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Dr. James Jennings



Executive Summary

Build **BPS**





Dear Neighbor,

I recently announced a 10-year, \$1 billion investment in the buildings and classrooms of the Boston Public Schools. Boston's schools are out of date. Our teachers, principals, and staff work tirelessly and creatively to keep them safe and supportive learning environments. But the fact is, 65 percent of Boston's 127 schools were built before World War II, fewer than half of those have been fully renovated, and it shows. In that time, we built an elevated expressway, tore it down, and buried it in a tunnel downtown. We should be able to build great schools. They are our ultimate investment in the future.

That's why, for over a year, we've been gathering community input and hard data on our school buildings' needs — and imagining new possibilities for their future. We've put it all together in **BuildBPS**, our 10-year Educational and Facilities Master Plan.

BuildBPS is going to transform the way we plan, build, and renovate school facilities. And more: it's going to unlock everything else we need to do to prepare students for 21st-century success. We are going to create not just modern schools, but flexible space that will allow our district to meet new potential as the City and the world evolve.

The next phase of BuildBPS calls for deep and ongoing engagement. BuildBPS is a living document. We're going to build on the knowledge, creativity and dedication in our school communities to re-imagine and renew Boston's public school infrastructure. Together we will plan and build to create a new era of equity and excellence in Boston's schools.

Sincerely,

A handwritten signature in black ink, appearing to read "Martin J. Walsh". The signature is fluid and cursive, written over a light blue rectangular background.

Martin J. Walsh, Mayor



“We shape our buildings; thereafter they shape us.”

Sir Winston Churchill

The students and teachers of Boston deserve the healthiest, most progressive, most motivating learning environments possible. Although learning can and does occur anywhere, the fact is, buildings matter. The environments in which teaching and learning take place contribute to the overall performance of students. Simply put, great school buildings add value and enhance the learning experience.

The BuildBPS 10-year Educational and Facilities Master Plan is a dynamic and strategic document. As the City of Boston begins its journey to transform the BPS building portfolio, we offer this master plan, which encompasses the aspirations and goals of all stakeholders, along with the data and ideas needed to bring them to fruition. For the past 18 months, the team working on it has endeavored to accumulate and synthesize a great amount of information that will aid the City, BPS, and the community in making informed decisions, and in developing a unified approach for this major revitalization program.

As with any master plan, it will be important for the City and BPS to continue to revisit this document—always adjusting and refocusing to accommodate change. In other words, changes in City infrastructure, advancements in pedagogy or technology, formations of new partnerships, and innovations in building technologies are all factors that may prompt the modification of the path forward. Over the next 10 years, it is guaranteed that changes will occur, but what must remain is the commitment to a unified plan for facility advancement districtwide.

BuildBPS has come to fruition with contributions from five advisory committees: Educational Planning, Demographics, Educational and Facilities Assessment, Community Engagement, and Finance. This report is organized around those five committees; the information and professional analysis contained in each section is meant to contribute to the important discussions and the work ahead with the community. In addition, the BuildBPS Dashboard, a web-based data visualization tool, helps to organize and communicate all information collected and analyzed during the project.



Educational Vision and Planning

The demands of the modern world differ vastly from those of the past. Preparing students to succeed in today's economy, as well as in the economy of the future, will require buildings that support transformative teaching and learning methodologies. The majority of Boston's school buildings were designed to support older, rigid approaches to education.

Preparing students to be college- and career-ready will serve to close both the achievement and opportunity gaps, equipping them with 21st century communication, collaboration, and critical-thinking skills, and helping them grow into creative, global citizens.

