Executive Report
Further Study Report

DRAFT

Brookline High School
Brookline, MA

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Submitted by

SMMA

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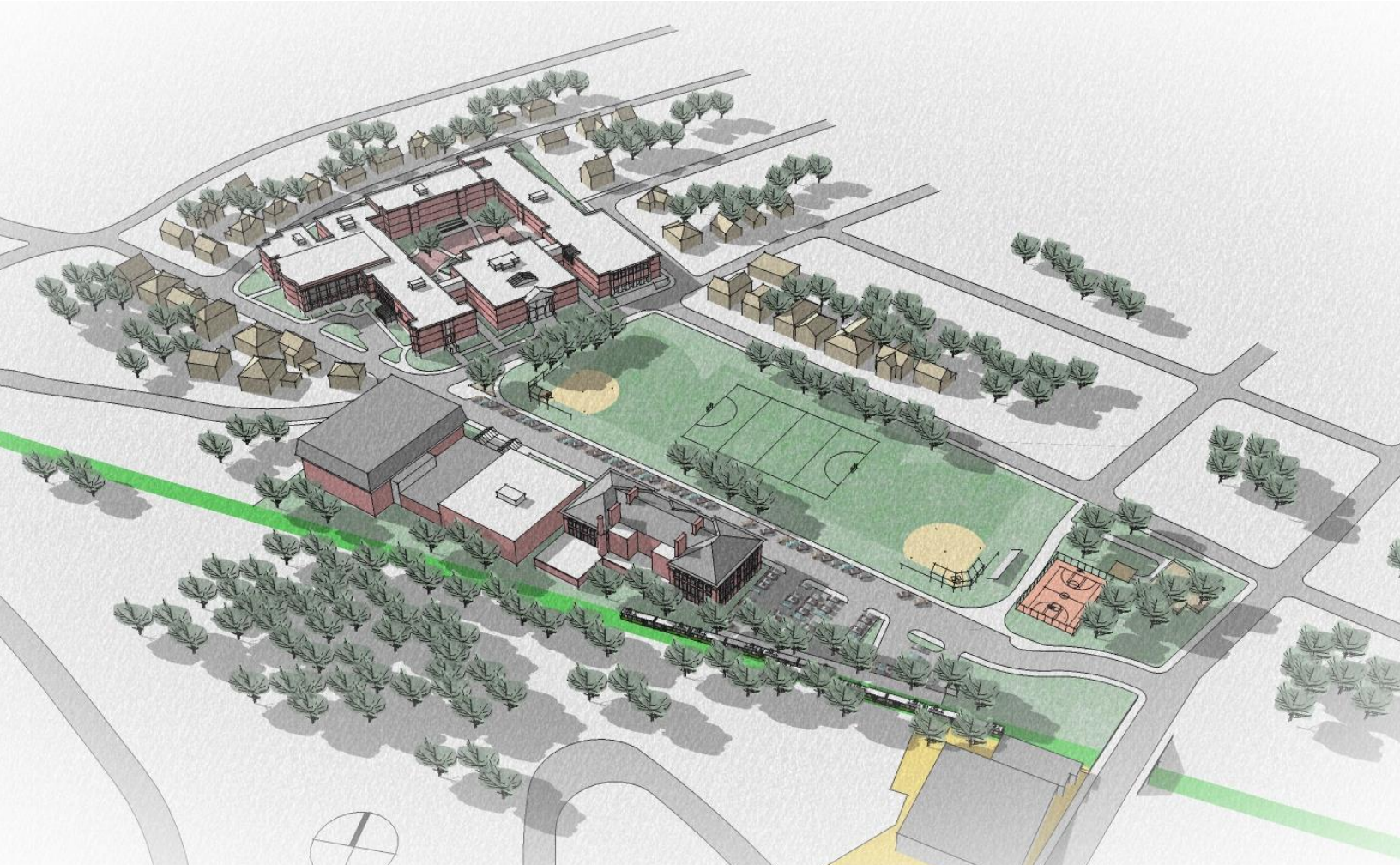

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Brookline High School – Further Study Report

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- Toward BHS 2020 and 21st Century Facilities, June 24, 2014 (PowerPoint)
- Framework for the 21st Century (Handout)
- 21st Century Design Patterns (Handout)

Visioning Session 2

- Blue Sky Ideas (Sketches by Participants)
- Public Schools of Brookline Further Study of Brookline High School, Vision Session #2, September 23, 2014 (PowerPoint)
- Toward BHS Guiding Principles for Design (PowerPoint)

6.2 Presentations to the Staff, Community and Visioning – Note, Not All PowerPoint Presentations Are Included in This Appendix

- Public Schools of Brookline Further Study of Brookline High School, June 18, 2014
- Public Schools of Brookline Further Study of Brookline High School, Capital Sub-Committee, December 18, 2014
- Public Schools of Brookline Further Study of Brookline High School, BHS Options Refinement Presentation, February 26, 2015
- Public Schools of Brookline Further Study of Brookline High School, School Committee Presentation and Discussion, March 26, 2015

6.3 Curriculum Space Worksheets

- Worksheets for 1,800 Students
- Worksheets for 2,100 Students
- Worksheets for 2,300 Students
- Worksheets for 2,600 Students

6.4 Traffic and Parking Assessment – Vanasse & Associates, Inc.

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Section 1

Executive Summary

1.1 Acknowledgments

Symmes Maini & McKee Associates (SMMA) would like to acknowledge the participation and guidance provided by District administration, teachers, and staff, as well as the Steering Committee.

Further Study Steering Committee

- William Lupini, Superintendent
- Peter Rowe, Deputy Superintendent for Administration and Finance
- Jennifer C. Fischer-Mueller, Deputy Superintendent for Teaching and Learning
- Deborah Holman, Headmaster – Brookline High School
- Hal Mason, Assistant Headmaster – Brookline High School
- Ray Masak, Project Manager – Brookline Building Department

1.2 Introduction

Between 1999 and 2011, Brookline High School has realized a modest 200 +/- fluctuation in student enrollment. In 2012, the high school population began increasing. More importantly, the Town's K-8 population has been steadily increasing since 2009. In recent years, the District has commissioned a number of studies, to find ways of addressing the impact of enrollment increases on its school buildings.

The studies include:

- Brookline School Population & Capacity Exploration Concept Study Report, August 2013, HMFH Architects
- Brookline School Population & Capacity Exploration (B-Space) Committee, September 2013
- Brookline High School Concept Study Report, September 2013, HMFH Architects

The latter, *Brookline High School Concept Study Report*, presents a very good overview of the existing building's characteristics, opportunities, and constraints—this report will not repeat that information. It also identifies 15 potential options for adding and reconfiguring space in which to accommodate anticipated growth. These potential options remain valid.

Over an 11-year period, enrollment at Brookline High School is projected to increase 45%, from 1,802 students in 2013-2014, to 2,600 students in 2024-2025. This will create a need for at least 24 general education classrooms; additional SPED rooms and support spaces; and a larger cafeteria, library, etc. Although there are enough

science lecture / labs (in terms of quantity) anticipated for future use, that room type will need to increase in size due to both functional and safety requirements, requiring additional area. Together, these needs will necessitate significant additional building space in a location, or locations, to be determined. The question is: Where and why that/those location(s)? As previously stated, the *Brookline High School Concept Study Report* identified numerous feasible means of adding classroom and other teaching spaces. This study identifies additional options.

In addition to simple, but significant, space needs, there is also a desire to transform the school from one that was designed for teacher-focused teaching to one geared toward student-focused learning. In tandem with solving the space needs, now is the time to address other issues facing the school. Defining the problem includes:

- Analyzing population growth (students are here now at lower grades)
- Addressing the need for additional classrooms, labs, support spaces
- Providing appropriate-size teaching spaces (many spaces are significantly undersized, by contemporary standards)
- Providing flexibility to accommodate current and future educational delivery methodologies
- Developing 21st Century teaching and learning environments
- Considering what impacts there could be on school culture, when evolving to a school with a 45% population increase

Every solution will likely have a significant cost and take years to plan, approve, and construct. As a significant capital project, the Town will seek participation by the Massachusetts School Building Authority (MSBA). The first step in the MSBA process is to submit a Statement of Interest (SOI). That document will define the nature, magnitude, and urgency of Brookline High School's problems. Brookline will compete with many other communities for MSBA funding dollars. Preparation of an SOI was begun while this study was in process, and was submitted to the MSBA in April 2015. The earliest an approval might come is January 2016.

The MSBA process can be lengthy, and the SOI identifies what problem(s), exactly, a school is facing. In Brookline's case, "Elimination of existing severe overcrowding" (Item #2) or "Prevention of severe overcrowding expected to result from increased enrollments" (Item #4). The SOI will not allow for the Town to define a solution within the application. Development of a range of potential solutions is reserved for Module 3, Feasibility Study of the MSBA process. This phase will likely explore both one- and two-campus solutions.

This current study will allow Brookline residents and leadership to discuss possible ideas and preferences, though no firm decision will emerge without going through the MSBA process.

1.3 Background / Enrollment

Anticipated Growth

- Population (2013-2014): 1,802
- Current Population (2014-2015): 1,877 (+77)
- Short-Term Population (2019-2020): 2,288 (+486)
- Projected Population (2024-2025): 2,600 (+798)
  An increase of approximately 800 students, or 44%!

1.4 Growth Impact on Space

- 24 Additional General Education Classrooms Needed (Core Curriculum)
- 23 Science Lecture Labs Needed (Appropriately Sized)
- Additional Special Education Rooms and Support Space
- Larger Cafeteria (Increase by 46%)
- Larger Library/Media Center (Increase by 100%)
- Few Increases to Number of Specialty Rooms, but Increase Sizes
- Additional Support Areas:
  - Offices: Administration, Guidance, Deans

1.5 Options Development

SMMA developed a series of "option components" to satisfy the space needs. These components took into account the educational program for the school; the School Committee's policies on class size and programs; the building's age and condition, as well as site availability and opportunities; the size of core building spaces (library, cafeteria, gym, etc.) and their ability to support current and/or anticipated populations; the building's configurations, and its ability to support additions and 21st century teaching and learning needs.

1.6 One Campus vs. Two Campuses

The current high school campus is dense, nestled in a residential neighborhood, and constrained by the urban nature of the neighborhood. An option briefly explored in the 2013 Concept Study involved a second high school on a portion of the Larz Anderson Park in South Brookline. This study also explored that option, but more importantly, discussed the educational and social implications of a second campus. See Section 4 for this discussion.

1.7 Short-Term and Long-Term Building Needs

With anticipated rapid enrollment growth comes the need for additional teaching spaces and support rooms, including general education classrooms, special education classrooms, science rooms, and specialty teaching environments. Using a method we call "curriculum-space worksheets," SMMA charted all curriculum offerings, along with class enrollment information from the 2014–2015 Master

Schedule. From this process, we determined the number of classrooms and other teaching spaces for the current enrollment (1,800 students) and future enrollments of 2,100 students, 2,300 students, and 12,600 students. See Section 3 of this report for additional details on the process. The curriculum-space worksheets are in Appendix 6.3.

1.8 Traditional Layouts vs. 21st Century Teaching and Learning Environments

Currently, most of the classrooms and other teaching spaces are arranged around double-loaded corridors (classrooms in rows on both sides of a corridor). This design was typical for the periods in which the various parts of the school were built, including the most recent building additions and renovations (1996). In addition, many of the classrooms are undersized, compared to contemporary standards. Those configurations and sizes were acceptable for traditional teacher-focused, lecture-style teaching, but are limiting for current student-focused educational delivery models. Some of these delivery models—such as Project-Based Learning, Flipped Classrooms, and differentiated and personalized learning—are currently practiced by many of the teachers at Brookline High School, but are limited in many areas by small room sizes, configurations, and appointments.

Student-centric teaching and learning / 21st Century education is focused on:

- Development of 4 C's Skills – Communication, Collaboration, Creativity, and Critical Thinking and Problem-Solving, via the following methodologies:
    - Active Learning
    - Project-Based Learning (Interdisciplinary, Hands-On)
    - Integration of Technology (Blended Learning)
    - Flipped Classrooms
    - Differentiated and Personalized Learning
    - The Third Teacher (The Building as a Teaching Tool)

1.9 Estimate of Probable Costs – eliminated from the study

An estimate of probable costs was part of this study's original scope of work. Based on a recommendation from SMMA, the owner agreed to eliminate the estimate from the scope. The rationale behind this decision included the following:

- This study developed a series of "option components" for the School Committee, school department, and community to consider, but stopped short of developing a specific proposal
- Assuming Brookline is invited into the MSBA process through the submitted SOI, the MSBA Module 3 process will necessitate a revisiting of all of the issues and will require at least three options: renovation-only, additions and renovations, and new construction. Each option will require a cost estimate.

1.10 Traffic and Parking Assessment

A traffic and parking assessment was conducted by Vanasse & Associates in May/June 2015. Traffic counts were conducted in May, when seniors were still in attendance. Their memorandum / report is included in Appendix 6.4 of this report.

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Section 2

Visioning

2.1 Introduction

David Stephen of New Vista Design led the efforts for Visioning, with participation by Philip Poinelli and other SMMA school planning staff.

The intent of the Visioning process is to engage a representation of the Brookline community to understand and contribute to the high school study.

2020 Working Groups

Prior to, and in preparation for, the Visioning sessions, the SMMA / New Vista team conducted a meeting with members of Brookline High School's 2020 Working Groups. Following is a list of attendees, and meeting report that summarizes the participants' "report outs" as of that time.

Also included from that meeting are:

- The SCOG (Strengths, Challenges, Opportunities, and Goals) Analysis from those present
- A list of 21st Century Skills
- Exploring Learning Goals for the 21st Century

Brookline High School - 2020 Working Groups

Design Visioning Kick-Off Meeting Notes
May 27, 2014

On May 27, 2014, representatives from Brookline High School's (BHS's) 2020 Working Groups, a collection of BHS faculty that is inquiring into the future of the school's programming and educational goals, participated in a three-hour Educational Visioning meeting facilitated by Symmes, Maini and McKee Associates (SMMA) and New Vista Design. The purpose of the meeting was to kick-off the high school study process and give each 2020 Working group an opportunity to report out on its progress and ideas as connected to it vision for the future of the school.

BHS's 2020 Working Groups have spent the past school year (2013-2014) researching the following focus areas connected to 21st century teaching and learning: Data Use; College and Career Center; Coordination of After School Supports; CTE Pathways; Senior Year Alternatives; STEM and STEAM; Global Options/Local Opportunities; and Cultural Proficiency. During the May 27 workshop, each Working Group shared it process, progress and priorities, after which small mixed-groups of participants collaborated on preparing a SCOG (Strengths, Challenges, Opportunities, and Goals) Analysis of BHS's academic program and facility.

Meeting Attendees:

SMMA Consultants	BHS Staff
May 27th (3-6pm)	
Mary Burchenal	English chair
Teddi Jacobs	Health/Fitness chair
Anthony Meyer	Dean
Owen Minott	Special Education admin
Scott Butchart	Dean
Dan Bresman	Alternative program chair
Sarah Orlov	Special Education admin
Jim Henry	Special Education admin
Lenny Libenzon	Guidance chair - 2020 College Career Center
Alicia Mitchell	Visual Arts chair
Arnie Marcus	CTE chair and 2020 - CTE
Agnes Alberola	World Language chair
Josh Paris	Math chair
Rachel Eio	2020 - Global
Brittany Stevens	2020 - Senior Year, College Career Center
Astrid Allen	2020 - Global

Kara Lopez	Alt program counselor
Kari Buys	2020 - STEAM
Lexi Thomas	2020 - Cultural Proficiency
Bridget Knightly	2020 - After School Supports
Susan Moreno	2020 - After School Supports
Deb Holman	Headmaster
Hal Mason	Assistant Headmaster

Meeting Notes:

- Deb Holman posed the question: How do we serve 1800 students well now… and how will we serve 2,500 well in the future.

