

HMFH Architects, Inc.

**Brookline School Population &
Capacity Exploration**

Concept Study Report

Brookline, MA

August 2013



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Acknowledgements

TOWN OF BROOKLINE

Mel Kleckner	Town Administrator
Sean Cronin	Deputy Town Administrator
Daniel Bennett	Building Commissioner
Michael Shepard	Former Building Commissioner (retired)
Ray Masak	Building Department
Janet Fierman	Building Commission
David Pollak	Building Commission
Nancy Daly	Board of Selectmen
Betsy DeWitt	Board of Selectmen
Jeff Levine	Director of Planning and Community Development
Sergio Modigliani	Planning Board
Harry Bohrs	Advisory Committee
Carla Benka	Advisory Committee

B-SPACE COMMITTEE MEMBERS

Katherine Craven	Baker School Parent, Former Exec. Dir. of the MSBA
Philip Kramer	Pierce School Parent, Architect
Fred Wang	Community Member, Harvard Medical
Lisa Crosley	Community Member, Brigham Scientist
Neil Wishinsky	Advisory Committee
Mike Sandman	Advisory Committee
Mel Kleckner	Board of Selectmen, non-voting
Betsy DeWitt	Board of Selectmen
Ken Goldstein	Board of Selectmen
Bill Lupini	Superintendent, non-voting
Alan Morse	School Committee
Rebecca Stone	School Committee
George Cole	Building Commission

BROOKLINE PUBLIC SCHOOLS

Bill Lupini	Superintendent
Peter Rowe	Deputy Superintendent for Administration and Finance



Section 1- Introduction



School Districts with Buffer Zones Effective July 1, 2012

Voted by the School Committee on March 15, 2012

Buffer Zone Proposals

- 1 - Baker-Heath Buffer: Expand toward Baker so that the buffer ends at LaGrange St
 - 2 - NEW Runkle-Heath Buffer
 - 3 - Driscoll-Runkle Buffer: Expand into Driscoll core and west to connect with existing buffer
 - 4 - Driscoll-Devotion Buffer: Expand to include west side of Winchester St, Atherton Rd, and some of Summit Ave
 - 5 - NEW Devotion-Pierce-Driscoll Buffer: Devotion-Lawrence tail plus south of Beacon St, north of Marion St, and west of Park St
 - 6 - Devotion-Lawrence Buffer: Extend northeast to Town boundary
 - 7 - Pierce-Lawrence Buffer: Expand west to Harvard St, south to Alton Pl, keeping south of Alton Pl along St Paul St
 - 8 - Pierce-Lawrence Buffer: Expand section south of Aspinwall Ave to centerline of Perry St
 - 9 - Pierce-Lincoln Buffer: Existing Pierce-Lincoln buffer is expanded to Cumberland Ave, Irving St and along Boylston St to Walnut Path
 - 10 - NEW Lincoln-Pierce-Runkle Buffer: Combines existing Lincoln-Runkle buffer with all of Cypress Lofts
 - 11 - NEW Lincoln-Pierce Buffer
 - 12 - Baker-Heath-Lincoln-Runkle Buffer: Include Goddard Cir in existing surrounding buffer zone
 - 13 - Heath-Lincoln Buffer: Amend to include all properties within existing boundaries, and extend southwest to Sargent Cswy
 - 14 - NEW Pierce-Driscoll Buffer: Griggs Ter, Griggs Rd, and 519-549 Washington St
 - 15 - NEW Runkle-Lincoln Buffer: Area bounded by Sumner Rd, Buckminster Rd, Catlin Rd, and Boylston St
- Existing Buffer Zones
 School Districts

* None of the existing Buffer Zones would be removed. This includes any existing Buffer Zones which are not colored on the map due to their size

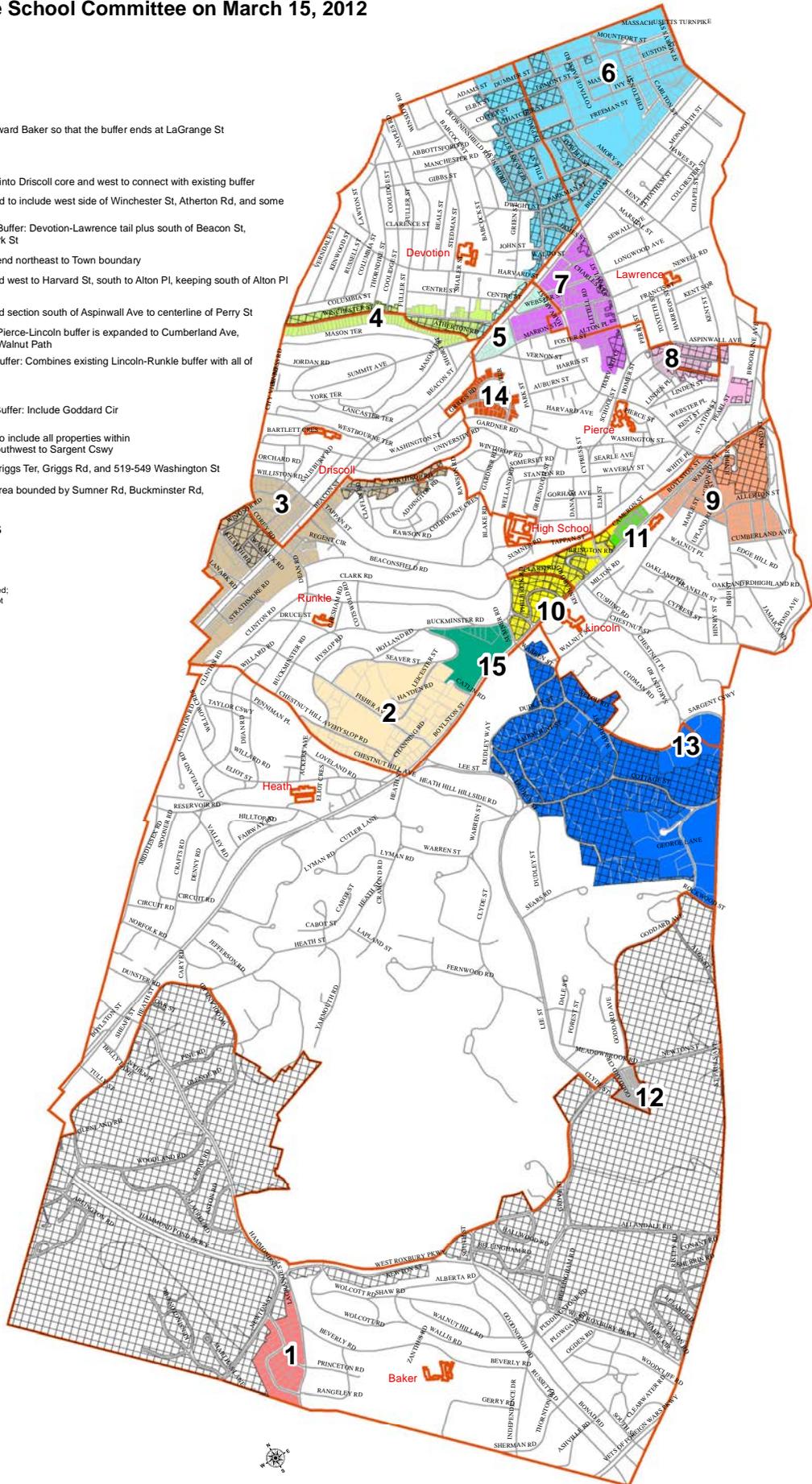
Locus Map



Disclaimer

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Map printed by Brookline GIS on 5/21/2012



0 1,000 2,000 3,000 Feet

1:20,000



HMFH Architects was contracted to assist the Brookline School Population & Capacity Exploration, B-Space Committee, with investigations into opportunities for growth at the existing town schools and some additional sites. The opportunities for growth to be examined were expansions at the existing K-8 Schools, expansion into a new K-8 School, and expansion of a new middle-high school.

Opportunities at the existing K-8 Schools evaluated both modular additions and renovation-additions at the schools. The Baker, Driscoll, Heath, Lawrence, Lincoln and Pierce Schools were reviewed as part of this study; excluding the Runkle School due to its recently completed renovation-addition, and the Devotion School due to its pending project with the MSBA.

New construction opportunities were evaluated for a new K-8 School or a new 7th-12th grade middle-high school at various sites throughout town. The feasibility of the locations discussed in this report will assist in evaluating their constructability and school district implications.

Brookline Current K-8 & Expected Growth Summary

Brookline Public School Sites	Student Population	Sections / Grade	Current Bldg. sf	Site Acreage	Bldg. sf / Student
K-8 - Current					
Baker School	721	4 / 5	99,955	11.5	139
Devotion School	821	4 / 5 / 6	162,000	6.6	197
Driscoll School	547	3	90,292	3.9	165
Heath School	517	3	80,952	6.6	157
Lawrence School	644	3 / 4	95,000	1.9	148
Lincoln School	560	3 / 4	87,500	4.3	156
Pierce School	734	3 / 4 / 5	95,000	3.2	129
Runkle School	521	3	104,800	3.0	201

Total Population:	5065
Anticipated Enrollment Max: (based on 630/grade K-8)	5670
Additional Seats Needed:	605
Additional Classrooms Needed: (based on 22 & 25 stud./class)	26



Current Population

The current total population of the K-8 student body in Brookline is 5065 students, averaging 562 students per grade. Forecasted enrollment growths from Brookline Public Schools anticipate a possible growth to 630 students per grade, totaling 5670 students. This expansion creates a shortage of 605 seats, with the assumption that all current schools are not currently overcrowded. For the purpose of this study we are dividing up the additional population of 605 students, and distributing those seats between various configurations of schools in town.

When a more in-depth renovation-addition to an existing school is part of that solution, the existing population of the school is added to the additional students to determine the required number of spaces for the school re-design. The resultant proposed additions in the 3 School + High School solution, school plans, resolve any current overcrowding that the school may be experiencing today. This is not the case when only classrooms are added to schools in the 4 School + High School solutions.

Brookline Public Schools maximum classroom populations are 22 students per classroom in the K-3 grade levels, and 25 students per classroom in the 4-8 grade levels. Through this calculation, 26 additional classrooms would be needed throughout the town to accommodate the additional 605 student enrollment growth.

Solutions

The anticipated student enrollment growth in Brookline will not only be within the K-8 population, but also at the 9-12 grade levels. The High School population is anticipating growth from the current 1800 students to 2500 students by the year 2022. Therefore the solutions proposed as a part of this study all include the necessary components to handle growth from K-12.

In most solutions, this means work done at the K-8 grade levels will need to be partnered with a renovation-addition to the existing high school to expand its capacity to 2500 students. The only option which does not require this work is the New Second High School option. This option requires restructuring the grade transitions to K-6 elementary schools, and two 7-12 middle-high schools.



