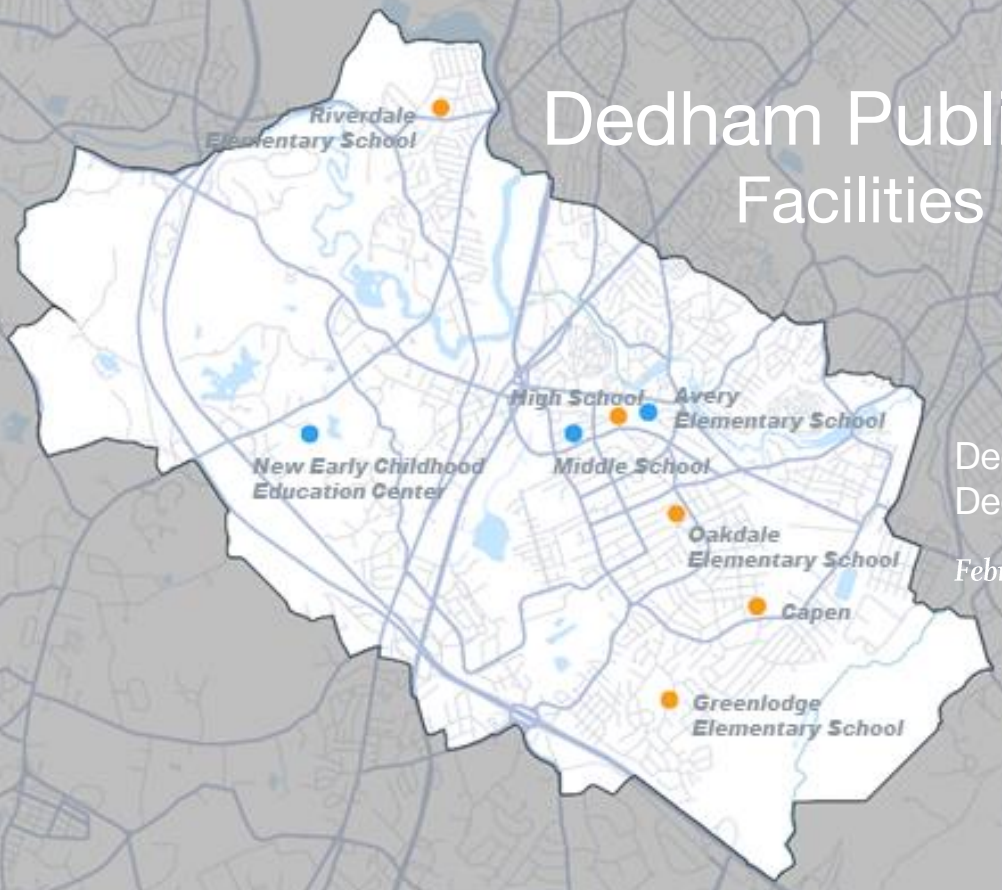


Dedham Public Schools
Facilities Master Plan

Dedham Public Schools
Dedham, MA

February 28, 2020

Prepared by
SMMA
1000 Massachusetts Avenue
Cambridge, Massachusetts

Master Plan Report
Dedham Public Schools
Dedham, MA.

Prepared by
SMMA

Table of Contents

A. *Introduction and Executive Summary*

B. *Overview of Previous Studies, Existing Conditions Assessments Discussion*

- D&W 2013
- KBA 2015
- EMG 2016

C. *Enrollment Discussions*

D. *Educational Adequacy of the Riverdale, Oakdale and Greenlodge Elementary Schools + Charles J. Capen School Building*

E. *Space Needs Assessments*

- Three schools - Approach A
- Two schools – Approach B
- One School – Approach C

F. Conceptual Approaches, Descriptions and Site Diagrams

G. Moving Forward with the Massachusetts School Building Authority (MSBA)

H. The Community Process, Summary of Community Meetings

I. Costs Discussion

Appendices

Appendix 1	NESDEC Enrollment Projections
Appendix 2	Community Meetings and Visioning
Appendix 3	Summary of Spaces
Appendix 4	Glossary of Terms for School Planning and Design

A

Introduction and Executive Summary

SMMA

Section A

Introduction and Executive Summary

Acknowledgments

SMMA would like to acknowledge the participation and guidance provided by the district administration, Facilities department, and the teachers and staff of the District.

Adhoc Working Committee

Michael Welch - Superintendent of Schools
Kevin Coughlin - Chair, School Committee
Steve Bilafer - School Committee & School Building Rehabilitation Committee
Mayanne MacDonald Briggs - School Committee & School Building Rehabilitation Committee

School Building Rehabilitation Committee

David Roberts, Chair
Ron Hathaway, Vice-Chair
Steve Bilafer
Mayanne Briggs
Brendan G. Keogh
Mary Ellen McDonough
John Tocci
Nancy Baker (exofficio)
Michael Welch (exofficio)

School Committee

Kevin Coughlin, Chair
Lisa Laprade, Vice-Chair
Steve Bilafer
Mayanne MacDonald Briggs
Joshua Donati
Melissa Pearrow
Tracy White

Introduction

SMMA was engaged to conduct an Update to the Dedham Public Schools Master Plan.

The focus of this Plan was to review the four (4) remaining buildings that have not been rebuilt or built new in the past 50 years, specifically: Riverdale Elementary School; Oakdale Elementary School; Greenlodge Elementary School; Dedham High School. In addition, the old site of the ECEC (322 Sprague Street) was reviewed for its' potential re-use, use as swing space or excess to the Town.

Early on in the process, the principals of each of the four schools were interviewed as part of the building conditions and educational facility effectiveness review. In order to understand the full context of the schools to be studied, SMMA conducted tours of and interiews with the principals of the Avery Elementary School and Dedham Middle School that were outside of this scope as well.

Dedham Master Plan Goals

The Dedham School Committee and the Adhoc Working Committee collaborated on developing the following goals for the Master Plan

- Comprehensively rebuild or replace Oakdale, Riverdale and Greenlodge Elementary Schools
- Develop a master plan where the elementary schools can serve the community well into the future with flexibility to accommodate changing educational needs
- Provide equity of facilities for all elementary children within the town
- To the extent possible, plan for school(s) that foster a small school / neighborhood environment and feeling
- Develop project(s) that are fiscally responsible and politically viable for the community

Overview of Previous Studies

SMMA reviewed the previous studies conducted for the Dedham Public Schools including:

- 2013 Master Plan Update Study, by Dore and Whittier
- 2015 ECEC Feasibility Study, by KBA Architects
- 2016 Facility Condition Assessment, by the EMG Corp.

Assessments of building conditions, size and types of space and other details were found to be consistent with what SMMA observed.

Enrollment Discussion

Each year the New England School Development Council (NESDEC) develops a report for Dedham Public Schools. The report includes historical enrollment data as well as projected enrollments for the next ten years. This was done most recently in late 2019 based on the October 1, 2019 actual enrollments. The NESDEC report is included in Appendix 1of this report.

Take-aways from the referenced NESDEC report

1. Over the next ten years (2019-2020 to 2029-2030), the Grades 1-5 population is anticipated to rise by approximately 130 students
2. Over the next ten years (2019-2020 to 2029-2030), the Grades K–12 population is anticipated to rise by approximately 130 students suggesting that most of the increase will appear in the elementary grades
3. Currently the average grade level size for Grades 1-5 is 196 students
4. The ten-year projection of average grade level size for Grades 1–5 is 225 students

Outside of the NESDEC report the trend that is most notable is the trend in PreK and Kindergarten. The current Kindergarten grade level size is 230 students. This represents a recent increase in both PreK and Kindergarten. Since the trend is recent and only a few years, it is impossible to know if that increase will maintain or even increase in the future. If an increase were to be the case, there could be a significant increase realized at matriculating grade levels with higher enrollments at the elementary grades.

During community meetings, parents and residents expressed concern over rising population at the ECEC and the potential impact if that trend matriculates to the elementary grades and schools. SMMA was requested to develop alternatives based on a potential population growth to level of 250 students per grade at the elementary grades. This alternate approach is developed in Sections E & F of this report.

Educational Adequacy

Riverdale, Oakdale and Greenlodge Elementary Schools

The three school buildings were reviewed for their ability to serve contemporary and next generation learning into the future. The following building issues are the most impactful to teaching and learning: occupant comfort, health and safety, and adequacy of building systems. All will need to be addressed at some point in the future. If there were to be building renovations and or additions, all would need to be addressed, triggered by building / health codes or educational needs.

The review of the three schools based on these issues and characteristics led to the recommendation that all three buildings need to be addressed as capital projects for comprehensive renovations or replacement.

Each building was reviewed for:

Educational Effectiveness – the ability to host current and future:

- Educational curricula
- Teaching and learning methodologies
- Next generation modalities of learning

Building Elements – multiple building conditions that impact teaching and learning

Building Priorities

In 2016, the Massachusetts School Building Authority (MSBA) conducted a state-wide review of school buildings called the 2016 School Survey Report. The chart below shows the statistics for Dedham's Schools.

Massachusetts School Building Authority – 2016 School Survey Report

District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

The scoring rubric for this chart is as follows:

Scoring Rubric - (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
    - Learning Environments
    - Building Safety
    - Universal Accessibility
    - Academic Sufficiency
    - Program Sufficiency
    - Instructional Technology
3. Capacity Utilization
    - Underutilized (less than 80% capacity utilization)
    - Average Utilization (between 80% - 125% capacity utilization)
    - Over Utilization (equal to or greater than 125% capacity utilization)

The full MSBA School Survey Report can be found at:
http://www.massschoolbuildings.org/programs/school_survey

What is clear is from these statistics is that Oakdale's building condition is the most poorly ranked, followed by Riverdale and Greenlodge. Dedham High School is in the best condition of these four schools.

Editorial note: the three previous studies of Dedham's school buildings as well as the findings of this report all indicate all four buildings are in worse condition than as reported in the MSBA Survey. That said, we agree on that Oakdale ES is the school with the greatest need. We place Riverdale second and Greenlodge third based on our assessments.

Dedham High School constructed in 1969 (51 years old) does have Educational Effectiveness and Building Element issues. The school department has and continues to address as many as budgetarily possible. The high school building was designed to house a significantly higher student population than currently exists. If Dedham were to attempt to replace the high school, the MSBA guidelines would indicate an appropriately smaller building; about ½ the current size.

Over the years as the student population declined, Dedham has used the excess space for school department and other community needs. These uses would all be displaced if a new high school were sought.

The High School building also houses:

- DPS Central Administration including Business Office
- DPS Facilities Department use
- DPS Commissary Kitchen for all schools
- Youth Commission Offices
- Athletics and Fitness Center

Space Needs Assessment

How much and what kind of space is needed to replace the three schools: Riverdale, Oakdale and Greenlodge? The follow up is where does it go and why? What are the cost impacts of these decisions?

The answers to all these questions will be the focus of MSBA's Module 3: Feasibility Study. This is the first stage of research, analysis and design of a project once the school district is invited into the Capital Grants Program.

The following exercise was explored and discussed with the Dedham community in advance of preparing the Statement of Interest (SOI).

Projected Enrollment Converted to Building Size

Since the current enrollments in grades 1-5 are relatively small compared to many districts, and the individual schools are relatively small, the following exercise was conducted for discussion with the Dedham community.

How might the three schools under study be replaced?

Using projected population enrollments summarized in Section C of this report, we have looked at the district elementary grades (1-5) population figures less those at the Avery School. In doing so, two district design populations are moved forward.

1. Currently, anticipated elementary schools' population of 1,125 students. This projected population comes from the most recent NESDEC Report. When removing the 345 students at Avery from consideration, the "design population" is 780 students.
2. If the elementary grades population were to grow to 1,250 students (250 per grade) the design population would be 905 students (1,250 – 345 [Avery]).

Conceptual Approaches

Section F demonstrates "conceptual approach" descriptions and site diagrams for the Riverdale, Oakdale and Greenlodge Elementary School sites.

A "test fit" was developed for each of the existing school sites to accommodate two different "design populations" for each of a three-school solution; a two-school solution or a one school solution. These approaches are described in Section E of this report, Space Needs Assessment. The site diagrams shown in Section F are not intended to reflect a building design but rather an approximate first floor "footprint" of a likely multi-story building.

Assumptions used when developing the test fit diagrams:

- Only the existing school sites were considered. No other Town-owned land was identified for consideration for a single or multiple new school(s)
- Due to the lack of available swing space at existing school buildings, concept approaches shown in Section F are confined to a new building on the same site but adjacent. The existing school is intended to remain in operation during the construction of the new building. Following occupancy, the existing building would likely be demolished to make room for vehicular circulation, parking and play fields or the building and immediate site would be returned to the Town as surplus property.
- The Capen school building and site were not considered for swing space or a new school site. This discussion is summarized in Section A of this report.
- The Avery Elementary School, being a relatively new school on a small and land locked site was not part of the test fitting.
- Further investigations will be needed of each of the sites to confirm the viability to support a new school. These investigations will take place as part of part of the MSBA driven Feasibility Study. These investigations will include, but not be limited to wetlands, geotechnical, topography and survey, hazardous materials etc.

The Community Process, Summary of Community Meetings

SMMA, in collaboration with the School Department, School Committee and Dedham School Building Rehabilitation Committee, conducted a series of community forums, a visioning workshop and listening events. Community meetings took place on:

- December 11, 2018 - Dedham School Committee & School Rehabilitation Committee Joint Meeting
- June 5, 2019 - Community Kickoff Meeting
- October 15, 22 and 23, 2019 - Individual School Update and Input Gathering Meetings
- December 9, 2019 - Dedham Public Schools Community Workshop #2
- January 13, 2020 - Test Fitting Three Existing School Sites

(Note: PowerPoint presentations from each of the Community Meetings can be found in the Appendix of this report)

Moving Forward with the Massachusetts School Building Authority (MSBA)

Engagement with the MSBA is formally initiated through the submission of a Statement of Interest (SOI), followed by an Eligibility Period and a Feasibility Study. This section describes those initial steps in detail, after which a fairly prescriptive design and construction process follows.

Statement of Interest Process (SOI)

1. Submitting an SOI is the first critical step in the MSBA's program to partially fund the construction, renovation, addition or repair of municipally owned school facilities located in cities, towns and regional school districts.
    - The Dedham School Department is planning to submit an SOI for the Oakdale School prior to the deadline of early April 2020.
2. The SOI allows districts to inform the MSBA about deficiencies that may exist in a local school facility and how those deficiencies inhibit the delivery of the district's educational program.
3. The district either submits under the Core (Capital) Program or the Accelerated Repair program.
    - The SOI to be submitted under the Core (Capital) Program

MSBA Statement of Interest Priorities

The SOI submitted by the District must identify which of the SOI Priorities are relevant for their project.

Oakdale Elementary School SOI - Of the seven SOI Priorities, the Dedham Public Schools intends to submit under the two Priorities Five and Seven.

> **Priority Five** - Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility
>
> **Priority Seven** - Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements

Costs Discussion

The scope of this master plan did not include providing probable project costs. Additional definition of scope and schedule would be required in order to do so. In the absence of providing probable costs, we have provided a high-level overview of factors and decisions that can influence cost and have provided some vocabulary around cost. During the Feasibility Study phase, the project team will provide cost information.

Grade Level Configuration

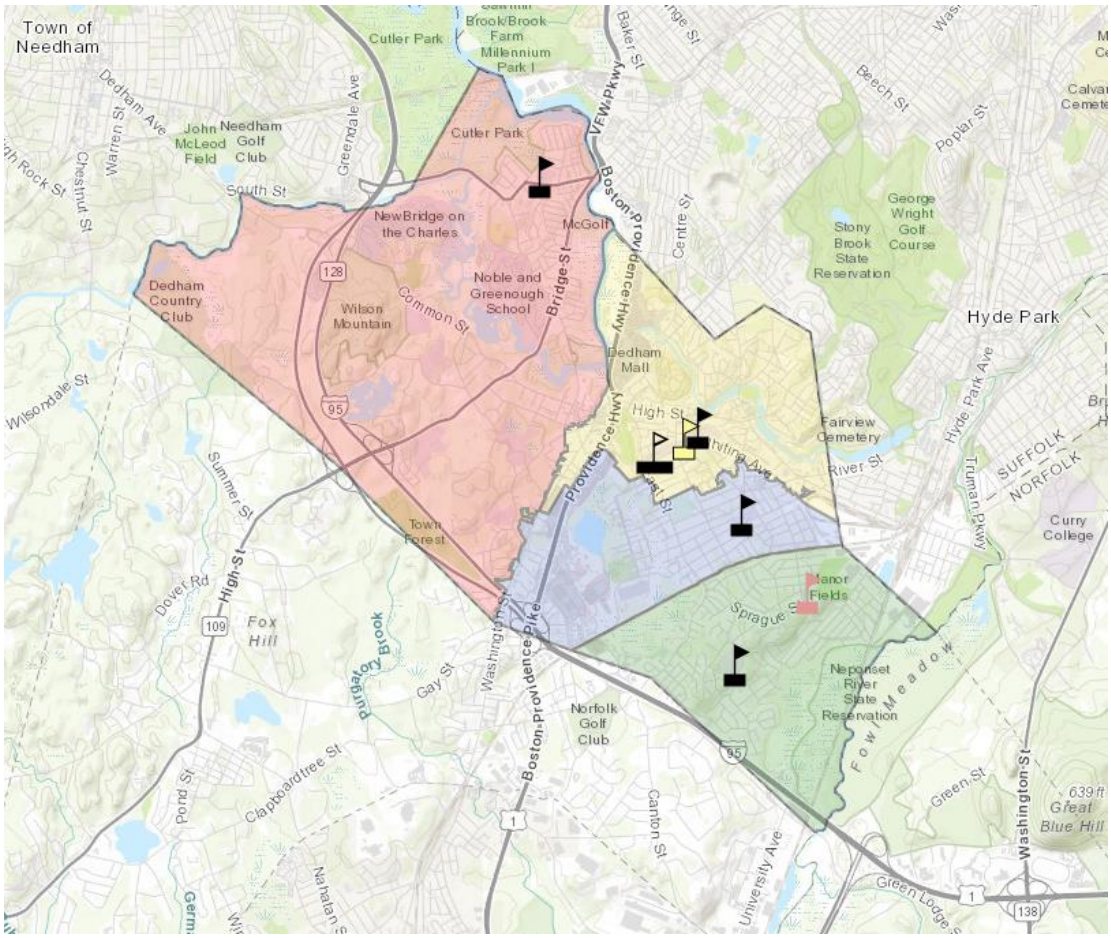
Dedham has a grade level configuration consisting of Pre-K, 1-5, 6-8, and 9-12. Although there were brief discussions on whether or not it could or would want to change, it was agreed that no change is anticipated. Contributing to this discussion are:

- Avery Elementary School – designed for approximately 325 students. If it were to be reconfigured, it is too large to house a single grade level and too small to house two grade levels.
- ECEC – is designed to house the district wide populations for both PreK and Kindergarten. If the Kindergarten population were to be sustained or further increase (currently 230 students), the new ECEC could become overcrowded. This could suggest some of the Kindergartens may need to return to the elementary school(s). Also see the demographic discussion in Section C

Current Elementary School District Lines

The graphic below shows the current elementary schools catchment boundaries:

- Red – Riverdale Elementary School
- Yellow – Avery Elementary School
- Blue – Oakdale Elementary School
- Green – Greenlodge Elementary School



Redistricting

Regardless of what direction the school replacement program takes, there will be an inevitable need to re-evaluate the elementary school attendance zones. The schedule for replacement including the number of replacement buildings will greatly influence the redistricting process and whether or not it will need to take place more than once within any defined schedule.

Riverdale
Elementary School
High School
Avery
Elem
New Early Childhood
Education Center
Middle School
Oakdale
Elementary School
Capen
Greenlodge
Elementary School

B

Overview

SMMA

Section B

Overview of Previous Studies, Existing Conditions Assessments Discussion

Dedham Public Schools has, over the past seven or eight years, studied each of the schools in the district, both for building condition and educational functionality. The studies were in-depth and have led to improvements in the school system including design and implementation of the new Early Childhood Education Center (ECEC).

SMMA reviewed each of these studies and found them consistent with our walk-throughs of the buildings and interviews with school administrators.

Dore and Whittier 2013 Master Plan Update Study

This study was a follow up to Dore and Whittier's previous Master Plans conducted in 2003 and 2008. Those studies led to the design and construction of the Dedham Middle School and the new Avery Elementary School.

The 2013 showed that the three elementary schools: Riverdale, Oakdale and Greenlodge were significantly undersized, and most significantly, the teaching spaces, primarily classrooms are undersized when compared to the Massachusetts School Building Authority (MSBA) guidelines.

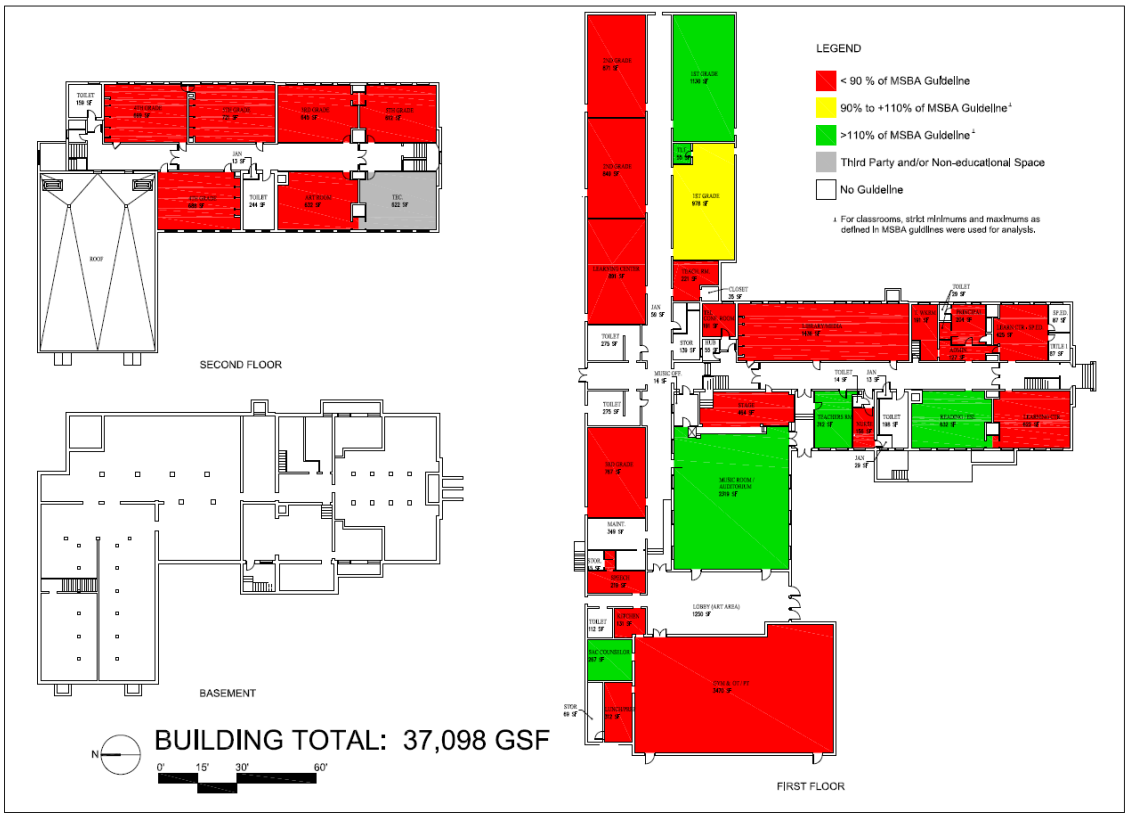
What keeps this from being a significant issue currently is the small class sizes in most of the schools. If class sizes were to rise based on the MSBA guidelines of 23 students per class, the classroom size would be of major concern for contemporary and future teaching and learning methodologies.

The drawings below are from the 2013 Masterplan Update and clearly show the scope of classroom sizes in these schools.

The spaces shown in red indicate room areas are greater than 10% smaller than the Guidelines of the MSBA. Most all teaching spaces are undersized. This information is used in conjunction with the buildings' construction type and condition of the building envelope and engineering systems to evaluate the buildings ability to serve as a 21st Century school.

At the Riverdale School, these small classrooms are throughout the school including the original 1921 building and the 1930 and 1952 additions.

Riverdale Elementary School

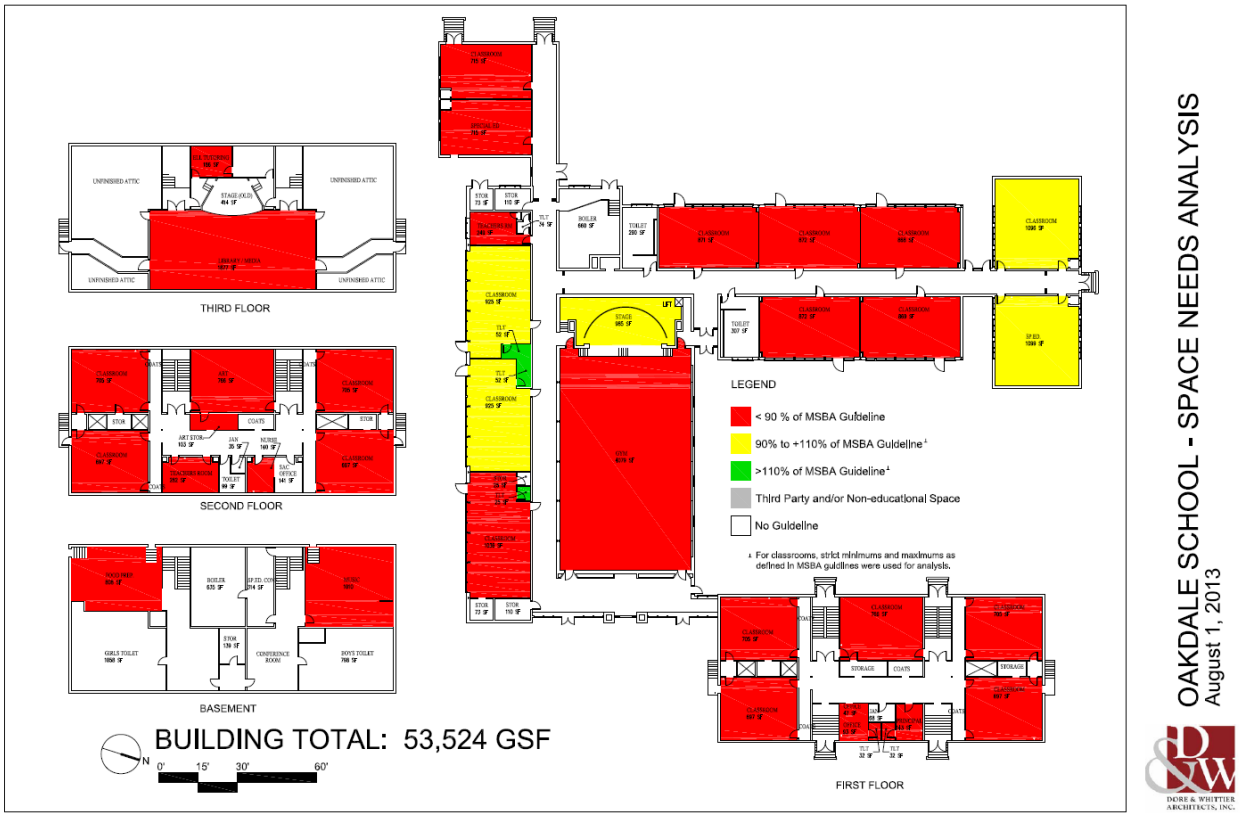


This drawing and analysis was part of the Dore and Whittier 2013 Master Plan Update Study

The spaces shown in red indicate room areas are greater than 10% smaller than the Guidelines of the MSBA. Most all teaching spaces are undersized. This information is used in conjunction with the buildings' construction type and condition of the building envelope and engineering systems to evaluate the buildings ability to serve as a 21st Century school.

At the Riverdale School, these small classrooms are throughout the school including the original 1921 building and the 1930 and 1952 additions.

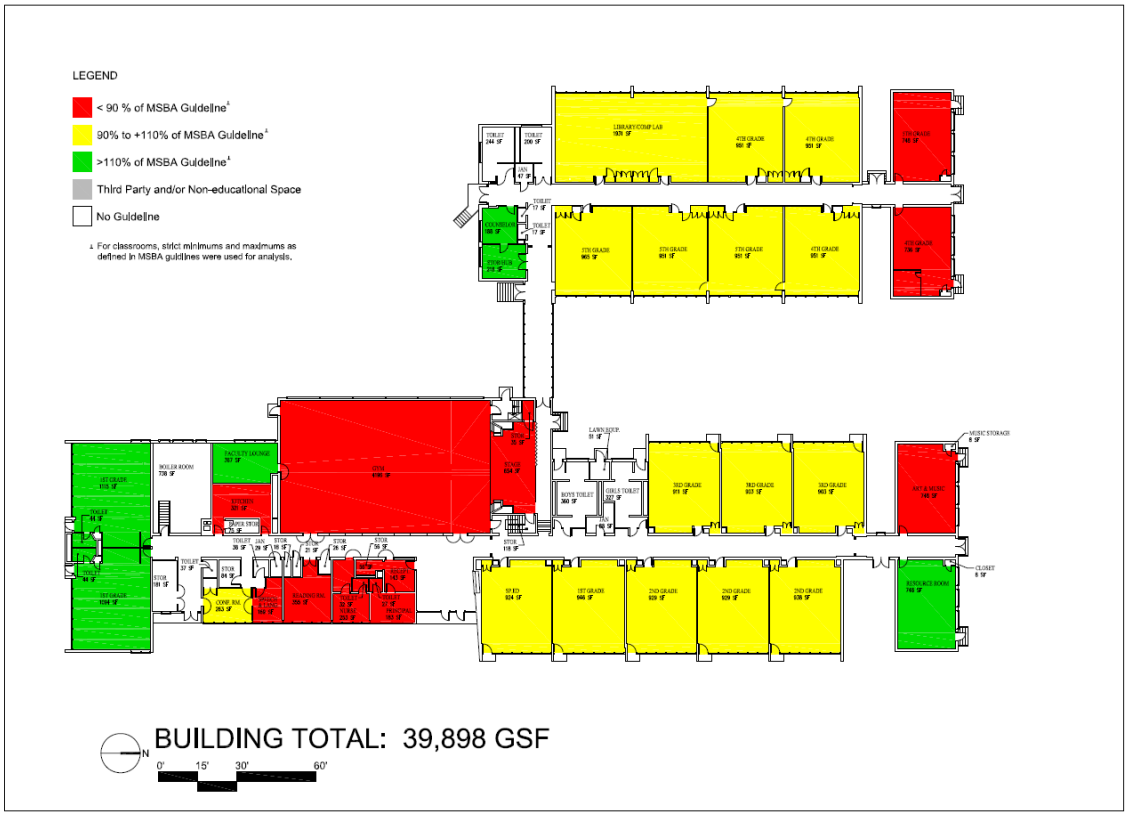
Oakdale Elementary School



This drawing and analysis were part of the Dore and Whittier 2013 Master Plan Update Study

The spaces shown in red indicate room areas are greater than 10% smaller than the Guidelines of the MSBA. Most all teaching spaces are undersized. This is the case in both the original 1902 building as well as the 1951 and 1970 classroom additions. This information is used in conjunction with the buildings' construction type and condition of the building envelope and engineering systems to evaluate the buildings ability to serve as a 21st Century school.

Greenlodge Elementary School



This drawing and analysis were part of the Dore and Whittier 2013 Master Plan Update Study

The spaces shown in red indicate room areas are greater than 10% smaller than the Guidelines of the MSBA. Although most of the classrooms meet the MSBA room size, both original construction - 1955 and the 1961 classroom addition, the newer west wing is accessible only by an isle that runs along the back of the stage. The later added modular classrooms, 1970, are undersized and are beyond their useful life. This information is used in conjunction with the buildings' construction type and condition of the building envelope and engineering systems to evaluate the buildings ability to serve as a 21st Century school.

The 2016 EMG study contains more recent information on the physical conditions of the buildings.

KBA 2015 ECEC Feasibility Study

In 2015, KBA Architects *(*Knight, Bagge & Anderson, Inc.) studied numerous options *as* part of MSBA approved Feasibility Study to relocate the Early Childhood Education Center from the Sprague Street site / Capen School building to the Dexter School site. The building is to serve the district wide Pre-Kindergarten and Kindergarten students.

As part of the study process, KBA presented 14 options covering additions and renovations as well as new construction, studying each of the Riverdale, Oakdale, Greenlodge and Dexter school sites. The process included community presentations and debate. Ultimately the Dexter school site was selected.

EMG 2016 Facilities Conditions Assessment

In 2016, the consulting firm of EMG based out of Owings Mills, MD conducted a **Facilities Conditions Assessment** for each of the school buildings. The reports are very detailed listing significant information on the buildings and sites. The reports cover many aspects of the building envelope (exterior walls, roofs etc.) and each of the engineering systems in the facilities.

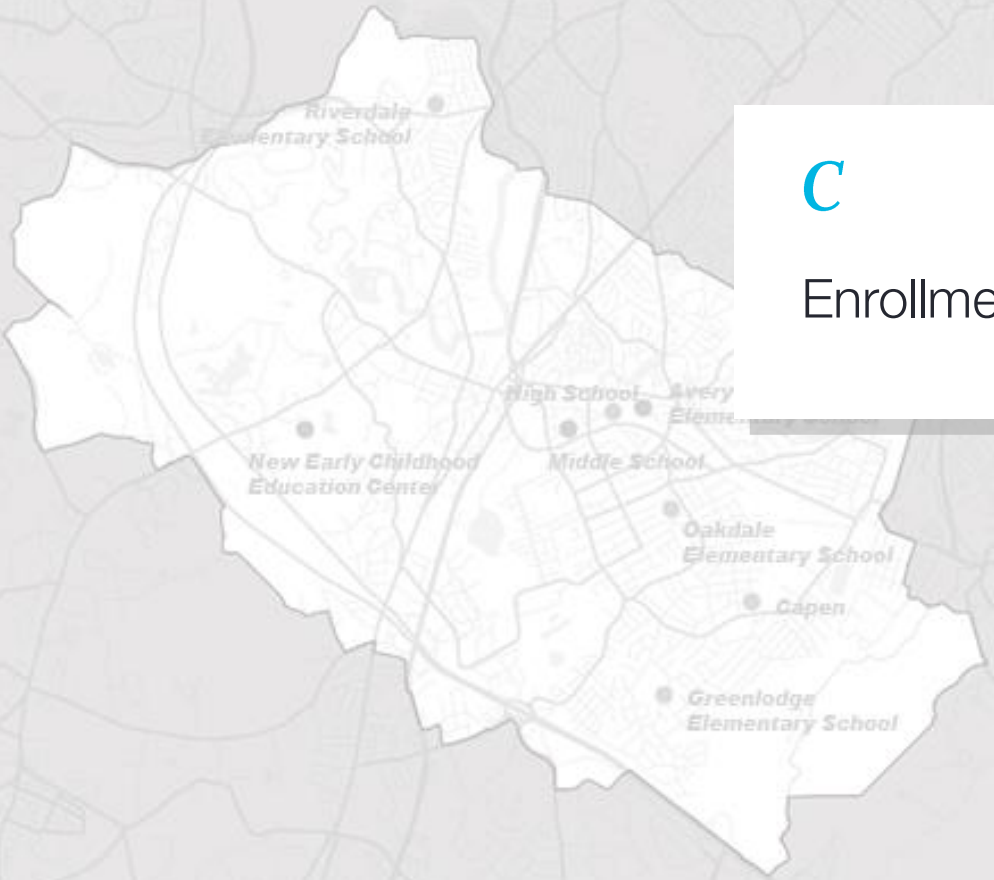
The reports include **Special Issues and Follow up Recommendations**. **Opinions of Probable Costs** are included for repairs and replacement of systems.

Although the buildings appear to be well maintained, much of the envelope and many of the engineering systems are beyond their useful lives.

The reports include an analysis of the Facility Condition Index (FCI) which gives an indication of a building's overall condition. Two FCI ratios are calculated and presented, the Current Year (2016) and Ten-Year.

1. The Current Year FCI is the ratio of Immediate Repair Costs to the building's Current Replacement Value.
2. The Ten-Year FCI is the ratio of anticipated Capital Reserve Needs over the next ten years to the Current Replacement Value.

The 10-year FCI's for the three elementary schools range from Fair to Very Poor.



C

Enrollment Discussions

SMMA

Section C

Enrollment Discussions

Each year the New England School Development Council (NESDEC) develops a report for the Dedham Public Schools district. The report includes historical enrollment data as well as projected enrollments for the next ten years. This was done most recently in late 2019 based on the October 1, 2019 actual enrollments. The NESDEC report is included in Appendix I of this Master Plan report.

NESDEC uses the Survival Cohort Model when developing projected enrollments. This includes historical trends; numbers of live births; an anticipated matriculation of students from year to year; newly constructed housing and anticipated school age children from them. It may not include housing projects that are in the planning stages.

Take-aways from the referenced NESDEC report:

- Since 2010, the Grades 1-5 population has dropped by approximately 150 students
- Since 2010, the Grades K-12 population has dropped by approximately 170 students (a 6.2% decrease)
- Over the next ten years (2019-2020 to 2029-2030), the Grades 1-5 population is anticipated to rise by approximately 130 students
- Over the next ten years (2019-2020 to 2029-2030), the Grades K–12 population is anticipated to rise by approximately 130 students suggesting that most of the increase will appear in the elementary grades
- Currently the average grade level size for Grades 1-5 is 196 students
- The ten-year projection of average grade level size for Grades 1–5 is 225 students

NOTE: Beyond 5 years out, populations are "estimated" for elementary years.

Outside of the NESDEC Report, what is most notable is the trend in PreK and Kindergarten enrollments. The current Kindergarten grade level size is 230 students and the PreK is capped at 130. This represents a recent increase in both PreK and Kindergarten. Since the trend is recent and only a few years, it is impossible to know if that increase will maintain or even increase in the future. If an increase were to be the case, there could be a significant increase realized at matriculating grade levels with higher enrollments at the elementary grades.

Future PreK Needs

The new Early Childhood Education Center (ECEC) opened in February 2019. The school serves all (District wide) kindergarten classrooms with a current population of approximately 230 children.

The school also serves integrated and tuition PreK (6 classrooms) with a current population of approximately 130 students. Some PreK students attend half day (morning or afternoon session) while others attend full day. In the very short time, the school has been opened, it has been a big success. Special needs students with an Individual Education Plan (IEP) enroll in the school at age 2.9. This means that these classrooms increase in population throughout the school year.

The late-fall PreK enrollment filled quickly and there are approximately 120 families who are currently on the waiting list.

It is possible that the success of the PreK program will result in more pressure on the Kindergarten program. Since there is a limited number of classrooms in the ECEC, this increase could further reduce the PreK capacity. These enrollment numbers need to be monitored several times each year.

Short-term solution: the ECEC building was designed to accept a two-classroom modular addition. There are some permitting issues that would need to be addressed to undertake the addition.

Long-term solutions: if PreK and K enrollments continue to rise or at some point the Town decides to substantially increase PreK enrollment capacity, strategies might include:

- Turn the ECEC into an all PreK building
- Return kindergartens to each of the elementary schools. This would best take place in concert with a capital school project. Alternate building sizes are explored in this Master Plan.

Community Input

During community meetings, parents and residents expressed concern over the rising population at the ECEC and the potential impact if that trend matriculates to the elementary grades and schools. SMMA was requested to develop Alternatives based on a potential growth population of 250 students per grade level at the elementary grades.

Projected Enrollments

Base Line:

The anticipated (based on 10-year projection) elementary schools' population is 1,125 students (225 students per grade level). This projected population comes from the most recent NESDEC Report. When deducting 345 students at Avery from the total population, the "design population" for the remaining school(s) is 780 students.

Potential Growth:

If the elementary grades population were to grow to 1,250 students (250 students per grade level) the design population would be 905 students (1,250 – 345 [Avery]). Note, at this point, the only basis for this growth number is the very real trend in the PreK population, PreK demand and the higher than anticipated kindergarten population.

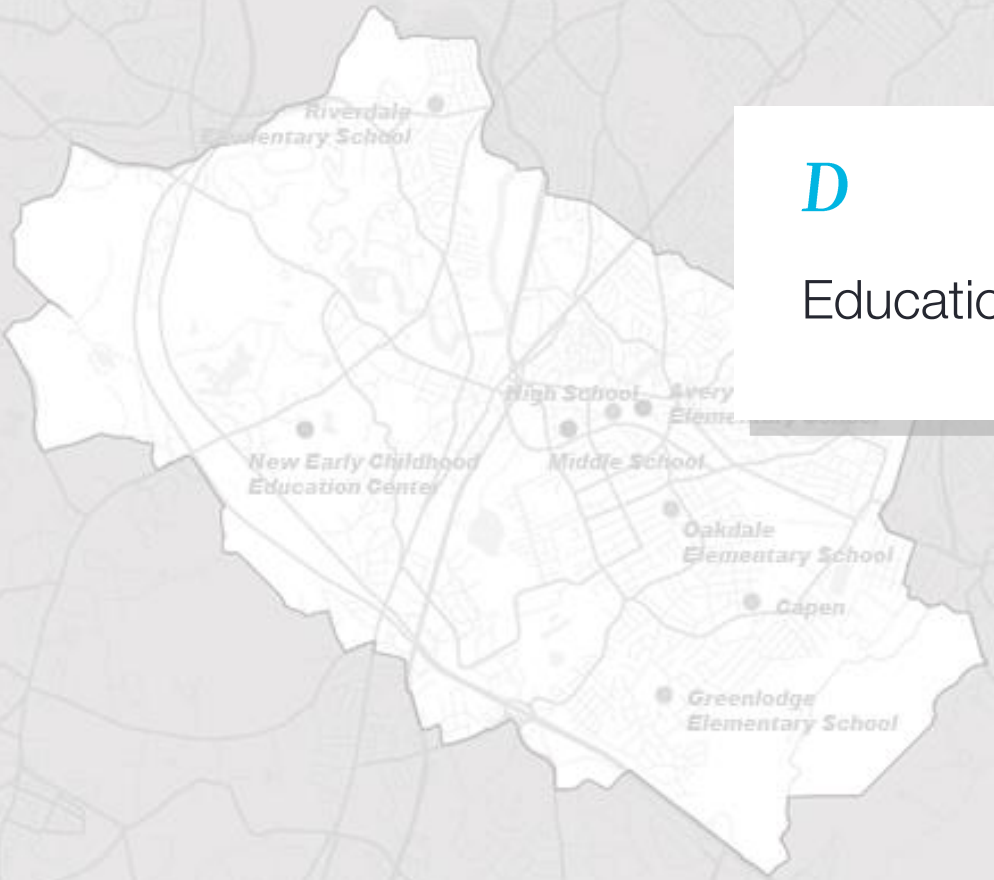
It should also be noted that new schools in communities in eastern Massachusetts have an anecdotal history of rapidly rising student populations from students returning from private, charter and other schools from outside the district.

Ultimately, the MSBA will develop a projected population for the elementary grades which will then be the basis for the Feasibility Study and design. This projection will be developed when the Statement of Interest is accepted, and Dedham is invited into the Capital Program.

The Massachusetts office of Secretary of State anticipates that data from the National 2020 Census will assist with future school planning.

The following chart shows current school statistics at each of the four elementary schools and the ten year need for classrooms using the MSBA class size.

	Current				2027 Needs w/ MSBA Criteria		
	2018-19 Population	Classrooms/ Grade	Total Classrooms	Average Class Size	Class size	Classrooms / Grade	Population
Avery	304	3	15	20.3	23	15	345
Riverdale	172	2	10	17.2	23	30	671
Oakdale	271	3	15	18	23		
Greenlodge	247	3	14	17.6	23		
	994	11	54	18.4		45	1,016



D

Educational Adequacy

SMMA

Section D

Educational Adequacy, Building Issues & Characteristics

Riverdale, Oakdale and Greenlodge Elementary Schools

The three school buildings were reviewed for their ability to serve contemporary and next generation learning into the future. The following building issues are the most impactful to teaching and learning: occupant comfort, health and safety, and adequacy of building systems. All will need to be addressed at some point in the future. If there were to be building renovations and or additions, all would need to be addressed, triggered by building / health codes or educational needs.

The review of the three schools based on these issues and characteristics led to the recommendation that all three buildings need to be addressed as capital projects for comprehensive renovations or replacement.

Educational Facility Effectiveness

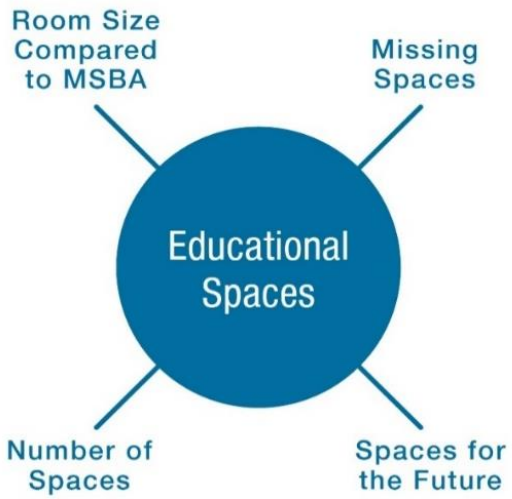
Educational Effectiveness is the buildings' ability to host current and future:

- Educational curricula
- Teaching and learning methodologies
- Next generation modalities of learning

Dedham's three older elementary schools were constructed in the early to mid-20th Century. The process of educating today, content, delivery methodology and learning modalities is significantly different from when these schools were built. The Master Plan needs to look as far into the future as possible. The Educational Facility Effectiveness review takes into account both the Educational Spaces and the Building Elements that impact teaching and learning.

The Massachusetts School Building Authority (MSBA) has "Guidelines" for the type, number and size of rooms that typically comprise schools today. These are formulaic with the size and number of spaces based on the anticipated student population (design size). This MSBA document is called the Summary of Spaces. The Summary of Spaces assumes 23 students per classroom in grades 1-12 and 18 students per classroom in K.

Educational Spaces



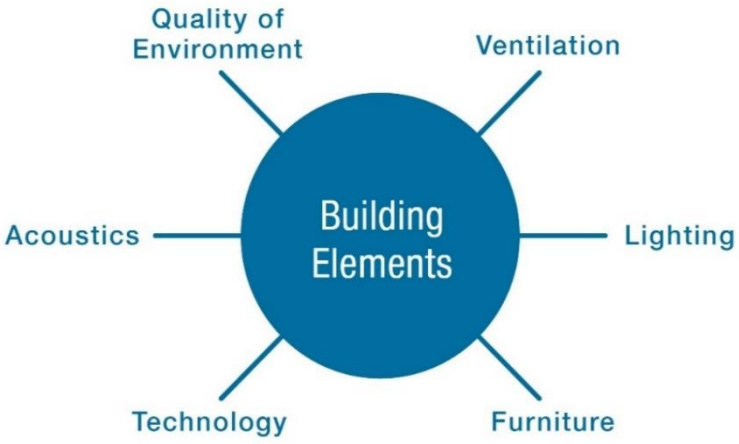
Room sizes Compared to MSBA – is the square footage similar to as defined in the Summary of Spaces? Room size has a direct relationship to the number of students properly supported in the classroom. It is a good indicator of flexibility for future educational changes.

Missing Spaces – are there spaces, typical to a school that are missing from Dedham's schools? e.g. cafeterias are expected in all schools. None of the Riverdale, Oakdale or Greenlodge have a cafeteria.

Number of Spaces – are there enough classrooms and other teaching and support spaces to serve the proposed design size and teaching methodologies?

Spaces for the Future – though it is not possible to forecast the future of education and the spaces needed, are existing spaces flexible enough to accommodate multiple or alternate teaching methodologies?

Building Elements



Quality of the Environment – a subjective interpretation regarding the aesthetics or the space. Is the space one where children will want to spend a large portion of their day? Many of the other "building elements" contribute to this quality.

Ventilation – good ventilation can have a positive impact on students' ability to learn. Does the space have the proper (code conforming) mechanical ventilation, providing: outdoor air, filtered air, heated or cooled? Are operable windows with insect screens, available to provide natural ventilation in on temperature appropriate days?

Lighting – is the artificial lighting in the school:

- Have the proper light levels for educational activities?
- Is it controllable for a range of activities in the rooms?
- The type that won't aggrevate some students medical or phyisilogical conditions

Furniture – is the furniture comfortable for students; can it be easily moved within the classroom; serve multiple modalities of teaching and learning?

Technology – is the technology infrastructure capable of serving future needs?

Acoustics – are the rooms' acoustical qualities appropriate for teaching and learning.

- Is there appropriate absorptive material within the room to ensure speech intelligibility between occupants?
- Are the walls and partitions capable of keeping out noise that maybe generated from outside the room?

Significant Building Condition

Issues are those components that have an impact on teacher's ability to teach and students ability to learn. In some cases, are the buildings able to be renovated in a cost-effective way? E.g. is it possible to expand classroom sizes in a load bearing masonry structure?

Minor Issues

Identified as minor, have some impact on teaching and learning but are not code or safety issues. Many can likely be accomplished as needed with operational funding.

Riverdale Elementary School

1. **Educational Effectiveness**
    a. Typical classrooms in the original building are significantly undersized (612 to 721 sf); typical classrooms in the building additions range in size from 767sf (undersized) to 870 / 978 which are in the range of MSBA Guidelines
    b. No cafeteria for student dining (meals in classrooms)
    c. Undersized gym and library/media center
    d. Numerous issues with building conditions that support teaching and learning: lighting; temperature; ventilation, acoustics
    e. Issues related to safe and secure learning environments
    f. Need for additional spaces to support Special Education
    g. Existing 2 section school building area = 37,098 gsf
    MSBA guidelines for a 2-section school is 48,600 gsf
2. **Significant Building Condition Issues – requiring capital expenditures**
    a. Lack of handicapped access to significant parts of the building
    b. Numerous other issues of accessibility
    c. Wooden stairs
    d. Wood construction in original building
    e. Lack of automatic fire protection system

f. Obsolete mechanical H&V system, no air conditioning (frequent too hot / too cold for teaching and learning)

g. Inadequate electrical systems

h. Obsolete plumbing systems; lack of adequate facilities in original building

i. Asbestos containing flooring and numerous other locations; PCB's in numerous locations

j. Entry sequence, exterior classroom doors and other school safety and security issues

k. Window replacement needed

l. Cosmetic issues – floors, ceilings, walls (limited work might be categorized as minor)

m. Other maintenance and capital repair projects listed in previous studies

3. Minor Issues – may be accomplished with operational funding

a. Cosmetic issues – floors, ceilings

b. Limited student display area

c. Primarily chalkboards

d. Conventional classroom furniture

Oakdale Elementary School

1. Educational Effectiveness

a. Typical classrooms in the original building are significantly undersized; typical classrooms in the building additions range in size from 715 sf (undersized), to 872 and 925, in the range of MSBA Guidelines

b. No cafeteria for student dining (meals in classrooms)

c. Undersized gym and library/media center

d. Numerous issues with building conditions that support teaching and learning: lighting; temperature; ventilation, acoustics

e. Issues related to safe and secure learning environments

f. Need for additional spaces to support Special Education

g. Existing 3 section school building area = 53,524 gsf
MSBA guidelines for a 3-section school is 60,000 gsf

2. Significant Building Condition Issues – requiring capital expenditures

a. Lack of handicapped access to significant parts of the building

b. Numerous other issues of accessibility

c. Wooden stairs / steel fire escapes

d. Wood construction in original building

e. Lack of automatic fire protection system
f. Obsolete mechanical H&V system, no air conditioning (frequent too hot / too cold for teaching and learning)
g. Inadequate electrical systems
h. Obsolete plumbing systems; lack of adequate facilities in original building
i. Asbestos containing flooring and numerous other locations; PCB's in numerous locations
j. Entry sequence, exterior classroom doors and other school safety and security issues
k. Window replacement needed
l. Cosmetic issues – floors, ceilings, walls (limited work might be categorized as minor)
m. Other maintenance and capital repairs projects listed in previous studies

3. **Minor – may be accomplished with operational funding**
   a. Cosmetic issues – floors, ceilings, walls
   b. Limited student display area
   c. Primarily chalkboards– change out to marker boards, additional boards desired
   d. Conventional classroom furniture

Greenlodge Elementary School

1. **Educational Effectiveness**
   a. Typical classroom sizes generally meet MSBA Guidelines with the exception of the most recent addition (4 rooms)
   b. No cafeteria for student dining (meals in classrooms)
   c. Undersized gym
   d. Numerous issues with building conditions that support teaching and learning: lighting; temperature; ventilation, acoustics
   e. Issues related to safe and secure learning environments
   f. Need for additional spaces to support Special Education
   g. Existing 3 section school building area = 51,000 gsf
      MSBA guidelines for a 3-section school is 60,000 gsf
2. **Significant Building Condition Issues – requiring capital expenditures**
   a. Limited handicapped access to significant parts of the building
   b. Numerous other issues of accessibility
   c. Lack of automatic fire protection system

d. Obsolete mechanical H&V system, no air conditioning (frequent too hot / too cold for T&L)
e. Inadequate electrical systems
f. Obsolete plumbing systems
g. Asbestos containing flooring and numerous other locations; PCB's in numerous locations
h. Entry sequence, exterior classroom doors and other school safety and security issues
i. Window replacement needed
j. Cosmetic issues – floors, ceilings, walls (limited work might be categorized as minor)
k. Other maintenance and capital repairs projects listed in previous studies

3. Minor – may be accomplished with operational funding

a. Cosmetic issues – floors, ceilings, walls
b. Limited student display area
c. Primarily chalkboards – change out to marker boards, additional boards desired
d. Conventional classroom furniture

Charles J. Capen School Building

Capen School

Capen Site

The Capen School building most recently served the Dedham school district as the Early Childhood Education Center (ECEC). In February 2019, the new ECEC began its' soft-start opening. The new building is now in full operation. The main floor of the Capen building is currently leased to the Blue Hills Adult Education organization. SMMA conducted a review of the building for potential use as "swing space" for any anticipated new capital project resulting from this Master Plan process and subsequent Statement of Interest filings with the MSBA.

SMMA reviewed the Facility Condition Assessment conducted by EMG Corporation, dated 12/12/2016 and the Master Plan Update, conducted by Dore & Whittier Architects, dated 8/1/2013 as well as a walkthrough of the building.

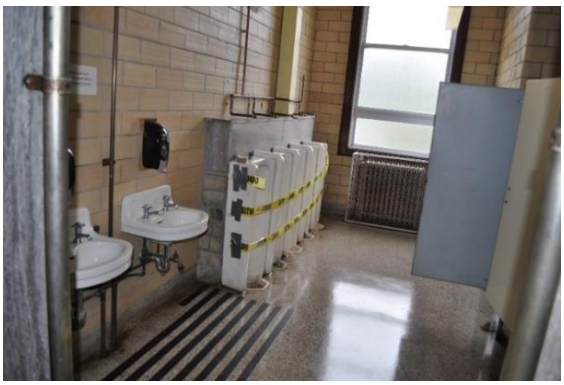
The conditions reported in these reports appear to be accurate. The building is in as bad or worse condition as the buildings to be renovated or replaced. Our opinion is the buiding is not appropriate to be used as swing space.

In a memo to the Superintendent, dated 4/18/2019, SMMA addressed the Dedham School Committee policy in regard to the potential retirement of the building.

Retirement of Facilities – this memo addressed each of the points of the Dedham School Committee policy in regard to the potential retirement of the Charles J. Capen school building.

1. **Age / Physical Condition / Operating Systems / Program Facilities**[1]
    a. Age: Constructed in 1930 with a circa 1960's addition; the building was designed as an elementary school. The building began use as an early childhood center in 1993. The building is two stories plus a partially occupied basement
    b. Physical Condition: 322 Sprague Street, 29,167 gsf, the building exterior is characterized in fair and poor condition. The site and mechanical systems were characterized in poor condition. The other building systems were characterized in fair condition.
    c. Operating Systems:
        i Heating systems – poor, fair, good (numerous anticipated lifecycle replacements identified)
        ii Plumbing systems – poor, fair, good (numerous anticipated lifecycle replacements identified)
        iii Electrical systems – fair (some anticipated lifecycle replacements identified)

Example of Wood Floor Framing



Example of Obsolete Plumbing

[1] Data extracted and paraphrased from the Facility Condition Assessment conducted by EMG Corporation, dated 12/12/2016 and the Master Plan Update, conducted by Dore & Whittier Architects, dated 1 August 2013.

iv Fire alarm – fair (some anticipated lifecycle replacements identified)

v Sprinkler System – none

vi Interior finishes - poor, fair, good (numerous anticipated lifecycle replacements identified)

vii Handicapped Accessibility – poor, missing

viii Hazardous Materials – report available within the Master Plan Update

d. Program Facilities:

i The building was undersized for the early childhood program

ii Most all teaching spaces are greater than 10% undersized when compared to the MSBA Guidelines

iii Numerous programs were in inappropriate sized for appointed spaces

iv Numerous program spaces were missing

2. Adequacy of Site / Location / Access / Surrounding Development / Traffic Patterns / other environmental conditions

a. Adequacy of Site: approximately 4 acres in size, the site is sloping in multiple directions. Access to the adjacent green play areas is steeply sloping and not accessible.

b. Location / Access: The building is located on the arterial Sprague Street between the Readville section of Boston and the East Street rotary.

c. Surrounding Development: either side of Sprague Street are typical residential Dedham neighborhoods. To the northeast is a vacant parcel owned by the town.

d. Traffic Patterns: Sprague Street is well traveled. Site access is from Sprague Street. Vehicular egress is onto Sprague Street at the corner of Etna Road. This egress likely is considered a dangerous location. There is a modest service entrance off Etna Road.

3. Reassignment of Children

Beginning in February 2019, the new Early Childhood Education Center (ECEC) began its' soft opening. This new facility houses the town wide, centralized PreK and Kindergarten students and programs. The students and programs were previously housed in the Capen / Curran school building.

4. Transportation Factors

The school department has determined that there are no appreciable transportation differences between the Capen / Curran site and the location of the new ECEC building.

5. Alternative Uses of the Building

The Dedham School Department is currently leasing most of the main floor level to the Blue Hills Adult Education organization.

6. Costs / Savings

The current lease is covering the operational costs of the building.

At such time that there may not be a lease, the building is would need to be environmentally maintained until the community determines its' future. Mothballing is a term used for such short- or long-term maintenance. The degree of mothballing is up to the school department or town. Protection against freezing is essential, whether it be draining of systems containing fluids or heating to a temperature to prevent system freezing. Additionally, some level of temperature control and ventilation would be recommended to prevent mold / mildew growth and material and system deterioration.

7. Continuity of Instructional and Community Programs

The new Early Childhood Education Center (ECEC) contains all students and programs previously located in the Capen / Curran building. The soft opening of the building resulted in no disruption to instructional or community programs.

E

Space Needs Assessments

SMMA

Section E

Space Needs Assessments

How much and what kind of space is needed to replace the three schools: Riverdale, Oakdale and Greenlodge? Where would the buildings go and why? What are the cost impacts of these decisions?

The answers to all of these questions will be the focus of MSBA's Module 3 Feasibility Study. Module 3 is the first stage of research, analysis and design of a project, once the school district is invited into the Core Program.

The following exercise was explored and discussed with the Dedham community in advance of preparing the Statement of Interest (SOI).

Projected Enrollment Converted to Building Size

Since the current enrollments in grades 1-5 are relatively small compared to many districts, and the individual schools are relatively small, the following exercise was conducted for discussion with the Dedham community.

How might the three schools under study be replaced?

Using projected population enrollments summarized in Section C of this report, we looked at the district elementary grades (1-5) population figures, minus the population at the Avery School. In doing so, two district design populations are moved forward.

1. Currently anticipated elementary schools' population of 1,125 students. This projected population comes from the most recent NESDEC Report. When deducting 345 students housed at Avery, the "design population" is 780 students.
2. If the elementary grades population were to grow to 1,250 students (250 per grade) the design population would be 905 students (1,250 – 345 [Avery]).

These ranges are reflected in the three "Approaches" defined below.

As part of the community discussions in December 2019 and January 2020, the population "design approach" was to evenly divide the population between the three schools / sites. That approach does not take into account the need for a consistent number of class sections to matriculate through grades.

Class sections are the number of classrooms per grade level that then remains constant. e.g. a (2) section schools has: 2 first grades, 2 second grades, 2 third grades, etc. Similarly, larger section schools are identified based on the number of schools proposed.

