HMFH Architects, Inc.

Brookline School Population & Capacity Exploration

Concept Study Report

Brookline, MA

September 2013

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Section 1 - Introduction

School Districts
with Buffer Zones Effective July 1, 2012

Voted by the School Committee on March 15, 2012

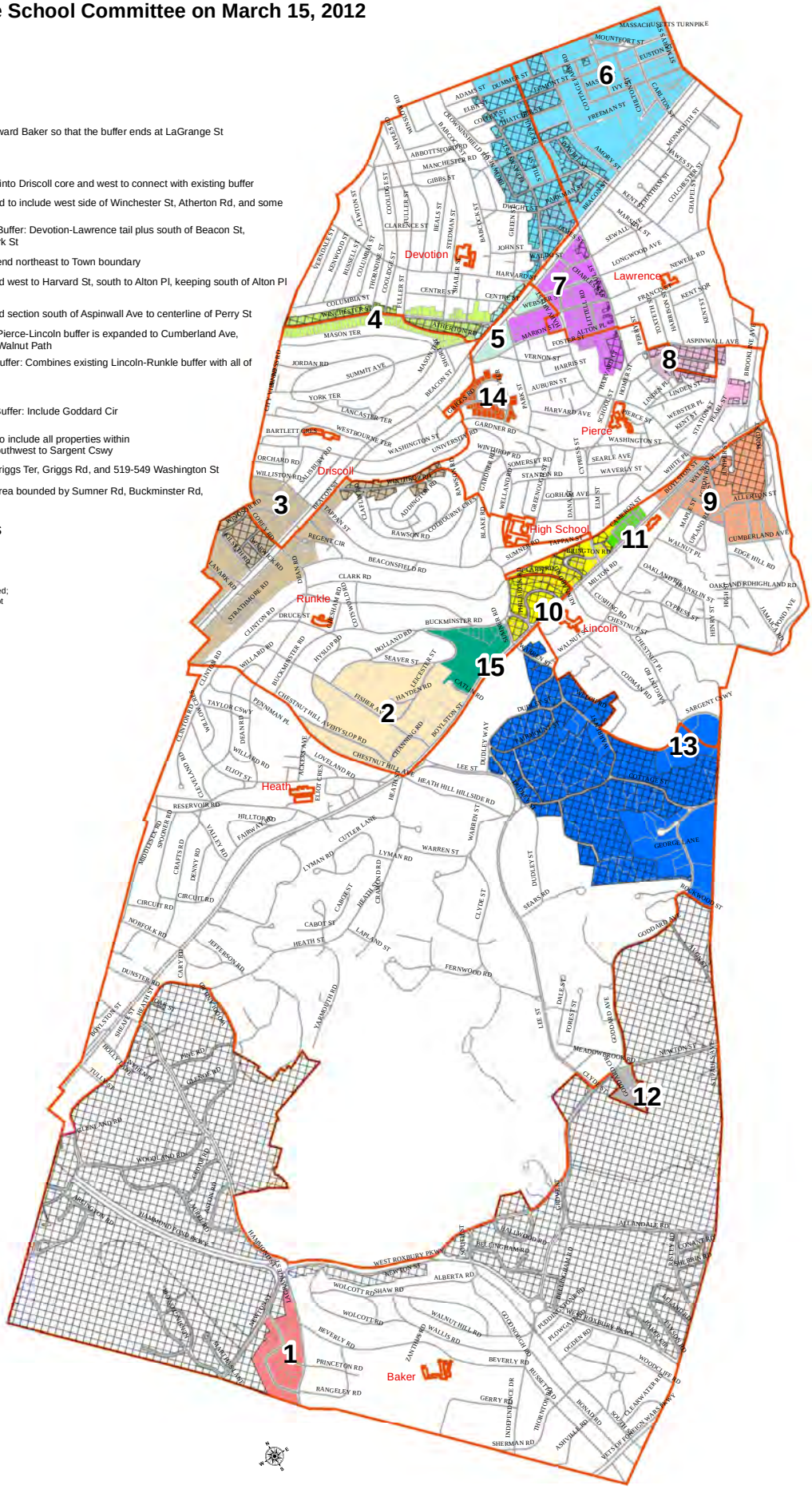
Buffer Zone Proposals

- 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

BROOKLINE GIS

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
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 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		-	-	-			
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 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 modulars.

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. Modulars 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 availably 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			MSBA Space Guidelines for Current Population				MSBA Space Guidelines for Expanded Population			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES		27			38	34,990			39	36,190	
(List classrooms of different sizes separately)											
Pre-Kindergarten w/ toilet		3		1,200		-		1,200		-	
Kindergarten w/ toilet				1,200	3	3,600		1,200	4	4,800	
General Classrooms - Grades 1-5		26*		950	18	17,100		950	18	17,100	
General Classrooms - Grades 6-8				950	11	10,450		950	11	10,450	
Science Classroom / Lab		1		1,200	3	3,600		1,200	3	3,600	
Prep room				80	3	240		80	3	240	
SPECIAL EDUCATION					5	7,050			6	8,560	
(List rooms of different sizes separately)											
Self-Contained SPED - Grades 6-8				950	2	1,900		950	2	1,900	
Self-Contained SPED - Grades 1-5				950	3	2,850		950	4	3,800	
Self-Contained SPED - Grades 1-5 toilet				60	3	180		60	4	240	
Self-Contained SPED - Grades 6-8 toilet				60	2	120		60	2	120	
Resource Room - Grades 6-8				500	1	500		500	1	500	
Resource Room - Grades 1-5				500	2	1,000		500	2	1,000	
Small Group Room / Reading				500	1	500		500	2	1,000	
ART & MUSIC						5,625				5,625	
Art Classroom - Grades 1-5		1		1,000	1	1,000		1,000	1	1,000	
Art Classroom - Grades 6-8		1		1,200	1	1,200		1,200	1	1,200	
Art Workroom w/ Storage & kiln				150	2	300		150	2	300	
Band / Chorus - 100 seats				1,500	1	1,500		1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats				1,200	1	1,200		1,200	1	1,200	
Music Practice / Ensemble - Grades 1-5				75	3	225		75	3	225	
Music Practice / Ensemble - Grades 6-8				200	1	200		200	1	200	
VOCATIONS & TECHNOLOGY						3,200				3,200	
Tech Clrm. - (E.G. Drafting, Business)				1,200	1	1,200		1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)				2,000	1	2,000		2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION						8,328				8,333	
Gymnasium				6,000	1	6,000		6,000	1	6,000	
Gym Storeroom				150	1	150		150	1	150	
Health Instructor's Office w/ Shower & Toilet				178	1	178		183	1	183	
Locker Rooms - Boys / Girls w/ Toilets				1,000	2	2,000		1,000	2	2,000	
MEDIA CENTER						3,240				4,246	
Media Center/Reading Room			4000	3,240	1	3,240		4,246	1	4,246	
DINING & FOOD SERVICE						6,801				8,118	
Cafeteria / Dining			2600	2,735	1	2,735	**	3,735	1	3,735	**
Kitchen				1,847	1	1,847		2,047	1	2,047	
Chair / Table / Equipment Storage				382	1	382		449	1	449	
Staff Lunch Room				237	1	237		287	1	287	
Stage				1,600	1	1,600		1,600	1	1,600	
MEDICAL						610				610	
ADMINISTRATION & GUIDANCE						2,855				3,220	
CUSTODIAL & MAINTENANCE						2,112				2,305	
OTHER						0				0	
Other *(specify)*											
Total Building Net Floor Area (NFA)			0			74,811				80,408	
Proposed Student Capacity / Enrollment						547				747	
Total Building Gross Floor Area (GFA)[2]						112,217				120,612	
Grossing factor (GFA/NFA)			#DIV/0!			1.50				1.50	

Current	+ 200
Grades K-5	Grades K-5
396	498
Grades 6-8	Grades 6-8
151	249

* Existing # of CR's based on estimated original building layout

** Cafeteria Seating has been adjusted to reflect three seatings in lieu of two

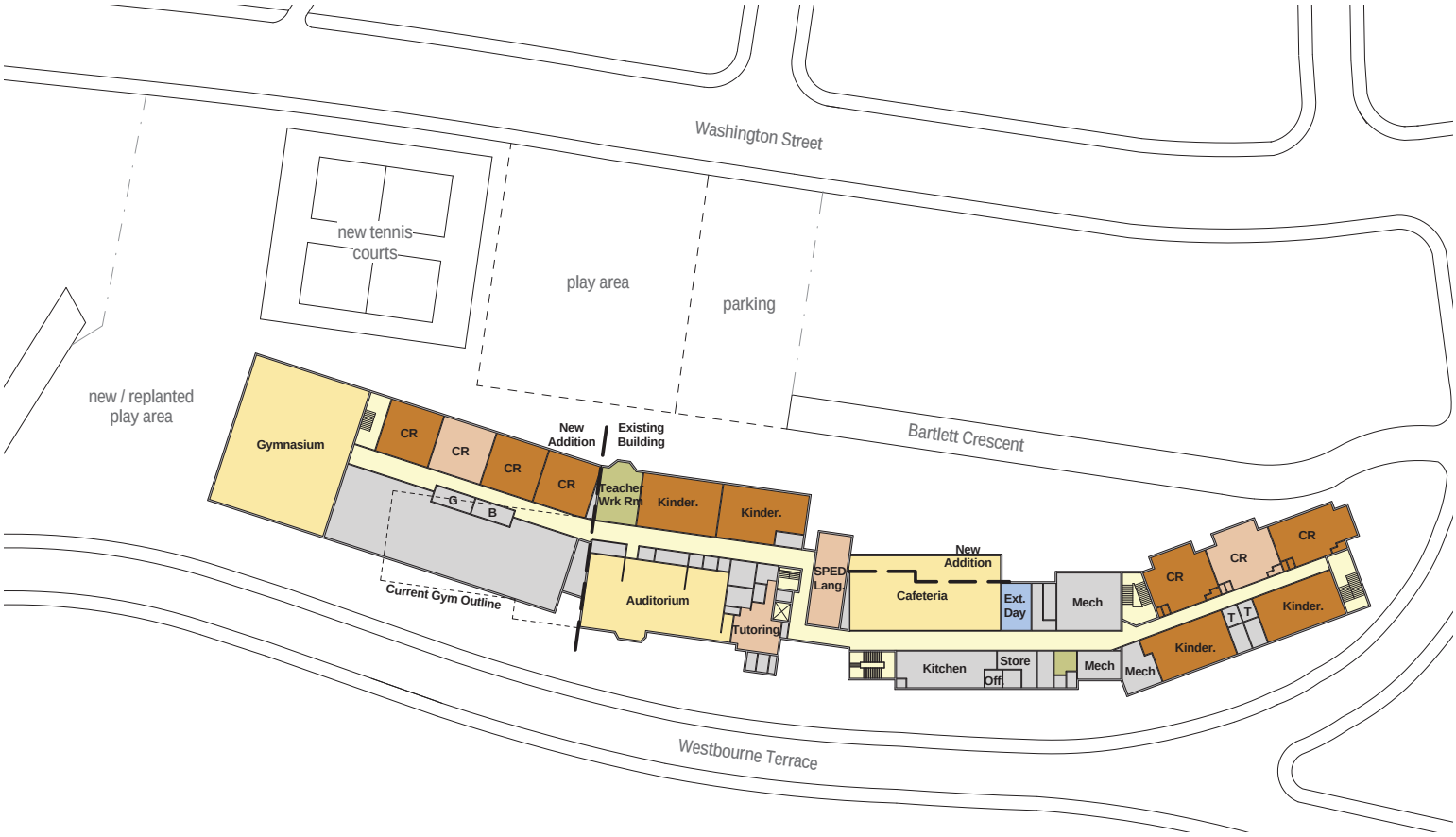
The Driscoll School property extends generously along Westbourne Terrace. The opportunity for expansion at the Driscoll School identified in this report requires the removal of the current permanent/modular gymnasium structure, and relocation of the tennis courts. This allows for a new classroom wing 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