- Participants expressed the following thoughts when asked to share their greatest concern with regard to a larger and re-envisioned high school:

    - This is a tremendous opportunity to look at the ways in which we want to grow and change
    - This process will happen really fast once it gets underway
    - Living through renovations is very disruptive
    - We need more gathering and performance spaces
    - We need to find ways to keep Guidance personalized and small
    - Health and fitness has some very innovative programming that should be supported
    - We are wondering about the implications for Winthrop House… as they are outgrowing their space
    - Spaces for Special Education must be versatile enough to serve a diverse group with special needs
    - Any new spaces should be flexible enough to all us to grow… we are all selfish in that we want to grow and protect our existing areas at the same time
    - We should be thinking about STEM/STEAM, and creating spaces for flexible learning and exploration
    - New space should reflect the school's philosophy of innovation and autonomy. We should not have technology just for the sake of it, but provide lots of options
    - In terms of college and career programming, we should be looking at ways to "take down" the walls of school… providing venues for students to work outside of the school and interact within the community. This helps them transition to the next
    - We need a library that is more flexible space and less traditional
    - The traditional classroom model that we have is antiquated… we need to develop a vision of what a classroom can/would look like as we move forward
    - We need to provide more spaces that encourage collaboration among students and teachers
    - We should think about how the space will look different and how to marry the spaces with technology
    - We will need to focus increasingly on 21st century skills and online learning
    - We need to make sure that students have enough space to do the kind of innovative work we want them to do without taking away space and opportunities
    - Since we will be going from 1,700 up to as many as 2,600 students (a 50% increase) it will be essential to find ways to use the building layout to help maintain a sense of BHS being small

Report-outs from BHS 2020 Working Group team leaders about their current thinking and visions for the future of BHS:

Rachel Eio: BHS 2020 Global

- There are a number of key issues for World Language teachers
- People are doing great work, but they are working independently
- There are big hurdles, and a constant need to find financial aid for kids to go on trips
- We would like to do something like Newton North HS, and create a global education leadership fund through which donors can donate specifically for global education. We need more institutionalized for fundraising
- We need to also look at our attendance policy and how it connects to trips… and the possible facilitation of longer term experiences (3 weeks)
- We also need some kind of staffing position to help coordinate many of these trips
- In terms of space, we have the desire to create some common space for international programs
- Right now, Betsy Davis' International Office is the space to host guests and store materials
- Another piece is to think of how to institutionalize trips
- We would like to increase technology available to communicate with people abroad… some needs are met now and some are not

Arnie Marcus: BHS 2020 CTE

- Career and Tech Ed has been looking at "pathways" that are now offered and whether we should change some of them
- We visited Rindge School of Technical Arts in Cambridge, MA, and Worcester Tech in Worcester, MA to get a sense of what they are doing, but we are not a Chapter 74 program
- The issue we are grappling with is what they should be offering and how should we be offering it
- We were recently reviewed by state and are looking toward pathways that lead to some sort of certification
- 85-89% of BHS students go on to college, but many acquire skills here that allow them to work and help pay for college
- They have been redesigning the classroom to look like a business
    - Using technology for presentations
    - Having the space to use the classroom like a workplace
- Because we have pathways, we get federal money
- Some of the pathways are more developed than others, and need spaces for both work and staff:
    - Culinary / Restaurant
    - Woodwork and construction (just recently developed)
    - Media Design and Media Studies (Brookline Access)
    - Engineering offerings (between Career and Tech Ed)
    - Entrepreneurship program
    - Copy center

Susan Moreno and Bridget Knightly: BHS 2020 After School Programming

- We are now developing a homework center with was a 2014 pilot program
- Offer 50 freshman got homework support 4 days per week
- Our goal is 50 new students each year that are freshman and sophomores
- By Junior year, hopefully students won't need those supports
- Next year is will be offered 3-days a week and there is discussion about having that space open longer and into the evening
    - Concurrently we are discussing what homework "is about" at BHS
- We could use space in the Library, but when they grow to 100 students, that will would push the Library space to capacity
- We need to look to the future
- Currently we have 4 other homework centers, including ours, METCO, and Steps to Success
- Our long-term vision is to coordinate these programs
- The BHS "Legislature" is a mix of students, and they have been discussing the idea of the "flipped" classroom

Alexia (Lexi) Thomas: BHS 2020 Cultural Proficiency

- We are working to get a better understanding about diversity of students and how to meet the needs of ALL students
- We are working toward a faculty that reflects the diversity of our students
- We are looking at personal and cultural racism and how they relate to the achievement gap
- We are planning a whole faculty training that is related to standards from the new evaluation system
- The goal is to get students to engage in discussions, and be at the forefront of this discussion and how it might effect curriculum and instruction

Kari Buys and Alicia Mitchell: BHS 2020 STEAM

- We have visited the NuVu Studio in Cambridge, MA
- We are implementing a two week exploration project with freshman in math and science classrooms
- We would like this to me more student driven
- In the future we want to be able to keep independent studies that are specifically aimed toward STEAM. For this, we will need:
    - A larger space
    - A flexible space
- Our Engineering classroom teacher needs to be able to have better views of students, and supervise the use of tools.
    - This is a place that needs to be collaborative, and foster "Design and Engineering Thinking"
- We want to provide students with a lot of great tools and spaces to do this kind of thinking

Lenny Libenzon: BHS 2020 College and Career

- We are working with students to develop a better sense of what it means to be college and career ready:
    - Awareness
    - Exploration
    - Immersion
- We do great work to prepare students academically for these challenges, but for reasons of size and budget we don't have the system in place to get students out into the world

- We envision a "Center for Innovation"
    - A college and career person works with students to find:
        - Employment and community resources
        - Internships and summer programs for a diverse group of students
    - We need a space for it. We currently don't even have a college and career space with computers
        - We would like to break down the walls between school and the community
        - There should be connection to the CTE program
        - Until 2010 they had a "School to Work position at the school. But that position was cut and is now a part-time career placement position
    - Many students think they think they know what they want to do, but statistics say that people change careers 5 times in their lives and we need to prepare out students better for this

Brittany Stevens: BHS 2020 Senior Year Alternative

- There are incredible possibilities that are alternatives to our "Senior Year Paper" graduation requirement
- They would like to create opportunities for students to pursue passions via apprenticeships and research
    - For example, a filmmaker could partner with a student to do a film with a writing component.
    - Although a lot would happen off-site, there should be space for students to work independently within the school
    - They have an English teacher who has experience with Design Thinking / IDEO
    - Students are capable of great work, but they need space and time to do work that matters to the world outside of school

Report-outs from BHS Academic Departments about their current work and visions for the future:

Sarah Orlov, Jim Henry: Special Ed

- Space must be accessible physically and academically, and should be light and inviting
- There should be space for one to one, small group, and larger group meetings
- We have students with hygiene issues such as toileting and showering, and will need to accommodate them
- We need a non-traditional space for life and job skills and well as space for:
    - Service providers
    - Meeting space
    - Alternative programs
    - Students with therapeutic and behavior needs

Owen Minott: Winthrop House

- Our program succeeds in spite of our space
- What we need most is flexibility with technology

Teddi Jacobs: Health and Fitness

- We have an innovative program housed in many "standard" spaces
- Our spin room was a locker room
- We have two gyms and a pool that is shared with the town
- Would like to see one giant collaborative office space
- We emphasize "Lifetime Activities" such as rock climbing and Project Adventure, and would like to continue that
- Freshman participate in an integrated program
- We have outdoor adventure classes
- We are looking for ways to increase movement for kids throughout the school day… getting them prepared and ready to learn
- We should be thinking school-wide about providing ergonomic seats so kids can move… as well as standing desks

Performing Arts

- We are one of the only schools to have such a great dance program
- We are tying to rebuild it and take in interesting directions
- Our existing music spaces won't be large enough

Alicia Mitchell: Visual Arts

- We have a great space/building and don't want to pack it more tightly
- We are very interested in STEAM connections
- What are thinking about what we can do with our 50 minute schedule to provide more time
- Getting them closer to other areas
- Want to see the spaces reflect the variety of programs that we have

Agnes Alberola: World Languages

- We want to bring the outside world into our classrooms
- Our Language Labs could be expanded
- We need good connectivity within the classroom for Skyping, the Internet and communication through as many channels as possible
- We do plays, cooking projects, and a lot of music
- Flexible furniture that can accommodate varied delivery methods would be great
- We have guest speakers that come to speak or play music and we don't have good spaces for larger gatherings
- Our tablet-arm chairs don't work so well trapezoid tables would be much better
- Our physical space should actually reflect the space we are teaching about

Science

- The Science Department is weary of going into spaces where they are located on multiple floors
- We have a greenhouse now that was rendered useless by MCAS exams
- We have a very strong Science Department, with a high level of enrollment
- Our biggest problem is that we prepare students at a high level, but we are not "turning them on" to science
- We have the beginnings of a STEAM initiative and a plan to have a Robotics space for next year
- We need to do more data collection

Josh Paris: Math

- Math is engaged in the exact same conversation as the Science Department… student do well but they aren't excited
- Math would like to have closer proximity to science classrooms
- We use a lot of Technology, but it could really be more robust
- Math classrooms should be more like engineering environments
- We need to prepare students for the coming world, which means STEM and STEAM

Arnie Marcus: CTE

- It is so important to get kids exposed to the careers they will be entering
- Kids need to see the connections between science (academics) and real life
- This happens with student have internship experiences at places like hospitals, or engage in experiences that have an entrepreneurial component
- There is a lot of power when they see the relevance to academics

Library

- Ed tech… convergence to
- We struggle with our space. It needs to serve as a Learning Commons, as well as a Model and Maker Space
- We need our spaces to be collaborative and support small and large groupings of students
- We need areas that allow for a variety of noise levels
- Furniture needs to be collaborative
- We need lots of places to charge students devices (the school has a "Bring Your Own

Device" BYOD policy
- The library should support flexibility, real work, collaboration and global connections

Mary Burchenal: English
- Students need access to computers for the writing component
- Presently, the English and Social Studies Departments share space, and this proximity has worked well for the organic sharing ideas across departments
- Performance space is nice to have available

Social Studies
- Students have three years of required courses and can then choose from a variety of interesting electives such as:
    - Global Leadership
    - Legal Studies
    - Social Justice – community engagement
- Students have an opportunity for international travel to Cambodia for two weeks in February
- One tech-savvy Social Studies teacher, Sam, constructed tables where kids sit with their laptops
- The concept for the future social studies classroom should enable interdisciplinary and technology enhanced study

Brookline High School

SCOG Analysis

5.27.14

Brookline High School administrators and a group of faculty leaders involved in the BHS 2020 Working Group process engaged in a "SCOG Analysis" of what they see as the current strengths, challenges, opportunities and goals with regard to their school program and facility. The following is a compilation of various groups' ideas.

BHS Facility SCOG Analysis

STRENGTHS

- Like BHS building – has a sense of history and purpose
- Diverse, big, pretty spaces
- Quad – (indoor/outdoor), look outdoors (windows)
- Some collaborative spaces (benches/tables)
- Outdoor space
- Natural light
- Atrium
- Centrally located Library
- Art space/gallery
- Four buildings create campus feel
- College feel – comprehensiveness
- Space for alternative programs
- Partnerships (sharing space): BATV, REC, Adult Ed
- Digital Labs
- Athletic space
- History (plaques, old wood, preservation)
- Residential neighborhood – students walk or take the T
- Proximity to T

CHALLENGES

- Sharing space with other organizations and programs
- Residential neighborhood makes it hard to expand
- Feeling cramped within existing instructional space (intimacy vs. feeling cramped)
- Building capacity – is it safe to bring all students here?
- Anonymity of hallways – students are not always supervised
- Carpeting
- A/C
- No places for student to hang out
- Cafeteria (acoustics!)
- Cafeteria and lunch spaces
- No good space for faculty – no common lunch space
- Need both student and teacher collaboration spaces
- Creating a culture of innovation
- Multiple buildings – some learning is isolated
- Too few large and flexible spaces for speakers and performances
- No extra commons space for visiting groups
- PARKING!
- Parking with increased traffic
- Oddly utilized (unsafe?) first floor
- Tappan space needs reimaging
- We need collaboration and design spaces
- Teachers with young kids – space for kids

OPPORTUNITIES

- Accessibility: the T allows students to “get our and onward”
- User friendly Student Commons and Café that can be used all day+
- The concept of “neighborhoods” = keep school small… but how to construct?
- CTE Program and space exists, how to re-purpose and build one?
- CTE/SYP/CC Center/STEAM – create space linkages between them
- Dean/Assoc. Dean structure – is it right spatially and structurally?
- Explore how the length of the school day affects use of the building
- Explore online learning
- Does our space crunch force us to rethink credit and graduation requirements?
- What other entities can use our space after hours? – Community College
- Time as space – thinking differently about schedule
- Better displays of who we are
- Learning outside BHS walls – global and community learning
- Better supervision – glass walls in hallways
- Create more flexible spaces, including intimate spaces
- Event spaces
- We have great ideas and can solve problems

GOALS

- Make BHS home to ALL students
- Make a user-friendly cafeteria
- Flexible common meeting spaces (many!) for presentations and groups visiting
- Tappan Gym renovation / underutilized
- Innovation space – STEAM/STEM Lab
- Collaboration space for classes/groups
- Access to tools outside of school hours
- Hold on to historical feel of building
- Welcome community partners
- Spaces that support innovative learning
- Encourage movement

BHS Academic Program SCOG Analysis

STRENGTHS

- Great staff
- Huge breath of curriculum
- Travel opportunities (exchanges)
- High achieving student body with enriched home lives
- Teach all students
- Excellent college prep
- Flexible department offerings (autonomy)
- Variety of alternative programs

CHALLENGES

- Lack support for culturally disadvantaged student to take AP
- Lack of diversity among high level classes
- Homework: lack of coordination – too much
- Don't teach 21st century skills well
- Lacking emotional support for regular ed students
- Lacking technology and training for differentiation

OPPORTUNITIES

- Redefine how we teach:
  - Flip classroom
  - Interdisciplinary
  - Collaboration
- Redesign schedule
- 21st Century Fund – innovative academics
- More robust CTE/Vocational programs
- Opportunities to collaborate with communities and industry
- Burst "silo" philosophy as colleges become more innovative (integrate across disciplines)

GOALS

(See Opportunities above)

- More collaboration with regard to space, academics and electives
- Bringing in outside professionals
- Make school inviting and garner enthusiasm
- More ways to obtain credits, including flex schedules
- Internships
- More flexible offerings that tap into real life experience

Meeting Agenda 5/27/14

- Introductions and Project Framing
  3:00–3:20
- 2020 Teams Report Out
  3:20–4:25

Eight teams – 5 Minutes per Team:

- Global
- Career & Technical Education (CTE)
- After School
- Cultural Proficiency
- Science, Technology, Engineering, Arts, Math (STEAM)
- College Career
- Senior Year Alternative

Academic Departments – 2 Minutes per Department

- Special Education
- Health / Fitness
- Performing Arts
- Visual Arts
- World Languages
- Science
- Math
- CTE
- English
- Social Studies

Explorations

Findings

Implications for BHS and Planning Process

4:25–4:55	Presentation: 21st Century Teaching and Learning
4:55–5:05	BREAK
5:05–5:45	SCOG Analysis
5:45–6:00	Next Steps – Questions and Goals

Visioning

We recommended inviting representatives of groups including, but not limited to: District administrators, BHS administrators, BHS teachers, BHS students (freshman through juniors, 5-6 +/-), BHS parents, School Committee, selectmen, planning board, building commission, and members of the business community and other town committees or boards that may have been able to contribute to the discussion. We recommended a group size in the range of 40-50 people. Two sessions were conducted:

- Session 1 – June 24, 2014
- Session 2 – September 23, 2014

To the extent possible, the same representatives participated in both Visioning sessions.

This Brookline High School Study not only explored where to house a significantly larger student population, but also addressed the facilities needed to deliver changing educational pedagogy, including delivery models, both in the near and long-term, with the flexibility to adapt to future changes.

- What are current educational delivery models that are being practiced elsewhere around the country or world?
- Why might they be wanted or needed at BHS?
- How might the culture at BHS change with a significantly larger population?
- How can Brookline's development of a clearer vision for its educational future help to inform the goals and design priorities for the high school study process?

The intent of the Visioning process was to bring an understanding of 21st Century teaching and learning to a broad constituency, hear concerns and thoughts on a larger BHS, and develop "Guiding Principles" that will help the study team and the larger Brookline community understand the needs, impacts, and contributions of BHS.

2.2 Visioning Session 1 AGENDA – June 24, 2014

45 min: **Introductions** and project framing: What preceded us, where are we now, and where we are hoping to go?

60 min: **Significant Learning Activity**: Small and large group discussion.

15 min: **BREAK**

30 min: **Presentation** (PowerPoint and Videos): 21st Century Teaching and Learning.

60 min: **21st Century Skills Activity**: Small group brainstorming, large group discussion, gallery walk, and prioritization of 21st Century skills.

30 min: **LUNCH**

30 min: **Presentation** (PowerPoint and video): 21st Century School Design Patterns.

60 min: **21st Century Design Patterns Activity**: Small group brainstorming, large group discussion, gallery walk, and prioritization of design patterns.

30 min: **Closing and Next Steps**

2.3 Visioning Session 2 AGENDA – September 23, 2014

Agenda:

1:00 – 1:20	**Introductions and Project Progress**
	What we did last time, what has happened since then, and where we are heading
1:20 – 2:00	**BHS Learning Goals and Design Patterns 1.0**: Small and large group review and discussion:
	What strikes you? What implications do these design patterns have for BHS teaching and learning? For BHS facility renovation and design?
2:00 – 3:15	**Guiding Principles Activity**
	PowerPoint presentation of guiding principles and their connection to facility design
	Small group brainstorming, large group presentations, and prioritization of BHS guiding principles
3:15 – 3:30	**BREAK**
3:30 - 4:45	**Key Spaces and Adjacencies Activity**
	PowerPoint presentation of key spaces and considerations in facility design
	Individual reflection, small group discussion, and large group listing of key spaces and adjacencies
4:45 – 5:45	**Bubble-Diagramming Activity**
	Small group "bubble diagramming" and sketching of key spaces and important adjacencies that could bring BHS's learning goals, design patterns, and guiding principles to life
	Large group presentations
5:45 – 6:00	**Closing and Next Steps**
	The meeting notes from the two Visioning sessions are combined and immediately follow

The Brookline Community

BHS Educational Visioning Process

On June 24, 2014, and September 27, 2014 a representative group of Brookline High School (BHS) administrators, teachers, students, parents and community stakeholders (see participant list on pages 10-13) participated in Educational Visioning workshops run by Symmes, Maini and McKee Associates (SMMA) and New Vista Design. The first workshop provided a six-hour long collaborative session, and the second workshop provided a five-hour long collaborative session designed to inform the high school study process. Participants were led through a step-by-step visioning process aimed at capturing their best thinking about BHS's current and future educational goals and priorities, and then connecting these goals and priorities to best practices in innovative school facility design.