In this analysis, the approaches include: 3 schools, 2 schools and 1 school solutions. Since we are calculating based around fixed populations, some approaches have varying classroom Sections of schools within a single Approach. This helps keep schools with relative consistent

populations and prevents from over building across the community. The spread sheet included in this report section represents the concept.

Three Schools - Approach "A", two (A1) or three (A2) sections per school = 230 students to 345 students (at each school) assumes that each school will be replaced on its' existing site. For purposes of equity, each school is assumed to be the same student population size. This Approach A acknowledges the concept of retaining neighborhood schools.

Pros:

- Best meets the aspirations of neighborhood schools
- Fits easily on each of the existing school sites (see Section F)
- Would have little if any negative impact on teaching and learning during the construction period
- Provides equity of facilities at all three sites

Cons:

- Least cost effective (construction cost) due to duplicative spaces and small economy of scale
- Least cost effective operationally
- Will require some teaching and student support service personnel to travel between buildings
- Some teaching and student support service personnel may not be available to students at the time of need
- Due to small size, may be challenging to get MSBA support
- A challenge for timing – how long will it take to replace all three schools? Will the MSBA participate in multiple schools or will they need to be replaced sequentially?

These next two approaches reflect a consolidation to fewer school buildings

Two Schools – Approach "B", 345 students to 460 students (at each school). This would require selection of two of the three existing sites on which to construct new schools. For purposes of equity, each school is assumed to be the same size. This acknowledges the concept of retaining neighborhood schools.

Pros:

- Meets some of the aspirations of neighborhood schools
- Fits on the existing school sites (see Section F)
- Would have little if any negative impact on teaching and learning during the construction period

- Provides equity of facilities at all two sites
- Somewhat more cost effective (construction cost) than Approach A for school size and economy of scale

Cons:

- Somewhat less cost effective (construction cost) than Approach C due to duplicative spaces and smaller economy of scale
- Least cost effective operationally
- May require some teaching and student support service personnel to travel between buildings
- May result in specialized teaching and student support service personel not be available to students at the time of need

One School – Approach "C", 782 students to 920 students. This would require selection of one of the three existing sites on which to construct a new school.

Pros:

- Most construction cost effective due to lower overall square footage and best economy of scale
- Most cost effective operationally
- As one facility, all students share in the same facilities amenities at the same time
- Most efficient for specialized teaching and student support service personnel availability to students
- Shortest district wide schedule of implementation

Cons:

- Does not meet the aspirations of neighborhood schools
- Large elementary school
- Is more impactful on existing school sites
- May result in fewer play fields depending on site selected

Section F of this report "test fits" these conceptual approaches at each of the school sites.

Summary of Spaces

The Massachusetts School Building Authority (MSBA) uses a template for identifying the number and sizes of spaces for a “typical School”. The output is based on the projected enrollment of the school. This is broken down in elementary schools by: Lower Elementary Grades, K-2; and Upper Elementary Grades 3-6.

Since every community and school is unique with its’ curricula, delivery methodology and student support, the Summary of Spaces needs to be developed during the Feasibility Study phase of a proposed project to reflect that school’s criteria.

As of this Master Plan, the following Summaries were developed for purposes of comparison of different approaches. These summaries, without customization, identify an order of magnitude building size, in both net usable area and gross area or gross square feet (GSF).

The Summary of Spaces for each of the building sizes in in Appendix 3 of this report.

Three Approaches with Building Sizes

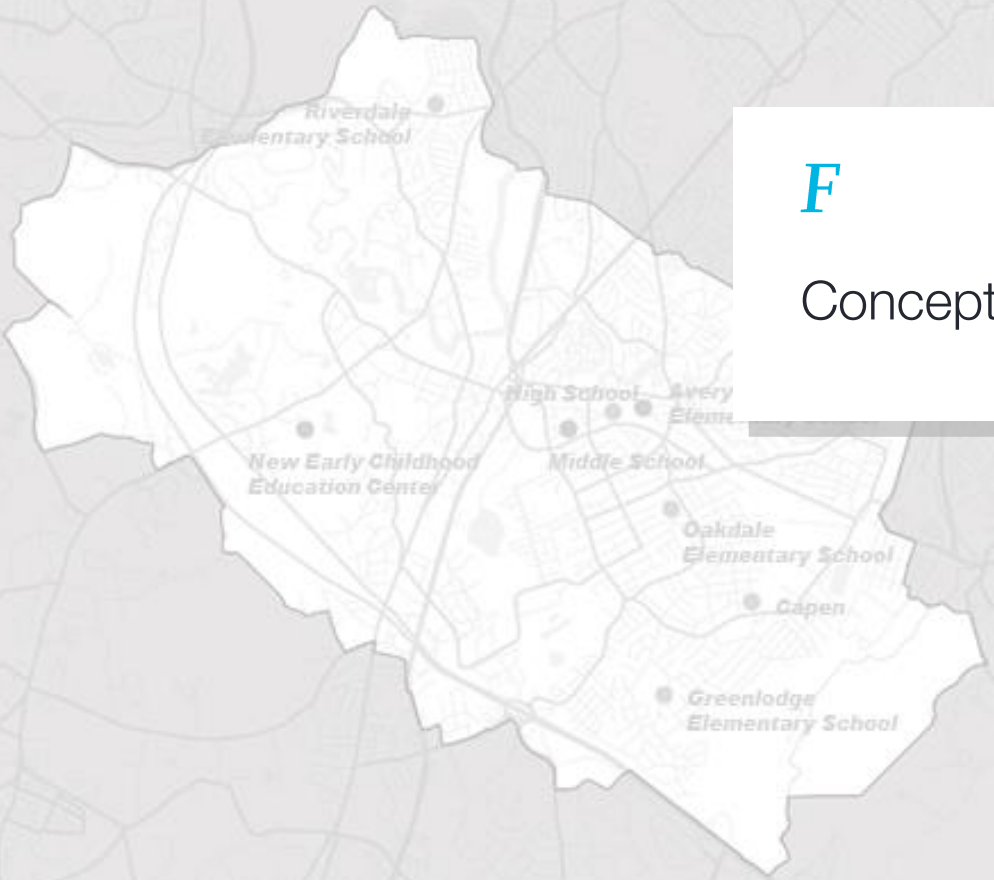
Baseline - NESDEC, 225 Students per Grade Level, Design Population 1,125 (Approaches A1, B1 and C1)

Total Population	Avery		Design Population		Sections	Classrooms	Building Size
1,125	345	=	780	=	7	34	

Potential - 250 students per Grade Level, Design Population = 1,250 (Approaches A2, B2 and C2)

Total Population	Avery		Design Population		Sections	Classrooms	Building Size
1,250	345	=	905	=	8	40	

Approach A1 - 3 Schools						
School 1	=	230	=	2	10	51,000
School 2	=	230	=	2	10	51,000
School 3	=	345	=	3	15	64,500
		805		7	35	166,500
Approach A2 - 3 Schools						
School 1	=	230	=	2	10	51,000
School 2	=	345	=	3	15	64,500
School 3	=	345	=	3	15	64,500
		920		8	40	129,000
Approach B1 - 2 Schools						
School 1	=	345	=	3	15	64,500
School 2	=	460	=	4	20	76,000
		805		7	35	140,500
Approach B2 - 2 Schools						
School 1	=	460	=	4	20	76,000
School 2	=	460	=	4	20	76,000
		920		8	40	152,000
Approach C1 - 1 School	=	782	=	7	34	114,500
Approach C2 - 1 School	=	920	=	8	40	132,000



F

Conceptual Approaches

SMMA

Section F

Conceptual Approaches

This Section F demonstrates “conceptual approach” descriptions and site diagrams for the Riverdale Elementary School, Oakdale Elementary School and Greenlodge Elementary School sites.

The work summarized in this section is to “test fit” the existing school sites to accommodate two different “design populations” for each of a three-school solution; a two-school solution or a one school solution. These approaches were described in Section E of this report, Space Needs Assessment. The site diagrams shown in this section are not intended to reflect a building design but rather an approximate first floor “footprint” of a likely multi-story building.

Assumptions used when developing the test fit diagrams:

1. Only the existing school sites were considered. No other Town-owned land was identified for consideration for a single or multiple new school(s)
2. Due to the lack of available swing space at existing school buildings, concept approaches shown in this Section are confined to the construction of a new building on the same site as the existing school. The existing school is intended to remain in operation during the construction of the new building. Following occupancy, the existing building would likely be down to make room for vehicular circulation, parking and play fields or the building and immediate site would be returned to the Town as surplus property.
3. The Capen school building and site were not considered for swing space or a new school site. This discussion is summarized in Section A of this report.
4. The Avery Elementary School is not in need of major repair replacement and was not part of the scope of this Master Plan.
5. Further investigations will be needed of each of the sites to confirm the viability to support a new school. These investigations will take place as part of part of the MSBA driven Feasibility Study. These investigations will include, but not be limited to wetlands, geotechnical, topography and survey, hazardous materials etc.

Conceptual Approaches by Site and Building Size

Riverdale Elementary School Site

- Site area: 5.75 acres
- Current building area: 37,098 gsf, one- and two-story building volumes

Approach A-1: Replace the current Riverdale School with a slightly larger school building using MSBA guidelines = Two Section School - design population of 230 students at approx. 51,000 gsf, or a Three Section School – design population of 345 students at approx. 64,500 gsf, using one- and two-story building volumes (site diagram below).

Approach A-2: This is similar to Approach A-1 –. This would have a similar site diagram but would increase in volume.

It has not been determined which school site receives the two-section school vs a three-section school**.**

1. A replacement (larger) building will fit on the current site, in the current building location +/-. This would require a swing space school.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Riverdale Elementary School Site (cont.)

Approach B-1: Replace the current Riverdale School with a larger school building using MSBA guidelines = Three Section School - design population of 345 students at approx. 64,500 gsf, or a four section School – design population of 460 students at approx. 76,000 gsf., two- and three-story building volumes (site diagram below).

It has not been determined is which school site receives the three-section school vs a four-section school.

Approach B-2: This is similar to Approach B-1 – except both schools would be Four Section Schools - design population of 460 students at approx. 76,000 gsf. This would have a similar site diagram but would increase in volume.

1. A replacement (larger) building will fit on the current site, in the current building location +/-. This would require a swing space school.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Riverdale Elementary School Site (cont.)

Approach C-1: Replace the current Riverdale School with a larger school building using MSBA guidelines = Seven Section School - design population of 782 students at approx. 114,500 gsf, two- and three-story building volumes (site diagram below).

Approach C-2: This would provide for a larger = Eight Section School - design population of 920 students at approx. 132,000 gsf. This would have a similar site diagram but would increase in volume.

1. A replacement (larger) building will fit on the current site, in the current building location +/-. This would require a swing space school.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Oakdale Elementary School Site

- Site area: 7.00 +/- acres
- Current building area: 53,524 gsf, one- and three-story building volumes

Approach A-1: Replace the current Oakdale School with a slightly larger school building using MSBA guidelines = two section school - design population of 230 students at approx. 51,000 gsf, or a three section school – design population of 345 students at approx. 64,500 gsf, using one- and two-story building volumes (site diagram below).

Approach A-2: This is similar to Approach A-1 –. This would have a similar site diagram but would increase in volume.

It has not been determined is which school site receives the two-section school vs a three-section school.

1. It is assumed that the original 1902 portion of the current Oakdale School building would remain and be returned to the Town for reuse. The 1951 addition would be demolished to accommodate vehicular circulation, parking or play fields.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Oakdale Elementary School Site (cont.)

Approach B-1: Replace the current Oakdale School with a larger school building using MSBA guidelines = three section school - design population of 345 students at approx. 64,500 gsf, or a four section school – design population of 460 students at approx. 76,000 gsf., two- and three-story building volumes (site diagram below).

It has not been determined is which school site receives the three-section school vs a four-section school.

Approach B-2: This is similar to Approach B-1 – except both schools would be four section schools - design population of 460 students at approx. 76,000 gsf. This would have a similar site diagram but would increase in volume.

Oakdale Elementary School Site (cont.)

Approach C-1: Replace the current Oakdale School with a larger school building using MSBA guidelines = seven section school - design population of 782 students at approx. 114,500 gsf, two- and three-story building volumes (site diagram below).

Approach C-2: This would provide for a larger = eight section school - design population of 920 students at approx. 132,000 gsf. This would have a similar site diagram but would increase in volume.

1. It is assumed that the original 1902 portion of the current Oakdale School building would remain and be returned to the Town for repurposing. The 1951 addition would be demolished to accommodate vehicular circulation, parking or play fields.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Greenlodge Elementary School Site

- Site area: 16 acres
- Current building area: 51,000 gsf, one and two-story building volumes

Approach A-1: Replace the current Oakdale School with a slightly larger school building using MSBA guidelines = two section school - design population of 230 students at approx. 51,000 gsf, or a three section school – design population of 345 students at approx. 64,500 gsf, using one- and two-story building volumes (site diagram below).

Approach A-2: This is similar to Approach A-1 –. This would have a similar site diagram but would increase in volume.

It has not been determined is which school site receives the two-section school vs a three-section school.

1. A replacement (larger) building will fit on the current site, in the current building location +/-. This would require a swing space school.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Greenlodge Elementary School Site (cont.)

Approach B-1: Replace the current Greenlodge School with a larger school building using MSBA guidelines = Three Section School - design population of 345 students at approx. 64,500 gsf, or a Four Section School – design population of 460 students at approx. 76,000 gsf., two- and three-story building volumes (site diagram below).

It has not been determined is which school site receives the three-section school vs a four-section school.

Approach B-2: This is similar to Approach B-1 – except both schools would be Four Section Schools - design population of 460 students at approx. 76,000 gsf. This would have a similar site diagram but would increase in volume.

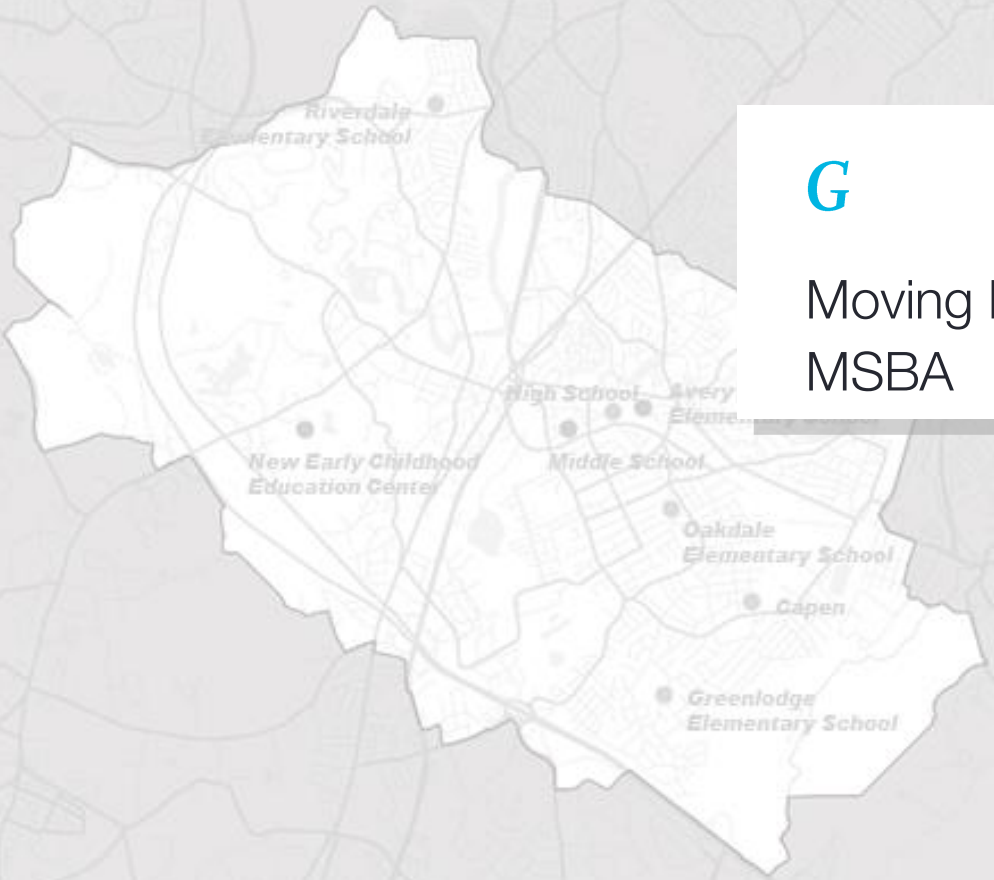
1. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.

Greenlodge Elementary School Site (cont.)

Approach C-1: Replace the current Greenlodge School with a larger school building using MSBA guidelines = Seven Section School - design population of 782 students at approx. 114,500 gsf, two- and three-story building volumes (site diagram below).

Approach C-2: This would provide for a larger = Eight Section School - design population of 920 students at approx. 132,000 gsf. This would have a similar site diagram but would increase in volume.

1. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.
2. A replacement (larger) building will fit on the current site, either partially or fully on the playfield and playground areas. This would allow the existing school to remain in operation during the construction of the new building.



G

Moving Forward with the MSBA

SMMA

Section G

Moving Forward with the Massachusetts School Building Authority (MSBA)

The MSBA Process

Engagement with the MSBA is formally initiated through the submission of an SOI, followed by an Eligibility Period and a Feasibility Study. This section describes those initial steps in detail, after which a prescriptive design and construction process follows.

Statement of Interest Process (SOI)

1. Submitting an SOI is the first critical step in the MSBA's program to partially fund the construction, renovation, addition or repair of municipally owned school facilities located in cities, towns and regional school districts.
2. The SOI allows districts to inform the MSBA about deficiencies that may exist in a local school facility and how those deficiencies inhibit the delivery of the district's educational program.
3. The district either submits under the Core (Capital) Program or the Accelerated Repairs program.
4. The SOI must identify one school for the Core Program, but the District or MSBA may request to include all three schools in the evaluation. (Even if multiple schools are studied, the one school identified must be improved or replaced through the Core Program).

MSBA Statement of Interest (SOI) Priorities

The SOI submitted by the District must identify which of the following SOI Priorities are relevant for their project.

1. Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children;
2. Elimination of existing severe overcrowding;
3. Prevention of the loss of accreditation;
4. Prevention of severe overcrowding expected to result from increased enrollments, which must be substantiated;
5. Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility;
6. Short term enrollment growth;
7. Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements; and
8. Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

Of the seven SOI Priorities, the Dedham Public Schools intends to submit under the two priorities (underlined above), Priorities Five and Seven.

MSBA Statement of Interest (SOI) Timeframe (Core Program)

January 2020: SOI period opened

April 8, 2020: SOI period closes for the core program

- Review SOI for Completeness
- Review SOI and accompanying documents for content
- Conduct Senior study visits if required
- Recommend SOIs for initiation into Eligibility Period

Typically, MSBA releases eligible Accelerated Repair projects in June/July and Core Program (CP) Projects in December.

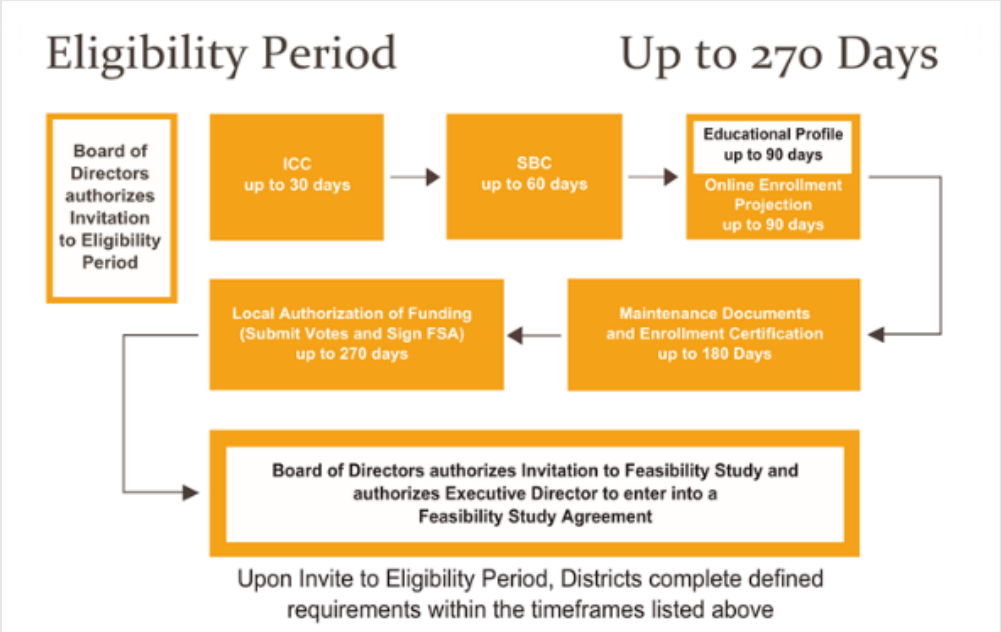
MSBA Eligibility Period (Module 1)

After acceptance into the Core Program, the District must successfully complete the following steps before they are authorized to commence with the Feasibility Study. The District has up to 10 months to complete these steps.

- Initial Compliance Certificate
- Form the School Building Committee

In place with the permanent SBRC

1. Complete educational profile
2. Submit District's Maintenance Practices
3. Certify Design Enrollment
4. VOTE the Feasibility Study Phase funding
5. Execute Feasibility Study Agreement (FSA)
6. Receive authorization to begin Feasibility Study
7. Process has up to 10 Months to complete



Upon Invite to Eligibility Period, Districts complete defined requirements within the timeframes listed above

MSBA Feasibility Study (Module 3)

With the Owner's Project Manager and Designer in place, the District and its team collaborate with the MSBA to document their educational program / initial space summary, document existing conditions, develop and evaluate alternatives, and recommend the most cost effective and educationally appropriate preferred solution.

1. Test alternative sites, site solutions
2. Possibly explore alternative school sizes (populations)
3. Select a preferred solution
4. At this stage, the project becomes reimbursable

After the preferred solution (one site, one design/construction approach) is selected by the District and all local approvals are in place, the District and design team represent the preferred solution at the Facilities Assessment Subcommittee (FAS). The FAS makes their recommendation to the MSBA Board of Directors and the project then commences with Schematic Design of the preferred solution.

Schematic Design and Project Funding Agreement (Modules 4 and 5)

Following the Feasibility Study and the approval of the preferred solution by the MSBA Board of Directors, the District and design team commence with the design of that preferred solution. It is at the conclusion of Schematic Design that the first detailed cost estimate is available that is used to set the project budget for the remainder of the project lifetime. The Schematic Design, its program and budget must be approved by the District and Community and put forward to the MSBA Board of Directors once again. The MSBA uses this program and budget to finalize their Scope and Budget and Project Funding Agreements. At this point in time, the total reimbursable amount to the Town is known.

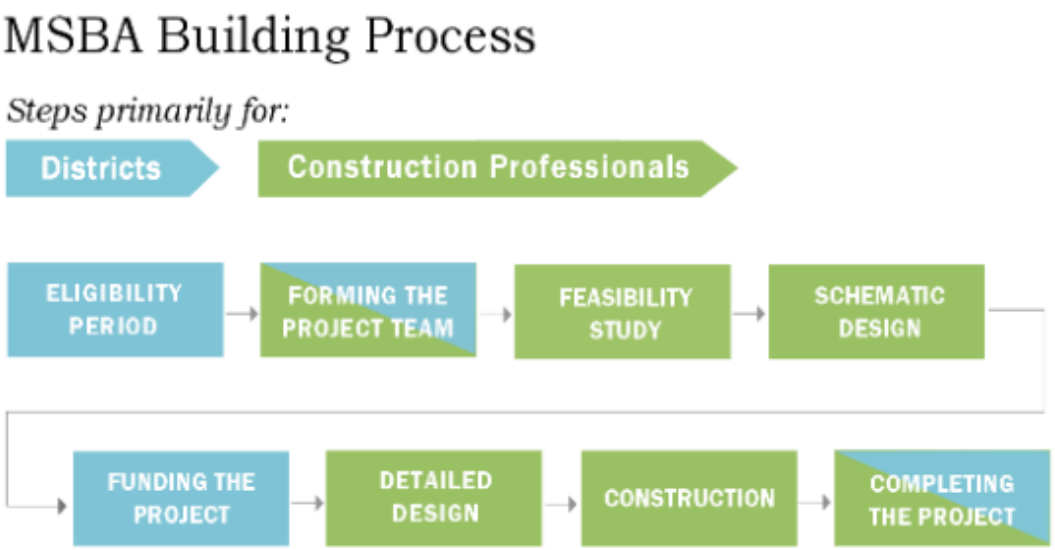
After all votes, approvals and funding (for Detailed Design through Construction) have been obtained, the project can move forward into Detailed Design and Construction.

Complete Grant and Implementation Timeframe

The following outline of phases and times represents an average proposed school building project that is part of the Massachusetts School Building Authority (MSBA) Capital Grant Program.

Statement of Interest (SOI) Process:	12 months
Eligibility Period:	10 months
Feasibility Study:	9 months
Schematic Design:	6 months
Development Design:	5 months
Construction Documents:	8 months
Construction:	24 months
Close Out:	3 months
Total:	**77 months**[1] *(all timeframes are approximate)*

[1] *(6.5 years) - Assumes an "Invitation" based on the SOI initial submission*



SOI Priorities – Oakdale

Based on the findings of the Master Plan to date, as well as the school's ranking in the MSBA Facilities Assessment (being in a higher priority category than Riverdale and Greenlodge), it is recommended to submit the SOI with the Oakdale School identified as that which should be substantially repaired or replaced through the Core Program.

The following section identifies the applicable MSBA SOI Priorities with relevant information from the Oakdale School existing conditions.

Priority Five - Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility:

- Obsolete mechanical heating and ventilation system, no air conditioning (frequently too hot / too cold for teaching and learning)

  From **The EMG 2016 Report**:

  - *The original three-story1902 building has a central steam boiler connected to a passive steam heating system and steam radiators. The building has steam heated Air Handler Units (AHUs) that appear to bring in fresh outdoor air to mix with internally heated air to classrooms.*
  - *The 1952 wing has a central steam dual boiler system connected to unit ventilators and radiators.*
  - *Supplemental units in the 1902 building include fan-driven exhaust ducts connected to the chimney to pull air up through the building and multiple unit heaters*
  - *Supplemental units in the 1952 wing include vent fans and unit heaters*
  - *Supplemental units in the 1960 end additions include electric baseboard and unit ventilators*

- Inadequate electrical systems *(see EMG Report)*
- Window replacement needed - all windows are listed as fair to poor in the EMG report. All but those in the basement of the 1092 building are singe glazed
- Lack of handicapped access to significant parts of the building and other accessibility issues
    - Door widths and clearances
    - Door hardware
    - Toilet fixtures and configurations
    - Vertical access to all teaching and learning spaces
    - Signage
    - Stair and handrail configurations

Stair connecting the 1902 original building with the 1951 and 1960 additions, no elevator or ramp connection

The 2016 EMG Report lists the following items as the most significant short term and modernization recommendations:

- *Replace tile flooring in the original multi-story building*
- *Install backflow preventers on the two town water supply lines*
- *Install additional exterior lighting for safety and security*
- *Install a complete fire suppression system*
- *Replace unit ventilators in classrooms based on life cycle*
- *Replace all windows*
- *Replace boilers when they reach the end of their useful life*
- *Replace lighting fixtures based on life cycle*
- *Maintain courtyard pavement*
- *Cut and patch pavement on the west side*
- *Modernize obsolete electrical panels*
- *Replace failed fuel oil tank monitoring and alarm systems*
- *Install fire-rated interior doors*
- *Replace exterior doors as they pass the end of their useful life*
- *Install a video monitoring system*
- *Replace original iron water supply piping with copper*
- *Heat balancing and control system upgrade*

- *When at the end of their useful life, replace the underground No.2 fuel oil tanks*
- *Repair and paint plaster ceilings and walls in the original multi-story building*
- *The building and inhabitants are not protected by a fire suppression system. Due to its construction date, the facility is most likely "grandfathered" by code and the installation of fire sprinklers not required until major renovations are performed. Regardless of when or if installation of facility-wide fire suppression is required by the governing municipality, EMG recommends a retrofit be performed. A facility-wide fire suppression retrofit is recommended for additional safety and security and to reduce liability and the cost of insurance. A budgetary cost is included.*

The 2016 EMG Report also includes:

SPECIAL ISSUES AND FOLLOW-UP RECOMMENDATIONS

As part of the FCA, a limited assessment of accessible areas of the building(s) was performed to determine the presence of mold, conditions conducive to mold growth, and/or evidence of moisture. Property personnel were interviewed concerning any known or suspected mold, elevated relative humidity, water intrusion, or mildew-like odors. Sampling is not a part of this assessment.

Areas of suspect mold growth were observed along the masonry structure in the following areas:

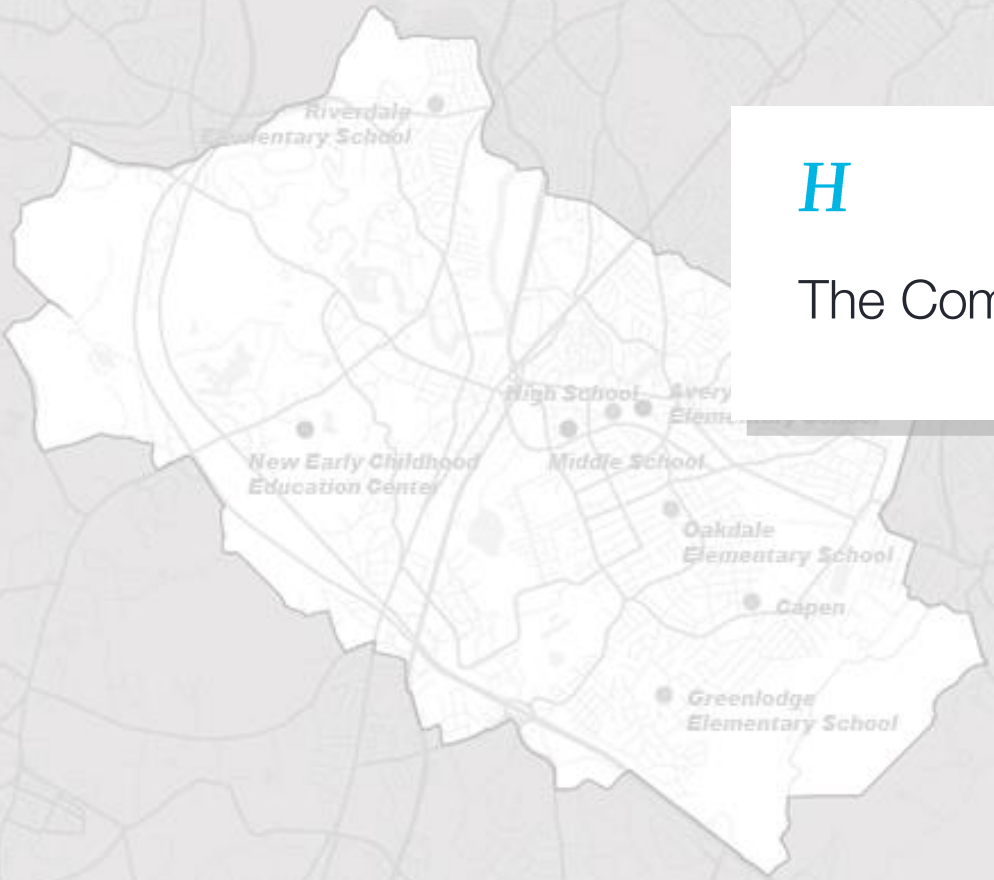
- *Outdoor alley between rooms 20 and 22, low on the walls and foundation*
- *Outdoor corner indent near the boiler room door where damaged gutter drains (north of classroom 14). Mold is low on the brick wall and concrete foundation.*
- *Outdoor wall near classrooms 21 and 22. Mold is on the brick wall and concrete foundation.*

The mold appears to be the result of condensation from a stack of plywood in an area with limited ventilation. Exposure to mold or mold producing materials can be hazardous and should be avoided. The presence of mold does not necessarily constitute an exposure. This assessment does not constitute a comprehensive mold survey of the Project, and any conclusions are based solely on conditions readily observable in accessed areas.

Exterior mold occurs in the alley between rooms 20 and 22. Since mold is not evident in interior areas of the Project, there does not appear to be a significant health threat to the occupants of the Project. The affected exterior materials should be cleaned or removed as part of the property's routine maintenance program. The cost of this work is not included in the cost tables.

Priority Seven - Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements:

- Typical classrooms in the original building are significantly undersized, most others undersized
- No cafeteria (meals in classrooms)
- Undersized gym & library/media center
- Numerous issues with building conditions that impede teaching and learning:
    - antiquated lighting
    - control of the temperature in classrooms and other occupied spaces
    - ventilation
    - acoustics - window single glazing; room materials and engineering system noise all contribute to higher than desirable background noise levels
- Issues related to safe and secure learning environments
    - Entry into the school is dependent on a phone/camera. The main office is located in a different portion of the building with no view of the accessible entrance. This means there is no control of a person once they are "buzzed in".
    - There is no way of automatically locking down portions of the building in a lock down condition.
- Need for additional Special Education spaces



H

The Community Process

SMMA

Section H

The Community Process, Summary of Community Meetings

SMMA, in collaboration with the School Department, School Committee and Dedham School Building Rehabilitation Committee, conducted a series of community forums, a Visioning workshop and listening events. (Note: PowerPoint presentations from each of the Community Meetings can be found in Appendix 2 of this report). A summary of each meeting/session has been provided below.

December 11, 2018

Dedham School Committee & School Rehabilitation Committee Joint Meeting

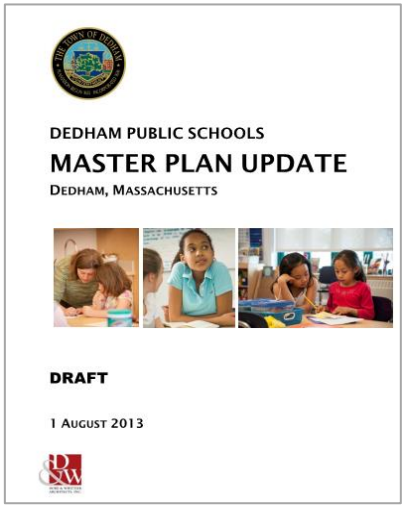
The December meeting was a kick-off to the Master Plan Update. It was an introduction to SMMA, the principal investigators, our portfolio of school district Master Plans, and our design experience with addition and renovation school projects and new school projects. The presentation included:

- Work done to date including data collection and review of previous studies
- Review of MSBA data Dedham Schools
- Educational Facility Effectiveness of schools
- Building Conditions of schools
- First review of classroom needs vs. classrooms available
- Initial review of district options

June 5, 2019

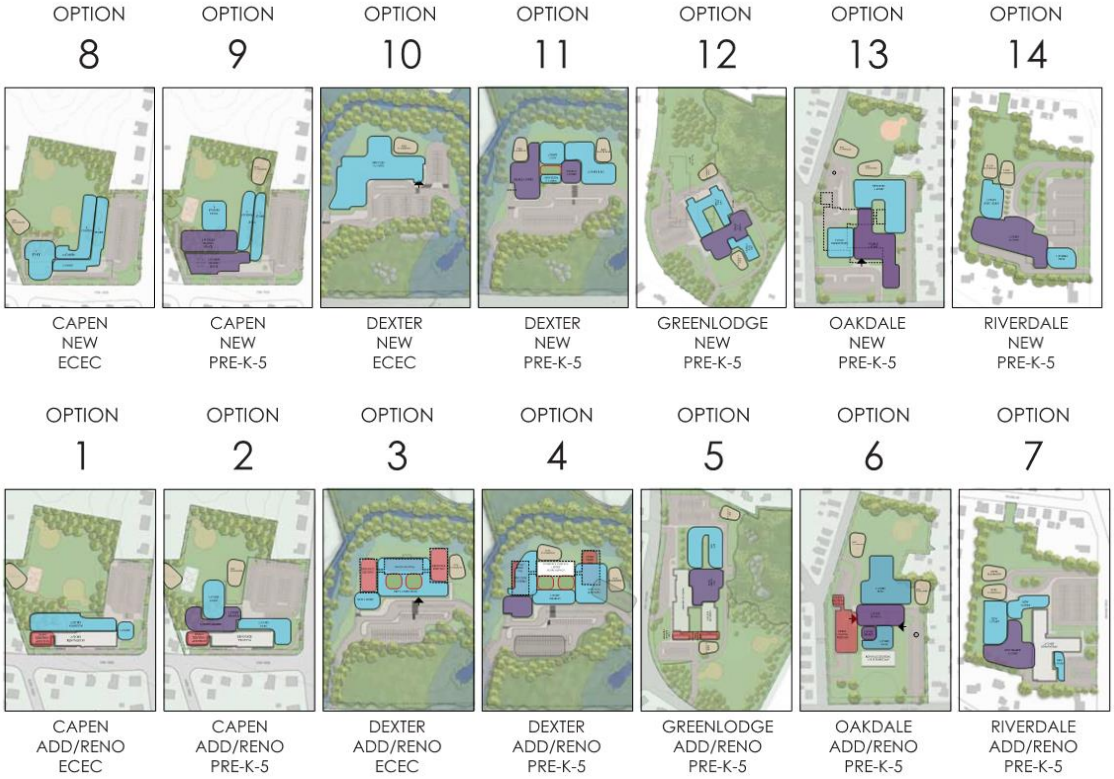
Community Kickoff Meeting

The June presentation included a review of prior school studies followed by SMMA's findings.



2013 Master Plan Update,
by Dore and Whittier Architects

2015 ECEC Feasibility Study, by KBA Architects



2016 Facility Condition Assessment, by the EMG Corp.

SMMA Reported Findings

1. Findings from the Massachusetts School Building Authority (MSBA) – 2016 School Survey Report
2. Review of the Capen building and site conditions and discussion of future (re)use
3. Dedham High School and its' many uses including the many District uses, beyond those of the high school academics

    i DPS Central Administration including Business Office

    ii DPS Facilities Department use

    iii DPS Commissary Kitchen for all schools

    iv Youth Commission Offices

    v Athletics and Fitness Center

4. The high school is 307,300 square feet. A new high school using the MSBA Guidelines would be in the range of 159,000 GSF
5. The Educational Facilities Effectiveness of each school – see Section D of this report
6. 2018-19 Enrollment Projections
   (note more recent projections are discussed in Section C)

October 15, 22 and 23, 2019

Individual School Update and Input Gathering Meetings

In mid-October, 2019, individual school update and input gathering meetings were held at each of Riverdale, Oakdale and Greenlodge Elementary Schools.

The agenda included:

1. Background on each School Facility
2. SMMA discussion on:

    i Educational Facility Assessments

    ii Enrollment Analysis

    iii Space needs in the future for the anticipated population enrollments

    iv The MSBA process moving forward towards a Capital Grant application

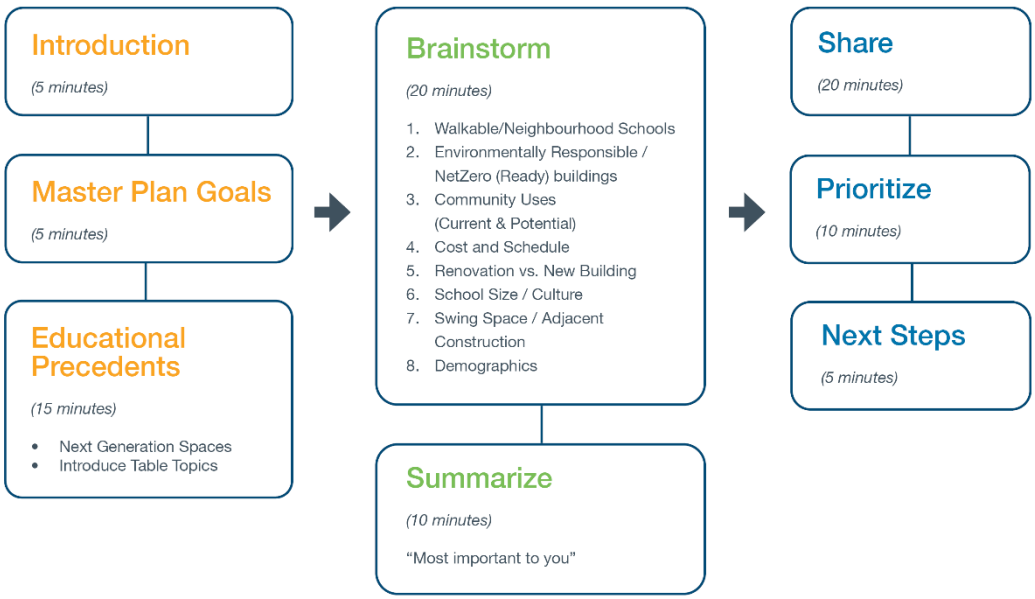
3. Community Engagement and Input – much of the meeting was devoted to the School Department and Master Plan team listening to the concerns of the school community and answering questions of attendees. Some of the issues discussed included: District demographics; neighborhood schools; schedule; school size and culture, etc. These discussions set the framework for the December Community Workshop and January "Test Fit" exercises.

December 9, 2019

Dedham Public Schools Community Workshop #2

The December workshop included two primary components:

1. Environments for Learning: A presentation of photos of new and renovated school spaces that represent quality environments for delivering next generation learning. Schools shown are from Massachusetts and around the country.
2. Visioning: A workshop where attendees worked collaboratively on a range of issues / table topics specific to Dedham schools and the opportunities and challenges ahead for implementing one or multiple new or renovated schools.



Workshop Format
Community Workshop #2 Agenda

In more detail, the meeting included the following information:

Introduction and Master Plan Goals – the School Committee, School Building Rehabilitation Committee (SBRC) and School Administration had previously identified their collective goals for the Master Plan project. Attendees were asked to keep these in mind as they worked on the Table Topics.

Goals

- Comprehensively rebuild or replace Oakdale, Riverdale and Greenlodge Elementary Schools
- Create a plan for schools that will meet the needs of all our students in the future and have the flexibility to accommodate them
- Develop a master plan where the elementary schools can serve the community well into the future with flexibility to accommodate changing educational needs

- Provide equity of facilities for all elementary children within the town
- To the extent possible, plan for school(s) that foster a small school / neighborhood environment and feeling
- Develop project(s) that are fiscally responsible and politically viable for the community

The following were also presented and opened for discussion

- The timeline for the completion of the Master Plan
- Development of a Statement of Interest (SOI) and submission to the Massachusetts School Building Authority (MSBA)
- Potential timeline for the design and construction of a or multiple school capital project(s). This is presented in years without tying to a calendar.

Educational Precedents – During the three sessions of the Community Meetings conducted in October 2019, attendees expressed an interest in seeing images of what new schools look like today. SMMA presented a slide show of renovated and new schools from both Massachusetts and across the country.

The focus was to understand show how buildings can not only embrace new teaching and learning methodologies but, in many cases, enhance experiences in the buildings.
Areas of presentation included:

- Classroom arrangements and adjacencies that enhance the 21st Century Skills:
  - Communication
  - Collaboration
  - Creativity
  - Critical thinking and problem solving
- Flexible, light weight and ergonomic student and teacher furniture
- The Third Teacher – the buildings' ability act as a teaching tool by showcasing how it is constructed; sustainable design components, graphics that are both aesthetic and instructional
- How learning commons can enhance classroom experiences
- Small group and pull over spaces that can be used by individuals to varying sizes of small groups for Special education, EL, differentiated and personalized learning
- The advantages of interior transparency
- Introduction of large amounts of natural light
- Fun spaces in which to learn
- Outdoor learning spaces
- etc.

A workshop format focused around eight (8) Table Topics – following a brief introduction of each table topic, attendees chose which topic they were most interested in.

- The charge was to "brainstorm" thoughts, ideas and concerns on the topic, no barriers. All thoughts were captured on large format flip chart paper and included in this report.
- Tables were asked to prioritize the thoughts and list three +/- with their highest priority. Also capture on flip chart paper.
- Each table presented, to the entire group, their prioritized list
- Final exercise – each person was given three sticky dots: a green – highest priority; yellow – next highest and red – third highest priority. All went on a "gallery walk" to identify individual priorities. These flip chart pages are also included in this report.

Table Topics Workshop

Topic 1: Walkable / Neighborhood Schools (do we want to insert graphics for each Topic – the slide introducing the topic from the PPT)

Topic 2: Environmentally Responsible / Net Zero (Ready)

Topic 3: Community Uses (Current / Potential)

Topic 4: Cost and Schedule

Topic 5: Renovation vs. New Building

Topic 6: School Size / Culture

Topic 7: Swing Space / Adjacent Construction

Topic 8: Demographics

Participants prioritized and presented their three top issues, take ways or recommendations from each table.

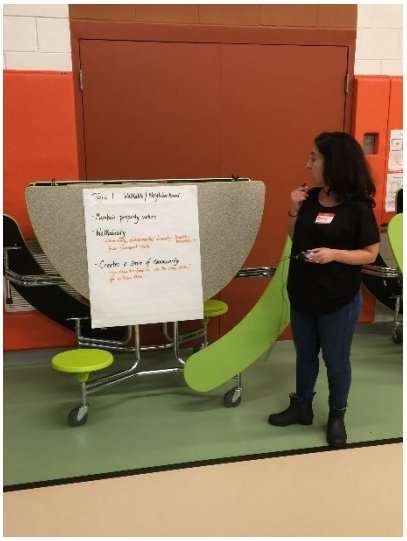
Topic 1: Walkable/Neighborhood

Prioritized list of brainstorming thoughts, ideas and concerns

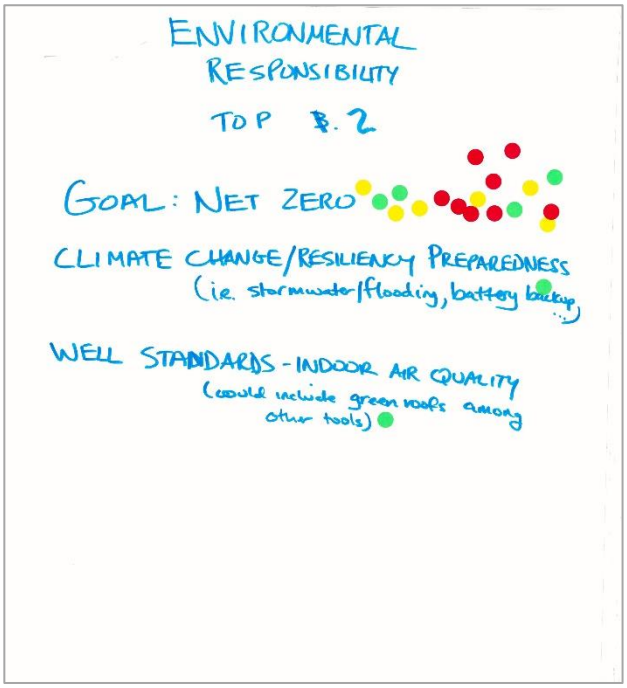
1. Maintain property values
2. Walkability
   - Community, environmentally friendly, health benefits and fewer transport costs
3. Creates a sense of community
   - You know the families, see the same folks/get to know them

Full list of brainstorming thoughts, ideas and concerns

- Cozy, warm environment
- Neighborhood school good for property values
- Maintain district policies and parent preference on class six (small)
- Walkability (property values)
- Town funding for 3 schools (equity for kids…21 years out for last neighborhood school?
- Creates sense of community
  - You "know" the kids around the neighborhood
- Environmentally friendly, good exercise (walking)
- School transport is expensive
- Traffic in Neighborhoods (not more)
- Bridge St/Riverdale – 2020 sidewalks & bike lanes (leverage state funding)
- Invest in good elementary schools (e.g. ECEC – grade schools…needs to feel "same")
  - Dedham is a desirable town
- Parking in the neighborhood (vs ECEC issue)
- Flexibility for future growth (limited with consolidation)



Topic 2: Environmental Responsibility/Net Zero (Ready)

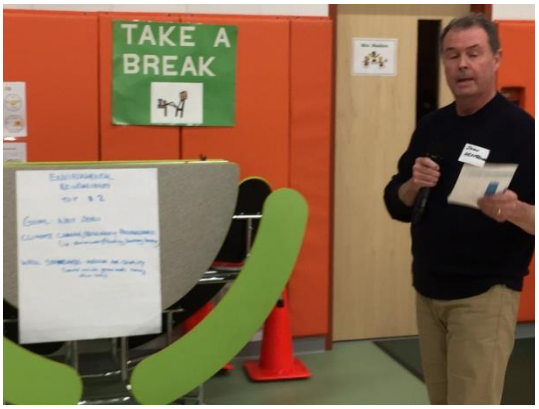


Prioritized list of brainstorming thoughts, ideas and concerns

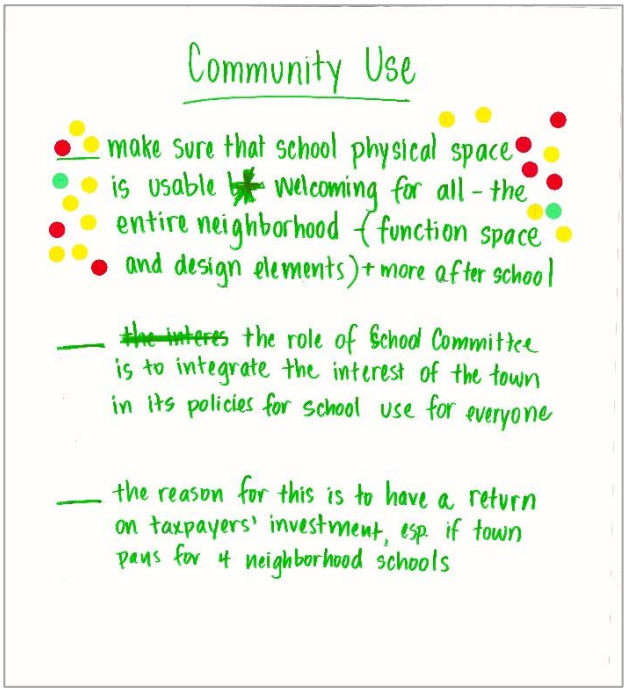
1. Goal: Net Zero
2. Climate change/resiliency preparedness (i.e. stormwater/flooding, battery backup etc.).
3. Well standards – indoor air quality (could include green roofs among other tools).

Full list of brainstorming thoughts, ideas and concerns

- Stormwater Management / Plan For Climate Change
- Greywater collection
- Solar/Electric – no gas
    - Explore geothermal, wind, battery backup
    - Green canopies
- EV charging stations
- Green roofs
- Efficient drop-off and pickup design and policy to decrease idling
- Smart lighting (adjust automatically to sunlight)
- Net-Zero or better – GOAL
- WELL standards indoor air quality systems



Topic 3: Community Use

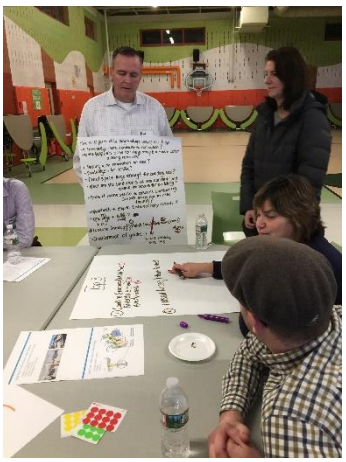


Prioritized list of brainstorming thoughts, ideas and concerns

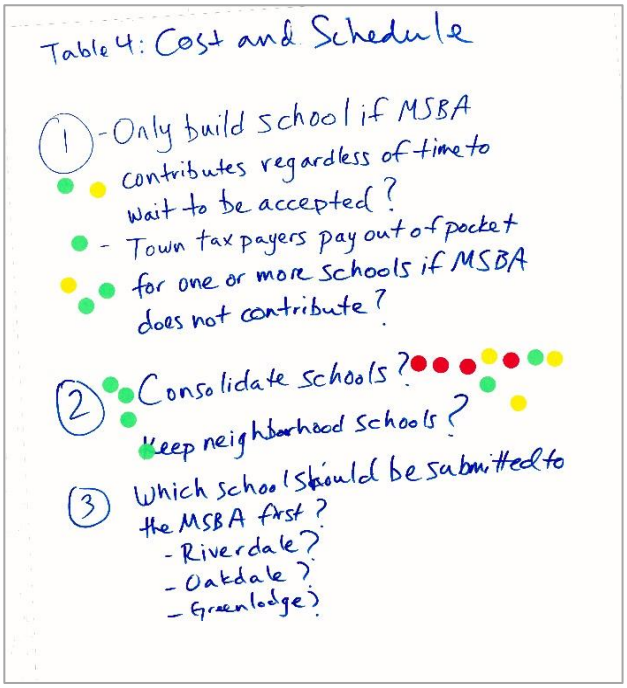
1. Make sure that school physical space is usable, welcoming for all – the entire neighborhood (function space and design elements) + more after school.
2. The role of School Committee is to integrate the interest of the town in its policies for school use for everyone.
3. The reason for this is to have a return on taxpayers' investment, especially if town pays for 4 neighborhood schools.

Full list of brainstorming thoughts, ideas and concerns

- Additional uses for school use
  - Girl scouts, Boy scouts
  - Evening classes
- An adult education programs
- Consider current and possible uses of gym
- After school options enhanced like music in the school buildings and arts, athletics, maker spaces – more spaces for more variety in after school programming (+before school)
- Inter-generational activities and separate areas for inter-generational e.g. the chess and plants programs.
- Use the spaces as much as you can
- Schools are accessible and open to multi-use
- Schools that belong to everyone in the neighborhood and not just the kids in the neighborhood
- Design should be welcoming to people after hours
- Breaking down silos of town departments for multi-use of school (=town) property
- Better outreach to community members who don't have kids
- Community gardens
- Community walking paths
- Examine school district policies to encourage neighborhood use (custodial fee paid by out of town agencies)
- School committee responds to the interests of the entire community



Topic 4: Cost and Schedule



Prioritized list of brainstorming thoughts, ideas and concerns

1. Only build school if MSBA
   - Contributes regardless of time to wait to be accepted.?
   - Town taxpayers pay out of pocket for one or more schools if MSBA does not contribute?
2. Consolidate schools?
   - Keep neighborhood schools?
3. Which school should be submitted to the MSBA first?
   - Riverdale?
   - Oakdale?
   - Greenlodge?

Full list of brainstorming thoughts, ideas and concerns

- Neighborhood schools are high priority
- Public safety building may preclude town funded building
- Who pays what?
- Concern about qualifying for MSBA funding… if we keep area schools w/pop <300 students
- Oakdale has most available space
- Concern about overlapping costs of multiple buildings
- Robin Reyes fund help with funding
- State funding w/their rules vs Town funding and our rules and plans

Topic 5: Renovation vs New Building

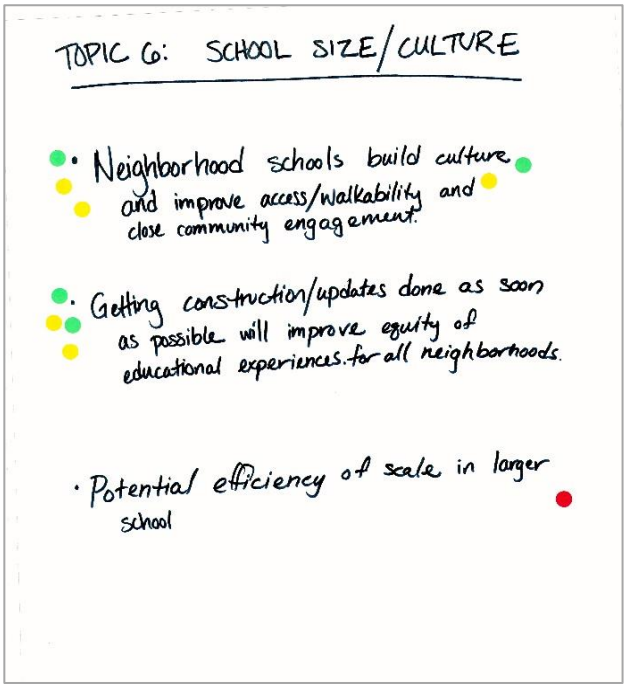
Prioritized list of brainstorming thoughts, ideas and concerns

1. Combine Greenlodge/Oakdale (new) (1)
    - Riverdale (new) (2)
    - Avery (exists) (3)
    - Close 1 existing school
2. One MSBA funded (new) / one town-funded (reno) Greenlodge to speed up timeline of completion
3. Grade configuration changes
    - 1-4
    - 5-6-7
    - 8-12

Full list of brainstorming thoughts, ideas and concerns

- New vs Old parts of buildings – always playing catch up
- Is Greenlodge more conducive to renovation?
- Do the footprints allow for new being built while other building remains?
- Parking with renovation or new?
- Footbridges for traffic?
- Field space large enough for building new?
- What are the conditions of the current land around the schools for building?
- Does it make sense to discuss combining schools so as not to risk funding?
- Opportunity to drop to 3 elementary schools?
- One Large & Avery?
- Combine
    - Greenlodge\Oakdale (new)
    - Oakdale (new)/ Riverdale(new)
    - Avery
- Consideration of grades
    - 1-4
    - 5-6-7 MS
    - 8-12 HS
- One MSBA funded / One Town funded – quicker timeline

Topic 6: School Size/Culture



Prioritized list of brainstorming thoughts, ideas and concerns

1. Neighborhood schools build culture and improve access/walkability and close community engagement.
2. Getting construction/updates done as soon as possible will improve equity of educational experiences for all neighborhoods.
3. Potential efficiency of scale in larger school

Full list of brainstorming thoughts, ideas and concerns

Smaller School

Advantage

- Proximity to neighborhood/walkability
- School pride / culture
- Knowing every kid / relationship
- Relationships with parents

Disadvantage

- Project timeline
- Cost harder to adjust to changing demographics / redistricting
- Deciding order of renovation/rebuilding

Larger School

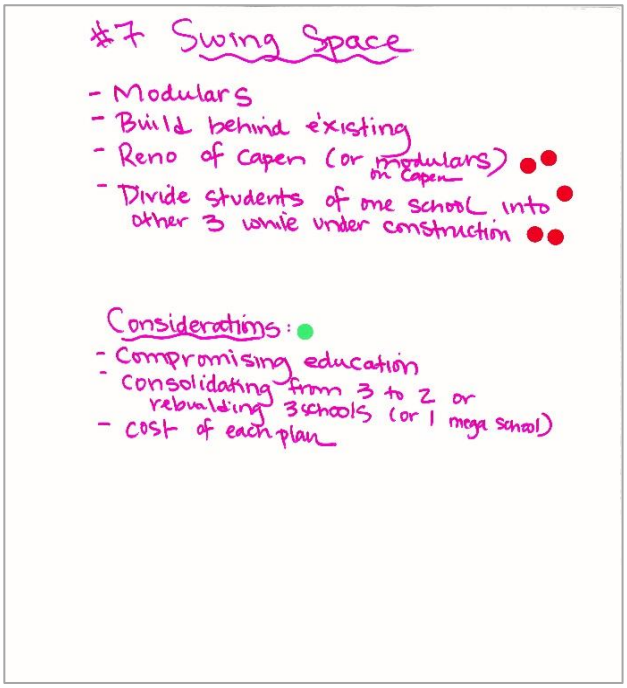
Advantages

- Done faster
- Less money ($)
- Flexible spaces?
- Professional support

Disadvantages

- Distance
- Traffic/Cost
- Fewer walking
- Less community

Topic 7: Swing Space



Prioritized list of brainstorming thoughts, ideas and concerns

1. Swing Space
    - Modulars
    - Build behind existing
    - Reno of Capen (or modulars on Capen)
    - Divide students of one school into other 3 while under construction
2. Considerations
    - Compromising education
    - Consolidating from 3 to 2 or rebuilding 3 schools (or 1 mega school)
    - Cost of each plan

Full list of brainstorming thoughts, ideas and concerns

Questions

- Is there space on each of the existing school's property to build while keeping students in the school?
- Is there space to set-up modulars?
- Would we reno Capen to use as swing space?
- If consolidating into 2 schools, would student body be split into swing space?