0' 40' 80' 120' 160' 240'

Third Floor Plan

Key MSBA Space Summary Guidelines

Heath School	Existing Conditions			MSBA Space Guidelines for Current Population				MSBA Space Guidelines for Expanded Population			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES		25			36	33,090			37	34,290	
(List classrooms of different sizes separately)											
Pre-Kindergarten w/ toilet		2		1,200		-		1,200		-	
Kindergarten w/ toilet				1,200	3	3,600		1,200	4	4,800	
General Classrooms - Grades 1-5		23*		950	17	16,150		950	17	16,150	
General Classrooms - Grades 6-8				950	10	9,500		950	10	9,500	
Science Classroom / Lab		2		1,200	3	3,600		1,200	3	3,600	
Prep room				80	3	240		80	3	240	
SPECIAL EDUCATION					5	7,050			6	8,560	
(List rooms of different sizes separately)											
Self-Contained SPED - Grades 6-8				950	2	1,900		950	2	1,900	
Self-Contained SPED - Grades 1-5				950	3	2,850		950	4	3,800	
Self-Contained SPED - Grades 1-5 toilet				60	3	180		60	4	240	
Self-Contained SPED - Grades 6-8 toilet				60	2	120		60	2	120	
Resource Room - Grades 6-8				500	1	500		500	1	500	
Resource Room - Grades 1-5				500	2	1,000		500	2	1,000	
Small Group Room / Reading				500	1	500		500	2	1,000	
ART & MUSIC						5,550				5,625	
Art Classroom - Grades 1-5				1,000	1	1,000		1,000	1	1,000	
Art Classroom - Grades 6-8		1		1,200	1	1,200		1,200	1	1,200	
Art Workroom w/ Storage & kiln				150	2	300		150	2	300	
Band / Chorus - 100 seats				1,500	1	1,500		1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats		1		1,200	1	1,200		1,200	1	1,200	
Music Practice / Ensemble - Grades 1-5				75	2	150		75	3	225	
Music Practice / Ensemble - Grades 6-8				200	1	200		200	1	200	
VOCATIONS & TECHNOLOGY						3,200				3,200	
Tech Clrm. - (E.G. Drafting, Business)				1,200	1	1,200		1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)				2,000	1	2,000		2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION						8,330				8,333	
Gymnasium				6,000	1	6,000		6,000	1	6,000	
Gym Storeroom				150	1	150		150	1	150	
Health Instructor's Office w/ Shower & Toilet				180	1	180		183	1	183	
Locker Rooms - Boys / Girls w/ Toilets				1,000	2	2,000		1,000	2	2,000	
MEDIA CENTER						3,105				4,099	
Media Center/Reading Room			2700	3,105	1	3,105		4,099	1	4,099	
DINING & FOOD SERVICE						6,604				7,920	
Cafeteria / Dining			3000	2,585	1	2,585	**	3,585	1	3,585	*
Kitchen				1,817	1	1,817		2,017	1	2,017	
Chair / Table / Equipment Storage				372	1	372		439	1	439	
Staff Lunch Room				229	1	229		279	1	279	
Stage				1,600	1	1,600		1,600	1	1,600	
MEDICAL						610				610	
ADMINISTRATION & GUIDANCE						2,832				3,190	
CUSTODIAL & MAINTENANCE						2,079				2,275	
OTHER						0				0	
Other *(specify)*											
Total Building Net Floor Area (NFA)			0			72,450				78,103	
Proposed Student Capacity / Enrollment						517				717	
Total Building Gross Floor Area (GFA)[2]						108,675				117,154	
Grossing factor (GFA/NFA)			#DIV/0!			1.50				1.50	

Current	+ 200
Grades K-5	Grades K-5
360	478
Grades 6-8	Grades 6-8
157	239

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

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.