During the first workshop that took place on Tuesday, June 24, 2014, participants engaged in activities that explored the following topics:

- **Elements of powerful learning** that lead to academic engagement and success
- **21st century teaching and learning practices** that are being influenced by digital technology and our changing economy
- **21st century learning goals** that distill the group's best thinking with regard to BHS's current and future educational programming and priorities
- **21st century design patterns** that innovative schools throughout the country have put into practice in order to make their forward-thinking learning goals come alive on the level of facility design

During the second workshop that took place on Tuesday, September 23, 2014, participants engaged in activities that explored the following topics:

- **Guiding principles for design** that emanate from learning goals and design patterns, and serve to articulate priorities for facility design
- **Key spaces and adjacencies** that align with the changing needs of the high school campus and its vision for the future
- **Bubble diagrams** that illustrate design elements and adjacencies that support the realization of BHS's guiding principles
- **Blue sky Ideas** that push the limits of participants' thinking about what is possible and, subsequently, identify what might be possible

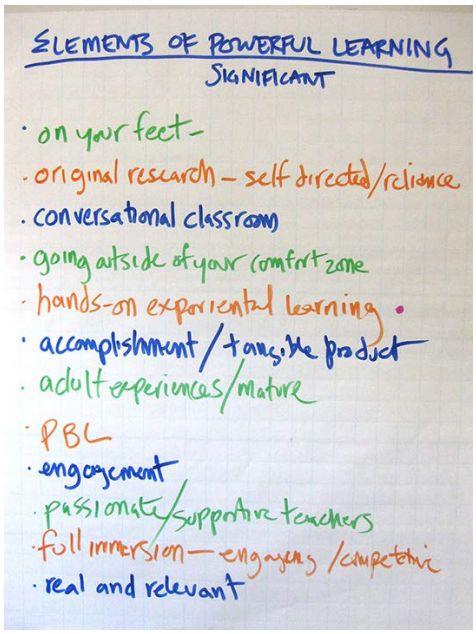
The following pages contain notes recorded during the June 24th and September 27th Educational Visioning Workshops.

Brookline Community BHS Educational Visioning

Elements of Powerful Learning

The following list highlights Elements of Powerful Learning that were identified by participants after reflecting on their own most powerful learning experiences during their K-12 years. Small mixed groups of participants then brainstormed elements common to each of their experiences. A comprehensive list of these elements was then recorded within the large group.

- Self-reliance
- High engagement
- Original research
- Project-based learning
- Tangible end-products
- Self-directed learning
- Accomplishment
- Adult experiences and mentoring
- Going outside of one's comfort zone
- Hand's-on and experiential learning
- Passionate and supportive teachers
- High expectations and the provision of guidance
- Multi-level and sequential problem-solving
- Mature behavior and high expectations
- Full immersion – engaging and competitive
- Real and relevant learning
- Conversational classrooms
- Collaborative work
- Hard work and practice
- Outside-of-the-box experiences
- Taking risks and going beyond the known
- Presenting to an authentic audience
- Frank, quick and authentic feedback
- Exposure to higher level thinking
- Influence of teachers
- Student voice and choice
- Great coaching/athletic challenge
- Online learning
- Working on your feet
- Autonomy



DRAFT Learning Goals 2.0

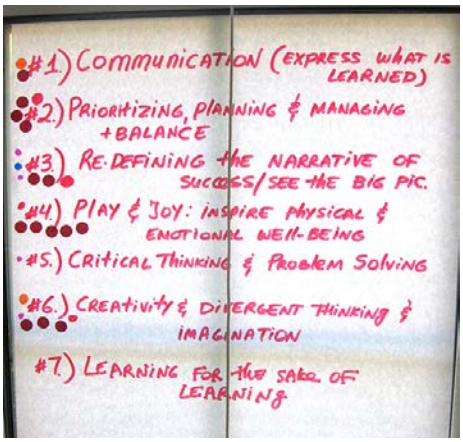
The following list of priority '21st Century Learning Goals' for Brookline High School students was developed by mixed teams of workshop participants. On June 24, 2014, eight teams of six participants worked to create their own priority listing of learning goals, after which each team presented to the larger group. Each list was then displayed in a gallery format and participants were given the opportunity to vote for their top six priority learning goals. Goals were then listed in order of the number of priority votes they received, with each learning goal given six base points for appearing on one of the original team lists, and each subsequent priority vote given one point. On September 23, 2014, the group reviewed the original listing of Draft Learning Goals 1.0 and made suggestions for how they might be consolidated and streamlined that are reflected in the following Draft 2.0.

BHS Learning Goals DRAFT 2.0

- Play, Joy and Creativity (114 votes)
  - Creativity and Imagination
  - Divergent Thinking
  - Curiosity and Exploration
  - Learning for the Sake of Learning
  - Inventive Thinking
  - Open to Other Ideas and Experiences
  - Inspiring Physical and Emotional Well-Being
  - Having Fun
  - Redefining the Narrative of Success
  - Seeing the Big Picture
  - Mind-Body Integration
  - Valuing Growth Over (or as much as) Achievement
  - Positive Learning Attitudes

- Communication and Collaboration (97 votes)
  - Working Well with Others
  - Goal Oriented Teamwork
  - Speaking, Listening, Writing and Reading
  - Express What is Learned
  - Effective Communication
  - Emotional Intelligence
  - Social Reasoning
  - Public Speaking

- Critical Thinking and Problem Solving (79 votes)
  - Student-Centered Learning
  - Locating, Assessing and Analyzing Information
  - Analysis and Praxis
  - Prioritizing and Planning
  - Managing and Balance
  - Ownership of Learning
  - Common Sense
  - Skepticism
  - Research
  - Asking Questions
  - Understanding Learning Styles
  - Knowing Yourself
  - Learning to Learn
  - Life-Long Learner
  - Finding Your Voice



- Citizenship and Ethics (76 votes)
  - Doing the Right Thing
  - Connecting to Community
  - Empathy
  - Attention to the World
  - Global Perspective and Awareness
  - A Sense of Community Beyond Local
  - Personal, Social and Civic Responsibility
  - Integrity
  - Humility

- Agility and Adaptability (51 votes)
  - Change Over Time
  - Grit and Risk Taking
  - Entrepreneurial Initiative
  - Perseverance
  - Positive Learning Behaviors

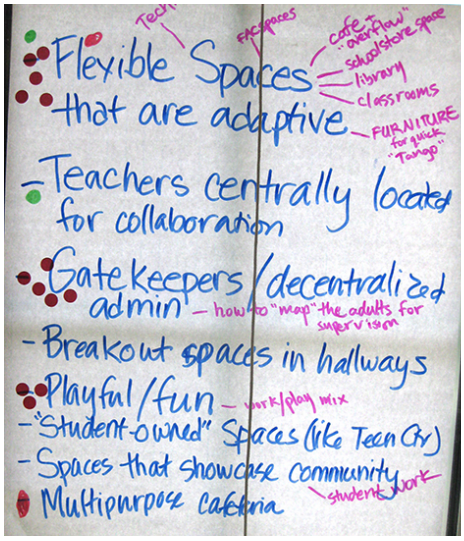
- Curricular and Digital Age Literacy (47 votes)
  - Core Content
  - Content Knowledge
  - Mastery of Core Academic Content
  - Mastery of Interested Subjects
  - Making Sense of Information

DRAFT Design Patterns 1.0

The following list of priority '21st Century Design Patterns' was developed by mixed teams of workshop participants. Eight teams of six participants worked to create their own priority listing of facility design patterns, after which each team presented to the larger group. Each list was then displayed in a gallery format and participants were given the opportunity to vote for their top six priority design patterns. Patterns are listed below in order of the number of priority votes they received, with each design pattern given six base points for appearing on one of the original team lists, and each subsequent priority vote given one point.

- ## Flexible Spaces and Furniture (94 votes)
  - Fluid and accessible to all
  - Variable sized classes
  - Movable furniture and walls
  - Flexible technology
  - Spaces that are adaptive (have many uses)
  - Display
  - Light and Flexible furniture for quick "tango"
  - Library, classrooms, cafeteria, school store
  - Breakout spaces in hallways
  - No corridors – flexible use patterns and circulation
  - Less specialization
  - Multi-purpose cafeteria
  - Not isolating groups
  - MLK Room
  - Mid-size flexible commons space
  - Loft or warehouse space
  - Space less formal and institutional
  - Look for new ways to schedule tests and AP exams
  - Good acoustic separation
  - Better systems and habits of sharing space
  - Multi-use auditoriums (small auditoriums)

- ## Commons Areas and Learning Studios (55 votes)
  - Classrooms surrounding a work space
  - Common spaces for work/play mix
  - Student Lounges
  - Spaces that showcase student work and community
  - "Student-owned" spaces like the Teen Center
  - Lecture spaces surrounded by breakout spaces
  - Hallways varied with activity areas



- ## Teacher Teaming (39 votes)
  - Collaboration of teachers and subjects
  - Faculty interaction (cafeteria)
  - Teachers centrally located
  - Shared department space for all departments

- Greeting and Gatekeeping (33 votes)
  - Safety
  - Welcoming area
  - Entry for community use after school hours
  - Decentralized administration
  - "Mapping" adults for informal supervision
  - Community access

- Visible Community of Learners (24 votes)
  - Spaces that showcase student work
  - Some level of transparency

- Maker Spaces (18 votes)
  - FAB Labs with multiple uses
  - Playful and fun – work/play mix

- Integration and Use of Outside Space (16 votes)
- Spa/Gym/Café/Rock Wall (14 votes)
- Adaptive Reuse (12 votes)
  - Rethink use of Language Labs, Cafeteria, Locker Rooms and Library
- Building as Teacher (9 votes)
  - Green and sustainable
- Ownership of an Area/Space (9 votes)
  - SWS or house system
- Tech Connectivity (7 votes)
- Keep Administration Together (Dean's Teams) (6 votes)

Brookline Community BHS Educational Visioning

DRAFT Guiding Design Principles 1.0

The following set of priority "Guiding Design Principles" for the high school study process was developed by mixed-teams of teachers and administrators who took part in an Educational Visioning workshop on September 23, 2014. Eight teams of six participants worked to create their own listing of Guiding Design Principles, after which each team presented to the larger group. Each list was then displayed in a gallery format and participants were given the opportunity to vote for their top six priority Guiding Design Principles. These are listed below in order of the number of priority votes they received, with each Guiding Design Principle given six base points for appearing on one of the original team lists, and each subsequent priority vote given one point. Guiding Design Principles offer a framework of educational priorities that prove invaluable in helping stakeholders and design team members to set design goals and focus their work. This first iteration of Guiding Principles may continue to develop as the high school study process unfolds.

1. Every Student Finds Their 'Small' (Place and People) (75 votes)

- Relationships
- Every Kid Connected
- All Kids are Known
- Big School, Small Feel
- Embrace and Celebrate Diversity
- Safe Spaces for Learning and Growing
- Physical, Emotional, and Intellectual Safety for Students and Faculty

2. A Flexible Approach to Teaching and Learning (74 votes)

- Cutting Edge Curriculum and Content
- Physical Spaces That Support Adaptability and Flexibility
- Collaborative Spaces for Students and Faculty (Jointly)
- Large Scale (Many) to Small Scale (One) Spaces
- Transparency and Sharing Across Departments (Projects/Access)
- Integration Between Disciplines/Departments, Community/School, Students/Parents/Faculty
- Adaptability, Durability and Sustainability
- Day-to-Day + 'Adapt Today, Evolve Tomorrow'

3. Learning By Thinking and Doing (73 votes)

- Student Engagement and Ownership
- Inquiry-Based, Student-Centered Learning
- Educating ALL Students at BHS(s)
- Spaces That Allow Real Work Products to be Brought to Completion
- You Are Here to Learn

DRAFT Guiding Design Principles 1.0

4. Source of Community Identity and Pride
(53 votes)

- Preserving the Classis BHS Feel
- Preservation, Personalization, and Possibilities
- You Can Look at the School From Any Angle, Inside and Out, and Know It's a High School
- Timeless and Classical Program Elements Combined with Innovative 21st Century Programs
- The Crowning Jewel(s) – BHS Exemplifies a Landmark and Flagship
- Community Facing Spaces – Community Serving Space

5. Freedom and Responsibility (40 votes)

- A caring and Outward Looking Community
- Spaces That Promote Ownership, Pride, Stewardship
- Connections and Access to and From Outside World

6. Environmental Sustainability (35 votes)

- Natural Light
- Comfortable Spaces That Promote Motivated Students
- Green – Eco-Friendly Building That Can Be Used as a Teaching Tool
- Gardens

Preliminary Brainstorm of "Blue Sky Ideas"

Note: The Blue Sky Ideas that are outlined below were brainstormed by Workshop Two participants as spaces they would like to see developed within the new high school campus. They are for discussion purposes only and do not represent actual programmed spaces.

1. **Library**
   - Provide public/outdoor entry
   - Café area with a student operated school store
   - Soft seating/lounge area
   - Display areas
   - Provide more school oriented zones as well

2. **Flex Spaces**
   - Adaptable spaces that are used differently at different times
   - Available for use at all times by adjacent classrooms and other spaces

3. **Modified Classroom Interiors**
   - Provide easy to move desks and chairs
   - Multiple teaching walls

4. **Stairs Next to Auditorium**
   - Reclaim unused space
   - Provide open seating
   - Create commons space with glass walls

5. **Roof Garden**
   - Larger space with wind turbines

6. **Faculty Work Space**
   - Space for up to 12 teachers, organized by discipline
   - Work stations with carols and desks
   - Collaborative work table
   - Glassed in small meeting room

7. **Winthrop House Program**
   - Location closer to high school
   - Centrally located community room
   - Space for 50 students

8. **Learning Center**
   - Flexible furniture
   - Individual work stations for students
   - Small group spaces that are glassed off and visible

9. **Quadrangle Core**
   - An atrium spaces that is used as a classroom commons
   - Like the Kennedy Library

10. **Tappan Building Replacement**
    - Build a new 4-5 story building that meets the space needs of the increased high school population

11. **Access to Outdoors/Nature**
    - Provide amphitheater

12. **Workrooms**
    - Provide perimeter desks with technology in corners
    - Central table

13. **Repurposed Cafeteria and Auditorium as Classrooms**
    - Create new community auditorium and café

14. **White Box Theater for Performing Arts**
    - Adjacent to stage, can serve as Green Room
    - Storage for props

15. **Small Niches**
    - Spaces for independent and small group work, as well as informal gathering

16. **Landing Spaces for Casual Interactions**
    - Safe public spaces that can be effectively supervised

Brookline Community BHS Educational Visioning

Participant List 6/24/14

June 24, 2014 (8-3PM)	
Name	
Deb Holman	Headmaster
Hal Mason	Assistant Headmaster, Brookline High School
Phil Poinelli	SMMA
Robert Kramer	SMMA
David Stephen	New Vista Design
Peter Rowe	Deputy Superintendent for Administration and Finance
Christien Polos	Performing Arts Department Teacher Leader Brookline High School
Sergio Moriguani	Planning Board
Danna Remen	Parent
Jeff Feldgoise	Brookline High School PTO
Andrew Kimball	Brookline High School World Language
Harry Bohrs	Advisory Committee
Ken Goldstein	Board of Selectmen
Aubrey Love	Brookline High School Science
Jessica Sims	
Nathaniel Bekere	
Eric Schiff	Guidance Counselor, Dean Butchart Team, Brookline High School
Erin Gallentine	Director of Parks
Lisa Jackson	School Committee
Susan Wolf Ditkoff	School Committee
Stewart Silvester	PTO
Lenny Libenzon	Guidance Department Chair, Brookline High School
Sarah Orlov	Special Education Director, Brookline High School
Stephanie McAllister	9th World History, Philosophy, Economics, Teachers Mentoring Teachers, Brookline High School
Melissa Battite	Recreation
Eoin Walsh	Students
Teddi Jacobs	Health & Fitness Department, Brookline High School
Brittany Stevens	Career Technology Education/CCC, Brookline High School
Gary Shiffman	Social Studies Curriculum Coordinator, 9th World History, Brookline High School
Billy Graham	Health & Fitness, Brookline High School
Roger Grande	Social Studies, Brookline High School
Pete Rittenburg	Director of Athletics, Brookline High School

Participant List 6/24/14 (Continued)

Edward Farhi	Parent
Sharon Jason	Parent
Dan Bresman	Coordinator/Counselor, School Within a School (SWS) -DHS
Anthony Meyer	Dean of 9th and 11th Grades, Brookline High School
Scott Butchart	Dean of 10th and 12th Grades, Brookline High School
Josh Paris	Chair, Math Department, Brookline High School
Malcolm Cawthorne	US History, African American Studies, Tutorial, Brookline High School
Mary _____	
Janet Fierman	Building Commission
Rachel Rubin	Community
Laurie Sheffield	English, Brookline High School
Joe Ranft	Community/Parents
Alicia Mitchell	Visual Arts, Brookline High School
Claudia Dell'Anno	Adult Education, Brookline High School
Arnie Marcus	Career & Tech Ed, Brookline High School
Ed Wiser	Physics, Science Department and STEAM Group, Brookline High School

Brookline Community BHS Educational Visioning

Participant List 9/23/14

Project: Brookline High School Further Study Date: 9/23/2014

Meeting Location: MLK Room - BHS Project No.: 14030
Meeting Purpose: Visioning Session #2

Distribution: (MF)

Name	Representing	Email
Rebecca Stone	School Committee	Rebecca_stone@brookline.k12.ma.us
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Emily Summers	Student Body (Senior)	ersummers@gmail.com
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Sergio Modigliani	Planning Board	On file
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J. Malcolm Cawthorne	BHS – Social Studies	Malcolm_Cawthorne@brookline.k12.ma.us
Aubrey A. Love	BHS – Science	Aubrey_Love@brookline.k12.ma.us
Stewart Silvestri	PTO/Parent	
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Sarah Orlov	BHS – Special Education	Sarah_Orlov@brookline.k12.ma.us
Shelley Mains	BHS – Libraries/Ed Tech	Shelley_Marcus@brookline.k12.ma.us
Laurie Sheffield	BHS – English	Laurie_Sheffield@brookline.k12.ma.us
Peter Rowe	Assistant Superintendent	
Gary Shiffman	BHS – Social Studies	Gary_Shiffman@brookline.k12.ma.us
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Teddi Jacobs	K12 Physical Education/Health	Teddi_Jacobs@brookline.k12.ma.us
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Anthony Meyer	BHS – Dean's Team and English	Anthony_Meyer@brookline.k12.ma.us
Arnie Marcus	Career & Tech Ed BHS	Arnie_Marcus@brookline.k12.ma.us
Erin Gallentine	Brookline Parks and Open Space	egallentine@brooklinema.gov
Ed Wiser	BHS – Science	Ed_wiser@brookline.k12.ma.us
Scott Butchart	BHS – Admin	Scott_Butchart@brookline.k12.ma.us
Jim Henry	BHS – Admin	Jim_Henry@brookline.k12.ma.us

Participant List 9/23/14 (Continued)

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Melissa Battite	Recreation	mbattite@brooklinema.gov
Bill Lupini	Superintendent of Schools	
Kate Jessup	SMMA	kjessup@smma.com
Phil Poinelli	SMMA	ppoinelli@smma.com
David Stephen	New Vista Design	
Deborah Holman	BHS - Headmaster	deborah_holman@brookline.k12.ma.us
Jennifer Fischer Mueller	Deputy Superintendent	
David Pollak	School Committee	

SMMA

2.4 Visioning Reflected

A great many thoughts were produced by participants at the two Visioning sessions. As options were developed, SMMA attempted to include, at the concept level, as many ideas as possible. Since this was a "study" and not a design, many ideas were left for the design process at a later date. Here are some bulleted ideas for the design stage.