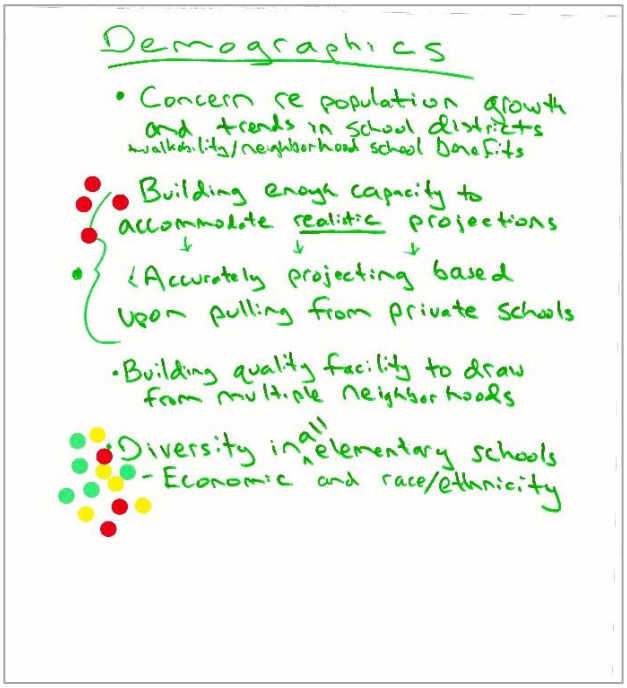
Modulars are not reimbursed by MSBA Reno of Capen could be cost or more of modulars.

- Modulars
- Build behind existing
- Reno of capen (or modulars on capen)
- Divide students of one school into other 3 schools while under construction

Options for Swing Space

- Modulars on site
- New construction on site while stay in old building
- Reno of Capen-swing
- Modular school on alternate site-swing
- Split students into other schools

Topic 8: Demographics



Prioritized list of brainstorming thoughts, ideas and concerns

1. Concern RE population growth and trends in school districts walkability/neighborhood school benefits
2. Building enough capacity to accommodate realistic projections
    - Accurately projection based upon pulling from private schools
3. Building quality facility to draw from multiple neighborhoods
4. Diversity in all elementary schools
    - Economic and race/ethnicity

Full list of brainstorming thoughts, ideas and concerns

Considerations

- Compromising education
- Consolidating from 3 to 2 or rebuilding 3 schools (or 1 mega school)
- Cost of each plan

January 13, 2020

Test Fitting – Three Existing School Sites

The final workshop held in January 2020 focused on the three elementary school sites and their ability to accommodate: (see Section F for all Conceptual Approaches explored)

- A new building of varying building sizes and populations were explored for each school site
- Arrival and dismissal drive lanes for busses and parents
- Parking for staff, visitors and handicapped
- Age appropriate playgrounds
- Playfields to the extent possible

I

Costs Discussion

SMMA

Section I

Costs Discussion

Probable costs are a function of a number of factors including but not limited to construction schedule, market conditions, complexity, and what is known as the project delivery method. This Section is intended to capture factors and decisions that can impact costs at a very high level and to provide an understanding of design and construction cost vocabulary.

Cost Considerations

Construction Schedule, Escalation and Market Conditions

The **Construction Schedule** is important in order to determine the escalation that must be applied to the present-day cost estimate and to inform the construction contractor's level of effort. A compressed schedule may require overtime or weekend work which may cause the contractor to submit a higher bid. A schedule that is very long may also cause higher bid costs because the management and oversight for that contract is drawn out for a longer period of time. The project team will advise the Town of what construction duration may be anticipated based on the size and nature of the project and will discuss schedule impact and influences with the project team in detail after the scope is defined.

Escalation, over the past few years, escalation has run in the range of 4% annually. This escalated pricing should be applied to the mid-point of construction and is evaluated with each design submission. The closer the project gets to the bid date, the lower the escalation will be.

Market Conditions are an important influence to construction costs. When the construction industry is saturated, it may be harder to find labor which can result in higher costs, material costs may be influenced by availability and the political climate or tariffs. The professional cost estimators take these factors into consideration but cannot predict what will happen.

Project Complexity

The project complexity can have an impact on the construction cost in many ways. Phased projects may have schedule/delay risks because they are relying on being able to move from one area to the next. Renovation projects may have schedule/delay and scope risks depending on the amount of information that the design team was able to collect on the existing conditions. A more recent complexity is the endeavor to ask for Passive House and Netzero buildings. These sustainability goals are raising the bar for workmanship and quality control during construction that contractors may, due to their current "novelty," feel the need to increase bids for to protect themselves from risk.

Construction Delivery Method

There are two options for MSBA construction contract procurement in Massachusetts. They are referred to as Chapter 149 and Chapter 149a which is a reference back to the section of the Massachusetts General Law that defines the two methods.

A **Chapter 149a** project is a "Construction Manager at Risk" delivery method, which means that you share project cost/construction risk with the construction contractor / construction

manager. This is done by bringing a construction manager on board during the design phase (typically after Schematic Design is complete but before Design Development documents are complete). The contractor provides input during the design process that should reduce change orders during construction, therefore reducing risk to the town. They can also provide advice on construction alternatives that may result in cost savings. This method is typically selected for occupied or phased renovation or addition/renovation projects because of their complexity. It allows for early start of construction for some phases and can expedite a project schedule. Due to this early involvement, and the fact that the contractor is to submit a Guaranteed Maximum Price to construct the project before the design is complete, this procurement method has a higher cost. In an ideal scenario, these costs may be offset by being able to complete the project more quickly and with fewer change orders.

A **Chapter 149** project is a "design-bid-build" delivery method which means that you have completed the design documents entirely before putting the project out for contractors to bid. After the bid, the *build* commences. Using this delivery method is known to have less upfront costs because you are not paying for the involvement and risk of the Construction Manager, but the Town does assume more risk for change orders. It becomes of high importance to have high quality design documents for bid to reduce this risk.

There are many pros and cons to consider when selecting your construction delivery method and this is typically not decided until the project has been defined in the Feasibility Study, at which time the project team will weigh the two options in much more detail.

Vocabulary

Construction Costs vs, Project Costs

Construction Costs refers to the bid / contract amount paid to the contractor or Construction Manager - "the cost of bricks and mortar".

Project Cost refers to the construction cost and includes other necessary related and Soft Costs needed for a complete project. It includes items such as:

- Furnishings and Equipment
- Owners Project Management fees
- Design fees including architects, engineers, specialty consultants, cost estimating, site survey, geotechnical and many others.
- Note that debt service and other financial costs are not included in the Project Costs

Contingency

Contingencies may appear in estimates in as many as three places. The construction cost estimate that will include an "estimating" or "design contingency" that is high at the beginning of the design phase (typically 15% in Feasibility and Schematic Design) and decreases to 0% when the design documents are complete. This contingency is intended to cover unknowns during the design process. As the design becomes more defined and detailed, the unknowns are eliminated. "Owner's contingency" is there to cover change orders during construction. Construction Manager (CM) contingency is to cover the CM for unknowns when they submit their bid for the project.

All of these factors will be weighed by your project team, discussed with you, and will be used to inform the project estimate.

Riverdale
Elementary School
High School
Avery
Eleme
New Early Childhood
Education Center
Middle School
Oakdale
Elementary School
Capen
Greenlodge
Elementary School

Appendices

SMMA

Appendices

Appendix 1 - NESDEC Enrollment Projections

Appendix 2 - Communities Meetings and Visioning

- **December 11, 2018**
  Dedham School Committee & School Rehabilitation Committee Joint Meeting
- **June 5, 2019**
  Community Kickoff Meeting
- **October 15, 22, 23, 2019**
  Individual School Update and Input Gathering Meetings
- **December 9, 2019**
  Dedham Public Schools Community Workshop #2 Environments for Learning
- **January 13, 2020**
  Test Fitting – Three Existing School Sites

Appendix 3 – Summary of Spaces

- 2 Section School
- 3 Section School
- 4 Section School
- 7 Section School
- 8 Section School

Appendix 4 – Glossary of Terms for School Planning and Design

Dedham, MA Historical Enrollment

School District: Dedham, MA

10/29/2019

Historical Enrollment By Grade

Birth Year	Births	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2004	302	**2009-10**	131	199	231	233	228	205	234	217	204	242	206	218	201	161	0	2779	2910
2005	246	**2010-11**	131	189	214	235	233	226	205	231	211	201	224	190	196	197	0	2752	2883
2006	276	**2011-12**	124	197	207	206	234	227	234	201	233	215	179	215	191	199	0	2738	2862
2007	271	**2012-13**	116	233	209	204	210	233	232	228	192	227	181	179	214	202	0	2744	2860
2008	280	**2013-14**	99	212	231	208	205	213	225	239	223	196	187	183	181	217	0	2720	2819
2009	266	**2014-15**	109	194	238	237	204	210	204	230	233	217	165	180	184	171	0	2667	2776
2010	263	**2015-16**	112	182	186	225	243	202	213	213	223	230	185	162	186	185	0	2635	2747
2011	259	**2016-17**	96	186	177	193	219	244	205	203	213	215	208	180	159	191	0	2593	2689
2012	256	**2017-18**	95	171	199	174	199	220	255	197	198	207	186	198	188	162	0	2554	2649
2013	270	**2018-19**	98	200	176	205	183	209	215	255	194	198	170	188	203	187	0	2583	2681
2014	297	**2019-20**	129	229	196	186	207	182	211	221	258	195	169	170	178	199	6	2607	2736

Historical Enrollment in Grade Combinations

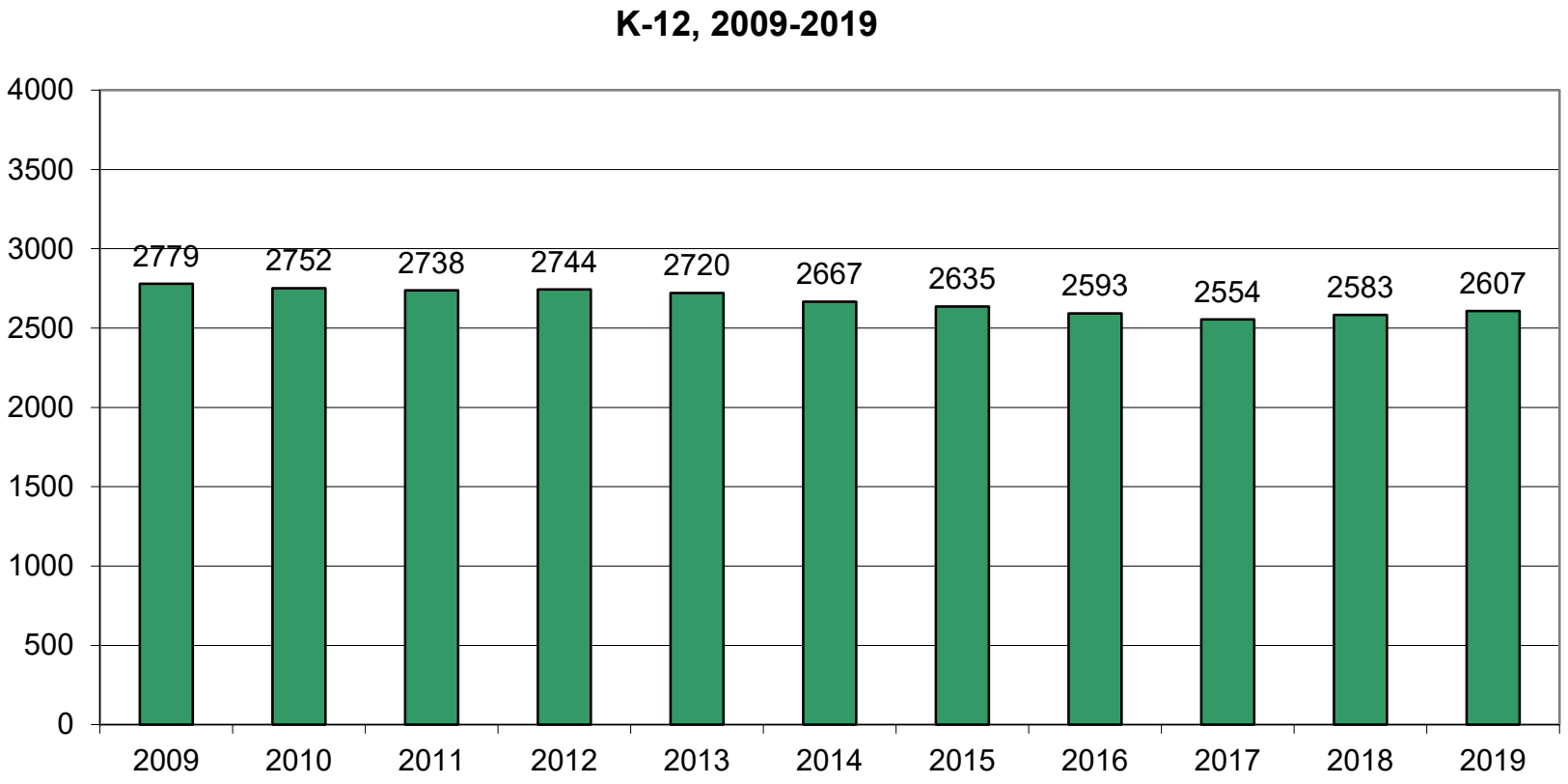
Year	PK-K	1-5	K-5	K-8	5-8	6-8	7-8	7-12	9-12
2009-10	330	1131	1330	1993	897	663	446	1232	786
2010-11	320	1113	1302	1945	848	643	412	1219	807
2011-12	321	1108	1305	1954	883	649	448	1232	784
2012-13	349	1088	1321	1968	879	647	419	1195	776
2013-14	311	1082	1294	1952	883	658	419	1187	768
2014-15	303	1093	1287	1967	884	680	450	1150	700
2015-16	294	1069	1251	1917	879	666	453	1171	718
2016-17	282	1038	1224	1855	836	631	428	1166	738
2017-18	266	1047	1218	1820	857	602	405	1139	734
2018-19	298	988	1188	1835	862	647	392	1140	748
2019-20	358	982	1211	1885	885	674	453	1169	716

Historical Percentage Changes

Year	K-12	Diff.	%
2009-10	2779	0	0.0%
2010-11	2752	-27	-1.0%
2011-12	2738	-14	-0.5%
2012-13	2744	6	0.2%
2013-14	2720	-24	-0.9%
2014-15	2667	-53	-1.9%
2015-16	2635	-32	-1.2%
2016-17	2593	-42	-1.6%
2017-18	2554	-39	-1.5%
2018-19	2583	29	1.1%
2019-20	2607	24	0.9%
Change		**-172**	**-6.2%**

©New England School Development Council • 508-481-9444 • www.nesdec.org

Dedham, MA Historical Enrollment



©New England School Development Council • 508-481-9444 • www.nesdec.org

Dedham, MA Projected Enrollment

School District: Dedham, MA **10/29/2019**

Enrollment Projections By Grade*

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2014	297		2019-20	129	229	196	186	207	182	211	221	258	195	169	170	178	199	6	2607	2736
2015	304		2020-21	130	221	234	201	192	210	184	209	219	256	166	167	171	178	6	2614	2744
2016	279		2021-22	131	203	225	239	207	195	212	183	207	217	218	164	168	171	6	2615	2746
2017	271	(prov.)	2022-23	132	197	207	230	246	210	197	210	181	205	184	215	165	168	6	2621	2753
2018	293	(prov.)	2023-24	133	213	201	212	237	250	212	196	208	180	174	182	216	165	6	2652	2785
2019	289	(est.)	2024-25	134	210	217	206	219	241	253	210	194	206	153	172	183	216	6	2686	2820
2020	287	(est.)	2025-26	135	209	214	222	212	223	244	251	208	193	175	151	173	183	6	2664	2799
2021	284	(est.)	2026-27	136	206	213	219	229	215	225	242	249	206	164	173	152	173	6	2672	2808
2022	285	(est.)	2027-28	137	207	210	218	226	233	217	223	240	247	175	162	174	152	6	2690	2827
2023	288	(est.)	2028-29	138	209	211	215	225	230	235	215	221	238	210	173	163	174	6	2725	2863
2024	286	(est.)	2029-30	139	208	213	216	222	229	232	233	213	219	202	207	174	163	6	2737	2876

Note: Ungraded students (UNGR) often are high school students whose anticipated years of graduation are unknown, or students with special needs - UNGR not included in Grade Combinations for 7-12, 9-12, etc.

Based on an estimate of births | Based on children already born | Based on students already enrolled

Projected Enrollment in Grade Combinations*

Year	PK-K	1-5	K-5	K-8	5-8	6-8	7-8	7-12	9-12
2019-20	358	982	1211	1885	885	674	453	1169	716
2020-21	351	1021	1242	1926	868	684	475	1157	682
2021-22	334	1078	1281	1888	819	607	424	1145	721
2022-23	329	1090	1287	1883	793	596	386	1118	732
2023-24	346	1112	1325	1909	796	584	388	1125	737
2024-25	344	1136	1346	1956	863	610	400	1124	724
2025-26	344	1115	1324	1976	896	652	401	1083	682
2026-27	342	1101	1307	2004	922	697	455	1117	662
2027-28	344	1104	1311	2021	927	710	487	1150	663
2028-29	347	1116	1325	1999	909	674	459	1179	720
2029-30	347	1112	1320	1985	897	665	432	1178	746

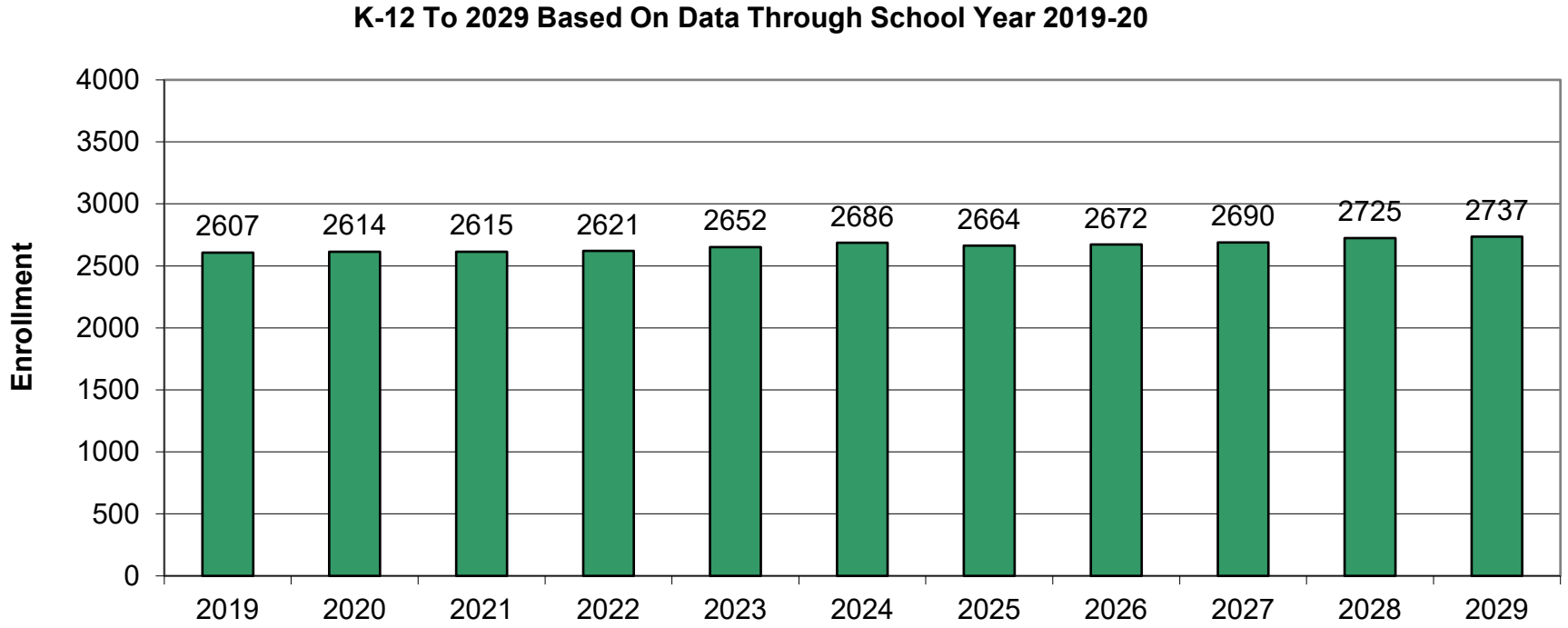
Projected Percentage Changes

Year	K-12	Diff.	%
2019-20	2607	0	0.0%
2020-21	2614	7	0.3%
2021-22	2615	1	0.0%
2022-23	2621	6	0.2%
2023-24	2652	31	1.2%
2024-25	2686	34	1.3%
2025-26	2664	-22	-0.8%
2026-27	2672	8	0.3%
2027-28	2690	18	0.7%
2028-29	2725	35	1.3%
2029-30	2737	12	0.4%
Change		130	5.0%

*Projections should be updated annually to reflect changes in in/out-migration of families, real estate sales, residential construction, births, and similar factors.

©New England School Development Council • 508-481-9444 • www.nesdec.org

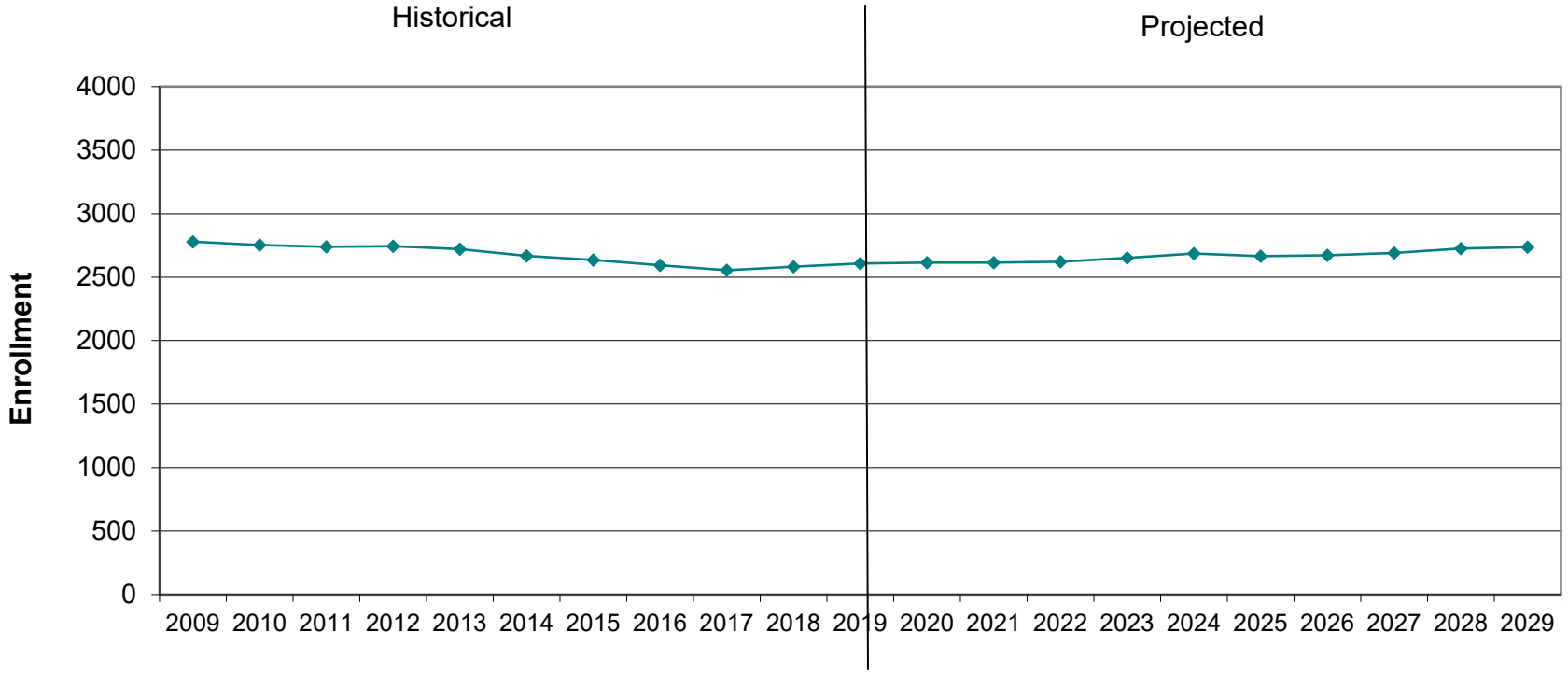
Dedham, MA Projected Enrollment



©New England School Development Council • 508-481-9444 • www.nesdec.org

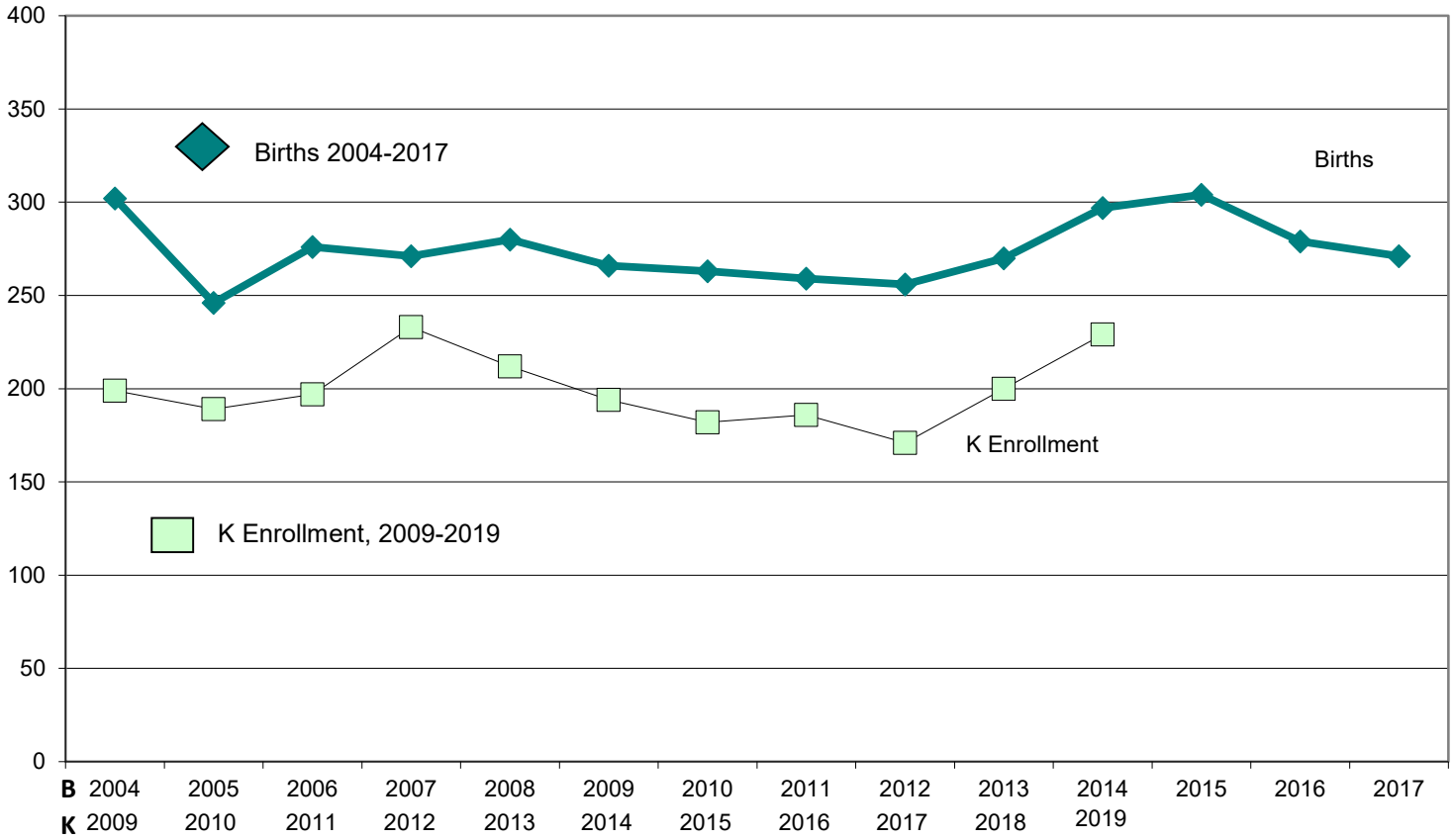
Dedham, MA Historical & Projected Enrollment

K-12, 2009-2029



©New England School Development Council • 508-481-9444 • www.nesdec.org

Dedham, MA Birth-to-Kindergarten Relationship



©New England School Development Council • 508-481-9444 • www.nesdec.org

Dedham, MA Additional Data

Building Permits Issued		
Year	Single-Family	Multi-Units
2005	16	6
2015	14	0
2016	10	0
2017	19	18
2018	15	0
2019	17 to date	0 to date

Source: HUD and Building Department

Enrollment History		
Year	Career-Tech 9-12 Total	Non-Public K-12 Total
2005-06	62	606
2015-16	110	582
2016-17	104	558
2017-18	101	555
2018-19	104	555
2019-20	113	508

Residents in Non-Public Independent and Parochial Schools (General Education)														
Enrollments as of Oct. 1	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12 TOTAL
	39	21	29	23	33	30	26	49	45	44	44	59	66	508

K-12 Home-Schooled Students	
2019	24

K-12 Residents in Charter or Magnet Schools, or "Choiced-out"	
2019	42

K-12 Special Education Outplaced Students	
2019	46

K-12 Tuitioned-In, Choiced-In, & Other Non-Residents	
2019	32

The above data were used to assist in the preparation of the enrollment projections. If additional demographic work is needed, please contact our office.

©New England School Development Council • 508-481-9444 • www.nesdec.org

SMMA

Facilities Master Plan

Test Fitting – Three Existing School Sites

January 13, 2020, Revised February 27, 2020

Agenda

- Introductions
- Community Engagement / Input
- Demographics
- Test Fits
    - Three School Sites
    - Alternative Populations
    - Multiple School Options
- Q & A

SMMA: Who We Are

Principal-in-Charge /
Educational Planner

Philip Poinelli
FAIA, ALEP

Project Manager

Kristen M. Olsen
AIA, MCPPO

Architecture

Cam Leandri

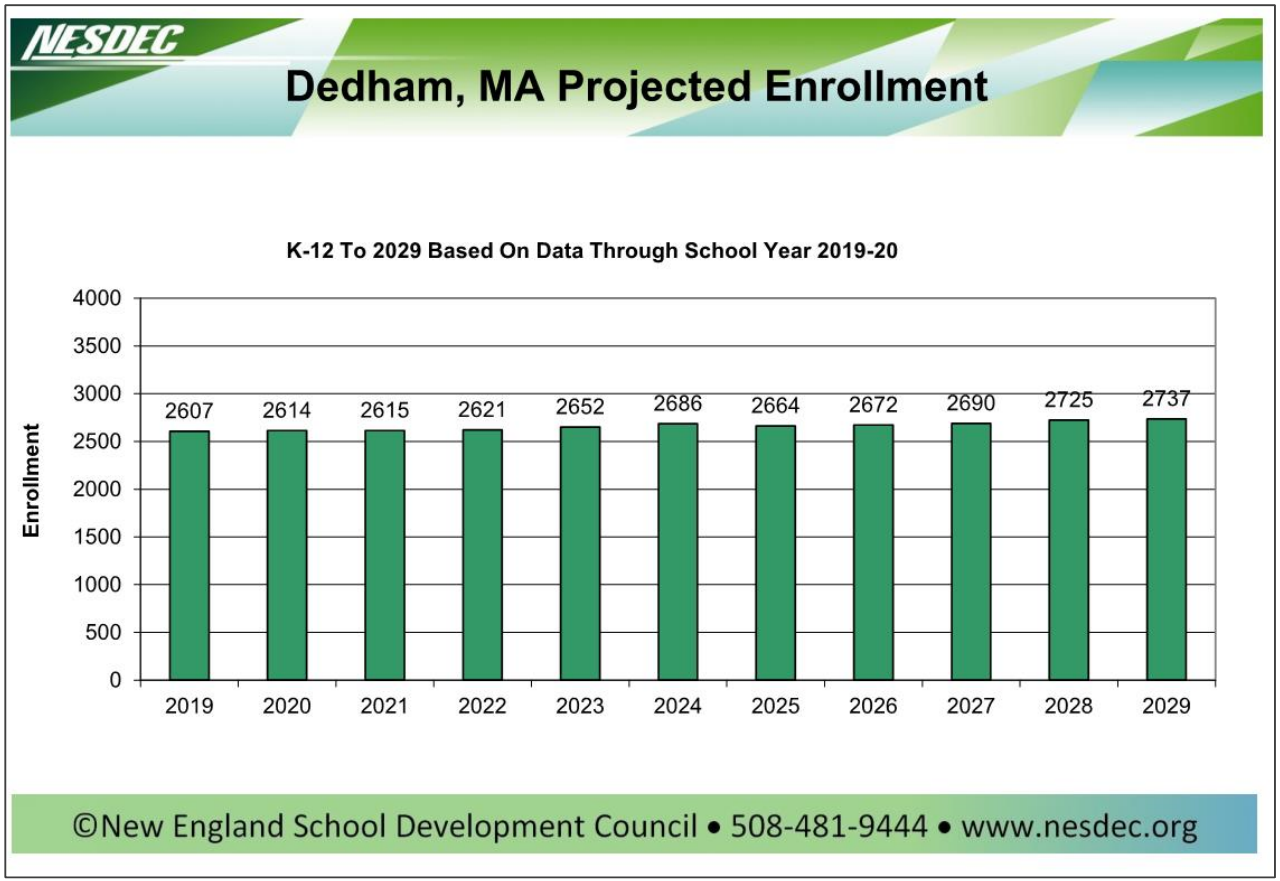
Civil Engineering

Peter Rebuck

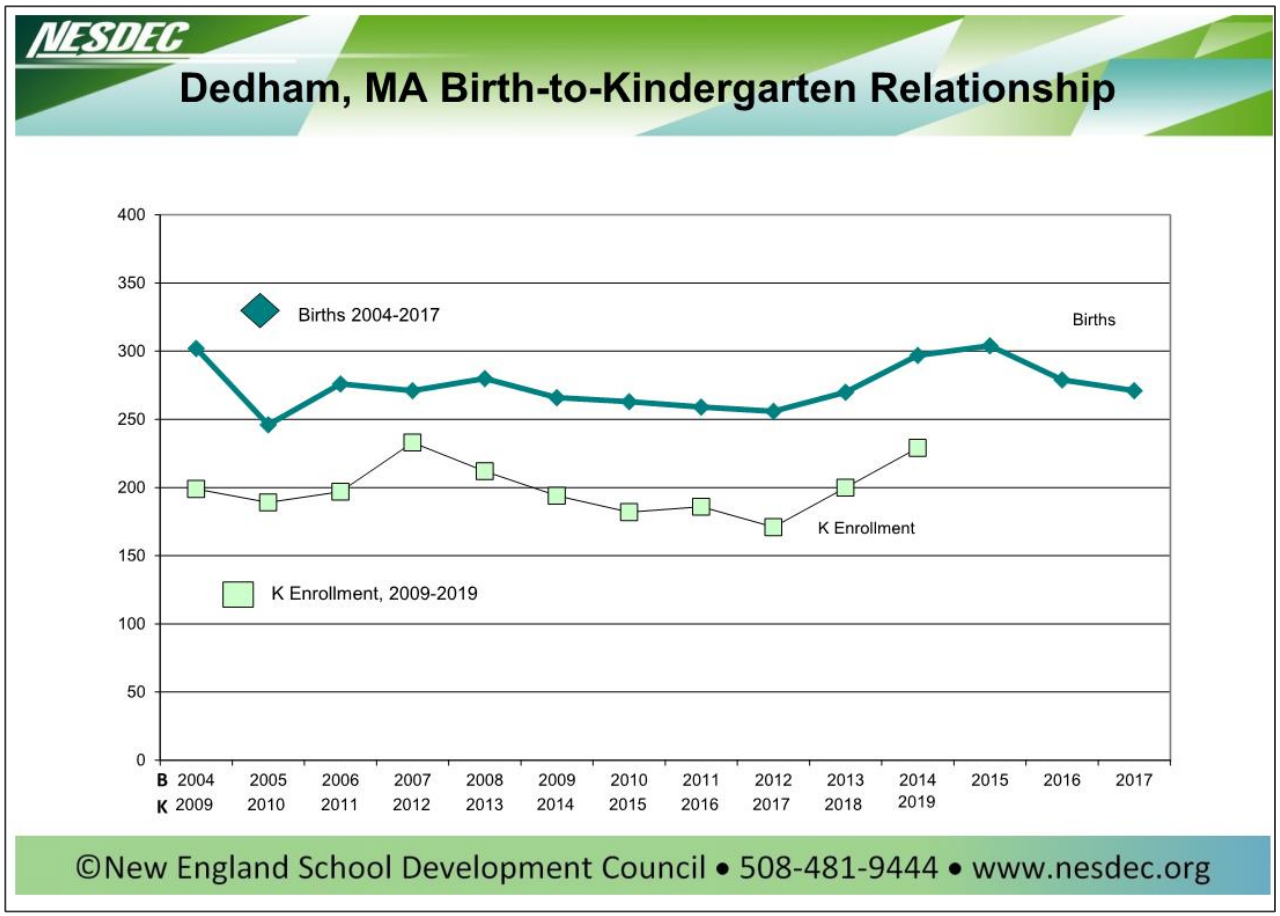
Community Engagement

- Individual School Update and Input Gathering Meetings
  - October 15 – Greenlodge Elementary School
  - October 22 – Riverdale Elementary School
  - October 23 – Oakdale Elementary School
- Environments for Learning Workshop
  - December 9
- Test Fits - Tonight
  - Three School Sites
  - Alternative Populations
  - Multiple School Options

Enrollment Projections



Birth Rate


NESDEC
Dedham, MA Birth-to-Kindergarten Relationship
400
350
300
250
200
150
100
50
0
Births 2004-2017
Births
K Enrollment
K Enrollment, 2009-2019
B 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017
K 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
©New England School Development Council • 508-481-9444 • www.nesdec.org

Demographics Discussion

Planning with Flexibility in Mind

- Waiting List for PreK = Assume Increasing Demand
- New Elementary School(s) = Assume Increasing Demand
  - If you build it, they will come
- Plan for Multiple Population Projections (grades 1–5)
  - 1,125 students (NESDEC)
  - 1,250 students Alternative Projection (250 students / grade)
- Number of New Schools - 1, 2 or 3 + Avery to Remain

Demographics

Total projected ES population	1,125 to 1,250 students
Population at Avery	345 students
Total for Oakdale, Riverdale, Greenlodge	780 to 920 students

How are the three schools replaced?

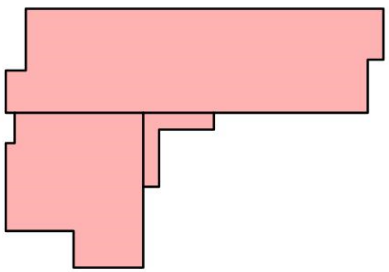
One School	782 students to 920 students
Two Schools	345 students to 460 students (@ each school)
Three Schools	230 students to 345 students (@ each school)

SITE TEST FITS

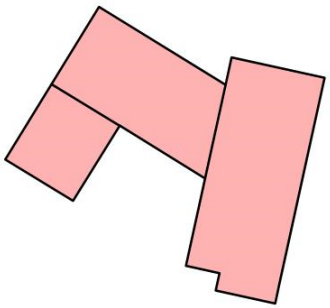
(No decisions or choices will be made at this Master Planning stage)

Test Fit Variables

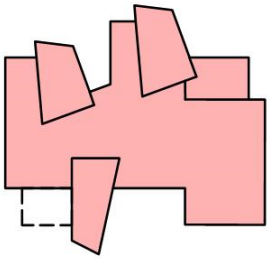
- Building Sizes (gross square feet) vary depending on number of students
- Two-Story or Three-Story solutions affect building footprints



One School



Two School

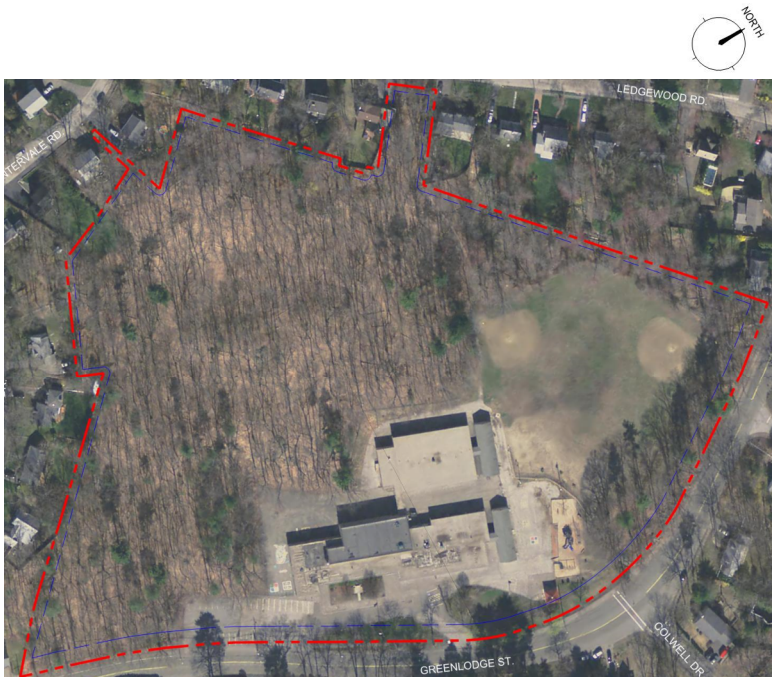


Three School

Three Sites

Riverdale
6.1 acres

Oakdale
6.9 acres



Greenlodge
16.7 acres

Approach 1 - *One New or Renovated School*

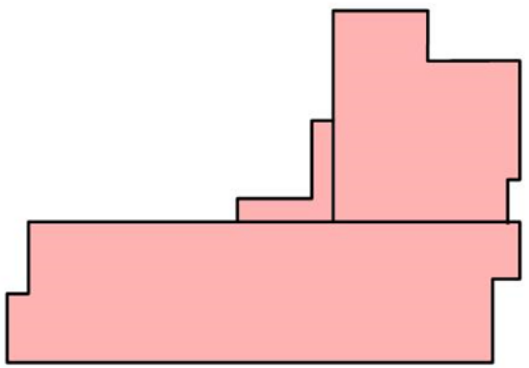
One school to replace the three existing schools

Two school populations / building sizes are identified

- 700 total students = 106,000 gross square feet

  or

- 925 total students = 132,000 gross square feet



3 stories at both
106,000 or 132,000 GSF

Approach 2 - *Two New or Renovated Schools*

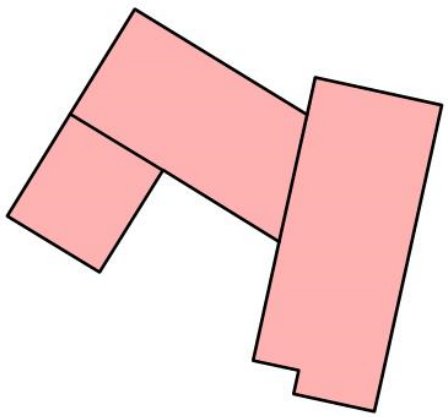
Two schools to replace the three existing schools (2 of 3 existing sites)

Two school populations / building sizes are identified

- 350 total students = 65,000 gross square feet

  or

- 463 total students = 77,000 gross square feet



2 stories at 65,000 GSF
3 stories at 77,000 GSF

Approach 3 - *Three New or Renovated Schools*

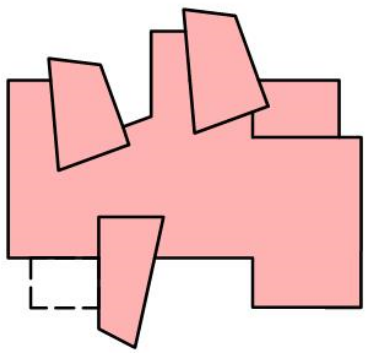
Three schools to replace the three existing schools (one at each existing sites)

Two school populations / building sizes are identified

- 233 total students = 53,000 gross square feet

  or

- 308 total students = 60,000 gross square feet



2 stories at both
53,000 or 60,000 GSF

Approach 1 – *Riverdale – 782 to 920 students*

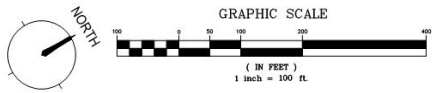
114,500 to 132,000 gross square feet

Approach 1 – *Oakdale – 782 to 920 students*

114,500 to 132,000 gross square feet

Approach 1 – *Greenlodge – 782 to 920 students*

114,500 to 132,000 gross square feet



Approach 2 – *Riverdale – 345 to 460 students*

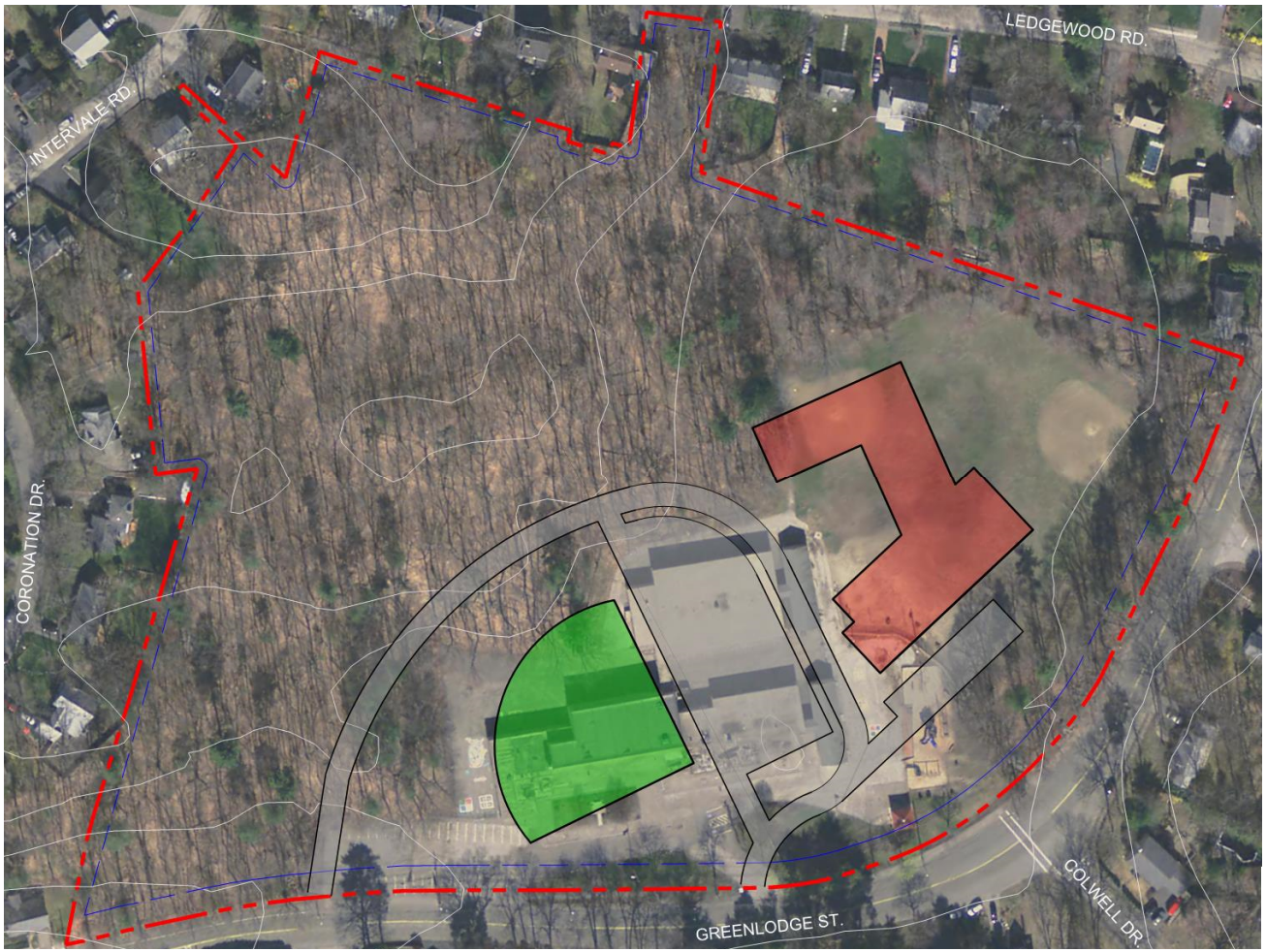
64,500 to 76,000 gross square feet

Approach 2 – *Oakdale – 345 to 460 students*

64,500 to 76,000 gross square feet

Approach 2 – *Greenlodge – 345 to 460 students*

64,500 to 76,000 gross square feet



Approach 3 – *Riverdale – 230 to 345 students*

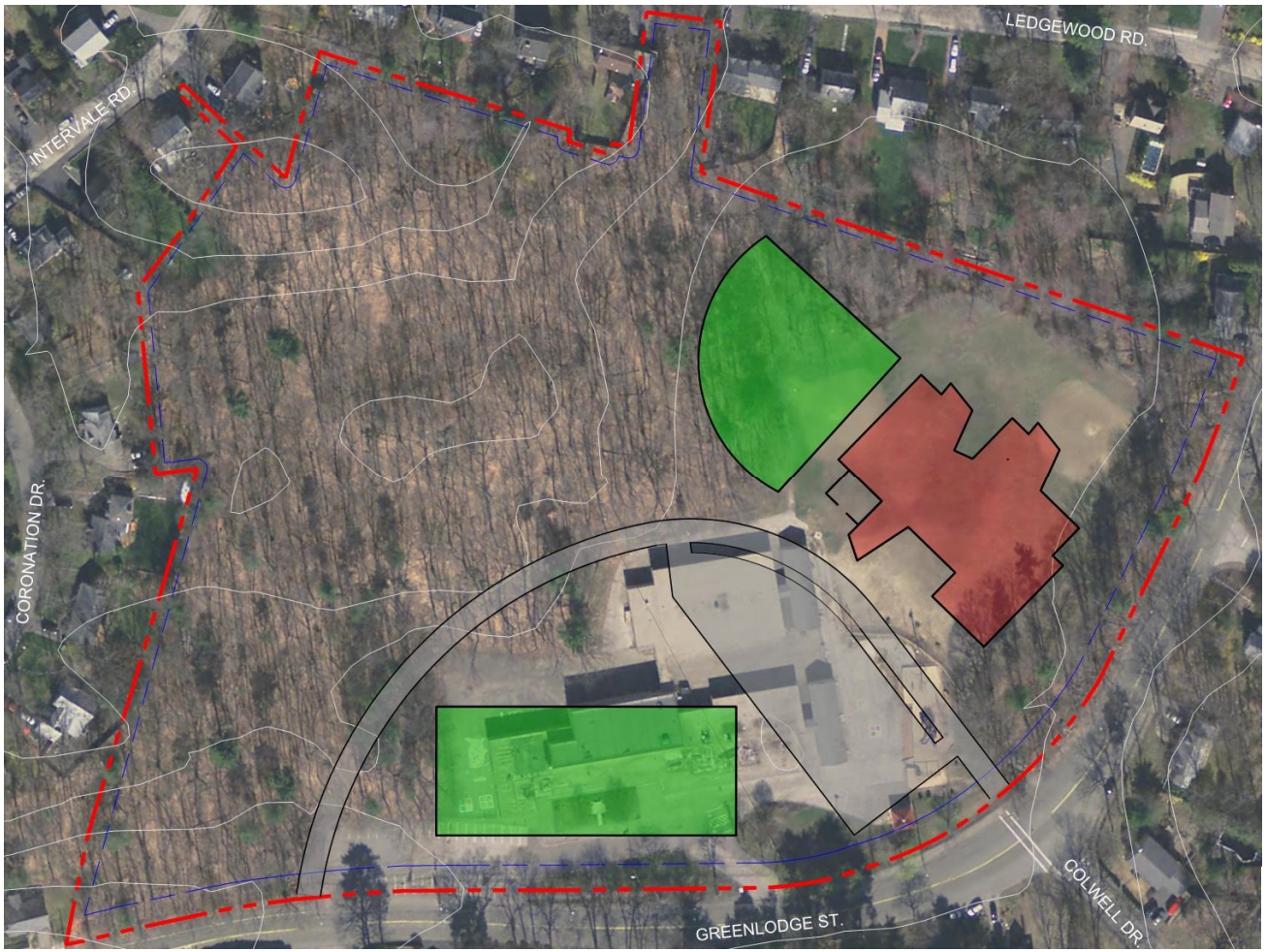
51,000 to 64,500 gross square feet

Approach 3 – *Oakdale – 230 to 345 students*

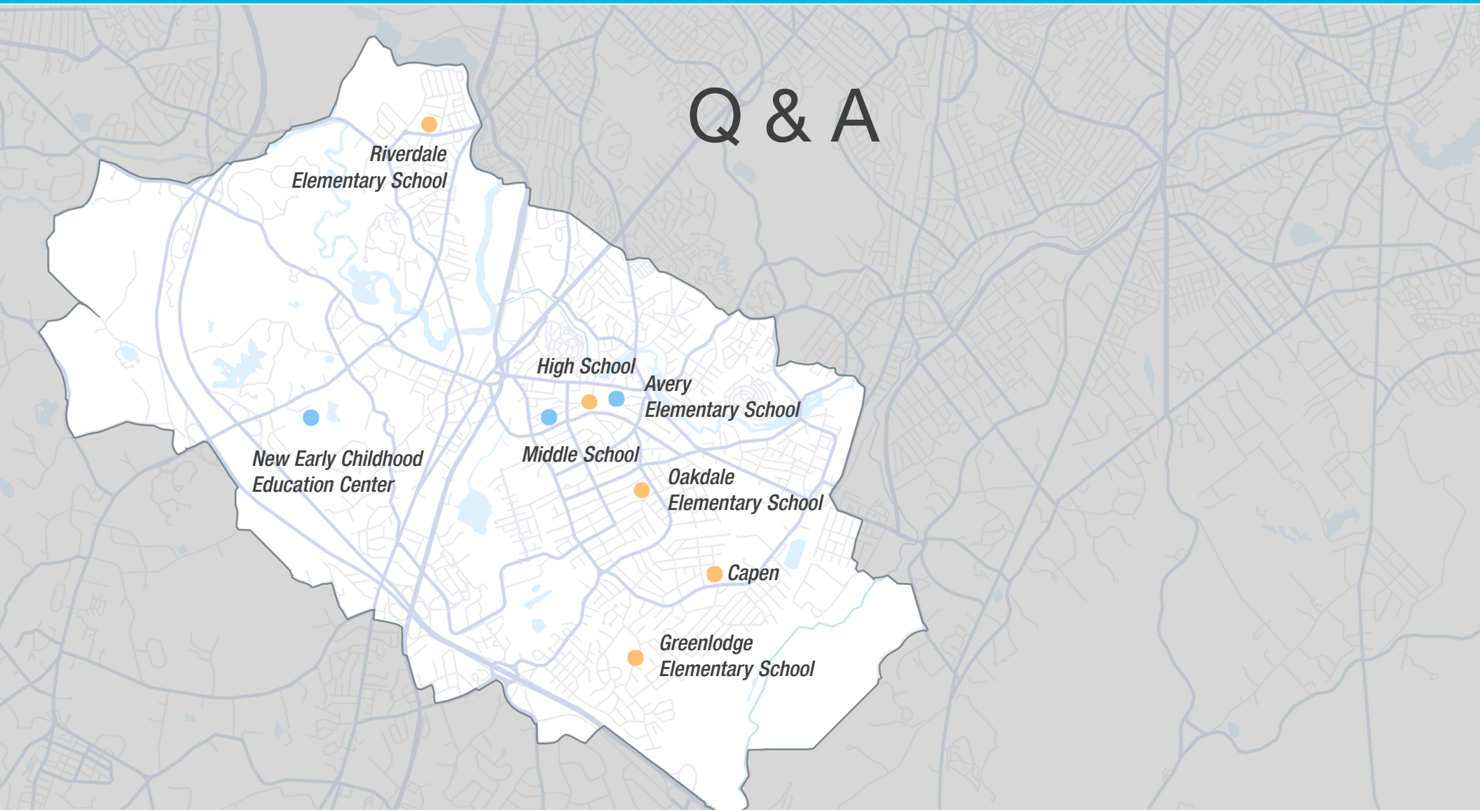
51,000 to 64,500 gross square feet

Approach 3 – *Greenlodge – 230 to 345 students*

51,000 to 6,500 gross square feet



Q & A


Riverdale
Elementary School
High School
Avery
Elementary School
New Early Childhood
Education Center
Middle School
Oakdale
Elementary School
Capen
Greenlodge
Elementary School

SMMA

Dedham Public Schools Community Workshop #2 Environments for Learning

December 9, 2019

Table Topics Workshop

Topic 1: Walkable / Neighborhood Schools

Topic 2: Environmentally Responsible / Net Zero (Ready)

Topic 3: Community Uses (Current / Potential)

Topic 4: Cost and Schedule

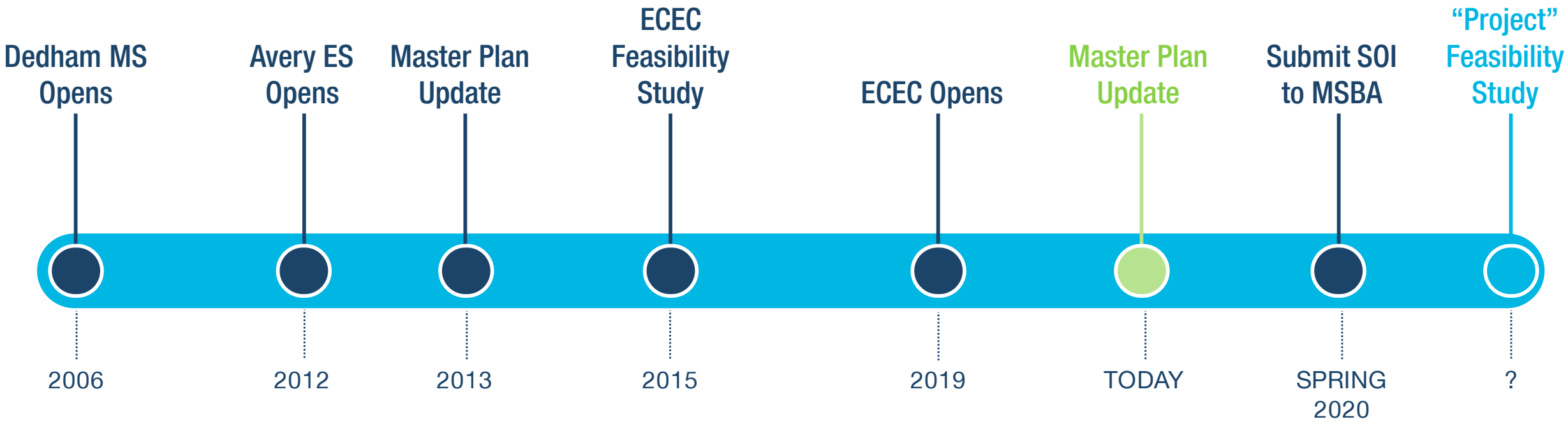
Topic 5: Renovation vs. New Building

Topic 6: School Size / Culture

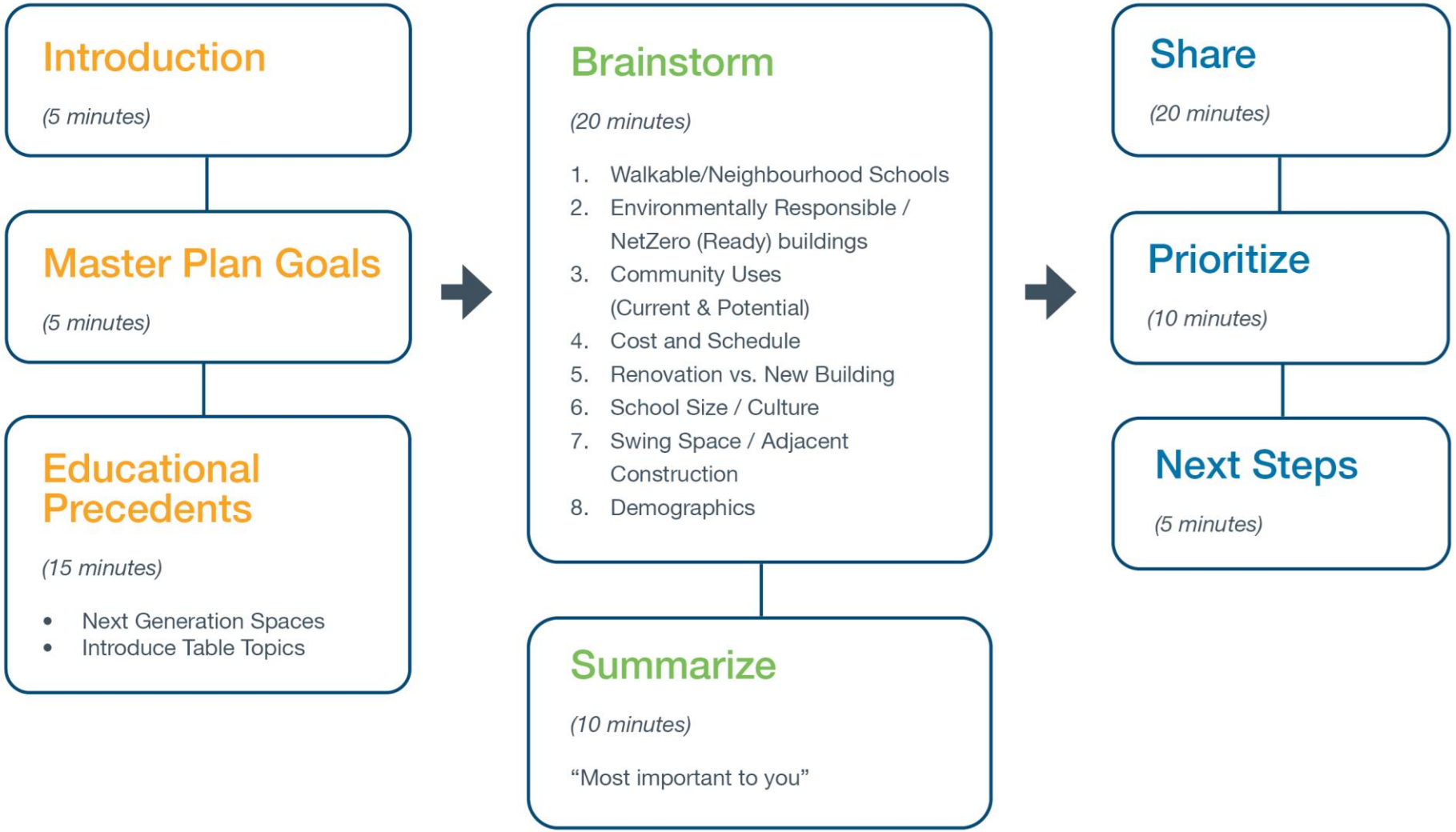
Topic 7: Swing Space / Adjacent Construction

Topic 8: Demographics

Schedule


Dedham MS Opens
2006
Avery ES Opens
2012
Master Plan Update
2013
ECEC Feasibility Study
2015
ECEC Opens
2019
Master Plan Update
TODAY
Submit SOI to MSBA
SPRING 2020
"Project" Feasibility Study
?