BPS has developed a vision for the district around the core values of equity, coherence, and innovation, forging a path of NextGeneration Learning that is:

- Rigorous and demanding
- Differentiated and equitable, with full access to a broad range of rigorous curricula
- Whole-learner focused
- Cross-disciplinary
- Multi-modal, multi-channel, and technology-enabled
- Collaborative among all school community members
- Expansive and inclusive of a wide variety of learning opportunities beyond the classroom
- Culturally and linguistically sustainable

To achieve these goals, the district's schools and learning environments will need to be:

- Flexible, to accommodate changing needs
- Sensory, and responsive to intellectual, physical, social, and emotional experiences
- Contextual, and considerate of community and neighborhood needs
- Safe and secure, fundamental to being able to learn
- Networked beyond school walls

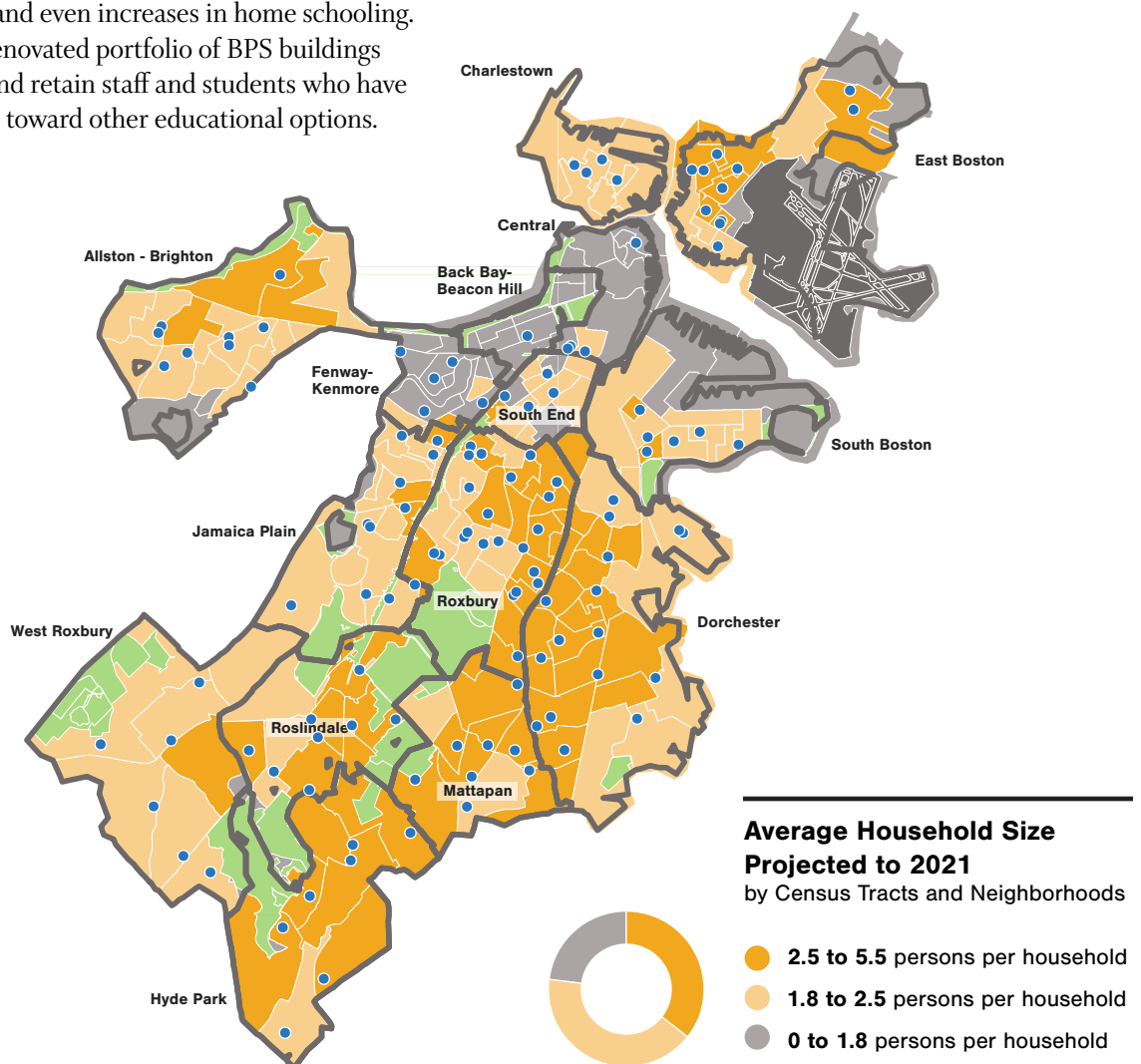
BuildBPS identifies the characteristics of buildings, sites, and learning environments needed for school buildings to meet the educational goals set out for the students and the district. Transformative environments will engage students, fostering in them a lifelong excitement for learning and achievement.