- Key Spaces and Adjacencies that Align with Changing Needs
    - *Flexible Media Commons vs. "Traditional" Library*
    - *All-Day (Dining) Commons vs. Cafeteria*

SMMA

- Self-Directed Learning/conventional classrooms
    - *School Within a School (SWS)*
    - *Can the concepts of SWS be expanded to other populations of the school?*
    - *Flexible furniture*
    - *Right sized classrooms*

- Hands-On and Experiential Learning
    - *Incorporation of "maker space(s)" around the school to enhance project-based learning*
    - *Expansion of project-based learning*
    - *Informal learning environments – use of corridors for academics and social gathering*
    - *Informal learning environments – use of corridors for academics and social gatherings*

SMMA

- Green/Sustainability
    - *School as a Teaching Tool*

- Hands on and Experimental Learning
    - *1:1 campus environment*
    - *Maker Spaces/CTE*

- Relevant CTE Programs
    - *Environments that excite students*
    - *Programs and spaces used by the community as well as students*

2.5 Glossary of Terms for School Planning and Design

Teaching and learning has changed significantly over the past few decades. Along with that has come changes in vocabulary and nomenclature. The following glossary of Terms is an attempt to establish a common language among educators, planning and design professionals, and the public. This glossary was distributed at each of the Visioning sessions, as well as at meeting with teachers and the School Committee.

Glossary of Terms

For School Planning & Design

SMMA

This glossary is intended for individuals associated with or interested in the planning and design of school facilities (School Committees, politicians, the interested public) who may not be familiar with terms currently used by educators, educational planners and architects. Definitions are kept short. For some terms, you may choose to obtain deeper definitions or examples.

A

active learning (vs. passive learning): any situation in which students are participatory and involved, often by making, doing, role playing, discussing, debating, etc., vs. just listening to the teacher.

academic high school: high school with a curriculum primarily focused on college prep; typically lacks school-to-work or vocational programs.

advanced placement (AP): college-level courses offered in high schools, the content of which is determined by the standardized AP tests offered by the College Board. While completion of such courses in high school has been shown to increase the likelihood of success in college, some AP programs have recently been criticized for being based in rote learning.

advisory: typically in middle schools and high schools—a period of a day (often a short period) during which all students meet in small groups with an adult (teachers, para-professionals, administrators, etc.) to discuss almost anything that students have concerns about. It is often seen as a good way of making adult/student connections and improving communications.

alternative school: often a program within a school that is substantially separate from the general population. Typically serves students with social/emotional issues who have difficulty fitting in to traditional school environments. Depending on the needs of the school community, can serve other populations such as gifted and talented, kids at risk, dropouts, other…

at-risk students: often students who are not engaged or interested in school and are at risk of dropping out. This can range from high achievers who are bored to low achievers uninterested in school because it does not teach in a way they can learn or it is disconnected from their lives.

B

blended learning: a program in which content delivery is a combination of online and face-to-face school based learning. Students have some control of time, place and pace of learning.

block schedule: high school schedule with class periods of 90 to 120 minutes long, vs. the conventional 60-minute periods. The longer class period allows for "more time on learning," while also allowing for a variety of activities to be included in the period such as "hands on" or project-based lessons. Most often, students will take the courses every day, but only for a semester rather than the full year.

BYOD – bring your own device: a school policy in which students are expected to provide their own laptop or tablet for in-school (and home) use. The school typically includes a supplemental program of providing devices to students whose families do not have the financial resources to provide their own. Some schools see this as inequitable since students of means with higher-end devices may have an advantage over other students. It can present network security issues as well, though many schools have overcome them. School-supplied IT and network support is essential, as is teacher professional development in device usage and instruction.

C

choice: a program that allows students to enroll in a school district in which they don't live. This program is intended to give students in low performing schools or districts opportunities to access better schools; sometimes initiated to increase diversity within the host community.

classroom: the basic instructional space within schools.

class size: Typically a target number for the maximum number of students in a given class type or subject area. Sometimes set by the school committee or district administration, sometimes set by union contracts. Often varies by grade level; sometimes varies by ability levels, e.g. high-achieving students may have larger class sizes because that might have little effect on their performance, whereas by contrast a lower achieving student may benefit greatly from a smaller class size.

cluster plan: classrooms organized with close adjacencies, often around a large-group instruction space, project room or other focal space. This is in contrast to a double loaded corridor. In middle schools, a cluster often houses a "team" (teachers who share the same group of students). In high schools, they can house an academic department, a house or a school within a school; often defines a small learning community.

comprehensive high school: a school that includes an academic curriculum and vocational curriculum or technical training.

constructivist learning: a philosophy originally developed by John Dewey based on hands-on activities, inquiry, exploration and discussion. Direct instruction by teachers is minimized.

Grafton High School

core academics: English, social studies, math, science, foreign language curricula, sometimes the arts are included.

critical thinking: the trained ability to think clearly and dispassionately. Critical thinking is logical thinking based on sound evidence, involving the ability to gather and analyze information and solve problems. (D. Ravitch)

D

DESE - (Massachusetts) Department of Elementary and Secondary Education: current name for the Department of Education. http://www.doe.mass.edu/

differentiated instruction: instruction intended to match the delivery method and experiences with individuals' different ways of learning.

double-loaded corridor: a traditional classroom plan in which rows of classrooms flank both sides of a corridor; also referred to as an egg-crate design.

E

early childhood: grade grouping that starts with Pre-K and kindergarten, often includes grade one and sometimes additional early grades.

egg-crate plan: see double-loaded corridor.

ESL: English as a Second Language, programs for students who do not have fluency in English.

ELL: English Language Learner - a student in an ESL program whose native language is not English and who lacks enough proficiency in English to be mainstreamed for part of the school day.

English language arts: English curriculum.

ergonomic furniture: typically lightweight, easy-to-move and more comfortable than the traditional hard plastic or wood furniture. It recognizes that individuals learn better when they are comfortable.

F

flipped classroom: a delivery process in which the curriculum content, such as lecture, video, reading or other, is provided to the student to experience outside the classroom (homework). Class time is then used for discussion with and among the students, group projects and other application of content knowledge. A component of active learning.

FTE (full time equivalent): A 1.0 FTE is a full-time teacher or student, while an FTE of 0.5 indicates that a teacher or student is half-time. Two half-time teachers equal 1.0 FTE.

G

grade configuration: the arrangement of grades that make up a school; can vary significantly among communities; most often set around pedagogy but occasionally set around available facilities.

guide on the side: a teacher as a facilitator rather than providing direct instruction, in contrast to a "sage on the stage."

H

house (plan): a grouping of spaces: classroom, administrative, support, etc. developed around an identity or theme; can be a school within a school.

I

I AM HUMan: the Integration of Art and Music into the HUManities. Akin to STEAM, this integration is just as important.

immersion (full): an instructional approach combining written, musical and visual arts and culture to a subject, often referred to in foreign languages.

inclusion: special education students integrated into typical general education classrooms. The term is also used for ELL students integrated into typical general education classrooms.

interdisciplinary learning: an approach of multiple core subjects being taught in an integrated way, often on a subject or theme and often around a project.

intervention: most often a specialist who joins a general education classroom to assist student(s) in need of assistance rather the "pulling them out" for that assistance.

L

large group instruction (space): a larger, unassigned space used for a variety of activities such as: multiple classes that meet together; for guest lecturers; for project work, gallery space, large meetings (student or community), etc.

learning style: modes of learning that reflect individuals' natural and sometimes trained traits such as: visual, verbal, tactile, kinesthetic, or auditory.

lifelong learning: just what it says—a belief that with the correct approach in school, people will remain engaged and excited about learning throughout their lives.

life skills program: programs for students with severely restricted cognitive development. Programs vary from school to school but in high schools the spaces needed often include a training kitchen; apartment-like area with a bed; adult-assist toilet room with shower and changing table, and a variety of small group teaching environments, including technology.

Quincy High School

Tewksbury High School

While often present at all grade levels, high schools typically include the most developed programs. Space requirements are in the range of 1,200–1,500 sf for a class size of 8–12 students.

looping: students remain with a teacher for multiple years rather than changing teachers every year.

M

mainstreaming: special education students placed in general education classrooms; may be done for some or all classes based on the students' disabilities; also referred to as inclusion.

maker spaces: a relatively new term for a hands-on space, often with age-appropriate tools to create, prototype, and test ideas and projects.

mastery learning: an approach of students in which students advance their studies based on their knowledge of the subject rather than seat time or age.

METCO: The Metco Program, originally begun in 1966, is a grant program funded by the Commonwealth of Massachusetts. It is a voluntary program intended to expand educational opportunities, increase diversity, and reduce racial isolation, by permitting students in certain cities to attend public schools in other communities that have agreed to participate. http://www.doe.mass.edu/metco/

modality: a means by which learning occurs, as, for example, through visual or kinesthetic experience. Also see learning style. (D. Ravitch)

MSBA – Massachusetts School Building Authority: created in 2004 to replace the former school building assistance program administered by the Department of Education, The Massachusetts School Building Authority ("MSBA") is a quasi-independent government authority created to reform the process of funding capital improvement projects in the Commonwealth's public schools. The MSBA strives to work with local communities to create affordable, sustainable, and energy-efficient schools across Massachusetts. http://massschoolbuildings.org/

multiple intelligences (MI): a theory introduced in 1983 by Howard Gardner, that people demonstrate their capabilities and learning proficiencies through a single or combination of intelligences. Current intelligences include: Verbal/Linguistic; Logical/Mathematical; Bodily/Kinesthetic; Musical/Rhythmic; Visual/Spatial; Interpersonal; Intrapersonal; and Naturalist.

P

paraprofessional: a trained aide who assists the classroom teacher, often in special education classrooms or regular ed classrooms that mainstream special education students. The "para" often does not have the same credentials and training as regular classroom teachers. (D. Ravitch)

pedagogy: the study of education and education practice. Also, a philosophy about the best way to teach. (D. Ravitch)

peer-to-peer learning: students learning from each other.

pod plan: see cluster plan.

portable classrooms: prefabricated building components that comprise classrooms and often wings used to accommodate overcrowding; also used as swing space to temporarily house classes during renovation projects.

Swampscott High School

project-based learning: this learning modality meets curriculum content goals by asking students to address deep, open-ended situations, such as solving problems or inventing things. It is naturally inclined to interdisciplinary learning and student collaboration, both highly valued 21st Century learning skills.

pull out (pull over): removal of a special education from the classroom to a separate room or space for remedial or targeted instruction.

R

resource room: special education space intended for small group instruction and/or tutoring or remedial work; also referred to as a learning lab.

S

sage on the stage: teacher at the front of the classroom in lecture mode; teacher- focused instruction.

school-to-work program: programs designed to prepare students to move directly into the workforce after high school rather than going to college, often associated with vocational training programs.

school within a school: most often incorporated in very large high schools to break down the size of the school into multiple schools within the same building or campus, often with separate administrations and facilities; can be designed around academic specialties or social houses or other ways to create smaller learning communities.

sections: the number of classes needed to fulfill a curriculum offering.

service learning: programs in which students engage in real-world and socially relevant community activities in ways structured to enable them to attain specified academic learning objectives.

small group instruction (space): small teaching space (often anywhere between 80–200 sf) intended for individual or small group learning or activity; meant for a variety of uses including: individual or peer-to-peer learning, accommodation of individualized learning styles, special education or regular education.

social-emotional: an area of special education for students with disabilities related to cooperating with others or establishing relationships within a classroom or school community.

SPED: programs of special education.

stand-up desks: student desk used by standing or sitting on a high stool, to facilitate a student's kinesthetic or physiological needs to move and, in doing so, helping the student to focus on tasks at hand.

STEM: the integration of Science, Technology, Engineering, and Math in an applied and interconnected way.

STEAM: the integration of the arts (design and visual and performing arts) into a STEM curriculum.

student-centered (classroom): also referred to as learner-centered (vs. teacher-centered).

T

Title I: a federally funded program begun in 1965, providing funds for programs intended to improve academic improvement of low income children.

Title IX: federal legislation passed in 1972 that prohibits discrimination based on gender; most often associated with equal sports facilities for girls and boys, pertaining to quantity of space, programs and spending.

V

visioning: an often community-based effort of assembling stakeholders (including educators, teacher and administrators, students, parents, and community members) for the purpose of exploring, in a workshop format, how the school or school district might develop long-term direction for educational delivery and the facilities needed to support this delivery.

#

1:1: a smart device for each student in the school. This could be a tablet, laptop or one of the many devices that are in between, such as a Chrome Book. Smart phones are not typically included in this category since serious research and writing is almost impossible using them. For 1:1 programs to be effective, students need to be able to use the devices at home and elsewhere, not just at school. 1:1 can be implemented through either school-provided devices or BYOD, "bring your own device."

3:1: Digital infrastructure needed for 1:1 programs. Many people, mostly adults in the school for the moment, use multiple devices: smart phone, tablet and laptop. When in the wireless mode, they are all trying to connect to the network at the same time, putting an even bigger strain on often inadequate wireless systems. So when we are discussing developing 1:1 programs for schools, the wireless infrastructure needs to be far more robust (larger bandwidth) to accommodate even more devices in the future.

21st century skills: as defined by "The Partnership for 21st Century Skills," is made up of the 4 Cs: Communication, Collaboration, Creativity, and Critical Thinking/Problem Solving. http://www.p21.org/

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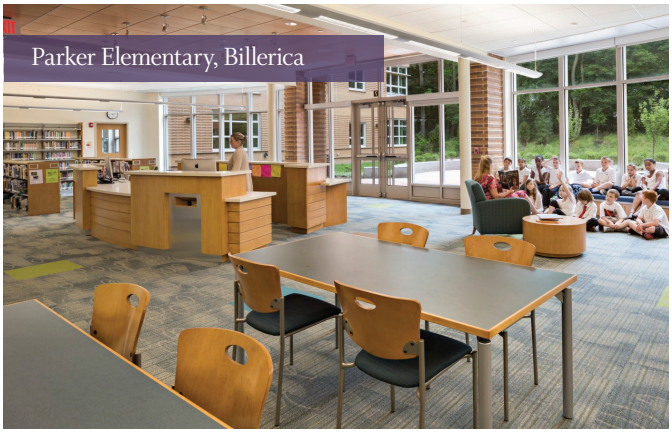
Parker Elementary, Billerica

The Center School, Stow

Marblehead High School

For those of you who want to understand educational terms well beyond those related to school planning and design, consult the following:

Ed Speak: A Glossary of Educational Terms, Phrases, Buzzwords, and Jargon, Diane Ravitch, ASCD, 2007

(In some cases, this book was referred to when developing definitions as they relate to planning and design.)

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Section 3

Educational Space Program

3.1 Introduction

Brookline High School has a very robust program of studies. The school's catalogue lists over 380 curriculum offerings, not all of which are offered every year. During the 2014–2015 school year, over 300 courses were offered (including semester courses).

