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**Edward Devotion School**  
**MSBA**  
**Preliminary Design Program**

Brookline, Massachusetts

MARCH 2014

**Volume 5** of 5



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## Volume 1

3.1.1 Introduction	Vol. I
3.1.2 Educational Program	Vol. I
3.1.3 Initial Space Summary	Vol. I
3.1.4 Evaluation of Existing Conditions	Vol. I
3.1.5 Site Development Requirements	Vol. I
3.1.6 Preliminary Evaluation of Alternatives	Vol. I
3.1.7 Local Actions and Approvals Appendices	Vol. I

## Volume 2

Appendix A – Statement of Interest and Capital Budget	Vol. II
Appendix B – Proposed Systems Narratives for Options	Vol. II

## Volume 3

Appendix C – Cost Estimate	Vol. III
Appendix D – Geotechnical Review	Vol. III
Appendix E – Environmental Report	Vol. III
Appendix F – Structural Review	Vol. III
Appendix G – MEP/FP Review	Vol. III
Appendix H – Hazardous Materials Survey	Vol. III
Appendix I – Architectural Alternative Options	Vol. III

## Volume 4

Appendix J – Edward Devotion School Concept Study	Vol. IV
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# Table of Contents

## Volume 5

Appendix K – BSPACE Concept Study Report

Vol. V





**HMFH** Architects, Inc.

**Brookline School Population  
&  
Capacity Exploration  
Concept Study Report**  
Brookline, MA

September 2013

UPDATED December 2013





# Table of Contents

## Acknowledgements

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### Section 1 - Introduction

Narrative Summary	1-1
Population Analysis	1-3

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### Section 2 - 4+HS Expansion

Overview	2-1
Modular Expansion	2-3

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### Section 3 - 3+HS Expansion

Overview	3-1
Driscoll School	3-3
Heath School	3-9
Lawrence School	3-13
Alternate 1	3-17
Alternate 2	3-25

---

### Section 4 - 1+HS Expansion

Overview	4-1
Baldwin / Soule Site	4-3
Old Lincoln School	4-5
Funding & Schedule	4-9

---

### Section 5 - New MS-HS Expansion

Overview	5-1
Larz Anderson Park	5-3

---

### Section 6 - Appendix

MSBA Cost Summaries	6-1
Detailed Cost Breakdown	6-5
3+HS Alternate 2 Project Schedules	6-9





# 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

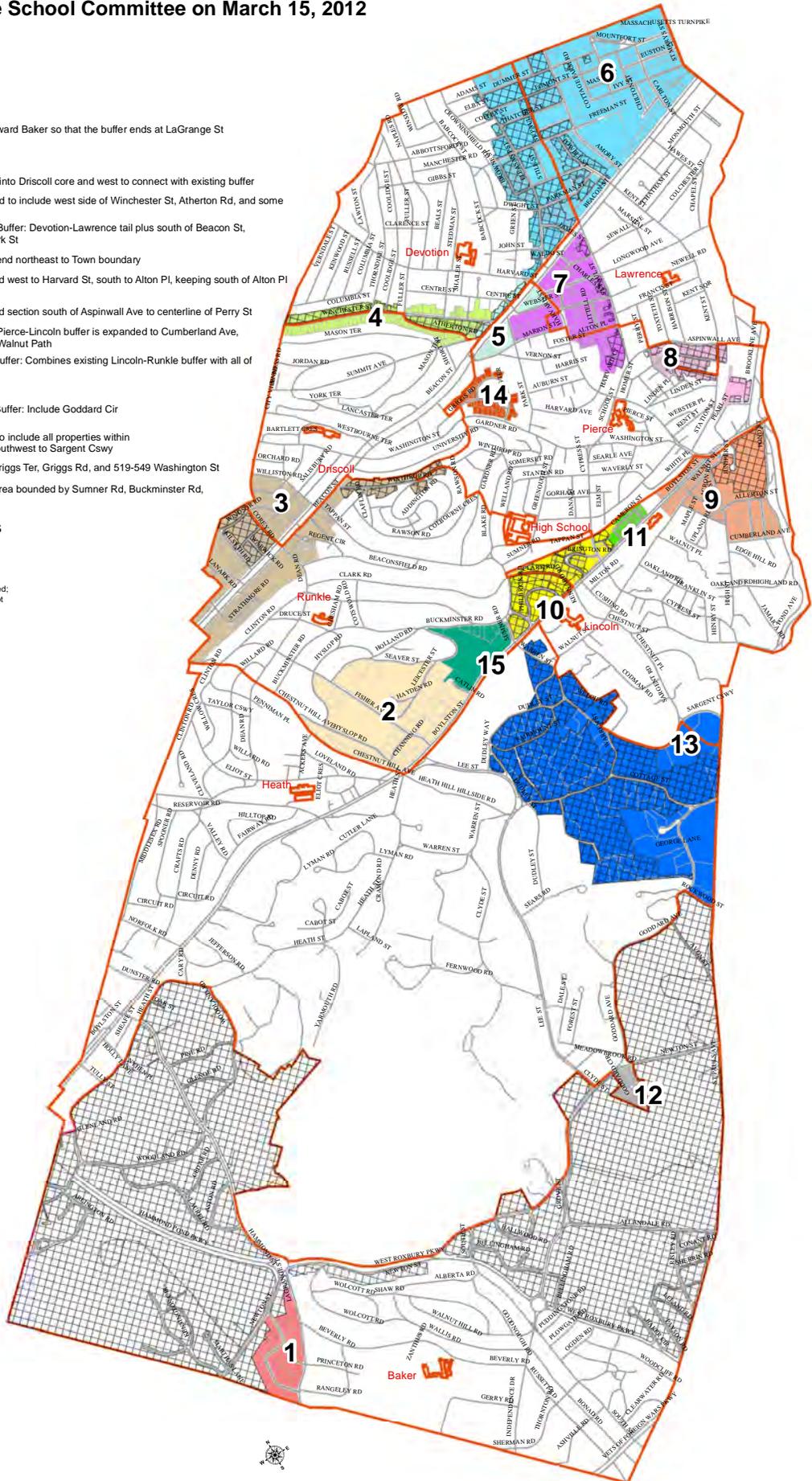
## Locus Map



## Disclaimer

The information shown on this map is from the Brookline Geographic Information System (GIS) Database. The Town of Brookline makes no claims, no representations, and no warranties, express or implied, concerning the validity (express or implied), the reliability or the accuracy of the GIS data and GIS data products furnished by the Town, including the implied validity of any uses of such data.

Map printed by Brookline GIS on 5/21/2012



0 1,000 2,000 3,000 Feet

1:20,000



HMFH Architects, Inc. 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 several additional sites. The opportunities for growth include expansion of the existing K-8 schools, a new K-8 School, and a new middle/high school.

Opportunities at the existing K-8 schools include both modular additions and renovation/addition options. 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, which has a pending project with the MSBA.

New construction opportunities were evaluated for a new K-8 school or a new 7-12th 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
<b>K-8 - Current</b>					
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 5,065 students, averaging 562 students per grade. Brookline Public Schools has forecasted enrollment growth to 630 students per grade for a total of 5,670 in the town. This growth yields 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 renovation/addition to an existing school is part of the solution, the required number of spaces is determined by adding the additional students to the existing population of the school. Using this figure, the proposed addition in the 3 School + High School solution would resolve current overcrowding; however, this is not the case when only classrooms are added to schools in the 4 School + High School solution as the schools would still experience overcrowding of the shared communal spaces such as the library and cafeteria.

Brookline Public Schools lists maximum classroom populations at 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 1,800 students to 2,500 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, work done at the K-8 grade levels will need to be augmented with a renovation/addition at the existing high school to expand its capacity to 2,500 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	-	-	-		
<b>Total Possible CR's Added:</b>	<b>26</b>	<b>26</b>	<b>26</b>		

	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 primary goal of the B-Space committee was to provide space for growth throughout the town without re-districting school zones. This resulted in the development of a solution 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



### Sites

The Pierce 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 Pierce School site, is also lacking appropriate open space for a classroom modular addition. The only classroom wing set back from the property edge is the southeast wing, which is also closest to the Brookline Music School. While there is sufficient space for the expansion of some classrooms, it is not advisable for multiple reasons: the expansion would come within close proximity to the Music School's historic building, blocking daylight from hitting the school's southern facade; an attachment of a two-story modular expansion would require significant reworking of the Lincoln School's roofline to ensure proper drainage; and the expansion would 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. Modulares located in the field would not have a direct connection to the main building and would house remote and isolated classrooms which would be contrary to 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 modulars needed at each location varies between six or seven, and could be adjusted based on each school zone's need, to total the 26 classrooms necessary.

Additional modular classrooms would add seats, but not alleviate the overcrowding within the school buildings. By only adding additional classroom spaces to existing schools, the communal spaces within these buildings will become overcrowded, which may 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 need to begin as soon as possible and be completed on a compressed project schedule. 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 on 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 pressing as many of the schools are already faced with overcrowding.



# 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 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 need to begin as soon as possible and be completed on a compressed project schedule. 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 on simultaneous construction schedules.

The feasibility of this solution would depend 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		Existing Conditions	
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>CORE ACADEMIC SPACES</b>		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			
<b>SPECIAL EDUCATION</b>			
<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			
<b>ART &amp; MUSIC</b>			
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			
<b>VOCATIONS &amp; TECHNOLOGY</b>			
Tech Clrm. - (E.G. Drafting, Business)			
Tech Shop - (E.G. Consumer, Wood)			
<b>HEALTH &amp; PHYSICAL EDUCATION</b>			
Gymnasium			
Gym Storeroom			
Health Instructor's Office w/ Shower & Toilet			
Locker Rooms - Boys / Girls w/ Toilets			
<b>MEDIA CENTER</b>			
Media Center/Reading Room			4000
<b>DINING &amp; FOOD SERVICE</b>			
Cafeteria / Dining			2600
Kitchen			
Chair / Table / Equipment Storage			
Staff Lunch Room			
Stage			
<b>MEDICAL</b>			
<b>ADMINISTRATION &amp; GUIDANCE</b>			
<b>CUSTODIAL &amp; MAINTENANCE</b>			
<b>OTHER</b>			
Other (specify)			
Total Building Net Floor Area (NFA)			0
Proposed Student Capacity / Enrollment			
Total Building Gross Floor Area (GFA) <sup>2</sup>			
Grossing factor (GFA/NFA)			#DIV/0!

MSBA Space Guidelines for Current Population		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
	38	34,990
1,200		-
1,200	3	3,600
950	18	17,100
950	11	10,450
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
		5,625
1,000	1	1,000
1,200	1	1,200
150	2	300
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
		74,811
		547
		112,217
		1.50

Current
Grades K-5 396
Grades 6-8 151

MSBA Space Guidelines for Expanded Population		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
	39	36,190
1,200		-
1,200	4	4,800
950	18	17,100
950	11	10,450
1,200	3	3,600
80	3	240
	6	8,560
950	2	1,900
950	4	3,800
60	4	240
60	2	120
500	1	500
500	2	1,000
500	2	1,000
		5,625
1,000	1	1,000
1,200	1	1,200
150	2	300
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
		8,333
6,000	1	6,000
150	1	150
183	1	183
1,000	2	2,000
		4,246
4,246	1	4,246
		8,118
3,735	1	3,735
2,047	1	2,047
449	1	449
287	1	287
1,600	1	1,600
		610
		3,220
		2,305
		0
		80,408
		747
		120,612
		1.50

+ 200
Grades K-5 498
Grades 6-8 249

\* 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 extends generously 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 build new 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 repurposed to provide necessary support spaces such as Learning Centers in lieu of continuing use of the space as an undersized classroom.