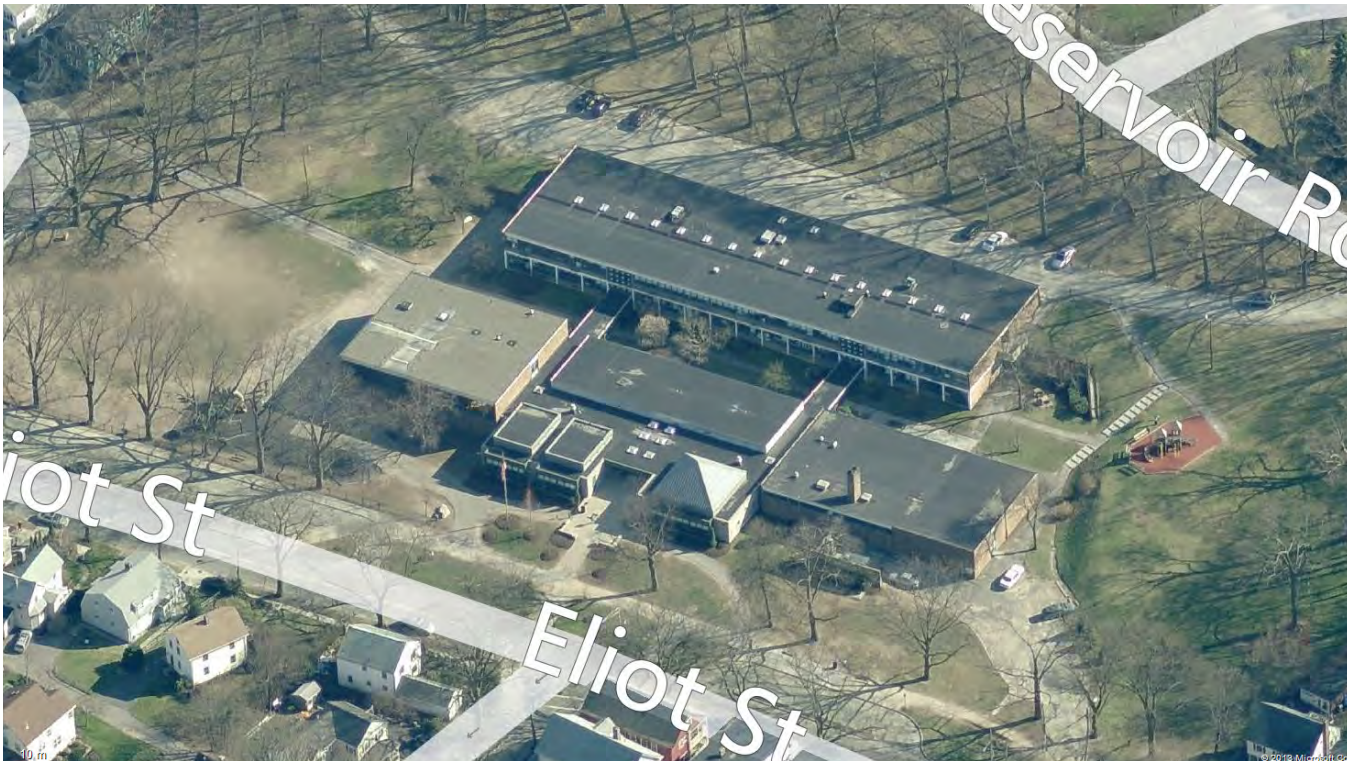


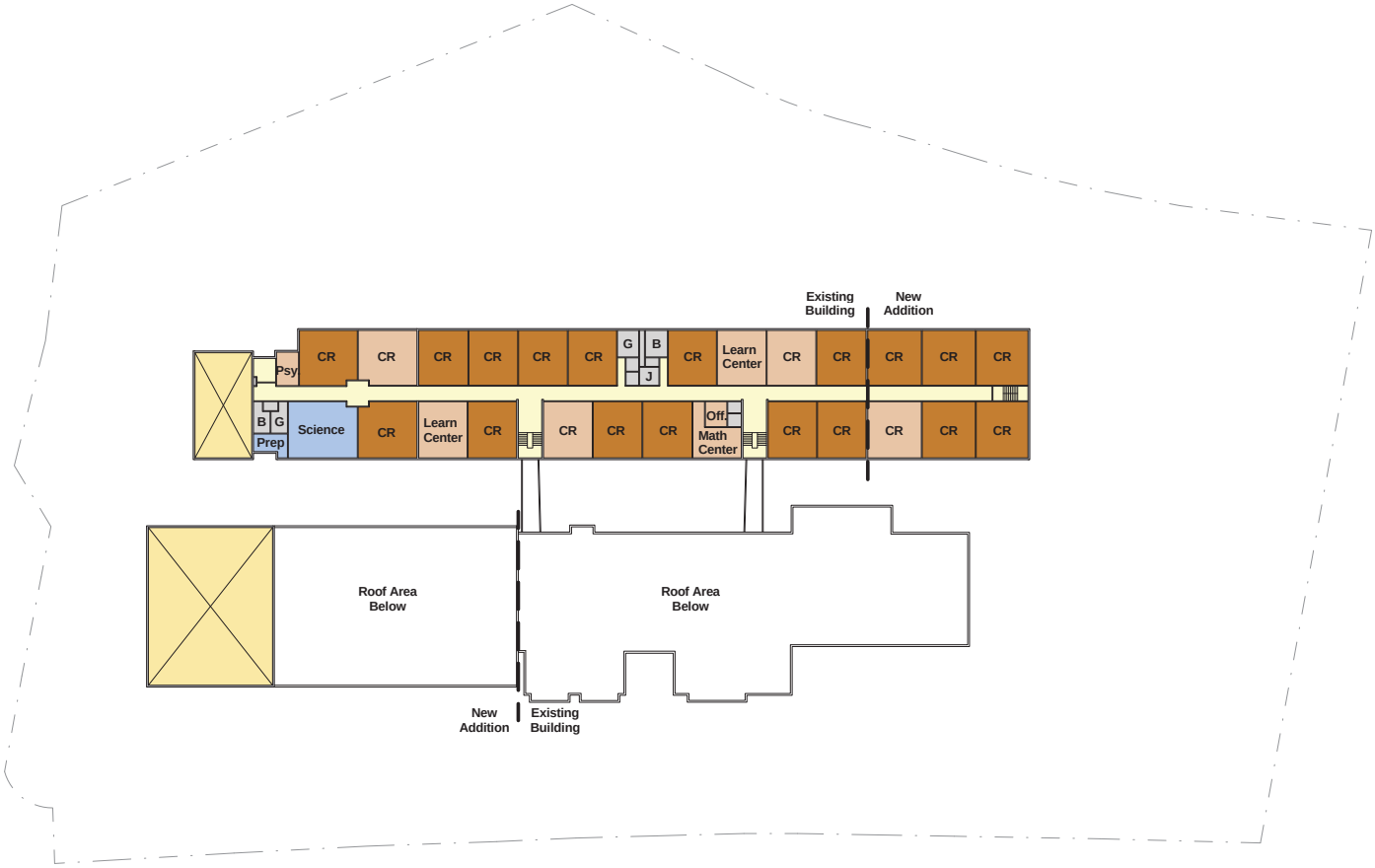
Image courtesy of Bing maps

Aerial of the Heath School site

First Floor Plan

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

0' 40' 80' 120' 160' 240'



Second Floor Plan

Key MSBA Space Summary Guidelines

Lawrence School	Existing Conditions			MSBA Space Guidelines for Current Population				MSBA Space Guidelines for Expanded Population			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES		32			42	39,040			42	39,040	
(List classrooms of different sizes separately)											
Pre-Kindergarten w/ toilet		2		1,200		-		1,200		-	
Kindergarten w/ toilet				1,200	4	4,800		1,200	4	4,800	
General Classrooms - Grades 1-5		31*		950	20	19,000		950	20	19,000	
General Classrooms - Grades 6-8				950	12	11,400		950	12	11,400	
Science Classroom / Lab		1		1,200	3	3,600		1,200	3	3,600	
Prep room				80	3	240		80	3	240	
SPECIAL EDUCATION		0			6	8,560			6	9,060	
(List rooms of different sizes separately)											
Self-Contained SPED - Grades 6-8				950	2	1,900		950	2	1,900	
Self-Contained SPED - Grades 1-5				950	4	3,800		950	4	3,800	
Self-Contained SPED - Grades 1-5 toilet				60	4	240		60	4	240	
Self-Contained SPED - Grades 6-8 toilet				60	2	120		60	2	120	
Resource Room - Grades 6-8				500	1	500		500	1	500	
Resource Room - Grades 1-5				500	2	1,000		500	3	1,500	
Small Group Room / Reading				500	2	1,000		500	2	1,000	
ART & MUSIC						6,775				6,850	
Art Classroom - Grades 1-5				1,000	2	2,000		1,000	2	2,000	
Art Classroom - Grades 6-8		1		1,200	1	1,200		1,200	1	1,200	
Art Workroom w/ Storage & kiln				150	3	450		150	3	450	
Band / Chorus - 100 seats				1,500	1	1,500		1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats				1,200	1	1,200		1,200	1	1,200	
Music Practice / Ensemble - Grades 1-5				75	3	225		75	4	300	
Music Practice / Ensemble - Grades 6-8				200	1	200		200	1	200	
VOCATIONS & TECHNOLOGY						3,200				3,200	
Tech Clrm. - (E.G. Drafting, Business)				1,200	1	1,200		1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)				2,000	1	2,000		2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION						8,330				8,333	
Gymnasium				6,000	1	6,000		6,000	1	6,000	
Gym Storeroom				150	1	150		150	1	150	
Health Instructor's Office w/ Shower & Toilet				180	1	180		183	1	183	
Locker Rooms - Boys / Girls w/ Toilets				1,000	2	2,000		1,000	2	2,000	
MEDIA CENTER						3,720				4,724	
Media Center/Reading Room			3000	3,720	1	3,720		4,724	1	4,724	
DINING & FOOD SERVICE						7,440				8,756	
Cafeteria / Dining			2300	3,220	1	3,220	**	4,220	1	4,220	*
Kitchen				1,944	1	1,944		2,144	1	2,144	
Chair / Table / Equipment Storage				415	1	415		481	1	481	
Staff Lunch Room				261	1	261		311	1	311	
Stage				1,600	1	1,600		1,600	1	1,600	
MEDICAL						610				710	
ADMINISTRATION & GUIDANCE						3,107				3,468	
CUSTODIAL & MAINTENANCE						2,207				2,402	
OTHER						0				0	
Other *(specify)*											
Total Building Net Floor Area (NFA)			0			82,988				86,543	
Proposed Student Capacity / Enrollment						644				844	
Total Building Gross Floor Area (GFA)[2]						124,482				129,814	
Grossing factor (GFA/NFA)			#DIV/0!			1.50				1.50	

Current	+ 200
Grades K-5	Grades K-5
454	562
Grades 6-8	Grades 6-8
190	282

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

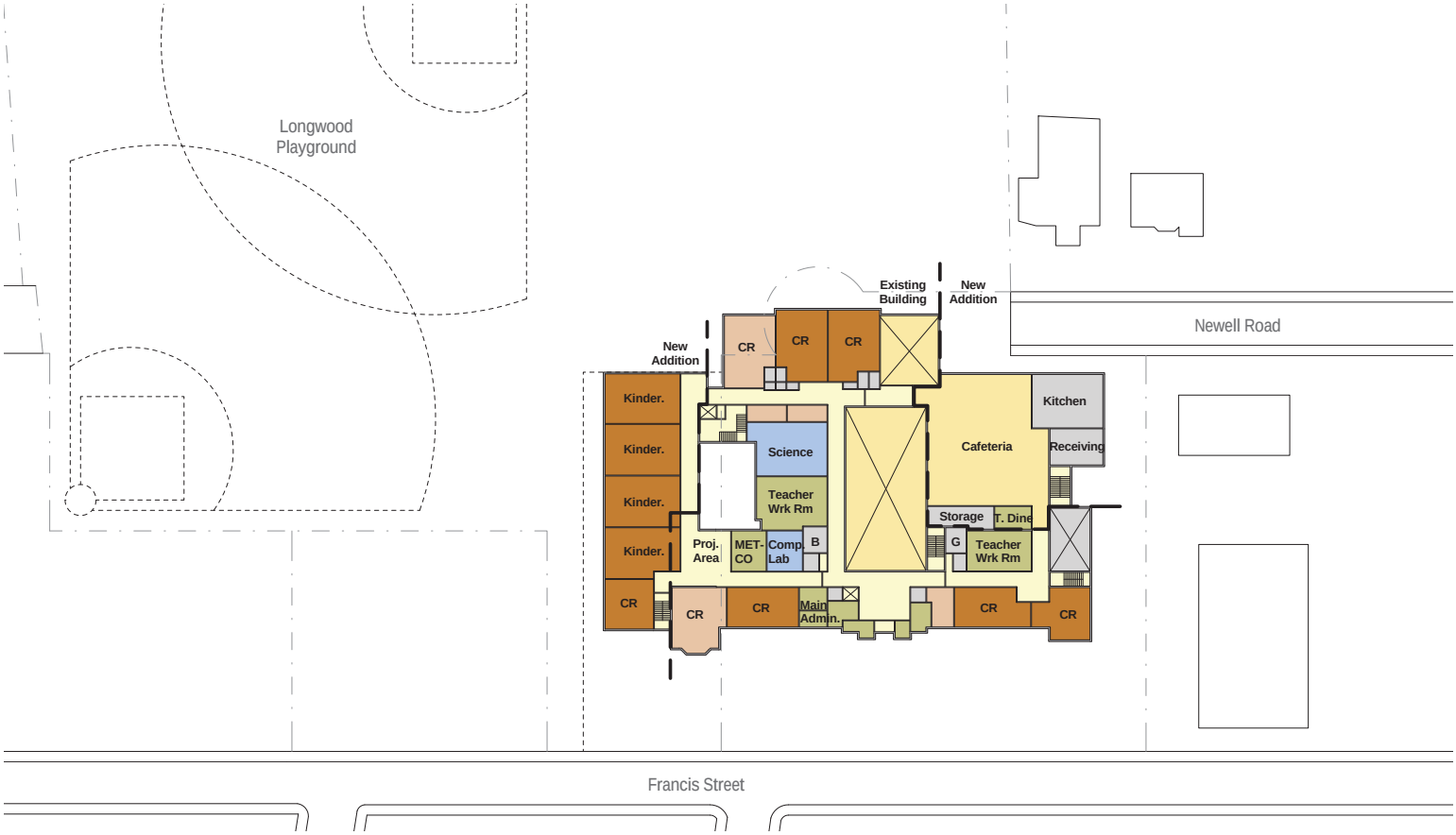
The Lawrence School property, located adjacent to the Longwood Playground, has a very limited site, but is an advantageous location near a majority of the K-8 population growth. The two areas identified for possible expansion in this scheme are the parking area off of Newell Road, and an 80' x 220' section 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.