Workshop Format



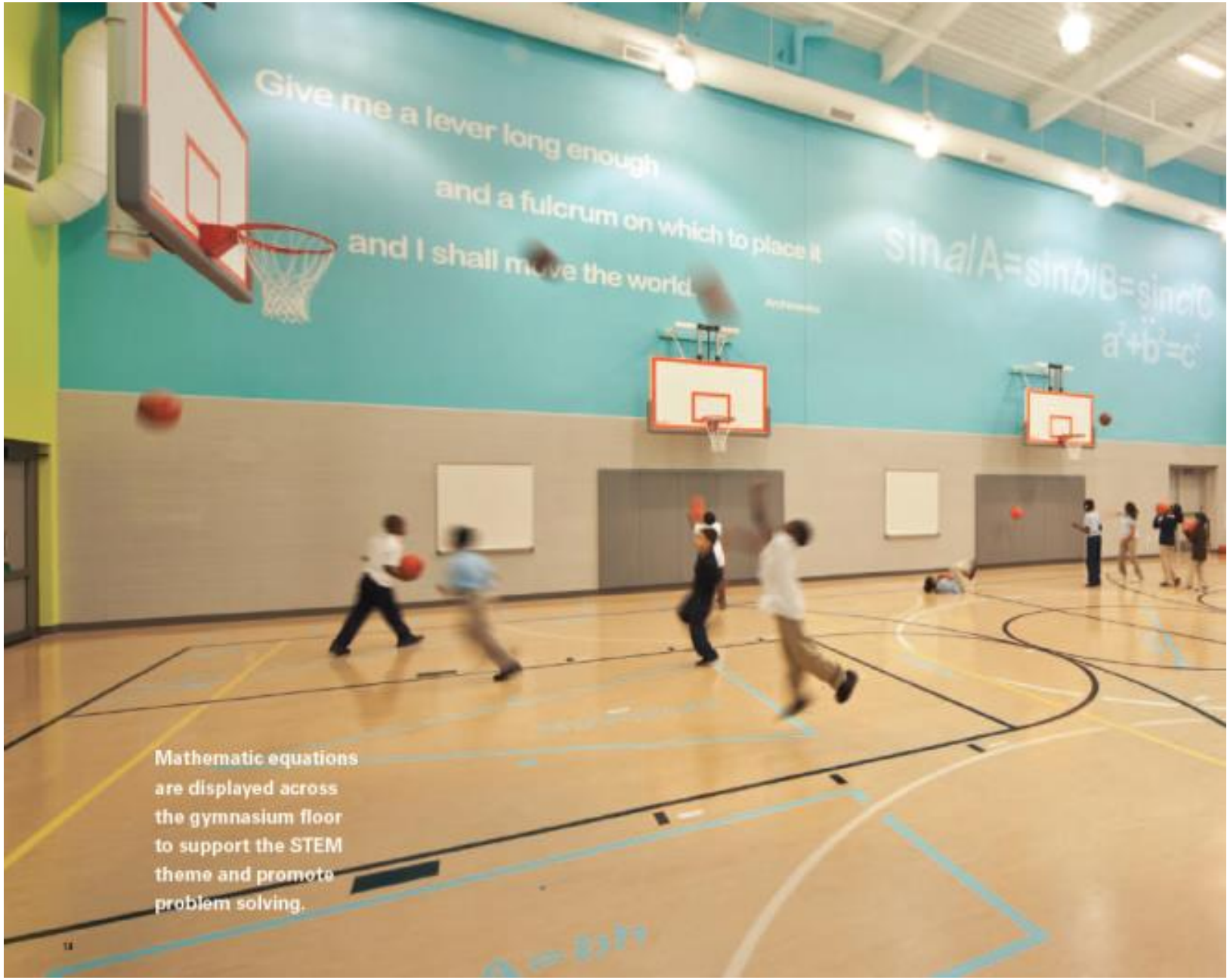
Dedham Master Plan Goals

- **Comprehensively rebuild or replace** Oakdale, Riverdale and Greenlodge Elementary Schools
- **Create a plan** for schools that will meet the needs of all our students in the future and have the flexibility to accommodate them
- **Develop a master plan** where the elementary schools can serve the community well into the future with flexibility to accommodate changing educational needs
- **Provide equity of facilities** for all elementary children within the town
- To the extent possible, plan for school(s) that **foster a small school / neighborhood environment and feeling**
- Develop project(s) that are **fiscally responsible** and **politically viable** for the community

School Environments Designed to Promote:

- Project / Problem Based Learning
- Social Emotional Learning
- Joy
- Differentiation and Personalization
- STEM / STEAM / STREAM
- Peer to PEER Learning
- The Third Teacher
- Learning Through Play
- Universal Design for Learning

Entire Building and Site as Learning Environments

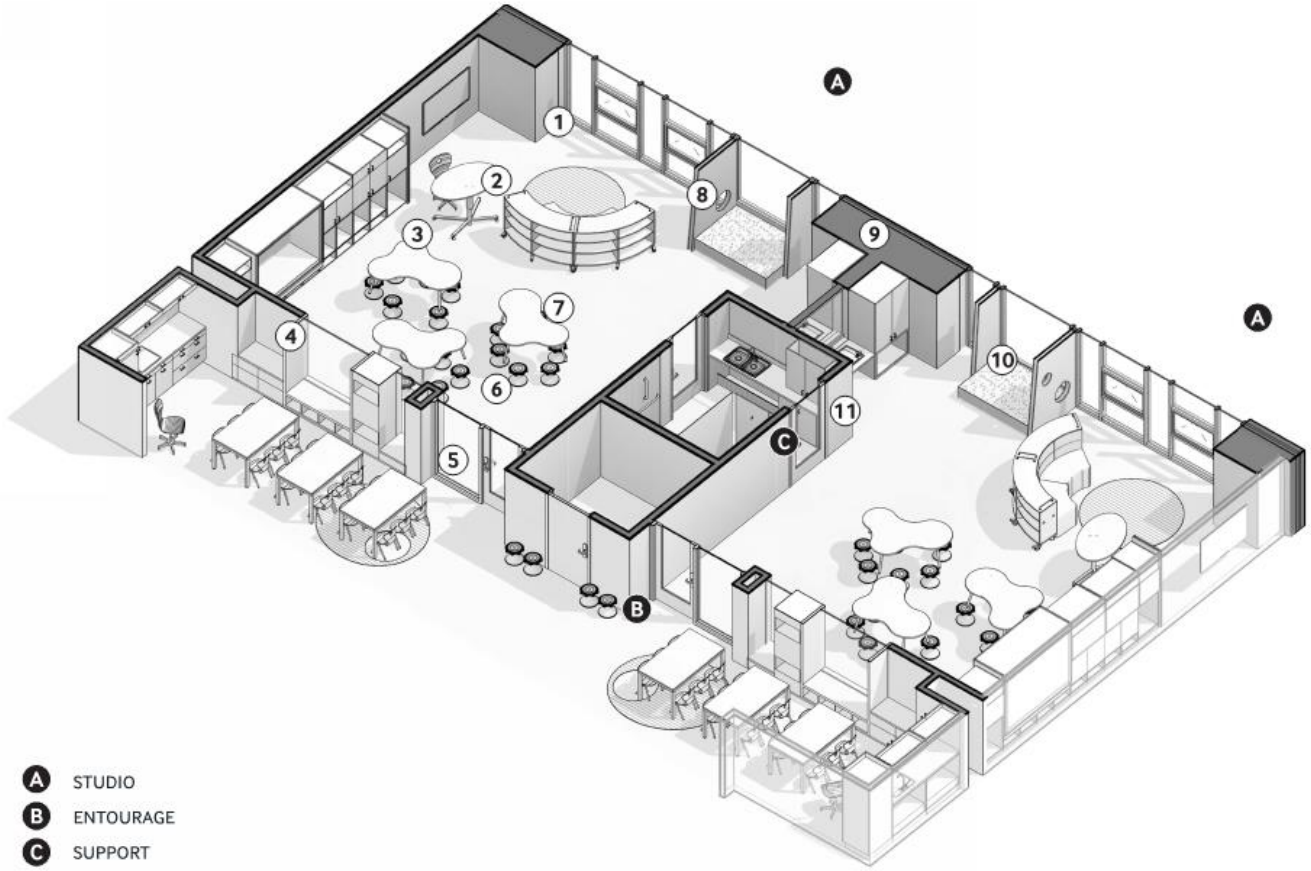


Booker T. Washington STEM Academy, Champaign IL. – Cannon Design

Flexible Learning Spaces

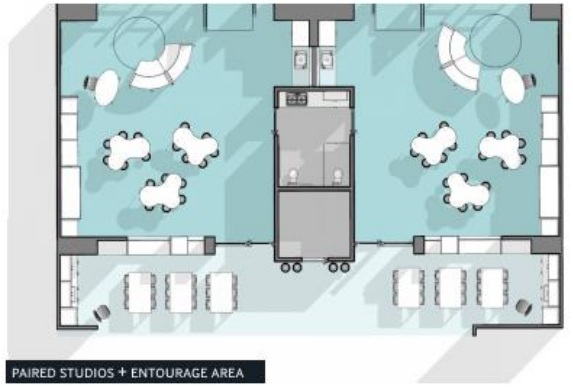
EXTERIOR VISUAL CONNECTION
INTERIOR VISUAL CONNECTION
INTERIOR PHYSICAL CONNECTION

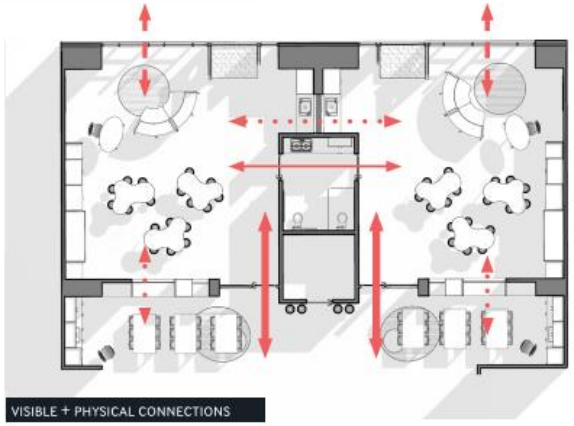
1. INTERACTIVE TECHNOLOGY
2. STUDENT STORAGE
3. READING NOOK
4. TEACHER WASHING / RESOURCE
5. ENTOURAGE / GROUP DINING + ARTS
6. ENTOURAGE STORAGE
7. HANDS-ON ACTIVE LEARNING
8. FOCUSED GROUP LEARNING
9. PERFORMANCE PLATFORM
10. STUDENT WASHING
11. SHARED STUDENT TOILETS



A STUDIO
B ENTOURAGE
C SUPPORT

STUDIO

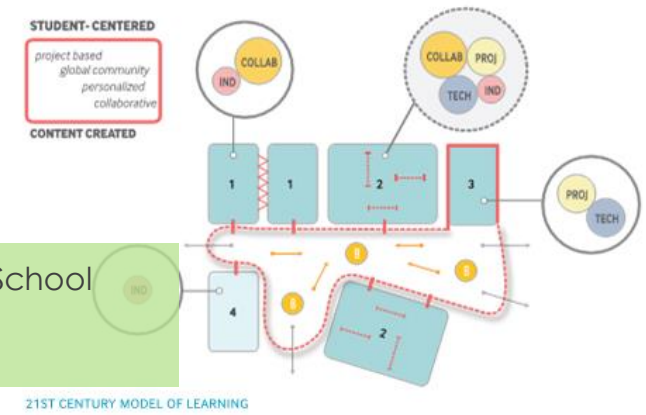

PAIRED STUDIOS + ENTOURAGE AREA


VISIBLE + PHYSICAL CONNECTIONS

Elon W. Rhodes Early Learning Center
Harrisonburg, Virginia
VMDO Architects

Agile, Adaptable Learning Spaces

During the planning process, educators expressed a desire for team teaching. The resulting design promotes teacher and student collaboration and individualized learning by creating spatially-diverse neighborhood environments that provide a variety of flexible scales and arrangements. Breakout spaces and resource hubs are distributed throughout the neighborhood to empower one-on-one collaborations that complement the project-based work occurring in studios.

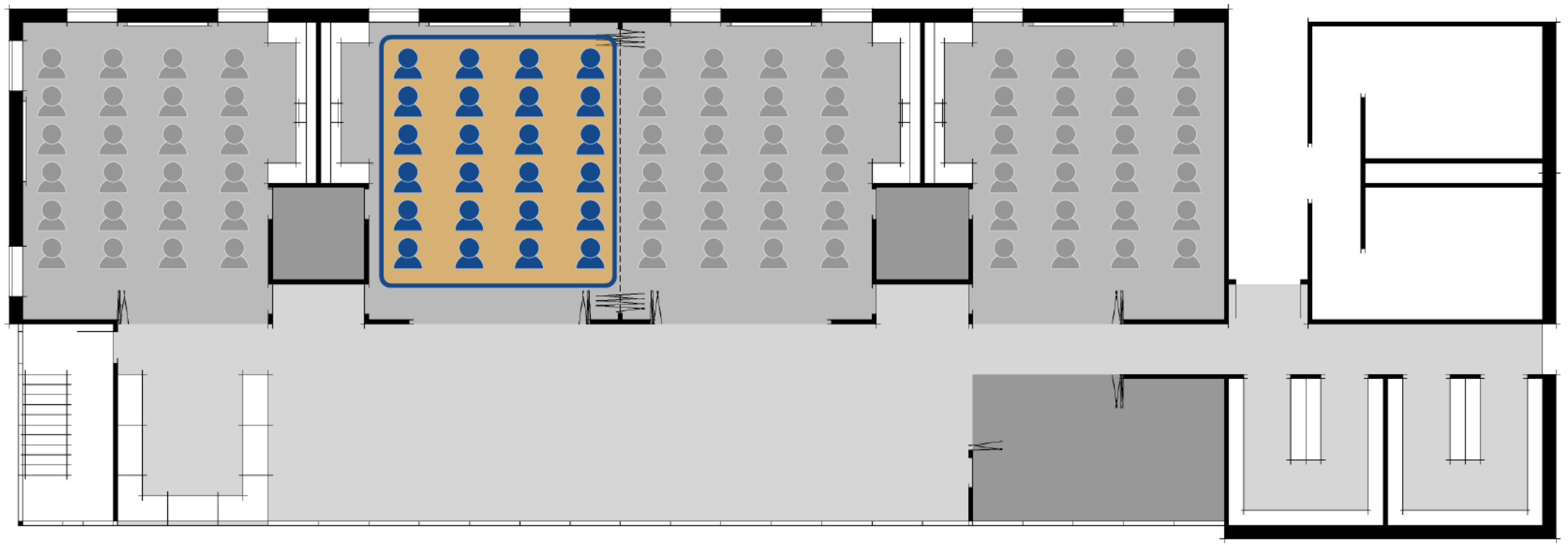


21ST CENTURY MODEL OF LEARNING

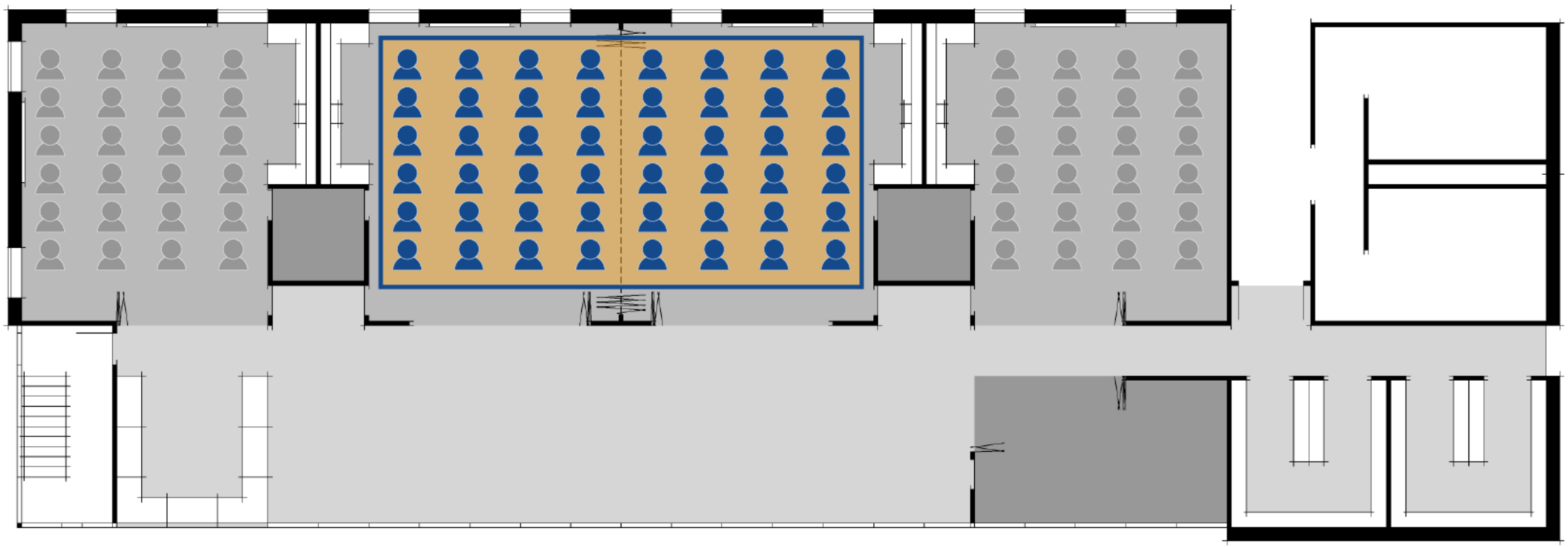
Bluestone Elementary School
Harrisonburg, Virginia
VMDO Architects

Classrooms / Learning Commons

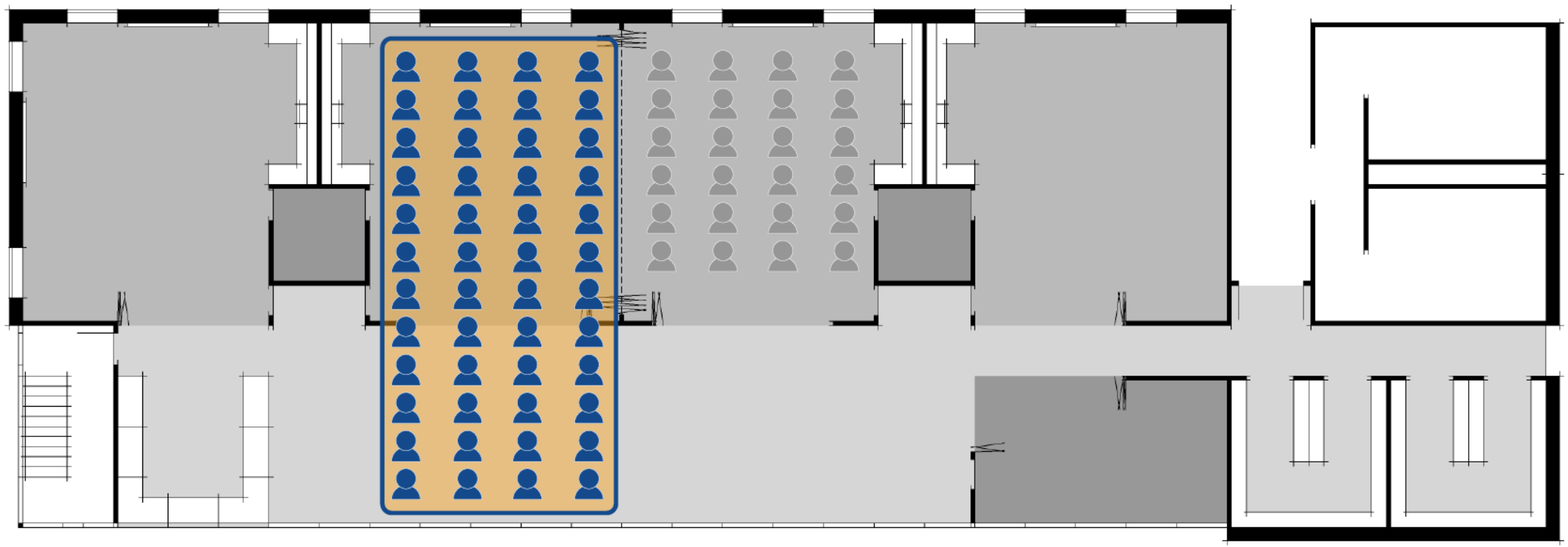
24



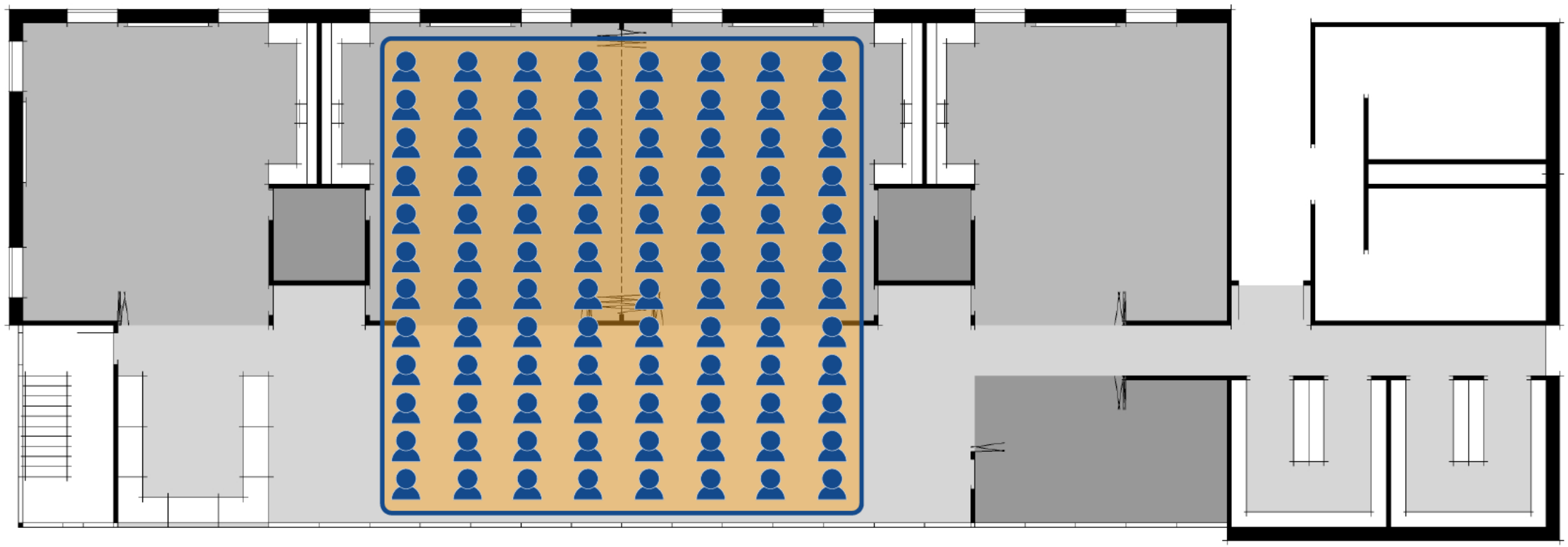
48



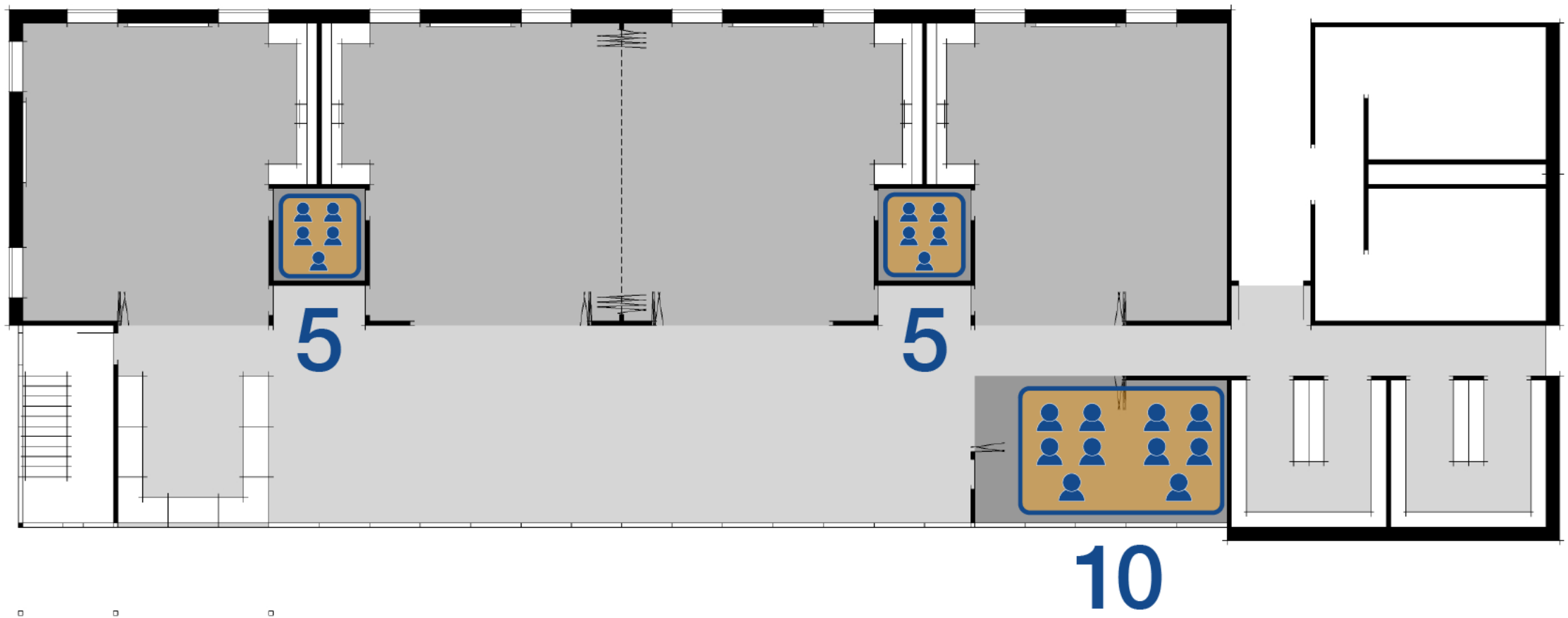
48



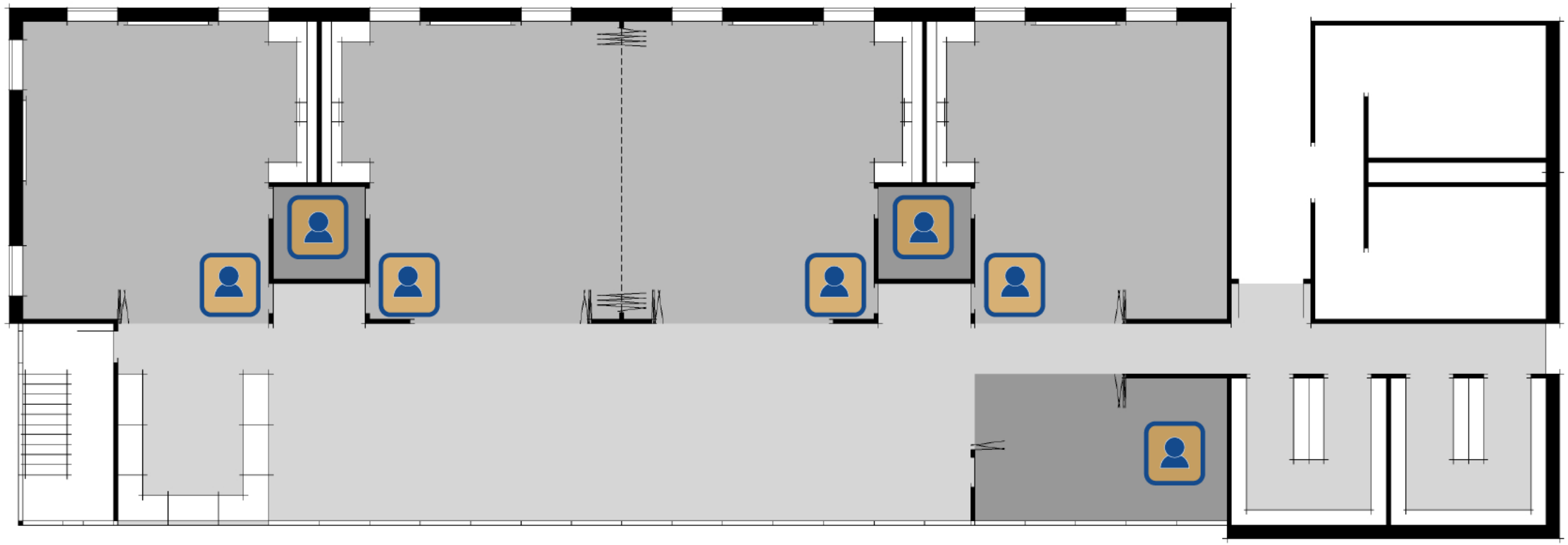
96



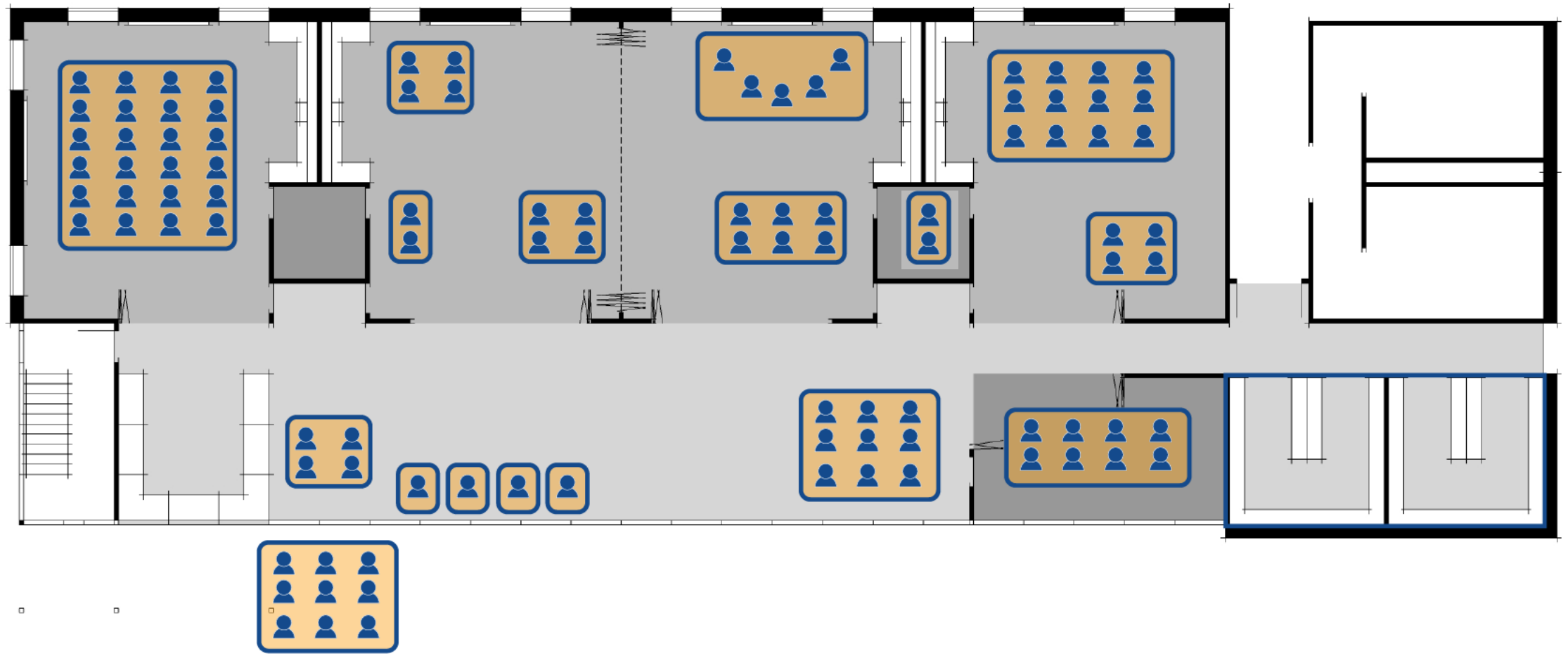
Small Group



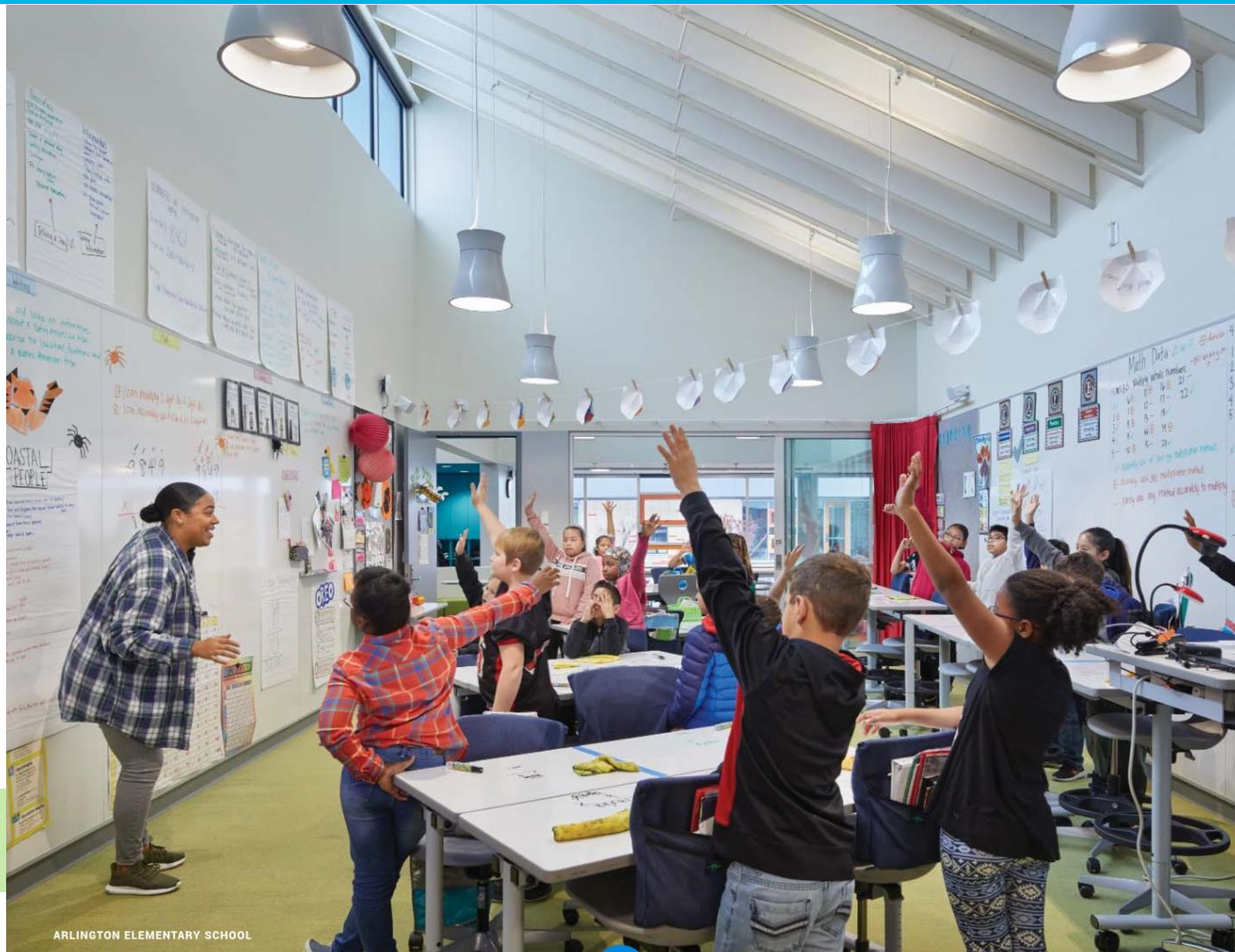
Teachers and Paraprofessionals



Teacher & Student Options



Bancroft Elementary



Arlington Elementary School
Tacoma, Washington
Mahlum Architects

Parker Elementary School
Billerica, MA.
SMMA Architects

Parker Elementary
Billerica, MA
SMMA

Springfield Literacy Center
Springfield, PA
Stantec

The Learning Commons: Lower Grades

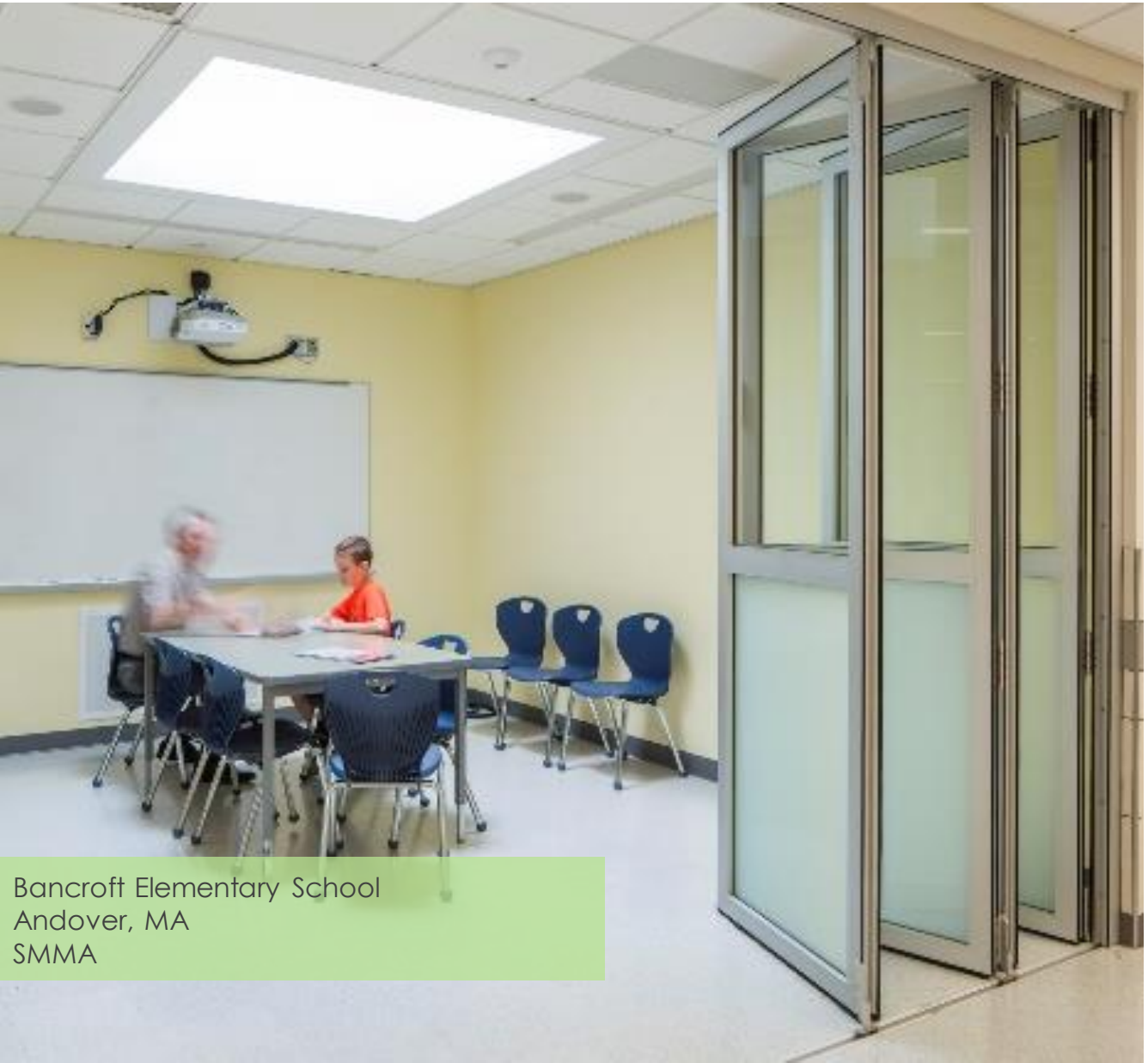
The Learning Commons: Upper Grades

High Plains School, ECE-8
Loveland, CO.
RBB Architects

Small Group

Northwood Elementary School
Mercer Island School District
Mahlum Architects

Pull Over / Small Group



Bancroft Elementary School
Andover, MA
SMMA

Parker Elementary School
Billerica, MA.
SMMA Architects

Douglas Park School
Regina Saskatchewan
Fielding Nair International

Center Elementary School
Stow, MA.
SMMA Architects

Parker Elementary School
Billerica, MA.
SMMA Architects

Modernizing the Media Center

Trillium Creek Primary School
West Lynn OR.
Dull Olson Weeks, IBI

Trillium Creek Primary School, West Lynn OR.
– Dull Olson Weeks, IBI

ker Elementary School
rica, MA.
MA Architects

5.

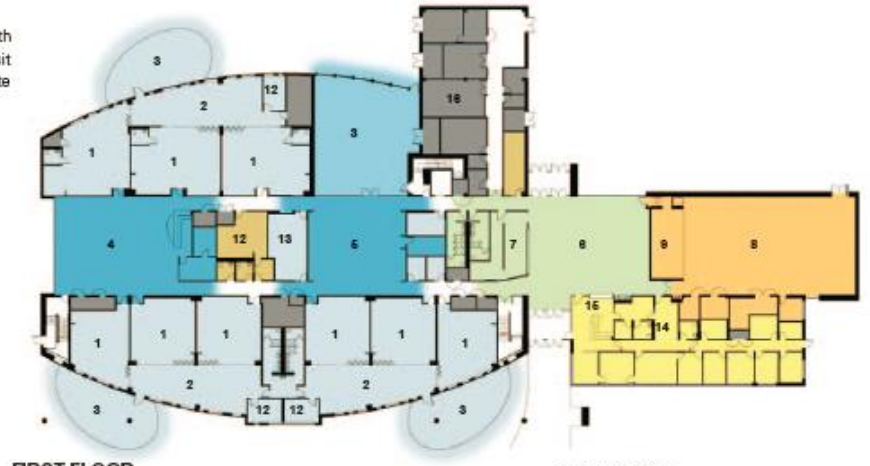
The STEM Studio is located in the middle of the spine, where students connect with instructors and local universit experts to explore and create projects that express their understanding of STEM.

4.

The Library bookends the center spine where students can connect with information vital to the advancement of STEM, and the Student Commons where graphics make the students aware of how STEM impacts all facets of life.

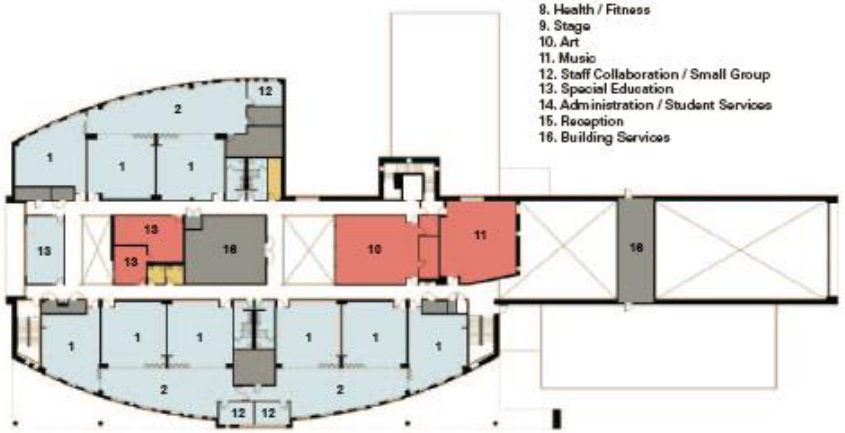
6.

The Student Commons is also where artwork, models, and graphics are prominently displayed.

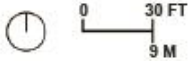


FIRST FLOOR

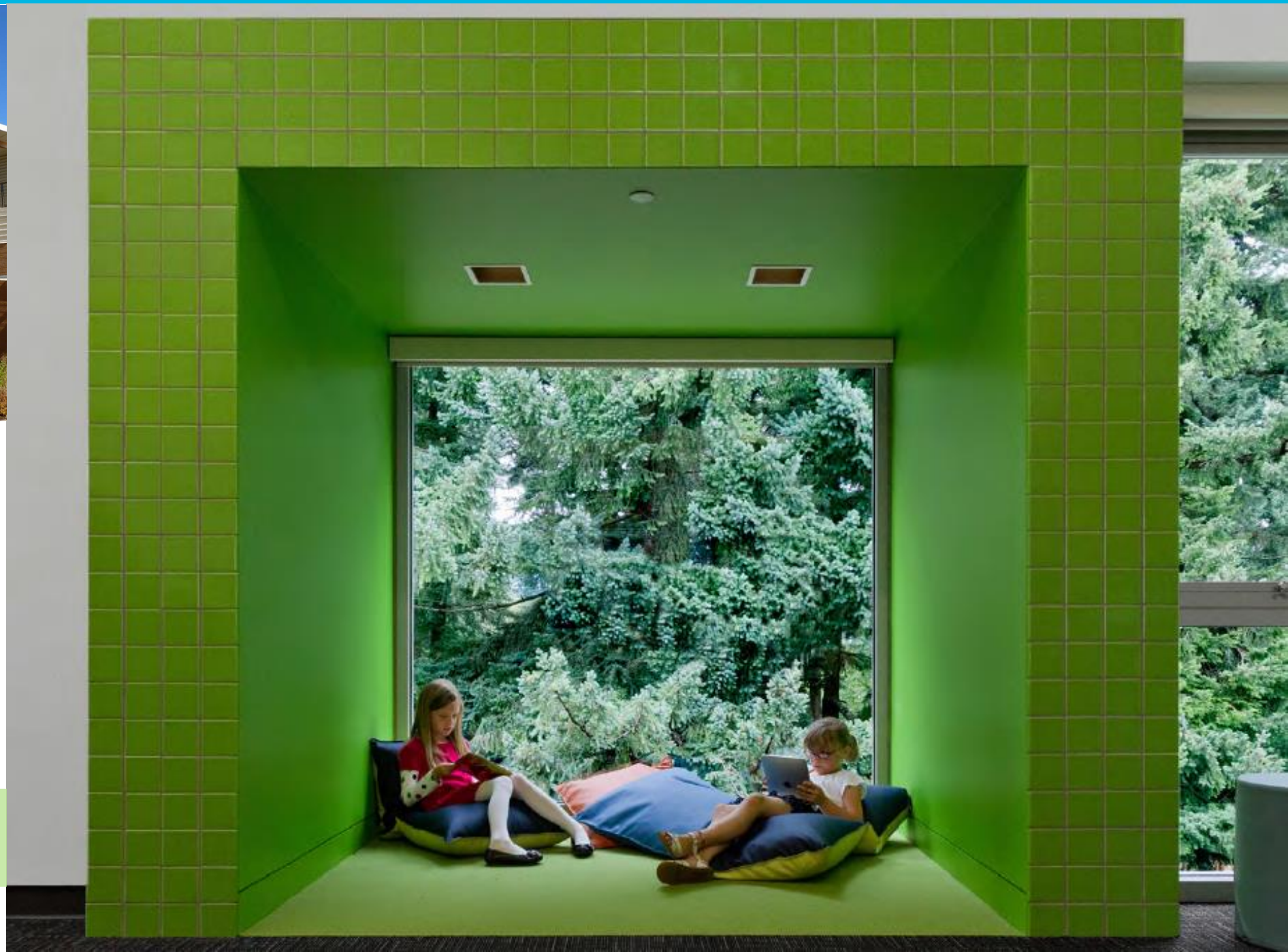
1. Learning Studio
2. Piazza (collaboration)
3. Outdoor Learning
4. Resource / Media
5. STEM Studio
6. Student Commons
7. Kitchen
8. Health / Fitness
9. Stage
10. Art
11. Music
12. Staff Collaboration / Small Group
13. Special Education
14. Administration / Student Services
15. Reception
16. Building Services



SECOND FLOOR



Booker T. Washington STEM Academy, Champaign IL. – Cannon Design



Trillium Creek Primary School
West Lynn OR.
Dull Olson Weeks, IBI

Parker Elementary School
Billerica, MA.
SMMA Architects

Stow Elementary,
Stow, MA
SMMA

Dining / Gym

Stow Elementary
Stow, MA
SMMA

Bancroft Elementary, Andover, MA
SMMA

Stow Elementary, Stow, MA
SMMA

OT/PT

Transparency

Arlington Elementary School
Tacoma, Washington
Mahlum Architects

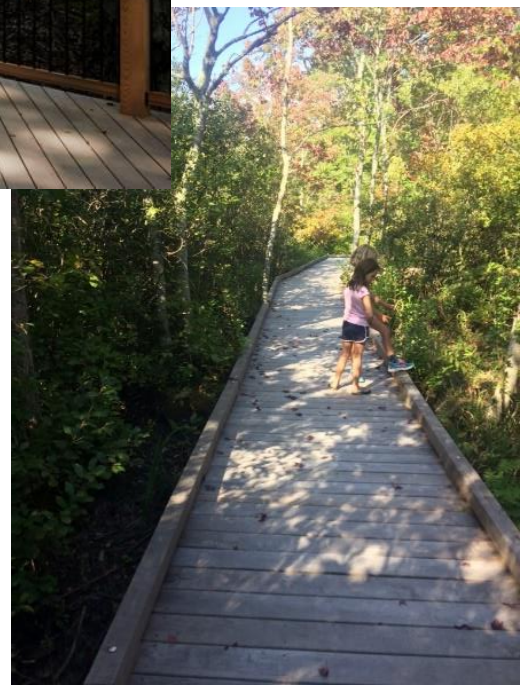
Arlington Elementary School
Tacoma, Washington
Mahlum Architects

Wilkes Elementary School
Bainbridge Island, WA.
Mahlum Architects

Sheltered Outdoor Learning Spaces

Engaging the Outdoors

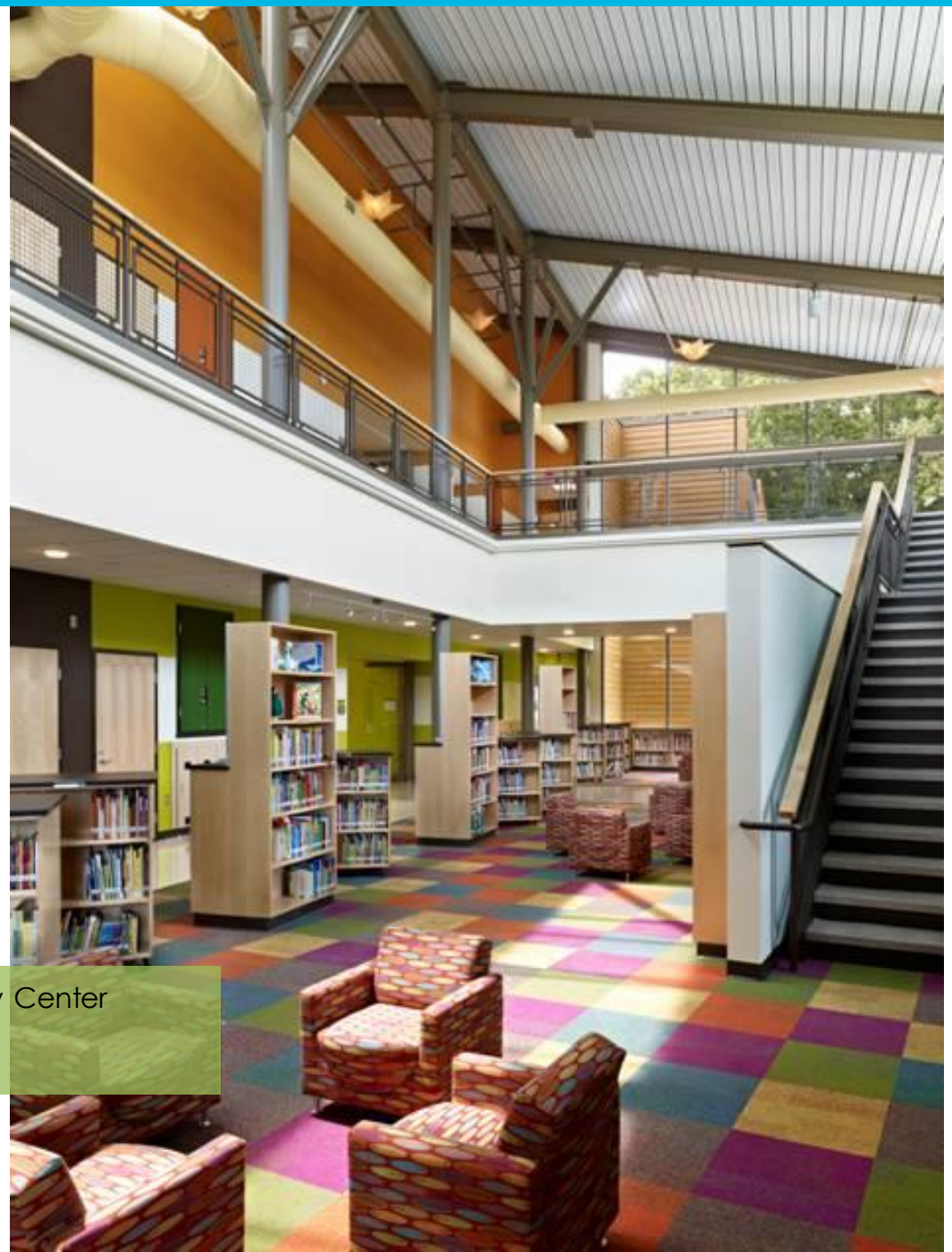
Engaging the Outdoors



Hanscom Middle/Primary School - Lincoln, MA.

- Bancroft Elementary School
- SMMA

Trillium Creek Primary School, West Lynn OR.
– Dull Olson Weeks, IBI



Springfield Literacy Center
Springfield, PA
Stantec

Springfield Literacy Center
Springfield, PA
Stantec

Rockland Elementary School

First Floor

PROGRAM LEGEND

- ADMINISTRATION AND GUIDANCE
- ART AND MUSIC
- CIRCULATION
- CORE ACADEMIC
- CUSTODIAL AND MAINTENANCE
- DINING AND FOOD SERVICE
- HEALTH AND PHYSICAL EDUCATION
- MEDIA CENTER
- MEDICAL
- OTHER
- SPECIAL EDUCATION

Second Floor

Rockland Elementary School
Rockland MA
SMMA

Aerial Front

Discussion

Table Topics Workshop

Topic 1: Walkable / Neighborhood Schools

Topic 2: Environmentally Responsible / Net Zero (Ready)

Topic 3: Community Uses (Current / Potential)

Topic 4: Cost and Schedule

Topic 5: Renovation vs. New Building

Topic 6: School Size / Culture

Topic 7: Swing Space / Adjacent Construction

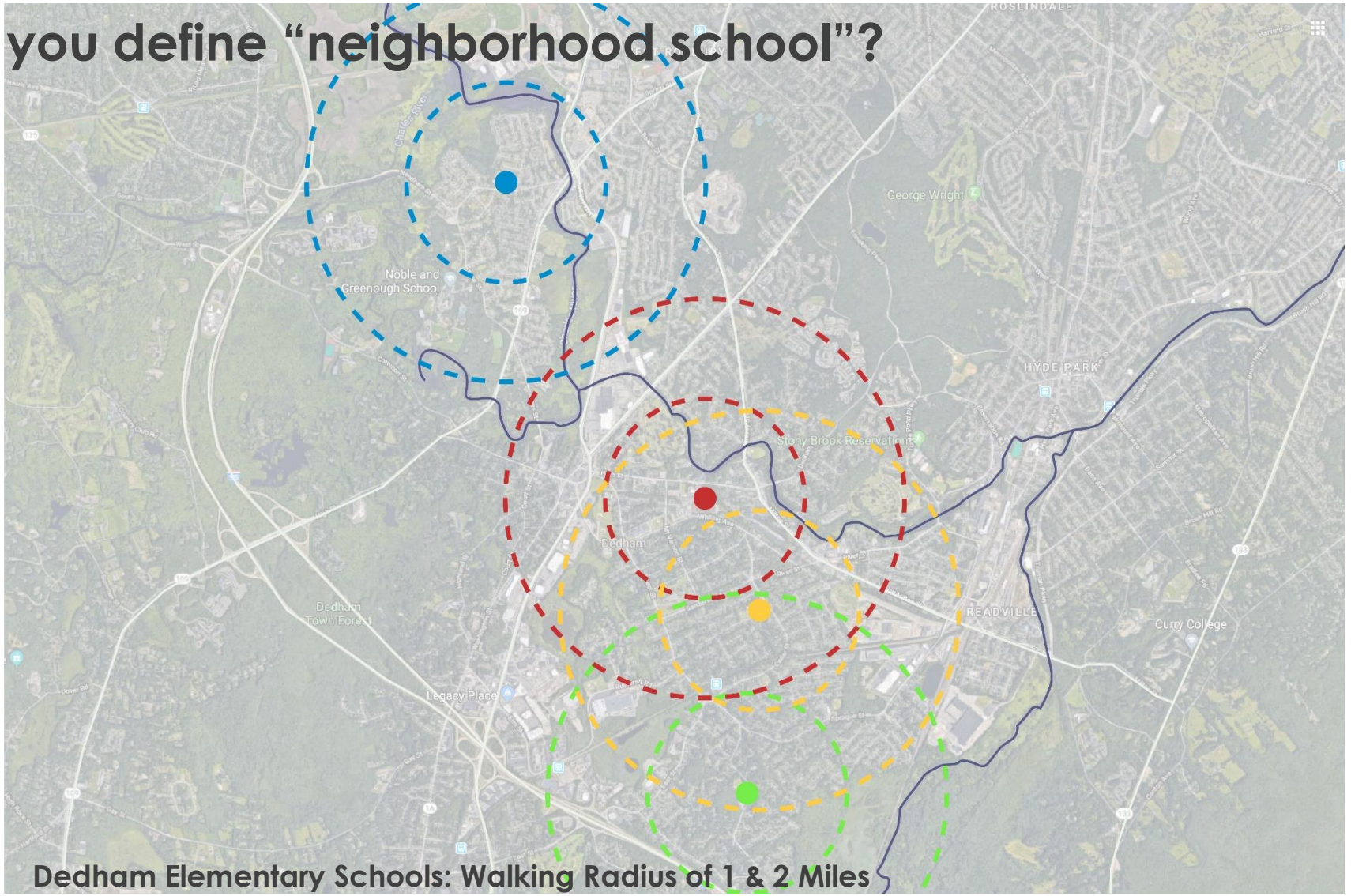
Topic 8: Demographics

Table Topic 1: Walkable / Neighborhood Schools

- Safe Routes to Schools
- Traffic
- Walking and Biking
- Bussing
- Arrival & Dismissal

Table Topic 1: Walkable / Neighborhood Schools

How do you define "neighborhood school"?