Section 2 - 4+HS Expansion



Feasibility of modular expansion at K-8 locations

Brookline Public School Sites	CR's add @ 6 schools	CR's add @ 4 schools	CR's add @ 3 schools	Will Site Accommodate Modular CR's?	Does expansion here help the district?
K-8 - Current				Y/N	Y/N
Baker School	4	7	-	Y	N
Devotion School	-	-	-		
Driscoll School	5	7	9	Y	Y
Heath School	5	6	9	Y	Y
Lawrence School	4	6	8	Y	Y
Lincoln School	4	-	-	N	Y
Pierce School	4	-	-	N	Y
Runkle School	-	-	-		
Total Possible CR's Added:	26	26	26		

	School location is not within the northern most part of town where expansion is most needed
	School site and configuration prohibit the installation of modulars on the property
	School site will accommodate installation of modular CR's and is located in northern part of town
	School site not evaluated per this study due to previous or pending work for the site

A preliminary hope of the B-Space committee was to provide for growth throughout the town, without a need for re-districting the school zones. This goal resulted in the development of a concept where modular classrooms could be added to all the K-8 schools in Brookline to accommodate the additional enrollment growth.

Of the eight K-8 schools in Brookline, the Runkle School and the Devotion School were initially taken out of consideration for additional modulars, as the Runkle School recently completed an expansion project, and the Devotion School is scheduled for future construction. In an evaluation of the site constraints of the six remaining elementary schools, both the Pierce School and the Lincoln School were determined to lack sufficient additional site space to allow for modular classrooms to be added onto the existing structures.

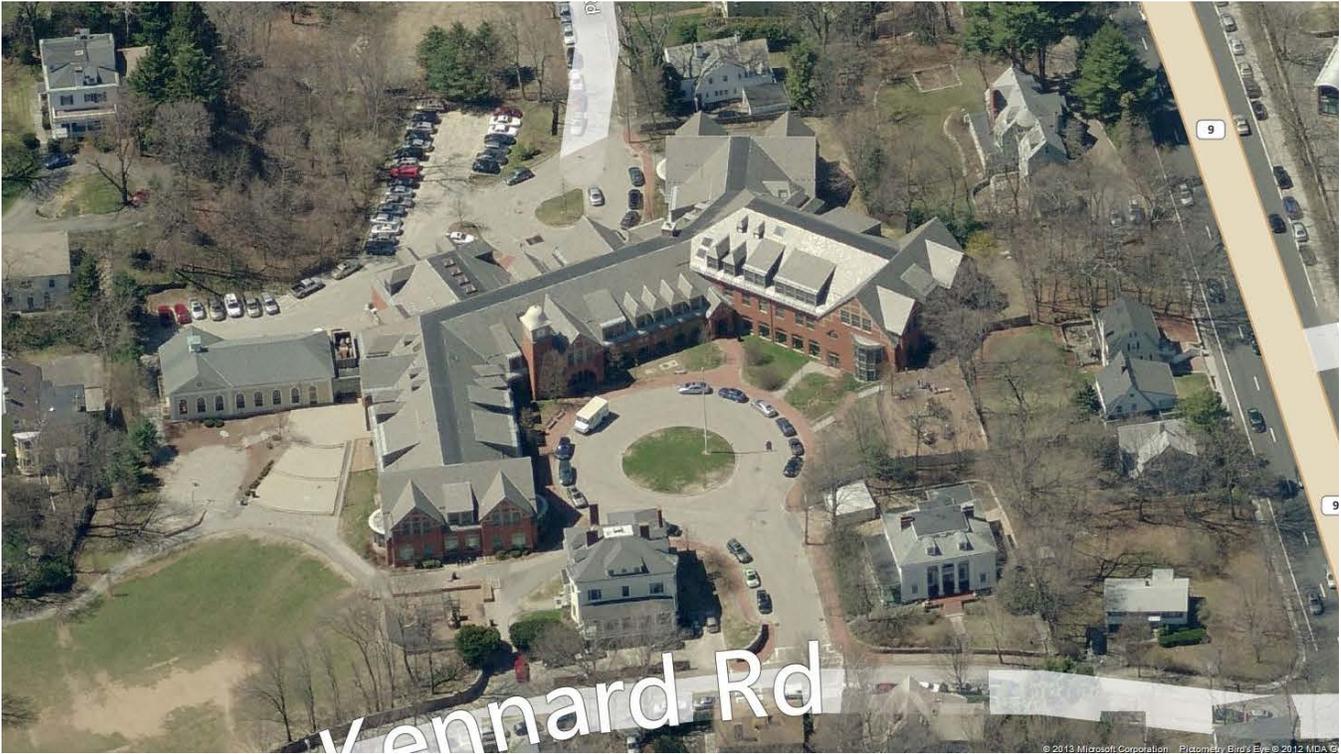


Image courtesy of Bing maps

Aerial of the Lincoln School site



Image courtesy of Bing maps

Aerial of the Pierce School site



The Peirce School site is situated in a dense area of downtown Brookline near the Brookline Town Hall and Library. The building footprint covers the majority of the open area of the site, with little space left between the building edges and property extents. The site is therefore lacking any open space which would allow for the infill of classroom modulares.

The Lincoln School site, while more open than the Peirce School site, is also lacking in any appropriate open space which could be utilized for a classroom modular addition. The only classroom wing which ends far enough away from the property edge is the south east wing closest to the Brookline Music School. While there is footprint available for an expansion of some classrooms, it is not advisable for multiple reasons.

The expansion would come within very close proximity to the Music School's historic building, blocking off daylight to the southern façade of the Music School. Due to the nature of the roofline of the building, an attachment of a two story modular expansion would require some significant reworking of the current building's roofline to ensure proper drainage from the building. The expansion would also require the relocation of a significant play structure currently located between the Lincoln School and Music School.

While there is an adjacent open space contained within the extents of the Lincoln School property, it is at a significantly lower elevation than the school. Any modulares located in the field would not have a direct connection to the main building and would result in very remote and isolated classrooms which would not seem to fit within Brookline's teaching methodologies.



Solution

The resultant 4 School + High School solution involves Modular Classrooms installed at the Baker, Driscoll, Heath and Lawrence School; combined with an addition-renovation at the High School. The number of modulares needed at each location varies between 6 or 7, and could be adjusted depending on what school zone had more need, to total the 26 classrooms necessary.

Additional modular classrooms would add seats, but not alleviate the overcrowding happening within the school buildings. By only adding additional classroom spaces to existing schools, the communal spaces within these buildings will automatically become overcrowded, in addition to any overcrowding currently happening in any of the schools. This can result in more lunch periods and less availability of gym, art, music and science rooms which are shared by the total student body.

Schedule

In order to most efficiently provide new space for the growing K-8 grade population in Brookline, the construction of the 4 School + High School solution would want to begin as soon as possible and be as condensed of a project schedule as possible. This could result in as many as six projects-four classroom modular installations, the Devotion School MSBA project and the High School renovation-addition project-commencing in simultaneous construction schedules.

While the High School project and one or two of the modular projects could be scheduled after a first round of modular installations, Brookline's need to begin construction is imminent as overcrowding is already taking place within the schools.



Section 3 - 3+HS Expansion



Current and Expanded Population Summaries

Brookline Public School Sites	Current Student Population	Current Sections / Grade	Current Number of K-8 CR's	Expanded Student Population	Expanded Sections / Grade	Expanded Number of K-8 CR's
3 School Expansion at K-8				+ 200 Stud.		
Driscoll School	547	3	26	747	3 / 4	33
Heath School	517	3	23	717	3 / 4	31
Lawrence School	644	3 / 4	31	844	4 / 5	36

Solution

In an effort to help reduce overcrowding in Brookline schools, three school buildings were identified and evaluated for addition-renovation projects intended to provide all necessary communal and classroom spaces as defined by the MSBA guidelines. Of the Baker, Driscoll, Heath and Lawrence Schools identified for the 4 School + High School solution, the Baker School is the southernmost location and furthest away from the majority of the school aged population expansion. Therefore the Driscoll, Heath and Lawrence Schools were examined for possible expansion.

The 3 School + High School solution renovation-addition plans provided within this report reflect expansions to Driscoll, Heath and Lawrence schools which provide adequate communal spaces-cafeteria, library, gymnasium, science, art music and support spaces-based on the MSBA's guidelines. In each of these proposed schemes, the additional 200 students, has been added to the current population of each school, in order to determine the required number and sizes of spaces within the school.

Funding & Schedule

In order to most efficiently provide new space for the growing K-8 grade population in Brookline, the construction of the 3 School + High School solution would want to begin as soon as possible and be as condensed of a project schedule as possible. This could result in as many as five projects-Driscoll, Heath, Lawrence, the Devotion School MSBA project and the High School renovation-addition project-commencing in simultaneous construction schedules.

The feasibility of this scenario would be dependent on funding and staffing to manage the projects. A method which some municipalities employ to help expedite multiple projects while still receiving MSBA funding is to contract project "A" as an MSBA project, while subsequent project "B" is solely town funded, and project "C" then becomes another MSBA project.

Key MSBA Space Summary Guidelines

Driscoll School Alt.		Existing Conditions	
ROOM TYPE	ROOM NFA ¹	# OF RMS	area totals
CORE ACADEMIC SPACES		27	
<i>(List classrooms of different sizes separately)</i>			
Pre-Kindergarten w/ toilet		3	
Kindergarten w/ toilet			
General Classrooms - Grades 1-5		26*	
General Classrooms - Grades 6-8			
Science Classroom / Lab		1	
Prep room			
SPECIAL EDUCATION			
<i>(List rooms of different sizes separately)</i>			
Self-Contained SPED - Grades 6-8			
Self-Contained SPED - Grades 1-5			
Self-Contained SPED - Grades 1-5 toilet			
Self-Contained SPED - Grades 6-8 toilet			
Resource Room - Grades 6-8			
Resource Room - Grades 1-5			
Small Group Room / Reading			
ART & MUSIC			
Art Classroom - Grades 1-5		1	
Art Classroom - Grades 6-8		1	
Art Workroom w/ Storage & kiln			
Band / Chorus - 100 seats			
Music Classroom / Large Group - 25-50 seats			
Music Practice / Ensemble - Grades 1-5			
Music Practice / Ensemble - Grades 6-8			
VOCATIONS & TECHNOLOGY			
Tech Ctrm. - (E.G. Drafting, Business)			
Tech Shop - (E.G. Consumer, Wood)			
HEALTH & PHYSICAL EDUCATION			
Gymnasium			
Gym Storeroom			
Health Instructor's Office w/ Shower & Toilet			
Locker Rooms - Boys / Girls w/ Toilets			
MEDIA CENTER			
Media Center/Reading Room			4000
DINING & FOOD SERVICE			
Cafeteria / Dining			2600
Kitchen			
Chair / Table / Equipment Storage			
Staff Lunch Room			
Stage			
MEDICAL			
ADMINISTRATION & GUIDANCE			
CUSTODIAL & MAINTENANCE			
OTHER			
Other (specify)			
Total Building Net Floor Area (NFA)			0
Proposed Student Capacity / Enrollment			
Total Building Gross Floor Area (GFA) ²			
Grossing factor (GFA/NFA)			#DIV/0!