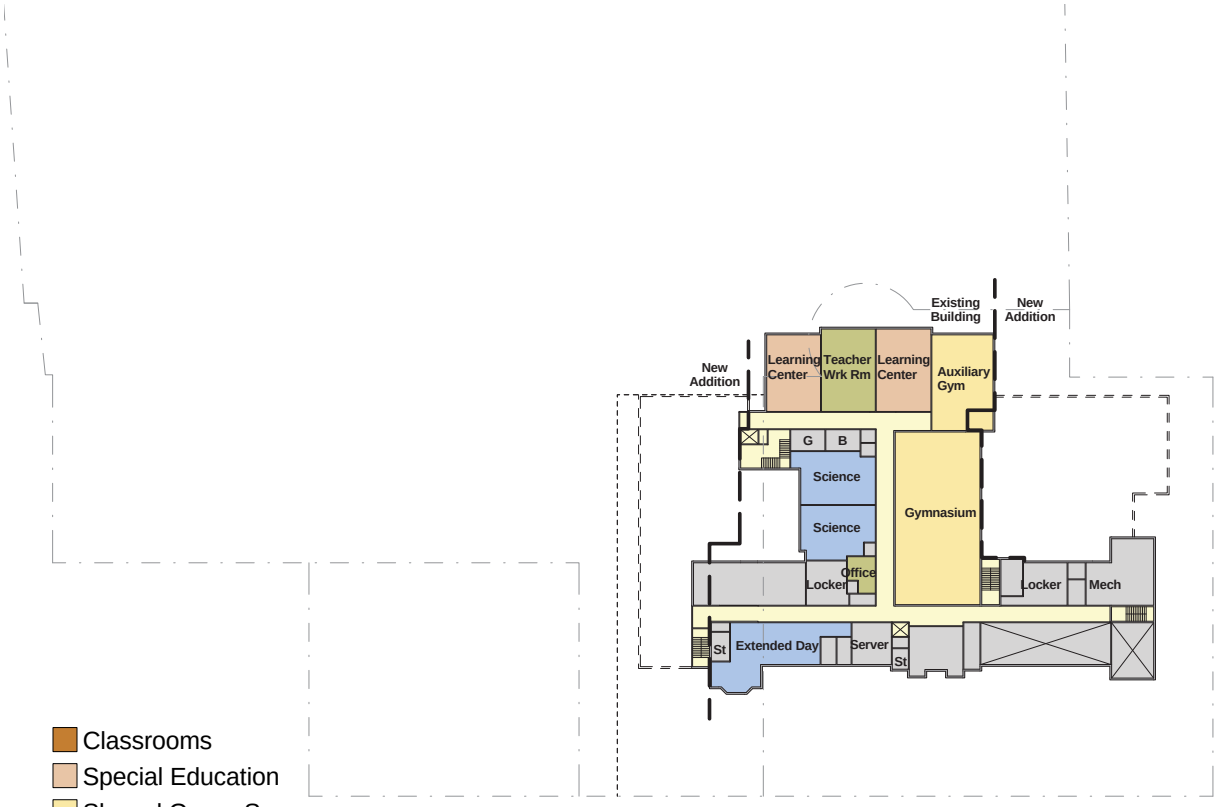
The two new additions create internal spaces which were once classrooms with exterior windows. The classroom spaces located along the existing western edge of the building closest to the playground will now look into an open light well, and are shared specialty spaces and not classroom homerooms. Spaces 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



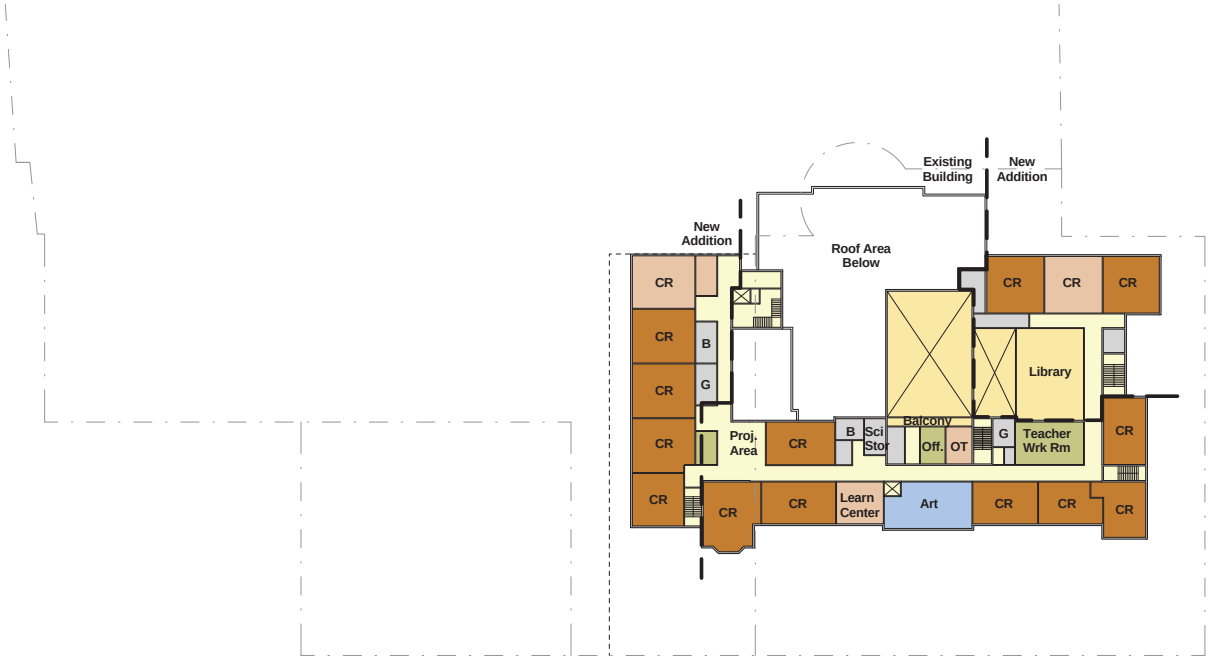
First Floor Plan



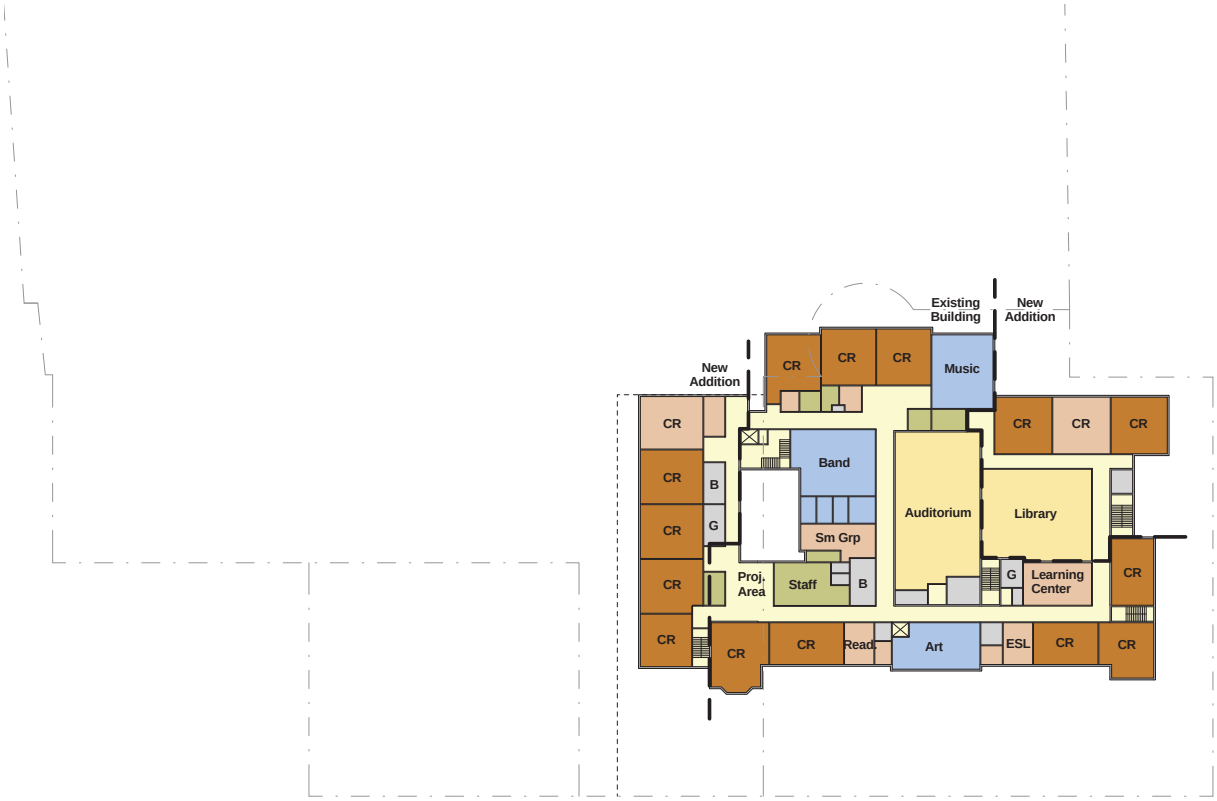
- Classrooms
- Special Education
- Shared Group Spaces
- Circulation
- Administration
- Specialty Rooms
- Support

0' 40' 80' 120' 160' 240'

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.

Key MSBA Space Summary Guidelines

Pierce School	Existing Conditions			MSBA Space Guidelines for Current Population				MSBA Space Guidelines for Expanded Population			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES		32			44	40,940			45	42,140	
(List classrooms of different sizes separately)											
Pre-Kindergarten w/ toilet		2		1,200		-		1,200		-	
Kindergarten w/ toilet				1,200	4	4,800		1,200	5	6,000	
General Classrooms - Grades 1-5		30*		950	21	19,950		950	21	19,950	
General Classrooms - Grades 6-8				950	13	12,350		950	13	12,350	
Science Classroom / Lab		2		1,200	3	3,600		1,200	3	3,600	
Prep room				80	3	240		80	3	240	
SPECIAL EDUCATION		0			6	9,060			6	9,060	
(List rooms of different sizes separately)											
Self-Contained SPED - Grades 6-8				950	2	1,900		950	2	1,900	
Self-Contained SPED - Grades 1-5				950	4	3,800		950	4	3,800	
Self-Contained SPED - Grades 1-5 toilet				60	4	240		60	4	240	
Self-Contained SPED - Grades 6-8 toilet				60	2	120		60	2	120	
Resource Room - Grades 6-8				500	1	500		500	1	500	
Resource Room - Grades 1-5				500	3	1,500		500	3	1,500	
Small Group Room / Reading				500	2	1,000		500	2	1,000	
ART & MUSIC						7,975				8,050	
Art Classroom - Grades 1-5		1		1,000	2	2,000		1,000	2	2,000	
Art Classroom - Grades 6-8		1		1,200	1	1,200		1,200	1	1,200	
Art Workroom w/ Storage & kiln				150	3	450		150	3	450	
Band / Chorus - 100 seats		1		1,500	1	1,500		1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats		1		1,200	2	2,400		1,200	2	2,400	
Music Practice / Ensemble - Grades 1-5				75	3	225		75	4	300	
Music Practice / Ensemble - Grades 6-8				200	1	200		200	1	200	
VOCATIONS & TECHNOLOGY						3,200				3,200	
Tech Clrm. - (E.G. Drafting, Business)				1,200	1	1,200		1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)				2,000	1	2,000		2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION						8,331				8,333	
Gymnasium				6,000	1	6,000		6,000	1	6,000	
Gym Storeroom				150	1	150		150	1	150	
Health Instructor's Office w/ Shower & Toilet				181	1	181		183	1	183	
Locker Rooms - Boys / Girls w/ Toilets				1,000	2	2,000		1,000	2	2,000	
MEDIA CENTER						4,167				4,920	
Media Center/Reading Room				4,167	1	4,167		4,920	1	4,920	
DINING & FOOD SERVICE						8,032				9,019	
Cafeteria / Dining			3500	3,670	1	3,670	**	4,420	1	4,420	*
Kitchen				2,034	1	2,034		2,184	1	2,184	
Chair / Table / Equipment Storage				445	1	445		494	1	494	
Staff Lunch Room				284	1	284		321	1	321	
Stage				1,600	1	1,600		1,600	1	1,600	
MEDICAL						610				710	
ADMINISTRATION & GUIDANCE						3,201				3,507	
CUSTODIAL & MAINTENANCE						2,295				2,442	
OTHER						0				0	
Other *(specify)*											
Total Building Net Floor Area (NFA)			0			87,811				91,383	
Proposed Student Capacity / Enrollment						734				884	
Total Building Gross Floor Area (GFA)[2]						131,717				137,074	
Grossing factor (GFA/NFA)			#DIV/0!			1.50				1.50	