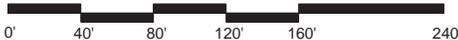
Image courtesy of Bing maps

Aerial of the Driscoll School site

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



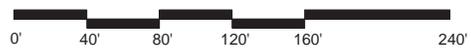
First Floor Plan





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 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 a recommended option because 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 northwest portion of the building closest to Reservoir Road. Understanding that the first story rear portion of this addition will be mostly underground, the classrooms are 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, which was installed in October 2012, and located below grade outside the footprint of the existing gymnasium, be relocated.

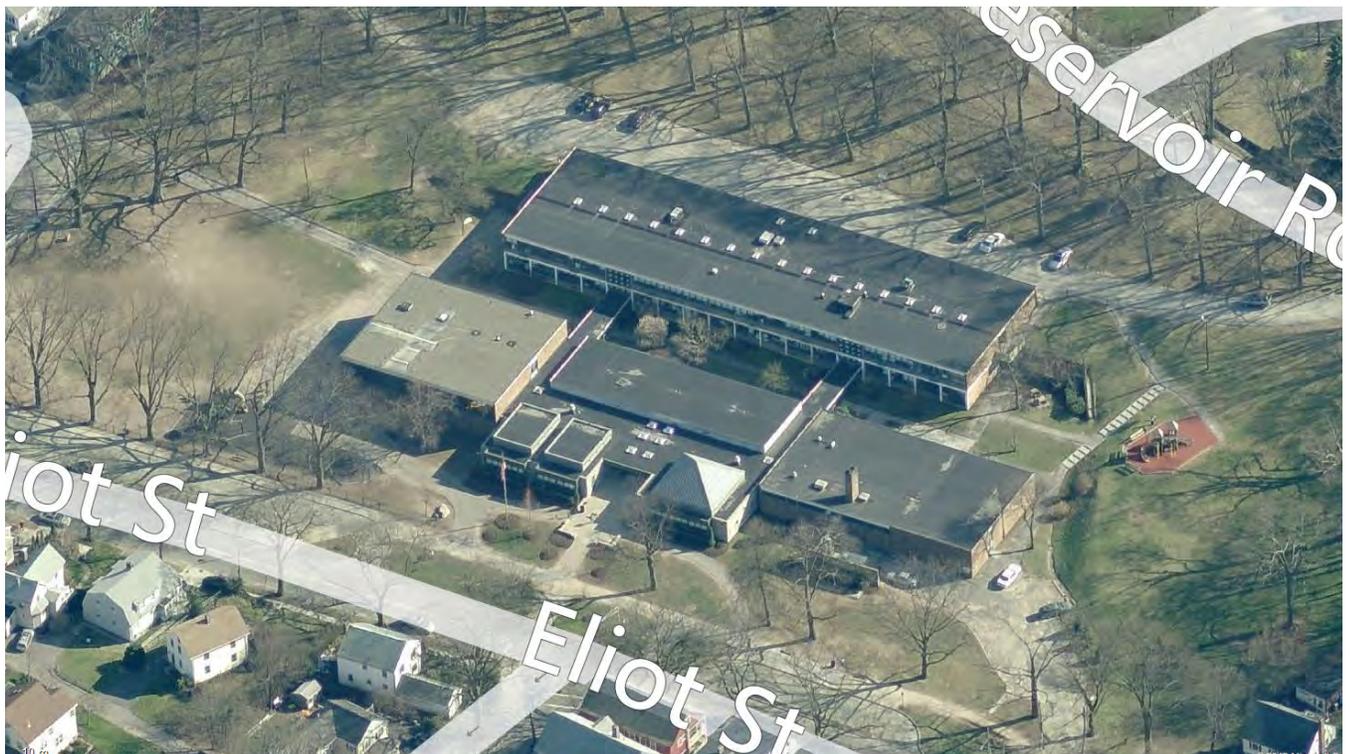


Image courtesy of Bing maps

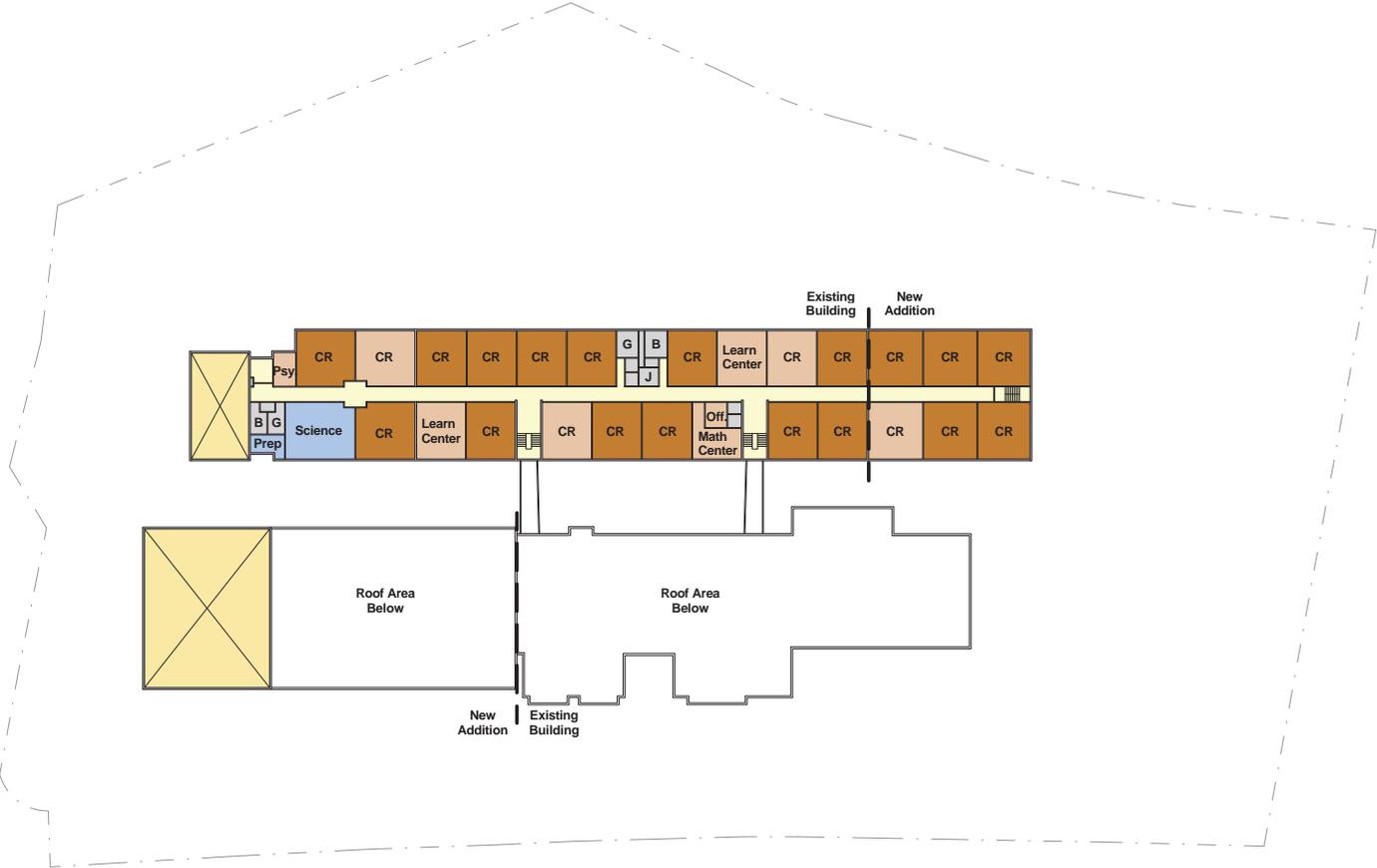
Aerial of the Heath School site



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 a very limited site, 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.

By utilizing these two areas around the Lawrence School, all of the additional classroom spaces can 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 repurposing of the existing, undersized cafeteria and library as shared or support spaces.

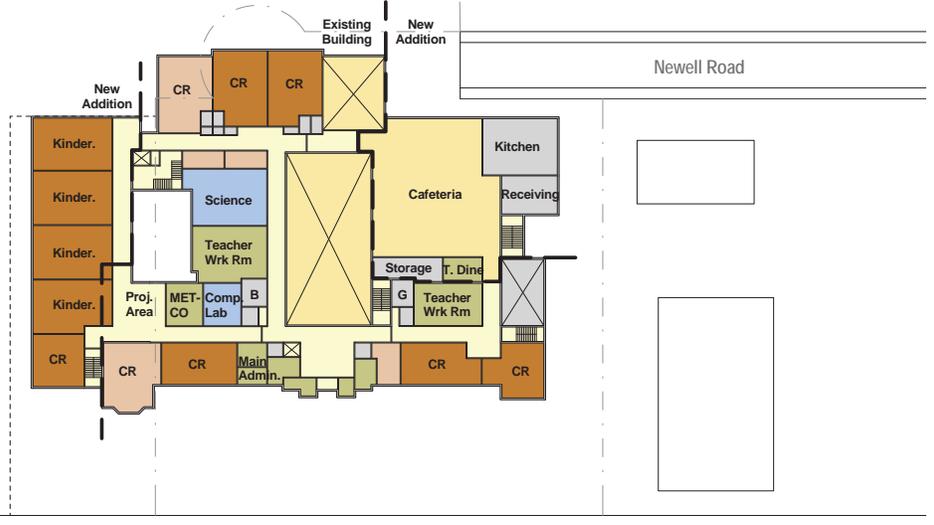
The two new additions create internal spaces which were once classrooms with exterior windows. The classroom spaces located along the existing western edge of the building closest to the playground will now look into an open light well, and are shared specialty spaces and not classroom homerooms. Spaces located on what was a northern exterior wall overlooking the parking area have been repurposed 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

