018. This new memorandum reflects a revised building program.

One of the project design goals remains to reduce reliance on personal automobile use. Parking management is an effective tool in influencing travel behavior. Right-sizing the parking supply balances the parking needs of the project while minimizing not only the physical footprint of parking, but also the number of motor vehicle trips that excess parking can incentivize. The objective of this evaluation is to understand how to minimize the amount of parking while meeting the needs of the project residents, workers, customers, and visitors. The evaluation looks at opportunities for sharing parking among uses that have peak parking demand occurring at different times of day and days of the week.

Project Description

The project consists of reuse of the mill building at 156 Oak Street as office space and new construction of residential and commercial space. The expected or possible uses within the project consist of the following.

- 800 residential units
- 180,000 SF of office space
- 50,000 SF of retail space
- 40,000 SF of restaurant space
- 15,000 SF of flexible commercial space¹
- 10,000 SF of health club
- 4,000 SF of community space

Zoning Requirements

The parking-related Development Standards (Article 5) in Newton's zoning ordinance set forth the minimum number of parking stalls to be supplied for each type of building or land use. The Development Standards also acknowledge that lesser parking is needed when there are multiple uses. The Development Standards include the ability to reduce parking requirements in cases "of a combination, in a single integrated development, of 3 or more uses ...".

¹ This flexible commercial space could be used for medical, dental, or general office space. Because medical office space has a higher parking generation rate than general office space, the shared parking evaluation assumes all 15,000 SF is medical office space.

Table 1 shows the minimum parking requirements for each individual use and the number of parking spaces based on those individual requirements. The gross parking requirement, without consideration of shared parking or other parking management strategies, is 2,961 spaces.

Table 1 – Parking Requirements per Zoning – Standalone Uses

Use	Size	Parking Ratio per Zoning	No. of Spaces
Residential	800 units	2 spaces per unit	1,600
Retail	50,000 SF *	1 space per 300 SF, plus 1 per every 3 employees in largest shift	200
Restaurant	40,000 SF **	1 space per 3 patron seats, plus 1 per every 3 employees in largest shift	440
Medical Office	15,000 SF	5 spaces per 1,000 SF	75
Health Club	10,000 SF ***	1 space per 150 SF, plus 1 per every 3 employees in largest shift	71
Office	180,000 SF	4.0 spaces per 1,000 SF for first 20,000 SF, plus 3.0 per 1,000 SF for additional SF	560
Community	4,000 SF ****	1 space per 300 SF, plus 1 per every 3 employees in largest shift	<u>15</u>
			2,961

* Estimated 100 employees

** Estimated 1,200 seats and 120 employees

*** Estimated 12 employees

**** Estimated 3 employees

Proposed Parking Supply

The project’s proposed parking supply is approximately 1,550 parking spaces among four below-grade parking structures and including at least 100 on-street parking spaces. Most of the parking, more than 900 spaces, is centrally located in a single garage under Block 5 and Block 6. Of the other three garages, two have about 100 spaces and one has about 300 spaces.

Right-Sized Parking Needs

A mixed-use project such as the proposed development needs less parking than that calculated assuming standalone uses. The amount of parking should be reduced to account for several factors, including typical vacancies, the sharing of parking among different uses, and incentives to reduce commuting by personal automobile. It is important to account for these factors and “right-size” the site parking not only to minimize the land and building area used for parking, but also to prevent excess parking from encouraging unnecessary vehicle use.

Two key elements of the parking management strategy are providing only one parking space per dwelling unit and providing a large centralized parking area shared among a variety of users.

Residential Parking

Parking for residents of the project would average one parking space for each of the 800 dwelling units. This is consistent with the target metric of one car per household set in the *Newton 2040* transportation strategy² and reflects general trends towards lower automobile ownership as access expands for other transportation options such as bicycling, transit, and on-demand ride services. Also, Northland expects to charge separately for residential parking to create disincentives for car ownership.

Shared Parking

Sharing a common parking supply among all commercial properties allows the amount of parking to be reduced as, for example, restaurant and retail use peaks on evenings and weekends when office use is low.

The calculation of the project's shared parking demand follows the methods outlined by the Urban Land Institute (ULI), the National Parking Association (NPA), and the Institute of Transportation Engineers (ITE). The calculation involves several factors, the first of which is to determine whether all the parking supply can, in fact, be shared. In this case, the residential parking is likely to be reserved for residential tenants and thus not shared with employee and customer parkers.