Current	+ 150
Grades K-5	Grades K-5
507	589
Grades 6-8	Grades 6-8
227	295

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

Alternate 1 - Pierce School

3+HS Expansion

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

0' 40' 80' 120' 160' 240'

Second Floor Plan

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

0' 40' 80' 120' 160' 240'

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 capactiy 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			MSBA Space Guidelines for Current Population				MSBA Space Guidelines for Expanded Population			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES		27			42	38,790			43	39,990	
(List classrooms of different sizes separately)											
Pre-Kindergarten w/ toilet		3		1,200		-		1,200		-	
Kindergarten w/ toilet				1,200	3	3,600		1,200	4	4,800	
General Classrooms - Grades 1-5		26*		950	21	19,950		950	21	19,950	
General Classrooms - Grades 6-8				950	12	11,400		950	12	11,400	
Science Classroom / Lab		1		1,200	3	3,600		1,200	3	3,600	
Prep room				80	3	240		80	3	240	
SPECIAL EDUCATION					5	7,050			6	9,060	
(List rooms of different sizes separately)											
Self-Contained SPED - Grades 6-8				950	2	1,900		950	2	1,900	
Self-Contained SPED - Grades 1-5				950	3	2,850		950	4	3,800	
Self-Contained SPED - Grades 1-5 toilet				60	3	180		60	4	240	
Self-Contained SPED - Grades 6-8 toilet				60	2	120		60	2	120	
Resource Room - Grades 6-8				500	1	500		500	1	500	
Resource Room - Grades 1-5				500	2	1,000		500	3	1,500	
Small Group Room / Reading				500	1	500		500	2	1,000	
ART & MUSIC						7,975				8,050	
Art Classroom - Grades 1-5		1		1,000	2	2,000		1,000	2	2,000	
Art Classroom - Grades 6-8		1		1,200	1	1,200		1,200	1	1,200	
Art Workroom w/ Storage & kiln				150	3	450		150	3	450	
Band / Chorus - 100 seats				1,500	1	1,500		1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats				1,200	2	2,400		1,200	2	2,400	
Music Practice / Ensemble - Grades 1-5				75	3	225		75	4	300	
Music Practice / Ensemble - Grades 6-8				200	1	200		200	1	200	
VOCATIONS & TECHNOLOGY						3,200				3,200	
Tech Clrm. - (E.G. Drafting, Business)				1,200	1	1,200		1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)				2,000	1	2,000		2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION						8,328				8,333	
Gymnasium				6,000	1	6,000		6,000	1	6,000	
Gym Storeroom				150	1	150		150	1	150	
Health Instructor's Office w/ Shower & Toilet				178	1	178		183	1	183	
Locker Rooms - Boys / Girls w/ Toilets				1,000	2	2,000		1,000	2	2,000	
MEDIA CENTER						3,240				4,737	
Media Center/Reading Room			4000	3,240	1	3,240		4,737	1	4,737	
DINING & FOOD SERVICE						6,801				8,776	
Cafeteria / Dining			2600	2,735	1	2,735	**	4,235	1	4,235	*
Kitchen				1,847	1	1,847		2,147	1	2,147	
Chair / Table / Equipment Storage				382	1	382		482	1	482	
Staff Lunch Room				237	1	237		312	1	312	
Stage				1,600	1	1,600		1,600	1	1,600	
MEDICAL						610				710	
ADMINISTRATION & GUIDANCE						2,855				3,470	
CUSTODIAL & MAINTENANCE						2,112				2,405	
OTHER						0				0	
Other *(specify)*											
Total Building Net Floor Area (NFA)			0			80,961				88,732	
Proposed Student Capacity / Enrollment						547				847	
Total Building Gross Floor Area (GFA)[2]						121,442				133,098	
Grossing factor (GFA/NFA)			#DIV/0!			1.50				1.50	

Current	+300
Grades K-5	Grades K-5
396	565
Grades 6-8	Grades 6-8
151	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[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES									**47**	**44,040**	
(List classrooms of different sizes separately)											
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	
SPECIAL EDUCATION									**8**	**11,580**	
(List rooms of different sizes separately)											
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	
ART & MUSIC										**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	
VOCATIONS & TECHNOLOGY										**3,200**	
Tech Clrm. - (E.G. Drafting, Business)								1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)								2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION										**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	
MEDIA CENTER										**5,220**	
Media Center/Reading Room								5,220	1	5,220	
DINING & FOOD SERVICE										**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	
MEDICAL										**710**	
ADMINISTRATION & GUIDANCE										**3,568**	
CUSTODIAL & MAINTENANCE										**2,503**	
OTHER										**0**	
Other *(specify)*											
Total Building Net Floor Area (NFA)			**0**			**0**				**96,626**	
Proposed Student Capacity / Enrollment						**0**				**945**	
Total Building Gross Floor Area (GFA)[2]						**0**				**144,938**	
Grossing factor (GFA/NFA)			**#DIV/0!**			**1.50**				**1.50**	

Current
Grades K-5
0
Grades 6-8
0

Grades K-5
630
Grades 6-8
315

* 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

Key MSBA Space Summary Guidelines

New K-8 School	Existing Conditions			MSBA Space Guidelines for Current Population				MSBA Space Guidelines for Expanded Population			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals		ROOM NFA[1]	# OF RMS	area totals	
CORE ACADEMIC SPACES									35	33,010	
(List classrooms of different sizes separately)											
Pre-Kindergarten w/ toilet								1,200		-	
Kindergarten w/ toilet								1,200	4	4,800	
General Classrooms - Grades 1-5								950	16	15,200	
General Classrooms - Grades 6-8								950	11	10,450	
Science Classroom / Lab								1,200	2	2,400	
Prep room								80	2	160	
SPECIAL EDUCATION									6	8,560	
(List rooms of different sizes separately)											
Self-Contained SPED - Grades 6-8								950	2	1,900	
Self-Contained SPED - Grades 1-5								950	4	3,800	
Self-Contained SPED - Grades 1-5 toilet								60	4	240	
Self-Contained SPED - Grades 6-8 toilet								60	2	120	
Resource Room - Grades 6-8								500	1	500	
Resource Room - Grades 1-5								500	2	1,000	
Small Group Room / Reading								500	2	1,000	
ART & MUSIC										5,625	
Art Classroom - Grades 1-5								1,000	1	1,000	
Art Classroom - Grades 6-8								1,200	1	1,200	
Art Workroom w/ Storage & kiln								150	2	300	
Band / Chorus - 100 seats								1,500	1	1,500	
Music Classroom / Large Group - 25-50 seats								1,200	1	1,200	
Music Practice / Ensemble - Grades 1-5								75	3	225	
Music Practice / Ensemble - Grades 6-8								200	1	200	
VOCATIONS & TECHNOLOGY										3,200	
Tech Clrm. - (E.G. Drafting, Business)								1,200	1	1,200	
Tech Shop - (E.G. Consumer, Wood)								2,000	1	2,000	
HEALTH & PHYSICAL EDUCATION										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	
MEDIA CENTER										4,015	
Media Center/Reading Room								4,015	1	4,015	
DINING & FOOD SERVICE										7,808	
Cafeteria / Dining							**	3,500	1	3,500	**
Kitchen								2,000	1	2,000	
Chair / Table / Equipment Storage								433	1	433	
Staff Lunch Room								275	1	275	
Stage								1,600	1	1,600	
MEDICAL										610	
ADMINISTRATION & GUIDANCE										3,173	
CUSTODIAL & MAINTENANCE										2,258	
OTHER										0	
Other *(specify)*											
Total Building Net Floor Area (NFA)			0			0				76,593	
Proposed Student Capacity / Enrollment						0				700	
Total Building Gross Floor Area (GFA)[2]						0				114,889	
Grossing factor (GFA/NFA)			#DIV/0!			1.50				1.50	

Current	
Grades K-5	
0	
Grades 6-8	
0	

Grades K-5	
467	
Grades 6-8	
233	

* Existing # of CR's based on estimated original building layout

** Cafeteria Seating has been adjusted to reflect three seatings in lieu of two

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.