Dedham Elementary Schools: Walking Radius of 1 & 2 Miles

Table Topic 1: Walkable / Neighborhood Schools

DEDHAM SC POLICY (JC) ATTENDANCE AREAS

Attendance areas for the various schools of the town will be drawn up by the Superintendent and approved by the Dedham School Committee. The primary considerations that govern the establishment of a school attendance area are school capacity and transportation considerations. Generally, students will attend the school in the attendance area in which they live.

In establishing an attendance area, the following general guidelines will also be applied:

1. Use of safe waking conditions consistent with the Committee's transportation policies; where possible, major traffic thoroughfares and natural barriers will be used for boundaries.

2. Honoring community of interest; where possible, school attendance zones will incorporate community patterns.

From time to time an overcrowded condition in an existing school, the development of new residential areas, or the opening of a new school may require the establishment or change of previously established school attendance areas.

The Committee will confer with community representatives prior to setting new attendance lines. However, the Committee's primary basis for judgment must be equality of educational opportunity for all students rather than the personal desires of any one group. The Superintendent is authorized to make exceptions to attendance lines for individual children in the best interests of the student and/or the school.

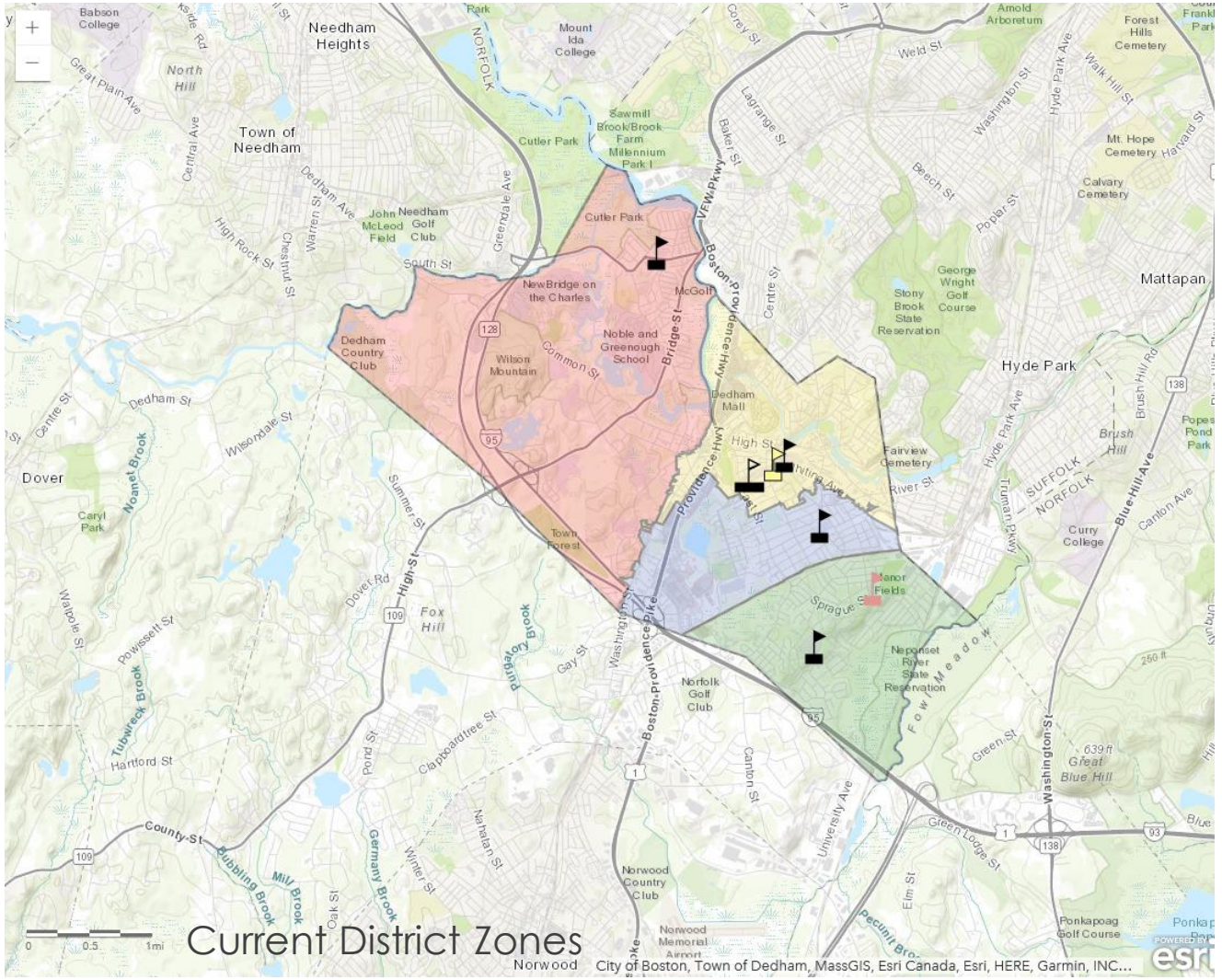


Table Topic 2: Sustainable / Net Zero (Ready)

- Sustainability, Resiliency, Net Zero (ready)
- Healthy Schools (LEED, WELL Standards)
- Low Energy Use

Energy Consumption (KBTU/yr)

People

Renewables

Energy Use Intensity Goal: **30** **kBtu/SF/yr.** *or better*

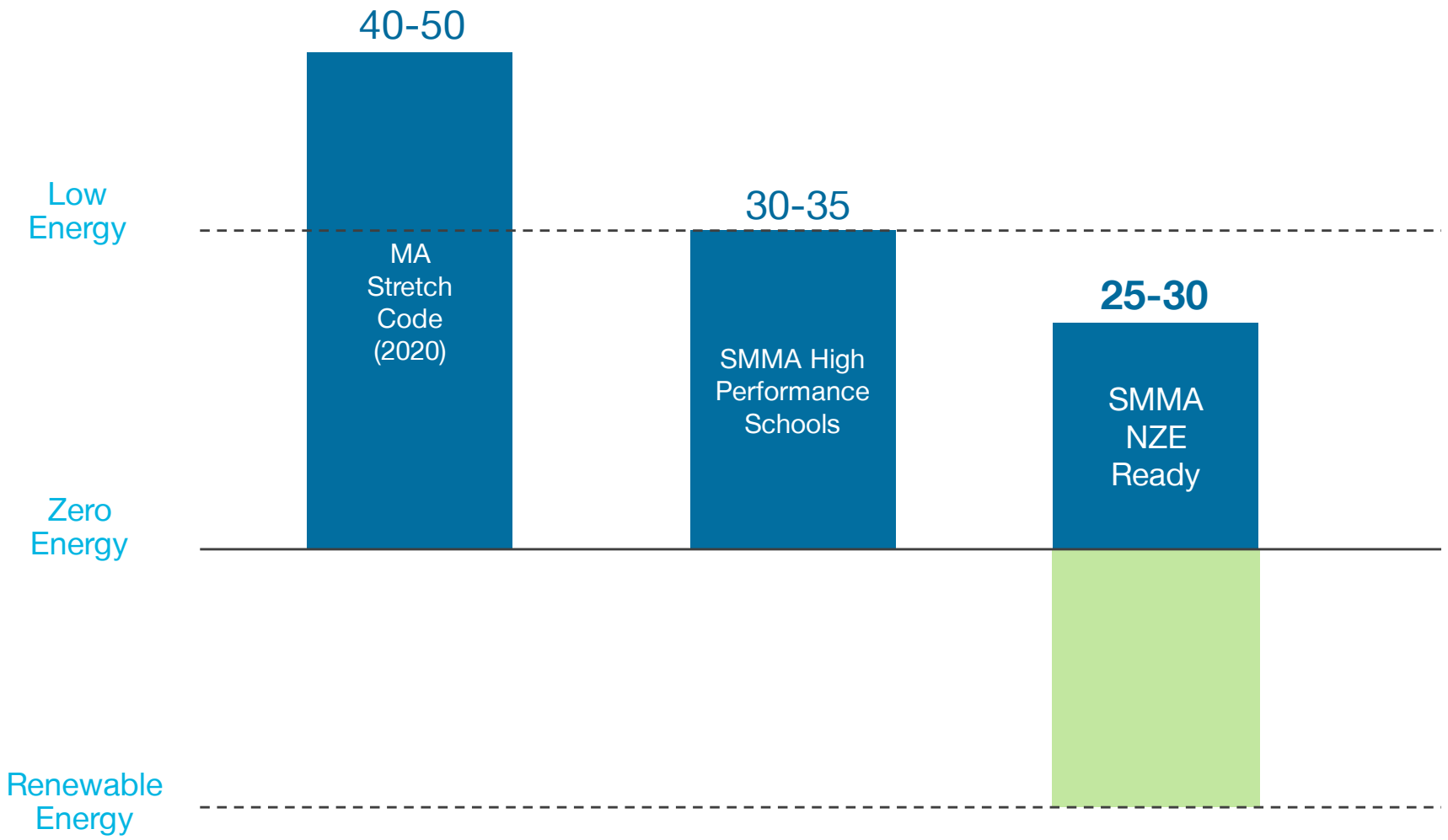


Table Topic 2: Environmentally Responsible / Net Zero (Ready)

School	School Type	Phase	Target EUI	All Electric	Zero Net Energy Goal
Cambridge - King Open	Elementary	Complete	26-28	Yes	60%
Cambridge - MLK	Elementary	Complete	26-28	No	43%
Worcester - Nelson	Elementary	Complete	25	No	No
Brookline - Coolidge Corner	K-8	Complete	23-26	Yes	Yes
Lexington - Hastings	Elementary	Under Construction	25	Yes	Yes
Westborough - Fales	Elementary	Under Construction	23	Yes	Yes
Belmont	Middle/High	Under Construction	30	Yes	Yes
Lincoln	Elementary	Under Construction	23	Yes	Yes
Arlington	High School	Under Construction	30-33	Yes	Yes
Watertown	Elementary	Design	23	?	Yes
Wellesley - Hunnewell	Elementary	Design	26-28	Yes	Yes
Acton-Boxborough	Elementary	Design	28	Yes	Yes
Swampscott – Hadley	Elementary	Design	20-30	?	?

Massachusetts Schools with Low Energy Goals

Table Topic 3: Community Uses (Current / Potential)

- Before School / After School – Students
- Evening / Weekend Use – Building
- Evening / Weekend Use – playgrounds and site
- District Policies
  - Outside community group use of facilities
- Summer uses
- Playgrounds and fields
- Gymnasia
- Cafeterias

Table Topic 3: Community Uses (Current / Potential)

- MSBA gym reimb. 6000; typical community request 7000+
- Elementary School equity
- Typical for ES: Stage (no auditorium)
- What is the current playing field inventory and what is the need?
- New vs. add/reno
  - Dedicated/controlled public access

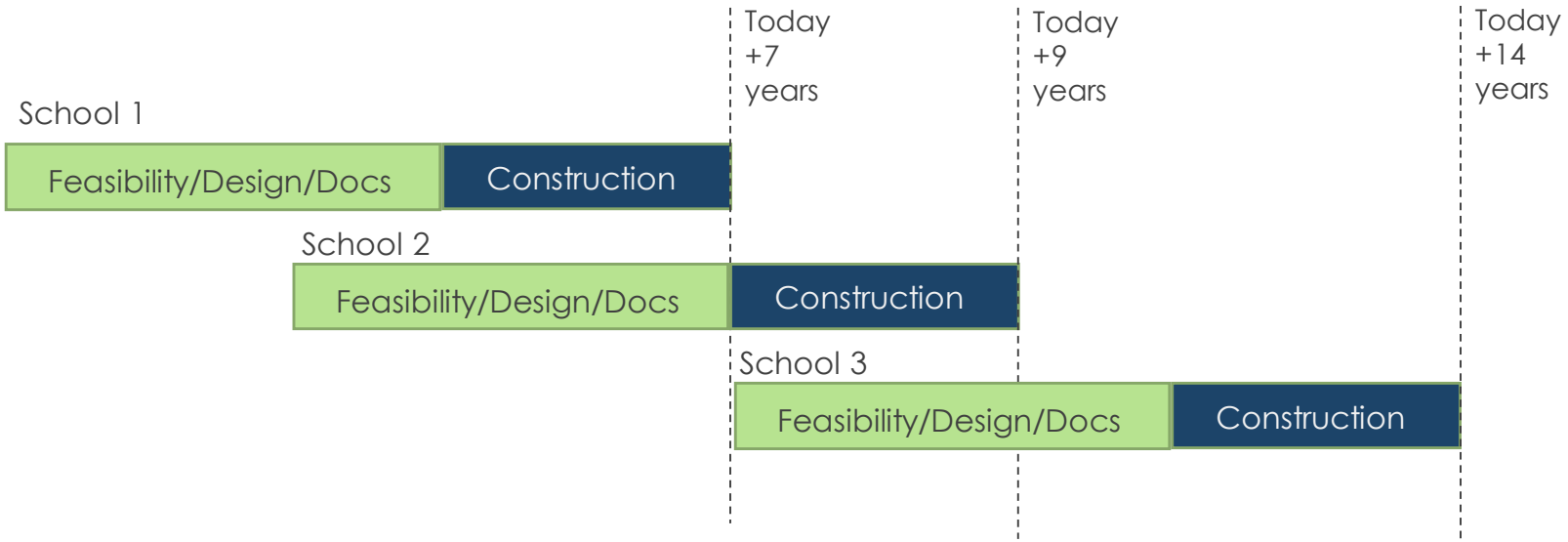
Table Topic 4: Cost and Schedule

- MSBA Timelines
- Single Project or Simultaneous Multiple Projects
- Costs of Multiple Projects
- Swing Space

Timeline for Design + Construction

Table Topic 4: Cost and Schedule

- Potential to condense schedule if one project is not MSBA?



Timeline for Design + Construction

Table Topic 4: Cost and Schedule

Square Footage using MSBA baseline
Assume 1,110 (grades 1-5) students total
Assume 775 needed + Avery

SF for **1 school** 114,300 gross SF **114,300 gross SF** total

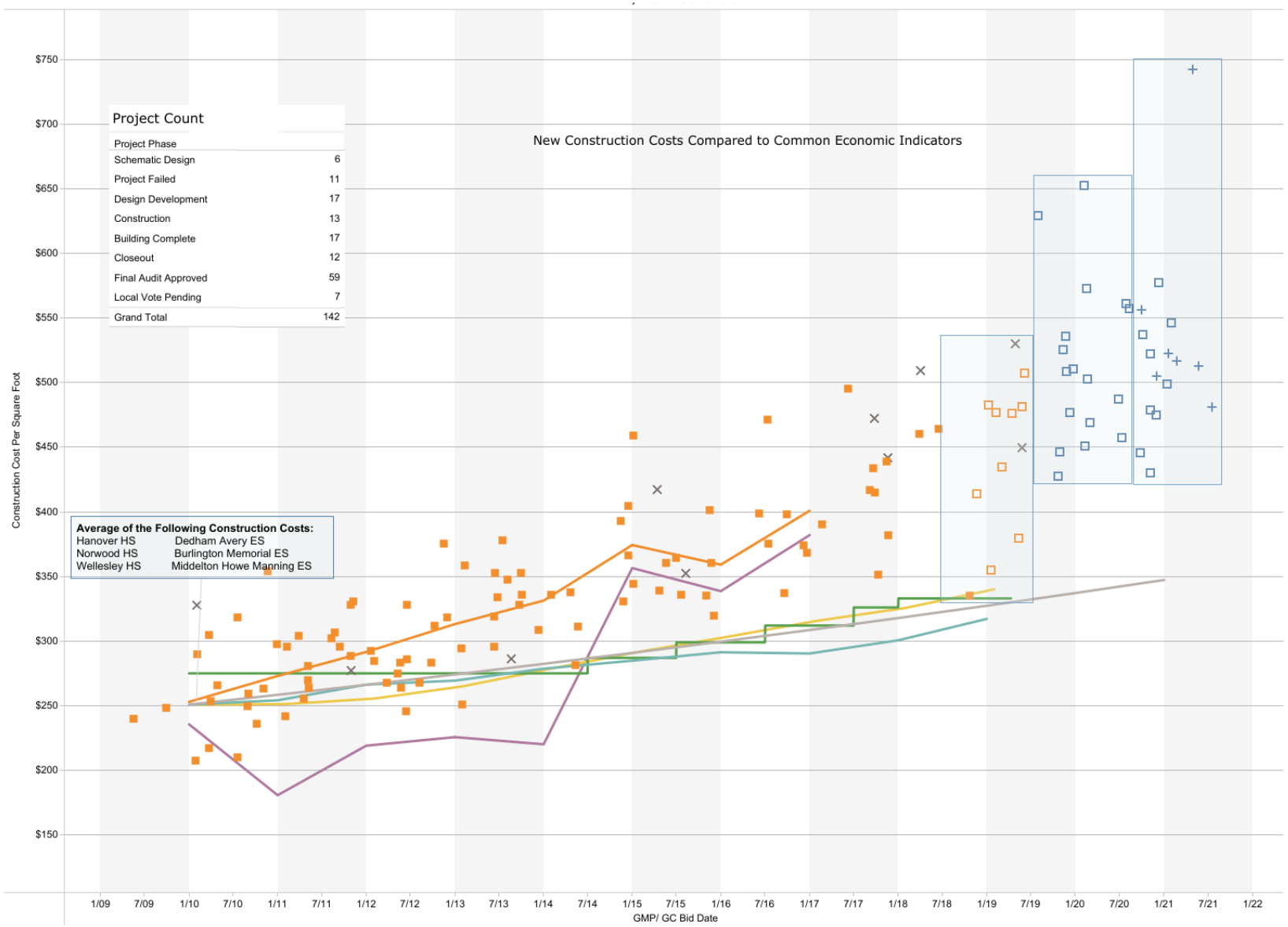
SF for **2 schools** (each) 68,400 gross sf x 2 = **136,800 gross SF** total

SF for **3 schools** (each) 54,500 gross sf x 3 = **163,500 gross SF** total

Proposed Space Summary- Elementary Schools

Dedham - Assume 2 Schools	Existing Conditions			PROPOSED: Existing to Remain/Renovated			PROPOSED: New			PROPOSED: Total			Date: Enter Date Enter Submittal: 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	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			0			0			0			0		20	19,050	
(List classrooms of different sizes separately)																
Pre-Kindergarten w/ toilet													1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet													1,200	3	3,600	1,100 SF min - 1,300 SF max; 2 sinks min. req
General Classrooms - Grade 1-6													950	15	14,250	900 SF min - 1,000 SF max; 2 sinks min. req
STE Room- Grade 3-6													1,080	1	1,080	Refer to STE Guidelines for Additio
STE Storage													120	1	120	Refer to STE Guidelines for Additio
SPECIAL EDUCATION			0			0			0			0			4,530	
(List rooms of different sizes separately)																
Self-Contained SPED													950	3	2,850	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toilet													60	3	180	
Resource Room													500	2	1,000	1/2 size Gen. Clrm.
Small Group Room / Reading													500	1	500	1/2 size Gen. Clrm.
ART & MUSIC			0			0			0			0			2,575	
Art Classroom - 25 seats													1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln													150	1	150	
Music Classroom / Large Group - 25-50 seats													1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble													75	3	225	
HEALTH & PHYSICAL EDUCATION			0			0			0			0			6,300	Excess PE Spaces Policy
Gymnasium													6,000	1	6,000	6000 SF Min. Size
Gym Storeroom													150	1	150	
Health Instructor's Office w/ Shower & Toilet													150	1	150	
MEDIA CENTER			0			0			0			0			2,416	
Media Center / Reading Room													2,416	1	2,416	
DINING & FOOD SERVICE			0			0			0			0			6,127	
Cafeteria / Dining													2,910	1	2,910	2 seatings - 15SF per seat

Table Topic 4: Cost and Schedule



Legend

- New Construction PSR
- New Construction SD
- New Construction Vote Failed
- New Construction Bid
- New Construction PFA Amended
- 3% Escalation
- Average- New Construction Projects
- BLS PPI- New School Construction
- MSBA Construction Funding Limit
- RLB Comparative Cost- Boston
- Average $/SF for Add/Reno

Current cost/sf MSBA database

Table Topic 5: Renovation vs. New Building

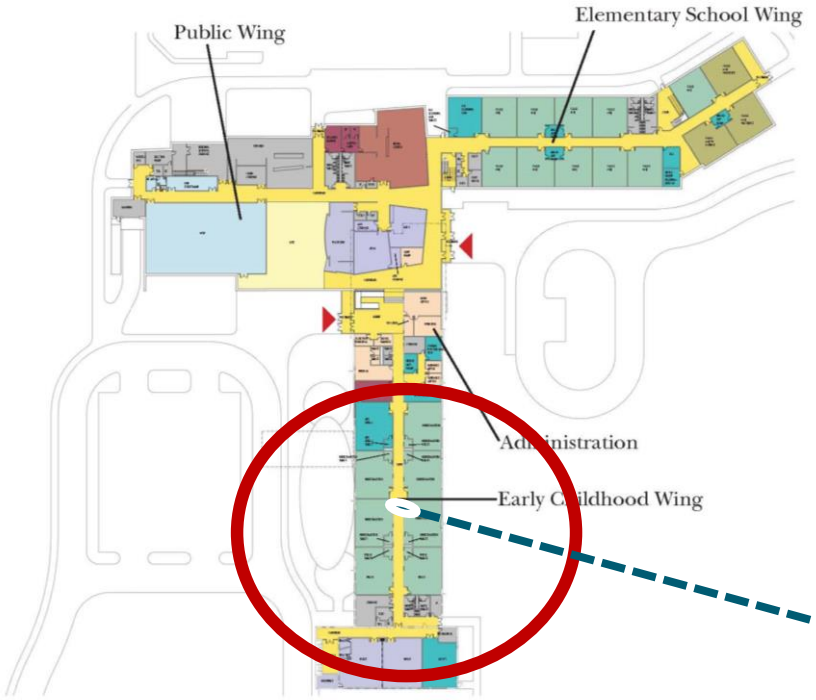
- Fulfillment of Educational Needs vs. Compromises?
- Student / Staff Safety
- Educational Disruption
- Handicapped Accessibility

Former Cafeteria

Former Stage

Table Topic 5: Renovation vs. New Building

- Universal Design for Learning
- Schedule
- Swing Space



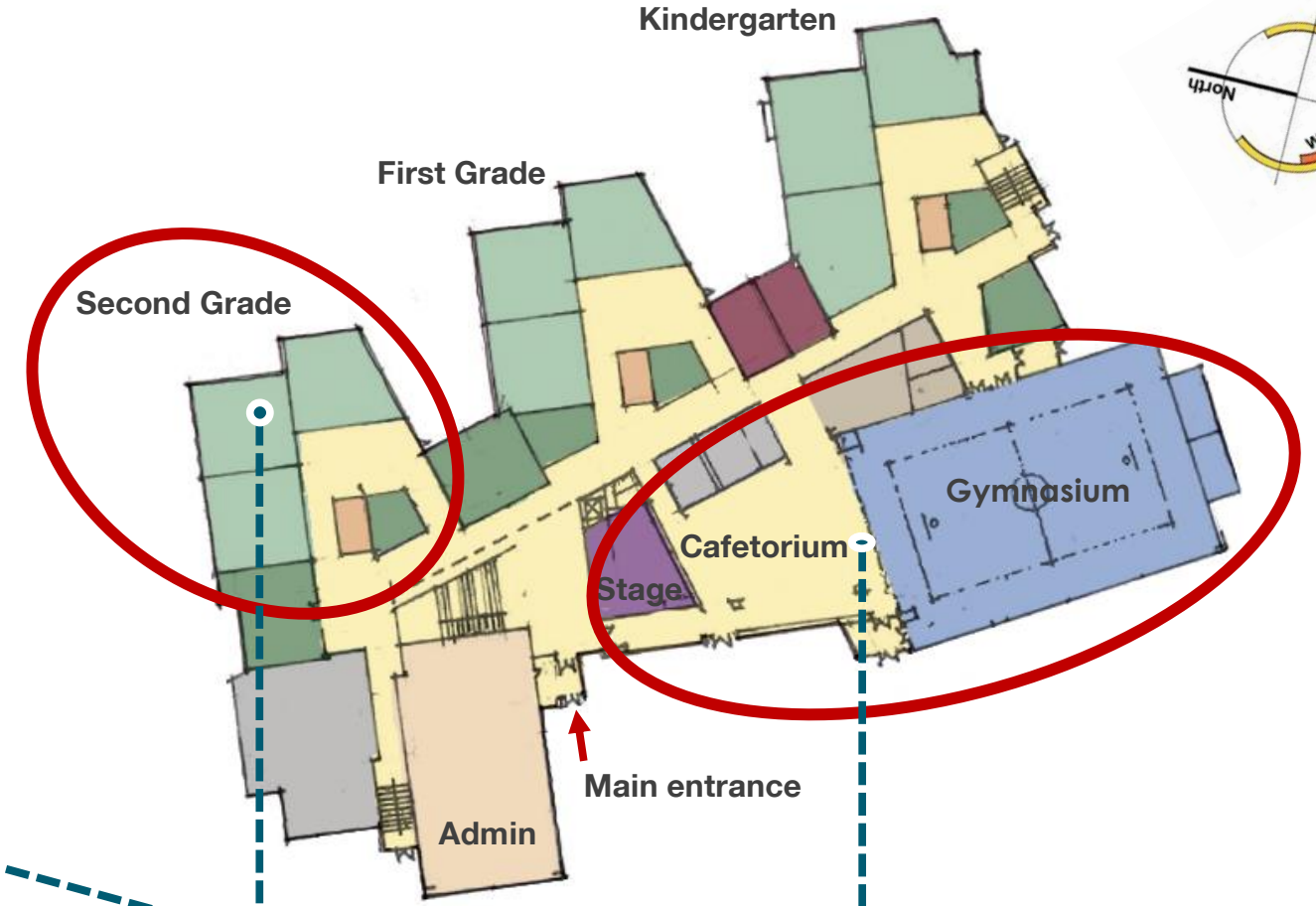
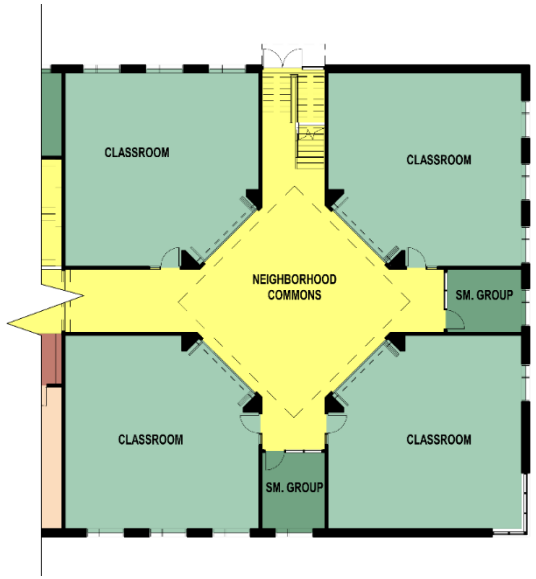


Table Topic 6: School Size / Culture

- Educational Neighborhoods
- Schools within a school
- How small is too small
- Advantages of a larger school
- Redistricting
- Operational budget

Table Topic 6: School Size / Culture

- Advantages of a larger school
- Redistricting
- Operational budget



Recent ES Projects f/ MSBA Website

South Hadley	270		only school
Revere	690		
Whitman-Hansen	800		
Athol-Royalston	545		
Newton	465		
Gloucester	355		1 of 5
Milford	985		
Northborough	270		1 of 4
Worcester	600		
Woburn	410		
Brookline	1,010		
New Bedford	400		
Hopkington	395		
Carver	750		
Narrahansett	580		
Granby	430		
Dedham ECEC	200		
Hanover	560		
Needham	430		
Amherst	750		
Bourne	460		
Newton	480		
Millis	515		
Clarksburg	150		only school
Lexington	645		
Taunton	735		
Tisbury	285		only school
Ludlow	630		
Marlborough	610		
Ipswich	775		
Harvard	445		
Northbridge	1,030		
Easthampton	1,010		
Foxborough	270		only school
Manchester-Essex	335		only school
Springfield	800		
	20070	36	557.5

average school design population

smallest school without Clarksburgh 270
150 school
1,030 largest school

Table Topic 7: Swing Space / Adjacent Construction

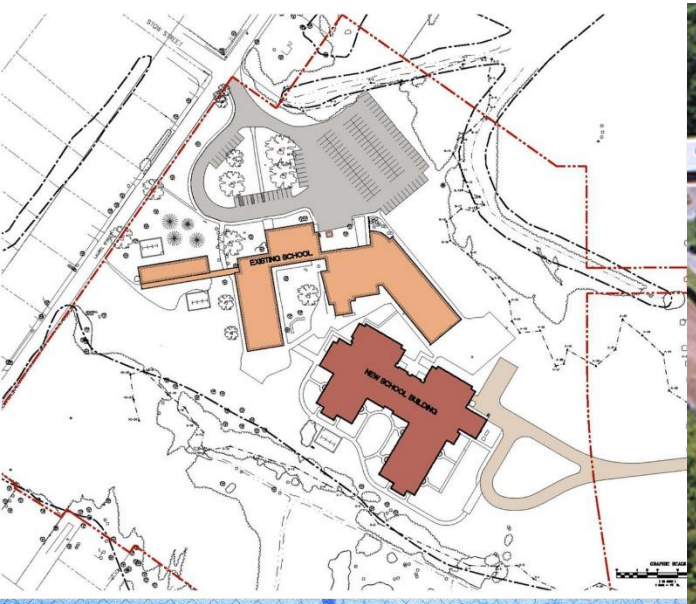


Table Topic 7: Swing Space / Adjacent Construction

- Modular Classrooms
- No Occupied Reno's

Table Topic 8: Demographics

- Universal PreK, demand for increased space
- Multi-location PreK - what might that mean?
- Increased Kindergarten Population – what might that mean?

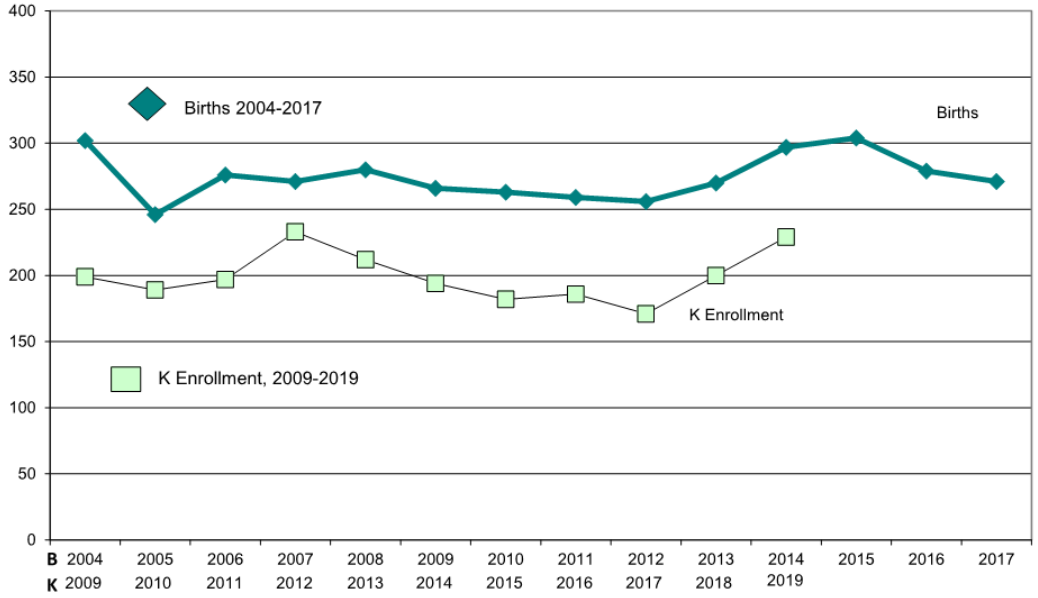
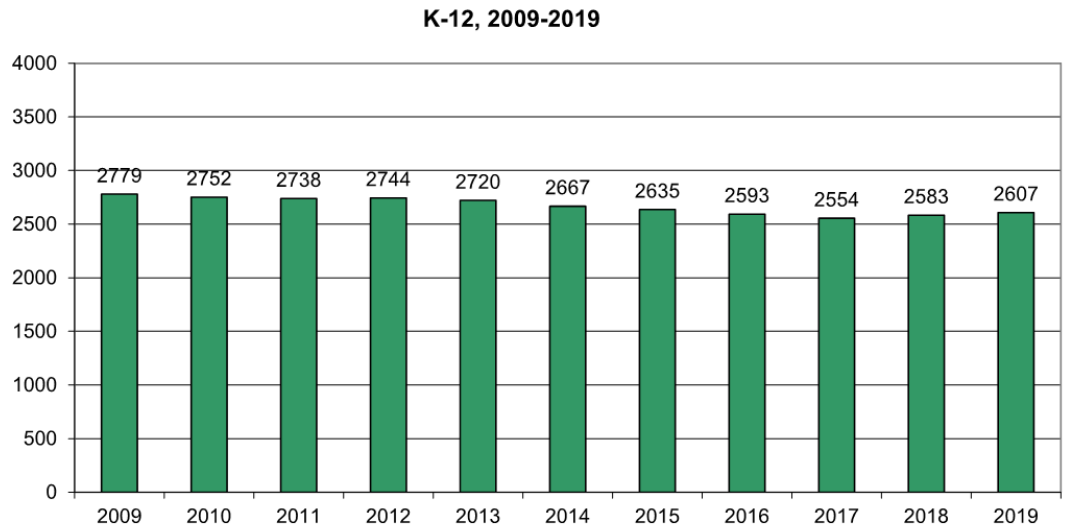


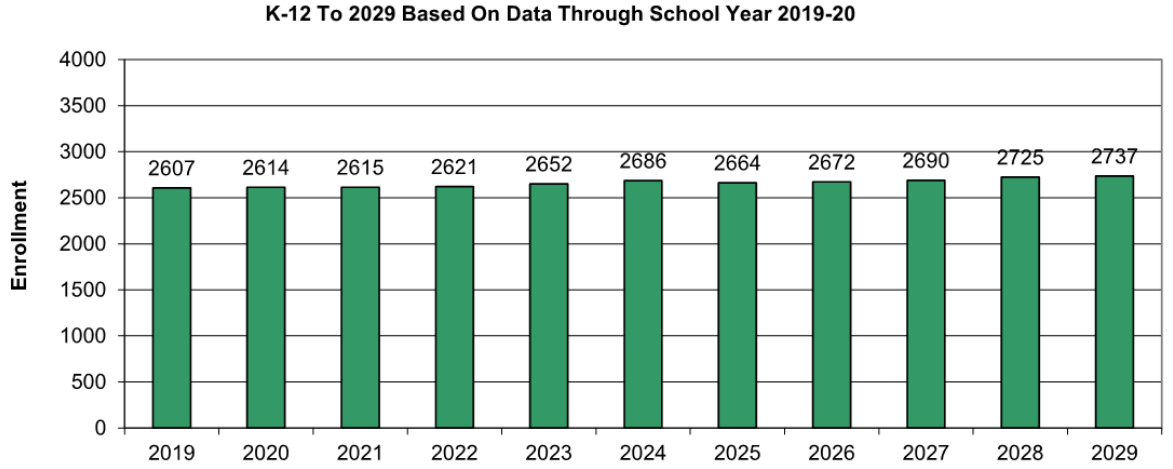
Table Topic 8: Demographics

- School Building sizes
- Neighborhoods of Growth?
- If You Build It, They Will Come

Dedham, MA Historical Enrollment



Dedham, MA Projected Enrollment



Step 1. Brainstorm (20 min)

Step 2. Summarize (10 min)

Step 3. Share (20 min)

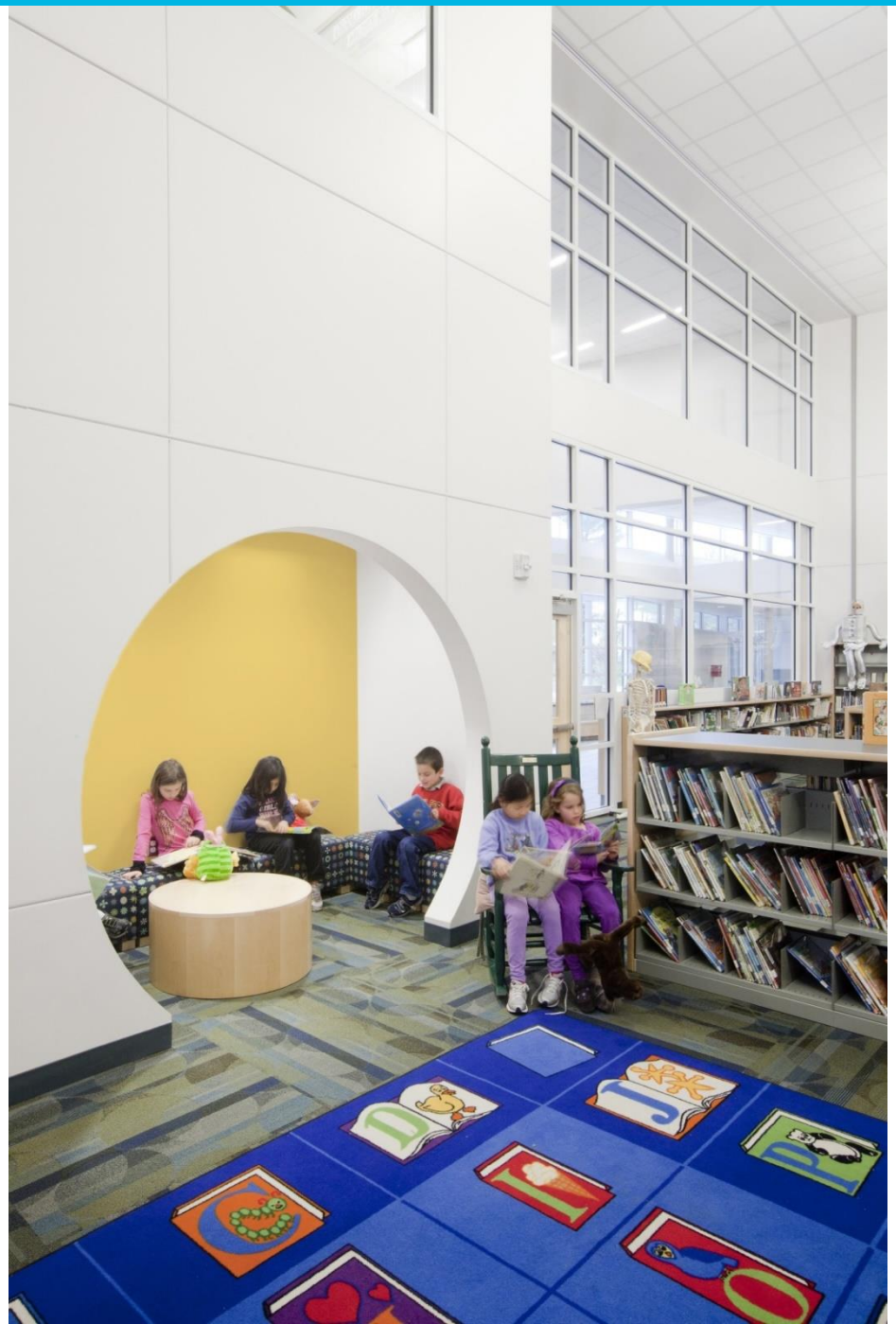
Step 4. Prioritize – Gallery Walk (10 min)

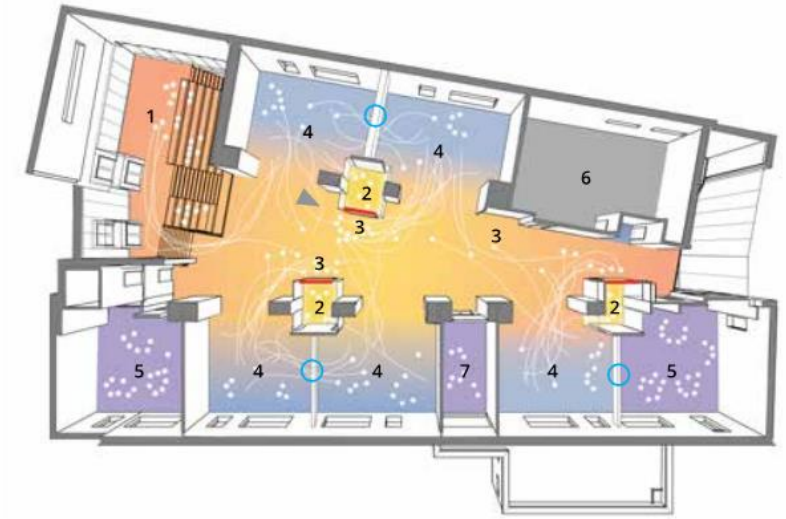
- **1st Preference - Green Dot**
- **2nd Preference – Yellow Dot**
- **3rd Preference – Red Dot**

Next Steps

- SMMA to Prepare Summary of Workshop #2
- Workshop #3 – Monday, January 13th
- DPS to Prepare Statement of Interest (SOI), Submit to MSBA, Spring 2020

Thank You





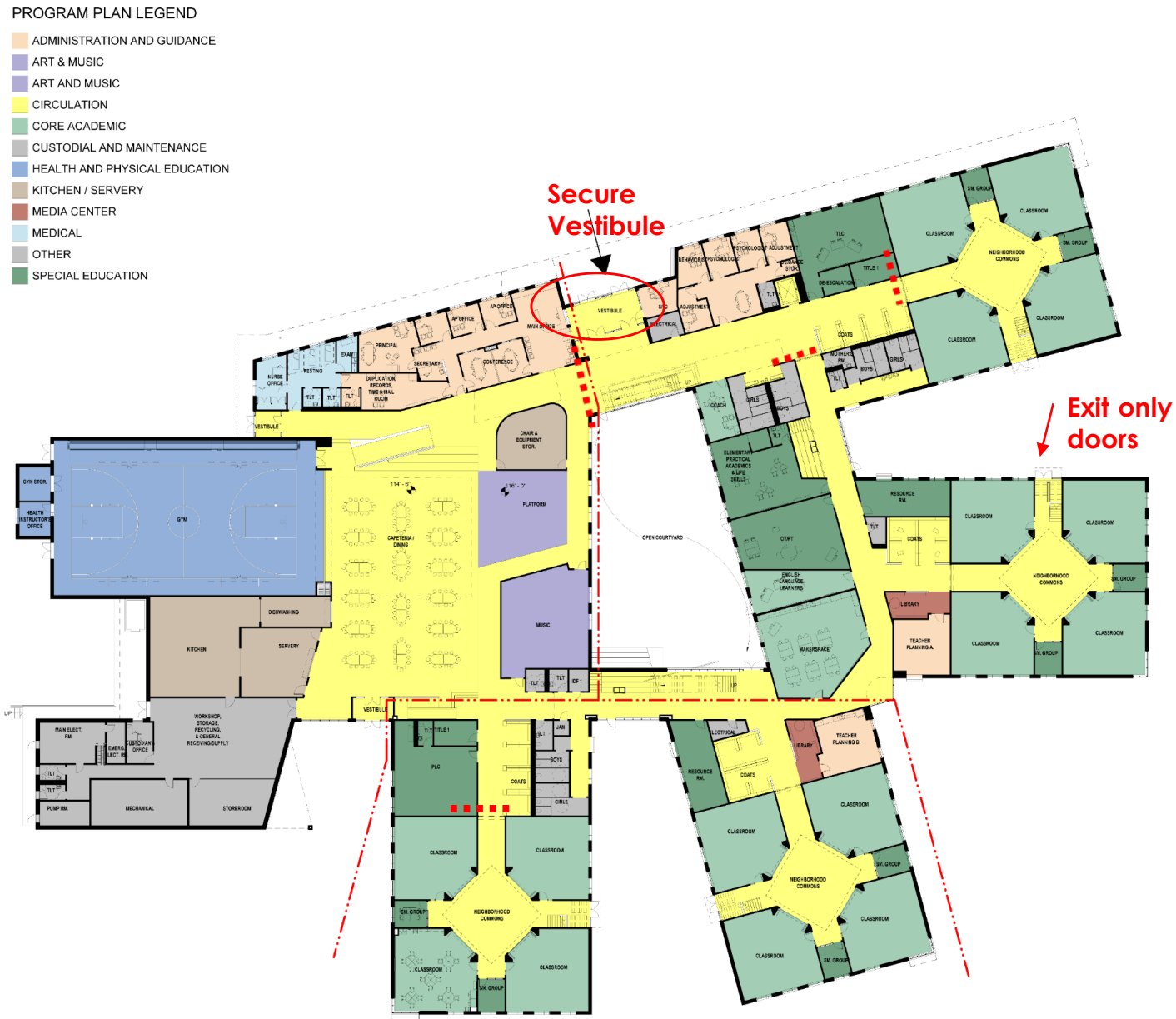
1 Informal Presentation Area
2 Small Conference Room
3 Informal Collaboration Space
4 Flexible Classrom
5 Dedicated Classroom
6 Utility Core
7 Staff Room
○ Operable Glass Partitions

Wilson High School
Tacoma, WA.
NAC Architecture

Douglas Park School
Regina Saskatchewan
Fielding Nair International

School Safety and Security

- Use of CPTED principles in design – property line to building edge
- Single point of entry
- Minimizing of exterior doors
- Invisible elements (zoning)
- Soft side of Safety and Security



Sheltered Outdoor Learning Spaces

Rockland Elementary School
Rockland MA
SMMA

Engaging the Outdoors

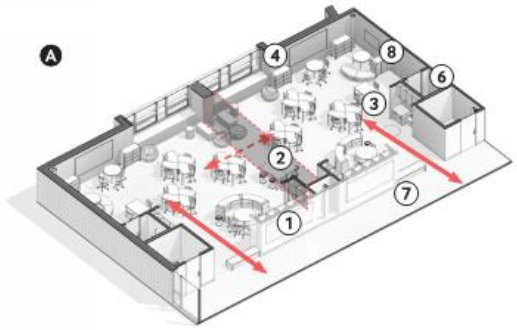
Trillium Creek Primary School, West Lynn OR.
– Dull Olson Weeks, IBI

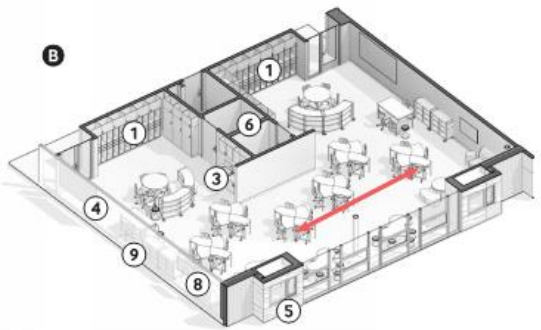
Flexible Studio Spaces

- A OPEN STUDIO
- B SUPER STUDIO
- C SINGLE STUDIO
- D SHARED STAFF RESOURCE / MEETING
- E SMALL GROUP RESOURCE

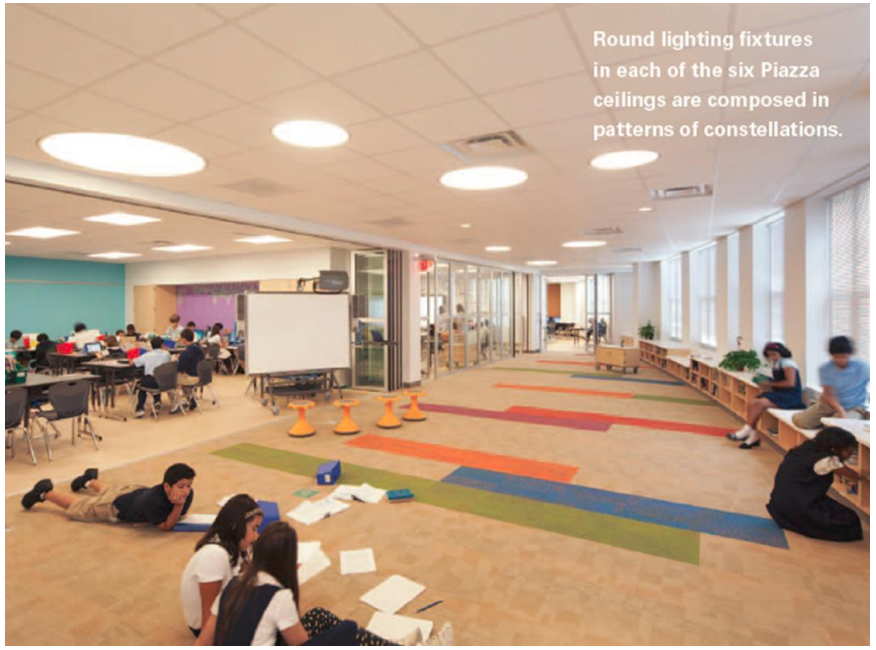
- FLEXIBLE CONNECTION
- PERMANENT CONNECTION
- MOVABLE PARTITION

1. STUDENT + TEACHER RESOURCE STORAGE
2. MOVABLE PARTITION
3. SINK + RESOURCE AREA
4. TACKABLE SURFACE
5. READING WINDOW NOOK
6. STUDIO TOILET (K/1)
7. THRESHOLD BENCH
8. INTERACTIVE TECHNOLOGY
9. WRITABLE WALL





Bluestone Elementary School
Harrisonburg, Virginia
VMDO Architects


Round lighting fixtures
in each of the six Piazza
ceilings are composed in
patterns of constellations.

SMMA

Facilities Master Plan

Individual School Update and Input Gathering Meetings

October 15, 22, 23, 2019

Agenda

- Introductions
- School Facility Projects Background
- Our Work Completed to Date
  - Educational Facility Assessments
  - Enrollment Analysis
- Community Engagement and Input
- Q & A

SMMA: Who We Are

Principal-in-Charge /
Educational Planner

Philip Poinelli

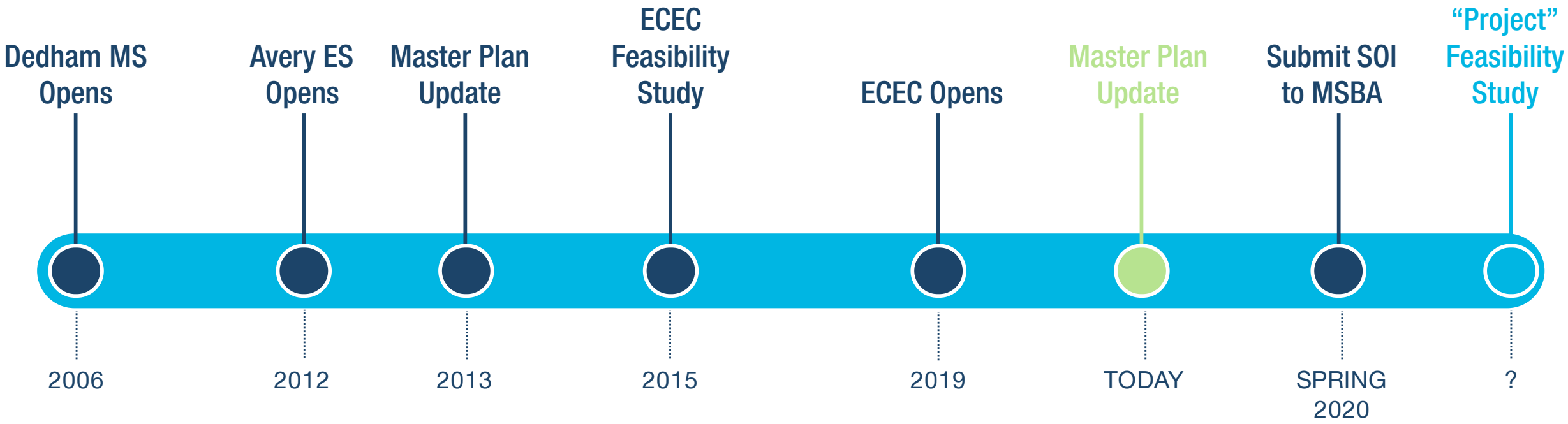
FAIA, ALEP

Project Manager

Kristen M. Olsen

AIA, MCPPO

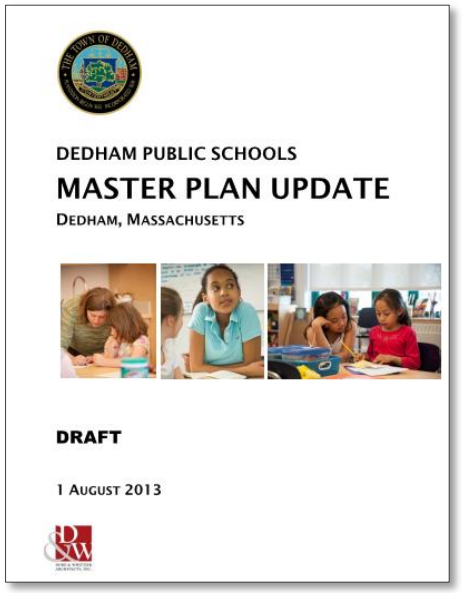
What brings us here today?



Prior Studies

2013 Master Plan Update

Dore and Whittier Architects

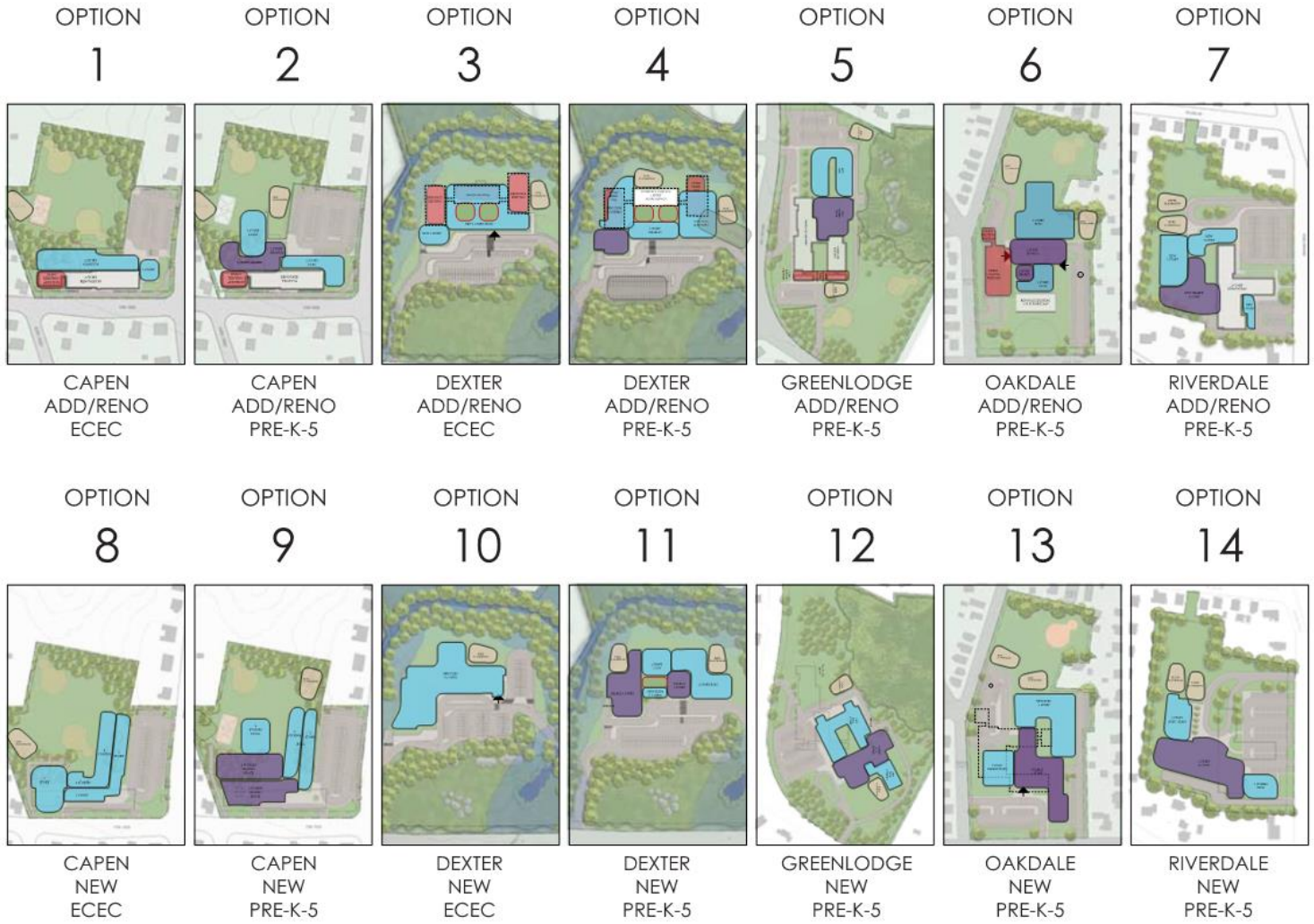


Reviewed many options!

Resulted in the successful prioritization and completion of the new ECEC building.