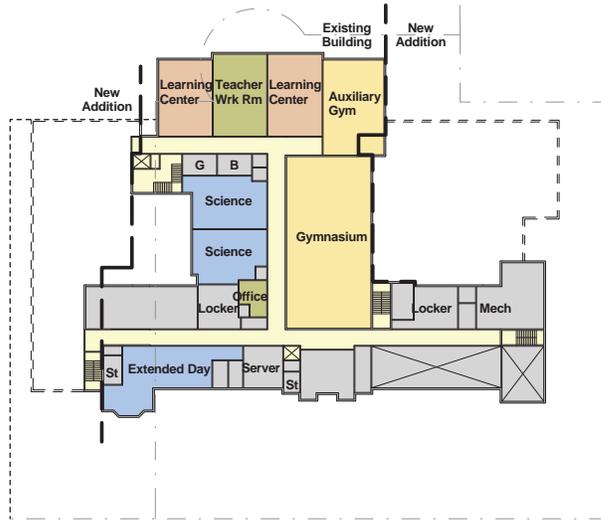
Longwood  
Playground



Francis Street

Newell Road

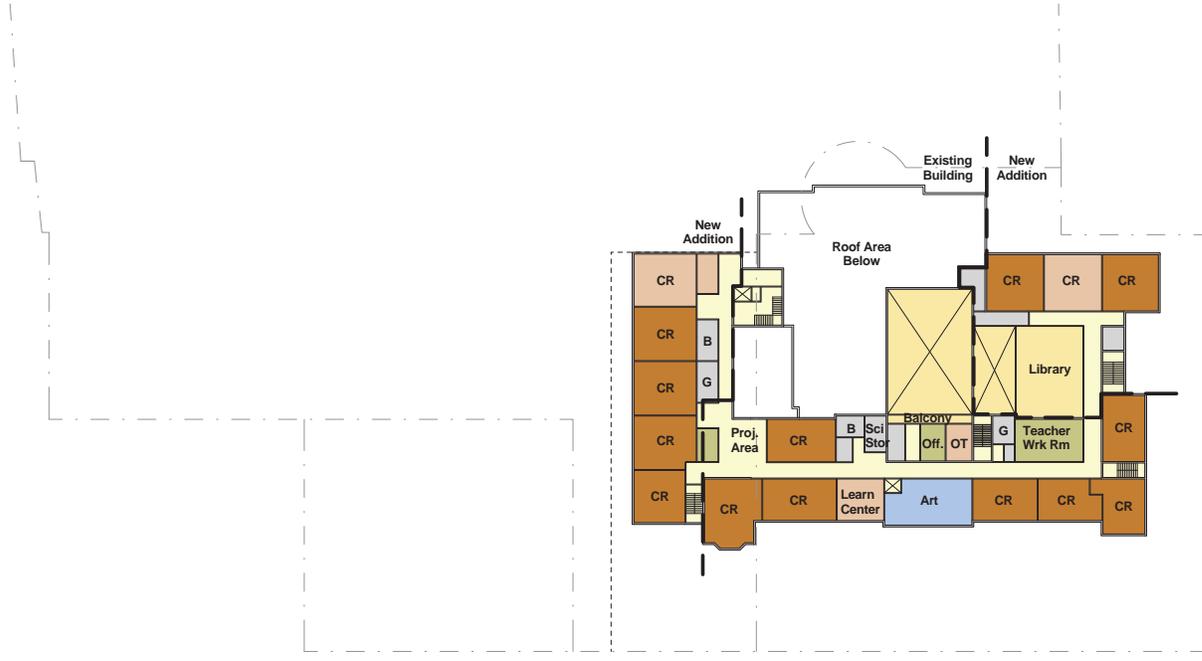
First Floor Plan



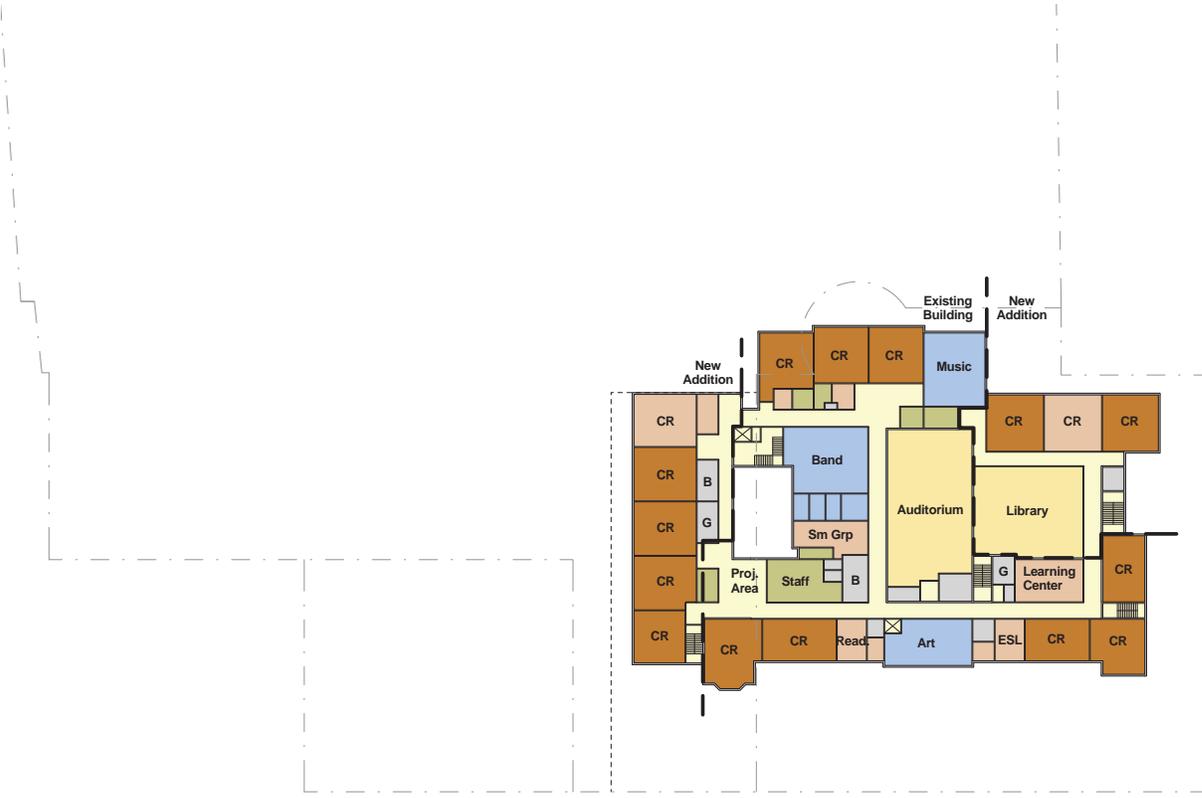
- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support



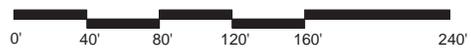
Basement Floor Plan



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 been 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 as to prevent any substantial expansions on to 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.

### 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 need to begin as soon as possible and be completed on a compressed project schedule. 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 on simultaneous construction schedules.

The feasibility of this solution would be dependent on funding and staffing. 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.



The Pierce School consists of the small 1912, historic Pierce School building and a larger 1970's, open-classrooms addition. The Pierce School property is located adjacent to Brookline Town Hall and Public Library, and as previously identified in the 4 School + High School solution of the study, cannot accommodate an addition on its current site.

The major benefit of building a new Pierce School is that it can 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 for the 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 an accessible connection between the floor levels of the renovated Historic Pierce School and 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.

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. 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.



Image courtesy of Bing maps

Aerial of the Pierce School site

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

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.

# Alternate 1 - Pierce School

3+HS Expansion



First Floor Plan





Second Floor Plan

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



# Alternate 1 - Pierce School

3+HS Expansion



Third 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						
Devotion School	830*	4 / 6	37	945	5	41
Driscoll School	547	3	26	847	4 / 5	37
Lawrence School	644	3 / 4	31	734	4	35

\* Current MSBA Enrollment Agreement

Note: Total Expanded Student Population is less than the required 630 additional seats  
 The additional student capacity will be gained through the removal of BEEP from other schools within town; freeing up additional classrooms for more student seats within the current school layouts

### Driscoll School

- Additional 300 students
- 13 classrooms – 10 new, 3 gained from BEEP relocation

### Devotion School

- Additional 115 students
- 5 anticipated new BEEP classrooms planned for general K-8 population

### Lawrence School

- Additional 90 students
- 4 modular classrooms constructed as currently planned by the town

### All other K-8 Schools

- Additional 125 students
- 6 additional Pre-K classrooms converted to general grade K-8 grade classrooms



Alternate 2 was developed based on recommendations from the B-Space Committee. The committee expressed a strong desire to maintain the K-8 neighborhood schools model, coupled with the desire to ensure that the school expansions were located in the denser northern areas of town.

The schools selected for further consideration for expansion are:

- Driscoll School – Future renovation / addition project possibly with MSBA
- Devotion School – Re-evaluation of enrollment for current planned renovation / addition project with MSBA
- Lawrence School – Addition of modular classrooms as currently planned by the district

These construction projects would be coupled with the relocation of all the BEEP (Pre-K) classes to leased spaces outside of the K-8 schools. This would provide an additional nine classroom spaces throughout the town's schools. The additional student capacity would be approximately distributed as shown on the adjacent page.

The proposed increased expansion at the Driscoll School is ideal as this is one of the few school sites in town which has the site capacity for the building expansion, and can accommodate the growth without negatively impacting the existing building or play areas.

The proposed revised enrollment required for expansion at the Devotion School will need to be negotiated with the MSBA and may impact the schedule for the currently scheduled project.

A previous design effort by the Town of Brookline has reviewed the modular addition at the Lawrence School, which will proceed based on those recommendations.

# Key MSBA Space Summary Guidelines

Driscoll School Alt. 2		Existing Conditions	
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>CORE ACADEMIC SPACES</b>		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			
<b>SPECIAL EDUCATION</b>			
<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			
<b>ART &amp; MUSIC</b>			
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			
<b>VOCATIONS &amp; TECHNOLOGY</b>			
Tech Clrm. - (E.G. Drafting, Business)			
Tech Shop - (E.G. Consumer, Wood)			
<b>HEALTH &amp; PHYSICAL EDUCATION</b>			
Gymnasium			
Gym Storeroom			
Health Instructor's Office w/ Shower & Toilet			
Locker Rooms - Boys / Girls w/ Toilets			
<b>MEDIA CENTER</b>			
Media Center/Reading Room			4000
<b>DINING &amp; FOOD SERVICE</b>			
Cafeteria / Dining			2600
Kitchen			
Chair / Table / Equipment Storage			
Staff Lunch Room			
Stage			
<b>MEDICAL</b>			
<b>ADMINISTRATION &amp; GUIDANCE</b>			
<b>CUSTODIAL &amp; MAINTENANCE</b>			
<b>OTHER</b>			
Other (specify)			
Total Building Net Floor Area (NFA)			0
Proposed Student Capacity / Enrollment			
Total Building Gross Floor Area (GFA) <sup>2</sup>			
Grossing factor (GFA/NFA)			#DIV/0!