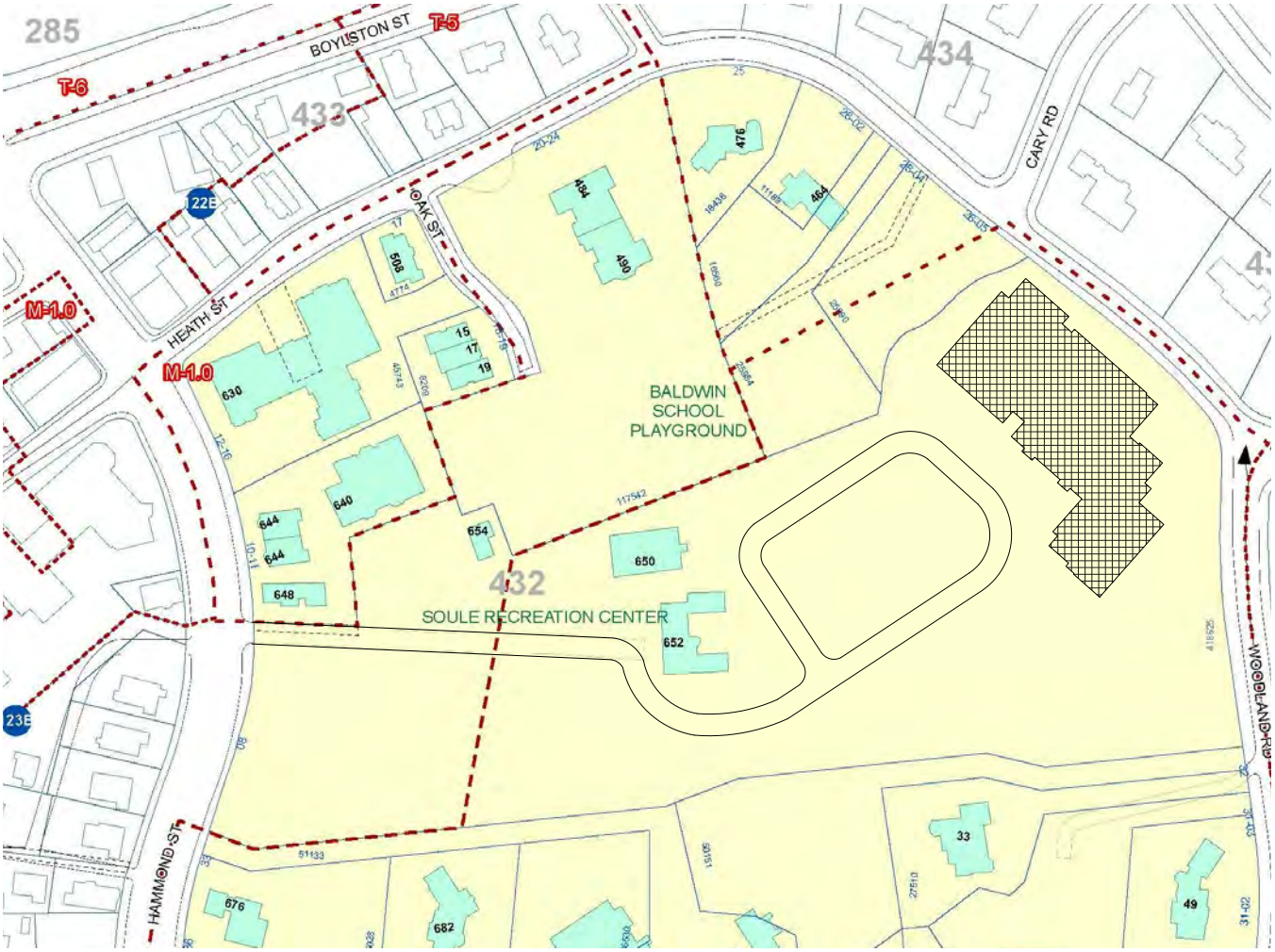
The development of a concept school will require a more in-depth study by the district to determine the interest in, and desire for a variety of possible subjects such as the arts or STEM programs. The opening of a concept school would ideally pull equal amounts of population away from all of the eight 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.

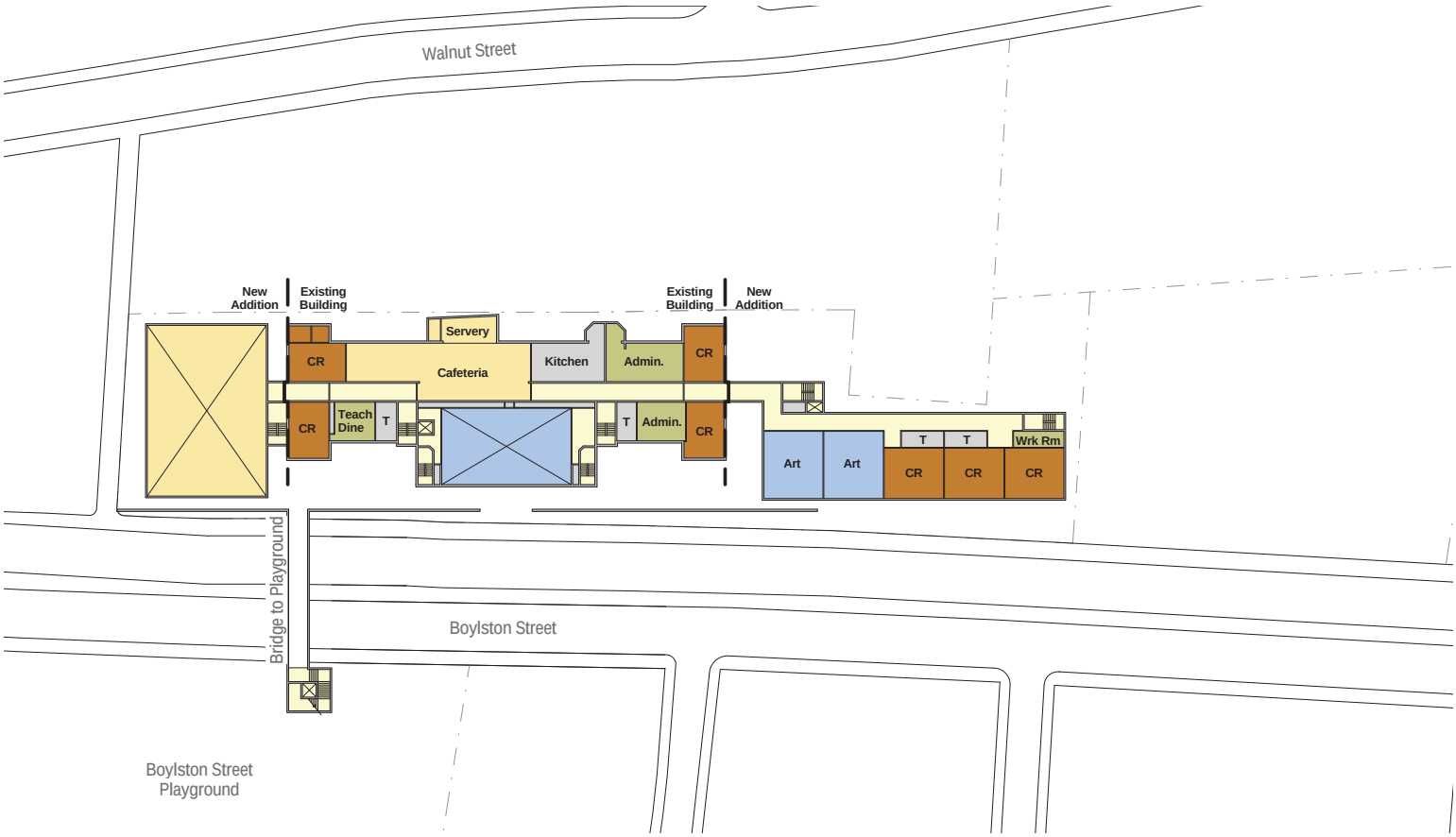
The Baldwin School / Soule Recreation Center does provide enough open square footage to create a new K-8 building in two possible locations on site. One option is to construct the school as a large addition to the existing Baldwin School building. While feasible, the construction would take place in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

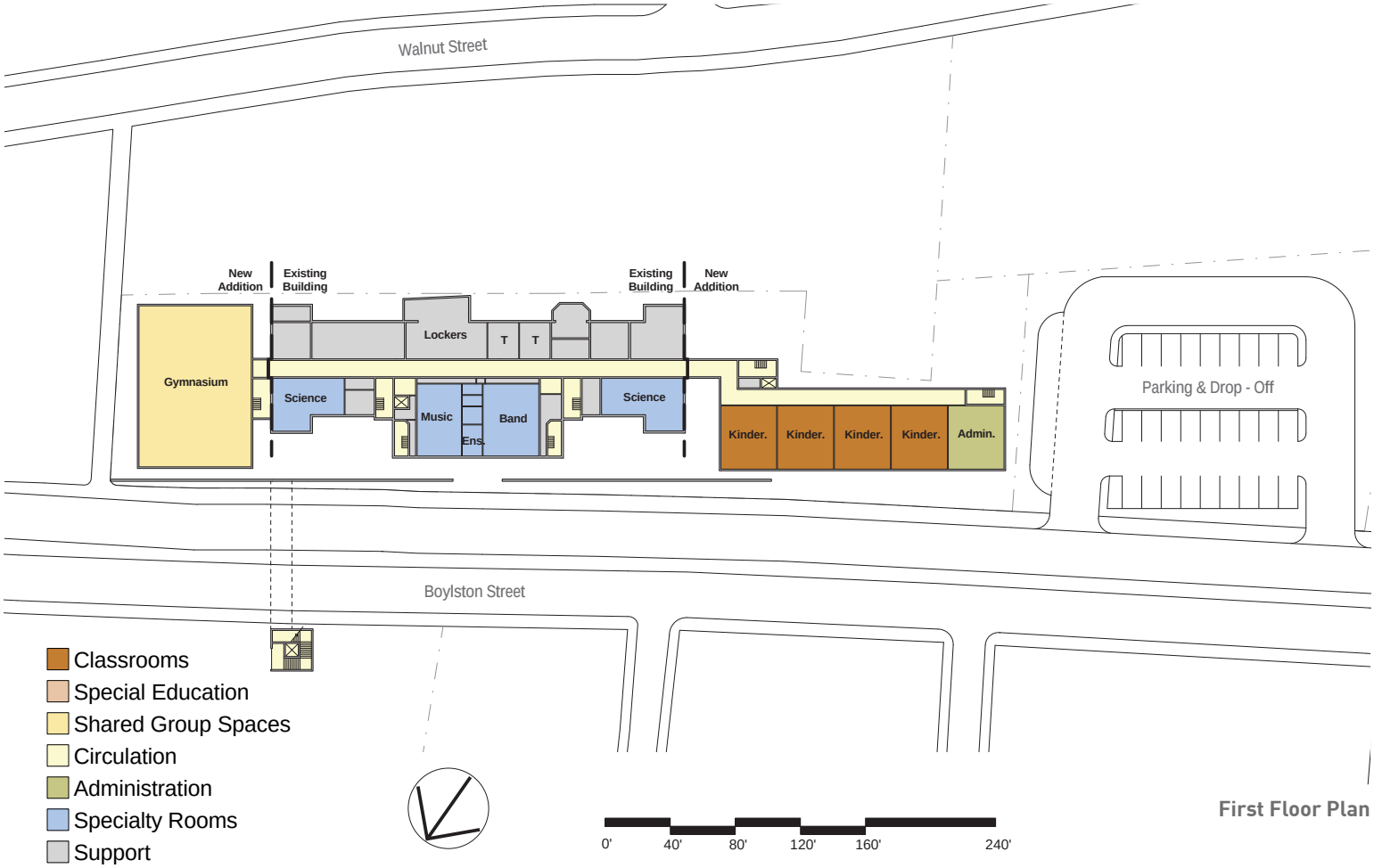
The formation of a new district in a southern location in town would be less than desirable in that it would adversely affect the rest of the town's school zones. If a new district were formed around a southern location such as the Baldwin School, the resulting shift of the remaining districts would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



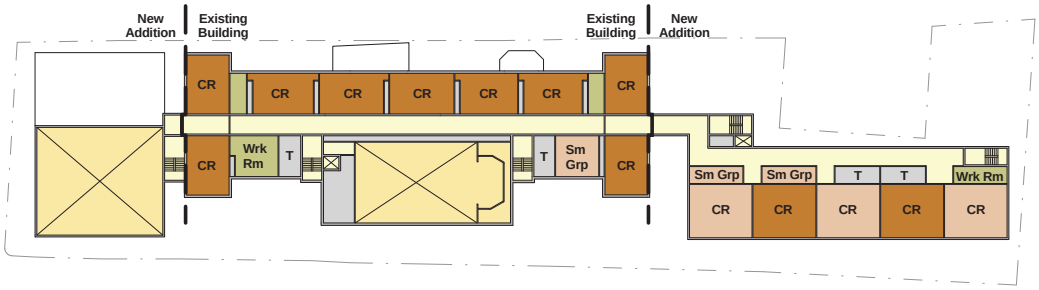
First Floor Plan

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.