Because the offerings are so robust, this study assumes that a similar number would be offered in the future. Some may change, some may be dropped and others added. As the population increases, the number of sections for many of the classes will increase, requiring additional classrooms. Although all program disciplines will likely be affected, the largest impact will be on core academic programs.

3.2 Curriculum–Space Worksheets

The number of curricula offerings, how frequently they meet, and the projected population for each can determine the number of classrooms needed. SMMA developed "curriculum–space worksheets" that include every offering and the number of students enrolled in each, to then be able to project future needs.

Recognizing that offerings may very well change over time, the assumption is that the number of offerings will likely not change significantly, even with a significantly larger population. There is an assumption that the population growth will increase the number of sections within established courses.

The industry-standard classroom utilization rate is .85. This factor was used in our analysis.

We developed curriculum–space worksheets for four different populations:

- 1,800 students, the approximate current population
- 2,100 students, the anticipated 2018 school-year projection
- 2,300 students, the anticipated 2020 school-year projection
- 2,600 students, the anticipated 2025 school-year projection

Each population level has detailed spreadsheets that define the number of spaces required on a curriculum area basis. Fourteen spreadsheets comprise each analysis. These can be found in the Appendix of this report, Section 6.3.

The analysis is conducted by areas of study. This assumes that classrooms are dedicated to that discipline. For example, English classrooms remain dedicated to English. Although various teachers may share a particular classroom, the room can be appointed for deep immersion of that discipline.

In the short term, with growth outpacing resources, it is likely that classrooms may need to be shared between some subjects, potentially yielding slightly higher utilization rates.

- **1,800 student analysis:** Suggests that the school needs two additional classrooms to serve "general education – core subject area." This indicates that the school is already overcrowded.
- Specialty classrooms and teaching spaces (e.g., art, music, CTE spaces) are, for the most part, sufficient to accommodate current needs.
- **2,100 student analysis:** Suggests that the school will need 11 additional classrooms to serve "general education – core subject area."
- Specialty classrooms and teaching spaces are not greatly impacted by the increase to 2,100 students. Some require additional space, but not all. Please refer to the detailed worksheets to see areas of study that will need additional rooms.
- **2,300 student analysis:** Suggests that the school will need 18 additional classrooms to serve "general education – core subject area."
- Specialty classrooms and teaching spaces are not greatly impacted by the increase to 2,300 students. Some require additional space, but not all. Please refer to the detailed worksheets to see areas of study that will need additional rooms.
- **2,600 student analysis:** Suggests that the school will need 24 additional classrooms to serve "general education – core subject area."
- Specialty classrooms and teaching spaces are not greatly impacted by the increase to 2,600 students. Some require additional space, but not all. Please refer to the detailed worksheets to see areas of study that will need additional rooms.

		Current Classrooms	Classrooms Required for 1800 Students	Classrooms Required for 2100 Students	Classrooms Required for 2300 Students	Classrooms Required for 2600 Students	Net SF Current	Net SF 2600	Delta (Net SF)
Core Academic									
EN	English	14	14	16	18	19	9,805	17,100	
WL	World Languages	15	15	17	18	20	10,865	18,000	
WL	Language Lab	1	1	1	1	1	1,275	1,275	
SO	Social Studies	11	11	12	14	15	7,600	13,500	
MA	Math	13	15	17	19	21	9,125	18,900	
HF	Wellness	0	1	2	2	2	0	1,800	
	Classroom TOTAL	54	57	65	72	78	38,670	70,575	**31,905**
			+3 CR's	**+11 CR's**	**+18 CR's**	**+24 CR's**			
Science									
SC	Physics		5	5	6	7			
SC	Chemistry		5	6	6	7			
SC	Biology		4	5	6	7			
SC	Applied Science		2	2	2	2			
	Science TOTAL	22	16	18	20	23	18,775	33,120	**14,345**
	STEM?								

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3.3 Enrollment Projections

Enrollment projections were provided by the School Department of Brookline

Years Out	School Year (FY)	9	10	11	12	Total Enrollement	School Year		Cumulative Increase
	2014	466	444	475	417	**1802**	2014	28	
	2014 - 2015	492	466	444	475	**1877**	2015	75	103
1	2016	536	492	466	444	**1938**	2016	61	164
2	2017	519	536	492	466	**2013**	2017	75	239
3	2018	564	519	536	492	**2111**	2018	98	337
4	2019	656	574	519	536	**2285**	2019	174	511
5	2020	539	656	574	519	**2288**	2020	3	514
6	2021	618	539	656	574	**2387**	2021	99	613
7	2022	676	618	539	656	**2489**	2022	102	715
8	2023	630	676	618	539	**2463**	2023	-26	689
9	2024	645	630	676	618	**2569**	2024	106	795
10	2025					**2600**	assume	31	826

3.4 Current Use

SMMA developed floor plans reflecting the current use of the building. Color-coding of the plans differentiates general education, special education, science, and many unique or special uses.

There are a number of school-related and community programs that currently occupy space in the school. Since they are not specifically related to the high school curriculum, it is very likely most, or all, of them will need to be moved out, and that the spaces will be converted to high school teaching spaces to accommodate the growing enrollment. These programs include:

- Brookline Early Education Program (BEEP)
- Brookline Adult Education Offices – Adult education classes are accommodated at Brookline High School using classrooms and specialty teaching spaces. It is likely that this use could continue, since the classes do not require dedicated space. If there were a future need for the school to move to a double-session schedule, adult education classes might be impacted.
- EDCO Collaborative
- Steps to Success
- 21 Century Fund

The net area used by the sum of these programs is slightly under 5,000 square feet.

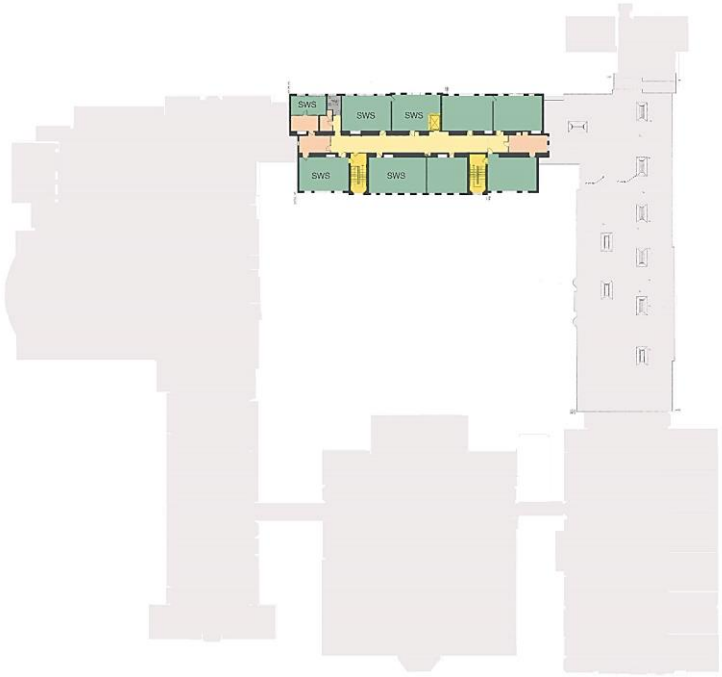
SMMA

FIRST FLOOR PLAN

SECOND FLOOR PLAN

SMMA

THIRD FLOOR PLAN



FOURTH FLOOR PLAN

3.5 Program Area Deficiencies

SMMA developed floor plans reflecting room size deficiencies when compared to the MSBA's space "guidelines".

These plans are also color-coded but in a very different way from the current-use plans. The plans are coded as:

- Within 5% of MSBA guidelines
- 5% to 24% under MSBA guidelines
- 25% or more under MSBA guidelines
- 10% or more over MSBA guidelines
- Not included in the MSBA guidelines

A significant number of teaching spaces are 25% or more under MSBA guidelines, including nearly all science classrooms and labs. Other spaces that stand out as being significantly undersized are the cafeteria (60% undersized) and the library / media center (100% undersized)

SMMA

FIRST FLOOR PLAN

SECOND FLOOR PLAN

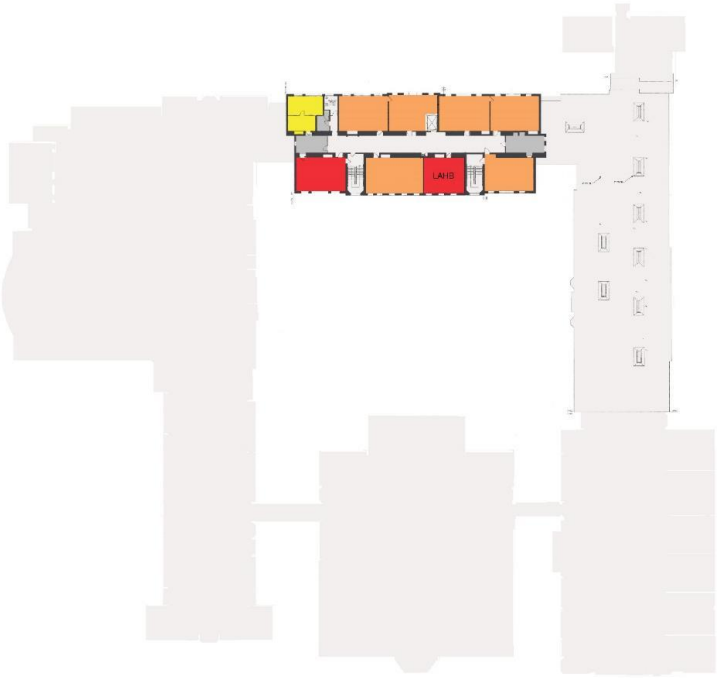
SMMA

LEGEND

- Appropriately Used Within 5%
- 5 to 24% Under MSBA
- 25% or More < MSBA
- 10% or More > MSBA
- Not Part of MSBA Project

*Based on 2015 Population

THIRD FLOOR PLAN



FOURTH FLOOR PLAN

3.6 Summary of Spaces

The MSBA uses a standard Summary of Spaces form. This form is available on the MSBA website under *Building with Us – Module 3*.

Included at the end of Section 3 are two versions of the form. Since the school is not being "programmed" at this time, a number of the columns have been hidden. The first version shows the existing rooms, the number of each type, and their sizes. Net educational square footage is used in this form and can be compared with the MSBA guidelines for a school of 1,800 students. The columns to the right indicate the MSBA's "standard" criteria for a school of this size.

The second version compares the existing rooms, the number of each type, and their sizes with the MSBA guidelines for a school with 2,600 students. The columns to the right indicate the MSBA's "standard" criteria for a school of this size.

3.7 Program Areas Not Typically Funded by the MSBA

The MSBA has guidelines for both the type and size of spaces that are typically funded by the Capital Grant Program, but recognizes that communities have unique programs and requirements that fall outside these guidelines. The MSBA is willing to discuss the unique requirements of a specific project, but there is no guarantee that those areas will be funded within the MSBA grant program. Current spaces or programs at Brookline High School that may fall outside the MSBA guidelines include the alumni office, school store, BEEP program (multiple spaces), EDCO (multiple spaces), PTO room, white-box and black-box theaters, scene shop, language lab, adult education offices, newspaper office, greenhouse, and departmental offices. The Module 3 process will be where these issues are sorted out.

Existing Space Summary - High Schools - 1,800 Students

BROOKLINE HIGH SCHOOL	1800 Existing Conditions			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**78,590**			**87,340**	
(List classrooms of different sizes separately)							
Classroom - General			0	850	62	52,700	825 SF min - 950 SF max
Classroom - English	Varies	14	9,805				
Classroom - Social Studies	Varies	11	7,600				
Classroom -Math	Varies	13	9,125				
Classroom - World Language	Varies	15	10,865				
Health							
		53					
Computer Lab	825	1	825				
Tutorial Classrooms	Varies	3	2,085				
Study Hall	690	1	690				
OFC Classrooms and Office	Varies	5	3,940				
School Within a School Classroom	Varies	4	2,785				
School Within a School Small Group	425	1	425				
BRYT	725	1	725				
Teacher Planning	Varies	5	3,860	100	62	6,200	
Language Lab	1,275	1	1,275				
Language Computer Lab	400	1	400				
World Language Office	175	1	175				
Small Group Seminar - ELL	Varies	3	1,210	500	4	2,000	
Math Support	600	1	600				
Science Classroom / Lab	Varies	22	18,775	1,440	16	23,040	3 x85% ut=20 Seats-1 per /day/student
Prep Room	Varies	6	2,115	200	16	3,200	
Central Chemical Storage Rm	Varies	2	550	200	1	200	
Science Office	Varies	4	760				
SPECIAL EDUCATION			**8,505**			**17,120**	
(List classrooms of different sizes separately)							
Self-Contained SPED - Learning Centers	Varies	4	2,440	950	12	11,400	assumed 8% of pop. in self-contained SPED
Self-Contained SPED - RISE	750	1	750				
Self-Contained SPED - CBC	500	1	500				
Self-Contained SPED - Bridge	650	1	650				
Self-Contained SPED - Transition	450	1	450				
Self-Contained SPED - Excel	Varies	3	2,325				
Self-Contained SPED - Pathways	590	1	590				
Self-Contained SPED - Small Group	600	1	600				
Self-Contained SPED Toilet			0	60	12	720	
Resource Room			0	500	5	2,500	1/2 size Genl. Clrm.
Small Group Room - Reading	200	1	200	500	5	2,500	1/2 size Genl. Clrm.
ART & MUSIC			**3,390**			**8,350**	
Art Classroom - 25 seats			0	1,200	3	3,600	Assumed use - 25% Population - 5 times/week
Art Workroom w/ Storage & kiln			0	150	3	450	
Band - 50 - 100 seats	1,625	1	1,625	1,500	1	1,500	Assumed use - 25% Population - 5 times/week
Chorus - 50 - 100 seats	1,025	1	1,025	1,500	1	1,500	
Piano	480	1	480				
Ensemble			0	200	1	200	
Music Practice	Varies	2	260	75	8	600	
Music Storage			0	500	1	500	
VOCATIONS & TECHNOLOGY			**0**			**19,200**	
Tech Clrm. - (E.G. Drafting, Business)			0	1,200	6	7,200	Assumed use - 50% Population - 5 times/week
Tech Shop - (E.G. Consumer, Wood)			0	2,000	6	12,000	Assumed use - 50% Population - 5 times/week
HEALTH & PHYSICAL EDUCATION			**12,240**			**26,280**	
Gymnasium	10,960	1	10,960	12,000	1	12,000	
PE Alternatives			0	3,000	1	3,000	
Gym Storeroom	Varies	3	860	300	1	300	
Locker Rooms - Boys / Girls w/ Toilets			0	10,080	1	10,080	5.6 sf/student total
Phys. Ed. Storage			0	500	1	500	
Athletic Director's Office	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	120	1	120	250	1	250	

Version
11.24.2010

Existing Space Summary - High Schools - 1,800 Students

BROOKLINE HIGH SCHOOL	1800 Existing Conditions			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
MEDIA CENTER			**7,945**			**11,150**	
Media Center / Reading Room	7,320	1	7,320	11,150	1	11,150	
Computer Lab	625	1	625				
AUDITORIUM / DRAMA			**13,260**			**10,400**	
Auditorium	5,200	1	5,200	7,500	1	7,500	2/3 Enrollment @ 10 SF/Seat - 750 seats MAX
Stage	2,550	1	2,550	1,600	1	1,600	
Auditorium Storage	Varies	3	410	500	1	500	
Make-up / Dressing Rooms			0	300	2	600	
Controls / Lighting / Projection	125	1	125	200	1	200	
White Box Theater	1,675	1	1,675				
Black Box Theater	1,825	1	1,825				
Workshop	975	1	975				
Performing Arts Office	250	2	500				
DINING & FOOD SERVICE			**13,185**			**14,000**	
Cafeteria / Student Lounge / Break-out	7,745	1	7,745	9,000	1	9,000	3 seatings - 15SF per seat
Chair / Table Storage			0	600	1	600	
Scramble Serving Area			0	600	1	600	
Kitchen	5,440	1	5,440	3,100	1	3,100	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room			0	700	1	700	20 SF/Occupant
MEDICAL			**900**			**1,510**	
Medical Suite Toilet			0	60	1	60	
Nurses' Office / Waiting Room	900	1	900	250	1	250	
Interview Room			0	100	4	400	
Examination Room / Resting				100	8	800	
ADMINISTRATION & GUIDANCE			**17,505**			**6,370**	
General Office / Waiting Room / Toilet	1,820	1	1,820	900	1	900	
Teachers' Mail and Time Room			0	100	1	100	
Duplicating Room (Copy)	775	1	775	200	1	200	
Records Room			0	200	1	200	
Principal's Office w/ Conference Area	400	1	400	375	1	375	
Principal's Secretary / Waiting			0	125	1	125	
Assistant Principal's Office - AP1			0	150	1	150	
Assistant Principal's Office - AP2			0	150	3	450	
Supervisory / Spare Office	Varies	11	2,560	120	1	120	
Deans Offices	Varies	15	3,700				
Social Worker Office	640	1	640				
Psychology Office	625	1	625				
School Within a School Office	200	1	200				
SPED Office	1,375	1	1,375				
Conference Room	500	1	500	450	1	450	
Conference Room	180	1	180				
Deans Conference	250	1	250				
Conference Room - MLK Room	1,600	1	1,600				
Guidance Office			0	150	9	1,350	
Guidance Waiting Room			0	100	1	100	
Guidance Storeroom			0	100	1	100	
METCO	600	1	600				
Career Center	740	1	740	600	1	600	
Records Room			0	250	1	250	
Teachers' Work Room	1,540	1	1,540	900	1	900	
CUSTODIAL & MAINTENANCE			**780**			**2,975**	
Custodian's Office			0	150	1	150	
Custodian's Workshop			0	250	1	250	
Custodian's Storage			0	375	1	375	
Recycling Room / Trash			0	400	1	400	
Receiving and General Supply			0	600	1	600	
Storeroom - Books	390	2	780	1,000	1	1,000	
Network / Telecom Room			0	200	1	200	
OTHER			**9,960**			**0**	
BEEP	Varies	3	2,335				
Adult Ed.	Varies	2	1,610				
Restaurant	Varies	2	1,450				
School Store	400	1	400				