MSBA Space Guidelines for Current Population		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
	42	38,790
1,200		-
1,200	3	3,600
950	21	19,950
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
		7,975
1,000	2	2,000
1,200	1	1,200
150	3	450
1,500	1	1,500
1,200	2	2,400
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
		80,961
		547
		121,442
		1.50

Current
Grades K-5 396
Grades 6-8 151

MSBA Space Guidelines for Expanded Population		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
	43	39,990
1,200		-
1,200	4	4,800
950	21	19,950
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
		8,050
1,000	2	2,000
1,200	1	1,200
150	3	450
1,500	1	1,500
1,200	2	2,400
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
		4,737
4,737	1	4,737
		8,776
4,235	1	4,235
2,147	1	2,147
482	1	482
312	1	312
1,600	1	1,600
		710
		3,470
		2,405
		0
		88,732
		847
		133,098
		1.50

+300
Grades K-5 565
Grades 6-8 282

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



### Key MSBA Space Summary Guidelines

Devotion School		Existing Conditions			MSBA Space Guidelines for Current Population			MSBA Space Guidelines for Expanded Population		
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals	ROOM NFA <sup>1</sup>	# OF RMS	area totals	ROOM NFA <sup>1</sup>	# OF RMS	area totals	
<b>CORE ACADEMIC SPACES</b>								47	44,040	
<i>(List classrooms of different sizes separately)</i>										
Pre-Kindergarten w/ toilet							1,200		-	
Kindergarten w/ toilet							1,200	5	6,000	
General Classrooms - Grades 1-5							950	22	20,900	
General Classrooms - Grades 6-8							950	14	13,300	
Science Classroom / Lab							1,200	3	3,600	
Prep room							80	3	240	
<b>SPECIAL EDUCATION</b>								8	11,580	
<i>(List rooms of different sizes separately)</i>										
Self-Contained SPED - Grades 6-8							950	3	2,850	
Self-Contained SPED - Grades 1-5							950	5	4,750	
Self-Contained SPED - Grades 1-5 toilet							60	5	300	
Self-Contained SPED - Grades 6-8 toilet							60	3	180	
Resource Room - Grades 6-8							500	2	1,000	
Resource Room - Grades 1-5							500	3	1,500	
Small Group Room / Reading							500	2	1,000	
<b>ART &amp; MUSIC</b>									8,050	
Art Classroom - Grades 1-5							1,000	2	2,000	
Art Classroom - Grades 6-8							1,200	1	1,200	
Art Workroom w/ Storage & kiln							150	3	450	
Band / Chorus - 100 seats							1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats							1,200	2	2,400	
Music Practice / Ensemble - Grades 1-5							75	4	300	
Music Practice / Ensemble - Grades 6-8							200	1	200	
<b>VOCATIONS &amp; TECHNOLOGY</b>									3,200	
Tech Clrm. - (E.G. Drafting, Business)							1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)							2,000	1	2,000	
<b>HEALTH &amp; PHYSICAL EDUCATION</b>									8,333	
Gymnasium							6,000	1	6,000	
Gym Storeroom							150	1	150	
Health Instructor's Office w/ Shower & Toilet							183	1	183	
Locker Rooms - Boys / Girls w/ Toilets							1,000	2	2,000	
<b>MEDIA CENTER</b>									5,220	
Media Center/Reading Room							5,220	1	5,220	
<b>DINING &amp; FOOD SERVICE</b>									9,421	
Cafeteria / Dining							4,725	1	4,725	
Kitchen							2,245	1	2,245	
Chair / Table / Equipment Storage							515	1	515	
Staff Lunch Room							336	1	336	
Stage							1,600	1	1,600	
<b>MEDICAL</b>									710	
<b>ADMINISTRATION &amp; GUIDANCE</b>									3,568	
<b>CUSTODIAL &amp; MAINTENANCE</b>									2,503	
<b>OTHER</b>									0	
<i>Other (specify)</i>										
Total Building Net Floor Area (NFA)			0			0			96,626	
Proposed Student Capacity / Enrollment					0				945	
Total Building Gross Floor Area (GFA) <sup>2</sup>			0			0			144,938	
Grossing factor (GFA/NFA)			#DIV/0!			1.50			1.50	

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



# Section 4 - 1+HS Expansion



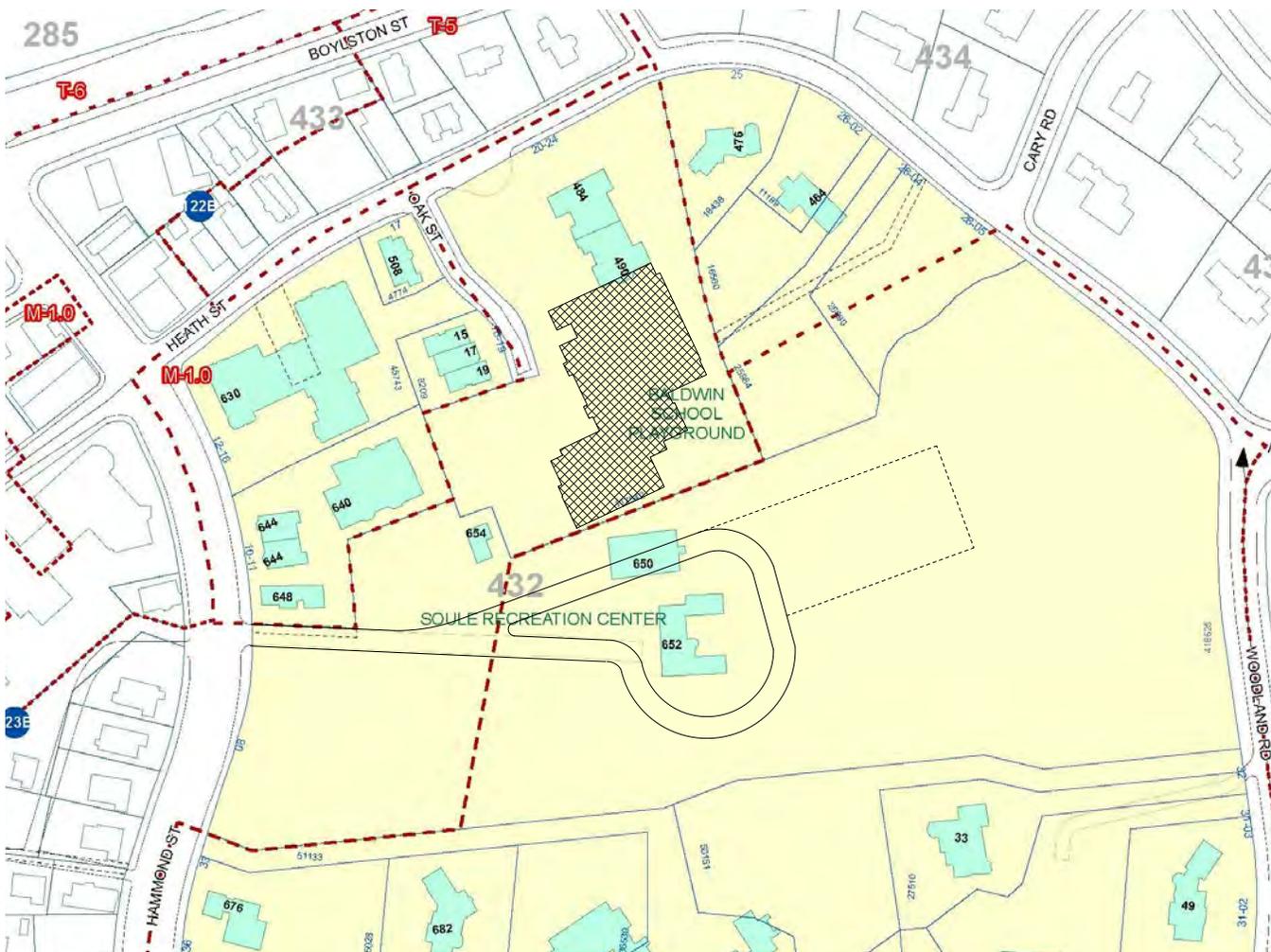


Solutions to accommodate the Brookline student population growth may result in multiple school projects and an extended construction schedule, creating a gap between the increased student population and the available additional building capacity. Therefore, alternatives were reviewed which could condense the number of construction projects necessary to provide the needed capacity. One alternative approach is to construct a new K-8 school, which could accommodate the student population either via re-districting or through the use of a concept school.

The development of a concept school will require a more in-depth study by the district to determine the interest in, and desire for a variety of possible subjects such as the arts or STEM programs. 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 ninth 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.

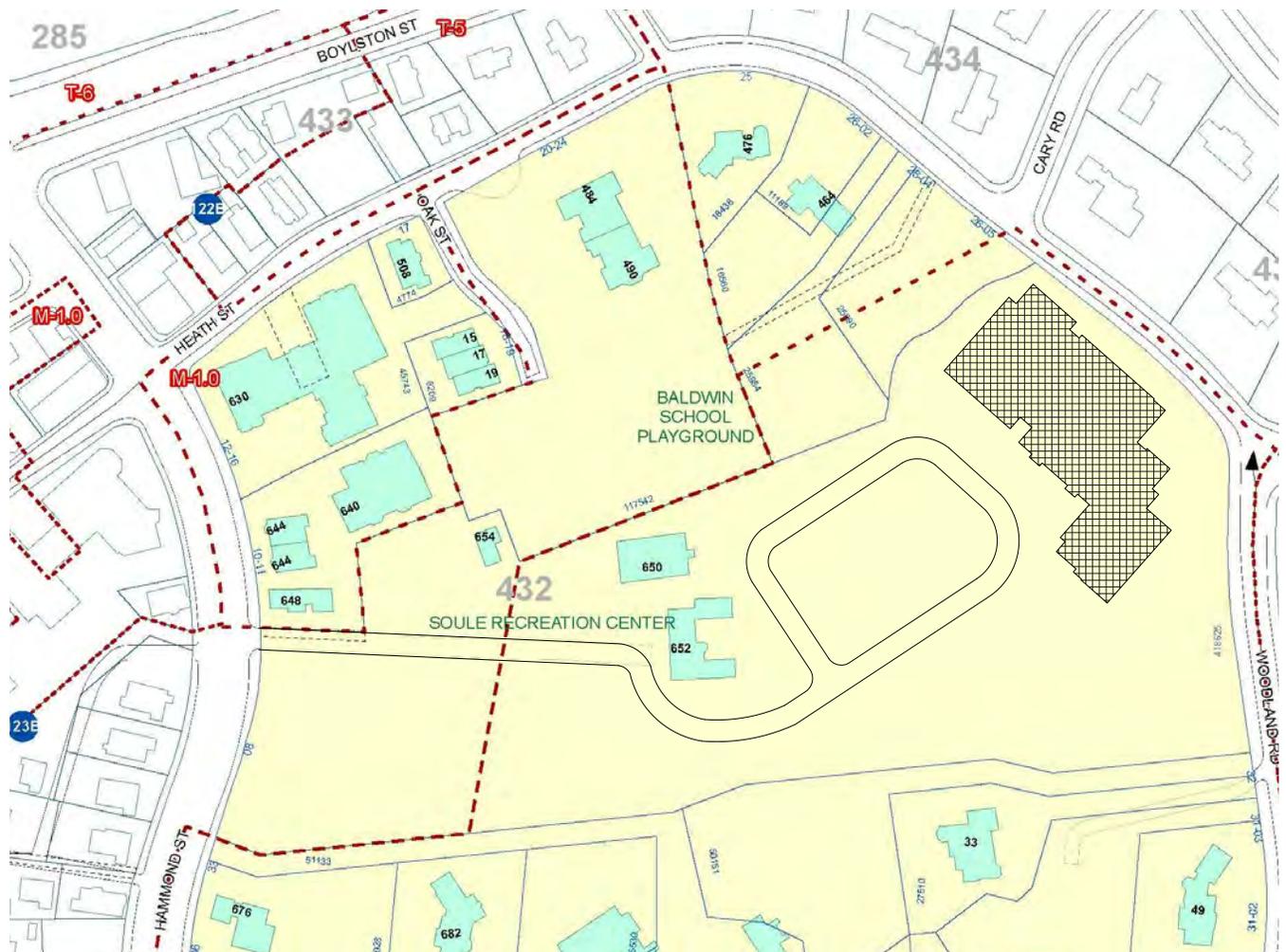
The Baldwin School / Soule Recreation Center does provide enough open square footage to create a new K-8 building in two possible locations on site. One option is to construct the school as a large addition to the existing Baldwin School building. While feasible, the construction would take place in 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.