Demographics

Boston's overall population has been on the rise, owed, in part, to our robust economy and the strength of our healthcare and higher education infrastructure. BPS's population is anticipated to grow modestly over the next decade, in contrast to the decline realized over the past 10 years. Most of this student-population growth is anticipated to be within Boston's communities of color. In addition, it is expected that higher-than-state averages for English learner and special education services will continue to increase.

BPS continues to face significant competition for student-aged children, due to parochial and private school options, increased charter school seats, the METCO program, and even increases in home schooling. An improved and renovated portfolio of BPS buildings could help attract and retain staff and students who have traditionally turned toward other educational options.





Educational and Facilities Assessments

The BuildBPS team assessed the entirety of the BPS building portfolio, rating each facility, on a scale ranging from “deficient” to “excellent,” in four categories:

- Facilities Assessment – Building: The physical conditions of the buildings, in terms of age, design, construction methods, and materials
- Facilities Assessment – Site: The quality, condition, and capacity of the various exterior spaces and components of the facility
- Educational Facility Effectiveness – Learning Environments: The inherent building characteristics and introduced equipment (e.g., furniture and technology), as well as the physical appearance and condition
- Educational Facility Effectiveness – Spaces: An evaluation of what spaces exist and the general adequacy of shapes and sizes relative to MSBA standards

These categories all have relationships with one another. Findings for each school can be visually sorted and analyzed in the BuildBPS Dashboard, and can be updated to reflect repairs and renovations as they occur.



Overall Scores by Typology

The assessment team visited all of the Boston Public Schools’ buildings, collecting and organizing data into the following four categories: **Facility Assessment–Building, Facility Assessment–Site, Educational Facility Effectiveness: Learning Environments, and Educational Facility Effectiveness: Spaces.**

Each of the assessment items is categorized into primary and secondary considerations. The primary considerations are weighted by a factor of 3 in order to differentiate the elements that (1) require significant time to repair or replace, (2) construction costs greater than the singular element’s cost factor, and (3) create a construction challenge (degree of difficulty) in order to repair. The weighted scoring allows for the most critical criteria to establish the overall scores and not be overly influenced by important but more readily repaired/replaced elements.

School Name	EFE: Learning Environments	EFE: Spaces	FA: Site	FA: Building
Adams, Samuel Elementary	2	2	3	2
Alighieri, Dante Montessori School	3	2	3	4
Bates, Phineas Elementary	3	2	3	3
Beethoven, Ludwig Van Elementary	3	2	3	5
Blackstone, William Elementary	3	3	3	4
Bradley, Manassah E. Elementary	2	2	3	3
Channing, William E. Elementary	2	2	2	3
Chittick, James J. Elementary	3	2	2	3
Clap Innovation School	2	2	4	3
Condon, James F. Elementary	3	3	4	4
Conley, George H. Elementary	3	2	3	3
Dever, Paul A. Elementary	3	3	3	2
Dickerman Elementary	1	1	3	4
Dudley Street Neighborhood School	3	2	3	3
Ellis, David A. Elementary	2	2	3	3
Endicott	1	1	3	3
Everett, Edwards Elementary	2	1	4	3
Grew, Henry Elementary	4	2	4	4
Guild, Curtis Elementary	3	2	4	4
Hale, Nathan Elementary	3	2	2	3
Hamilton, Alexander	1	1	3	3
Harvard/Kent Elementary	4	3	4	3
Henderson, Dr. William W. Inclusion (Lo..	2	2	3	3
Higginson Elementary	2	2	3	3
Holmes, Oliver Wendell Elementary	2	2	3	3
Kennedy, John F Elementary	3	2	3	3
Kennedy, Patrick Elementary	3	2	3	3
Kenny, Thomas J. Elementary	3	2	4	3
Manning, Joseph P. Elementary	3	2	3	3
Mason, Samuel W. Elementary	2	2	2	3
Mather Elementary	3	3	3	3
Mattahunt Elementary	3	3	3	5
Mendell, Ellis Elementary	3	2	3	3
Mozart, Wolfgang A. Elementary	3	2	3	3
O'Donnell, Hugh R. Elementary	3	2	3	3
Otis, James Elementary	3	2	3	3
Perkins, Michael J. Elementary	3	1	3	3
Philbrick, John D. Elementary	2	2	3	3
Quincy, Josiah Elementary	3	2	4	3
Russell, William E. Elementary	3	2	3	3
Shaw, Pauline A. Elementary	3	2	3	3
Stone, Lucy Elementary	1	1	4	4
Sumner, Charles Elementary	3	2	4	3
Taylor, Charles H. Elementary	3	2	3	3
Tynan, Joseph P. Elementary	3	3	3	4
UP Academy Holland	3	3	4	4
Winship, F. Lyman Elementary	2	2	3	3
Winthrop, John Elementary	3	2	3	3