MSBA Space Guidelines for Current Population		
ROOM NFA ¹	# OF RMS	area totals
	40	36,890
1,200		-
1,200	3	3,600
950	19	18,050
950	12	11,400
1,200	3	3,600
80	3	240
	5	7,050
950	2	1,900
950	3	2,850
60	3	180
60	2	120
500	1	500
500	2	1,000
500	1	500
		6,775
1,000	2	2,000
1,200	1	1,200
150	3	450
1,500	1	1,500
1,200	1	1,200
75	3	225
200	1	200
		3,200
1,200	1	1,200
2,000	1	2,000
		8,328
6,000	1	6,000
150	1	150
178	1	178
1,000	2	2,000
		3,240
3,240	1	3,240
		6,801
2,735	1	2,735
1,847	1	1,847
382	1	382
237	1	237
1,600	1	1,600
		610
		2,855
		2,112
		0
		77,861
		547
		116,792
		1.50

Current
Grades K-5 396
Grades 6-8 151

MSBA Space Guidelines for Expanded Population		
ROOM NFA ¹	# OF RMS	area totals
	41	38,090
1,200		-
1,200	4	4,800
950	19	18,050
950	12	11,400
1,200	3	3,600
80	3	240
	6	9,060
950	2	1,900
950	4	3,800
60	4	240
60	2	120
500	1	500
500	3	1,500
500	2	1,000
		6,850
1,000	2	2,000
1,200	1	1,200
150	3	450
1,500	1	1,500
1,200	1	1,200
75	4	300
200	1	200
		3,200
1,200	1	1,200
2,000	1	2,000
		8,333
6,000	1	6,000
150	1	150
183	1	183
1,000	2	2,000
		4,492
4,492	1	4,492
		8,447
3,985	1	3,985
2,097	1	2,097
466	1	466
299	1	299
1,600	1	1,600
		710
		3,270
		2,355
		0
		84,808
		797
		127,212
		1.50

+250
Grades K-5 531
Grades 6-8 266

* Existing # of CR's based on estimated original building layout
 ** Cafeteria Seating has been adjusted to reflect three seatings in lieu of two



The Driscoll School property generously extends along Westbourne Terrace. The opportunity for expansion at the Driscoll School identified in this report requires the removal of the current permanent/modular gymnasium structure, and relocation of the tennis courts. This allows for a new classroom wing to be constructed in its place, which also includes a new gymnasium built to the current MSBA size requirements. There is also sufficient room on site to re-create the tennis courts adjacent to the existing structured play area.

Expansion of the cafeteria seating area will also be required in order to accommodate the expanded student body population. Some areas within the existing school building have been re-purposed to better provide necessary support spaces such as Learning Centers in lieu of continuing use of the space as an undersized classroom.



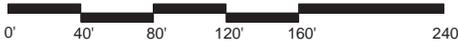
Image courtesy of Bing maps

Aerial of the Driscoll School site

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



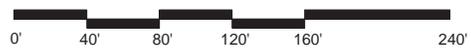
First Floor Plan





Second Floor Plan

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support





Third Floor Plan



The Heath School property, bordered by Eliot Street, Eliot Crescent, and Reservoir Road, recently completed an MSBA funded expansion project. However because of the configuration of the site, and the simple, parallel double loaded corridor layout of the building, it is a prime location for further expansion.

The opportunity for expansion identified in this report requires the removal of the current 1950's gymnasium and classroom addition. This is advisable as the second floor of this portion of the building is currently not accessible. A single story classroom and new MSBA sized gymnasium can then be constructed in this location on site. Additional classroom spaces are still required and are located in a two story addition which extends off the current NW portion of the building closest to Reservoir Road. Understanding that the first story rear portion of this addition will be mostly underground, the classrooms have been located only on the edge and front portion of the addition to ensure that they will receive daylight.

The proposed expansion location towards the Eliot Crescent edge of the site will require that the water retention system, installed October 2012, located below grade outside the footprint of the existing gymnasium be relocated.

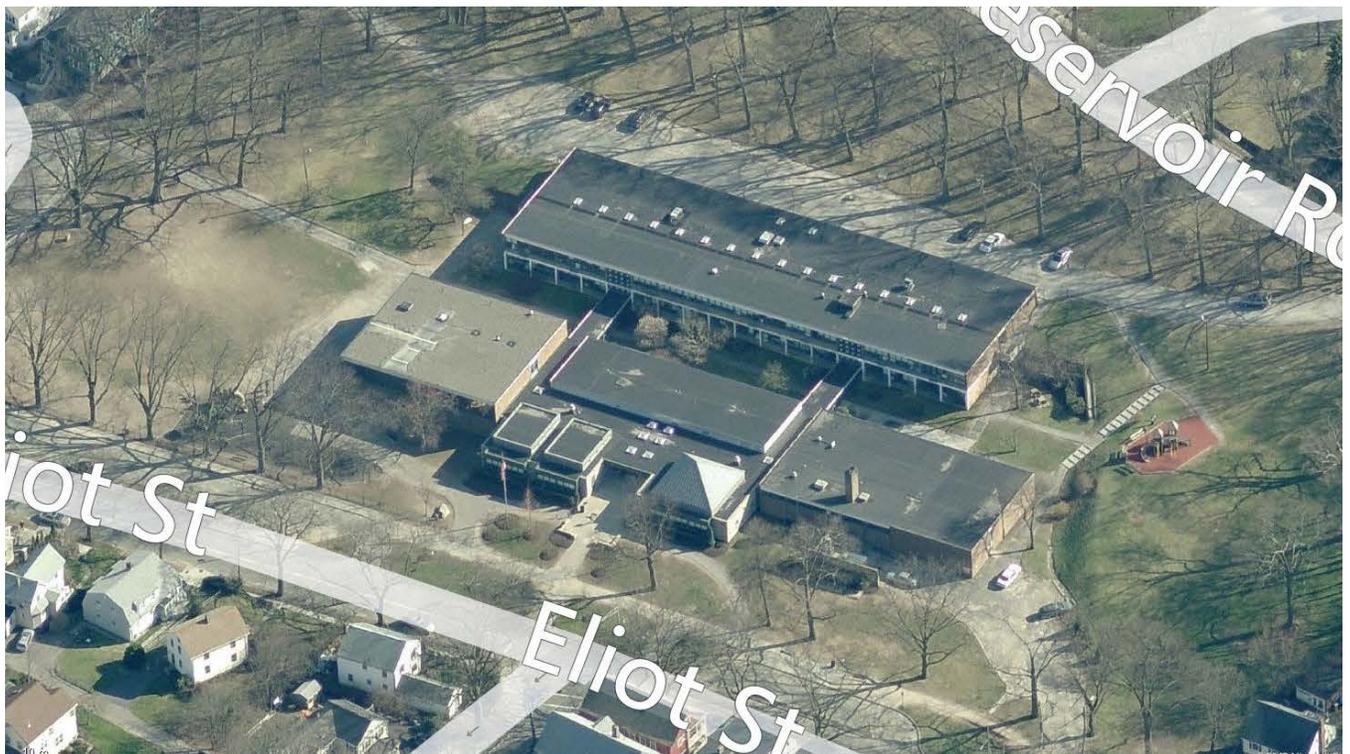


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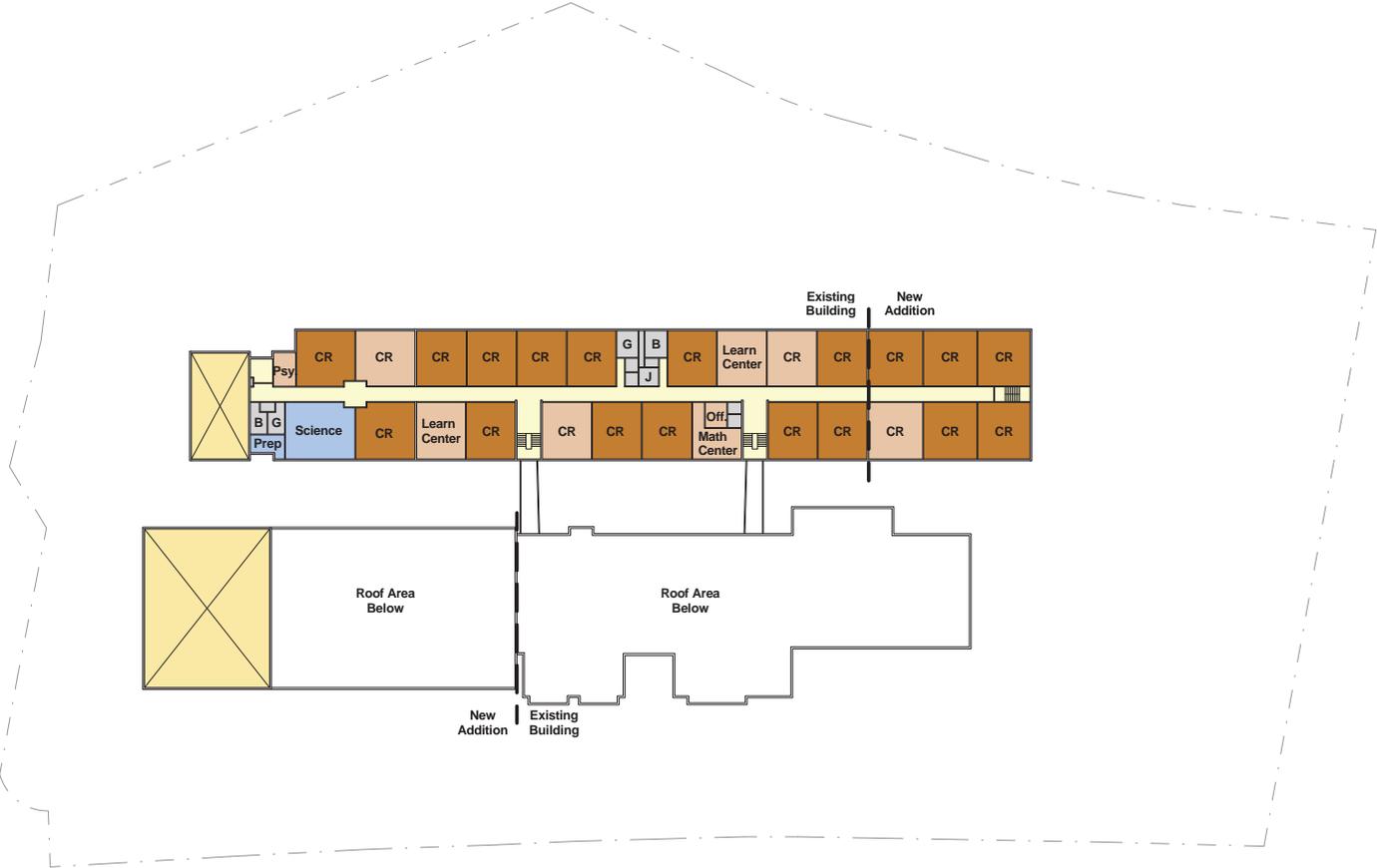
Aerial of the Heath School site



First Floor Plan

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support





Second Floor Plan



The Lawrence School property, located adjacent to the Longwood Playground, has very limited site area, but is an advantageous location near a majority of the K-8 population growth. The two areas identified for possible expansion in this scheme are the parking area off of Newell Road, and an 80' x 220' section of the Longwood Playground which borders the western edge of the school. This piece of property was authorized by an Act in 1929 to permit the erection of a building for school purposes.