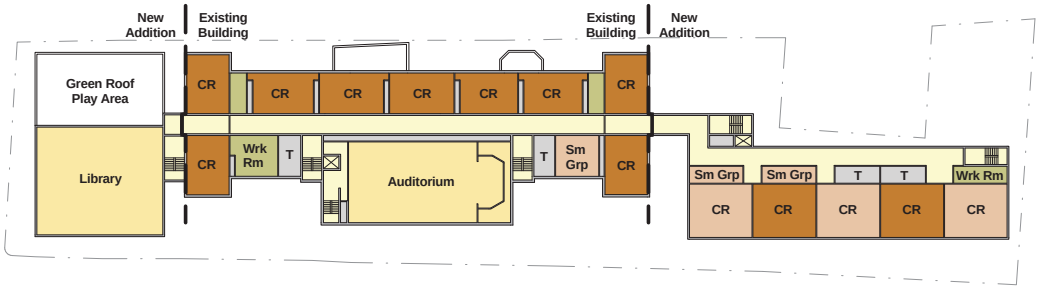
The location of the Old Lincoln School along Boylston Street raises concerns for how drop-off and pick-up might be accommodated without affecting traffic flow on Boylston, and keeping the students away from the busy street. One option is for the town to acquire the property to the west of the school 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



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 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.

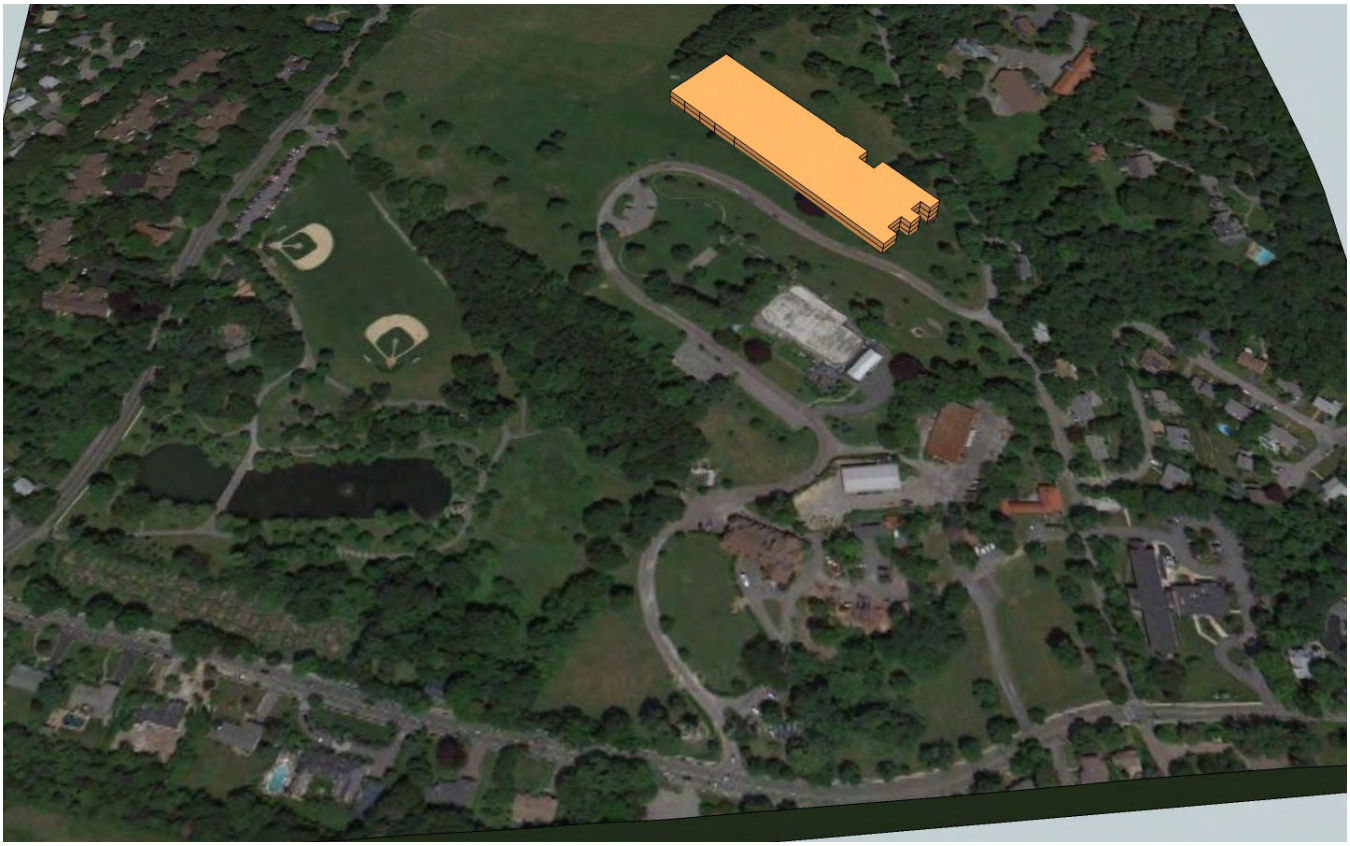
Section 5 - New MS-HS Expansion

Key MSBA Space Summary Guidelines

New High School	Existing Conditions			MSBA Space Guidelines for High School		
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals
CORE ACADEMIC SPACES			**0**			**90,880**
(List classrooms of different sizes separately)						
Classroom - General				850	64	54,400
Teacher Planning				100	64	6,400
Small Group Seminar (20-30 seats)				500	4	2,000
Science Classroom / Lab				1,440	17	24,480
Prep Room				200	17	3,400
Central Chemical Storage Rm				200	1	200
SPECIAL EDUCATION			**0**			**19,130**
(List classrooms of different sizes separately)						
Self-Contained SPED				950	13	12,350
Self-Contained SPED Toilet				60	13	780
Resource Room				500	6	3,000
Small Group Room				500	6	3,000
ART & MUSIC			**0**			**9,775**
Art Classroom - 25 seats				1,200	4	4,800
Art Workroom w/ Storage & kiln				150	4	600
Band - 50 - 100 seats				1,500	1	1,500
Chorus - 50 - 100 seats				1,500	1	1,500
Ensemble				200	1	200
Music Practice				75	9	675
Music Storage				500	1	500
VOCATIONS & TECHNOLOGY			**0**			**19,200**
Tech Clrm. - (E.G. Drafting, Business)				1,200	6	7,200
Tech Shop - (E.G. Consumer, Wood)				2,000	6	12,000
HEALTH & PHYSICAL EDUCATION			**0**			**26,728**
Gymnasium				12,000	1	12,000
PE Alternatives				3,000	1	3,000
Gym Storeroom				300	1	300
Locker Rooms - Boys / Girls w/ Toilets				10,528	1	10,528
Phys. Ed. Storage				500	1	500
Athletic Director's Office				150	1	150
Health Instructor's Office w/ Shower & Toilet				250	1	250
MEDIA CENTER			**0**			**11,650**
Media Center / Reading Room				11,650	1	11,650
Computer Lab						
AUDITORIUM / DRAMA			**0**			**10,400**
Auditorium				7,500	1	7,500
Stage				1,600	1	1,600
Auditorium Storage				500	1	500
Make-up / Dressing Rooms				300	2	600
Controls / Lighting / Projection				200	1	200
DINING & FOOD SERVICE			**0**			**14,520**
Cafeteria / Student Lounge / Break-out				9,400	1	9,400
Chair / Table Storage				620	1	620
Scramble Serving Area				600	1	600
Kitchen				3,180	1	3,180
Staff Lunch Room				720	1	720
MEDICAL			**0**			**1,510**
ADMINISTRATION & GUIDANCE			**0**			**6,630**
CUSTODIAL & MAINTENANCE			**0**			**3,035**
OTHER			**0**			**0**
Other (specify)						
Total Building Net Floor Area (NFA)			**0**			**213,458**
Proposed Student Capacity / Enrollment						**1,880**
Total Building Gross Floor Area (GFA)[2]						**327,120**
Grossing factor (GFA/NFA)			**#DIV/0!**			**1.53**

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 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

Options	4 + HS	3 + HS	1 + HS	NEW HIGH SCHOOL
Description	**Modulars & HS Add/Reno**	**(3) K-8 Add/Reno HS Add/Reno**	**New K-8 & HS Add/Reno**	**New 7 - 12 HS**
Renovation Area (total all bldgs)	50,950 sf	153,150 sf	120,850 sf	0 sf
New Construction (total all bldgs)	181,700 sf	266,650 sf	186,050 sf	298,920 sf
Demolition Area (total all bldgs)	130,000 sf	149,550 sf	137,000 sf	0 sf
Total Construction Area	232,650 sf	419,800 sf	306,900 sf	298,920 sf
Total Construction Cost	**$ 82,161,000**	**$ 126,354,600**	**$ 106,833,000**	**$ 116,578,800**
Construction Cost per sf	**$ 353**	**$ 301**	**$ 348**	**$ 390**
Construction Contingency 10%	$ 8,216,100	$ 12,635,460	$ 10,683,300	$ 11,657,880
Phasing Approach	Temp CR's for HS project	Temp CR's for some K-8 & HS	Temp CR's for HS project	No Swing Space Needed
Temp. Classroom Costs (HS)	$ 3,600,000	$ 3,600,000	$ 3,600,000	$ -
Temp. Classroom Costs (ES)	$ -	$ 2,000,000	$ -	$ -
A/E Fees at 10%	$ 9,037,710	$ 13,899,006	$ 11,751,630	$ 12,823,668
Other Professional Services at 5% *	$ 4,518,855	$ 6,949,503	$ 5,875,815	$ 6,411,834
F&E w/ Technology 630 K-8 + 700 hs x $3,000/stu.	$ 3,990,000	$ 3,990,000	$ 3,990,000	$ 3,990,000
Project Contingency 5%	$ 5,576,183	$ 8,471,428	$ 7,136,687	$ 7,573,109
Total Project Cost	**$ 117,099,848**	**$ 177,899,997**	**$ 149,870,432**	**$ 159,035,291**
Project Cost per sf	**$ 503**	**$ 424**	**$ 488**	**$ 532**
MSBA Hard Cost ** (see note 5) Reimbursement (40% up to 275/sf)	$ 21,724,600	$ 34,858,860	$ 34,174,900	$ 32,881,200
MSBA Soft Cost ** Reimbursement (40%)	$ 12,535,539	$ 18,378,159	$ 15,774,973	$ 16,982,596
Town of Brookline Share	**$ 82,839,709**	**$ 124,662,978**	**$ 99,920,559**	**$ 109,171,495**

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.