K-8 Schools

School Name	EFE: Learning Environments	EFE: Spaces	FA: Building	FA: Site
Boston Teachers Union K-8 School	3	2	4	3
Curley K-8 (Lower School)	3	2	4	3
Curley K-8 (Upper School)	3	2	4	3
Edison, Thomas A. K-8	2	2	4	3
Eliot, John K-8 (Lower School)	3	2	3	3
Eliot, John K-8 (Upper School)	3	2	4	3
Gardner Pilot Academy K-8	2	2	4	4
Greenwood, Sarah K-8	3	2	3	4
Haley K - 8, Dennis	3	2	4	4
Hennigan, James W. K-8	3	2	4	4
Hernandez, Rafael K-8	2	2	3	3
Higginson/Lewis K-8	2	2	3	3
Horace Mann School for the Deaf and H..	2	2	4	3
Hurley, Joseph K-8	4	2	4	4
Jackson/Mann K-8	2	2	4	3
Kilmer, Joyce K-8 (Lower School)	2	2	3	4
Kilmer, Joyce K-8 (Upper School)	3	2	3	3
King, Martin Luther, Jr K-8	3	2	3	4
Lee, Joseph K-8	3	3	4	4
Lyndon, Patrick K-8	2	2	4	4
Lyon, Mary K-8	2	2	4	3
McKay, Donald K-8	2	2	3	3
Mildred Avenue K-8	5	4	5	5
Mission Hill K-8	4	3	4	4
Murphy, Richard K-8	3	3	4	3
Ohrenberger, William H. K-8	4	2	4	3
Orchard Gardens K-8	4	4	5	4
Perry, Oliver Hazard K-8	3	2	3	3
Roosevelt, Franklin D. K-8 (Lower Scho..	5	2	5	5
Roosevelt, Franklin D. K-8 (Upper Scho..	3	2	5	3
Tobin, Maurice J. K-8	2	2	3	3
Trotter, William Monroe K-8	3	2	4	3
Umana Academy, Mario K-8	2	2	4	3
UP Academy Dorchester	3	3	4	3
Warren/Prescott K-8 Lower	3	3	4	3
Young Achievers Science & Math K-8	3	2	4	3

Middle Schools

School Name	EFE: Learning Environments	EFE: Spaces	FA: Building	FA: Site
Edwards, Clarence R. Middle	2	2	4	2
Frederick, Lilla G. Middle	5	4	5	5
Irving, Washington Middle	2	2	4	3
McCormack, John W Middle	3	3	4	4
McKinley Middle	2	2	3	2
Rogers Middle School			3	2
Timilty, James P. Middle	2	2	3	3
UP Academy Boston	3	3	3	2

Early Learning

School Name	EFE: Learning Environments	EFE: Spaces	FA: Building	FA: Site
Baldwin Early Learning Pilot Academy	2	2	4	4
East Boston Early Education Center			5	4
Ellison/Parks Early Education School	5	3	5	4
Haynes Early Education Center	4	3	5	4
West Zone Early Learning Center	3	2	4	4
Lee Academy at the Fifield	2	2	3	3

