

Needham Heights MBTA lot

Amendment to Needham Senior Center Site Feasibility Study

Needham, Massachusetts

BH+A Project No. 2961.00
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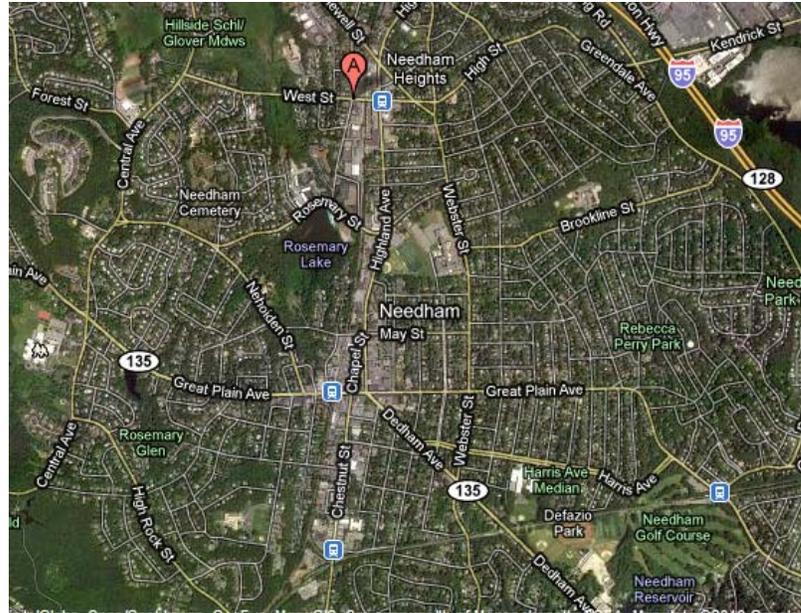
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Introduction and Summary

This amendment to the Senior Center site feasibility study is an abbreviated study of the Needham Heights MBTA parking lot located at West Street and Hillside Avenue just west of Heights Common. The study consists of testing the site for how it can accommodate the senior center, its parking as well as satisfy MBTA parking needs. The Site Data Matrix allows for comparison of all base data for this site with the other four sites that were studied.



The site is indicated by the red dot "A" in the map above. The site is a one minute drive from the Library and a three to four minute drive from Town Hall. The site is currently almost entirely paved and has a slight slope across it in the east to west direction. In the north to south direction, it is relatively flat.

The abutting properties to the site are varied and include a commercial property at the northern end of the lot (which is part of the Hillside Business District zoning district), Needham Heights Common (or Avery Square Common) to the east, residential properties across Hillside Avenue and a vacant commercial building with an attached ambulance garage across West Street from the site. The ambulance garage is located sufficiently far back from the street and has excellent visibility in both directions as it exits onto West Street. It will not pose a traffic issue relative to the senior center access or egress which is thought to stay off of Hillside Avenue as currently configured.



Parking lot seen from West Street



Looking across Heights Commons to site



Residential properties across Hillside Avenue



Ambulance garage across West Street

As seen in the photos above, Heights Common and the MBTA train tracks define the eastern edge of the site. The relationship of the Commons and the senior center building can be interesting and they should be seen as compatible and complementary elements to the town. How the senior center relates to the commons is an option to consider should this option make it to the next phase of design. While the train tracks cut off the senior center site and the MBTA parking lot from direct access to the train station and commons the sketch shows that a passage can be provided to enable access alongside the building.

The neighborhood context beyond the immediate abutters includes retail properties that front on Highland Avenue.



Commercial properties on Highland Avenue to the south and north of the West Street intersection

Summary

A 20,000 sf senior center is dimensionally accommodated on this site "as of right". No zoning change is required for a workable site plan mostly due to the large land area of the site, 73,009 sf. MBTA parking needs restrict the usable site area and thus require that the building be two stories tall.

The floor Area Ratio (FAR) for this site allows a 51,106 square foot (sf) building
The allowable lot coverage is 32,854 sf.