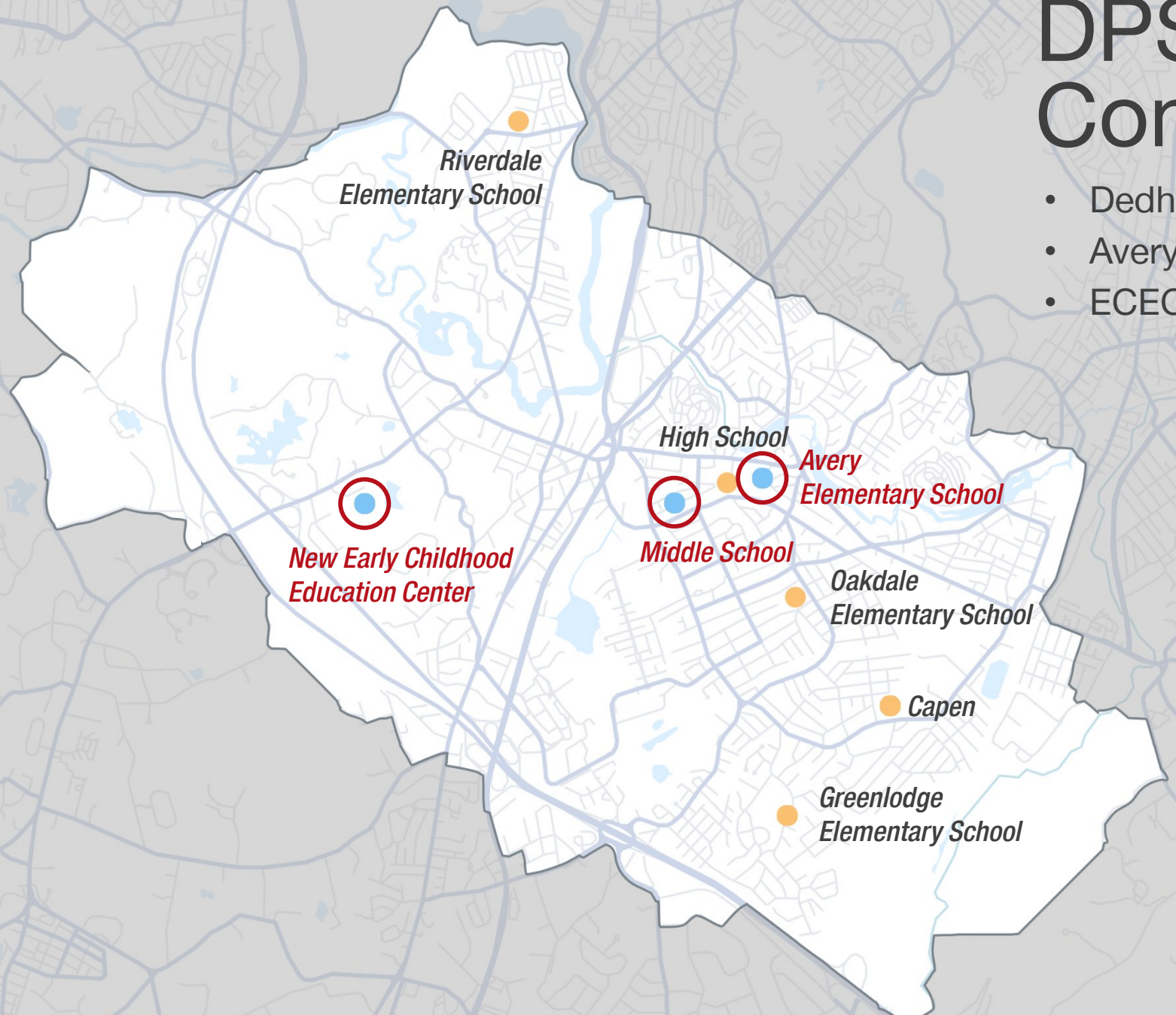
2015 ECEC Feasibility Study

KBA Architects



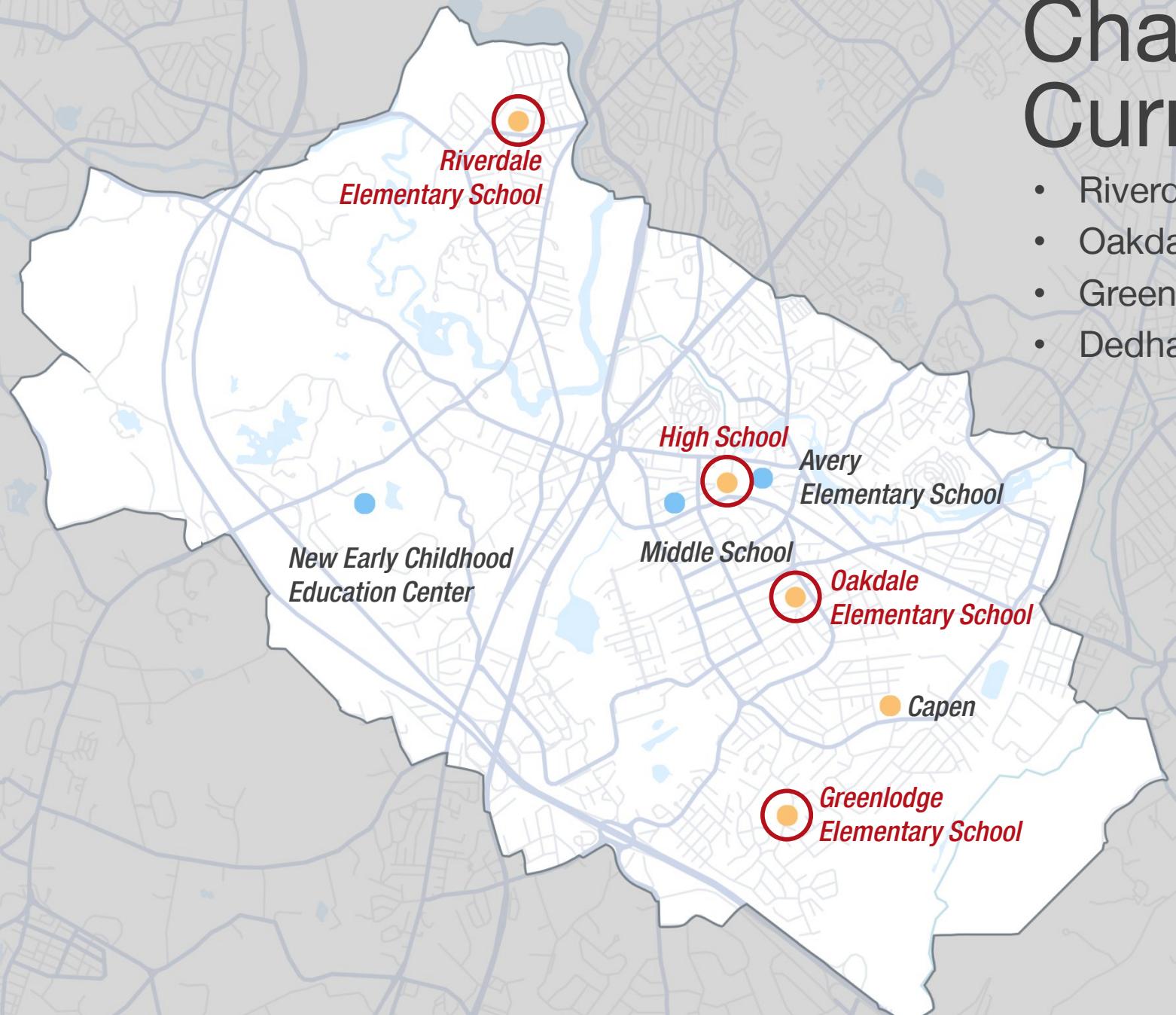
DPS Master Plan Completed Projects

- Dedham Middle School 2006
- Avery Elementary School 2012
- ECEC 2019



Charge for Current Study

- Riverdale Elementary
- Oakdale Elementary
- Greenlodge Elementary
- Dedham High School



Massachusetts School Building Authority – 2016 School Survey Report

District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Massachusetts School Building Authority – 2016 School Survey Report

District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	**1**	**Under**	**1**
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Massachusetts School Building Authority – 2016 School Survey Report

District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	**1**	**Under**	**1**
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

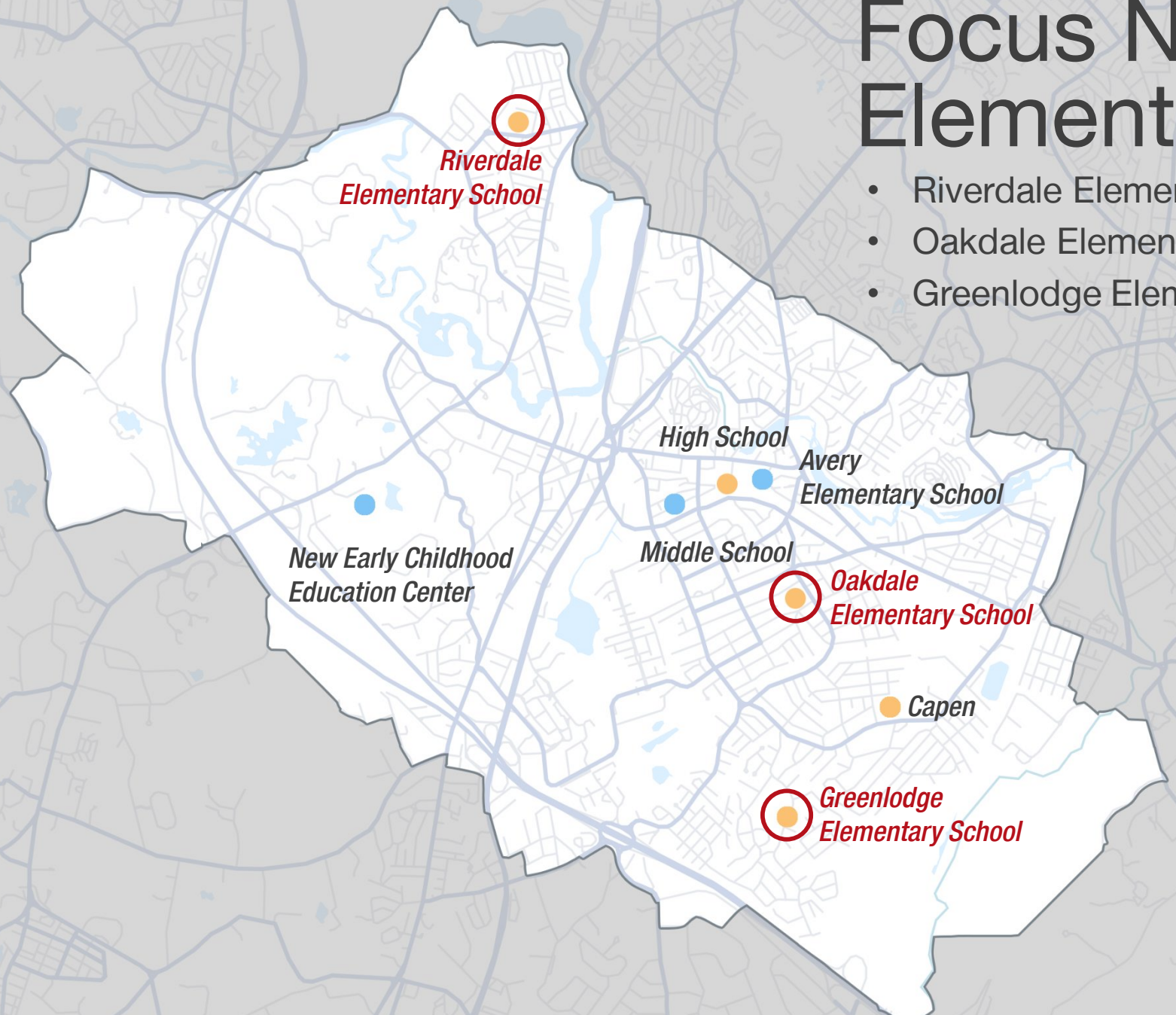
Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Focus Narrowed to Elementary School Need

- Riverdale Elementary
- Oakdale Elementary
- Greenlodge Elementary



Riverdale Elementary School

Quick Facts

- Built in 1921
- Additions in 1930 & 1970
- 172 Students
- Historic Status – none
- Modest Site Size
- Classrooms are undersized
- Traditional Layout

Oakdale Elementary School

Quick Facts

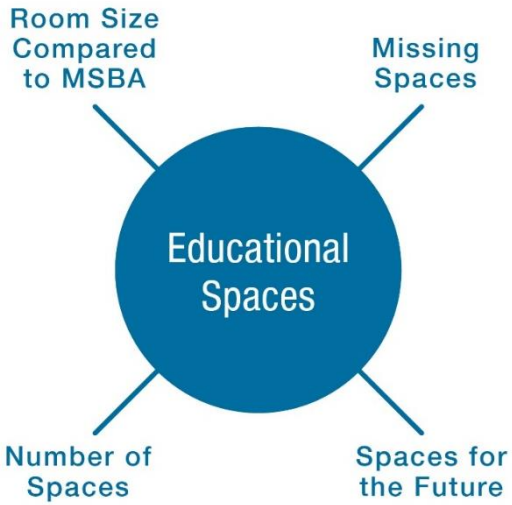
- Built in 1902
- Additions in 1951 & 1970
- 271 Students
- Historic Status – none
- Modest Site Size
- Classrooms are undersized
- Traditional Layout

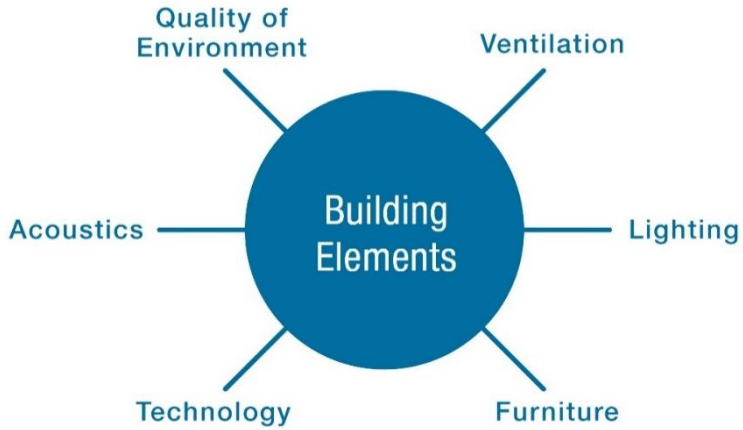
Greenlodge Elementary School

Quick Facts

- Built in 1955
- Additions 1961 &1970
- 247 Students
- Large Site (partially hilly)
- Traditional Layout

Measuring Educational Facility Effectiveness





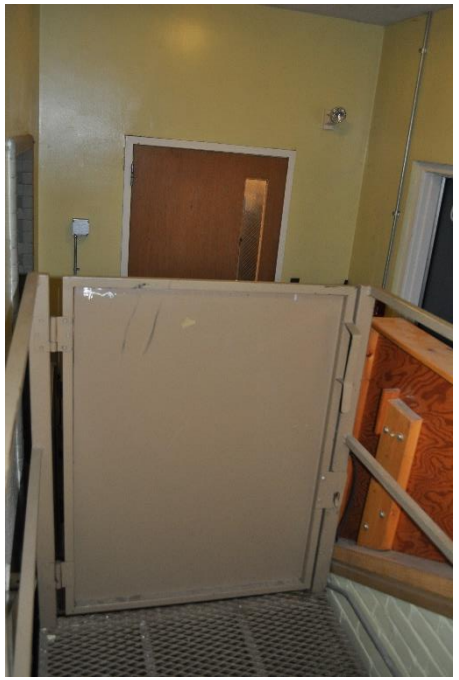
Educational Spaces

Conditions at the three schools vary somewhat but generally:

- Classroom vary in sizes: Some meet MSBA Guidelines but oldest buildings have significantly small rooms
- No cafeteria (meals in classrooms)
- Undersized gym, undersized libraries in 2 schools
- Numerous issues with building conditions that impede teaching and learning:
  lighting, temperature, ventilation, acoustics
- Issues related to safe and secure learning environments
- Need for additional Special Education spaces

Building Elements

- Limited handicapped access to significant parts of the building
- Wood construction in two of the oldest buildings, including stairs
- Numerous other issues of accessibility
- Obsolete mechanical heating and ventilation system, no air conditioning
  frequently too hot / too cold for teaching and learning
- Inadequate electrical systems
- Obsolete plumbing systems, lack of automatic fire protection
- Window replacement needed
- Cosmetic issues
  floors, ceilings, walls (work might be categorized as minor)



2016 Facility Condition Assessment
EMC Corp

FACILITY CONDITION ASSESSMENT

Prepared for

Town of Dedham Schools
100 Whiting Avenue
Dedham, Massachusetts 02026

PREPARED BY:
EMG
10461 Mill Run Circle, Suite 1100
Owings Mills, Maryland 21117
800.733.0660
www.EMGcorp.com

EMG CONTACT:
C. Martin Nowland, PE, CEM
Program Manager
908-793-8461
mnowland@nowlandservices.com

EMG PROJECT #:
121711.16R000-007.322

DATE OF REPORT:
December 23, 2016

ONSITE DATE:
November 9, 2016

FACILITY CONDITION ASSESSMENT
OF
DEDHAM-GREENLODGE ELEMENTARY SCHOOL
191 GREENLODGE STREET
DEDHAM, MA 02026

emg engineering | environmental | capital planning | project management FACILITY DUDE
EMG Corporate Headquarters 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117 www.EMGcorp.com p 800.733.0660

FACILITY CONDITION ASSESSMENT

Prepared for

Town of Dedham Schools
100 Whiting Avenue
Dedham, Massachusetts 02026

PREPARED BY:
EMG
10461 Mill Run Circle, Suite 1100
Owings Mills, Maryland 21117
800.733.0660
www.EMGcorp.com

EMG CONTACT:
Bill Champion
Program Manager
800.733.0660 x6234
bchampion@emgcorp.com

EMG PROJECT #:
121711.16R000-009.322

DATE OF REPORT:
December 27, 2016

ONSITE DATE:
November 10, 2016

FACILITY CONDITION ASSESSMENT
OF
DEDHAM-OAKDALE ELEMENTARY SCHOOL
147 CEDAR STREET
DEDHAM, MASSACHUSETTS 02026

emg engineering | environmental | capital planning | project management FACILITY DUDE
EMG Corporate Headquarters 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117 www.EMGcorp.com p 800.733.0660

FACILITY CONDITION ASSESSMENT

Prepared for

Town of Dedham Schools
100 Whiting Avenue
Dedham, Massachusetts 02026

PREPARED BY:
EMG
10461 Mill Run Circle, Suite 1100
Owings Mills, Maryland 21117
800.733.0660
www.EMGcorp.com

EMG CONTACT:
Bill Champion
Program Manager
800.733.0660 x6234
bchampion@emgcorp.com

EMG PROJECT #:
121711.16R000-010.322

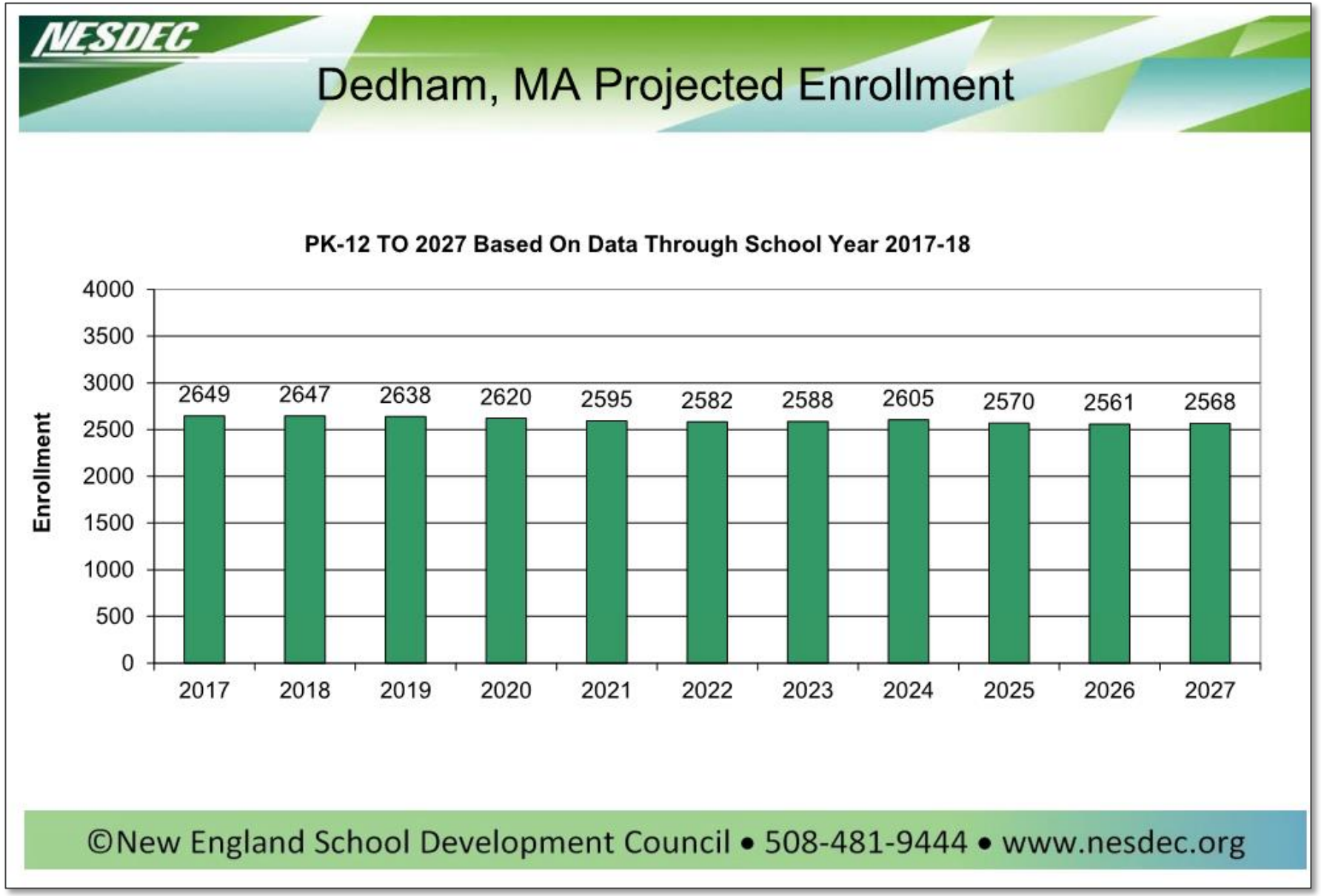
DATE OF REPORT:
January 5, 2017

ONSITE DATE:
November 14, 2016

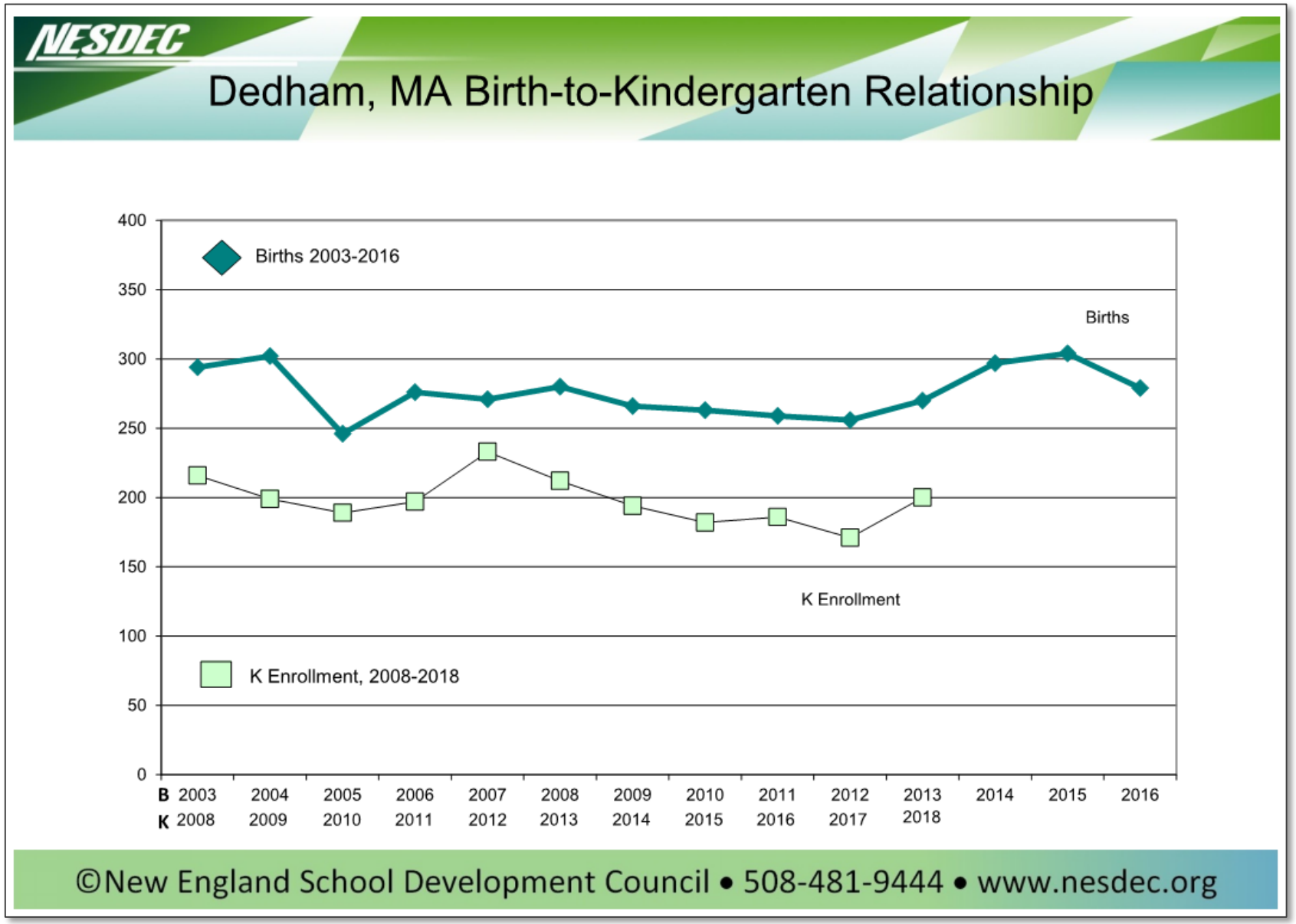
FACILITY CONDITION ASSESSMENT
OF THE
DEDHAM-RIVERDALE ELEMENTARY SCHOOL
143 NEEDHAM STREET
DEDHAM, MASSACHUSETTS 02026

emg engineering | environmental | capital planning | project management FACILITY DUDE
EMG Corporate Headquarters 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117 www.EMGcorp.com p 800.733.0660

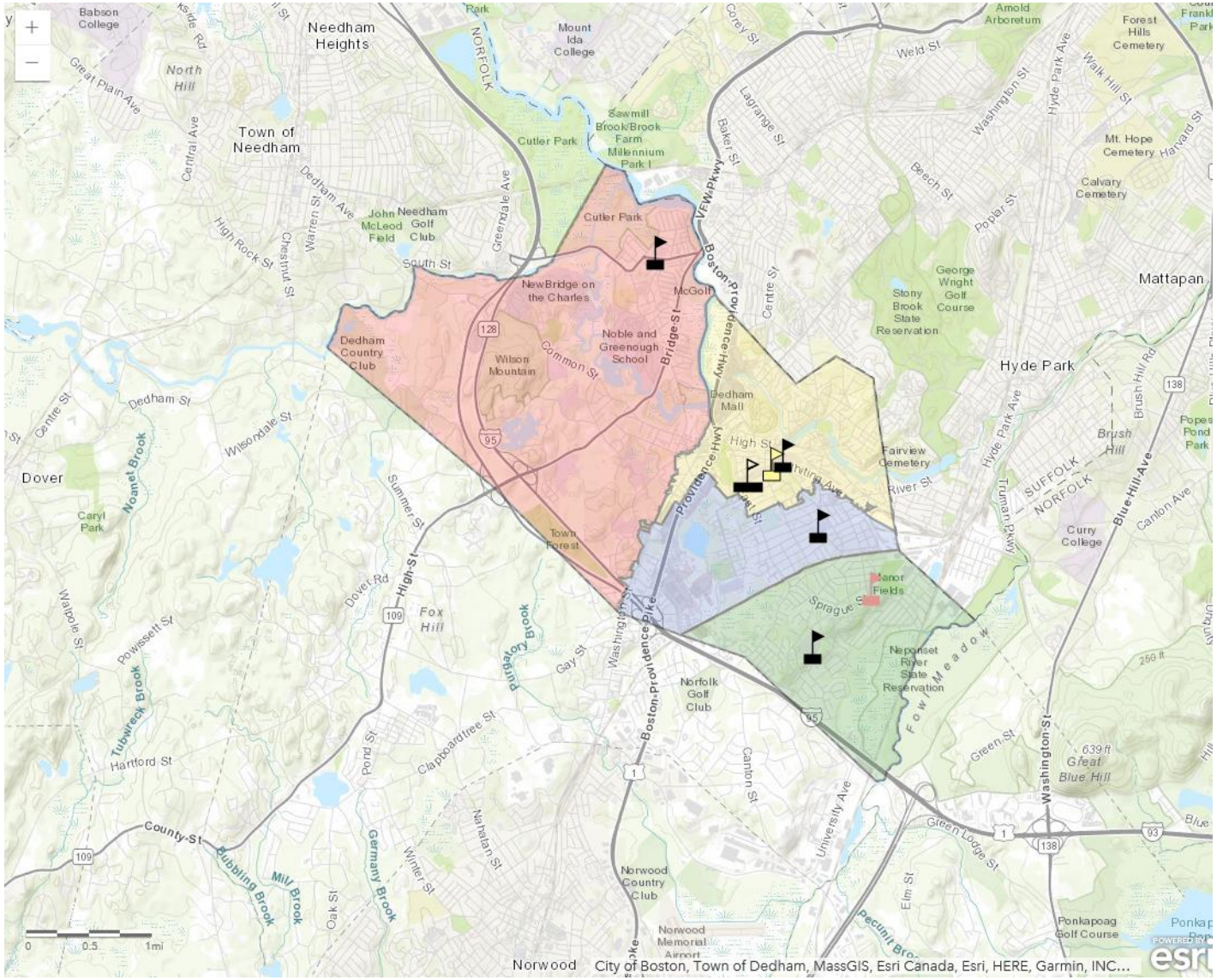
Enrollment Projections



Birth Rate


NESDEC
Dedham, MA Birth-to-Kindergarten Relationship
400
350
300
250
200
150
100
50
0
Births 2003-2016
Births
K Enrollment
K Enrollment, 2008-2018
B 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
K 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
©New England School Development Council • 508-481-9444 • www.nesdec.org

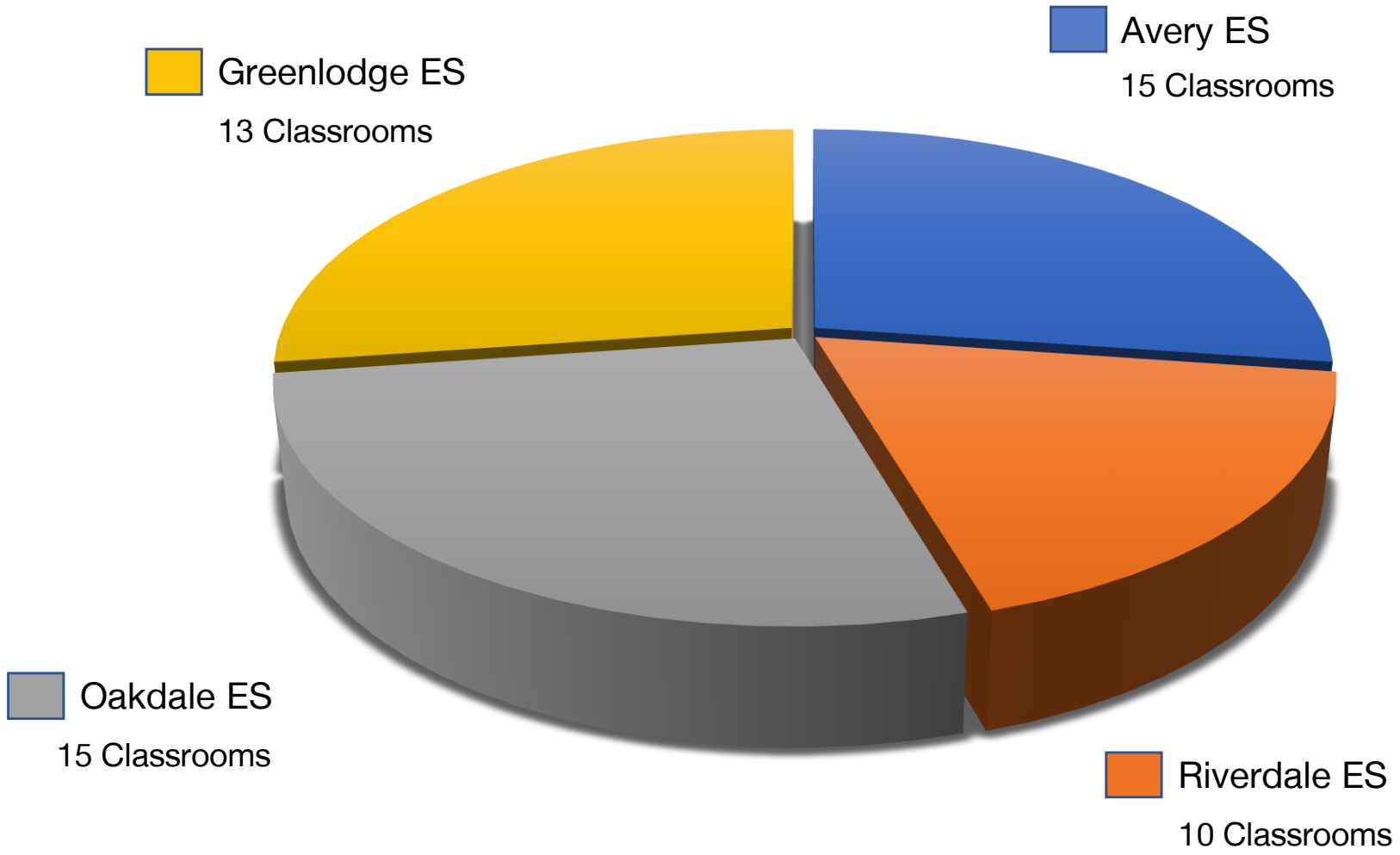
Current Elementary School Districts



Current ES Schools/Classrooms

Mostly Undersized Classrooms

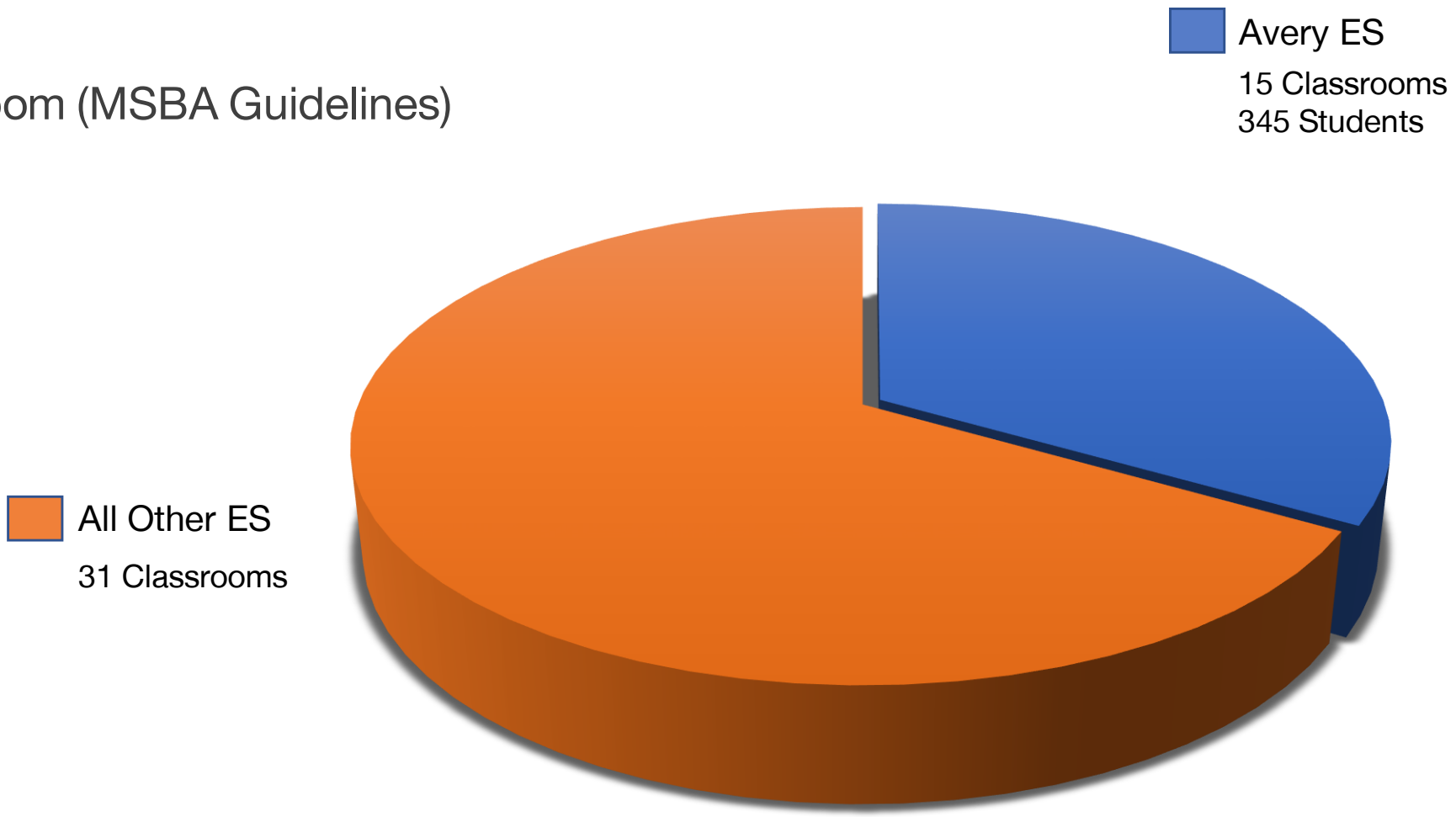
Total:
53 Classrooms
994 Students



2018-29: ES Classroom Need

Assumes:
23 Students/Classroom (MSBA Guidelines)

Total:
46 Classrooms
1,060 Students



2018-29: ES Classroom Need

	Current				2028 - 29 Needs w/ MSBA Criteria		
	2018-19 Population	Classrooms / Grade	Total Classrooms	Average Class Size	Class Size	Classrooms / Grade	Population
Avery	304	3	15	20.3	23	15	345
Riverdale	172	2	10	17.2	23		
Oakdale	271	3	15	18	23	**31**	**715**
Greenlodge	247	3	14	17.6	23		
	994	11	54	18.4		46	1,060

What We've Learned

- Riverdale, Oakdale and Greenlodge Elementary Schools are DPS' next greatest capital improvement need
- Enrollment Projections show a recent increase at Kindergarten and warrants close monitoring
- 31 Classrooms are needed to accommodate projected Elementary School enrollment as Avery accounts for 15

MSBA Statement of Interest (SOI) Process

- Submitting an SOI is the first critical step in the MSBA's program to partially fund the construction, renovation, addition or repair of municipally owned school facilities located in cities, towns and regional school districts.
- The SOI allows districts to inform us (MSBA) about deficiencies that may exist in a local school facility and how those deficiencies inhibit the delivery of the district's educational program.
- Core (Capital) Program vs. Accelerated Repairs
- Initially identify one school but may be asked to document all three schools

MSBA Statement of Interest (SOI) Priorities

1. Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children.
2. Elimination of **existing severe overcrowding**;
3. Prevention of the **loss of accreditation**;
4. Prevention of **severe overcrowding expected** to result from increased enrollments, which must be substantiated;
5. Replacement, renovation or **modernization of school facility systems**, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility;
6. **Short term enrollment** growth;
7. Replacement of or addition to **obsolete buildings** in order to provide a full range of programs consistent with state and approved local requirements; and
8. Transition from **court-ordered** and approved racial balance school districts to walk-to, so-called, or other school districts.

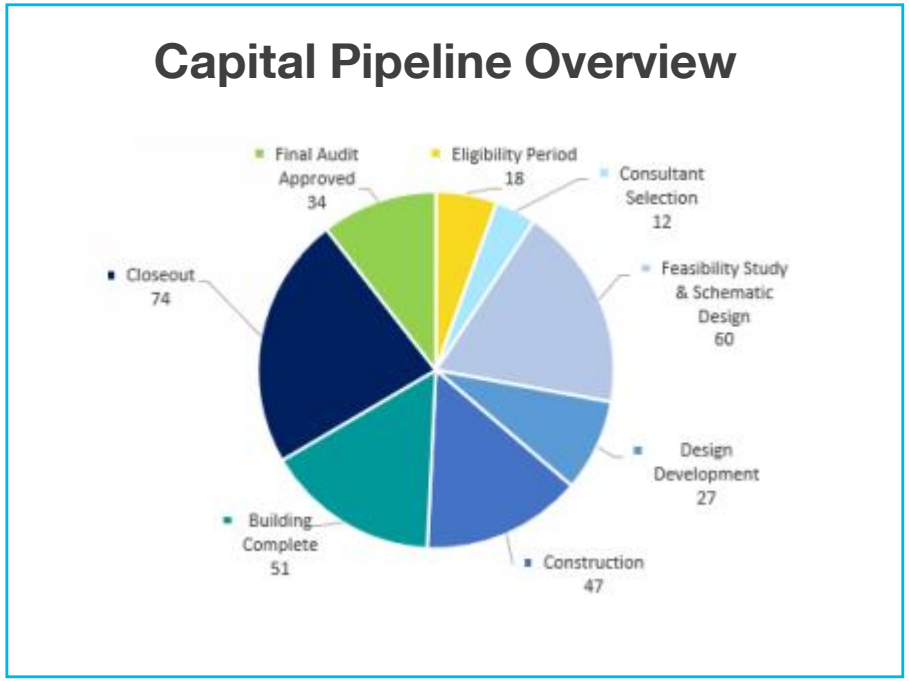
MSBA Statement of Interest (SOI) Process

January 2020: SOI period opens

April 2020: SOI period closes

- Review SOI for Completeness
- Review SOI and accompanying documents for content
- Conduct Senior study visits if required
- Recommend SOIs for initiation into Eligibility Period

Typically MSBA releases accelerated repair projects in June/July and Core Program (CP) Projects in **December**.



2018 (70) CP SOI's Submitted, 12 invited into Eligibility

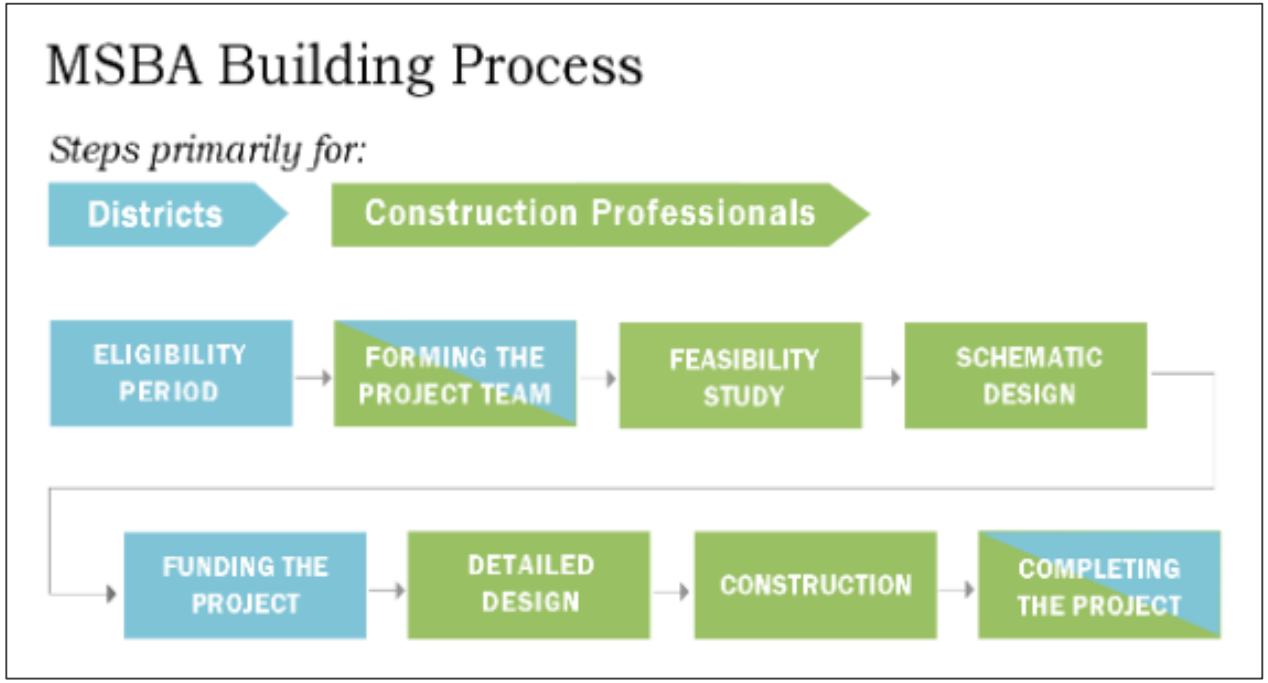
2019 (83) CP SOI's Submitted

Feasibility Study

- With the Owner's Project Management and Designer in place: The District and its team collaborate with the MSBA to document their educational program / initial space summary, document existing conditions, develop and evaluate alternatives, and recommend the most cost effective and educationally appropriate preferred solution
- Test alternative sites, site solutions
- Possibly explore alternative school sizes (populations)
- Select a preferred solution
- At this stage, the project becomes reimbursable

MSBA Building Process

- SOI Process: Approx. 12 months
- Eligibility Period: Approx. 10 months
- Feasibility Study: Approx. 9 months
- Schematic Design: Approx. 6 months
- Development Design: Approx. 5 months
- Construction Documents: Approx. 8 months
- Construction– Approx: 24 months
- Close Out– Approx: 3 months
- Total: 77 months (6.5 years) - Assumes an “Invitation” based on the SOI initial submission



Community Engagement and Input

- Fall Meetings
  - **Meeting 1: October 2019**

    at each School

    Building Conditions, Site(s), Enrollment

    Community Priorities and Goals
- SOI Development
  - **Meeting 2: December 9, 2019**

    Workshop at ECEC

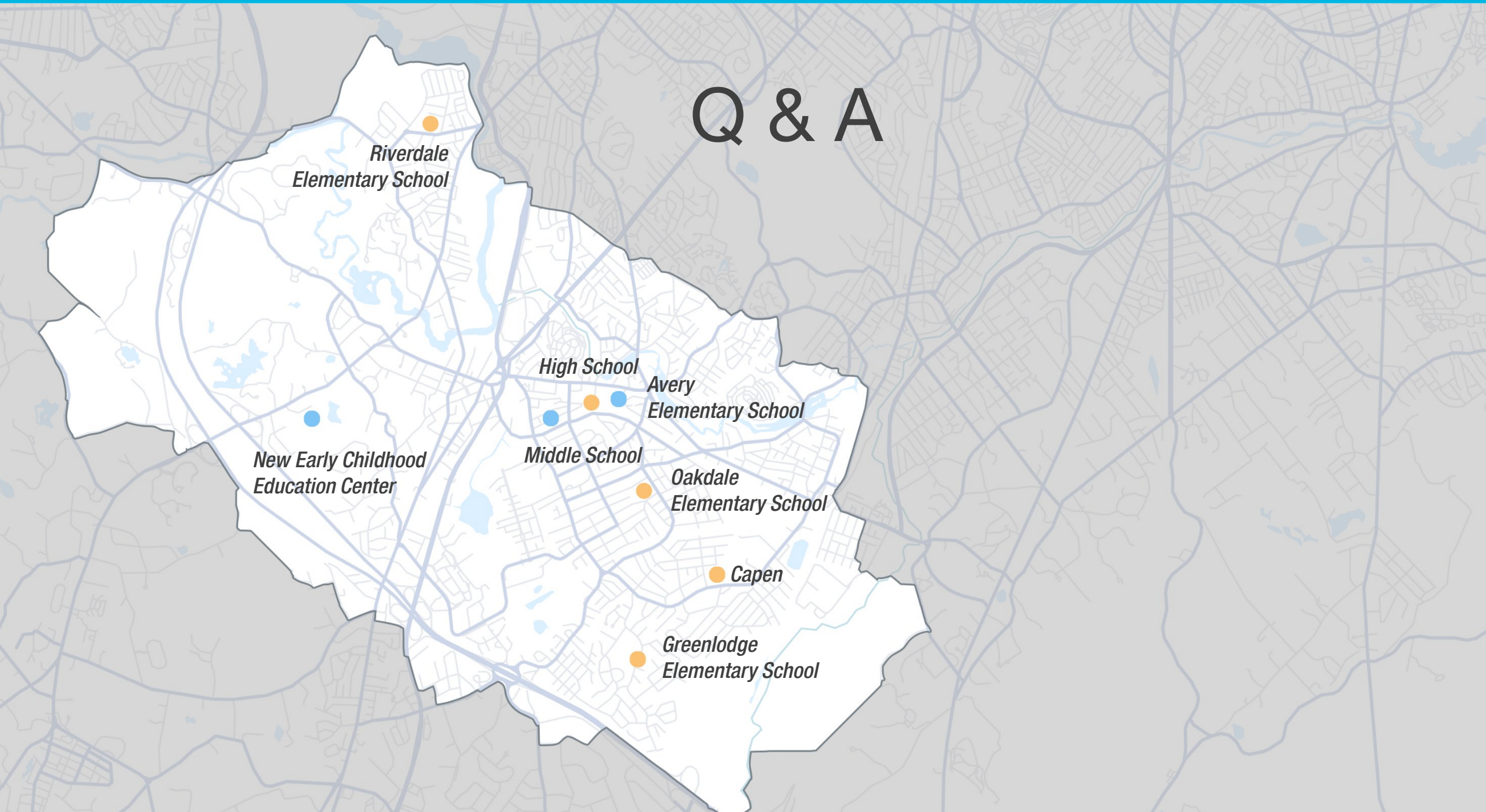
    Review of Community Input Received

    Options & Discussion
  - **Meeting 3: January 13, 2020**

    Follow-up & Development of Direction

    Elements of the SOI

Q & A


Riverdale
Elementary School
High School
Avery
Elementary School
New Early Childhood
Education Center
Middle School
Oakdale
Elementary School
Capen
Greenlodge
Elementary School

SMMA

Facilities Master Plan

Community Kickoff Meeting

June 5, 2019

SMMA - Who We Are

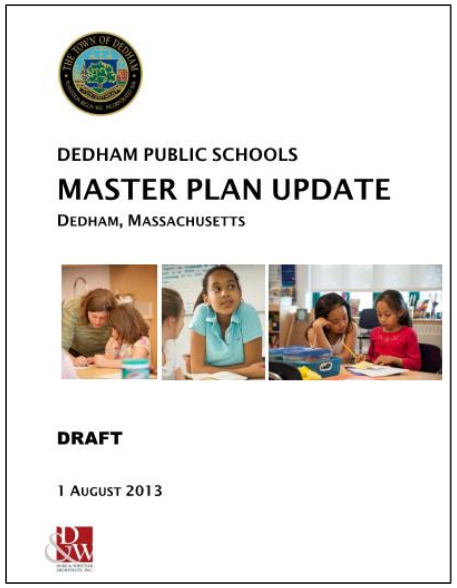
Principal-in-Charge /
Educational Planner
Philip Poinelli
FAIA, ALEP

Project Manager
Kristen M. Olsen
AIA, MCPPO

Prior Studies

2013 Master Plan Update

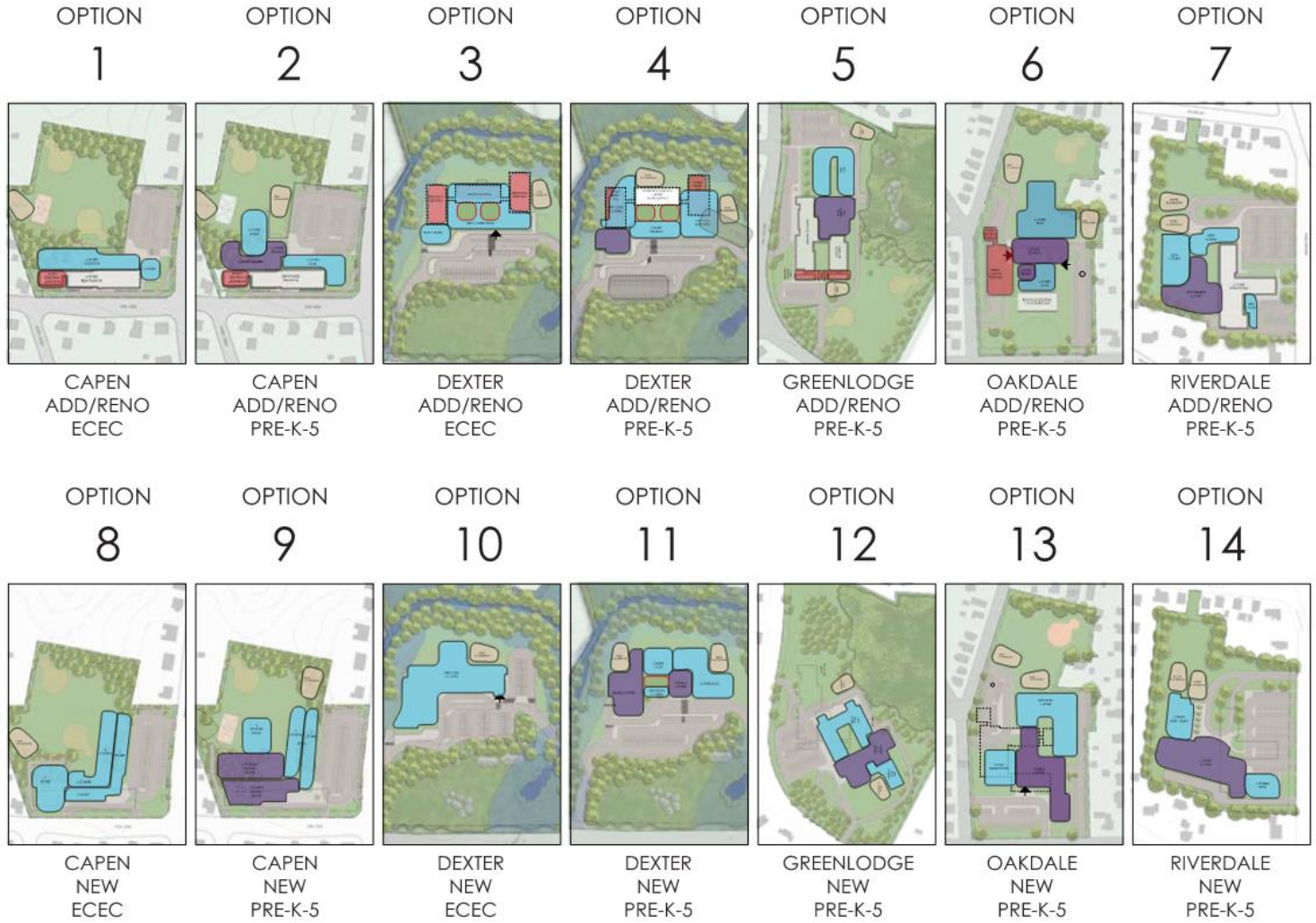
Dore and Whittier Architects



Reviewed many options!
Resulted in the successful prioritization and completion of the new ECEC building.

2015 ECEC Feasibility Study

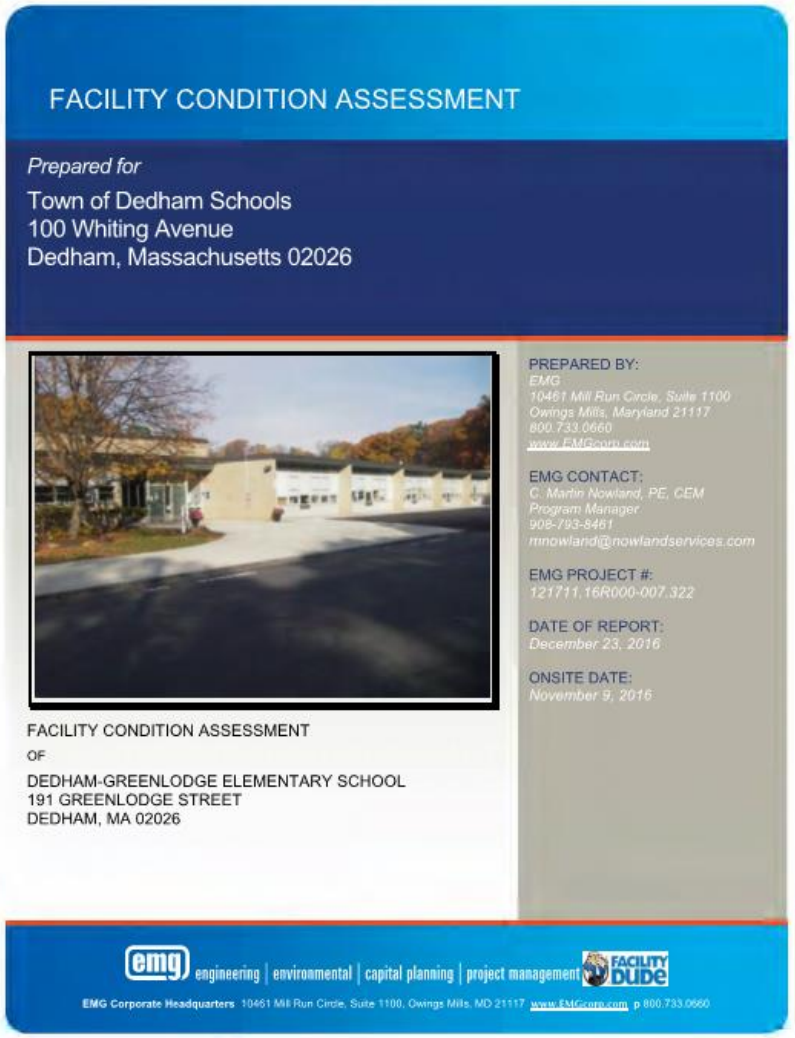
KBA Architects

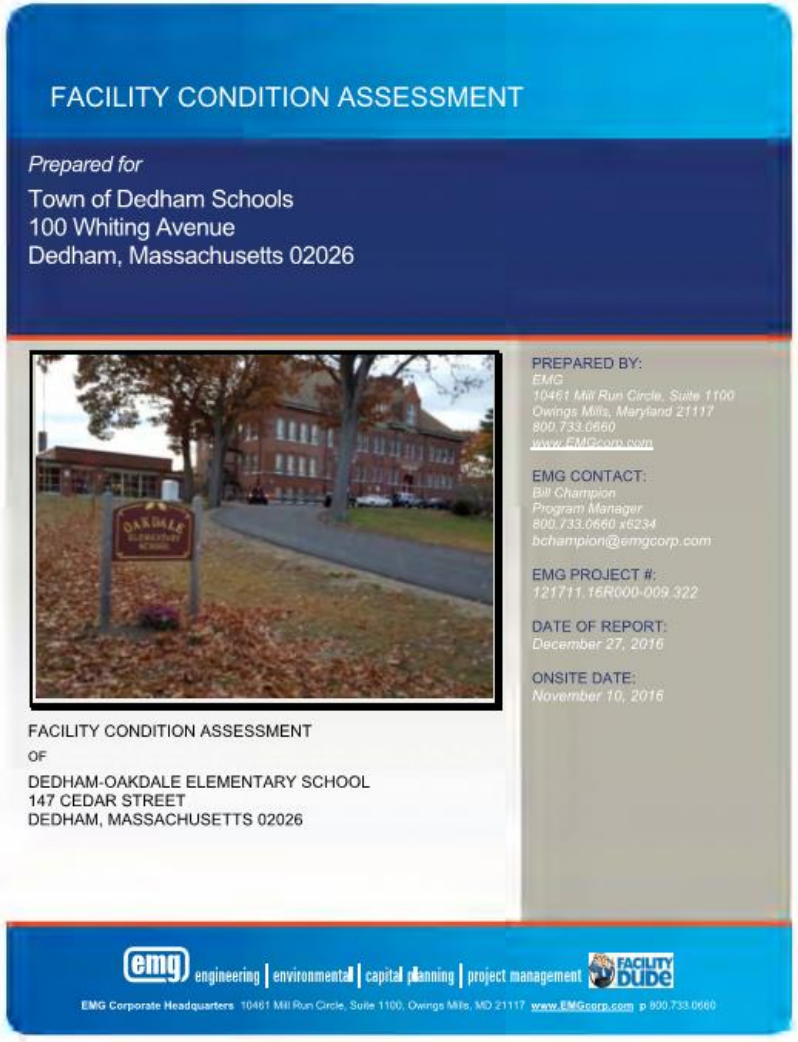


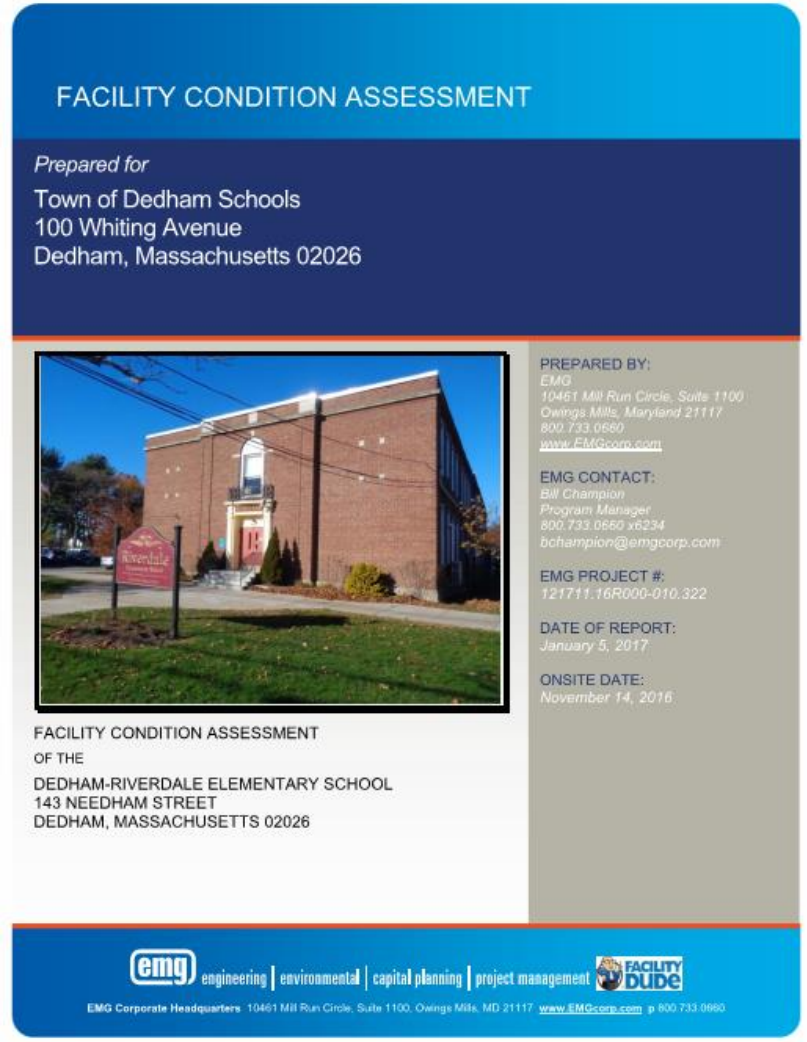
Prior Studies

2016 Facility Condition Assessment

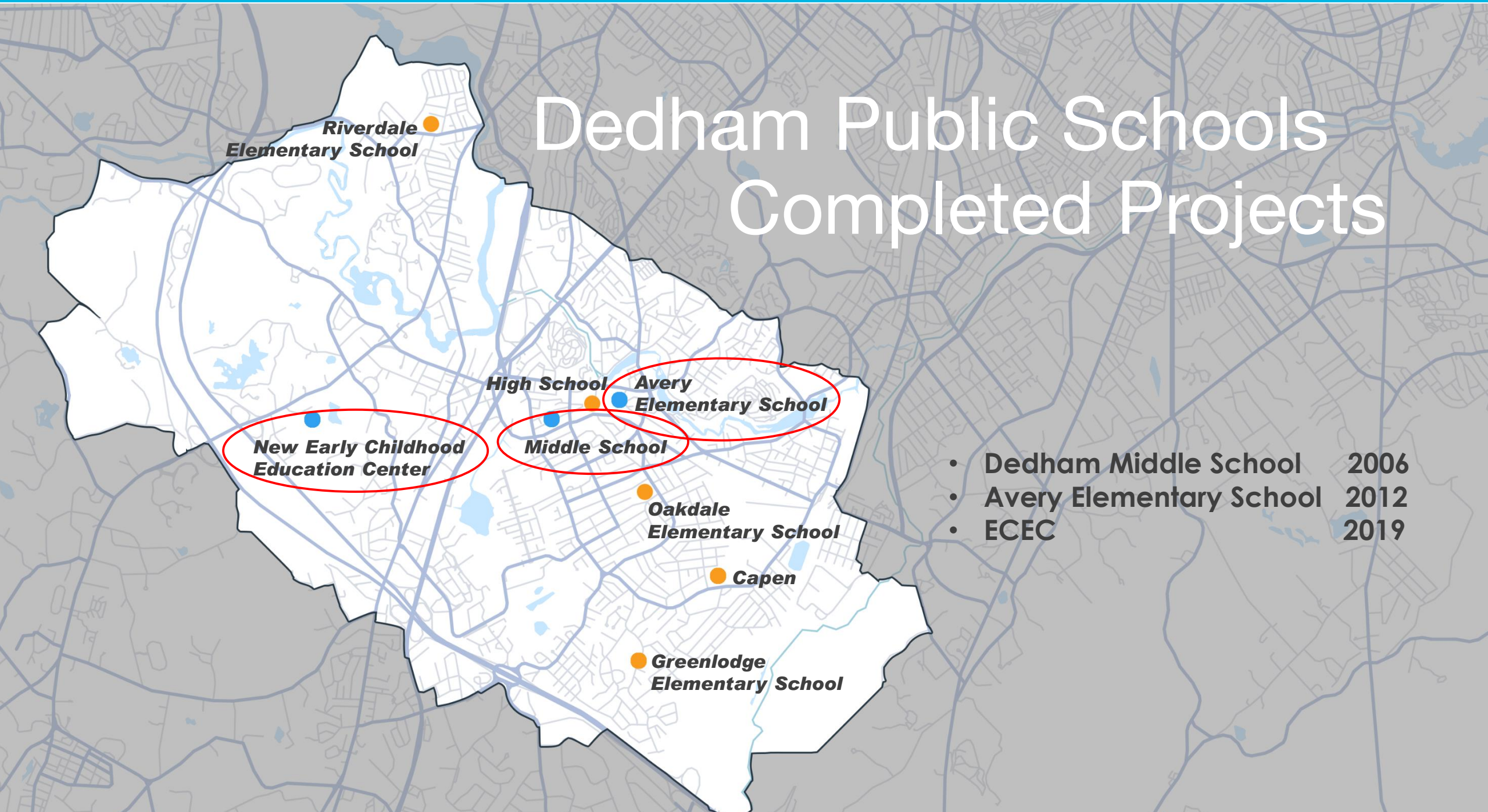
EMG Corp.