High Schools 6-12 & 7-12

School Name	EFE: Learning Environments	EFE: Spaces	FA: Building	FA: Site
Boston Green Academy	3	2	4	4
Boston Latin Academy	2	3	4	3
Boston Latin School	3	3	4	4
Carter Development Center	4	1	4	4
Henderson, Dr. William W. Inclusion (U..	2	2	3	3
O'Bryant, John D. School of Mathemati..	4	2	4	5
TechBoston Academy	3	3	3	3

High Schools 9-12

School Information School Name	EFE: Learning Environments	EFE: Spaces	FA: Building	FA: Site
Another Course to College	3	2	4	4
Boston Adult Technical Academy	4	2	4	3
Boston Arts Academy	3	3	4	2
Boston Community Leadership Academy	3	3	4	3
Boston Day & Evening Academy	2	2	4	4
Boston International Newcomers Acade..	2		3	2
Brighton High	2	2	3	3
Burke, Jeremiah E. High	2	3	3	4
Charlestown High	3	3	4	4
Community Academy	2	2	2	2
Community Academy of Science & Health	3	3	3	3
Dorchester Academy	4	2	4	3
East Boston High	2	2	4	4
English High, The	3	3	4	4
Excel High	2	3	3	3
Fenway High	4	3	5	4
Greater Egleston Community High	5	2		
Greenwood, Elihu Leadership Academy			3	3
Kennedy, Edward M. Academy for Healt..	3	2	4	3
Kennedy, Edward M. Academy for Healt..	3	1		
Lyon, Mary High	2	2	4	3
Madison Park Technical Vocational High	4	3	4	4
McKinley, Wm So. End Academy	2	3	4	4
McKinley, Wm. Preparatory High	2	2	3	2
Muniz, Margarita Academy	4	2	5	4
New Mission High	3	3	4	3
Snowden International School at Copley	2	2		
Urban Science Academy	3	3	4	4
West Roxbury Academy	3	3	4	4