Utilizing these two areas around the Lawrence School, all of the additional classroom spaces are able to be accommodated on this very tight site. A new Cafeteria and Library are constructed in the portion of the addition located at the existing parking lot. This allows for these spaces to be appropriately sized for the enlarged student body, and for the re-purposing of the existing, undersized Cafeteria and Library to other shared or support spaces.

The two new additions create internally located spaces which were once classrooms with exterior windows. The classroom spaces located along the existing western edge of the building closest to the playground will now look into an open light well, and are shared specialty spaces and not classroom homerooms. Spaces located on what was a northern exterior wall overlooking the parking area have been re-purposed into support spaces. A drawback to this scheme is that most or all of the existing parking for the school is eliminated.

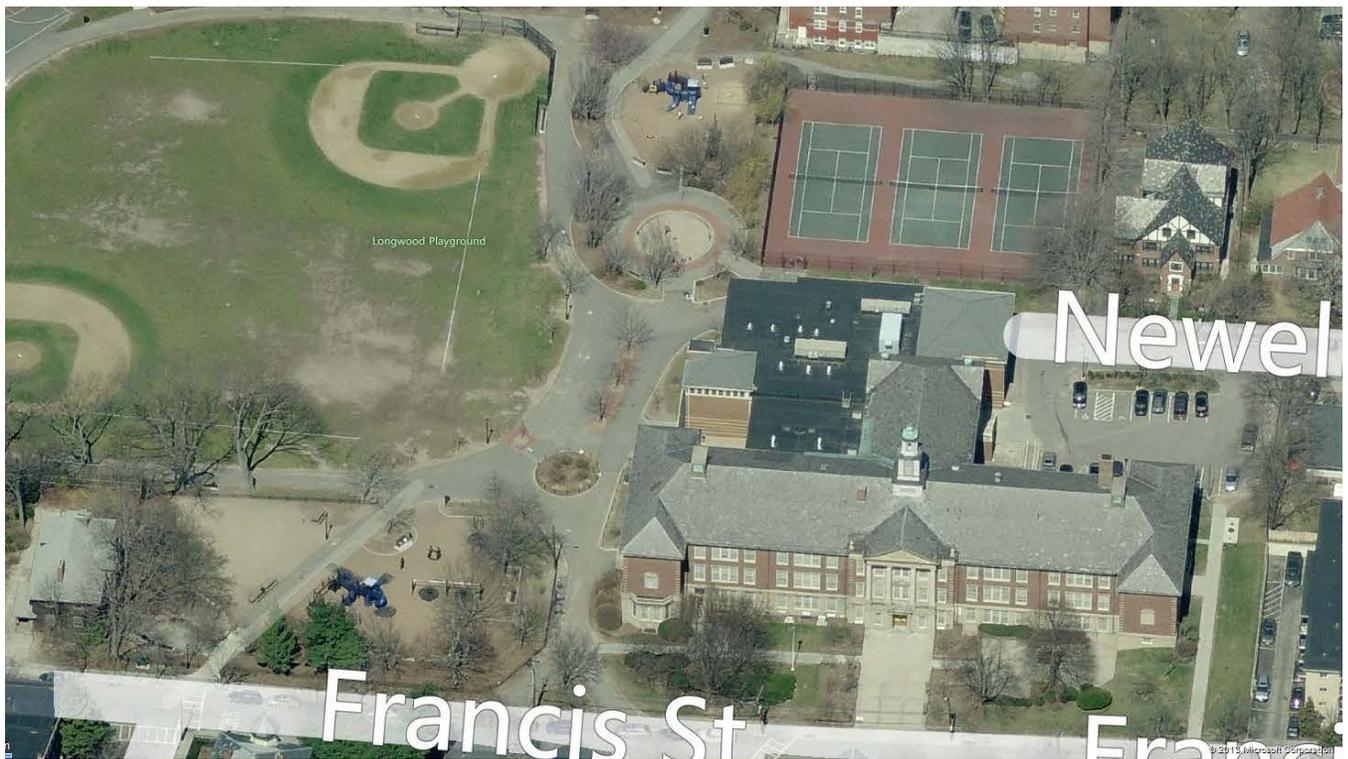
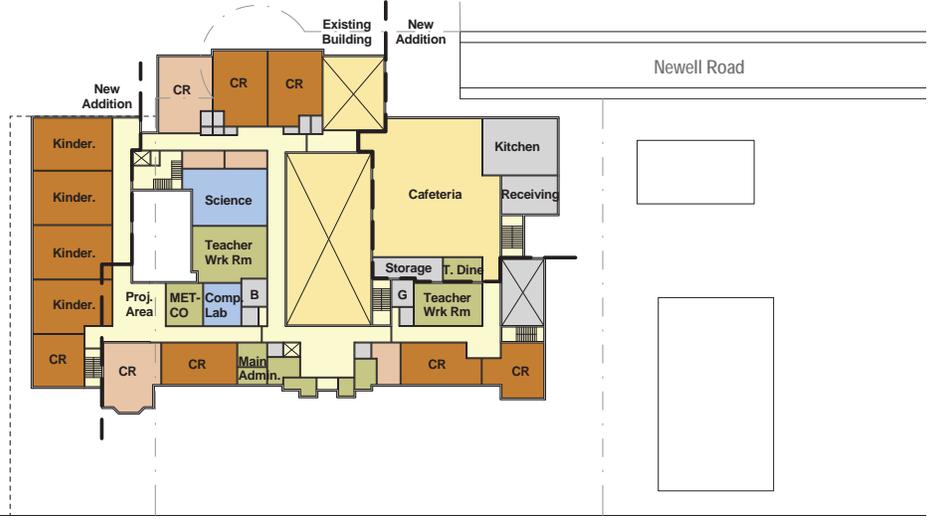