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11.24.2010

Existing Space Summary - High Schools - 1,800 Students

BROOKLINE HIGH SCHOOL	1800 Existing Conditions			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
EDCO Collaborative	Varies	3	1,530				
IT	Varies	2	880				
21st Century	300	1	300				
Alumni	480	1	480				
Newspaper	575	1	575				
Greenhouse	400	1	400				
Total Building Net Floor Area (NFA)			**166,260**			**204,695**	
Proposed Student Capacity / Enrollment						**1,800**	160
Total Building Gross Floor Area (GFA)[2]						**288,000**	
Grossing factor (GFA/NFA)			**0.00**			**1.41**	

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a

[2] **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of

Name of Architect Firm: _____

Name of Principal Architect: _____

Signature of Principal Architect: _____

Date:

Proposed Space Summary - High Schools - 2,600 Students

BROOKLINE HIGH SCHOOL	1800 Existing Conditions			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**78,590**			**123,570**	
(List classrooms of different sizes separately)							
Classroom - General			0	850	87	73,950	825 SF min - 950 SF max
Classroom - English	Varies	14	9,805				
Classroom - Social Studies	Varies	11	7,600				
Classroom -Math	Varies	13	9,125				
Classroom - World Language	Varies	15	10,865				
Health							
		53					
Computer Lab	825	1	825				
Tutorial Classrooms	Varies	3	2,085				
Study Hall	690	1	690				
OFC Classrooms and Office	Varies	5	3,940				
School Within a School Classroom	Varies	4	2,785				
School Within a School Small Group	425	1	425				
BRYT	725	1	725				
Teacher Planning	Varies	5	3,860	100	87	8,700	
Language Lab	1,275	1	1,275				
Language Computer Lab	400	1	400				
World Language Office	175	1	175				
Small Group Seminar - ELL	Varies	3	1,210	500	6	3,000	
Math Support	600	1	600				
Science Classroom / Lab	Varies	22	18,775	1,440	23	33,120	3 x85% ut=20 Seats-1 per /day/student
Prep Room	Varies	6	2,115	200	23	4,600	
Central Chemical Storage Rm	Varies	2	550	200	1	200	
Science Office	Varies	4	760				
SPECIAL EDUCATION			**8,505**			**25,180**	
(List classrooms of different sizes separately)							
Self-Contained SPED - Learning Centers	Varies	4	2,440	950	18	17,100	assumed 8% of pop. in self-contained SPED
Self-Contained SPED - RISE	750	1	750				
Self-Contained SPED - CBC	500	1	500				
Self-Contained SPED - Bridge	650	1	650				
Self-Contained SPED - Transition	450	1	450				
Self-Contained SPED - Excel	Varies	3	2,325				
Self-Contained SPED - Pathways	590	1	590				
Self-Contained SPED - Small Group	600	1	600				
Self-Contained SPED Toilet			0	60	18	1,080	
Resource Room			0	500	7	3,500	1/2 size Genl. Clrm.
Small Group Room - Reading	200	1	200	500	7	3,500	1/2 size Genl. Clrm.
ART & MUSIC			**3,390**			**11,350**	
Art Classroom - 25 seats			0	1,200	5	6,000	Assumed use - 25% Population - 5 times/week
Art Workroom w/ Storage & kiln			0	150	5	750	
Band - 50 - 100 seats	1,625	1	1,625	1,500	1	1,500	Assumed use - 25% Population - 5 times/week
Chorus - 50 - 100 seats	1,025	1	1,025	1,500	1	1,500	
Piano	480	1	480				
Ensemble			0	200	1	200	
Music Practice	Varies	2	260	75	12	900	
Music Storage			0	500	1	500	
VOCATIONS & TECHNOLOGY			**0**			**28,800**	
Tech Clrm. - (E.G. Drafting, Business)			0	1,200	9	10,800	Assumed use - 50% Population - 5 times/week
Tech Shop - (E.G. Consumer, Wood)			0	2,000	9	18,000	Assumed use - 50% Population - 5 times/week
HEALTH & PHYSICAL EDUCATION			**12,240**			**30,760**	
Gymnasium	10,960	1	10,960	12,000	1	12,000	
PE Alternatives			0	3,000	1	3,000	
Gym Storeroom	Varies	3	860	300	1	300	
Locker Rooms - Boys / Girls w/ Toilets			0	14,560	1	14,560	5.6 sf/student total
Phys. Ed. Storage			0	500	1	500	
Athletic Director's Office	300	1	300	150	1	150	
Health Instructor's Office w/ Shower & Toilet	120	1	120	250	1	250	

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Proposed Space Summary - High Schools - 2,600 Students

BROOKLINE HIGH SCHOOL	1800 Existing Conditions			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
MEDIA CENTER			**7,945**			**16,150**	
Media Center / Reading Room	7,320	1	7,320	16,150	1	16,150	
Computer Lab	625	1	625				
AUDITORIUM / DRAMA			**13,260**			**10,400**	
Auditorium	5,200	1	5,200	7,500	1	7,500	2/3 Enrollment @ 10 SF/Seat - 750 seats MAX
Stage	2,550	1	2,550	1,600	1	1,600	
Auditorium Storage	Varies	3	410	500	1	500	
Make-up / Dressing Rooms			0	300	2	600	
Controls / Lighting / Projection	125	1	125	200	1	200	
White Box Theater	1,675	1	1,675				
Black Box Theater	1,825	1	1,825				
Workshop	975	1	975				
Performing Arts Office	250	2	500				
DINING & FOOD SERVICE			**13,185**			**19,200**	
Cafeteria / Student Lounge / Break-out	7,745	1	7,745	13,000	1	13,000	3 seatings - 15SF per seat
Chair / Table Storage			0	800	1	800	
Scramble Serving Area			0	600	1	600	
Kitchen	5,440	1	5,440	3,900	1	3,900	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room			0	900	1	900	20 SF/Occupant
MEDICAL			**900**			**2,010**	
Medical Suite Toilet			0	60	1	60	
Nurses' Office / Waiting Room	900	1	900	250	1	250	
Interview Room			0	100	6	600	
Examination Room / Resting				100	11	1,100	
ADMINISTRATION & GUIDANCE			**17,505**			**8,370**	
General Office / Waiting Room / Toilet	1,820	1	1,820	1,300	1	1,300	
Teachers' Mail and Time Room			0	100	1	100	
Duplicating Room (Copy)	775	1	775	200	1	200	
Records Room			0	200	1	200	
Principal's Office w/ Conference Area	400	1	400	375	1	375	
Principal's Secretary / Waiting			0	125	1	125	
Assistant Principal's Office - AP1			0	150	1	150	
Assistant Principal's Office - AP2			0	150	5	750	
Supervisory / Spare Office	Varies	11	2,560	120	1	120	
Deans Offices	Varies	15	3,700				
Social Worker Office	640	1	640				
Psychology Office	625	1	625				
School Within a School Office	200	1	200				
SPED Office	1,375	1	1,375				
Conference Room	500	1	500	450	1	450	
Conference Room	180	1	180				
Deans Conference	250	1	250				
Conference Room - MLK Room	1,600	1	1,600				
Guidance Office			0	150	13	1,950	
Guidance Waiting Room			0	100	1	100	
Guidance Storeroom			0	100	1	100	
METCO	600	1	600				
Career Center	740	1	740	800	1	800	
Records Room			0	350	1	350	
Teachers' Work Room	1,540	1	1,540	1,300	1	1,300	
CUSTODIAL & MAINTENANCE			**780**			**3,575**	
Custodian's Office			0	150	1	150	
Custodian's Workshop			0	250	1	250	
Custodian's Storage			0	375	1	375	
Recycling Room / Trash			0	400	1	400	
Receiving and General Supply			0	800	1	800	
Storeroom - Books	390	2	780	1,400	1	1,400	
Network / Telecom Room			0	200	1	200	
OTHER			**9,960**			**0**	
BEEP	Varies	3	2,335				
Adult Ed.	Varies	2	1,610				
Restaurant	Varies	2	1,450				
School Store	400	1	400				

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Proposed Space Summary - High Schools - 2,600 Students

BROOKLINE HIGH SCHOOL	1800 Existing Conditions			MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
EDCO Collaborative	Varies	3	1,530				
IT	Varies	2	880				
21st Century	300	1	300				
Alumni	480	1	480				
Newspaper	575	1	575				
Greenhouse	400	1	400				
Total Building Net Floor Area (NFA)			**166,260**			**279,365**	
Proposed Student Capacity / Enrollment						**2,600**	157
Total Building Gross Floor Area (GFA)[2]						**408,200**	
Grossing factor (GFA/NFA)			**0.00**			**1.46**	

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a

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Name of Architect Firm: _____

Name of Principal Architect: _____

Signature of Principal Architect: _____

Date:

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Section 4

Options Discussion

4.1 Introduction

One Campus vs. Two Campus Discussion

Brookline has, in the modern era, always had one high school. Since the early 20th Century, the high school has grown and been renovated as needed at its campus on Greenough and Tappen Streets. Any significant change, such as a two-school solution, may be difficult for many people to even consider, but needs to be discussed when trying to resolve the surging growth issue.

There are many programs at BHS that are important to the school's culture and fabric. This may be the place to begin the one vs. two-school discussion.

Special Programs – The school has a number of special programs that provide a variety of educational opportunities and services to students. Among them are:

- Career and Technical Education (CTE), which is included in requirements for graduation
- Opportunity for Change
- School Within a School (SWS)
- Special programs within Special Education
- Winthrop House (currently off-campus)
- Student clubs and activities
- Interscholastic and Intramural Sports

How many or which programs can be replicated on a second campus or would be relocated? How that might affect student access to these programs?

How big is too big? If retained on one campus, could the community be faced with a similar problem in the future, 15-20 or more years from now?

Would a second high school be a duplication, to the extent possible, of the current high school? Or have a different focus – academic or career academies? If there is a second school, would the current campus change its focus or academic structure?

There are approximately 80 single-section offerings that are spread across all areas of the curriculum. These include unique subjects, honors and AP courses, and semester offerings. With two campuses, how would these be distributed? Does that limit offerings to some students?

This study does not attempt to resolve these issues or ask the community to make decisions at this time. The Visioning process, as well as other community meetings, served as a good start to the necessary community dialogue.

4.2 Second Campus Discussion

Discussions included a "second high school" vs. a "second campus" of the current high school.

As reviewed earlier, Brookline High School has a large and diverse curriculum. Duplicating the curriculum at a second high school, with all current offerings, would be difficult and costly, both in replication costs and operational expenses. The Steering Committee did not deem this a realistic option.

An alternative is to develop a second campus that might have selected programs of focus. If a second school building were located such that students could commute back and forth for some programs (e.g., CTE, interscholastic sports, clubs), this idea could be explored further.

Second Campus Location(s)

The only site currently available (as identified by the Town) for a possible second high school is Larz Anderson Park. The location was explored in a previous report: *Brookline School Population & Capacity Exploration Concept Study Report*, dated August 2013. That report was conducted by HMFH. The report identifies that the land was conveyed to the Town for the purpose of public education and recreational uses. The report further states that "...initial consultation with Town Counsel indicates that the property could have a school built on it without the need for Article 97 Legislative action." HMFH had two very preliminary massing studies to show potential locations.

SMMA explored this option as part of this study, both from an access issue and a possible building location view.

Second Campus Pros:

- Contemporary teaching and learning environments would be infused throughout the new building
- Opportunity for special-focus school (e.g. STEM, STEAM, academic academy, freshman academy, international baccalaureate program)
- Smaller population (smaller learning community)

Second Campus Cons: (Larz Anderson Park site)

- All curriculum offerings and programs would likely not be available at both schools
- With potential MSBA participation in a new school, renovations at the main campus may not be funded and would require discussions with MSBA during feasibility study
- Bussing likely required
- Politically challenging
- Topographical issues
- 2.8 miles from Reservoir Station (Riverside Green Line)
- Larger staff and ongoing operational costs

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Access

The aerial map below shows the Larz Anderson Park; the current High School; and the MBTA stations that serve those parts of Brookline.

The Riverside Green Line serves Brookline. The high school is immediately adjacent to the Brookline Hills Station. Larz Anderson Park is approximately 2.8 miles from the Reservoir Station. Brookline High School is approximately 2.8 miles from Larz Anderson Park

It is clear that without the introduction of bussing, the Larz Anderson Park site is not realistic for commuting between campuses.

It would take considerable additional study to develop a realistic option for this site, if the Town chose to test the option.

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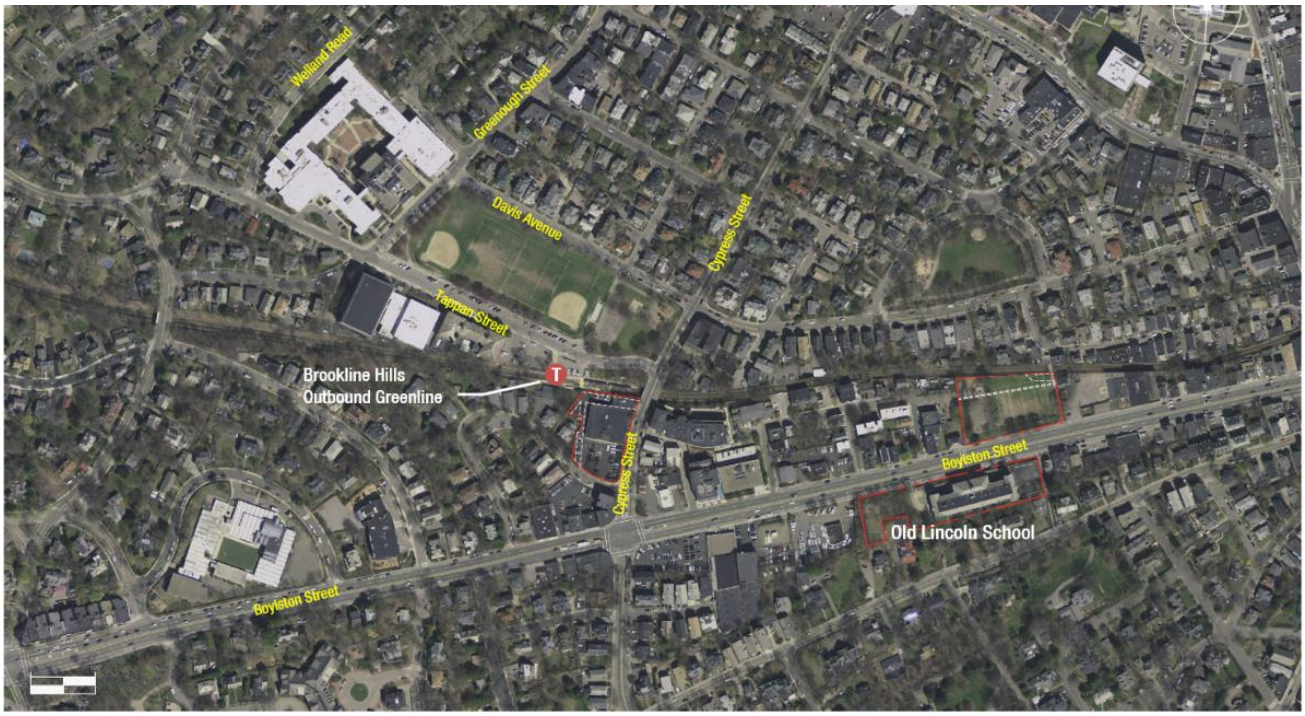
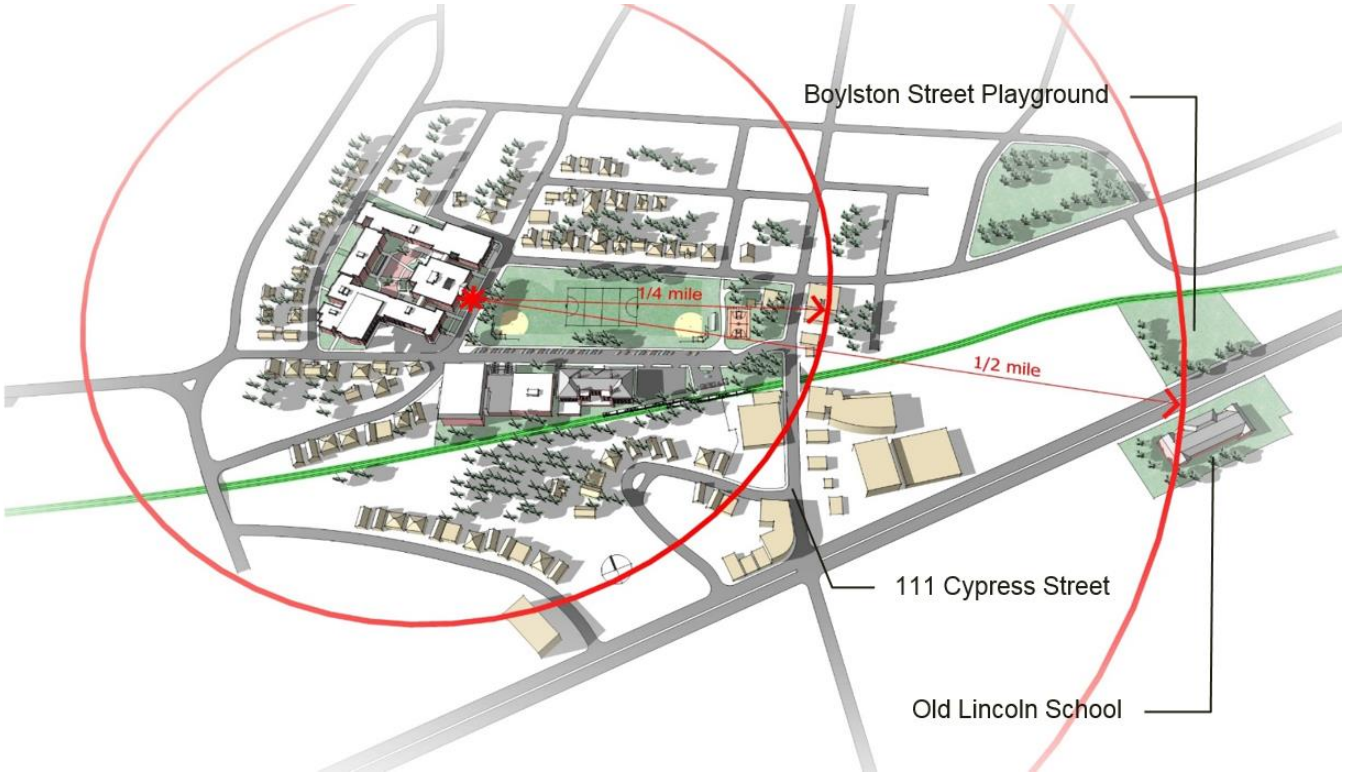
4.3 Main Campus