Capacity

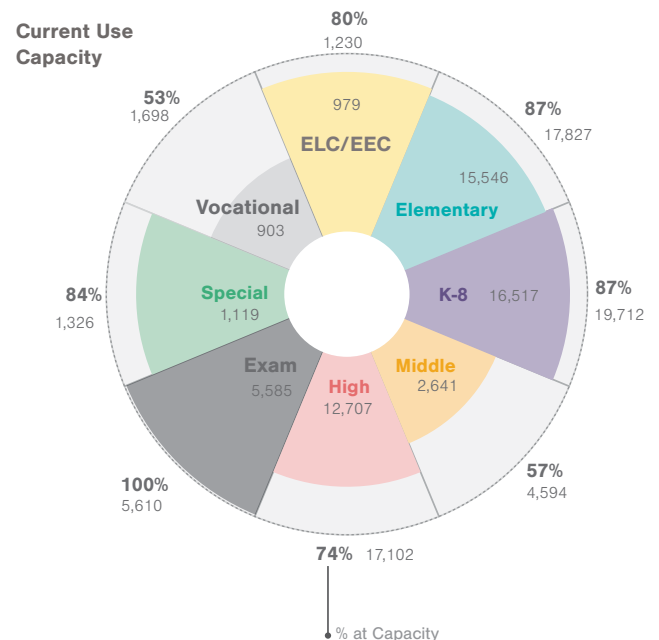
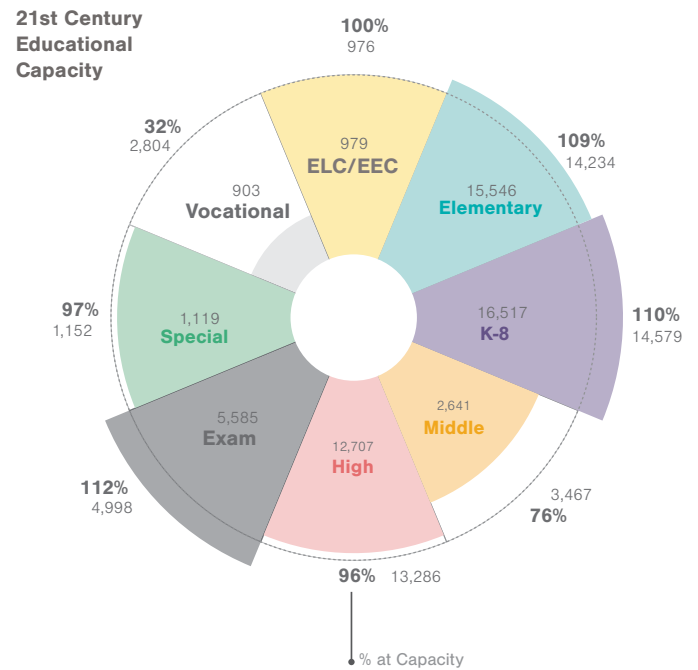
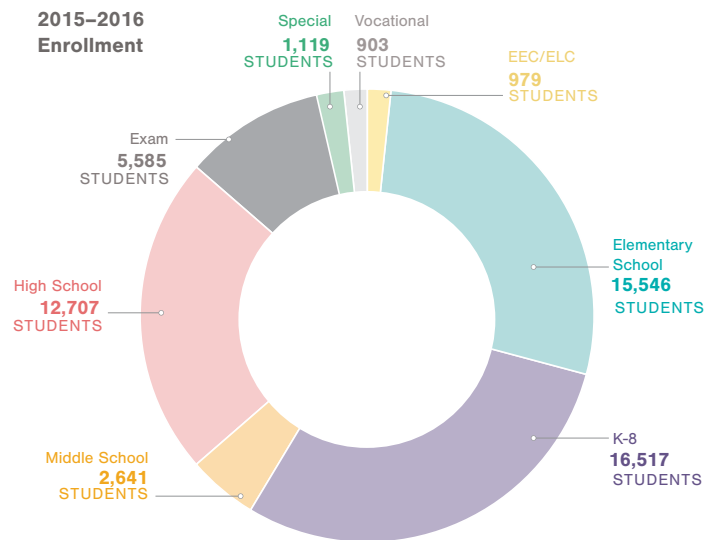
The BuildBPS team engaged in extensive analysis to bring greater clarity to the question of BPS capacity. Through our extensive exploration, one fact remained perfectly clear: there is no universally-accepted way to calculate capacity. It is not simply a matter of measuring square footage or counting desks and chairs. Rather, capacity raises a complex set of questions about how much space is available, and how that space may be appropriately used to serve students of particular ages, in various programs, for a wide range of uses.

The BuildBPS team utilized two approaches to analyze the capacity of the district’s many complex and varied buildings. The variations between the two methods will provide the District with a range to work within when determining future investments in facilities.

In summary, the buildings as they are configured today with the current programs represent a capacity of about 69,100 seats. As the district makes continued investments in facilities, the district will move from the Current Use Capacity of today (69,100 seats) towards the 21st Century Educational Capacity of tomorrow (55,500 seats).

The 21st Century Educational Capacity Model represents a more holistic understanding of space needs and learning environments in the district. The State has developed a series of educational space standards for new construction that represent one perspective on what spaces and how much space is needed for 21st Century Learning. It accounts for additional spaces such as enrichment programs, specialty subjects (e.g. art and music), dedicated spaces for counseling and therapies, and other supports that will transform our schools and activate the learning and teaching experiences of the future.

The Current Use Capacity Model represents BPS’ capacity in its buildings today. Based on the current students and programs in each building, it measures how our space is being utilized today. It accounts for schools with extra empty classrooms, as well as for schools where not all classrooms are full. This model improves on previous efforts to calculate capacity by defining which spaces are “capacity-generating” and by taking into account the space needs of particular student populations (particularly students with disabilities and English learners), variations in class size by grade level established by the teachers’ contract and how middle and high schools are scheduled at 90% and 85% utilization respectively.