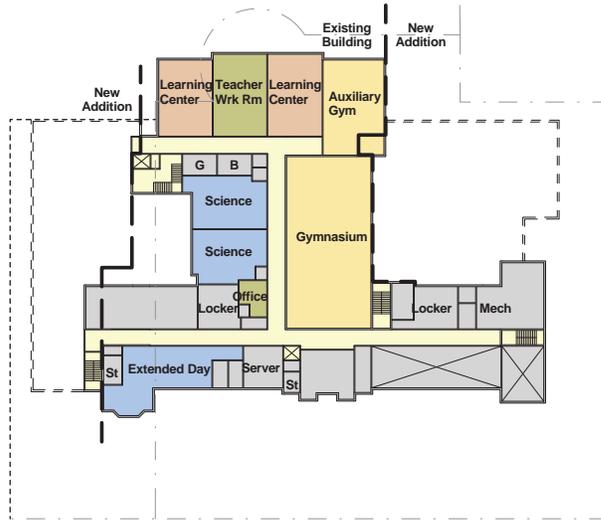
Image courtesy of Bing maps

Aerial of the Heath School site

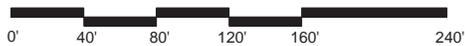
Longwood
Playground



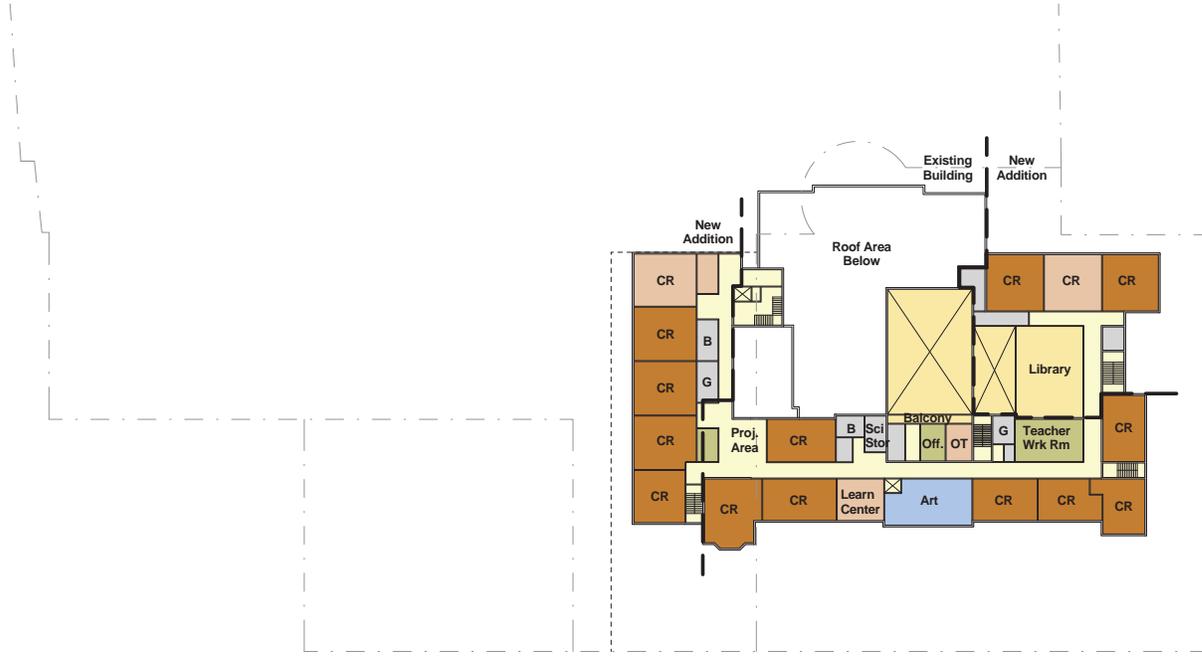
First Floor Plan



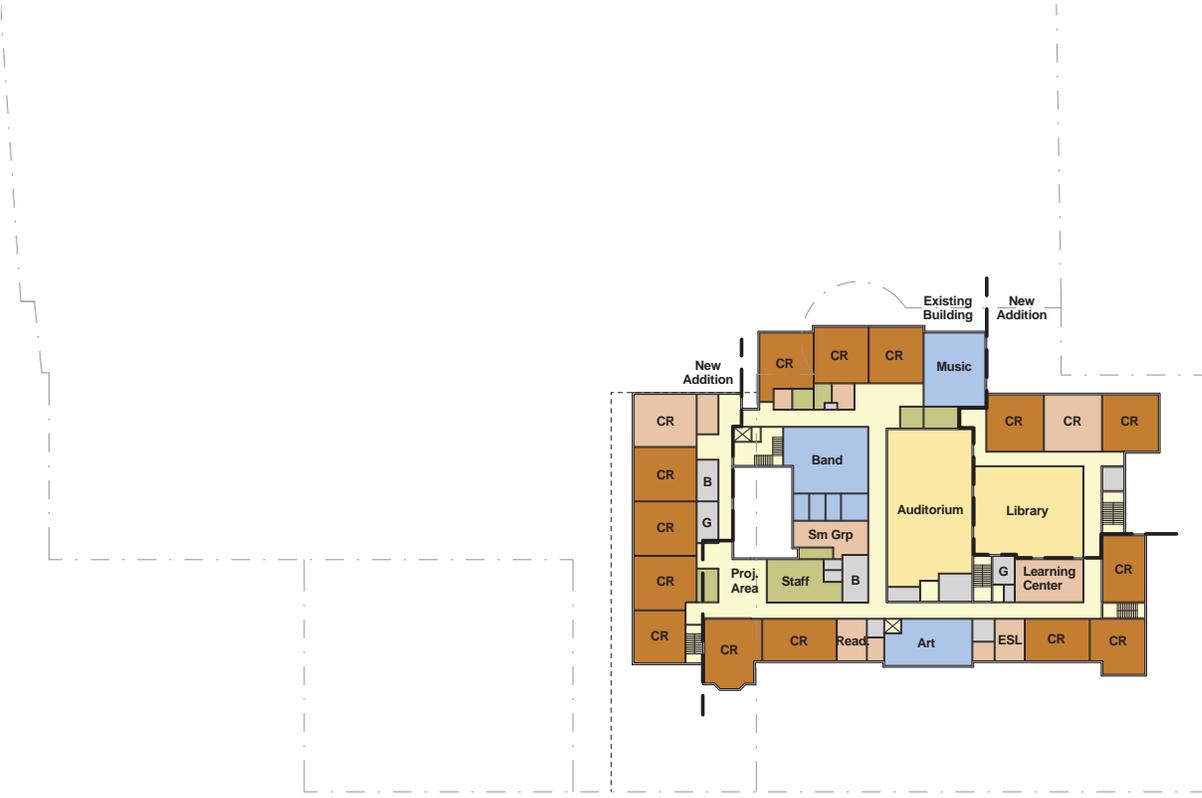
- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



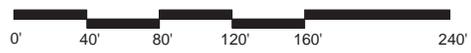
Basement Floor Plan



Third Floor Plan



Second Floor Plan



Current and Expanded Population Summaries

Brookline Public School Sites	Current Student Population	Current Sections / Grade	Current Number of K-8 CR's	Expanded Student Population	Expanded Sections / Grade	Expanded Number of K-8 CR's
3 School Expansion at K-8						
Driscoll School	547	3	26	747	4 / 5	35
Pierce School	734	4	30	884	4 / 5	39
Lawrence School	644	3 / 4	31	844	4 / 5	36



The Pierce School location has been identified by the B-Space Committee as an advantageous location for proposed expansion because a majority of the K-8 population is located within the immediate areas surrounding the school.

At the request of the B-Space Committee, HMFH Architects evaluated an alternate 3 School + High School solution where the Driscoll and Lawrence Schools are renovated as previously described, and in lieu of a Heath School renovation, the 1970 portion of the Pierce School is demolished and a new Pierce School is constructed on its current site.

The current 1970's building layout is based on an open classroom concept of which the majority of the other school buildings within Brookline have moved away from. Due to the expanding population, additional classroom areas have added within the existing library space central to the classroom wing of the building. This adds additional students in close proximity to other classrooms, with a lack of true partitions to aid in acoustical separation between the classes.

The current building is angled on the site in such a way to prevent any substantial expansions onto the existing structure, noting that most of the building is constructed up to the property limits. This limits any expansion opportunities of the current structure to minimal if at all and therefore to accommodate a student population of nearly 900 students on the site, a new building would be required.

Alternate Option - Pierce School

3+HS Expansion

The Pierce School consists of the small 1912, historic Peirce School building and a larger 1960's, open-classrooms addition that makes up the majority .The Pierce School property, located adjacent to Brookline Town Hall and Public, as previously identified in the 4 School + High School solution of the study as unable to receive any additions on its current site.

The major benefit of a new Pierce School is that it can be built to accommodate a large student body because it is located in an area very dense with K-8 students. By expanding the Pierce School to 884 students, Driscoll to 747 and Lawrence to 844, the majority of the school K-8 building expansion can be completed in areas of town closest to this population.

The proposed new layout of a Pierce School is focused on a new central Auditorium and Library Space surrounded by perimeter classrooms which all receive daylight. A central stair tower off of Pierce Street will allow for the accessible connection of the floor levels of the renovated Historic Pierce School with the levels of the new Pierce School structure. A new gymnasium facility is also located at the lower level of the school, and is appropriately sized for the large student population unlike the current school's gymnasium.



Image courtesy of Bing maps

Aerial of the Pierce School site



First Floor Plan

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



The scheme drawn for a new Pierce School includes an Auditorium as this is a space which Brookline desires to have in all of its K-8 school buildings, and is currently included in the renovations of other town projects, and was therefore included in this scheme. The inclusion of the auditorium in the scheme is not in accordance with MSBA's guidelines for K-8 Schools and whether the MSBA would allow or fund an auditorium would need to be negotiated.

Funding & Schedule

In order to most efficiently provide new space for the growing K-8 grade population in Brookline, the construction of the 3 School + High School solution would want to begin as soon as possible and be as condensed of a project schedule as possible. This could result in as many as five projects- Driscoll, Pierce, Lawrence, the Devotion School MSBA project and the High School renovation-addition project-commencing in simultaneous construction schedules.

The feasibility of this scenario would be dependent on funding and staffing to manage the projects. A method which some municipalities employ to help expedite multiple projects while still receiving MSBA funding is to contract project "A" as an MSBA project, while subsequent project "B" is solely town funded, and project "C" then becomes another MSBA project.

Plan Note:

The new Pierce School scheme enclosed within this report is intended as a massing study to confirm the plausible number of students / classrooms that can be located on this site. Further detailed study of the parking garage structure below this building would be required to confirm the structure and allowable elevation of the gymnasium and cafeteria wing in order to maintain the existing below grade parking garage.



Second Floor Plan

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



Alternate Option - Pierce School

3+HS Expansion



Third Floor Plan





Section 4 - 1+HS Expansion

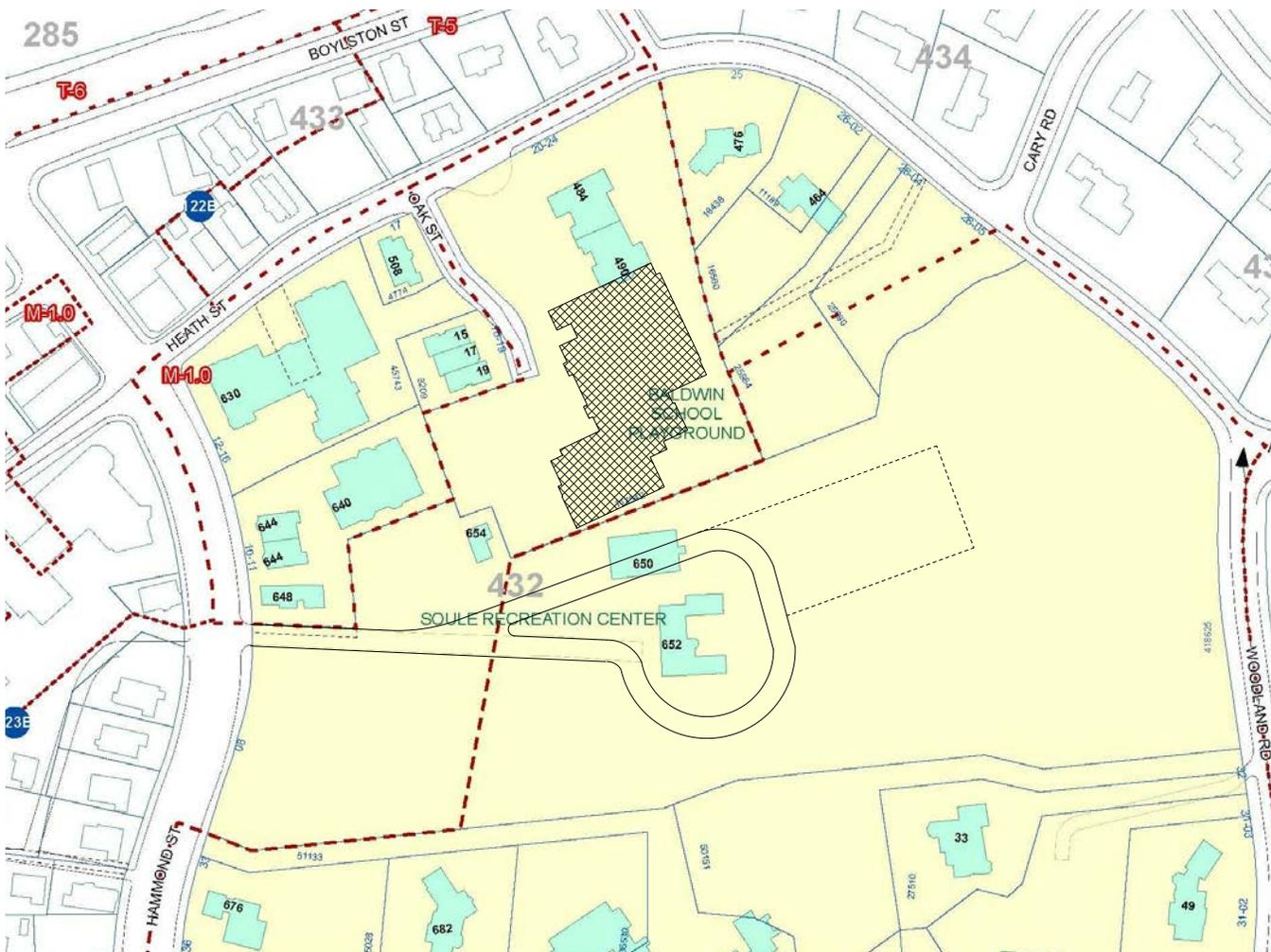


Solutions to the Brookline student population growth which involve multiple schools will result in multiple school projects and may result in an extended construction schedule; resulting in a significant gap between when the additional building capacity is available in the school system, and when the increased population arrives into the schools. Therefore alternatives were reviewed which could condense the number of construction projects necessary to provide the needed capacity. One alternative approach is to construct a new K-8 school, of which the student population can either be assembled via re-districting or through the use of a concept school.