The shared parking calculation then considers any atypical mode share by users resulting from transportation demand measures. In this case, the automobile mode share for office workers is assumed to be 60 percent, consistent with the analyses of the "robust shuttle service" scenario presented in the traffic analysis. To be conservative, the mode share adjustment is applied only to office workers and not to retail and restaurant workers.

The shared parking calculation also considers trips wholly internal to the project. For example, some of the retail and restaurant patrons are those who live or work on site and therefore the retail component of the project does not need to provide parking for them since their cars are already parked at the residence or office. For this calculation, an internal capture rate of 20 percent is used. That is, when parking space usage is at its peak, 20 percent of retail/restaurant patrons are those living or working on site. The 20 percent figure is consistent with that calculated for the traffic assessment. This adjustment applies to patrons only and not to employees. Also, it is applied only to weekday parking demand, to account for the lack of shared patronage by office workers on weekends.

The last element of the shared parking calculation is consideration of the temporal differences among various parkers. The ULI and ITE provide information about hourly, daily, and monthly parking demand patterns for each of the project uses. The temporal data differentiate between parking occupancy patterns of customers and visitors versus employees.

² *Newton 2040: A Transportation Strategy for Newton*

Table 2 shows the anticipated peak parking demand, weekday and weekend, for each month. **Table 3** shows the peak parking demand, by land use, for the peak month of December. Key findings are:

- Parking demand on weekdays is higher than on weekend days
- December, at 1,596 spaces, is the month with the highest peak parking demand.
- The peak parking demand for other months ranges from 1,507 spaces to 1,542 spaces.

Table 2 – Peak Parking Demand – Shared Parking, by Month

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Weekdays												
Residential	800	800	800	800	800	800	800	800	800	800	800	800
Commercial	707	708	733	719	729	728	715	725	723	738	742	796
Total	1,507	1,508	1,533	1,519	1,529	1,528	1,515	1,525	1,523	1,538	1,542	1,596
Weekends												
Residential	800	800	800	800	800	800	800	800	800	800	800	800
Commercial	531	534	569	554	568	567	567	568	575	554	576	647
Total	1,331	1,334	1,369	1,354	1,368	1,367	1,367	1,378	1,355	1,374	1,376	1,447

Table 3 – Peak Parking Demand – Shared Parking, December Weekday

Use	Size	Shared Parking Demand (weekday midday)
Residential (reserved*)	800 units	800
Retail	50,000 SF	149
Restaurant	40,000 SF	245
Medical Office	15,000 SF	51
Health Club	10,000 SF	38
Office	180,000 SF	298
Community	4,000 SF	<u>15</u>
		1,596

* Residential parking areas assumed to be used only by residents and their visitors, and not shared with commercial tenants/visitors/customers.

Findings and Recommendations

The project site plan is suitable for enabling parking demand management through shared parking in the central garage. The garage is a convenient location for employee and customer/visitor parking and is large enough to allow for an effective program of shared parking.

The analysis of shared parking potential for the project shows that parking demand will occur midday on a weekday in December. The calculated peak parking demand in December is 1,596 spaces. The peak parking demand for other months ranges from 1,507 to 1,542 spaces.

The proposed parking supply of 1,550 spaces is right-sized for the anticipated parking demand. Even with conservative parking assumptions about the use of the flex space (medical office) and the automobile mode share for retail and restaurant employees (100%), the proposed supply would be enough for all but the busiest month of the year.

Rather than building more parking to accommodate the potential highest parking days of the year, it is recommended that the project retain the option of implementing a seasonal shared-parking policy for some of the residential parkers. As currently planned, there would be a designated residential parking area on the lower level of the central garage and only residents would park in that section of the garage. It is recommended that should it ever become necessary, some of the designated residential parking supply be temporarily shared by employees, customers, and residents. That way parking spaces vacated by residents during the day could be used to accommodate the peak midday parking demand of employees and customers. Based on the anticipated peak seasonal demand, fewer than 200 of the resident parking spaces in the central garage would need to be temporarily shared. An example of how these shared spaces might be temporarily configured as part of a parking management plan is shown as **Exhibit A**. Allowing for the possibility of seasonal sharing of some residential parking should be incorporated into parking permit agreements with residents.

Overall, we find that the proposed parking supply is appropriate to meet the project's objective of providing for the parking needs of the residents, workers, customers, and visitors without excess parking that encourages more vehicle use.

EXHIBIT A

Seasonal Parking Management Example

The parking garage under Building 5 and Building 6 has two levels. The upper level would be for use by retail/restaurant/office employees and customers. The lower level would normally be for residential parking. This example shows how approximately 200 spaces of the lower level might be used for shared parking among all users.