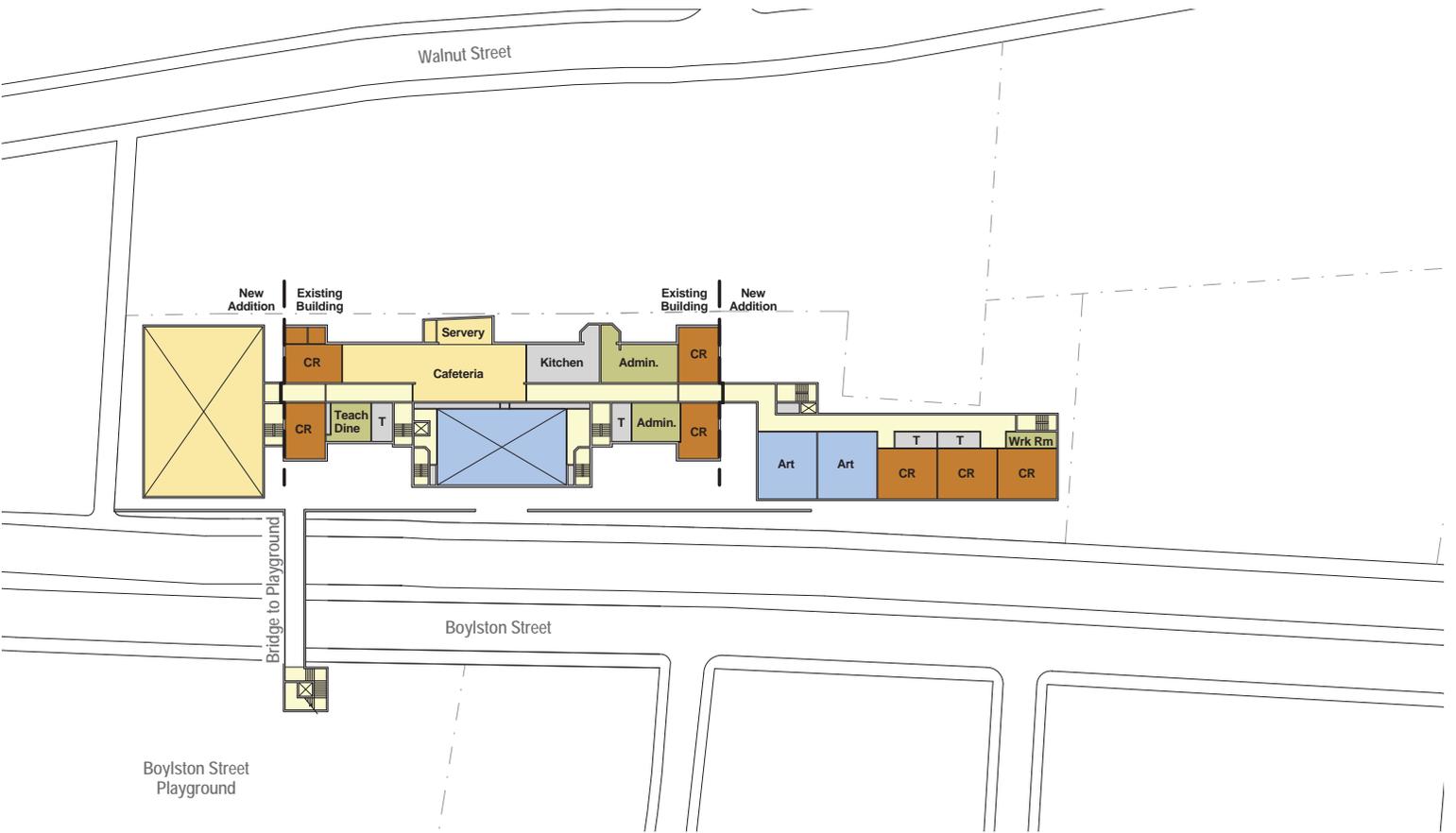
New K-8 expansion to existing Baldwin School



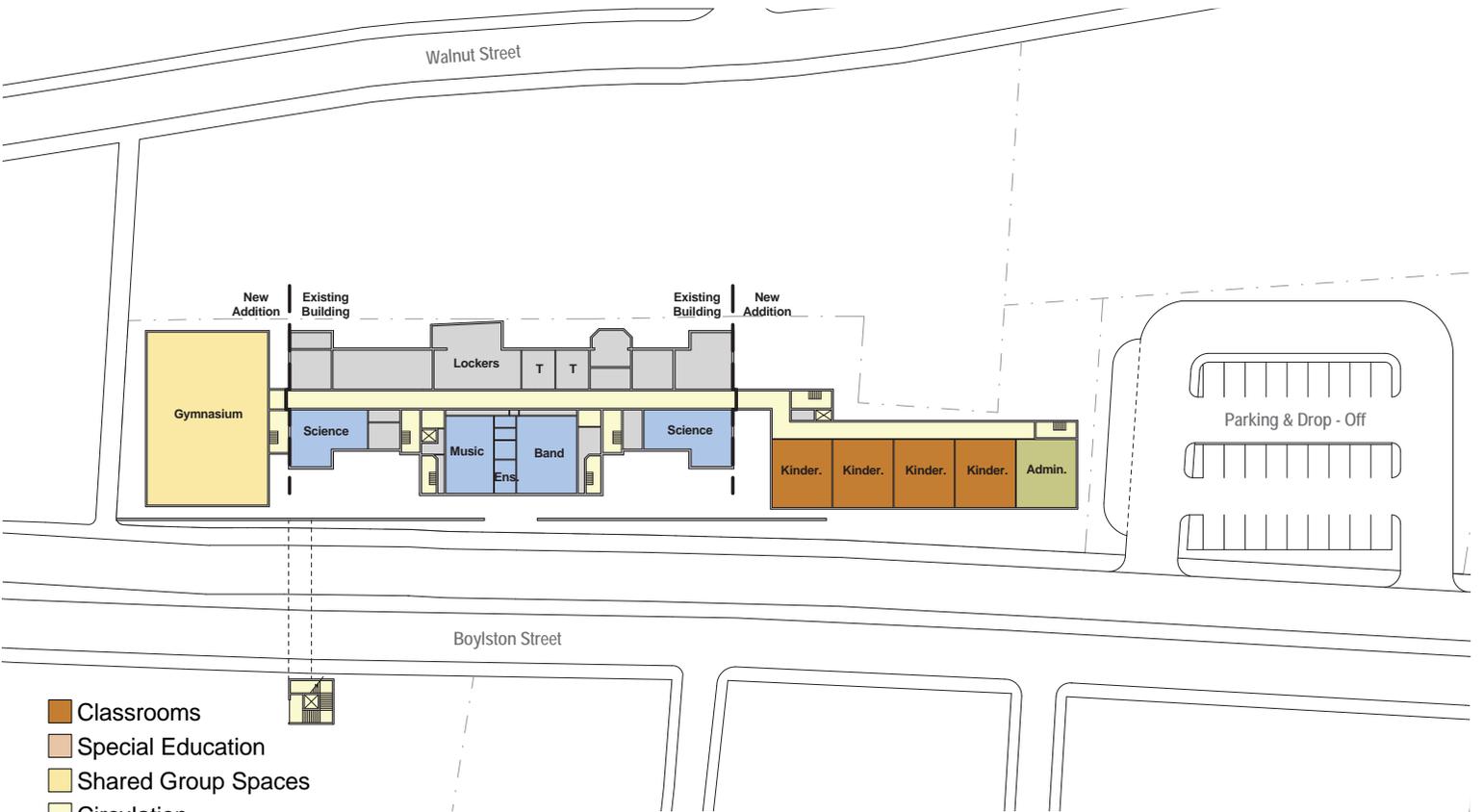
The formation of a new district in a southern location in town would be less than desirable in that it would adversely affect the rest of the town's school zones. If a new district were formed around a southern location such as the Baldwin School, the resulting shift of the remaining districts would cause the school building to be located on the southernmost border. Residents who 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 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



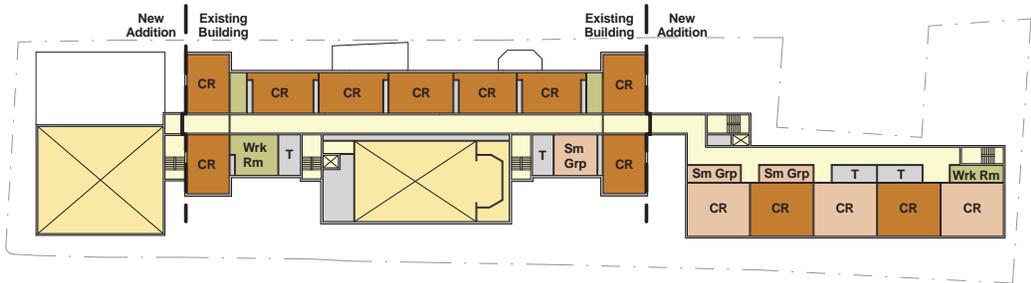
The Old Lincoln School location is an ideal location for the formation of a new district as previously discussed in this report. The property was reviewed further to determine the feasibility of a renovation/addition project. The existing historic school building is elevated approximately one to one 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.

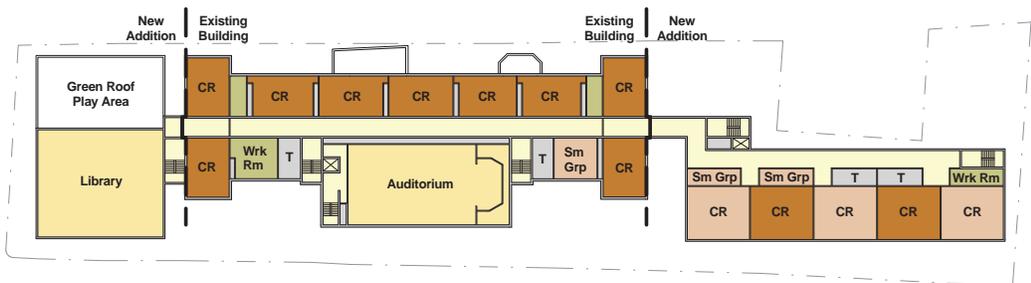


Image courtesy of Bing maps

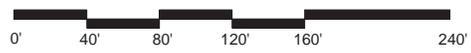
Aerial of the Old Lincoln School site



Fourth Floor Plan



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



Third Floor Plan

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 space which cannot be accommodated in the existing building. To accommodate the 700 student body population would require at least a four level structure. 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 repurposed 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. 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 the students to easily access the outdoor play space without having to 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 similar 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 need to begin as soon as possible and be on a compressed project schedule. 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. 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