The development of a concept school will require more in-depth study by the district to determine the interest in and desire for a variety of possible subject matters such as the arts or STEM based learning. The opening of a concept school would ideally pull equal amounts of population away from all of the eight other school districts to relieve overcrowding. However there is no guarantee that the interested student population for a concept school would be equally spread throughout the district, and could still result in some overcrowding in existing districts.

The development of a new district for a 9th elementary school would be most advantageous in the northern portion of Brookline. Developing a new district in one of the denser neighborhoods would minimize the effects on the adjacent existing districts. This makes the Old Lincoln School location a desirable location as it is situated in the northern part of town where the majority of the student population is located.

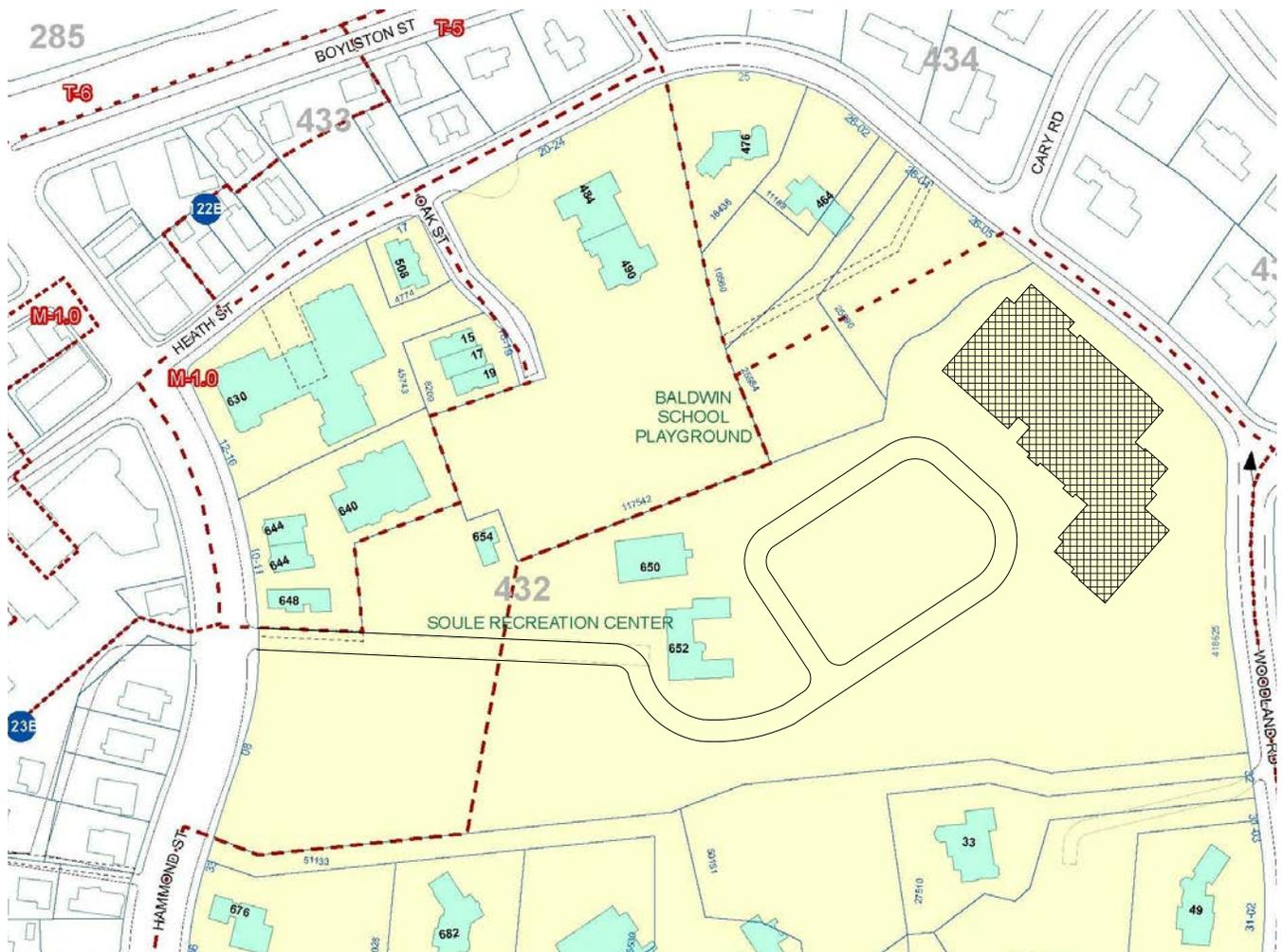
The Baldwin School – Soule Recreation Center does provide enough open square footage to create a new K-8 building in two possible locations on site. One possible scenario is to construct the school as a large addition to the existing Baldwin School building. While feasible, the construction would take place in very close proximity to the adjacent residential neighborhood. A second possible location is within the Soule Recreation area extents, replacing a current parking area off of Heath Street and creating a new drive off of Hammond Street for building access. The location of the building within the Soule Recreation Center would require an Article 97 legislative action and land swap as this parcel of land is protected for recreational purposes only.



New K-8 expansion to existing Baldwin School



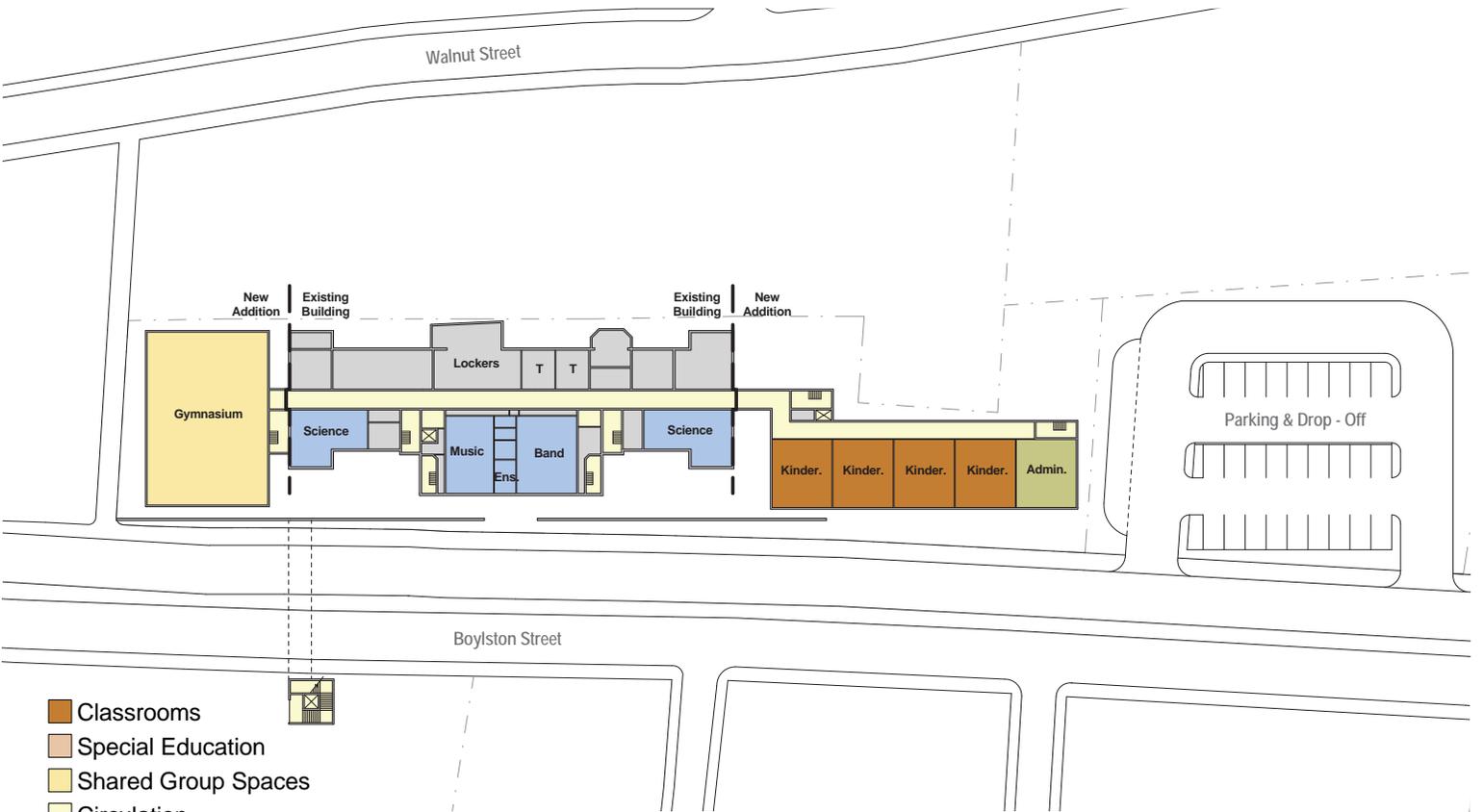
The forming of a new district in a southern location in town would be less than desirable in that it would adversely affect the rest of the town's school zones. If a new district were to be formed around a southern location such as the Baldwin School, the resultant shift of the remaining districts would be that the school building would be located on the southernmost border. Residents who would live across the street from one town school would be included in the zone of the next school to their south instead of the one fairly closest to them.



New K-8 School at existing parking area



Second Floor Plan



First Floor Plan

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



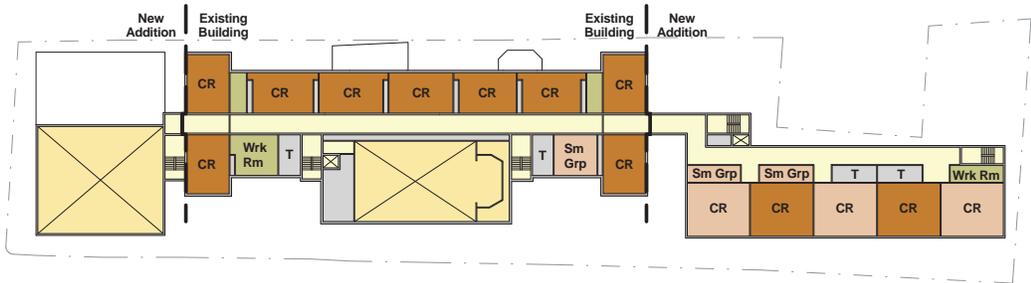
The Old Lincoln School location is an ideal location for the formation of a new district as previously discussed in this report. It was reviewed further to determine the feasibility of a renovation-addition project to the property. The existing historic school building is elevated approximately one to one and a half levels above Boylston Street along which it is located. A parking structure is located to the east of the building between the school and Walnut Path; the roof of the structure is level with the first floor of the building. It is understood that this structure will soon require structural work regardless of whether a project proceeds here or not.