Both of these dimensional factors from the zoning by-laws allow for expansion. For example, if funds are available, a basement could be added for storage and the building would remain in compliance. (Restrictions on height and number of floors does not easily allow for attic storage.) The lot coverage also allows considerable expansion. If at some future time the MBTA's parking needs are reduced, an addition is allowable.

Parking for 100 cars for the senior center can be provided through a combination of 85 spaces on site, 5 new dedicated spaces on Hillside Avenue and 10 newly created spaces at a near-by lot. As with all the sites, the quantity of parking will ultimately have to be resolved with the planning board during site plan review. Neither the zoning by-laws nor the referenced ITE Parking Generation Manual provide guidance for the number of spaces required.

Parking for 100 MBTA commuter vehicles can be accommodated with 85 spaces on the site and an additional 15 spaces at Avery Square, in front of the train platform.

This study contains only one diagram to show that the project is feasible. This layout provides the most parking on site and locates the Senior Center along West Street. This seems to be a logical location relative to the site and its context. The orientation, facing south with an east/west long axis, is an optimal one for both summer and winter months in this climate. The ultimate site and building configuration will result from the final design process should this site be selected by the Town.



Existing lot has 229 spaces but does not comply with landscape requirements of Needham zoning by-laws.

The referenced remote lot is a Town owned lot off of Mark Lee Road (see map below). This lot could be re-stripped to accommodate ten additional cars from what it currently houses. It is envisioned that these spaces could be dedicated for senior center staff parking to leave as many spaces as possible on the building site for patrons.



15 spaces for MBTA are available at Avery Square.

10 Spaces for Senior Center staff are available through re-stripping of Mark Lee Road lot.

The study diagram assumes that access and egress to the parking lot will be off of Hillside Avenue at the two existing curb cuts that provide access to the lot today. Hillside will provide safer access to the site than access or egress from West Street. If desired, the curb cut closest to West Street could be limited to access only so that exiting cars are further removed from the corner of West and Hillside, allowing greater reaction time. This again is an issue for final design but one that demonstrates some of the inherent flexibility that this site has to offer.

Unique Issues

Proximity to the train will require accommodations. Noise and vibrations may be issues although, with this being the end of the line, it is unlikely that trains will be moving along the site at a high enough speed to cause vibration. (It does not appear that significant rail traffic goes north beyond the site although the tracks do extend to the north).

The idling train at the station could be a distraction that will require study during final design relative to window location and specification of acoustical properties for windows. Locations for mechanical equipment intakes will also have to be considered relative to the tracks.



Train tracks converge from two to one set at the Station, the end of the MBTA's Needham Line



The site has good access towards downtown via Hillside Avenue to Rosemary St. or Highland Ave.

When the train arrives or departs, traffic coming to or leaving the senior center may have to wait at the road crossing. Fortunately, an alternative route to downtown (or to the northern areas of Needham) is possible using Hillside Avenue. Hillside connects with Rosemary Street 5 blocks south of this potential site.

The following arrival and departure times fall within typical hours of operation for the senior center. They are offered herein for consideration of their impact on senior center traffic or access. The commuter rail extends south through Needham and impacts other intersections seemingly without major negative impact. Given the short length of the commuter trains, these crossings do not close off the street for significant durations.

Inbound arrival time	Outbound departure time
9:21 AM	9:35 AM
10:38 AM	10:55 AM
12:38 PM	12:55 PM
2:43 PM	3:05 PM
3:38 PM	3:50 PM
4:40 PM	5:00 PM

Cost

The estimated project cost range of the senior center at this site would be similar to that at Greene's Field Option 4: between \$8.0M to \$8.5M. (Option 4 was at the north end of the field with surface parking that also required some off-site improvement for surface parking on Pickering Street. The MBTA parking plan includes similar on and off-site improvements at Hillside Avenue making it comparable to option 4.)