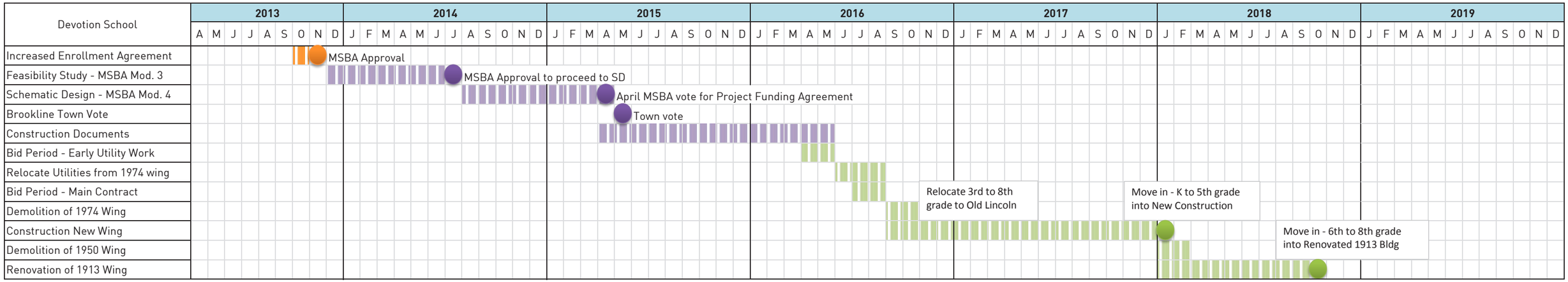
** MSBA funding numbers are tentative pending MSBA participation with the project and reimbursement rates

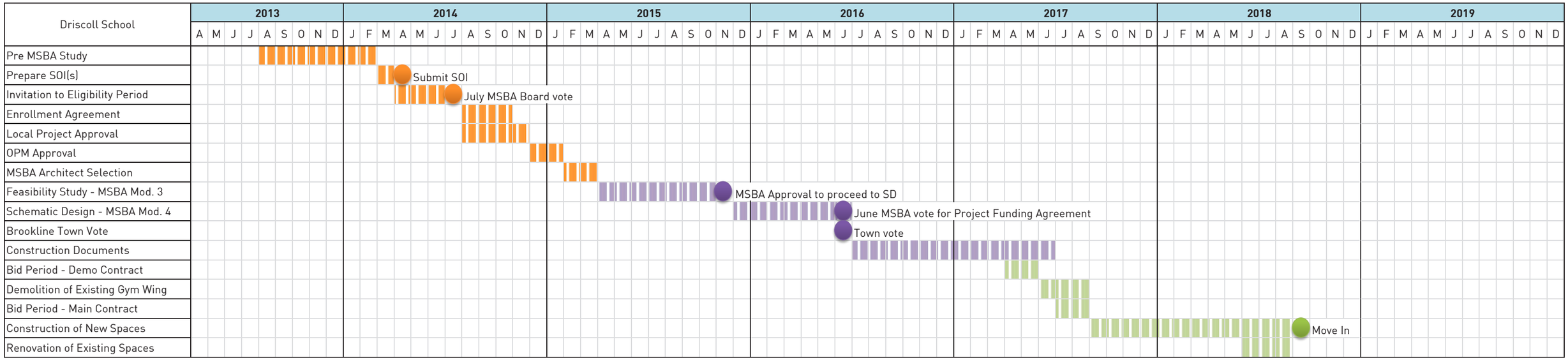
Options	3 + HS Alternate 1	3 + HS Alternate 2
Description	**(3) K-8 Add/Reno HS Add/Reno**	**(3) K-8 Add/Reno HS Add/Reno**
Renovation Area (total all bldgs)	109,100 sf	102,880 sf
New Construction (total all bldgs)	383,650 sf	383,000 sf
Demolition Area (total all bldgs)	246,600 sf	256,800 sf
Total Construction Area	492,750 sf	485,880 sf
Total Construction Cost	**$ 165,394,900**	**$ 165,051,450**
Construction Cost per sf	**$ 336**	**$ 340**
Construction Contingency 10%	$ 16,539,490	$ 16,505,145
Phasing Approach	Temp CR's for some K-8 & HS	Temp CR's for some K-8 & HS
Temp. Classroom Costs (HS)	$ 3,600,000	$ 3,600,000
Temp. Classroom Costs (ES)	$ 2,000,000	$ 2,000,000
A/E Fees at 10%	$ 18,193,439	$ 18,155,660
Other Professional Services at 5% *	$ 9,096,720	$ 9,077,830
F&E w/ Technology 630 K-8 + 700 hs x $3,000/stu.	$ 3,990,000	$ 3,990,001
Project Contingency 5%	$ 10,940,727	$ 10,919,021
Total Project Cost	**$ 229,755,276**	**$ 229,299,106**
Project Cost per sf	**$ 466**	**$ 472**
MSBA Hard Cost ** (see note 5) Reimbursement (40% up to 275/sf)	$ 54,403,580	$ 48,383,560

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	$300			$130 - $270		$12		$390	
Baker School	$2,992,500								
Driscoll School	$2,992,500	99,500	13,650	$1,774,500	9,200	$110,400	45,800	$17,862,000	**$19,746,900**
Heath School	$2,992,500	79,050	-	$0	8,350	$100,200	30,700	$11,973,000	**$12,073,200**
Lawrence School	$2,565,000	99,950	18,650	$5,035,500	2,000	$24,000	48,350	$18,856,500	**$23,916,000**
Old Lincoln School	-	69,900	69,900	$18,873,000	7,000	$84,000	44,250	$17,257,500	**$36,214,500**
Current High School *cost carried in 4, 3, 1 Sub Totals	-	474,000	50,950	$13,756,500	130,000	$1,560,000	141,800	$55,302,000	**$70,618,500**
New 7 - 12 High School	-	-	-	$0	-	$0	298,920	$116,578,800	**$116,578,800**
4 + HS Construction Cost Sub Total:	$11,542,500		50,950	$13,756,500	130,000	$1,560,000	141,800	$55,302,000	**$82,161,000**
3 + HS Construction Cost Sub Total:	-	752,500	83,250	$20,566,500	149,550	$1,794,600	266,650	$103,993,500	**$126,354,600**
1 + HS Construction Cost Sub Total:	-	543,900	120,850	$32,629,500	137,000	$1,644,000	186,050	$72,559,500	**$106,833,000**
NEW HIGH SCHOOL Construction Cost Sub Total:	-	-	-	$0	-	$0	298,920	$116,578,800	**$116,578,800**

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	$300			$130 - $270		$12		$390	
Driscoll School Alternate 1		99,500	13,650	$1,774,500	9,200	$110,400	52,800	$20,592,000	**$22,476,900**
Pierce School Alternate 1		131,250	25,850	$6,979,500	105,400	$1,264,800	140,700	$54,873,000	**$58,168,500**
Lawrence School Alternate 1		99,950	18,650	$5,035,500	2,000	$24,000	48,350	$18,856,500	**$19,664,000**
Driscoll School Alternate 2		99,500	13,650	$1,774,500	9,200	$110,400	58,800	$22,932,000	**$24,816,900**
Devotion School Alternate 2 *		155,870	38,280		117,600		176,700		**$73,439,050**
Lawrence School Alternate 2	$1,710,000								
Current High School *cost carried in Sub Totals	-	474,000	50,950	$13,756,500	130,000	$1,560,000	141,800	$55,302,000	**$65,085,500**
3 + HS Alternate 1 Construction Cost Sub Total:	-			$27,546,000		$2,959,200		$149,623,500	**$165,394,900**
3 + HS Alternate 2 Construction Cost Sub Total:	$1,710,000			$15,531,000		$1,670,400		$78,234,000	**$165,051,450**

* Devotion School Costs based on previous Devotion School study cost Estimate, Option E1


Devotion School
2013
2014
2015
2016
2017
2018
2019
A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
Increased Enrollment Agreement
Feasibility Study - MSBA Mod. 3
Schematic Design - MSBA Mod. 4
Brookline Town Vote
Construction Documents
Bid Period - Early Utility Work
Relocate Utilities from 1974 wing
Bid Period - Main Contract
Demolition of 1974 Wing
Construction New Wing
Demolition of 1950 Wing
Renovation of 1913 Wing
MSBA Approval
MSBA Approval to proceed to SD
April MSBA vote for Project Funding Agreement
Town vote
Relocate 3rd to 8th grade to Old Lincoln
Move in - K to 5th grade into New Construction
Move in - 6th to 8th grade into Renovated 1913 Bldg


Driscoll School
2013
2014
2015
2016
2017
2018
2019
A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
Pre MSBA Study
Prepare SOI(s)
Submit SOI
Invitation to Eligibility Period
July MSBA Board vote
Enrollment Agreement
Local Project Approval
OPM Approval
MSBA Architect Selection
Feasibility Study - MSBA Mod. 3
MSBA Approval to proceed to SD
Schematic Design - MSBA Mod. 4
June MSBA vote for Project Funding Agreement
Brookline Town Vote
Town vote
Construction Documents
Bid Period - Demo Contract
Demolition of Existing Gym Wing
Bid Period - Main Contract
Construction of New Spaces
Move In
Renovation of Existing Spaces