The location of the Old Lincoln School along Boylston Street raises concerns for how drop-off and pick-up might be accommodated without affecting traffic flow on Boylston, and keeping the students away from the busy street. One option is for the town to acquire the property to the west of the school currently owned by U-Haul. This land can then be used as parking and a drop-off loop. An accessible entrance at grade with the drop-off loop would facilitate better accessible access into the school.

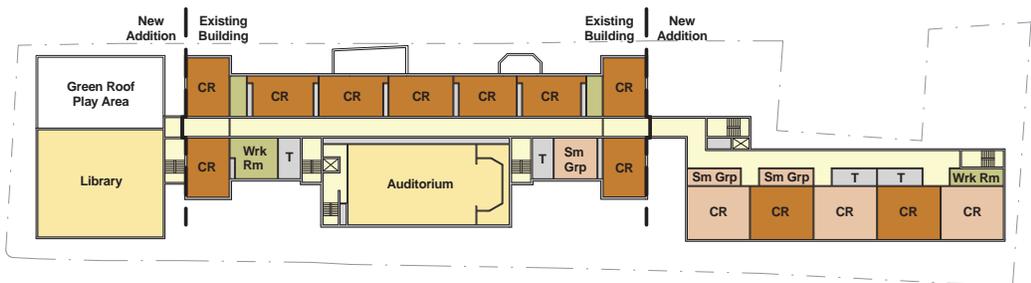


Image courtesy of Bing maps

Aerial of the Old Lincoln School site

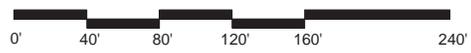


Fourth Floor Plan



Third Floor Plan

- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



The proposed renovation addition scheme at the Old Lincoln School will involve an addition which extends from the U-Haul property to the existing building, as well as a new gym structure on the opposite side of the school where the parking garage is currently located. The addition closest to the U-Haul property would house the necessary additional classroom spaces which cannot be accommodated in the existing building. This will require at least a four level structure in order to accommodate a 605 student body population. The first level of this addition would be built level with the current basement of the existing building and grade at the U-Haul property. This will require removing a large amount of the ledge material that currently borders the two properties.

The new gym facility on the opposite side of the existing school will also be built level with the basement of the existing school, in the place of the existing parking structure which is currently in need of repair. By creating a new gymnasium that meets the standards of MSBA's guidelines for sizing, the existing gymnasium can be re-purposed into the school's music facilities, making good use of the double height space.

The entire existing school building would undergo an extensive renovation to update all building systems, windows and envelope concerns. The air quality of the school would meet all necessary quality standards, possibly through the use of a displacement ventilation system. This type of a system ensures a 100% filtered outdoor air supply which would be intake from the Walnut Street side of the building, conditioned and supplied to the rooms.

A pedestrian bridge structure would also be constructed from the first floor level of the building, across Boylston Street, to the Boylston Street playground. This will allow for easy access by the students to outdoor play space, without the concern of having the students cross the street. This will also provide a safe pedestrian route for walkers to the school from the neighborhood north of Route 9. This bridge will be a similar installation to what is currently constructed at the Pierce School.



In order to most efficiently provide new space for the growing K-8 grade population in Brookline, the construction of the 1 School + High School solution would want to begin as soon as possible and be as condensed of a project schedule as possible. A total of three construction projects would result from this solution; a new K-8, the Devotion School MSBA project and the High School renovation-addition project.

The feasibility of this scenario would be dependent on funding and staffing to manage the projects. A method which some municipalities employ to help expedite multiple projects while still receiving MSBA funding is to contract project "A" as an MSBA project, while subsequent project "B" is solely town funded, and project "C" then becomes another MSBA project.



Section 5 - New MS-HS Expansion



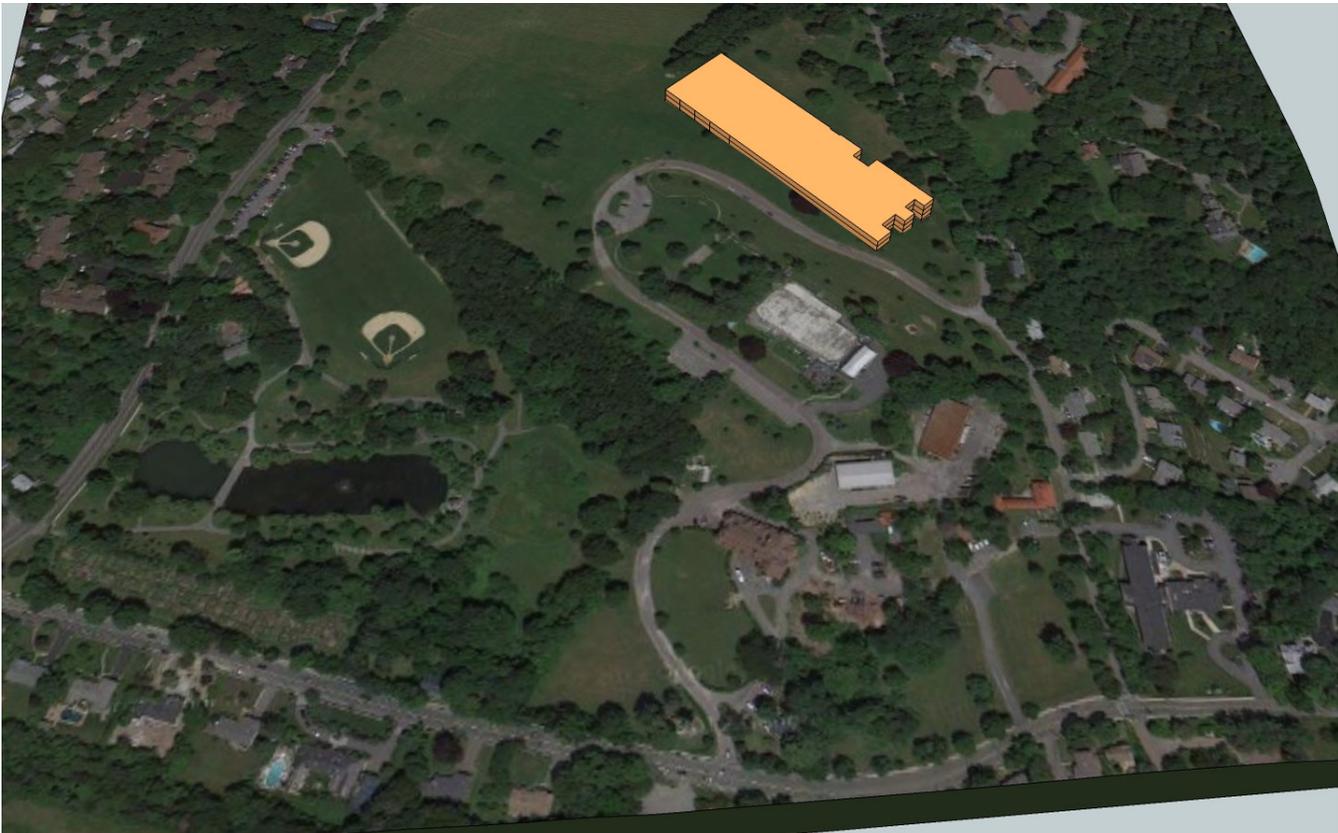
Key MSBA Space Summary Guidelines

New High School		Existing Conditions	
ROOM TYPE	ROOM NFA ¹	# OF RMS	area totals
CORE ACADEMIC SPACES			0
<i>(List classrooms of different sizes separately)</i>			
Classroom - General			
Teacher Planning			
Small Group Seminar (20-30 seats)			
Science Classroom / Lab			
Prep Room			
Central Chemical Storage Rm			
SPECIAL EDUCATION			0
<i>(List classrooms of different sizes separately)</i>			
Self-Contained SPED			
Self-Contained SPED Toilet			
Resource Room			
Small Group Room			
ART & MUSIC			0
Art Classroom - 25 seats			
Art Workroom w/ Storage & kiln			
Band - 50 - 100 seats			
Chorus - 50 - 100 seats			
Ensemble			
Music Practice			
Music Storage			
VOCATIONS & TECHNOLOGY			0
Tech Cirm. - (E.G. Drafting, Business)			
Tech Shop - (E.G. Consumer, Wood)			
HEALTH & PHYSICAL EDUCATION			0
Gymnasium			
PE Alternatives			
Gym Storeroom			
Locker Rooms - Boys / Girls w/ Toilets			
Phys. Ed. Storage			
Athletic Director's Office			
Health Instructor's Office w/ Shower & Toilet			
MEDIA CENTER			0
Media Center / Reading Room			
Computer Lab			
AUDITORIUM / DRAMA			0
Auditorium			
Stage			
Auditorium Storage			
Make-up / Dressing Rooms			
Controls / Lighting / Projection			
DINING & FOOD SERVICE			0
Cafeteria / Student Lounge / Break-out			
Chair / Table Storage			
Scramble Serving Area			
Kitchen			
Staff Lunch Room			
MEDICAL			0
ADMINISTRATION & GUIDANCE			0
CUSTODIAL & MAINTENANCE			0
OTHER			0
Other (specify)			
Total Building Net Floor Area (NFA)			0
Proposed Student Capacity / Enrollment			
Total Building Gross Floor Area (GFA) ²			
Grossing factor (GFA/NFA)			#DIV/0!

MSBA Space Guidelines for High School		
ROOM NFA ¹	# OF RMS	area totals
		90,880
850	64	54,400
100	64	6,400
500	4	2,000
1,440	17	24,480
200	17	3,400
200	1	200
		19,130
950	13	12,350
60	13	780
500	6	3,000
500	6	3,000
		9,775
1,200	4	4,800
150	4	600
1,500	1	1,500
1,500	1	1,500
200	1	200
75	9	675
500	1	500
		19,200
1,200	6	7,200
2,000	6	12,000
		26,728
12,000	1	12,000
3,000	1	3,000
300	1	300
10,528	1	10,528
500	1	500
150	1	150
250	1	250
		11,650
11,650	1	11,650
		10,400
7,500	1	7,500
1,600	1	1,600
500	1	500
300	2	600
200	1	200
		14,520
9,400	1	9,400
620	1	620
600	1	600
3,180	1	3,180
720	1	720
		1,510
		6,630
		3,035
		0
		213,458
		1,880
		327,120
		1.53

All options which involve construction at the K-8 school structures also require a renovation addition at the existing Brookline High School facility in order to accommodate the expanded population as it grows through the school system. The only option that avoids additional construction at the K-8 level, and requires only two construction projects, including the Devotion School renewal, is a scenario where a second high school building is constructed. This also requires the grade structure to be reorganized into K-6 neighborhood schools, and two 7-12 middle high schools. One of the two schools would be the current high school campus that would be re-structured to accept the new grade levels for a total of 1,900 students. The second would be a new school facility built in town to accommodate the additional 1,880 students.