Implementation Obstacles

Implementation of this option is dependent upon resolution of commuter rail parking with the MBTA. There are no site considerations or permitting issues that would appear to delay implementation.

Issues and Options to Consider

1. Where does the MBTA commuter rail parking go and how much is available. If all 100 MBTA spaces could be located elsewhere, the options for this site are expanded. If MBTA spaces need to be located on this site the options become more limited.
2. A one story versus two story options; site planning options affect the number of MBTA spaces that need to be replaced at an alternative location.
3. No information was available regarding hazardous materials given the short time frame for the study. This should be pursued. No funds were allotted in the total project cost estimate for Phase I environmental studies or hazmat abatement.
4. MBTA access requirements for equipment along the eastern property line should be verified. (MBTA has not informed the Town that access is required.) The lot includes a zone where cars are not parked and where a line is painted on the paving near the signals and the equipment shed (see photo below).

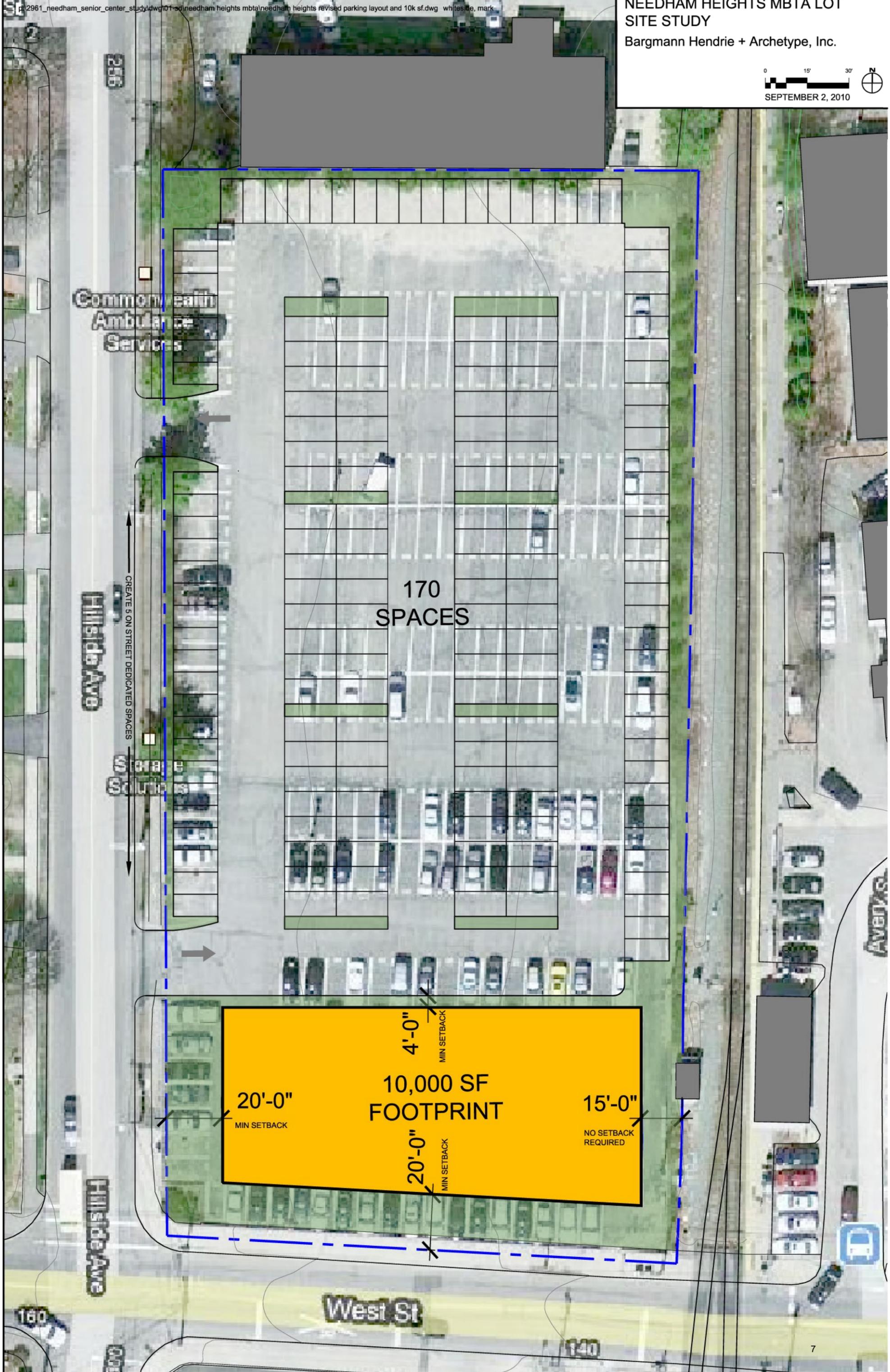


Existing Conditions



NEEDHAM HEIGHTS MBTA LOT SITE STUDY

Bargmann Hendrie + Archetype, Inc.



CREATE 5 ON STREET DEDICATED SPACES

Site Data Matrix

	Data Category	Needham Heights MBTA lot
0	Zoning & Dimensional Data	
	District	Hillside Business (HAB)
	flood plain district	no
	aquifer protection district	no
	allowed use (3.2.2)	Yes for municipal structure
	Dimensional Restrictions	
	front yard setback (4.4.4)	20 ft The site has two front yards, that facing West Street and that facing Hillside Avenue.
	rear yard setback (4.4.8.4)	There is no rear yard setback requirement for this site. (50 ft is required if the site abuts a residential district. Rear yard for this site is in business district thus, there is no requirement.)
	side yard setback (4.4.8.4)	There is no side yard setback requirement. The side yard for this property is the side that abuts the tracks (Same condition as for rear yard setback noted above.)
	site area	73,009 sf ¹ This measurement is for the entire site.
	FAR limitations (4.4.2 (e)(2))	0.7
	allowable buildable area	51,106 sf