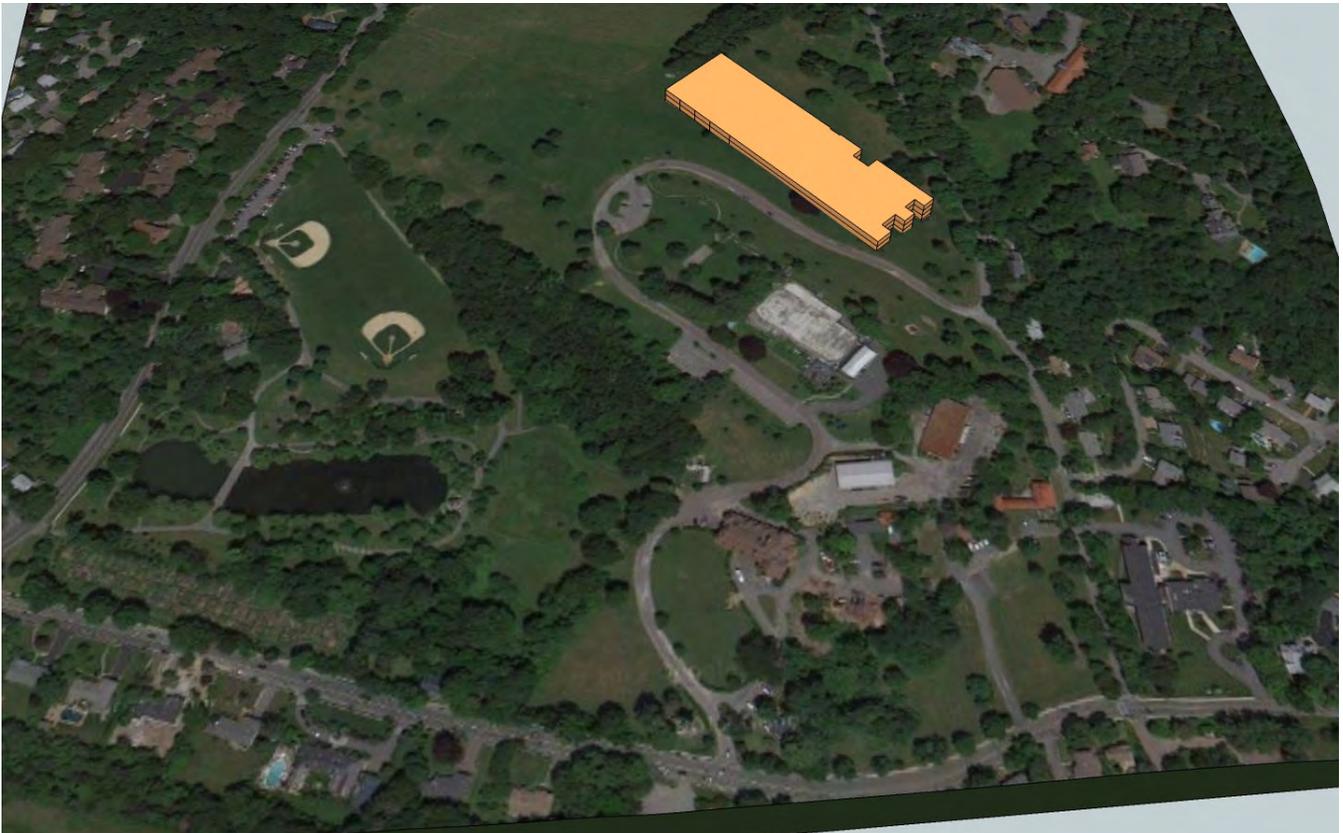
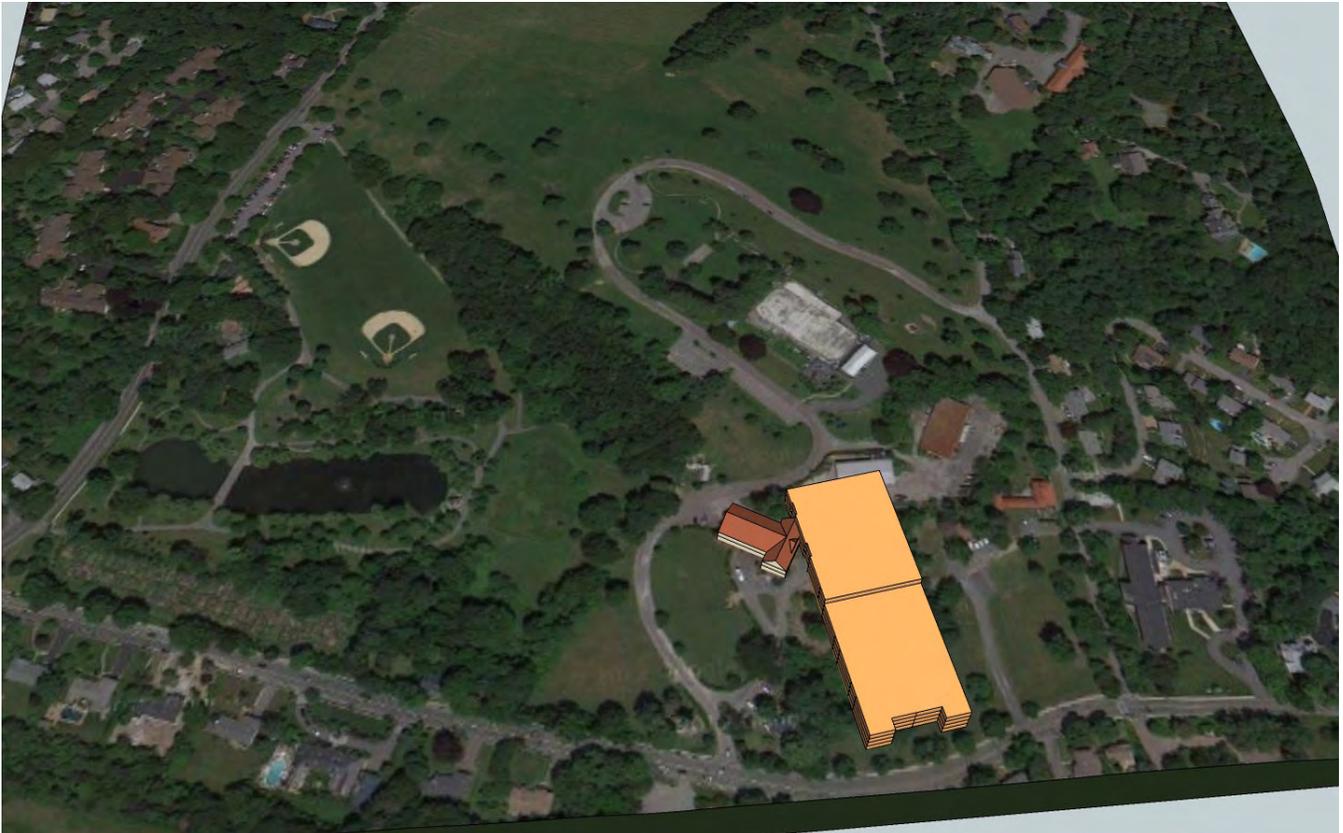
## Key MSBA Space Summary Guidelines

New High School	Existing Conditions		
	ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>CORE ACADEMIC SPACES</b>			<b>0</b>
<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			
<b>SPECIAL EDUCATION</b>			<b>0</b>
<i>(List classrooms of different sizes separately)</i>			
Self-Contained SPED			
Self-Contained SPED Toilet			
Resource Room			
Small Group Room			
<b>ART &amp; MUSIC</b>			<b>0</b>
Art Classroom - 25 seats			
Art Workroom w/ Storage & kiln			
Band - 50 - 100 seats			
Chorus - 50 - 100 seats			
Ensemble			
Music Practice			
Music Storage			
<b>VOCATIONS &amp; TECHNOLOGY</b>			<b>0</b>
Tech Cirm. - (E.G. Drafting, Business)			
Tech Shop - (E.G. Consumer, Wood)			
<b>HEALTH &amp; PHYSICAL EDUCATION</b>			<b>0</b>
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			
<b>MEDIA CENTER</b>			<b>0</b>
Media Center / Reading Room			
Computer Lab			
<b>AUDITORIUM / DRAMA</b>			<b>0</b>
Auditorium			
Stage			
Auditorium Storage			
Make-up / Dressing Rooms			
Controls / Lighting / Projection			
<b>DINING &amp; FOOD SERVICE</b>			<b>0</b>
Cafeteria / Student Lounge / Break-out			
Chair / Table Storage			
Scramble Serving Area			
Kitchen			
Staff Lunch Room			
<b>MEDICAL</b>			<b>0</b>
<b>ADMINISTRATION &amp; GUIDANCE</b>			<b>0</b>
<b>CUSTODIAL &amp; MAINTENANCE</b>			<b>0</b>
<b>OTHER</b>			<b>0</b>
Other (specify)			
Total Building Net Floor Area (NFA)			<b>0</b>
Proposed Student Capacity / Enrollment			
Total Building Gross Floor Area (GFA) <sup>2</sup>			
Grossing factor (GFA/NFA)			<b>#DIV/0!</b>

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

All options which involve construction at the K-8 schools also require a renovation/addition at Brookline High School in order to accommodate the expanded population as students move 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 to build a second high school building. 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 would require an approximately 300,000 sf building, but there is not a sufficient amount of open land within the Brookline Town limits to 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 300,000 sf 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, 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 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.

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



# Section 6 - Appendix



**NOTES:**

1. High School add/reno based on BHS Concept Study Option 1 sqft amounts; cost/sqft calculated as noted
2. All Estimates include a 12% escalation cost with construction beginning in 2017.
3. Minor Renovation Cost, \$130/sf; Major Renovation Cost, \$270/sf
4. Demolition Cost, \$12/sf; New Construction, \$390/sf

\* Other professional fees include Testing, Survey, Traffic Consult, HazMat, Clerk of the Work, etc.

\*\* MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates

## 4+HS Option Cost Summary

Appendix

4 + HS Options Breakdown			TOTAL
Description	Modular Add at Four Schools	HS Add/Reno	
Demolition Area	0 sf	130,000 sf	130,000 sf
Renovation Area	0 sf	50,950 sf	50,950 sf
New Construction Area (at each of 4 schools for modular additions)	9,975 sf	141,800 sf	151,775 sf
<b>Total Construction Area</b>	<b>39,900 sf</b>	<b>192,750 sf</b>	<b>232,650 sf</b>
Demolition Cost (\$12/sf)	\$ -	\$ 1,560,000	\$ 1,560,000
Renovation Cost (\$270/sf)	\$ -	\$ 13,756,500	\$ 13,756,500
New Construct.Cost (\$300 or \$390/sf)	\$ 11,542,500	\$ 55,302,000	\$ 66,844,500
<b>Total Construction Cost</b>	<b>\$ 11,542,500</b>	<b>\$ 70,618,500</b>	<b>\$ 82,161,000</b>
<b>Total Construction Cost per sf</b>	<b>\$ 289</b>	<b>\$ 366</b>	
Cap on Const. Costs which MSBA will Reimburse (\$275/sf)	\$ 10,972,500	\$ 54,311,500	\$ 65,284,000
Assumed MSBA Reimbursement on Const. Costs (40.34% of Cap)	\$ 4,426,307	\$ 21,909,259	\$ 26,335,566
Additional MSBA Reimbursement for Renovation (up to %5)	\$ -	\$ 717,813	\$ 717,813
Construction Contingency 10%	\$ 1,154,250	\$ 7,061,850	\$ 8,216,100
Temp. Classroom Costs	\$ -	\$ 3,600,000	\$ 3,600,000
A/E Fees at 10%	\$ 1,269,675	\$ 7,768,035	\$ 9,037,710
Other Professional Services at 5% *	\$ 634,838	\$ 3,884,018	\$ 4,518,855
F&E w/ Technology 630 K-8 or 700 hs x \$3,000/stu.	\$ 1,890,000	\$ 2,100,000	\$ 3,990,000
Project Contingency 5%	\$ 824,563	\$ 4,751,620	\$ 5,576,183
<b>Total Soft Costs</b>	<b>\$ 5,773,326</b>	<b>\$ 29,165,523</b>	<b>\$ 34,938,848</b>
Cap on Soft Costs which MSBA will Reimburse (20% Actual Const. Cost)	\$ 2,308,500	\$ 14,123,700	\$ 16,432,200
Assumed MSBA Reimbursement on Soft Costs (40.34% of Cap)	\$ 923,400	\$ 5,649,480	\$ 6,572,880
<b>Total Project Cost</b>	<b>\$ 17,315,826</b>	<b>\$ 99,784,023</b>	<b>\$ 117,099,848</b>
<b>Total Project Cost per sf</b>	<b>\$ 434</b>	<b>\$ 518</b>	
<b>Total MSBA Reimbursement</b>	<b>\$ 5,349,707</b>	<b>\$ 28,276,553</b>	<b>\$ 33,626,259</b>
<b>Town of Brookline Share</b>	<b>\$ 11,966,119</b>	<b>\$ 71,507,470</b>	<b>\$ 83,473,589</b>