Enrollment by Typology

	Enrollment SY15/16	21st Century Educational Capacity			Current Use Capacity		
		# of Seats	+/-	% at Capacity	# of Seats	+/-	% at Capacity
Early Learning	979	976	-3	100%	1,230	251	80%
Elementary	15,546	14,234	-1,312	109%	17,827	2,281	87%
K-8	16,517	14,579	-1,938	113%	19,712	3,195	84%
Middle	2,641	3,467	826	76%	4,594	1,953	57%
High	12,707	13,286	579	96%	17,102	4,395	74%
Exam	5,585	4,998	-587	112%	5,610	25	100%
Special	1,119	1,152	33	97%	1,326	207	84%
Vocational	903	2,804	1,901	32%	1,698	795	53%
Total	55,997	55,497	-500	101%	69,098	13,101	81%

Enrollment by Neighborhood

	Enrollment SY15/16	21st Century Educational Capacity			Current Use Capacity		
		# of Seats	+/-	% at Capacity	# of Seats	+/-	% at Capacity
Allston-Brighton	4,282	4,248	-34	101%	5,215	933	82%
Back Bay/Beacon Hill	373	215	-158	174%	377	4	99%
Central Boston	1,990	2,217	227	90%	2,642	652	75%
Charlestown	2,389	2,537	148	94%	3,092	703	77%
Dorchester	8,411	8,494	83	99%	10,415	2,004	81%
East Boston	5,244	4,308	-936	122%	5,793	549	91%
Fenway/Kenmore	3,393	2,884	-509	118%	3,616	223	94%
Hyde Park	2,147	1,753	-394	122%	2,784	637	77%
Jamaica Plain	4,113	4,090	-23	101%	5,265	1,152	78%
Mattapan	2,811	3,536	725	79%	4,147	1,336	68%
Roslindale	2,556	1,744	-812	147%	3,382	826	76%
Roxbury*	10,575	9,215	-1,360	115%	11,955	1,380	88%
South Boston	2,632	3,239	607	81%	3,595	963	73%
South End	1,191	1,727	536	69%	1,521	330	78%
West Roxbury	2,987	2,484	-503	120%	3,603	616	83%
Madison Park*	903	2,804	1,901	32%	1,698	795	53%
Total	55,997	55,497	-500	101%	69,098	13,101	81%

* Madison Park is excluded from Roxbury for this analysis due to the unique nature of vocational capacity.

Finance

The City of Boston is embarking on the challenging task of upgrading BPS facilities to meet the needs of 21st Century education. BuildBPS, therefore, establishes a \$1 billion commitment over 10 years of investments that the City will fund primarily with money from its annual general obligation bond issues, and by partnering with the Massachusetts School Building Authority (MSBA). Mayor Walsh's \$1 billion commitment is more than double the capital spending on BPS facilities over the last decade.

BuildBPS developed cost-model data for repair and renovation projects to serve as an order-of-magnitude planning tool. Working closely with BPS, the City will need to prioritize projects to take advantage of MSBA offerings, such as the Accelerated Repair Program, which provides grants in support of roof, boiler, and window replacements; and the Core Program, which provides grants for renovation, addition, and new building projects.

Community Engagement

During the course of this study, BPS undertook several community engagement events, ranging from a districtwide survey to multiple neighborhood “Kitchen Table Talks,” to gather input from residents, parents, teachers, and students about the state of Boston’s school buildings. This feedback informed many components of this report and, moving forward, community engagement will play an integral role in determining options for projects and for prioritizing investments.





Moving Forward

At the highest level, this master plan provides the City, BPS, and the community with a set of building blocks that will lead Boston forward. It also plans for the future, calling for new, state-of-the-art schools focused on developing students for success in Boston's current and future economy.

BuildBPS goals are aligned with Superintendent Chang's vision for Boston Public Schools:

- **Coherence:** Infuse the system with a sense of logic
- **Innovation:** Build a culture of change that generates new solutions at every level of BPS, from classrooms to schools to the central office
- **Equity:** Ensure that the district progresses equally and collectively

BuildBPS explicitly states the need for community engagement and involvement in helping to advance big ideas into action. To initiate these discussions, BuildBPS proposes forming a new organizational body focused solely on BPS building projects. This new entity would help shape and manage the district's unified approach to capital improvement and new schools, and continue to engage community stakeholders with each step forward.