A new 1,880 student middle high school facility will be a sizeable building at approximately 300,000sf. There is not a vast amount of open land within the Brookline Town limits that would allow for the construction of such a facility. Sites such as the Old Lincoln School or the Baldwin Soule Recreational Area would be overwhelmed by the construction of a 300,000sf complex, and would not appropriately fit into the context of their neighborhoods.



Massing Studies for new MS-HS at Larz Anderson

The Larz Anderson Park area would be able to accommodate the necessary footprint of a second middle high school facility. The Larz Anderson Park was donated to the town for the purpose of public education or recreational uses. Our initial consultation with Town Counsel indicates that the property could have a school built on it without the need for an Article 97 legislative action and land swap as would be the case for property that was procured for recreational purposes only.

One possible location for the new school would be off of Newton Street and extending back towards the DPW buildings, even possibly incorporating the historic Larz Anderson Carriage House into the design. This makes use of some of the park's least attractive spaces. However, this location of a facility would likely alter the views of the park from the formal gardens and pond area.

A second possible location would be between Avon Street and the loop road around the perimeter of the ice skating rink. The building could be positioned at a lower elevation along the hillside, allowing the mass of the building to be tucked away from view when observed from the formal gardens area of the park and the ballfields along Goddard Road. Avon has a long stretch from Goddard Road with very few abutters. Avon Street, along with the long, curving access drive to the ice rink, gives such a project a good opportunity for queuing space for a large school without inconveniencing others.

The great benefit to the town pursuing a new middle high school option will be the limiting of necessary construction projects.



Section 6 - Summary



MSBA Cost Summary

Summary

Brookline Public School Sites	4 + HS	3 + HS	1 + HS	NEW HIGH SCHOOL
Description	Modulars & HS Add/Reno	(3) K-8 Add & HS Add/Reno	New K-8 & HS Add/Reno	New 7 - 12 HS
Construction Cost	\$75,858,780	\$114,103,000	\$98,560,500	\$107,611,200
Construction Contingency 10%	\$7,585,878	\$11,410,300	\$9,856,050	\$10,761,120
Temp. Classroom Costs (HS)	\$3,600,000	\$3,600,000	\$3,600,000	\$0
A/E Fees at 10%	\$8,344,466	\$12,551,330	\$10,841,655	\$11,837,232
OPM and Other Professional Services at 5%	\$4,172,233	\$6,275,665	\$5,420,828	\$5,918,616
F&E w/ Technology 630 k-8 + 700 hs @ \$3,000/stu.	\$3,990,000	\$3,990,000	\$3,990,000	\$3,990,000
Project Contingency 5%	\$5,177,568	\$7,596,515	\$6,613,452	\$7,005,908
Total Project Cost	\$108,728,925	\$159,526,810	\$138,882,484	\$147,124,076
MSBA Hard Cost Reimbursement (40% up to 275/sf)	\$21,213,000	\$33,164,700	\$33,098,500	\$32,881,200
MSBA Soft Cost Reimbursement (40%)	\$11,708,058	\$16,729,524	\$14,688,794	\$15,805,151
Town of Brookline Share	\$75,807,867	\$109,632,586	\$91,095,190	\$98,437,726



MSBA Cost Summary Alt. 1

Summary

Brookline Public School Sites	4 + HS	3 + HS	1 + HS	NEW HIGH SCHOOL
Description	Modulars & HS Add/Reno	(3) K-8 Add & HS Add/Reno	New K-8 & HS Add/Reno	New 7 - 12 HS
Construction Cost	\$75,858,780	\$162,216,000	\$98,560,500	\$107,611,200
Construction Contingency 10%	\$7,585,878	\$16,221,600	\$9,856,050	\$10,761,120
Temp. Classroom Costs (HS)	\$3,600,000	\$3,600,000	\$3,600,000	\$0
A/E Fees at 10%	\$8,344,466	\$17,843,760	\$10,841,655	\$11,837,232
OPM and Other Professional Services at 5%	\$4,172,233	\$8,921,880	\$5,420,828	\$5,918,616
F&E w/ Technology 630 k-8 + 700 hs @ \$3,000/stu.	\$3,990,000	\$3,990,000	\$3,990,000	\$3,990,000
Project Contingency 5%	\$5,177,568	\$10,639,662	\$6,613,452	\$7,005,908
Total Project Cost	\$108,728,925	\$223,432,902	\$138,882,484	\$147,124,076
MSBA Hard Cost Reimbursement (40% up to 275/sf)	\$21,213,000	\$51,978,300	\$33,098,500	\$32,881,200
MSBA Soft Cost Reimbursement (40%)	\$11,708,058	\$23,046,761	\$14,688,794	\$15,805,151
Town of Brookline Share	\$75,807,867	\$148,407,841	\$91,095,190	\$98,437,726



4+HS Cost Breakdown

Summary

Brookline Public School Sites	Cost for Modulars	Total Exist. sf	Renovated sf	Cost for Renovation	Demolition sf	Cost for Demolition	Addition sf	Cost for New Construction	Total Constr. Cost
Costs per sq ft	\$280			\$120 - \$250		\$10		\$360	
Baker School	\$2,793,000			-		-		-	\$2,793,000
Driscoll School	\$2,793,000			-		-		-	\$2,793,000
Heath School	\$2,793,000			-		-		-	\$2,793,000
Lawrence School	\$2,394,000			-		-		-	\$2,394,000
Old Lincoln School	-			-		-		-	
Total Elementary Schools									\$10,773,000
Current High School *cost carried in 4, 3, 1 Sub Totals	-	474,000	50,950	\$12,737,500	130,000	\$1,300,000	141,800	\$51,048,000	\$65,085,500
New 7 - 12 High School	-			-		-		-	
4 + HS Construction Cost Sub Total:	\$10,773,280		50,950	\$12,737,500	130,000	\$1,300,000	141,800	\$51,048,000	\$75,858,780

3+HS Cost Breakdown

Summary

Brookline Public School Sites	Cost for Modulares	Total Exist. sf	Renovated sf	Cost for Renovation	Demolition sf	Cost for Demolition	Addition sf	Cost for New Construction	Total Constr. Cost
Costs per sq ft	\$280			\$120 - \$250		\$10		\$360	
Baker School	-								
Driscoll School	-	99,500	13,650	\$1,638,000	9,200	\$92,000	45,800	\$16,488,000	\$18,218,000
Heath School	-	79,050	-	\$0	8,350	\$83,500	30,700	\$11,052,000	\$11,135,500
Lawrence School	-	99,950	18,650	\$2,238,000	2,000	\$20,000	48,350	\$17,406,000	\$19,664,000
Old Lincoln School	-								
Total Elementary Schools									\$49,017,500
Current High School *cost carried in 4, 3, 1 Sub Totals	-	474,000	50,950	\$12,737,500	130,000	\$1,300,000	141,800	\$51,048,000	\$65,085,500
New 7 - 12 High School	-			-		-		-	
3 + HS Construction Cost Sub Total:	-	752,500	83,250	\$16,613,500	149,550	\$1,495,500	266,650	\$95,994,000	\$114,103,000

3+HS Alternate Cost Breakdown

Summary

Brookline Public School Sites	Cost for Modulares	Total Exist. sf	Renovated sf	Cost for Renovation	Demolition sf	Cost for Demolition	Addition sf	Cost for New Construction	Total Constr. Cost
Costs per sq ft	\$280			\$120 - \$250		\$10		\$360	
Baker School	-								
Driscoll School	-	99,500	13,650	\$1,638,000	9,200	\$92,000	48,800	\$17,568,000	\$19,298,000
Pierce School	-	131,250	25,850	\$6,462,500	105,400	\$1,054,000	140,700	\$50,652,000	\$58,168,500
Lawrence School	-	99,950	18,650	\$2,238,000	2,000	\$20,000	48,350	\$17,406,000	\$19,664,000
Old Lincoln School	-								
Total Elementary Schools									\$97,130,500
Current High School *cost carried in 4, 3, 1 Sub Totals	-	474,000	50,950	\$12,737,500	130,000	\$1,300,000	141,800	\$51,048,000	\$65,085,500
New 7 - 12 High School	-			-		-		-	
3 + HS Construction Cost Sub Total:	-	804,700	109,100	\$23,076,000	246,600	\$2,466,000	379,650	\$136,674,000	\$162,216,000

1+HS Cost Breakdown

Summary

Brookline Public School Sites	Cost for Modulars	Total Exist. sf	Renovated sf	Cost for Renovation	Demolition sf	Cost for Demolition	Addition sf	Cost for New Construction	Total Constr. Cost
Costs per sq ft	\$280			\$120 - \$250		\$10		\$360	
Baker School	-			-		-		-	-
Driscoll School	-			-		-		-	-
Heath School	-			-		-		-	-
Lawrence School	-			-		-		-	-
Old Lincoln School	-	69,900	69,900	\$17,475,000	7,000	\$70,000	44,250	\$15,930,000	\$33,475,000
Total Elementary Schools									\$33,475,000
Current High School <small>*cost carried in 4, 3, 1 Sub Totals</small>	-	474,000	50,950	\$12,737,500	130,000	\$1,300,000	141,800	\$51,048,000	\$65,085,500
New 7 - 12 High School	-			-		-		-	
1 + HS Construction Cost Sub Total:	-	543,900	120,850	\$30,212,500	137,000	\$1,370,000	186,050	\$66,978,000	\$98,560,500

New MS-HS Cost Breakdown

Summary

Brookline Public School Sites	Cost for Modulars	Total Exist. sf	Renovated sf	Cost for Renovation	Demolition sf	Cost for Demolition	Addition sf	Cost for New Construction	Total Constr. Cost
Costs per sq ft	\$280			\$120 - \$250		\$10		\$360	
Baker School	-			-		-		-	-
Driscoll School	-			-		-		-	-
Heath School	-			-		-		-	-
Lawrence School	-			-		-		-	-
Old Lincoln School	-			-		-		-	-
Total Elementary Schools									\$0
Current High School <small>*cost carried in 4, 3, 1 Sub Totals</small>	-	474,000	50,950	\$12,737,500	130,000	\$1,300,000	141,800	\$51,048,000	\$65,085,500
New 7 - 12 High School	-			\$0		\$0	298,920	\$107,611,200	\$107,611,200
NEW HIGH SCHOOL Construction Cost Sub Total:	-	-	-	\$0	-	\$0	298,920	\$107,611,200	\$107,611,200