**NOTES:**

1. High School costs based on BHS Concet Study Option 1; New Science and Academic Wings
  2. All Estimates include a 12% escalation cost with construction beginning in 2017.
  3. Minor Renovation Cost, \$130/sf; Major Renovation Cost, \$270/sf
  4. Demolition Cost, \$12/sf; New Construction, \$390/sf
  5. MSBA Hard Cost Reimbursement 3+HS Option not carrying reimbursement for Heath School Project
- \* Other professional fees include Testing, Survey, Traffic Consult, HazMat, Clerk of the Work, etc.  
\*\* MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates



# 3+HS Option Cost Summary

Appendix

3 + HS Options Breakdown					TOTAL
Description	Driscoll School	Heath School	Lawrence School	HS Add/Reno	
Demolition Area	9,200 sf	8,350 sf	2,000 sf	130,000 sf	149,550 sf
Renovation Area	13,650 sf	0 sf	18,650 sf	50,950 sf	83,250 sf
New Construction Area	45,800 sf	30,700 sf	48,350 sf	141,800 sf	266,650 sf
<b>Total Construction Area</b>	<b>59,450 sf</b>	<b>30,700 sf</b>	<b>67,000 sf</b>	<b>192,750 sf</b>	<b>349,900 sf</b>
Demolition Cost (\$12/sf)	\$ 110,400	\$ 100,200	\$ 24,000	\$ 1,560,000	\$ 1,794,600
Renovation Cost (\$130 or \$270/sf)	\$ 1,774,500	\$ -	\$ 5,035,500	\$ 13,756,500	\$ 20,566,500
New Construction Cost (\$390/sf)	\$ 17,862,000	\$ 11,973,000	\$ 18,856,500	\$ 55,302,000	\$ 103,993,500
<b>Total Construction Cost</b>	<b>\$ 19,746,900</b>	<b>\$ 12,073,200</b>	<b>\$ 23,916,000</b>	<b>\$ 70,618,500</b>	<b>\$ 126,354,600</b>
<b>Total Construction Cost per sf</b>	<b>\$ 332</b>	<b>\$ 393</b>	<b>\$ 357</b>	<b>\$ 366</b>	
Cap on Const. Costs which MSBA will Reimburse (\$275/sf)	\$ 14,479,900	\$ -	\$ 18,355,750	\$ 54,311,500	\$ 87,147,150
Assumed MSBA Reimbursement on Const. Costs (40.34% of Cap)	\$ 5,841,192	\$ -	\$ 7,404,710	\$ 21,909,259	\$ 35,155,160
Additional MSBA Reimbursement for Renovation (up to %5)	\$ 166,233	\$ -	\$ 255,474	\$ 717,813	\$ 1,139,520
Construction Contingency 10%	\$ 1,974,690	\$ 1,207,320	\$ 2,391,600	\$ 7,061,850	\$ 12,635,460
Temp. Classroom Costs	\$ -	\$ -	\$ 2,000,000	\$ 3,600,000	\$ 5,600,000
A/E Fees at 10%	\$ 2,172,159	\$ 1,328,052	\$ 2,630,760	\$ 7,768,035	\$ 13,899,006
Other Professional Services at 5% *	\$ 1,086,080	\$ 664,026	\$ 1,315,380	\$ 3,884,018	\$ 6,949,503
F&E w/ Technology 630 K-8 or 700 hs x \$3,000/stu.	\$ 630,000	\$ 630,000	\$ 630,000	\$ 2,100,000	\$ 3,990,000
Project Contingency 5%	\$ 1,280,491	\$ 795,130	\$ 1,644,187	\$ 4,751,620	\$ 8,471,428
<b>Total Soft Costs</b>	<b>\$ 7,143,420</b>	<b>\$ 4,624,528</b>	<b>\$ 10,611,927</b>	<b>\$ 29,165,523</b>	<b>\$ 51,545,397</b>
Cap on Soft Costs which MSBA will Reimburse (20% Actual Const. Cost)	\$ 3,949,380	\$ -	\$ 4,783,200	\$ 14,123,700	\$ 22,856,280
Assumed MSBA Reimbursement on Soft Costs (40.34% of Cap)	\$ 1,593,180	\$ -	\$ 1,929,543	\$ 5,697,501	\$ 9,220,223
<b>Total Project Cost</b>	<b>\$ 26,890,320</b>	<b>\$ 16,697,728</b>	<b>\$ 34,527,927</b>	<b>\$ 99,784,023</b>	<b>\$ 177,899,997</b>
<b>Total Project Cost per sf</b>	<b>\$ 452</b>	<b>\$ 544</b>	<b>\$ 515</b>	<b>\$ 518</b>	
<b>Total MSBA Reimbursement</b>	<b>\$ 7,600,604</b>	<b>\$ -</b>	<b>\$ 9,589,726</b>	<b>\$ 28,324,573</b>	<b>\$ 45,514,903</b>
<b>Town of Brookline Share</b>	<b>\$ 19,289,716</b>	<b>\$ 16,697,728</b>	<b>\$ 24,938,201</b>	<b>\$ 71,459,449</b>	<b>\$ 132,385,094</b>

**NOTES:**

1. High School costs based on BHS Concet Study Option 1; New Science and Academic Wings
2. All Estimates include a 12% escalation cost with construction beginning in 2017.
3. Minor Renovation Cost, \$130/sf; Major Renovation Cost, \$270/sf
4. Demolition Cost, \$12/sf; New Construction, \$390/sf

\* Other professional fees include Testing, Survey, Traffic Consult, HazMat, Clerk of the Work, etc.

\*\* MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates



## 3+HS Alt. 1 Option Cost Summary

Appendix

3 + HS Alternate 1 Options Breakdown					TOTAL
Description	Driscoll School	Pierce School (Alt. 1)	Lawrence School	HS Add/Reno	
Demolition Area	9,200 sf	105,400 sf	2,000 sf	130,000 sf	246,600 sf
Renovation Area	13,650 sf	25,850 sf	18,650 sf	50,950 sf	109,100 sf
New Construction Area	45,800 sf	140,700 sf	48,350 sf	141,800 sf	376,650 sf
<b>Total Construction Area</b>	<b>59,450 sf</b>	<b>166,550 sf</b>	<b>67,000 sf</b>	<b>192,750 sf</b>	<b>485,750 sf</b>
Demolition Cost (\$12/sf)	\$ 110,400	\$ 1,264,800	\$ 24,000	\$ 1,560,000	\$ 2,959,200
Renovation Cost (\$130 or \$270/sf)	\$ 1,774,500	\$ 6,979,500	\$ 5,035,500	\$ 13,756,500	\$ 27,546,000
New Construction Cost (\$390/sf)	\$ 13,740,000	\$ 54,873,000	\$ 18,856,500	\$ 55,302,000	\$ 142,771,500
<b>Total Construction Cost</b>	<b>\$ 15,624,900</b>	<b>\$ 63,117,300</b>	<b>\$ 23,916,000</b>	<b>\$ 70,618,500</b>	<b>\$ 173,276,700</b>
<b>Total Construction Cost per sf</b>	<b>\$ 263</b>	<b>\$ 379</b>	<b>\$ 357</b>	<b>\$ 366</b>	
Cap on Const. Costs which MSBA will Reimburse (\$275/sf)	\$ 14,479,900	\$ 46,936,800	\$ 18,355,750	\$ 54,311,500	\$ 134,083,950
Assumed MSBA Reimbursement on Const. Costs (40.34% of Cap)	\$ 5,841,192	\$ 18,934,305	\$ 7,404,710	\$ 21,909,259	\$ 54,089,465
Additional MSBA Reimbursement for Renovation (up to %5)	\$ 166,233	\$ 364,250	\$ 255,474	\$ 717,813	\$ 1,503,770
Construction Contingency 10%	\$ 1,562,490	\$ 6,311,730	\$ 2,391,600	\$ 7,061,850	\$ 17,327,670
Temp. Classroom Costs	\$ -	\$ 2,000,000	\$ 2,000,000	\$ 3,600,000	\$ 7,600,000
A/E Fees at 10%	\$ 1,718,739	\$ 6,942,903	\$ 2,630,760	\$ 7,768,035	\$ 19,060,437
Other Professional Services at 5% *	\$ 859,370	\$ 3,471,452	\$ 1,315,380	\$ 3,884,018	\$ 9,530,219
F&E w/ Technology 630 K-8 or 700 hs x \$3,000/stu.	\$ 630,000	\$ 630,000	\$ 630,000	\$ 2,100,000	\$ 3,990,000
Project Contingency 5%	\$ 1,019,775	\$ 4,123,669	\$ 1,644,187	\$ 4,751,620	\$ 11,539,251
<b>Total Soft Costs</b>	<b>\$ 5,790,373</b>	<b>\$ 23,479,754</b>	<b>\$ 10,611,927</b>	<b>\$ 29,165,523</b>	<b>\$ 69,047,577</b>
Cap on Soft Costs which MSBA will Reimburse (20% Actual Const. Cost)	\$ 3,124,980	\$ 12,623,460	\$ 4,783,200	\$ 14,123,700	\$ 34,655,340
Assumed MSBA Reimbursement on Soft Costs (40.34% of Cap)	\$ 1,260,617	\$ 5,092,304	\$ 1,929,543	\$ 5,697,501	\$ 13,979,964
<b>Total Project Cost</b>	<b>\$ 21,415,273</b>	<b>\$ 86,597,054</b>	<b>\$ 34,527,927</b>	<b>\$ 99,784,023</b>	<b>\$ 242,324,277</b>
<b>Total Project Cost per sf</b>	<b>\$ 360</b>	<b>\$ 520</b>	<b>\$ 515</b>	<b>\$ 518</b>	
<b>Total MSBA Reimbursement</b>	<b>\$ 7,268,041</b>	<b>\$ 24,390,859</b>	<b>\$ 9,589,726</b>	<b>\$ 28,324,573</b>	<b>\$ 69,573,199</b>
<b>Town of Brookline Share</b>	<b>\$ 14,147,232</b>	<b>\$ 62,206,195</b>	<b>\$ 24,938,201</b>	<b>\$ 71,459,449</b>	<b>\$ 172,751,078</b>