Boston is embarking on a major revitalization and transformation of its public school facilities. Through BuildBPS, Bostonians will have some of the best facilities in the nation – safe, efficient schools that meet the needs of contemporary teaching methods and are capable of supporting the City's highly regarded educational achievements and reputation. BuildBPS is the foundation for significant, long-term investment in Boston's public school system, and will yield benefits for all students across the City.





Planning Principles

Taking into consideration BPS's educational vision, and conclusions drawn from the analyses of population trends, district capacity, building conditions, and community feedback, the following principles have been identified to guide engagement, planning and capital spending over the next decade.

Nearly every building in the BPS portfolio is in need of some repair or renovation; therefore, to prioritize, every potential project needs to be considered through the lens of these planning principles.

BPS Planning Principles

1

Leverage real-time facility assessment data to prompt and validate investment choices.

4

Improve the match between educational programs and their facilities.

2

Create school environments that promote student and staff safety and well-being.

5

Maximize the energy efficiency of BPS facilities.

3

Align building capacity to enrollment and demographic trends citywide.

6

Focus new school construction primarily in high-growth neighborhoods with limited options for site expansion.

A Foundation of Engagement

7

Focus initial school renovation and expansion projects primarily in neighborhoods where school building sites can be expanded and where swing space is available.

9

Develop program and building utilization plans in neighborhoods that are not projected for high-growth among youth populations and have excess building capacity.

8

Expand K1 seats in neighborhoods where the estimated supply of high-quality seats does not meet demand, in accordance with analysis from the Universal PreK policy development process.

10

Optimize the geographic distribution of BPS high schools.

BuildBPS will embark on a new chapter of engagement in which the planning principles outlined above will build on the knowledge, creativity and dedication in our school communities to re-imagine and renew Boston's public school infrastructure.

Immediate Action

Over the next 10 years, many steps will be taken and much work done in the effort to move BuildBPS forward and rebuild Boston's school building portfolio. The following are actions that can be taken immediately to pave the way for future investments:

1

Commit \$1 billion to Boston's school buildings to catalyze long-term investment.

3

Implement a robust community collaboration process to guide ongoing and long-term decision making.

5

Undertake several "prototype" projects, to model standards from the BPS educational vision.

2

Establish an office dedicated to managing BuildBPS investments and projects.

4

Invest in new school furniture and technology, to promote 21st century learning and teaching methodologies.

Future BuildBPS Community Engagement Outline

2017

March	BuildBPS Information Sessions	BPS and the City will host open sessions in which residents can learn more about BuildBPS, and what the future holds. These will be opportunities to ask questions and share initial feedback and ideas about BuildBPS. BuildBPS office hours will also be held during this time for the community to inquire about the project or to offer one-on-one feedback. The sessions also will feature tutorials on using the data dashboard.	Individual School Community Meetings	Every school site council and school governing board will review and discuss their school's assessment, as well as BuildBPS as a whole. These meetings will take place as part of an existing site council meeting, or as a separate meeting unto itself. Each school will be able to compile ideas and feedback, and submit them to BPS. The district will provide tools and resources to guide the discussions.
April				
May	Neighborhood Workshops	A series of neighborhood workshops will bring each section of the City together to promote a deeper understanding of the schools and facilities in each neighborhood. These forums will enable students, parents, staff, and residents to share their experiences, ideas, and concerns. Most importantly, the workshops will include facilitated problem-solving sessions to engage stakeholders and help prioritize investments and propose solutions.		
June				
July				
August	School Building Office Review	The new school building office will collect all ideas generated by the community at site council meetings and neighborhood workshops. The ideas will be reviewed, and further analysis will be conducted to determine what their implementation would involve, logistically and financially. During this time, the school building office will update the facilities and demographic data, and the BuildBPS Dashboard will also be updated.		
September				
October				
November	Neighborhood Prioritization Meeting	Community members will learn more about the feasibility of the ideas generated in the workshops and provide input on proposed projects for the year ahead.		
December				
2018	January	Funding and Implementation	Based on the work conducted over the previous nine months, the City and BPS will include priority projects in Boston's capital budget proposal.	

Year Two and Beyond

Based on lessons learned in year one, the City and BPS officials may adapt the process to ensure successful community engagement, essentially repeating the cycle to prioritize projects for year two and beyond.