	existing area	There is currently no building on site.
	buildable area for <u>new</u> senior center	51,106 sf
	allowable lot coverage (4.4.2)	45% max (for 2-story) Note that clarification is required between table 4.4.2(a) and note (e) which appears to state that there is <u>no limitation</u> on lot coverage for HAB. Due to the large size of this lot, the propose building complies with the more restrictive requirement.
	maximum allowable lot coverage (4.4.2(a))	32,854 sf
	existing building lot coverage	Not applicable.
	footprint available for expansion to existing	Footprint of 2-story senior center is 10,000 sf leaving 22,854 sf of additional "footprint" available for expansion.

¹ Site area of 73,009 sf is measured from Town GIS map;

	max stories (4.4.3)	2 1/2 stories (including any enclosed parking)
	max building height (4.4.3)	35 ft
	Other Requirements	
	other buildings allowed on site	No
	other buildings on site	no (complies)
	Building Entrance (4.4.9)	Building entrance providing access to first and second floor space shall be available from one or more streets on which the building fronts. (By-laws state that primary entry for site must be from Hillside Avenue and does not list West Street as an option.)
	Parking Requirements	
	handicapped parking required	5 spaces will meet the needs of the combined lots (MAAB) Additional spaces may be desired by senior center
	size of spaces	9 ft x 18.5 ft 8 ft x 16 ft compact 50% of spaces can be compact spaces
	parking set back requirements	10 ft front yard 4 ft rear & side yards
	parking green space requirements	Planted 10% landscaped area 25% landscaped area within interior of parking area 1 tree per 10 parking spaces 40 sf per tree
	Bicycle Rack	1 bicycle space per 20 parking spaces (5 req'd for senior center)
	off street loading requirement	1 Required
1	Natural Site Conditions	
	Available Soil Report	No
	Soil Conditions	no premium anticipated
	Water Table	not known, no issue anticipated
	Topography	0 to 3% slope
	Vegetation	None
	Orientation, N-S-E-W	Building orients along east/west axis. This orientation is optimal for reducing solar heat gain in the summer and allowing it (if desired) in the winter.
2	Environmental Issues: Conservation	
	Flood Considerations	No
	Wetlands	No
	River or "Water Body" Setbacks	No