**NOTES:**

1. High School costs based on BHS Concet Study Option 1; New Science and Academic Wings
  2. All Estimates include a 12% escalation cost with construction beginning in 2017.
  3. Minor Renovation Cost, \$130/sf; Major Renovation Cost, \$270/sf
  4. Demolition Cost, \$12/sf; New Construction, \$390/sf
  5. Devotion School Estimate numbers for Option E1, CM@R based on previous estimate
- \* Other professional fees include Testing, Survey, Traffic Consult, HazMat, Clerk of the Work, etc.  
\*\* MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates



## 3+HS Alt. 2 Option Cost Summary

Appendix

3 + HS Alternate 2 Options Breakdown					TOTAL
Description	Driscoll School (Alt. 2 - larger)	Devotion School (Alt. 2)	Lawrence School	HS Add/Reno	
Demolition Area	9,200 sf	117,592 sf	2,000 sf	130,000 sf	258,792 sf
Renovation Area	13,650 sf	38,278 sf	18,650 sf	50,950 sf	121,528 sf
New Construction Area	58,800 sf	170,985 sf	48,350 sf	141,800 sf	419,935 sf
<b>Total Construction Area</b>	<b>72,450 sf</b>	<b>209,263 sf</b>	<b>67,000 sf</b>	<b>192,750 sf</b>	<b>541,463 sf</b>
Demolition Cost (\$12/sf)	\$ 110,400	\$ 1,411,104	\$ 24,000	\$ 1,560,000	\$ 3,105,504
Renovation Cost (\$130 or \$270/sf)	\$ 1,774,500	\$ 4,976,140	\$ 5,035,500	\$ 13,756,500	\$ 25,542,640
New Construction Cost (\$390/sf) +/-	\$ 17,640,000	\$ 67,581,076	\$ 18,856,500	\$ 55,302,000	\$ 159,379,576
<b>Total Construction Cost</b>	<b>\$ 19,524,900</b>	<b>\$ 80,823,510</b>	<b>\$ 23,916,000</b>	<b>\$ 70,618,500</b>	<b>\$ 194,882,910</b>
<b>Total Construction Cost per sf</b>	<b>\$ 269</b>	<b>\$ 386</b>	<b>\$ 357</b>	<b>\$ 366</b>	
Cap on Const. Costs which MSBA will Reimburse (\$275/sf)	\$ 18,054,900	\$ 53,408,119	\$ 18,355,750	\$ 54,311,500	\$ 144,130,269
Assumed MSBA Reimbursement on Const. Costs (40.34% of Cap)	\$ 7,283,347	\$ 21,544,835	\$ 7,404,710	\$ 21,909,259	\$ 58,142,151
Additional MSBA Reimbursement for Renovation (up to %5)	\$ 170,082	\$ 488,466	\$ 255,474	\$ 717,813	\$ 1,631,835
Construction Contingency 10%	\$ 1,952,490	\$ 8,082,351	\$ 2,391,600	\$ 7,061,850	\$ 19,488,291
Temp. Classroom Costs	\$ -	\$ 2,000,000	\$ 2,000,000	\$ 3,600,000	\$ 7,600,000
A/E Fees at 10%	\$ 2,147,739	\$ 8,890,586	\$ 2,630,760	\$ 7,768,035	\$ 21,437,120
Other Professional Services at 5% *	\$ 1,073,870	\$ 4,445,293	\$ 1,315,380	\$ 3,884,018	\$ 10,718,560
F&E w/ Technology 630 K-8 or 700 hs x \$3,000/stu.	\$ 630,000	\$ 630,000	\$ 630,000	\$ 2,100,000	\$ 3,990,000
Project Contingency 5%	\$ 1,266,450	\$ 5,243,587	\$ 1,644,187	\$ 4,751,620	\$ 12,905,844
<b>Total Soft Costs</b>	<b>\$ 7,070,548</b>	<b>\$ 29,291,817</b>	<b>\$ 10,611,927</b>	<b>\$ 29,165,523</b>	<b>\$ 76,139,815</b>
Cap on Soft Costs which MSBA will Reimburse (20% Actual Const. Cost)	\$ 3,904,980	\$ 16,164,702	\$ 4,783,200	\$ 14,123,700	\$ 38,976,582
Assumed MSBA Reimbursement on Soft Costs (40.34% of Cap)	\$ 1,575,269	\$ 6,520,841	\$ 1,929,543	\$ 5,697,501	\$ 15,723,153
<b>Total Project Cost</b>	<b>\$ 26,595,448</b>	<b>\$ 110,115,327</b>	<b>\$ 34,527,927</b>	<b>\$ 99,784,023</b>	<b>\$ 271,022,725</b>
<b>Total Project Cost per sf</b>	<b>\$ 367</b>	<b>\$ 526</b>	<b>\$ 515</b>	<b>\$ 518</b>	
<b>Total MSBA Reimbursement</b>	<b>\$ 9,028,698</b>	<b>\$ 28,554,142</b>	<b>\$ 9,589,726</b>	<b>\$ 28,324,573</b>	<b>\$ 75,497,139</b>
<b>Town of Brookline Share</b>	<b>\$ 17,566,750</b>	<b>\$ 81,561,185</b>	<b>\$ 24,938,201</b>	<b>\$ 71,459,449</b>	<b>\$ 195,525,586</b>

**NOTES:**

1. High School costs based on BHS Concet Study Option 1; New Science and Academic Wings
2. All Estimates include a 12% escalation cost with construction beginning in 2017.
3. Minor Renovation Cost, \$130/sf; Major Renovation Cost, \$270/sf
4. Demolition Cost, \$12/sf; New Construction, \$390/sf

\* Other professional fees include Testing, Survey, Traffic Consult, HazMat, Clerk of the Work, etc.

\*\* MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates



# 1+HS Option Cost Summary

Appendix

1 + HS Options Breakdown			TOTAL
Description	New K-8 at Old Lincoln	HS Add/Reno	
Demolition Area	7,000 sf	130,000 sf	137,000 sf
Renovation Area	69,900 sf	50,950 sf	120,850 sf
New Construction Area	44,250 sf	141,800 sf	186,050 sf
<b>Total Construction Area</b>	<b>114,150 sf</b>	<b>192,750 sf</b>	<b>306,900 sf</b>
Demolition Cost (\$12/sf)	\$ 84,000	\$ 1,560,000	\$ 1,644,000
Renovation Cost (\$130 or \$270/sf)	\$ 18,873,000	\$ 13,756,500	\$ 32,629,500
New Construction Cost (\$390/sf)	\$ 13,275,000	\$ 55,302,000	\$ 68,577,000
<b>Total Construction Cost</b>	<b>\$ 32,232,000</b>	<b>\$ 70,618,500</b>	<b>\$ 102,850,500</b>
<b>Total Construction Cost per sf</b>	<b>\$ 282</b>	<b>\$ 366</b>	
Cap on Const. Costs which MSBA will Reimburse (\$275/sf)	\$ 31,125,750	\$ 54,311,500	\$ 85,437,250
Assumed MSBA Reimbursement on Const. Costs (40.34% of Cap)	\$ 12,556,128	\$ 21,909,259	\$ 34,465,387
Additional MSBA Reimbursement for Renovation (up to %5)	\$ 952,996	\$ 717,813	\$ 1,670,809
Construction Contingency 10%	\$ 3,223,200	\$ 7,061,850	\$ 10,285,050
Temp. Classroom Costs	\$ -	\$ 3,600,000	\$ 3,600,000
A/E Fees at 10%	\$ 3,545,520	\$ 7,768,035	\$ 11,313,555
Other Professional Services at 5% *	\$ 1,772,760	\$ 3,884,018	\$ 5,656,778
F&E w/ Technology 630 K-8 or 700 hs x \$3,000/stu.	\$ 3,990,000	\$ 2,100,000	\$ 6,090,000
Project Contingency 5%	\$ 2,238,174	\$ 4,751,620	\$ 6,989,794
<b>Total Soft Costs</b>	<b>\$ 14,769,654</b>	<b>\$ 29,165,523</b>	<b>\$ 43,935,177</b>
Cap on Soft Costs which MSBA will Reimburse (20% Actual Const. Cost)	\$ 6,446,400	\$ 14,123,700	\$ 20,570,100
Assumed MSBA Reimbursement on Soft Costs (40.34% of Cap)	\$ 2,600,478	\$ 5,697,501	\$ 8,297,978
<b>Total Project Cost</b>	<b>\$ 47,001,654</b>	<b>\$ 99,784,023</b>	<b>\$ 146,785,677</b>
<b>Total Project Cost per sf</b>	<b>\$ 412</b>	<b>\$ 518</b>	
<b>Total MSBA Reimbursement</b>	<b>\$ 16,109,601</b>	<b>\$ 28,324,573</b>	<b>\$ 44,434,174</b>
<b>Town of Brookline Share</b>	<b>\$ 30,892,053</b>	<b>\$ 71,459,449</b>	<b>\$ 102,351,502</b>

**NOTES:**

1. High School costs based on BHS Concet Study Option 1; New Science and Academic Wings
2. All Estimates include a 12% escalation cost with construction beginning in 2017.
3. Minor Renovation Cost, \$130/sf; Major Renovation Cost, \$270/sf
4. Demolition Cost, \$12/sf; New Construction, \$390/sf

\* Other professional fees include Testing, Survey, Traffic Consult, HazMat, Clerk of the Work, etc.

\*\* MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates



# New Second HS Option Cost Summary

Appendix

<b>NEW HIGH SCHOOL</b>	
<b>Description</b>	<b>New 7 - 12 HS</b>
Demolition Area	0 sf
Renovation Area	0 sf
New Construction Area	298,920 sf
<b>Total Construction Area</b>	<b>298,920 sf</b>
Demolition Cost (\$12/sf)	0 sf
Renovation Cost (\$130 or \$270/sf)	0 sf
New Construction Cost (\$390/sf)	89,676,000 sf
<b>Total Construction Cost</b>	<b>\$ 89,676,000</b>
<b>Total Construction Cost per sf</b>	<b>\$ 300</b>
<b>Cap on Const. Costs which MSBA will Reimburse (\$275/sf)</b>	<b>\$ 82,203,000</b>
<b>Assumed MSBA Reimbursement on Const. Costs (40.34% of Cap)</b>	<b>\$ 33,160,690</b>
<b>Additional MSBA Reimbursement for Renovation (up to %5)</b>	<b>\$ -</b>
Construction Contingency 10%	\$ 8,967,600
Temp. Classroom Costs	\$ -
A/E Fees at 10%	\$ 9,864,360
Other Professional Services at 5% *	\$ 4,932,180
F&E w/ Technology 630 K-8 + 700 hs x \$3,000/stu.	\$ 3,990,000
Project Contingency 5%	\$ 5,871,507
<b>Total Soft Costs</b>	<b>\$ 33,625,647</b>
<b>Cap on Soft Costs which MSBA will Reimburse (20% Actual Const. Cost)</b>	<b>\$ 17,935,200</b>
<b>Assumed MSBA Reimbursement on Soft Costs (40.34% of Cap)</b>	<b>\$ 7,235,060</b>
<b>Total Project Cost</b>	<b>\$ 123,301,647</b>
<b>Total Project Cost per sf</b>	<b>\$ 412</b>
<b>Total MSBA Reimbursement</b>	<b>\$ 40,395,750</b>
<b>Town of Brookline Share</b>	<b>\$ 82,905,897</b>