The current campus comprises four buildings and is largely built-out, with limited site for construction of a new building. Most of the component options developed in both studies involve the surgical removal of portions of the building(s). There are 15 options shown in HMFH's *2013 BHS Concept Study*. Herein, we describe different ways of solving portions of the problem. Since each contributes to an overall solution, we will refer to them as component options. They include various ways of developing the needed space in quantity, location, and quality, and include new construction, renovations of existing spaces, re-purposing of space, and transformations of space.



ome of the issues discussed included:

- How and why might curriculum be distributed around the building?
- Sciences need classroom / labs that are appropriately sized (typically, 1,440 square feet for 24 students). Should the sciences be collected in a single location, as they currently are? Or should they be distributed around the school, with adjacencies to related subjects, for interdisciplinary project-based learning? STEM (science, technology, engineering and math) or STEAM (which adds the integration of the arts into core curriculum) are alternative approaches to the departmental organization. The latter is the direction that modern-day education is moving and was a preference expressed during Visioning.
- Inclusion of "maker spaces" in core academic areas of the school – these may have some CTE aspects to the physical rooms and, possibly, curriculum.
- The need for a library / media center that is appropriately sized (double the current area); centrally located; accessible throughout the day; capable of accommodating the latest technology, with flexibility for changes in the future; and includes a variety of rooms and spaces for collaboration
- Dining commons that are open and available to the student population throughout the day.



4.4 Possible Extensions of the Main Campus

The classroom and lab areas required likely exceed the existing building's ability to accommodate their needs. Other sites were explored for the possible expansion of the current campus, and include:

- **Old Lincoln School (OLS)** – This former school has been in near continuous use as swing space for other school building projects over the years. The distance from the campus (approximately ½ mile) is too far for students to move back and forth throughout the day. Use would need to take the form of a special program or population.
- **Boylston Street Playground** – Across the street from the OLS, this location is similarly far from the campus, and comprises a small site that would likely require an Article 97 for conversion to a building site.
- **111 Cypress Street, Medical Office Building (The Tin Building)** – This location is a commercial building on Cypress Street that is currently unoccupied. It is very viable for a new building. Although beyond the limits of the current campus, it is close enough for students to move back and forth during class changes. The build-out capability will be a function of zoning requirements or possible variances.
- **Teacher Parking** – Comprising a lot east of the UAB building, this site is small and includes the complication of a large MWRA sewer that runs north to south under the site. With those limitations, it is a viable site for a classroom / lab building. This, for example, could include a STEM program and could be tied to the UAB / CTE building.
- **Tappan Gym Building** – A removal and replacement with different types of learning environments, this was included in the *2013 BHS Concept Study*.
- **Various Locations** – Around the existing building (see associated diagrams).

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4.5 Possible Reconfiguration of Main Building

The following plans represent some options for reconfiguring the main building. These ideas are intended to be employed in conjunction with expansion elsewhere on or adjacent to the campus.

First Floor Plan – Possibilities shown include:

- Expansion of the cafeteria, including a restaurant serving the foodservice curriculum; relocation of the foodservice curriculum
- Conversion of the gym to science classroom / labs and maker space
- Reclaiming custodial areas in the northern corner for classroom space
- Relocation of the custodial areas to the basement area in the current location of lockers
- Relocation of teacher planning and dean's offices

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Second Floor Plan – Possibilities shown include:

- Reconfiguration of the library and dean's offices into classrooms
- Addition of a second floor in the high-bay gym space for science classroom / labs

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Third Floor Plan – Possibilities shown include:

- New library / media center in the former science area
- Conversion of (small) science rooms into classrooms

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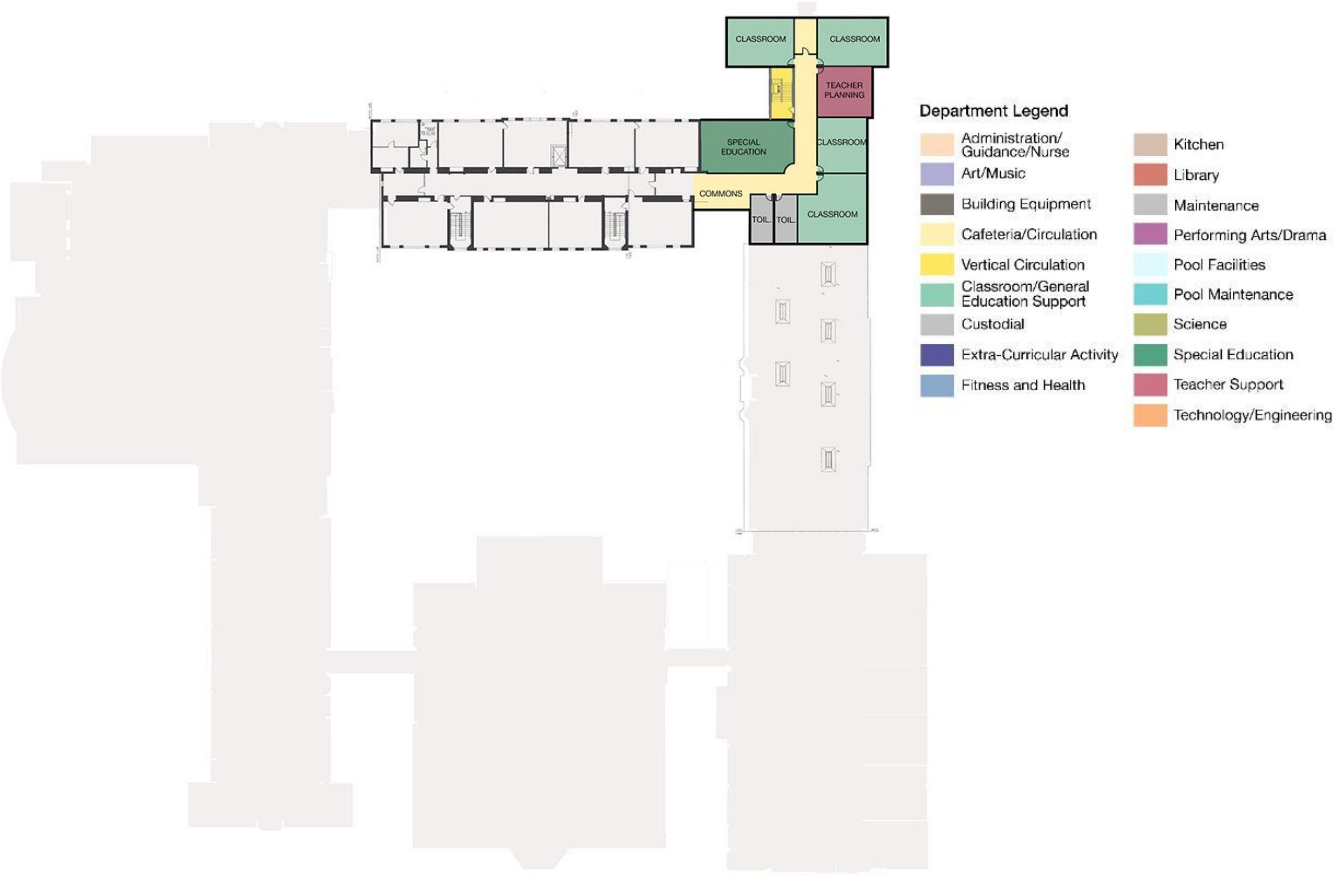

Fourth Floor Plan - Possibilities shown include:

- Modest building addition for classrooms in the northern corner

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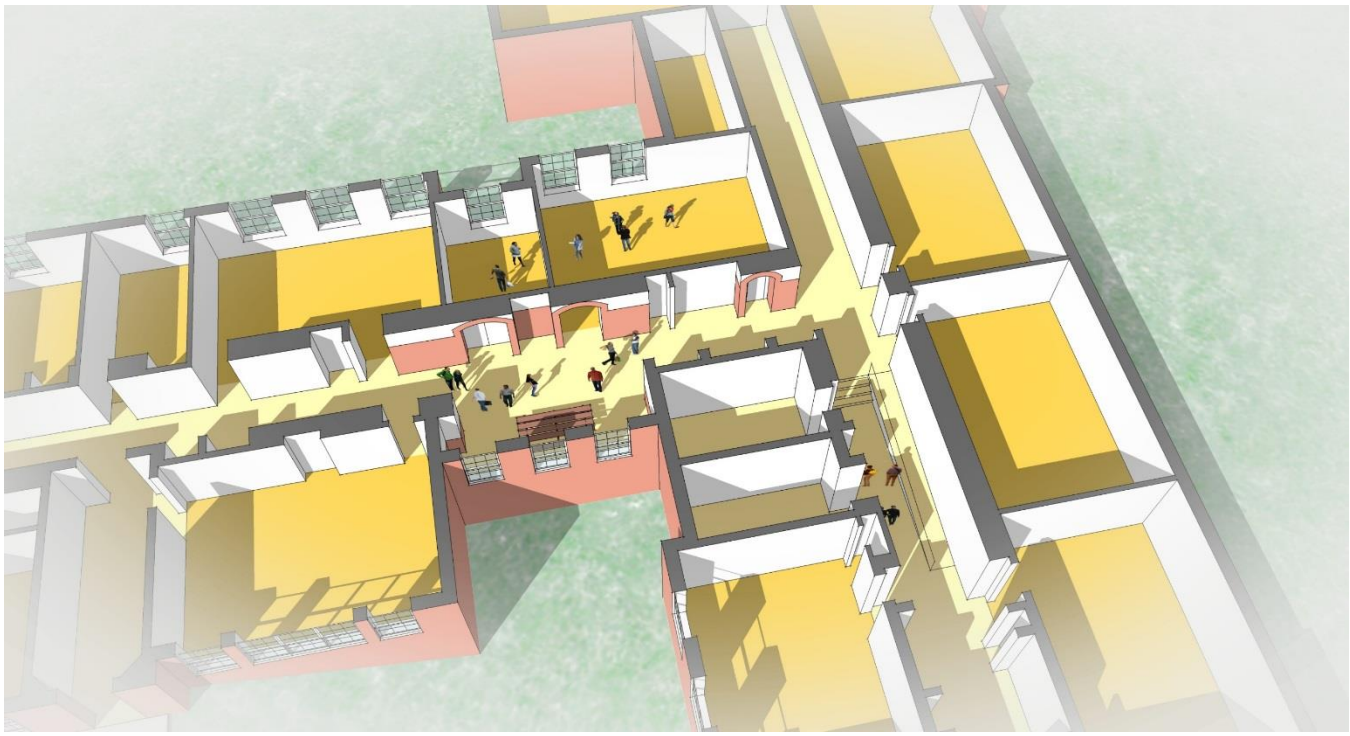
4.6 Re-Imagining Spaces

As discussed earlier in this report, currently, most of the classrooms and other teaching spaces are arranged around double-loaded corridors (classrooms in rows on both sides of a corridor). In addition, many of the classrooms are undersized compared to contemporary standards. Those configurations and sizes were acceptable for traditional teacher-focused, lecture-style teaching, but are limiting for current student-focused educational delivery models. Some of these delivery models are currently practiced by many of the teachers at Brookline High School, but are limited in many areas by small room size, configurations, and appointments.

The following diagrams illustrate a portion of the current main building (northern corner) with double-loaded corridors, with:

- Classrooms that are self-contained and don't relate to rooms around them
- Congested corners, where two corridors intersect at a 90 degree corner
- Stairs in the corridor, which present accessibility difficulties.



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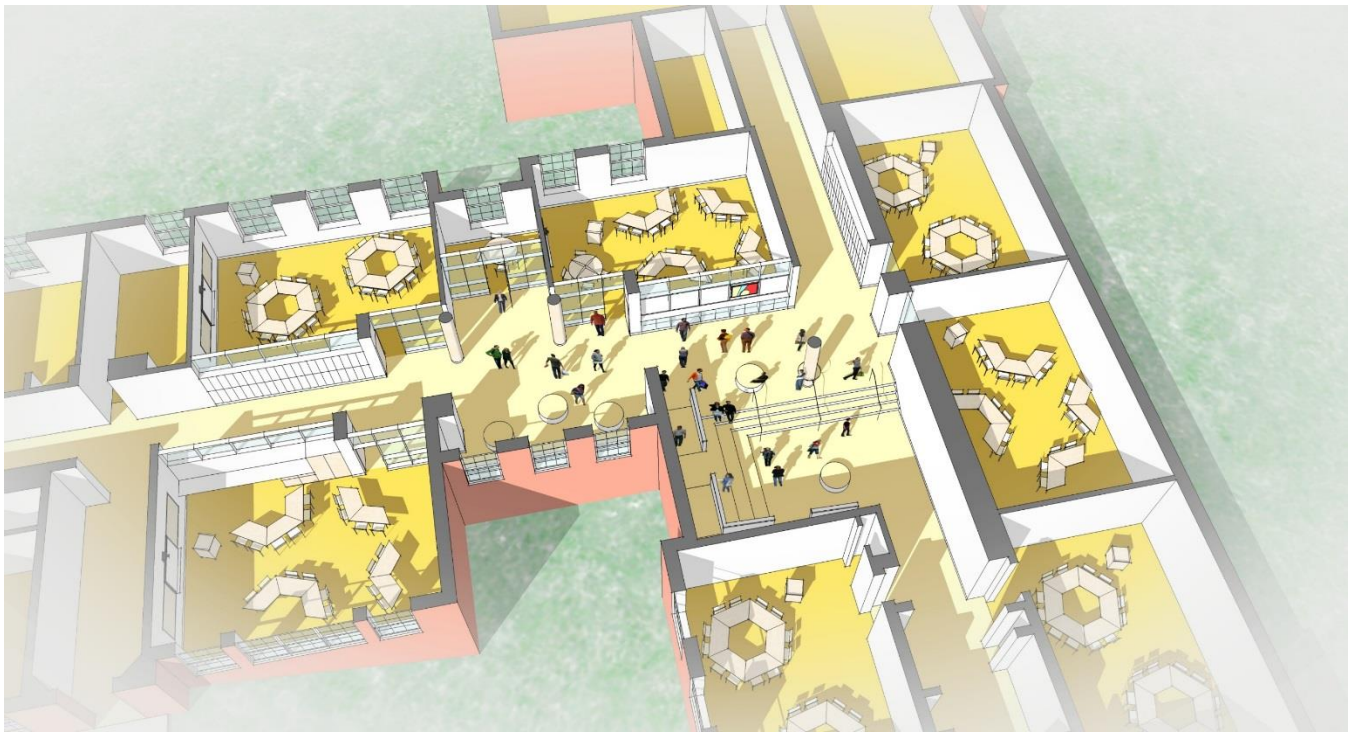
The diagram below re-imagines the same area, with contemporary teaching ideas and reconfigurations that will handle larger populations, including:

- Reconfigured classrooms with flexible furniture for differentiation and a variety of educational delivery models
- Transparency into classrooms that borrow natural light into the corridor
- Creation of learning environments in the corridors
- Creation of teachers' work room that is easily accessible by students
- Removal of selected partitions that open the corridor, including a ramp for accessibility and elimination of the "pinch point"



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The courtyard in the main building is a wonderful and heavily used space, where students socialize, study, and circulate. It also provides light, views, and natural ventilation to the many classrooms that look out onto it.