	Vernal Pools	No
3	Environmental HAZMAT	
	Sub-Surface Soil Contamination	not known
	Building Asbestos	Not applicable
	Building Lead Paint	Not applicable
	Exterior Caulking or Window Putty Containing Asbestos	Not applicable
	Others	None
4	Permitting	
	Town Meeting Vote for Zoning Change	Not required. Site is in compliance with setback and other dimensional requirements. (Parking requirements will be reviewed with Planning Board as is true for all schemes, as senior center parking requirement are not covered in by-laws or in referenced ITE manual.
	Environmental Impact Statement	not required
	Planning Board Required	Yes, site plan submission is required as with all sites
	Conservation Commission Required	No
	Permitting Surcharge to design fees	No
5	Site Access	
	Major street access is from	Hillside Avenue and West Street
	Vehicular to Parking	Vehicular access within the parking lot to parking spaces is organized and clear.
	Entry and Exit from Site	Site access from Hillside Avenue is good and existing curb cuts can be reused if desired. Vehicular access from West Street is less desirable due to heavier traffic and proximity to railroad crossing. There are no existing curb cuts on West Street.
	Off-Street Loading & Service provision	Good
	Construction Vehicle Access	Good
	Contractor Parking	Fair (some parking may be available on site after lay down areas are established)
	Pedestrian Access	Yes, good
	Bicycle Access	Yes, good
	Bus/Van Drop Off	Yes, could be best accommodated from parking lot side although drop-off on West Street could be considered.

	Public Transportation	Yes MBTA commuter rail Bus 59 on Highland Avenue
	Auxiliary transportation required	No
6 Emergency Vehicle Access		
	Police Department response time	3 minutes
	Police Department patrol	Yes
	Fire Department response time	3 minutes
	Fire Department Access requirements	Access is good. Access is facilitated by corner lot allowing FD apparatus to access the building on two sides from the street.
7 Parking		
	projected <u>total</u> parking need at site	90 to 100 spaces are projected for the senior center 100 parking spaces are required by MBTA for commuters.
	<u>existing</u> parking available at site	229 spaces exist within lot using the full site. MBTA is exempt from zoning; lot does not comply by-laws. 15 MBTA spaces located at commuter drop-off in Avery Square
	new on-grade parking available & feasible	With a 10,000 sf footprint (20,000 sf building) between 160 & 170 spaces can be located on the site in compliance or close compliance with the zoning by-laws.
	<u>number</u> of off street parking provided	85 MBTA and 85 Senior Center Spaces are located on site. 15 Additional MBTA spaces at Avery Square <u>satisfy the 100 total space requirement of the MBTA.</u> 10 additional senior center spaces can be created in lot at Mark Lee Road (used for staff parking) and approximately 5 new on street spaces could be provided on at Hillside Avenue for senior center resulting in 100 spaces total.
	Structured Parking Required	No
	handicapped parking provided	5 for senior center
	Parking expansion capability	No, parking fully utilizes site. Structured parking would be the only alternative.
	Shared uses, Alternate parking sources	There is extensive on-street parking in this district. MBTA parking spaces are available evenings and weekends.