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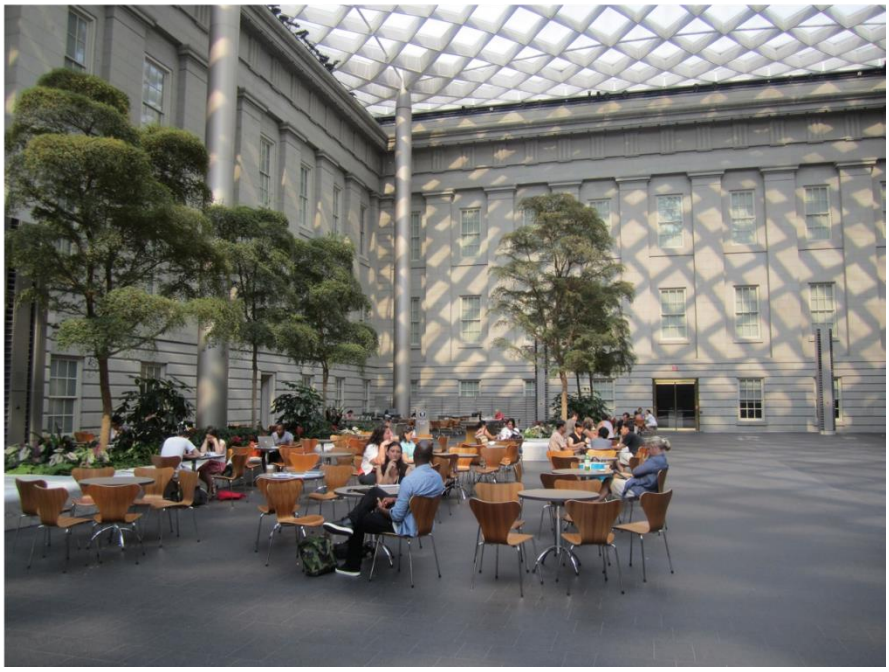
A possibility that can be explored in the future could be the enclosure of the courtyard with skylights and roofing. This reclaimed area could provide alternate options for student dining, or be used for a restaurant, library / media center, etc. This could allow the vacated areas to be re-purposed, significantly reducing the need for new buildings or other additions. Here are some (non-school) examples of reclaiming courtyards with roofs / skylights.



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Additional images that show possible additions of new buildings to expand the main campus:

Figure shows additions to the main building

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Figure shows the location of 111 Cypress Street building in the context of the campus

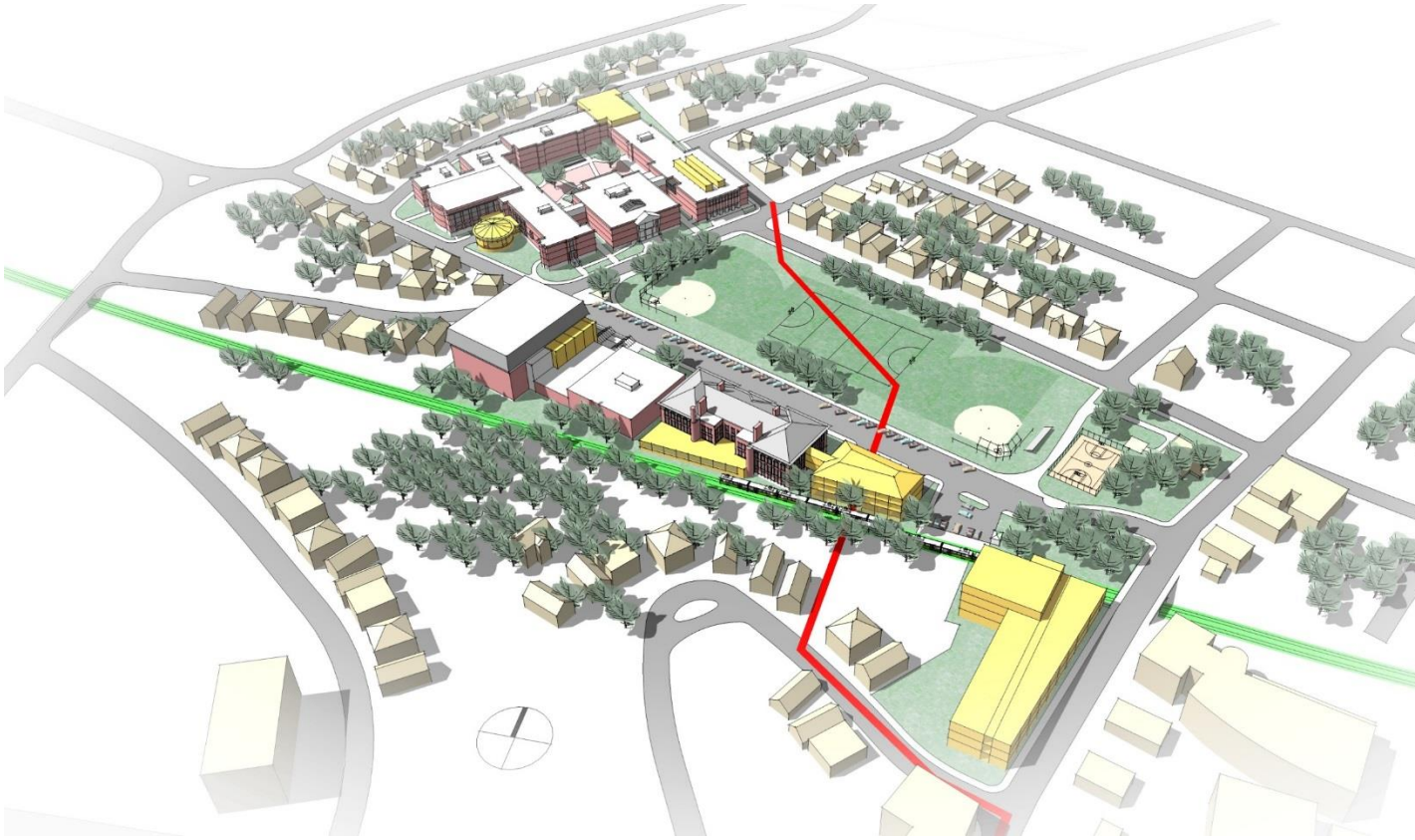

Figure shows numerous locations for possible additions of new buildings to expand the main campus

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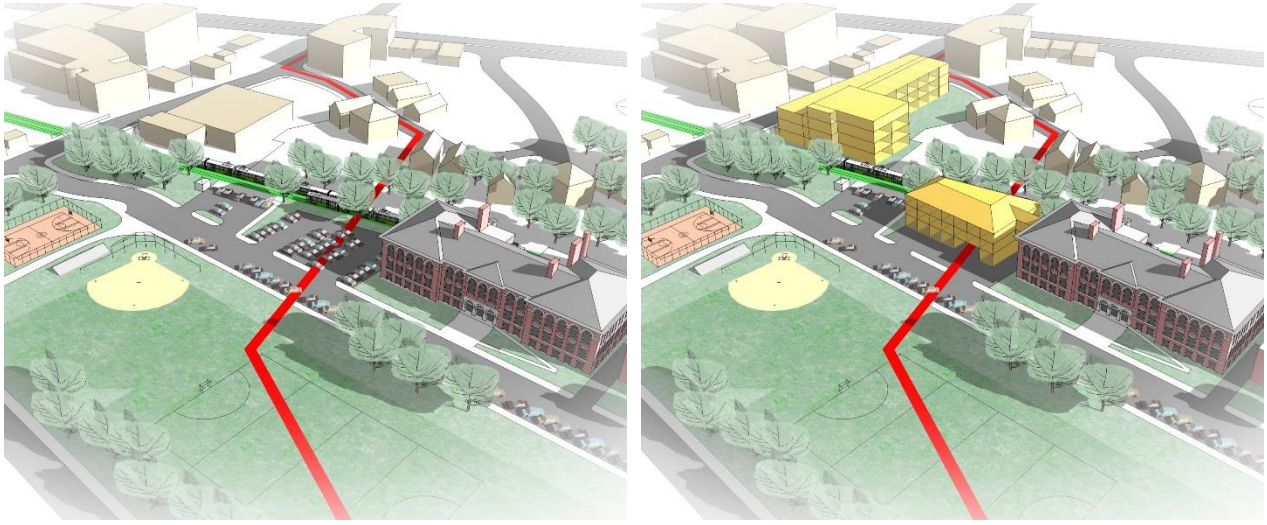
4.7 MWRA Sewer Line

The red line on Figure 3.7.1 shows the location of a large MWRA sewer line. The one area where it could impact the high school is if the parking lot east of the UAB were selected as a location for a new building. (See discussion in Section 3.4.) Here is some information on the pipe and criteria for building over it.

- The sewer line is a high-level sewer with an approximate size of 76” x 84”; it was built in 1908, with approximately 10 feet of cover over it.
- Under MWRA criteria, the pipe can be built over.
- Under MWRA criteria, and when adhering to their construction methodology, vibration monitoring, and foundation plans, which would be part of the review process, it is possible to span over the easement,
- There has been no change to the current pipe status – it is to remain as is.



Figures show the sewer line and a possible school building constructed over the line.

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Section 5

Schedule Discussion | MSBA Process

5.1 Introduction

Any solution will likely have a significant cost and take years to plan, approve, and construct. As a significant capital project, the Town will seek participation by the MSBA. The first step in the MSBA process is to submit a Statement of Interest (SOI). That document will define the nature, magnitude, and urgency of Brookline High School's problems. Brookline will compete with many other communities for MSBA funding dollars. Preparation of an SOI was begun while this study was in process, and was submitted to the MSBA in April 2015. The earliest an approval might come is January 2016.

5.2 Short-Term Needs

Due to the rapidly increasing enrollment, the need for classrooms will quickly eclipse the building's ability to meet the needs of its student population. The school has a committee working internally to "space mine" the building, to determine possible locations for classrooms. It is also exploring scheduling options. The community will need to address the locations of programs that are not directly connected to the curriculum.

5.3 Long-Term Needs

It is clear that additional area will be needed to meet educational needs. As described in the Option Components in Section 4 of this report, the space will likely require a combination of various options, including new construction, renovations, and the repurposing of portions of the buildings.

5.4 Construction Implementation

Assuming the Town proceeds with increasing the size of the existing campus (one-school solution), how can construction take place without disruption to teaching and learning? Implementation of any solution will likely require phasing.

This often takes the form of:

- New construction first
- Once the newly built areas are occupied, areas for renovation can be taken over for construction
- Renovations will also likely take multiple phases
- Swing space – The rising enrollment exacerbates the need for space during construction. Portable classrooms are often used for this purpose. (It should be noted that the MSBA does not reimburse for swing space.) Figure 5.4.1 illustrates one way in which portable classrooms might be employed. This diagram shows multiple units, possibly two stories high, located on Cypress Park, across Greenough Street from the school's main entrance. It is believed that, because this would be a temporary condition, an Article 97 would not be required.

5.5 What If? Schedules

A series of schedules were developed to explore "what if?" scenarios, such as: What if the MSBA were a partner in a high school capital project, and what if the Town were to proceed without the MSBA? The attached graphic chart (end of section 5) represents a series of options for discussion.

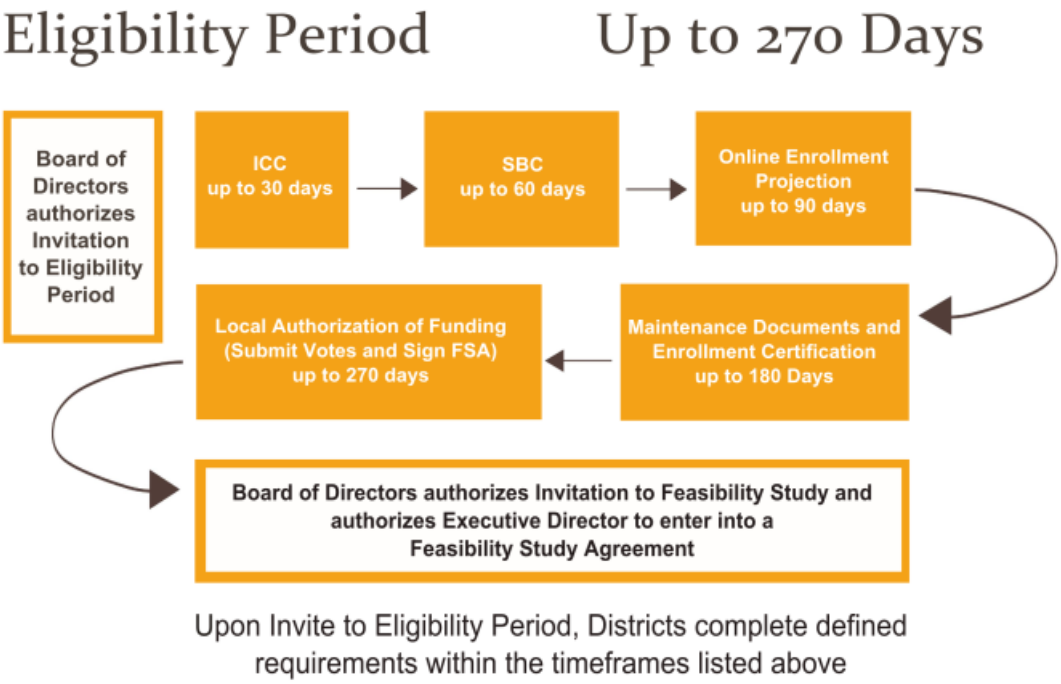
5.6 MSBA CAPITAL PLANNING

MSBA PROCESS

Capital projects that desire MSBA grant reimbursement must follow a well-defined process that is described below: The full MSBA process can be found at the MSBA's website: http://massschoolbuildings.org/building. The process is subject to change. Please refer to the website for current information.

Module 1 – Eligibility Period Status

Updated at the June 5, 2013, Board Meeting.



The MSBA has formalized its grant process with the establishment of an **Eligibility Period.** The **Eligibility Period** assists the MSBA with:

- Identifying early whether a district is ready to manage and fund a capital project.
- Determining a district's financial and community readiness to enter the capital pipeline.

- Providing a definitive schedule and identifying needs for planning and budgeting.

The MSBA Board of Directors votes to invite a district into the eligibility period based on a review of the district's Statement of Interest (SOI). The vote initiates a 270-day period for the district to complete certain preliminary requirements that include:

1) A certification of the district's understanding of the grant program rules by executing an initial compliance certification;
2) Forming a school building committee and submitting the membership to the MSBA for acceptance;
3) A summary of the district's existing maintenance practices;
4) Certification of a design enrollment for the proposed project agreed upon with the MSBA (may not be applicable for repair assessments depending on the proposed scope of work);
5) Confirmation of community authorization and funding to proceed (see MSBA Vote Requirements); and
6) Execution of the MSBA's standard Feasibility Study Agreement, which establishes a process for the district to be reimbursed for eligible expenses.

Districts that successfully complete the preliminary requirements to the satisfaction of the MSBA within the 270-day eligibility period are eligible to receive an invitation from the MSBA Board of Directors to the Feasibility Study phase. This phase involves the District utilizing MSBA-specific procurement processes and standard Request for Services (RFS) templates and contracts to procure a team of professionals to work with the district as a proposed project advances through the MSBA grant process as defined in Module 2.

"what if's"

Funding / Design / Construction Schedule

Brookline High School Further Study Plan

	2015				2016				2017				2018				2019				2020				2021				2022				2023				2024			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Scenario 1																																								
New High School		8			9			10	11				3	4			5	6 (30 months)										7												
with MSBA																																								
Scenario 1A																																								
New High School						8			9			10	11				3	4			5	6 (30 months)										7								
with MSBA																																								
Scenario 1B*																																								
New High School							1	1A	4				5	3	6 (30 months)										7															
w/o MSBA																																								
Scenario 2*																																								
Reno High School						8			9			10	11				3	4			5	6 (42 months)															7			
with MSBA																																								
Scenario 2A*																																								
Reno High School						1	1A	4*					5	3	6 (42 months)														7											
w/o MSBA						1	1A	4**			5	3	6 (24 months) Phase 1								7	6 (12 months) Phase 2			7															

KEY

1	Design Funding
1A	Designer and OPM Selection
2	Design and Construction Funding
3	Construction Funding Vote
4	Design / Permitting CM
5	Bidding
6	Construction
6A	Demolition or Mothball School
7	Occupancy
8	Submit SOI
9	SOI Accepted / MSBA Mod 1 Eligibility Period / Funding
10	MSBA Mod 2 Building Project Team
11	Mod 3 - Feasibility Study

*a) Assumes phased construction with CM@ Risk - shorter duration (TBD))
b) all costs 100% to town shortens escalation costs
c) gains some additional seats and eliminates modulars
d) adds modular swing space cost project (TBD)
e) requires site acquisition schedule

**Nature of Option: Phasing to bring components of school online - compressing tasks and shorten durations.

NOTES:
Actions Taken at MSBA 1/14/2015 Board Meeting
108 SOI submission 4/2014

12 invites to eligibility period 2015
3 invites to eligibility period 2015 (coming in March)
15 Total

Process in effect puts projects into 2016. Next year puts Brookline HS into 2017 Earliest start is a 2020/21 for opening doors.

All projects appear to be on NEASC warning/watch list

DRAFT
1/27/2015

SMMA