8 Utility Connections		
	Storm Drainage	Yes
	Gas	at site
	Water	at site
	Sewer	at site
	Electric, Telephone, Data & Cable	at site
9 Capacity for Expansion		
	area available for expansion	By-law provisions for lot coverage and FAR allow a larger footprint and additional area. However, any expansion would depend on reduction of MBTA parking requirements unless a structured parking alternative was considered.
	quantify area	FAR for this site allows 31,166 square feet more area than the 20,000 sf contemplated by the program. Lot coverage provisions allow for a 22,854 sf larger footprint on the site than the currently contemplated 10,000 sf.
	impact of expansion on traffic	Not likely significant
	impact of expansion on parking	Additional SC area would require additional parking and additional space is not available without mitigation of MBTA need or alternatively, use of structured parking.
	impact on system requirements	There is no impediment to increasing the service size of building systems if an addition were to be constructed.
10 Abutting Properties		
	Impact on Abutters	Not significant, given current use of the commuter parking lot.
11 Adjacencies/Neighbors		
	Neighborhood Context	Mixed Use: residential and commercial
	List Adjacent Uses	Residential (west & south) Commercial (north) park (east) Hillside Avenue is Commercial on north side of road and residential on south side. Commercial properties are to north on West Street and residential properties are to south.
	Conflicting Adjacent Uses	Not apparent
	Negative impact on Landscape	No negative impact Construction of a building on this site would <u>improve</u> the landscaped condition perhaps significantly, pending final design. The parking lot currently does not comply with the Town's zoning by-laws for landscaping. A new use would require modification of the lot including by-law compliance which would further enhance the landscape condition.
	Adjacent Proposed Construction	no

12	Impact on Existing Use	
	Impact of SC on existing use	<p>Development of this site benefits the area aesthetically.</p> <p>Use results in a net reduction of parking spaces off of Hillside Avenue.</p> <p>The senior center could be a benefit for commercial uses.</p>
13	Impact on Existing Buildings	
		neutral
14	Possibility for Shared Use	
		yes
15	Location	
	Proximity to Town Center / Downtown	<p>1 mile to Town Center</p> <p>Heights Common is a secondary shopping and dining area with significant commercial activity.</p> <p>Two routes from the site to the center of Town are possible; Highland Avenue or Hillside Avenue (Hillside connects to Rosemary Street near the Library). This could be beneficial when commuter train is crossing West Street.</p>
	Proximity to outdoor rec spaces	0.3 miles/10 minutes walk to Hillside School/Glover Meadows, 0.3 mile/10 minutes walk to Rosemary Lake
	Unique characteristics of location	Heights Commons/Avery Square
	Travel distances	<p>1 mile: 20 minute walk, 4 minute drive to Town Hall</p> <p>1 minute drive, 10 minute walk to Library</p> <p>Walking distance to commercial amenities on Highland Avenue.</p>
16	View Corridors	
	impact on view corridors	None; SC shields view of parking lot from West Street and can improve the general streetscape.
17	Constructability	
	construction staging	sufficient area available on site
	construction vehicle access	acceptable
	disruption of adjacent uses	minimal
	note observed construction cost surcharge	none
18	Single Level or Multi Level	
		<p>A single story building is feasible on the site pending resolution of MBTA parking.</p> <p>A two story building is more likely given use of the parking lot.</p>

19 Other Outdoor Activities		
		Minor on site amenities pending resolution of MBTA parking
20 Intergenerational Activities		
	Teen Volunteers	The site is close to Needham High School to enable volunteer or mentoring programs if desired. (Site is also proximate to Hillside Elementary School.)
	Rec Department	No advantage or disadvantage of this site re: recreation
21 Operational Considerations		
		No operational advantages or disadvantages of site
22 Sustainability		
	Reduction in automobile use	Potentially; bus stop and train stop near site
	feasibility of solar	Yes, ideal solar orientation and lack of obstruction
	feasibility of wind	No
	rainwater reuse	Yes
	geothermal	Yes
	Significant Stormwater Impact	No
	Adaptive reuse	no; new building
	LEED certification feasible	Yes
23 Railroad		
	Impact of Railroad	Design will have to consider impact of noise and possible vibrations from adjacent railroad tracks. (End of the line location of this station mitigates these impacts.)

Appendix A

Excerpt from Needham Zoning Map (dated March 25, 2002) shows the Needham Heights site in the Highland Avenue Business district with residential district to the west and the Avery Square Business district to the east.