Dedham Public Schools
Completed Projects



- Dedham Middle School 2006
- Avery Elementary School 2012
- ECEC 2019

Integrated Planning & Design

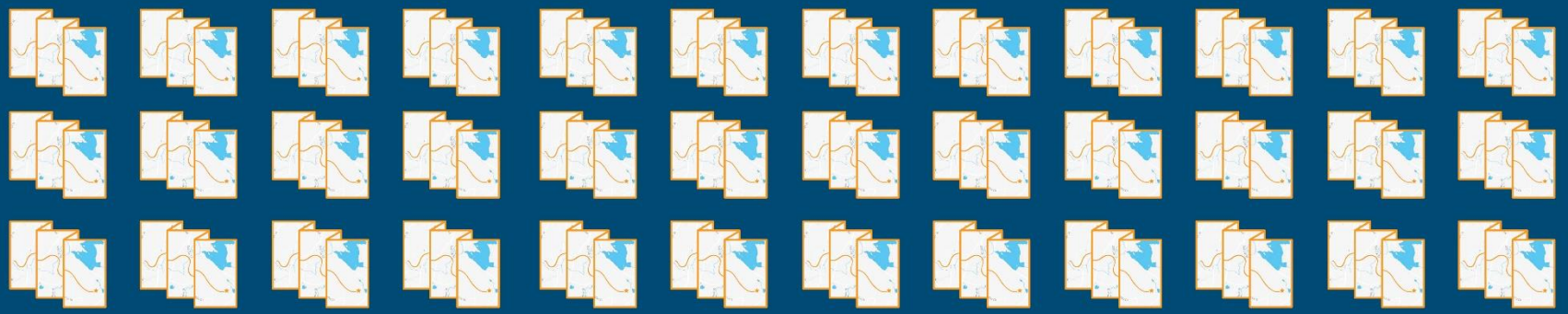
K–12 BY THE NUMBERS

40+ MASTER PLANS IN

$1.8 BILLION

TOTAL CONSTRUCTION
LAST 10 YEARS IN MA AND RI

250+ SCHOOL STUDIES IN MA



Recent Master Planning Experience

Ashland School District
5 Schools

Belmont Public Schools
6 Schools

Boston Public Schools
134 Schools, Educational & Facilities Master Plan

Brookline High School
Educational Master Plan

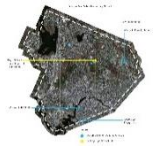
East Longmeadow School District
5 Schools

Hamilton-Wenham Regional School District
5 Schools

Lawrence Public Schools
21 Schools

Lexington Public Schools
9 Schools

Sharon High School
High School Educational Master Plan



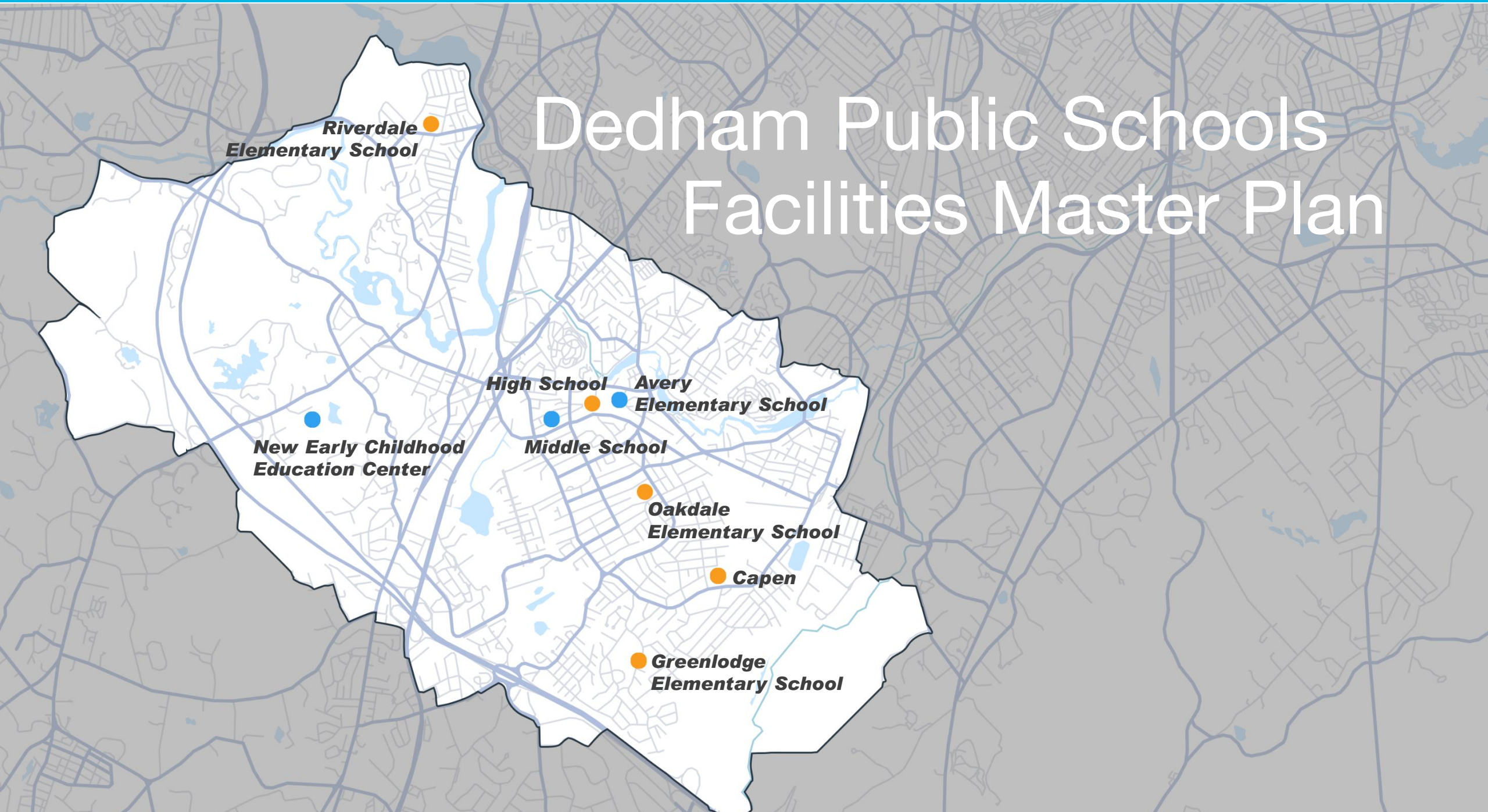
Waltham School District
9 Schools

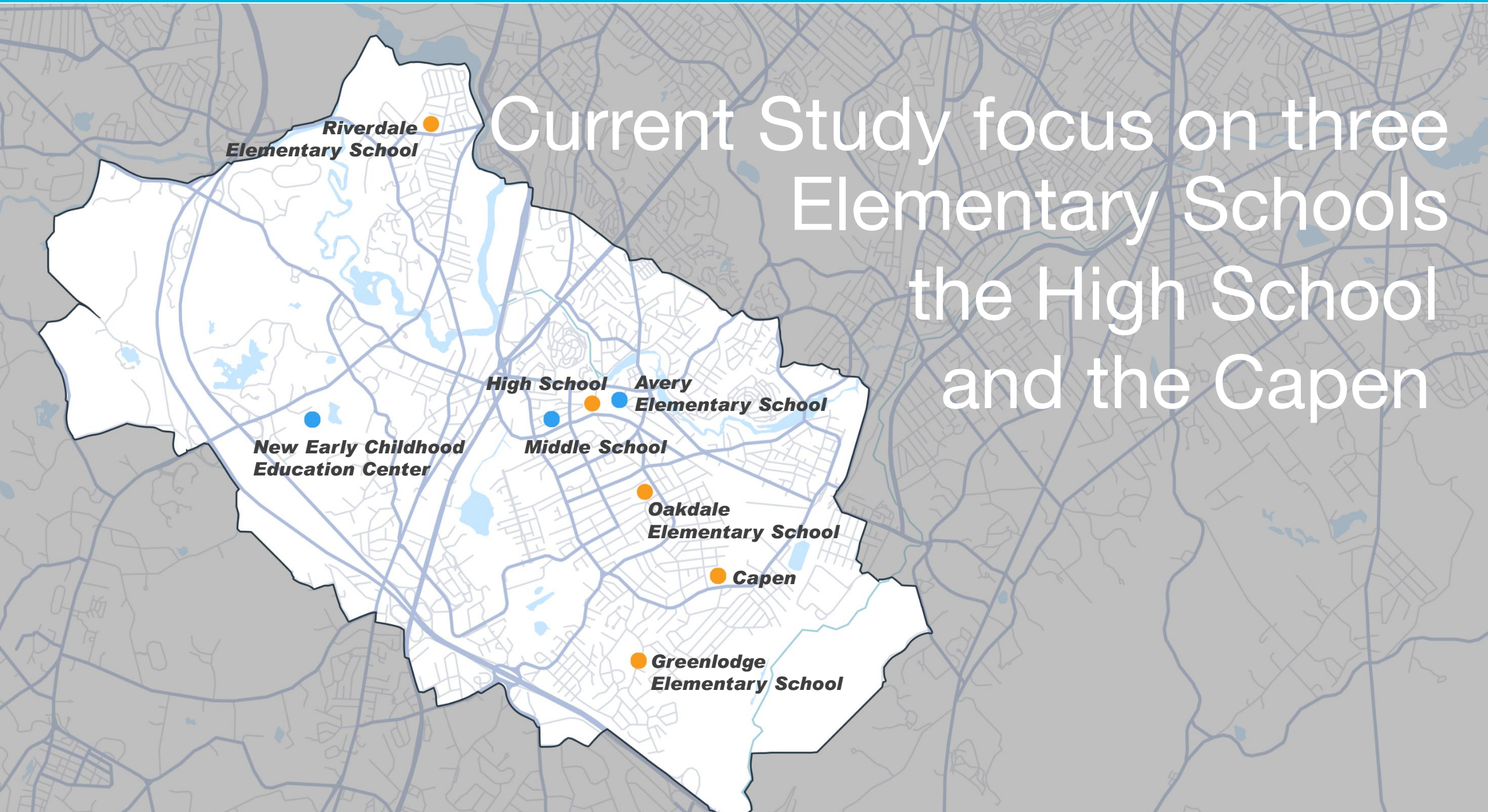
Wellesley School District
9 Schools

Westwood School District
7 Schools

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

Dedham Public Schools Facilities Master Plan





Current Study focus on three Elementary Schools the High School and the Capen

Massachusetts School Building Authority – 2016 School Survey Report

District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Massachusetts School Building Authority – 2016 School Survey Report

District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Massachusetts School Building Authority – 2016 School Survey Report

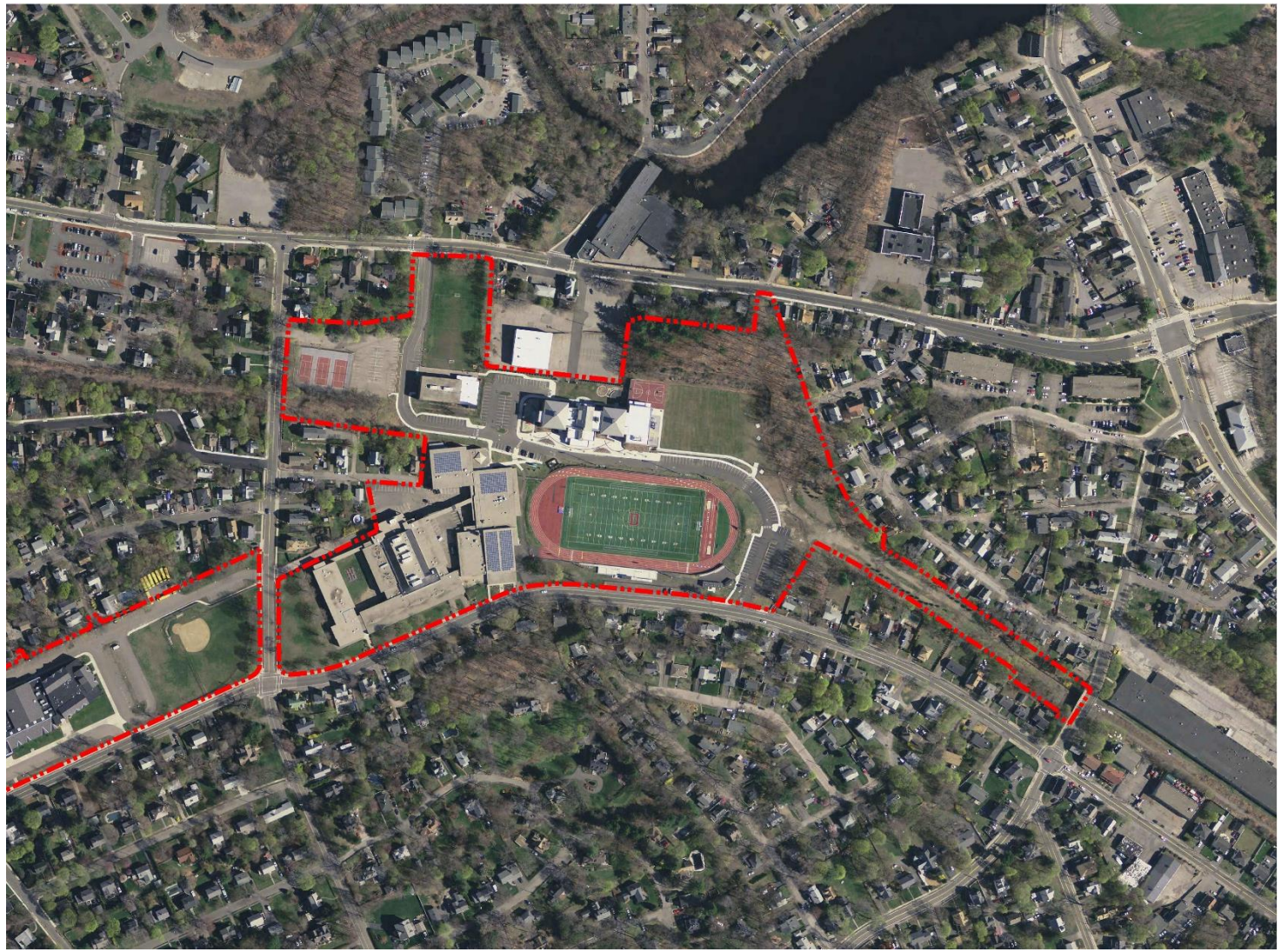
District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1969	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Dedham High School



Quick Facts:

- Built in 1959
- Renovations in 1967 & 1974
- 767 Students
- Site 11.4 acres
- Classrooms are undersized
- Public spaces are oversized

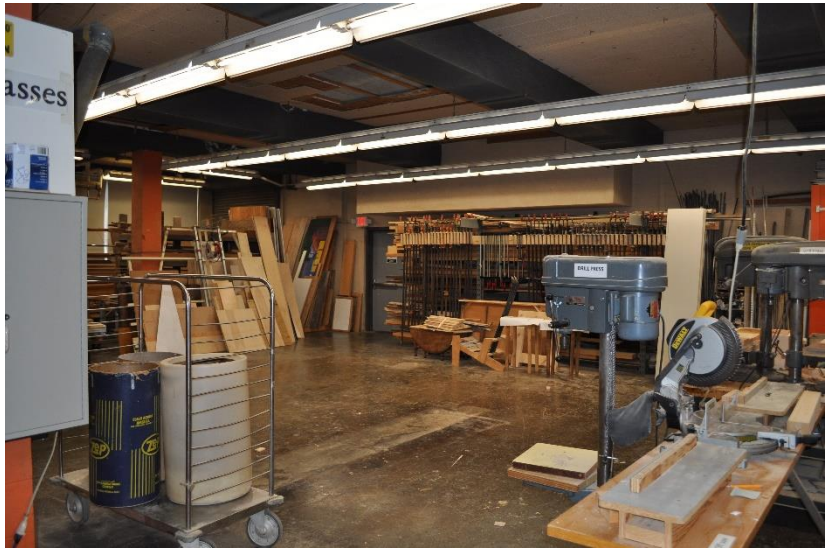
Dedham High School Uses

- High School Academics
- DPS Central Administration including Business Office
- DPS Facilities Department use
- DPS Commissary Kitchen for all schools
- Youth Commission Offices
- Athletics and Fitness Center

- If New, MSBA Guidelines: 159,000 GSF

Quick Facts:

- 307,323 square feet



Capen

Quick Facts

- Built in 1931
- Additions in 1970
- 250 Student Capacity (PK-K)
- Historic Status – none
- Modest Site Size (4-5 acres)
- Classrooms are undersized
- Traditional Layout

Capen - Building Conditions

- Lack of handicapped access to the 2nd floor + significant parts of the building
- Numerous other issues of accessibility
- Wood construction in original building
- Lack of automatic fire protection system
- Obsolete mechanical H&V system, no air conditioning
  --frequent too hot / too cold for T&L
- Inadequate electrical systems
- Window replacement needed
- Cosmetic issues
  --floors, ceilings, walls (work might be categorized as minor)

Capen - Educational Facility Effectiveness

- Typical classrooms are significantly undersized
- No cafeteria (meals in classrooms)
- Undersized gym & library/media center
- Numerous issues with building conditions that support teaching and learning:
  --lighting; temperature; ventilation, acoustics
- Issues related to safe and secure learning environments
- Need for additional Special Education space

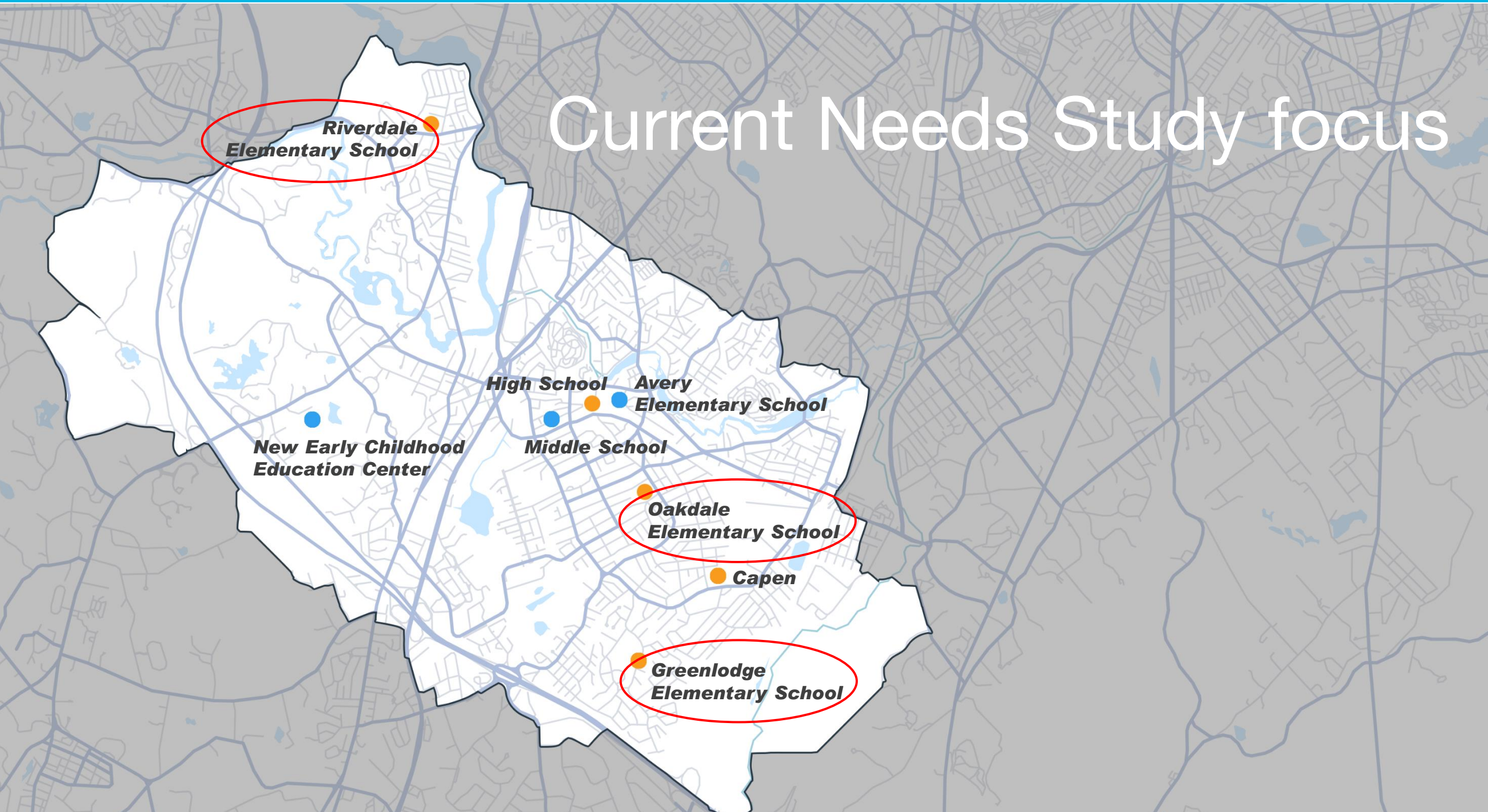
Capen as Swing Space?

- Comparable Educational Needs:
  - General Education Classrooms
  - Additional Special Education Space
  - Art Room
  - Music Room
  - Handicapped Accessibility

Schedule:

- Would not be needed for 4+ years!
- Will require heating and ventilation in "moth-balled" state.

Current Needs Study focus



Massachusetts School Building Authority – 2016 School Survey Report

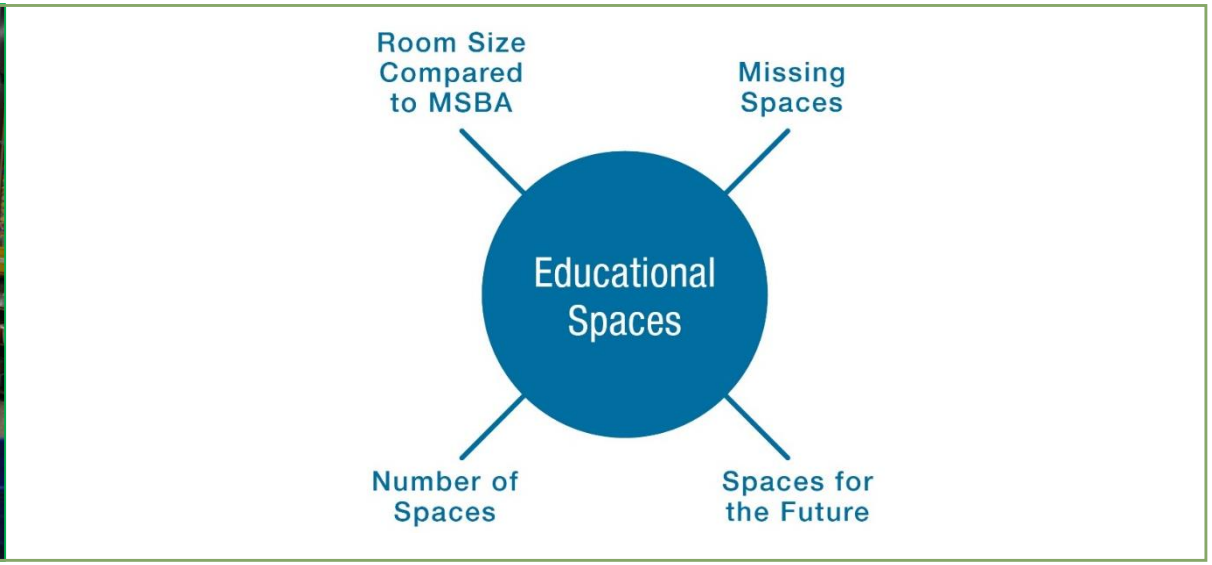
District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Conditions Rating	Capacity Rating	General Environmental Rating
Dedham	Avery	ES	2012	308	61,000	116.8	-	-	-	-	-
Dedham	Dedham High	HS	1959	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	-	-	-	-	-
Dedham	Early Childhood Center	PreK/K	1931	282	26,000	92.2	-	-	-	-	-
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	53,524	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

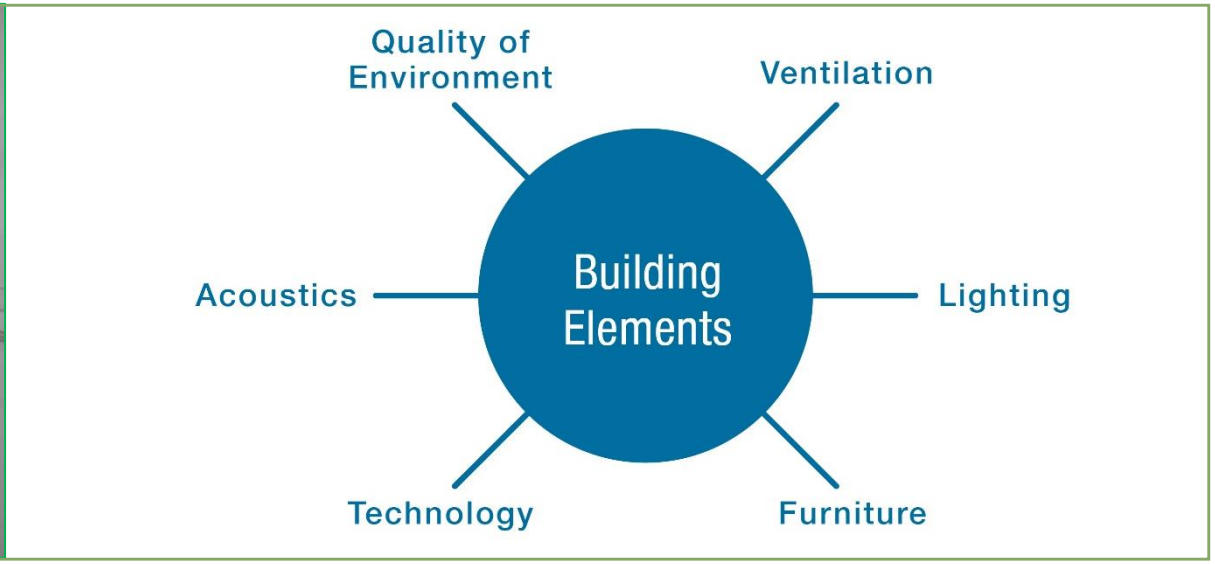
Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Elements of Educational Facility Effectiveness





Greenlodge Elementary School

Quick Facts

- Built in 1955
- Additions 1961 &1970
- 247 Students
- Large Site (partially hilly)
- Traditional Layout

Oakdale Elementary School

Quick Facts

- Built in 1902
- Additions in 1951 & 1970
- 271 Students
- Historic Status – none
- Modest Site Size
- Classrooms are undersized
- Traditional Layout

Riverdale Elementary School

Quick Facts

- Built in 1921
- Additions in 1930 & 1970
- 172 Students
- Historic Status – none
- Modest Site Size
- Classrooms are undersized
- Traditional Layout

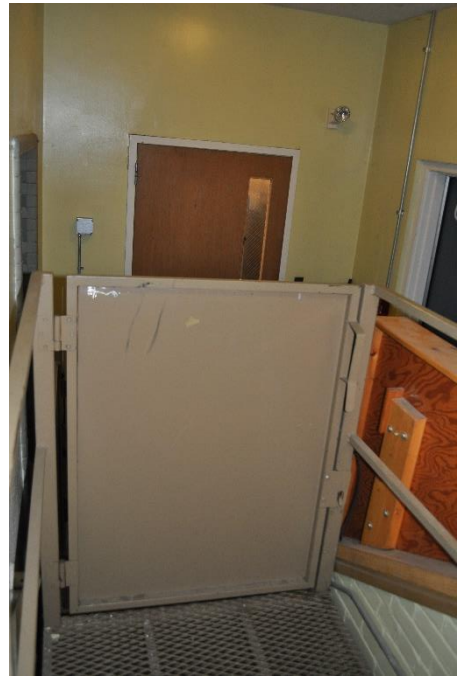
Educational Facility Effectiveness

Conditions at the three schools vary somewhat but generally:

- Classroom vary in sizes - some meet MSBA Guidelines but oldest buildings have significantly small rooms
- No cafeteria (meals in classrooms)
- Undersized gym, undersized libraries in 2 schools
- Numerous issues with building conditions that impede teaching and learning:
  --lighting, temperature, ventilation, acoustics
- Issues related to safe and secure learning environments
- Need for additional Special Education spaces

Building Conditions Issues

- Limited handicapped access to significant parts of the building
- Wood construction in two of the oldest buildings, including stairs
- Numerous other issues of accessibility
- Obsolete mechanical heating and ventilation system, no air conditioning
  --frequently too hot / too cold for teaching and learning
- Inadequate electrical systems
- Obsolete plumbing systems, lack of automatic fire protection
- Window replacement needed
- Cosmetic issues
  --floors, ceilings, walls (work might be categorized as minor)



MSBA Statement of Interest (SOI) Process

- Submitting an SOI is the first critical step in the MSBA's program to partially fund the construction, renovation, addition or repair of municipally owned school facilities located in cities, towns and regional school districts.
- The SOI allows districts to inform us (MSBA) about deficiencies that may exist in a local school facility and how those deficiencies inhibit the delivery of the district's educational program.
- Core (Capital) Program vs. Accelerated Repairs
- Initially identify one school but may be asked to document all three schools

Massachusetts School Building Authority (MSBA) - SOI Priorities:

1. Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children.
2. Elimination of **existing severe overcrowding**;
3. Prevention of the **loss of accreditation**;
4. Prevention of **severe overcrowding expected** to result from increased enrollments, which must be substantiated;
5. Replacement, renovation or **modernization of school facility systems**, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility;
6. **Short term enrollment** growth;
7. Replacement of or addition to **obsolete buildings** in order to provide a full range of programs consistent with state and approved local requirements; and
8. Transition from **court-ordered** and approved racial balance school districts to walk-to, so-called, or other school districts.

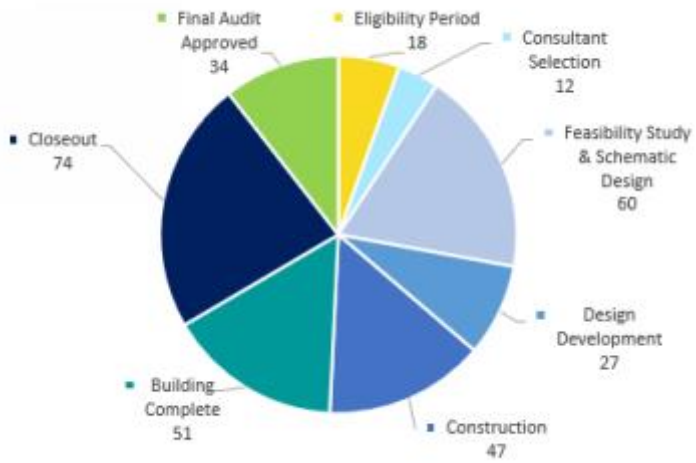
Feasibility Study

- With the Owner's Project Management and Designer in place: The District and its team collaborate with the MSBA to document their educational program / initial space summary, document existing conditions, develop and evaluate alternatives, and recommend the most cost effective and educationally appropriate preferred solution
- Test alternative sites, site solutions
- Possibly explore alternative school sizes (populations)
- Select a preferred solution
- At this stage, the project becomes reimbursable

Massachusetts School Building Authority (MSBA) - SOI Process:

January 2020 SOI period opens
April 2020 SOI period closes
Review SOI for Completeness
Review SOI and accompanying documents for content
Conduct Senior study visits if required
Recommend SOIs for initiation into Eligibility Period

Capital Pipeline Overview



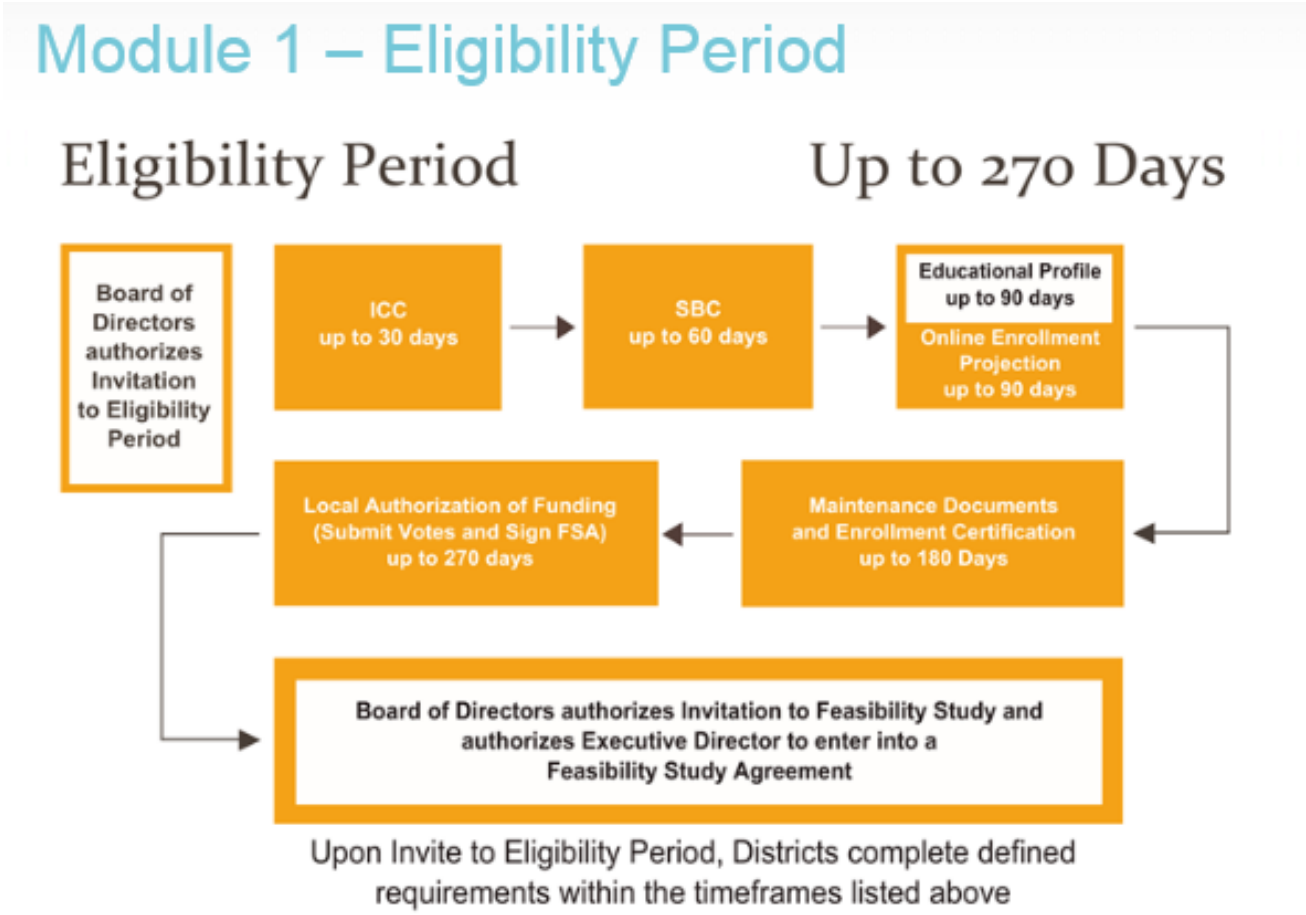
Typically MSBA release accelerated repair projects in June/July and Core Program Projects in December.

2018 (70) SOI's Submitted, 12 invited into Eligibility

2019 (83) SOI's Submitted

Massachusetts School Building Authority (MSBA) - Eligibility Period:

- Initial Compliance Certificate
- Form the School Building Committee
  - In place with the permanent SBRC
- Complete educational profile
- Submit District's Maintenance Practices
- Certify Design Enrollment
- **VOTE** the Feasibility Study Phase funding
- Execute Feasibility Study Agreement (FSA)
- Receive authorization to begin Feasibility Study
- Process has up to **10 Months** to complete



Massachusetts School Building Authority (MSBA) - Building Process:

SOI Process – Approx. 12 months

Eligibility Period - Approx. 10 months

Feasibility Study – Approx. 9 months

Schematic Design– Approx. 6 months

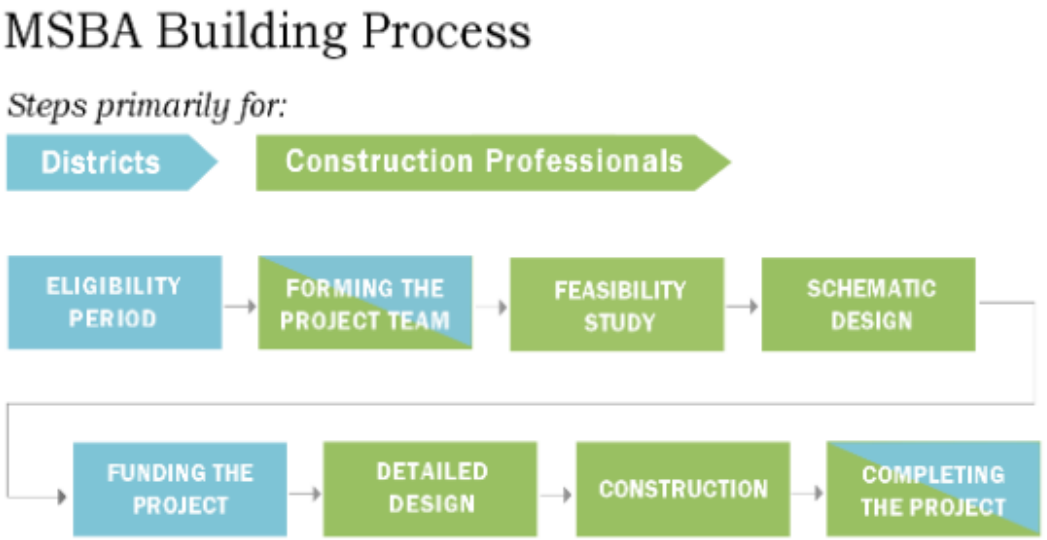
Development Design– Approx. 5 months

Construction Documents– Approx. 8 months

Construction– Approx. 24 months

Close Out– Approx. 3 months

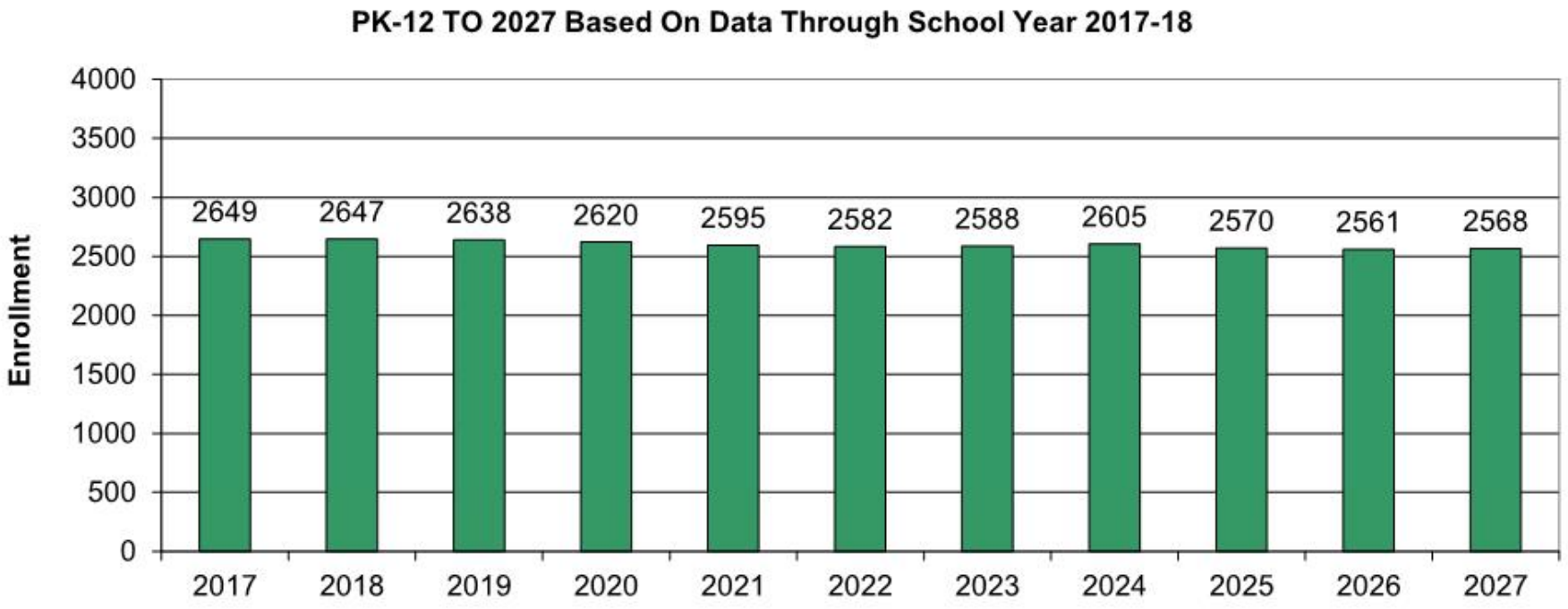
Total: 77 months (6.5 years) -
Assumes an “Invitation” based on the SOI initial submission



Enrollment Projections

NESDEC

Dedham, MA Projected Enrollment

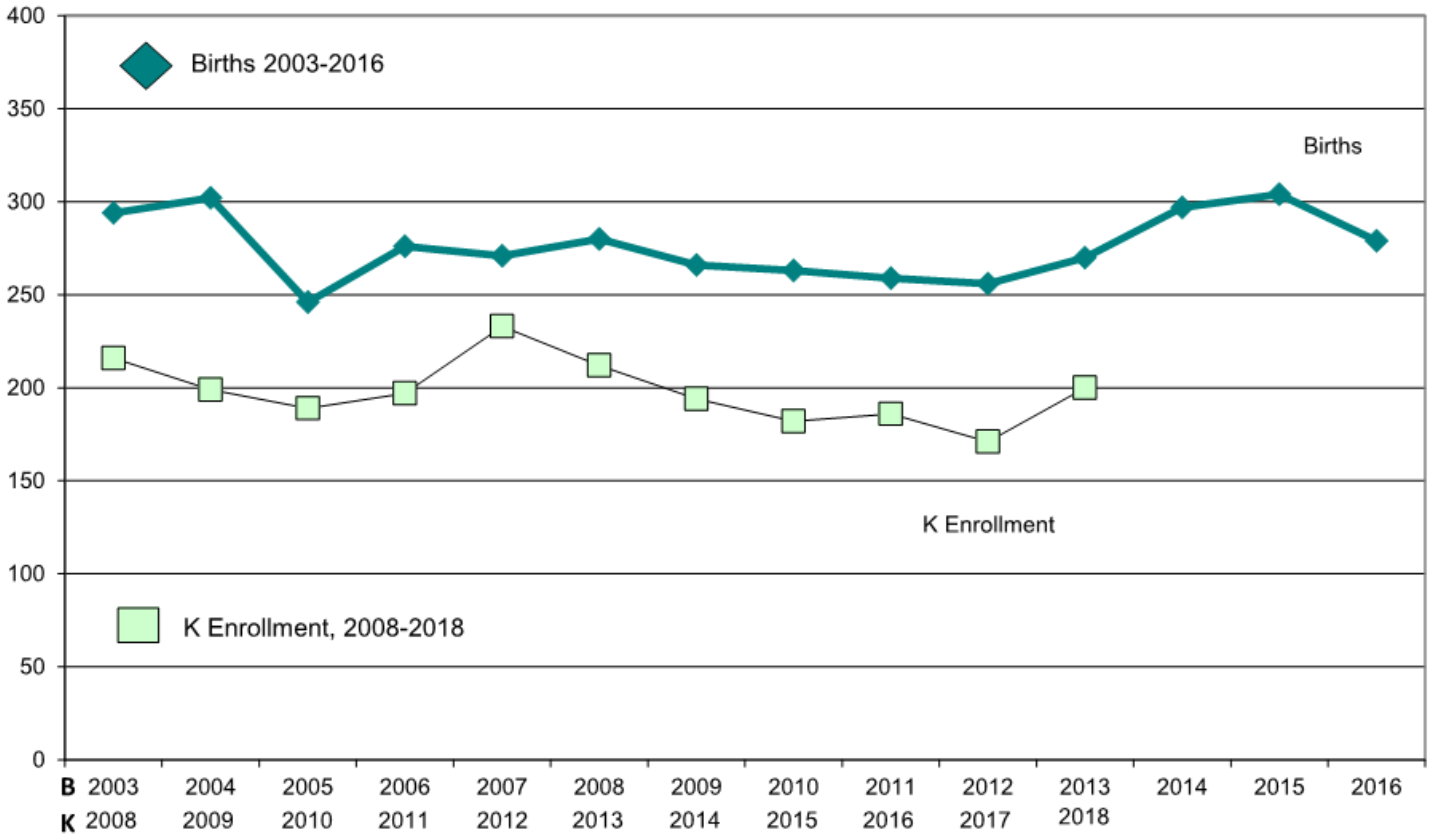


©New England School Development Council • 508-481-9444 • www.nesdec.org

Birth Rate

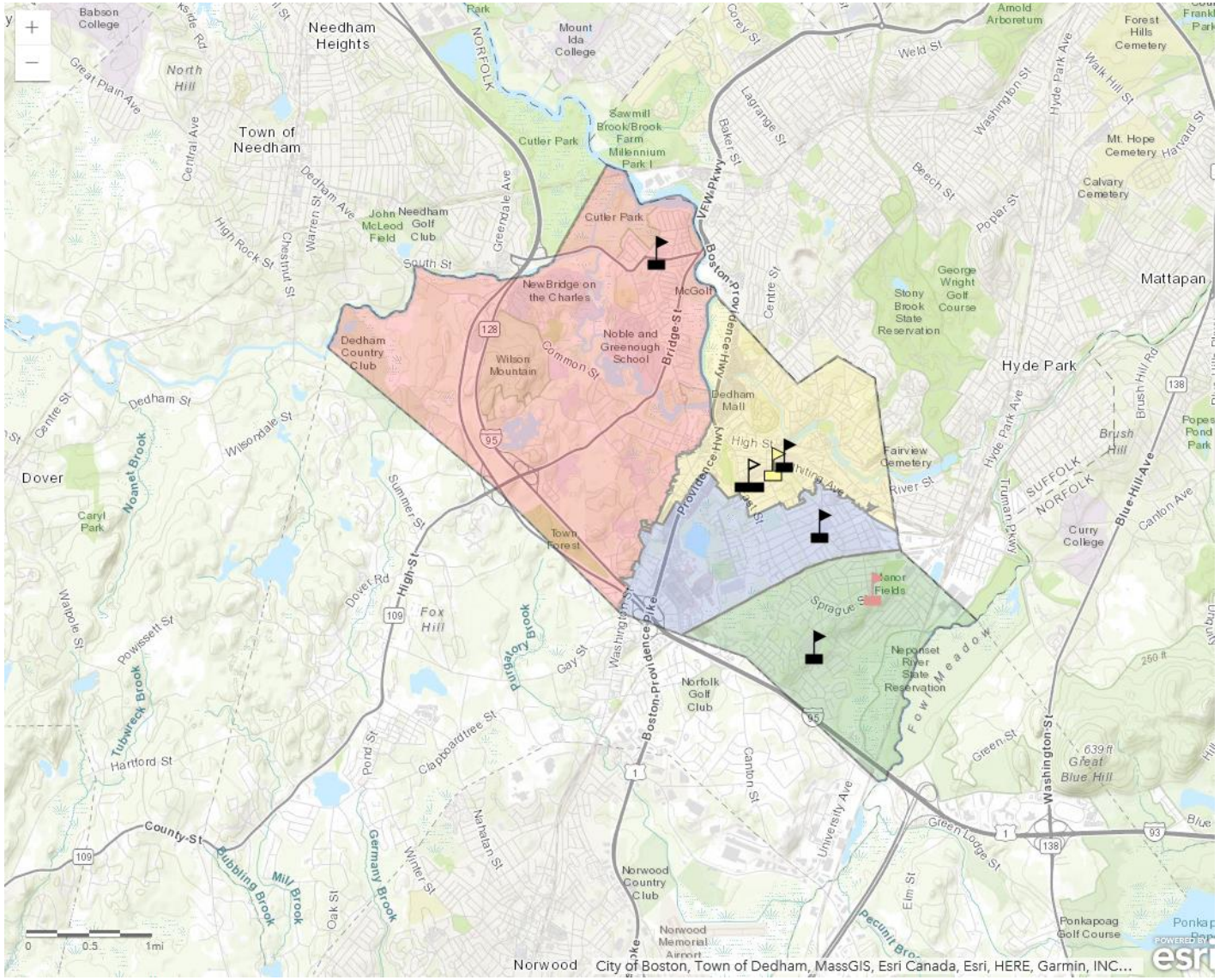
NESDEC

Dedham, MA Birth-to-Kindergarten Relationship



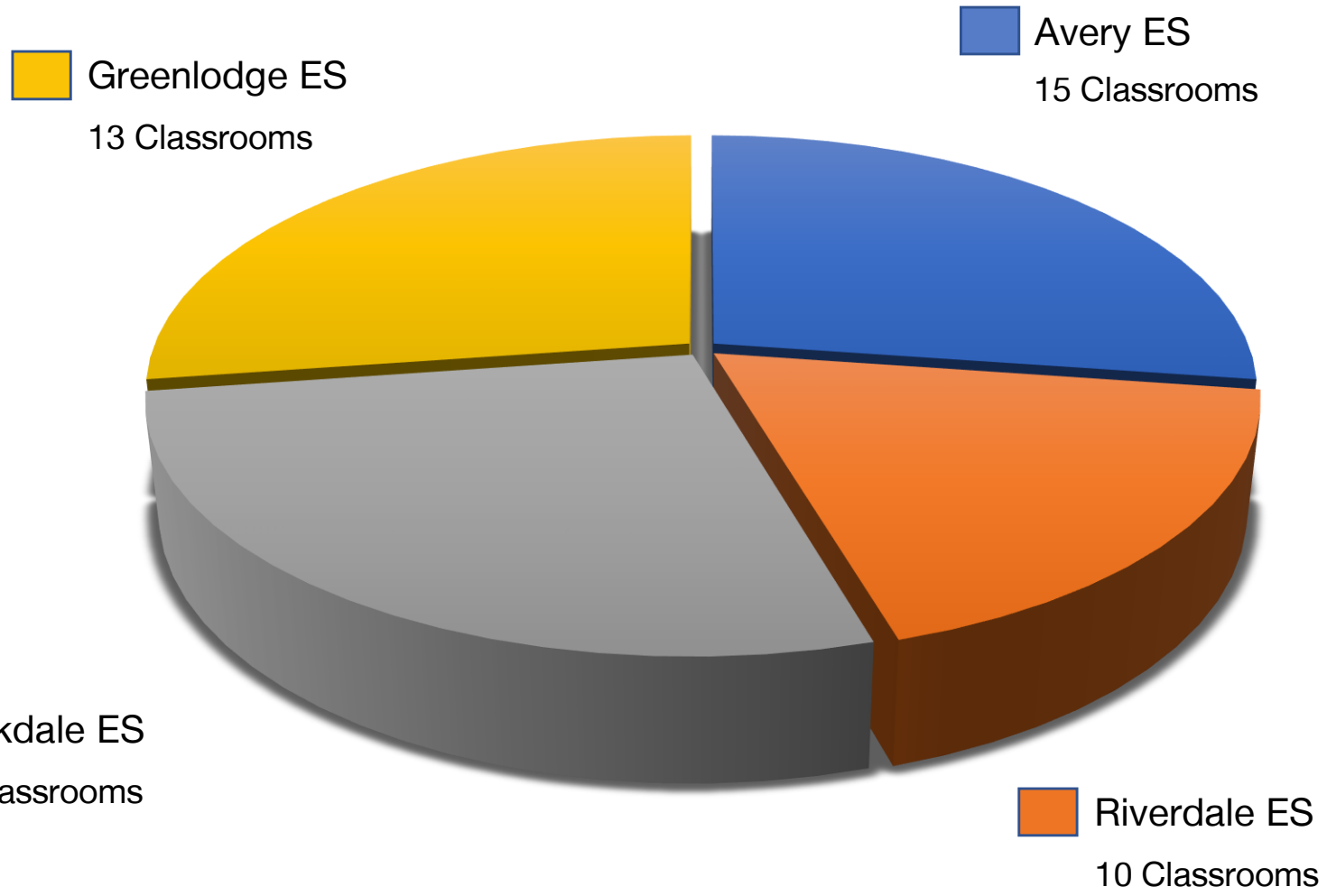
©New England School Development Council • 508-481-9444 • www.nesdec.org

Current Elementary School Districts



Current Schools Configuration / Classrooms

Mostly Undersized Classrooms

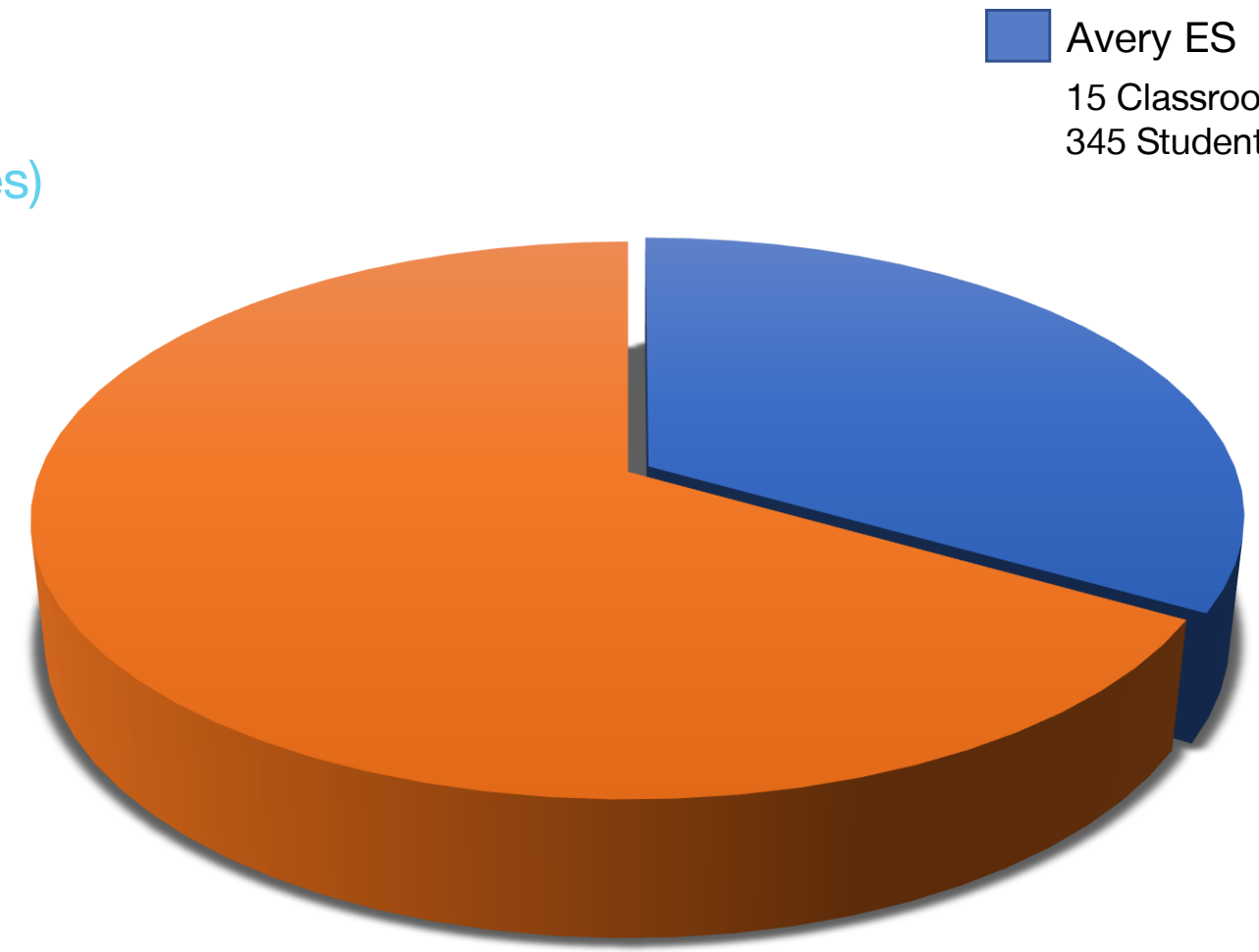


Total:
53 Classrooms
994 Students

2028 - 29 School / Classroom Need

Assumes:

- Properly sized classrooms 900-950sf
- 23 Students/Classroom (MSBA Guidelines)



Total:

46 Classrooms
1,060 Students

Next Steps

	Current				2028 – 29 Needs w/ MSBA Criteria		
	2018-19 Population	Classrooms / Grade	Total Classrooms	Average Class Size	Class Size	Classrooms / Grade	Population
Avery	304	3	15	20.3	23	15	345
Riverdale	172	2	10	17.2	23		
Oakdale	271	3	15	18	23	**31**	**715**
Greenlodge	247	3	14	17.6	23		
	994	11	54	18.4		46	1,060

Community Engagement and Input

- Fall Meetings
  - Meeting 1 – September 2019

    at each School

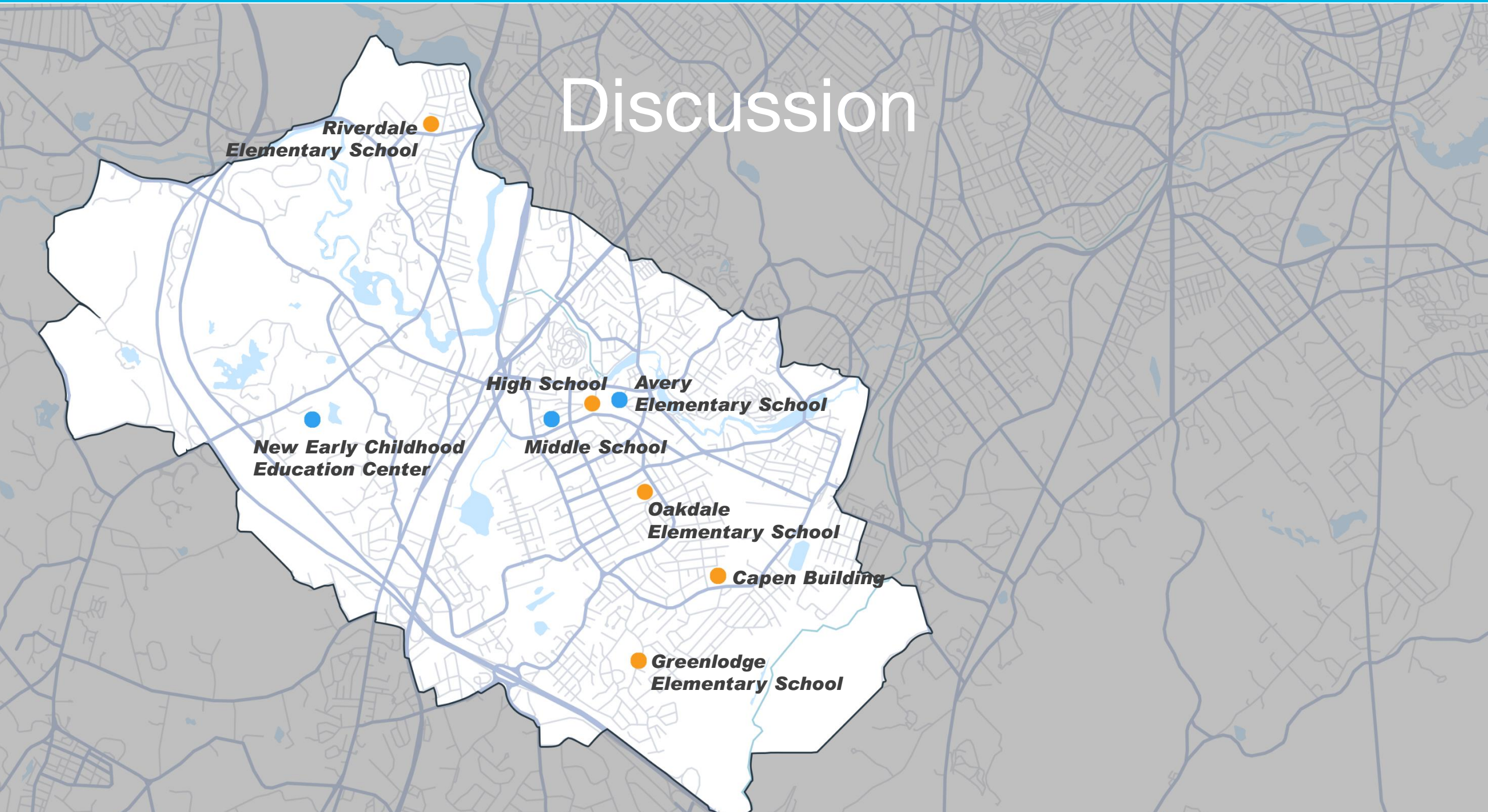
    Building Conditions, Site(s), Enrollment

    Community Priorities and Goals
- SOI Development
  - Meeting 2 – October 2019

    Options & Discussion
  - Meeting 3 – Early December 2019

    Follow-up & Development of Direction Elements of the SOI

Discussion


Riverdale
Elementary School
High School
Avery
Elementary School
New Early Childhood
Education Center
Middle School
Oakdale
Elementary School
Capen Building
Greenlodge
Elementary School

SMMA

Facilities Master Plan – Progress Report

Dedham School Committee & School Rehabilitation Committee
Joint Meeting
December 11, 2018

Who We Are

Principal-in-Charge /
Educational Planner
Philip Poinelli
FAIA, ALEP

Project Manager
Kristen M. Olsen
AIA, MCPPO

Integrated Planning & Design

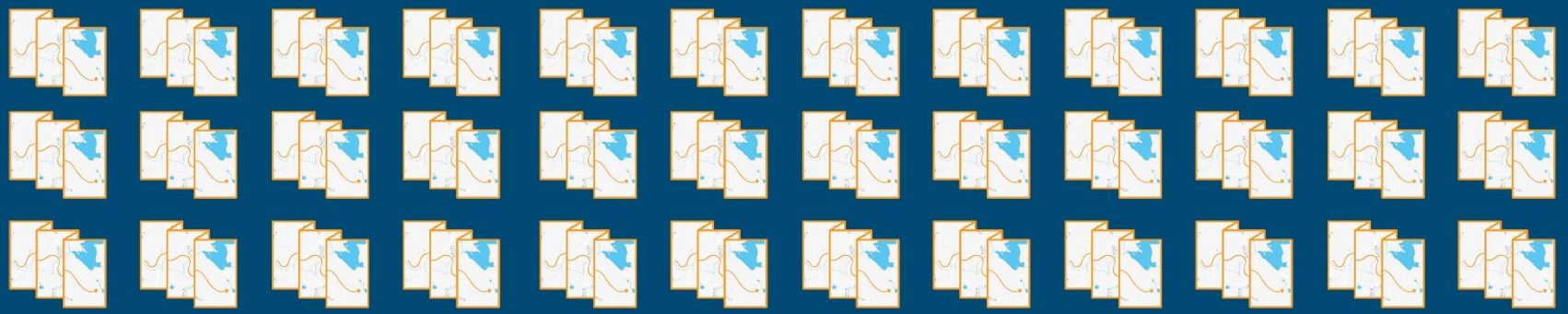
K–12 BY THE NUMBERS

40+ MASTER PLANS IN

$1.8 BILLION

TOTAL CONSTRUCTION
LAST 10 YEARS IN MA AND RI

250+ SCHOOL STUDIES IN MA



Recent Master Planning Experience

Ashland School District
5 Schools

Belmont Public Schools
6 Schools

Boston Public Schools
134 Schools, Educational & Facilities Master Plan

Brookline High School
Educational Master Plan

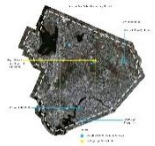
East Longmeadow School District
5 Schools

Hamilton-Wenham Regional School District
5 Schools

Lawrence Public Schools
21 Schools

Lexington Public Schools
9 Schools

Sharon High School
High School Educational Master Plan



Waltham School District
9 Schools

Wellesley School District
9 Schools

Westwood School District
7 Schools

Recent New and Renovation Experience

Bancroft Elementary School

Parker Elementary School

The Center Elementary School

Ayer Shirley High School

Grafton High School

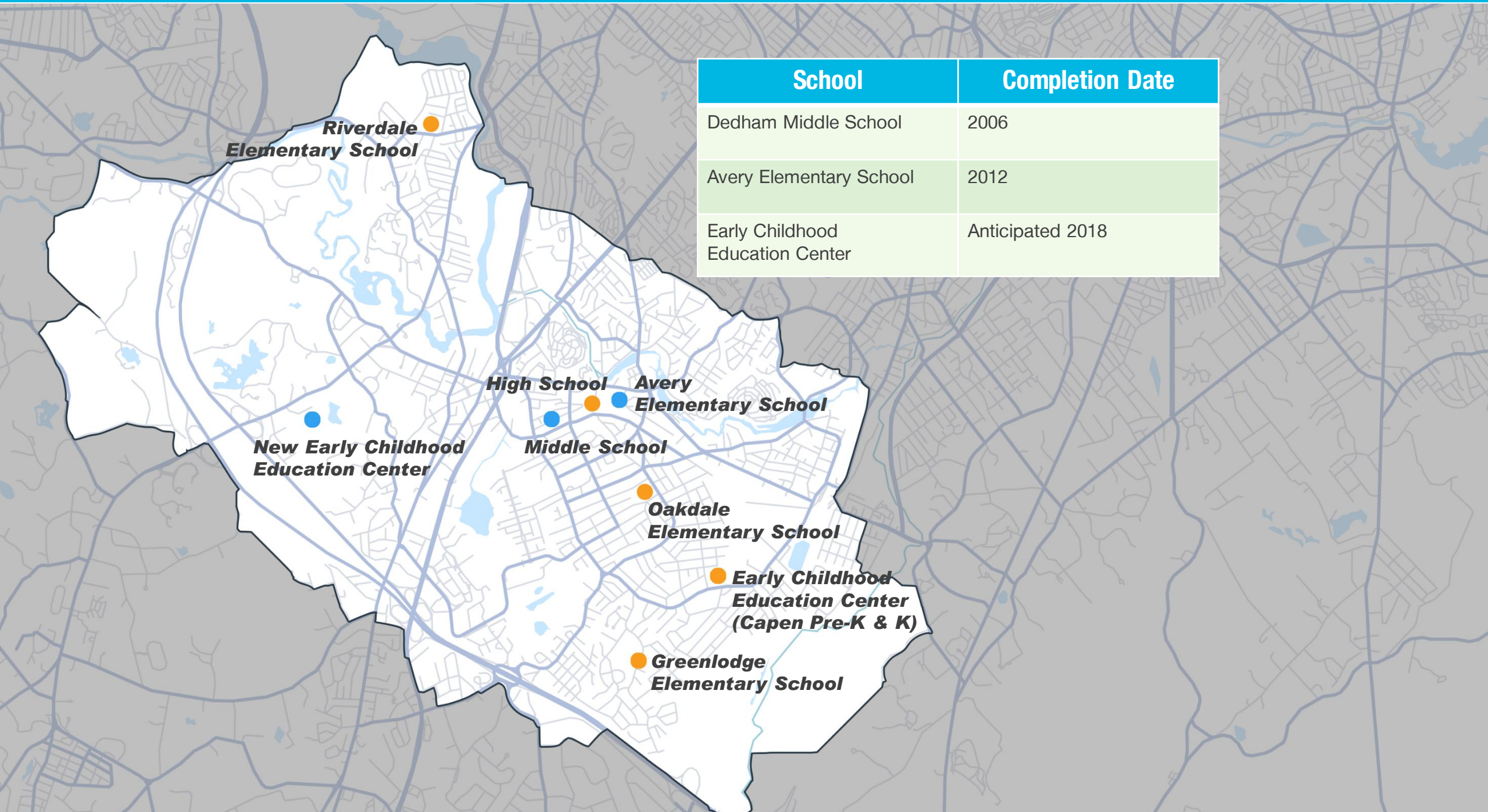
North Middlesex Regional High School

Quincy High School

Somerville High School

Wellesley High School

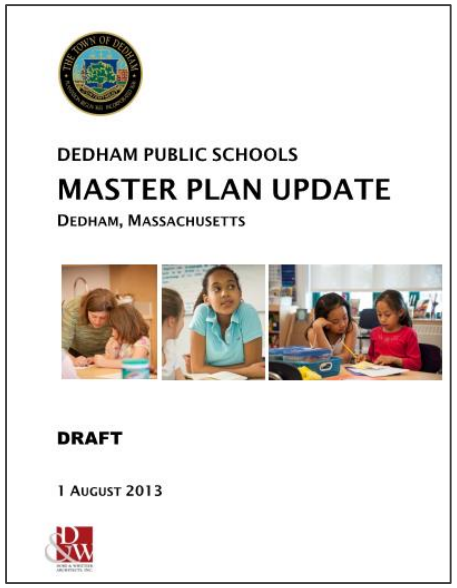
Winchester High School



School	Completion Date
Dedham Middle School	2006
Avery Elementary School	2012
Early Childhood Education Center	Anticipated 2018

Data Collection & Analysis

2013 Master Plan Update



Capital Improvement Program

Option 1:
Reno/Add to each Elementary and ECEC on existing site.

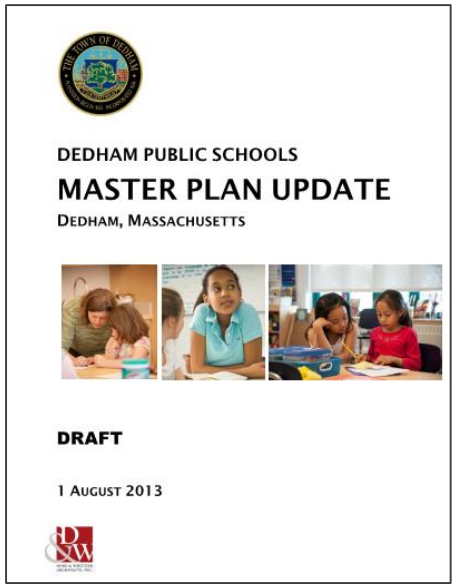
Option 1a:
Reno/Add to each Elementary on existing site. Add/Reno of Dexter for ECEC.

Option 2:
Demo each Elementary and ECEC. Build each new on existing sites.

Option 2a:
Demo each Elementary and build new on existing sites. Demo Capen/Curran and build new ECEC on Dexter School site.

Data Collection & Analysis

2013 Master Plan Update



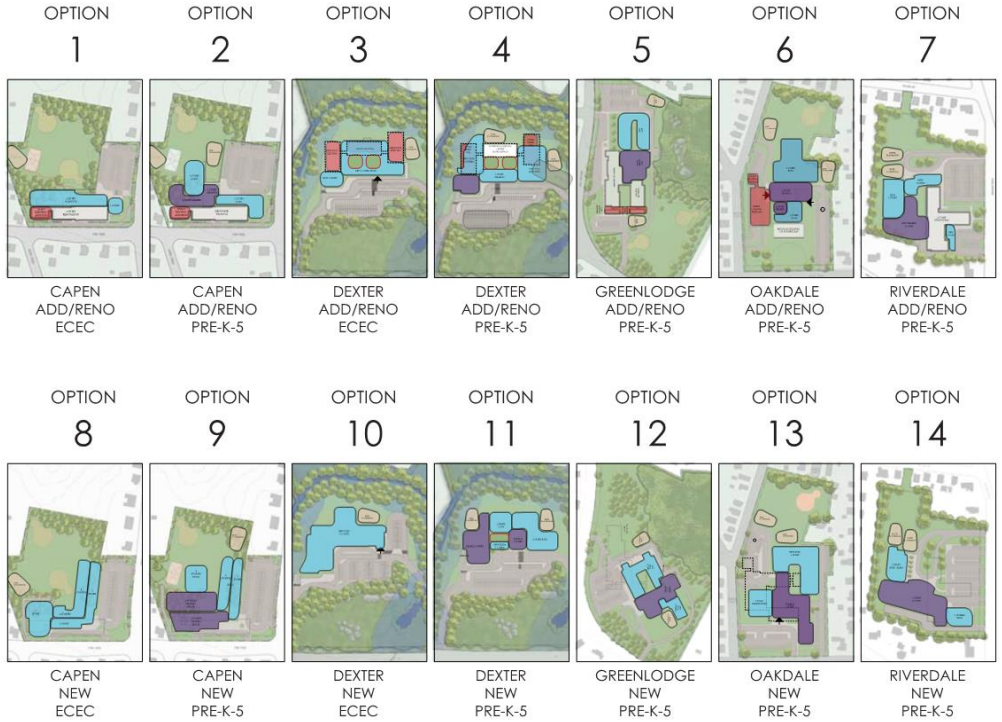
Capital Improvement Program

Option 1:
Reno/Add to each Elementary and ECEC on existing site.

Option 1a:
Reno/Add to each Elementary on existing site. Add/Reno of Dexter for ECEC.

Option 2:
Demo each Elementary and ECEC. Build each new on existing sites.

Option 2a:
Demo each Elementary and build new on existing sites. Demo Capen/Curran and build new ECEC on Dexter School site.

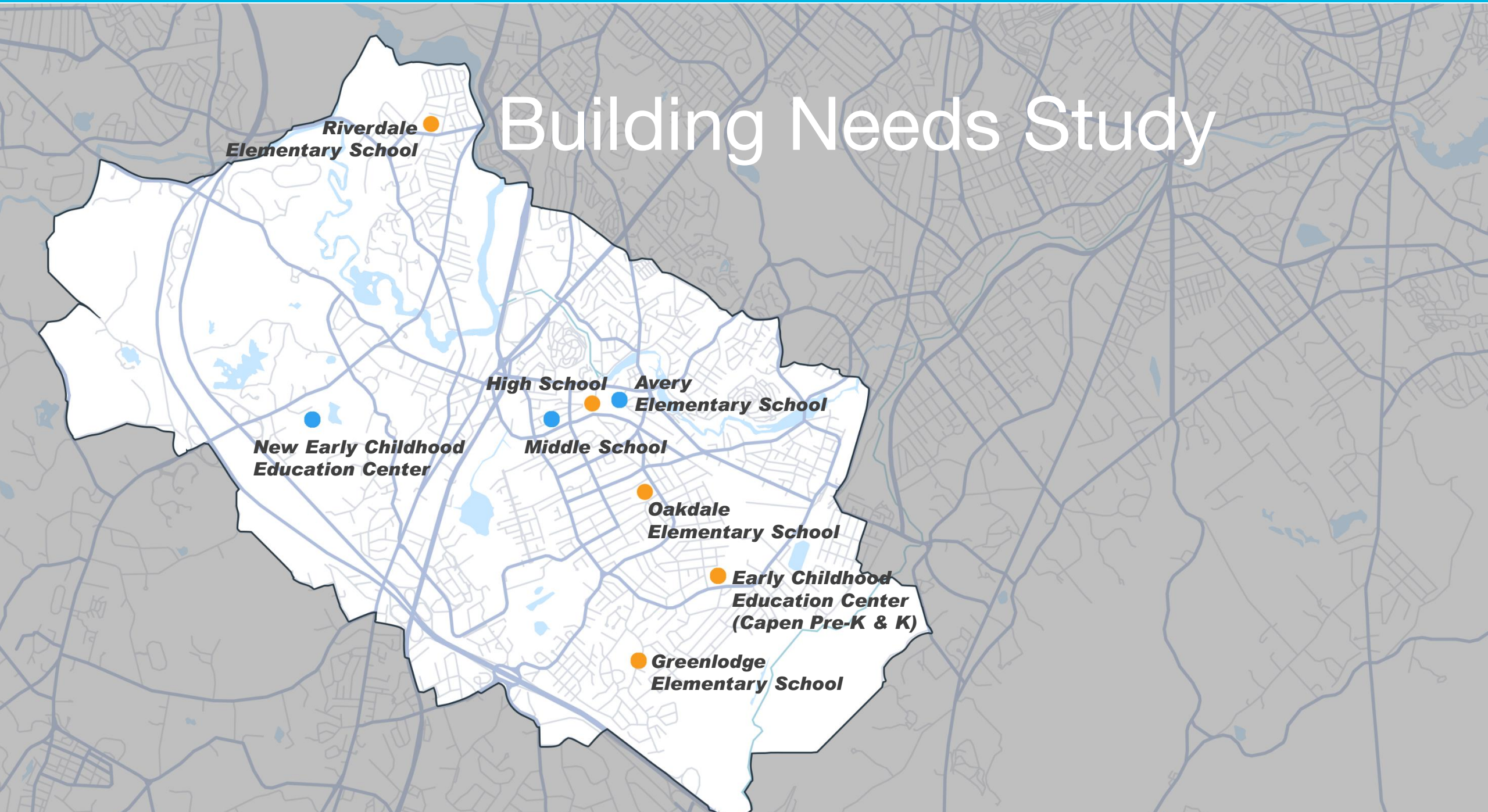


Data Collection & Analysis

2016 Facility Condition Assessments

PROPERTY INFORMATION	
Address:	147 Cedar Street, Dedham, Norfolk, Massachusetts 02026
Year Constructed/Renovated:	1902 Main multi-story building 1952 Southern wing including gymnasium 1960 Two end additions, two classrooms each (14, 15, 21, 22)
Current Occupants:	Approximately 275 students and 40 faculty
Percent Utilization:	95
Management Point of Contact:	Denise Moroney, 781-310-1141 phone
Property Type:	Classrooms, Offices
Site Area:	Approximately 7.00 acres
Building Area:	53,524 SF
Number of Buildings:	4
Number of Stories:	3
Parking Type and Number of Spaces:	47 spaces in open lots
Building Construction:	Conventional wood frame structure on concrete slab. Masonry bearing walls and wood-framed roofs. Steel frame with concrete-topped metal decks. Concrete tilt-up bearing walls and wood panel roof.
Roof Construction:	Gabled roofs with asphalt shingles. Flat roofs with built-up membrane.
Exterior Finishes:	Brick Veneer
Heating, Ventilation & Air Conditioning:	The original three-story1902 building has a central steam boiler connected to a passive steam heating system and steam radiators. The building has steam heated Air Handler Units (AHUs) that appear to bring in fresh outdoor air to mix with internally heated air to classrooms. The 1952 wing has a central steam dual boiler system connected to unit ventilators and radiators. Supplemental units in the 1902 building include fan-driven exhaust ducts connected to the chimney to pull air up through the building and multiple unit heaters Supplemental units in the 1952 wing include vent fans and unit heaters Supplemental units in the 1960 end additions include electric baseboard and unit ventilators
Fire and Life/Safety:	Smoke detectors, heat detectors, alarms, strobes, extinguishers, manual pull stations, alarm panel, exit signs.
Dates of Visit:	November 10, 2016

Building Needs Study



MSBA 2016 School Survey

Massachusetts School Building Authority – 2016 School Survey Report

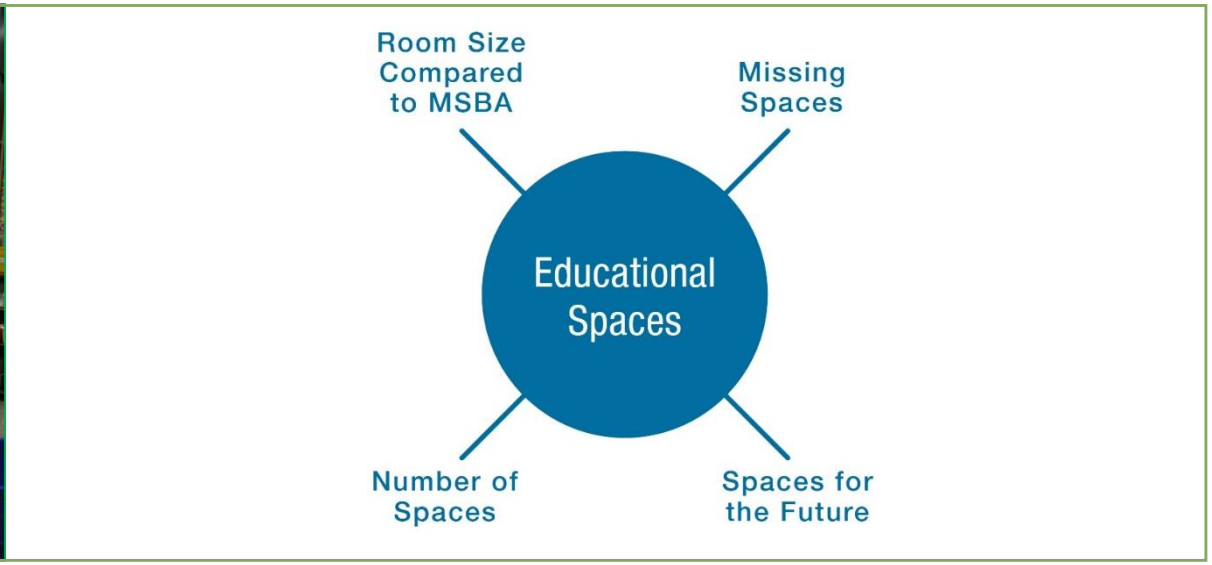
District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Condition Rating	Capacity Rating	General Environment Rating
Dedham	Avery	ES	2012	308	35,964	116.8	*	*	*	*	*
Dedham	Dedham High	HS	1959	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	*	*	*	*	*
Dedham	Early Childhood Center	PreK / K	1931	282	26,000	92.2	*	*	*	*	*
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	48,909	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

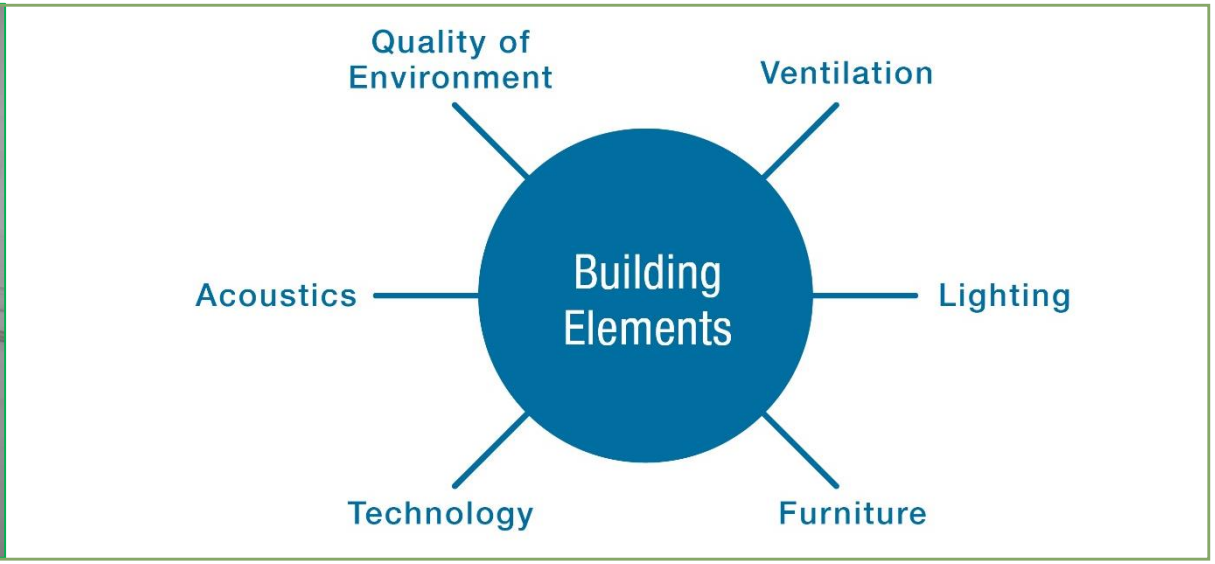
Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

Elements of Educational Facility Effectiveness





Greenlodge Elementary School

Quick Facts

- Built in 1955
- Additions 1961 &1970
- 247 Students
- Large Site (partially hilly)
- Traditional Layout

Greenlodge - Educational Facility Effectiveness

Classroom sizes generally meet MSBA Guidelines with exceptions

No cafeteria (meals in classrooms)

Undersized gym

Numerous issues with building conditions that impede teaching and learning:
--lighting, temperature, ventilation, acoustics

Issues related to safe and secure learning environments

Need for additional Special Education spaces

Greenlodge - Building Conditions Issues

Limited handicapped access to significant parts of the building

Numerous other issues of accessibility

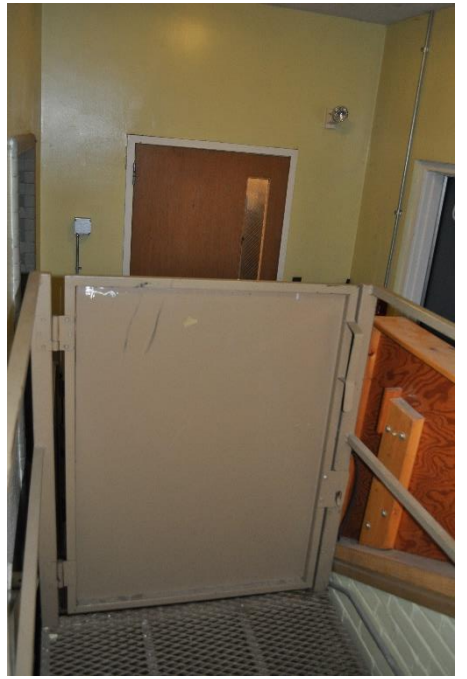
Obsolete mechanical heating and ventilation system, no air conditioning
--frequently too hot / too cold for teaching and learning

Inadequate electrical systems

Obsolete plumbing systems

Window replacement needed

Cosmetic issues
--floors, ceilings, walls (work might be categorized as minor)



Oakdale Elementary School

Quick Facts

- Built in 1902
- Additions in 1951 & 1970
- 271 Students
- Historic Status – none
- Modest Site Size
- Classrooms are undersized
- Traditional Layout

Oakdale - Educational Facility Effectiveness

Typical classrooms in the original building are significantly undersized, most others undersized

No cafeteria (meals in classrooms)

Undersized gym & library/media center

Numerous issues with building conditions that impede teaching and learning:
--lighting, temperature, ventilation, acoustics

Issues related to safe and secure learning environments

Need for additional Special Education spaces

Oakdale - Building Conditions Issues

Lack of handicapped access to significant parts of the building and other accessibility issues

Wooden stair construction / steel fire escapes

Wood construction in original building

Lack of automatic fire protection system

Obsolete mechanical heating and ventilation system, no air conditioning
--frequently too hot / too cold for teaching and learning

Inadequate electrical systems

Window replacement needed

Cosmetic issues
--floors, ceilings, walls (work might be categorized as minor)

Riverdale Elementary School

Quick Facts

- Built in 1921
- Additions in 1930 & 1970
- 172 Students
- Historic Status – none
- Modest Site Size
- Classrooms are undersized
- Traditional Layout

Riverdale - Educational Facility Effectiveness

Typical classrooms in the original building are significantly undersized, most are undersized

No cafeteria (meals in classrooms)

Undersized gym & library/media center

Numerous issues with building conditions that support teaching and learning:
--lighting; temperature; ventilation, acoustics

Issues related to safe and secure learning environments

Need for additional Special Education space

Riverdale - Building Conditions Issues

Lack of handicapped access to significant parts of the building

Numerous other issues of accessibility

Wooden stair construction

Wood construction in original building

Lack of automatic fire protection system

Obsolete mechanical H&V system, no air conditioning
--frequent too hot / too cold for T&L

Inadequate electrical systems

Window replacement needed

Cosmetic issues
--floors, ceilings, walls (work might be categorized as minor)

Capen-Curran (Current ECEC) Site

Quick Facts

- Built in 1931
- Additions in 1970
- 250 Students (PreK-K)
- Historic Status – none
- Modest Site Size (4-5 acres)
- Classrooms are undersized
- Traditional Layout

Capen-Curran - Educational Facility Effectiveness

Typical classrooms are significantly undersized

No cafeteria (meals in classrooms)

Undersized gym & library/media center

Numerous issues with building conditions that support teaching and learning:
--lighting; temperature; ventilation, acoustics

Issues related to safe and secure learning environments

Need for additional Special Education space

Capen-Curran - Building Conditions Issues

Lack of handicapped access to the 2nd floor + significant parts of the building

Numerous other issues of accessibility

Wood construction in original building

Lack of automatic fire protection system

Obsolete mechanical H&V system, no air conditioning
--frequent too hot / too cold for T&L

Inadequate electrical systems

Window replacement needed

Cosmetic issues
--floors, ceilings, walls (work might be categorized as minor)

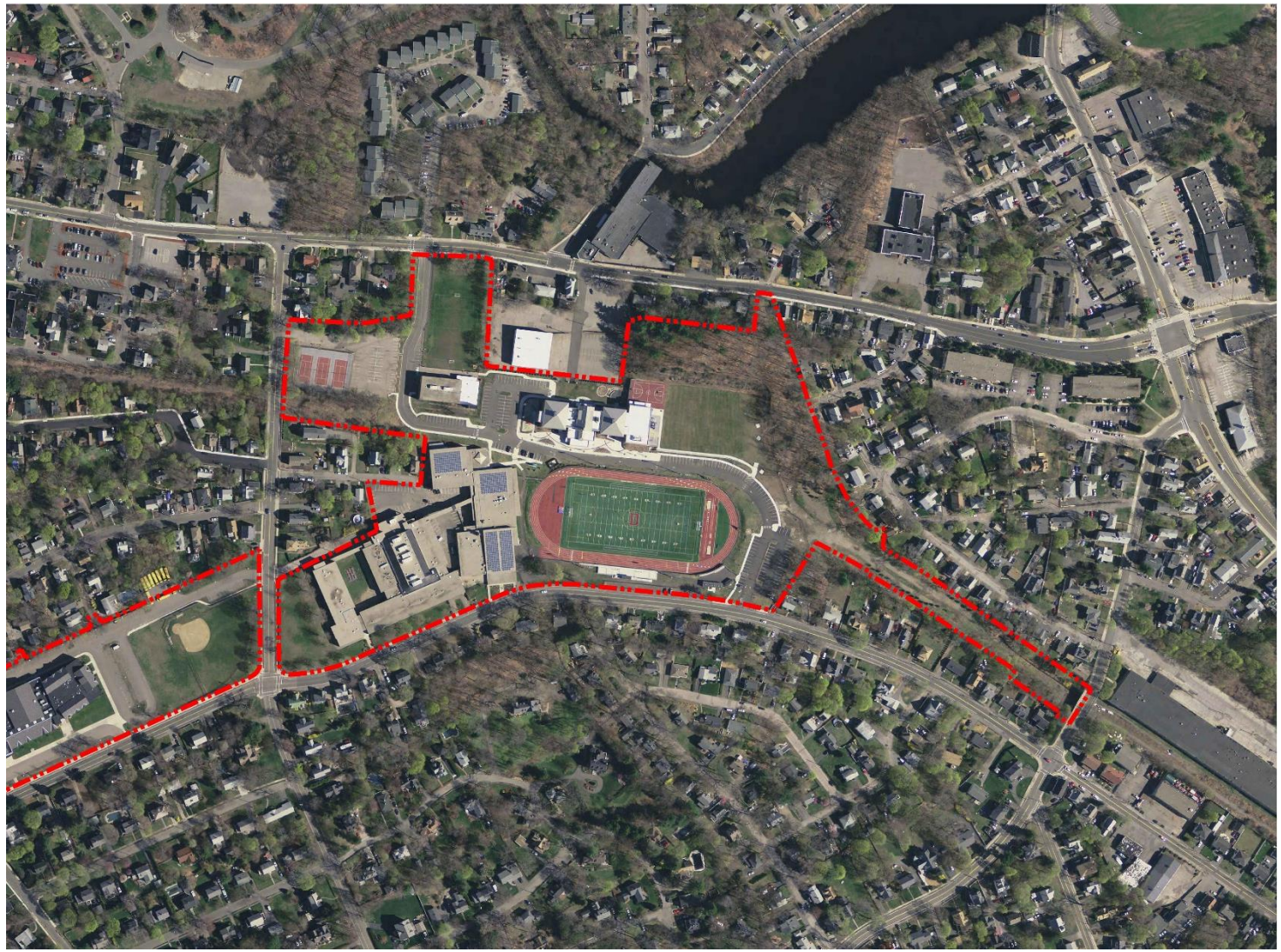
Capen-Curran – As Swing Space

Comparable Educational Needs:

- General Education Classrooms
- Additional Special Education Space
- Art Room
- Music Room
- Handicapped Accessibility

Will require heating and ventilation in moth-balled state

Dedham High School



Quick Facts:

- Built in 1959
- Renovations in 1967 & 1974
- 767 Students
- Site 11.4 acres
- Classrooms are undersized
- Public spaces are oversized

Dedham High School Uses

- High School Academics
- DPS Central Administration including Business Office
- DPS Facilities Department use
- DPS Commissary Kitchen for all schools
- Youth Commission Offices
- Athletics and Fitness Center

Quick Facts:

- 307,323 square feet

MSBA 2016 School Survey

Massachusetts School Building Authority – 2016 School Survey Report

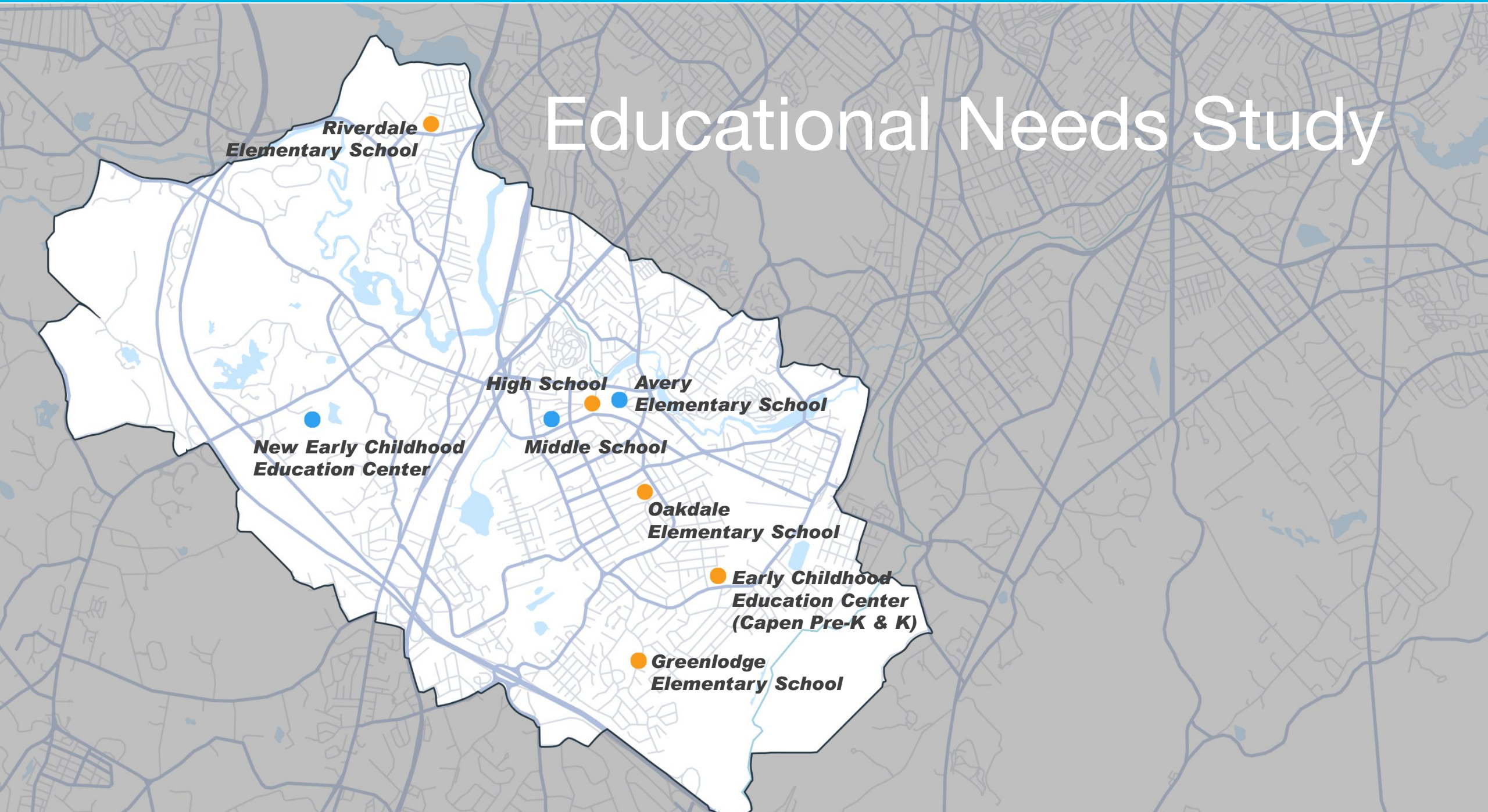
District	School	Type	Year Founded	2016/2017 Enrollment	Total GSF	SF/ Student	Classroom Count	Students/ Classroom	Building Condition Rating	Capacity Rating	General Environment Rating
Dedham	Avery	ES	2012	308	35,964	116.8	*	*	*	*	*
Dedham	Dedham High	HS	1959	739	307,323	415.9	72	10.3	1	Under	1
Dedham	Dedham Middle School	MS	2006	631	162,000	256.7	*	*	*	*	*
Dedham	Early Childhood Center	PreK / K	1931	282	26,000	92.2	*	*	*	*	*
Dedham	Greenlodge	ES	1955	278	51,084	183.8	19	14.6	2	Average	1
Dedham	Oakdale	ES	1902	272	48,909	179.8	21	13.0	3	Average	1
Dedham	Riverdale	ES	1920	183	37,299	203.8	16	11.4	2	Average	1

Scoring Rubric (Ratings 1 – 4) *best to poorest*

1. Building Condition
2. General Environment
   - Learning Environments
   - Building Safety
   - Universal Accessibility
   - Academic Sufficiency
   - Program Sufficiency
   - Instructional Technology
3. Capacity Utilization
   - Underutilized (less than 80% capacity utilization
   - Average Utilization (between 80% - 125% capacity utilization)
   - Over Utilization (equal to or greater than125 % -capacity utilization)

http://www.massschoolbuildings.org/programs/school_survey

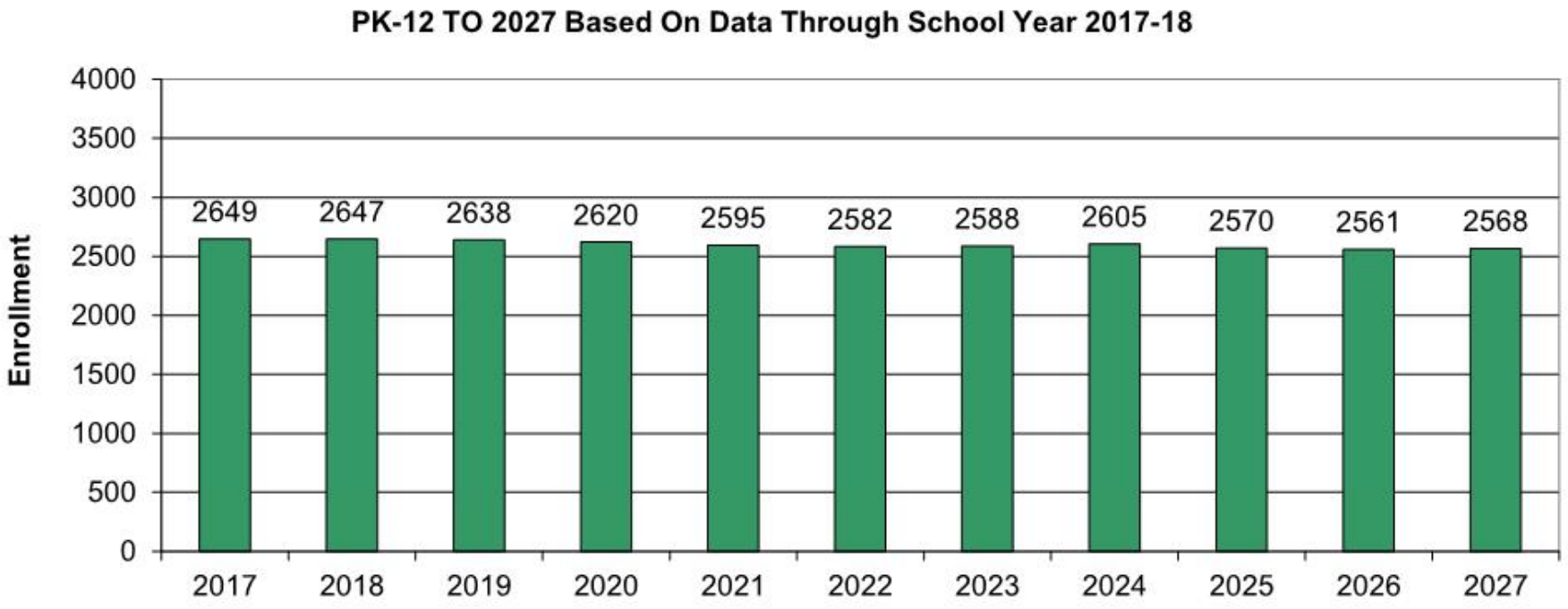
Educational Needs Study



Enrollment Projections

NESDEC

Dedham, MA Projected Enrollment

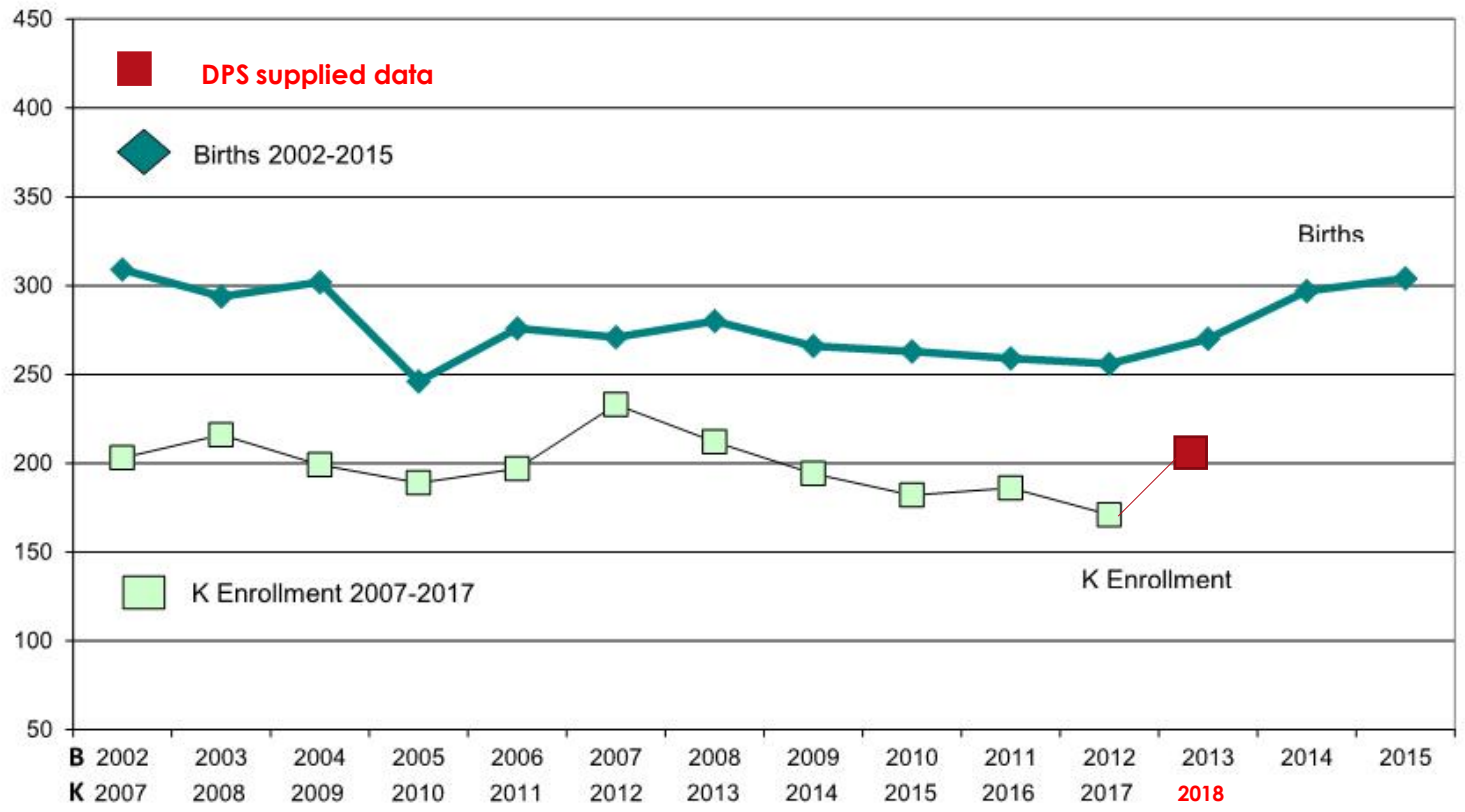


©New England School Development Council • 508-481-9444 • www.nesdec.org

Birth Rate

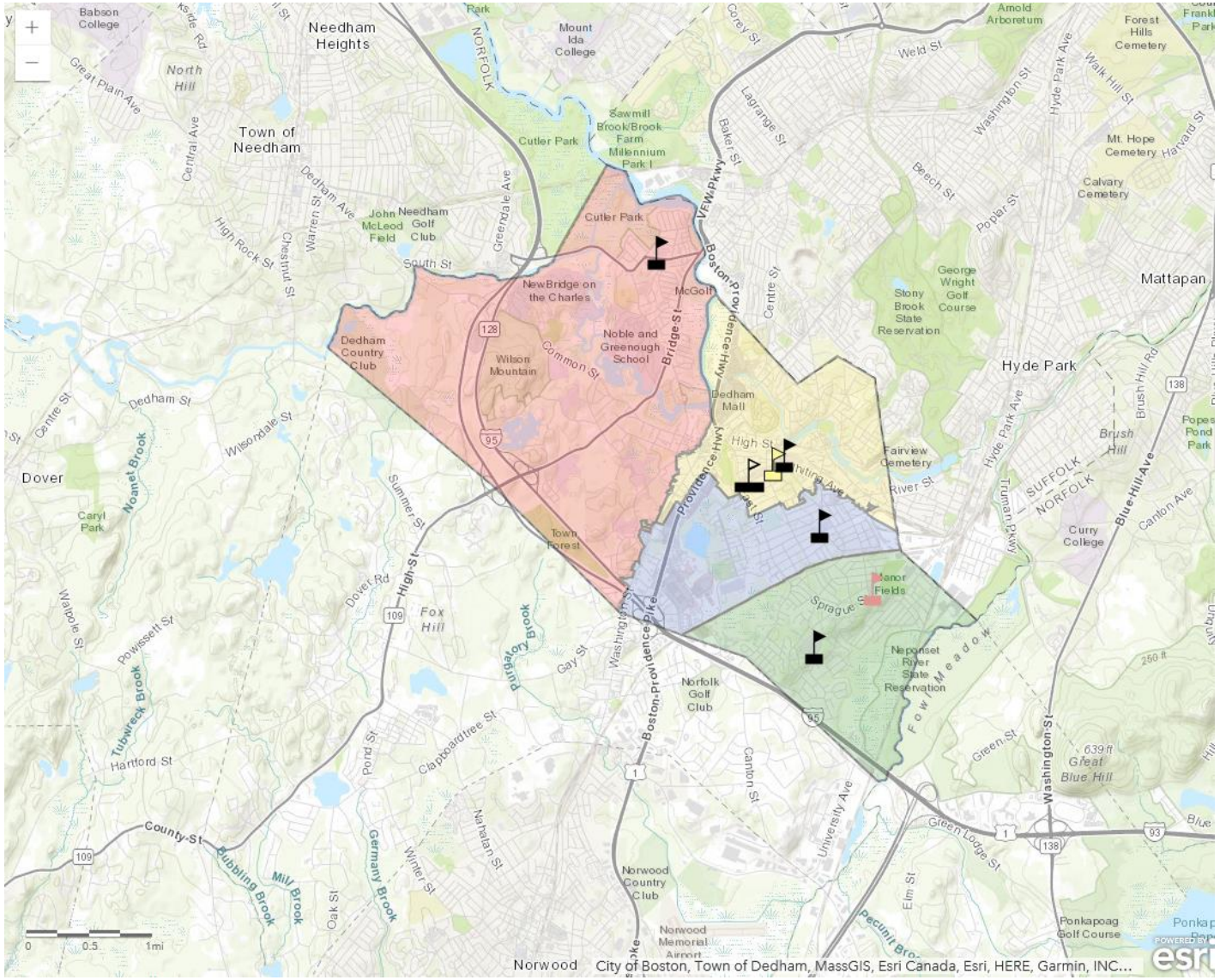
NESDEC

Dedham, MA Birth-to-Kindergarten Relationship



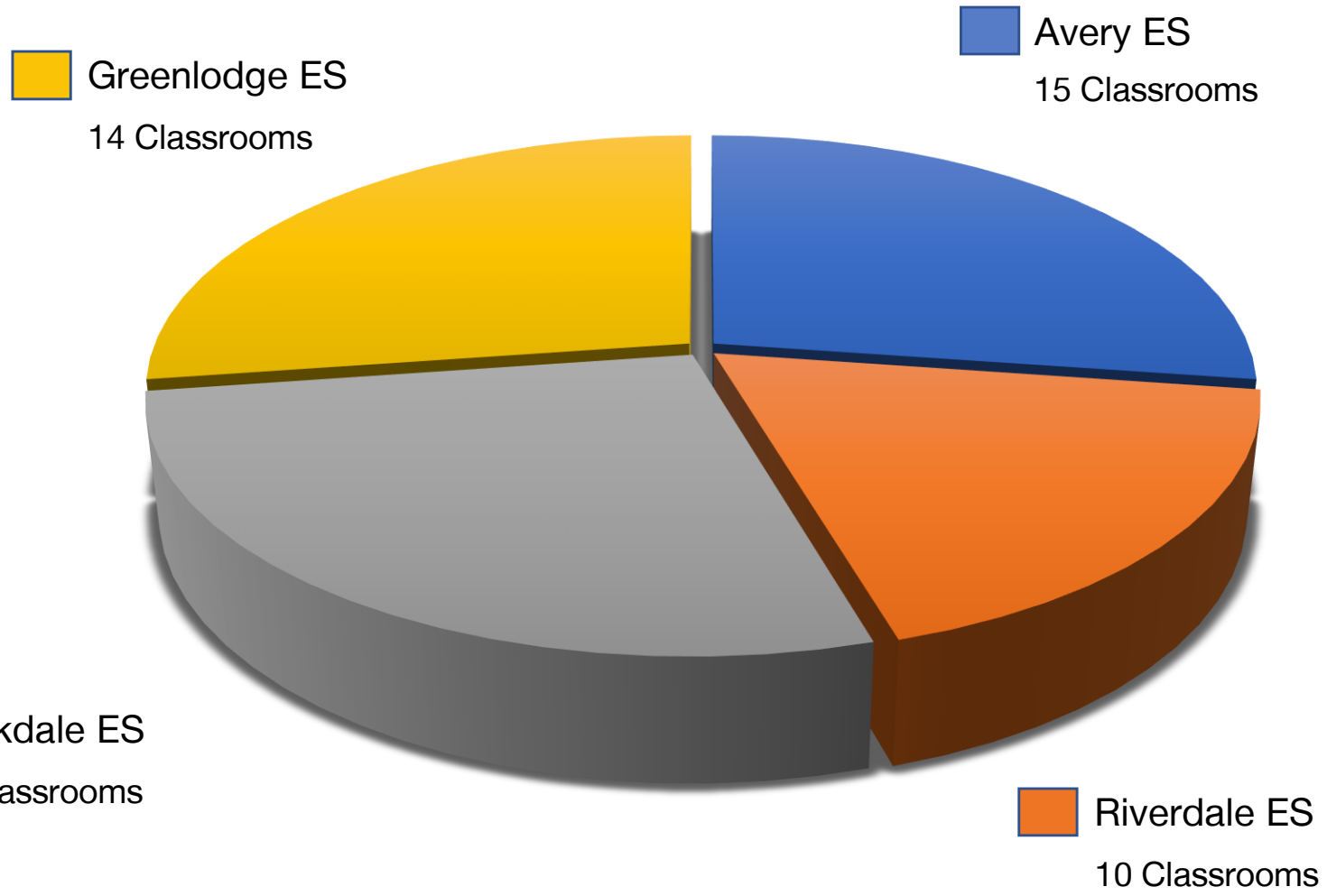
©New England School Development Council • 508-481-9444 • www.nesdec.org

Current Elementary School Districts



Current Schools Configuration / Classrooms

Mostly Undersized Classrooms

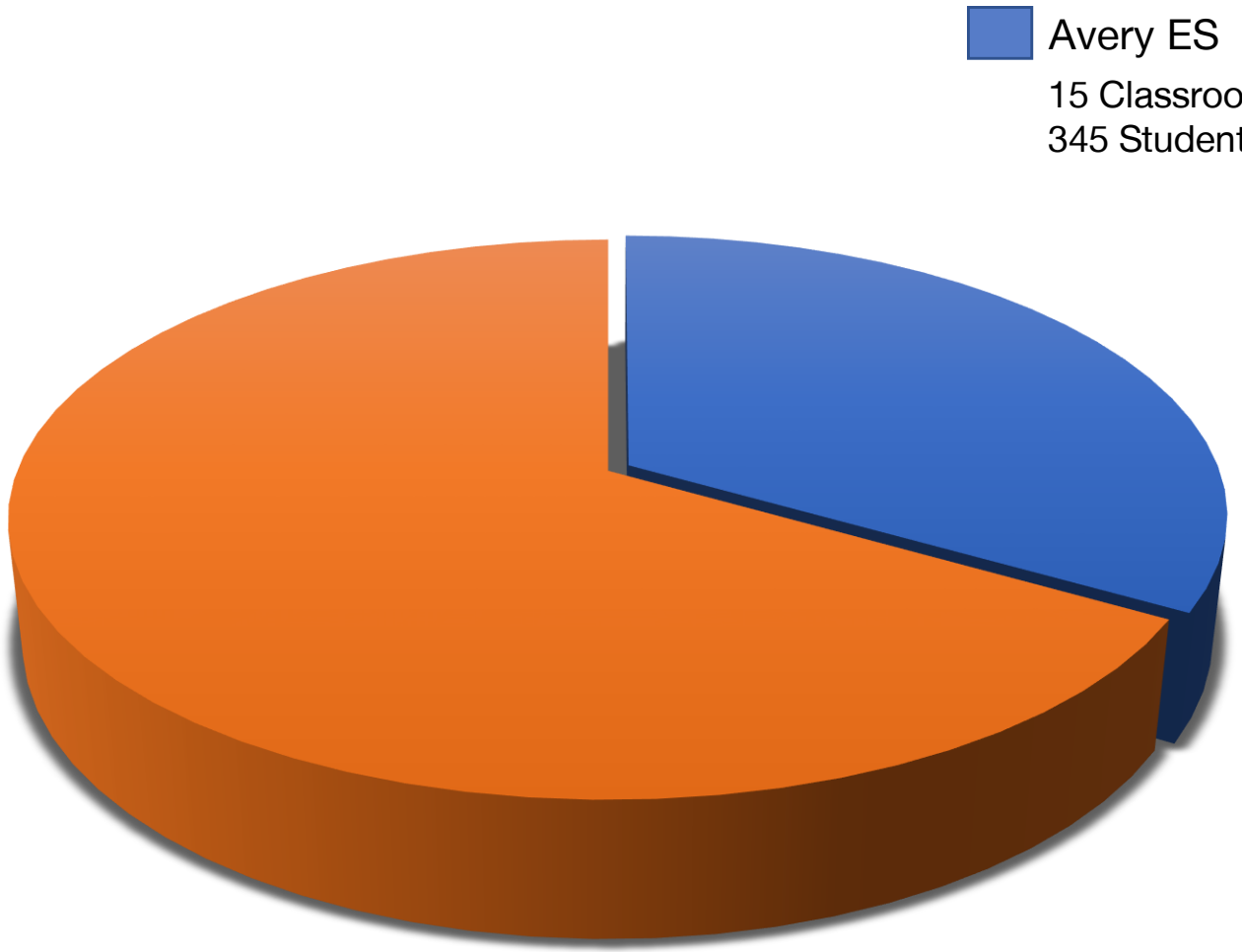


Total:
54 Classrooms
994 Students

2027 School / Classroom Need

Assumes:

- Properly sized classrooms 900-950sf
- 23 Students/Classroom



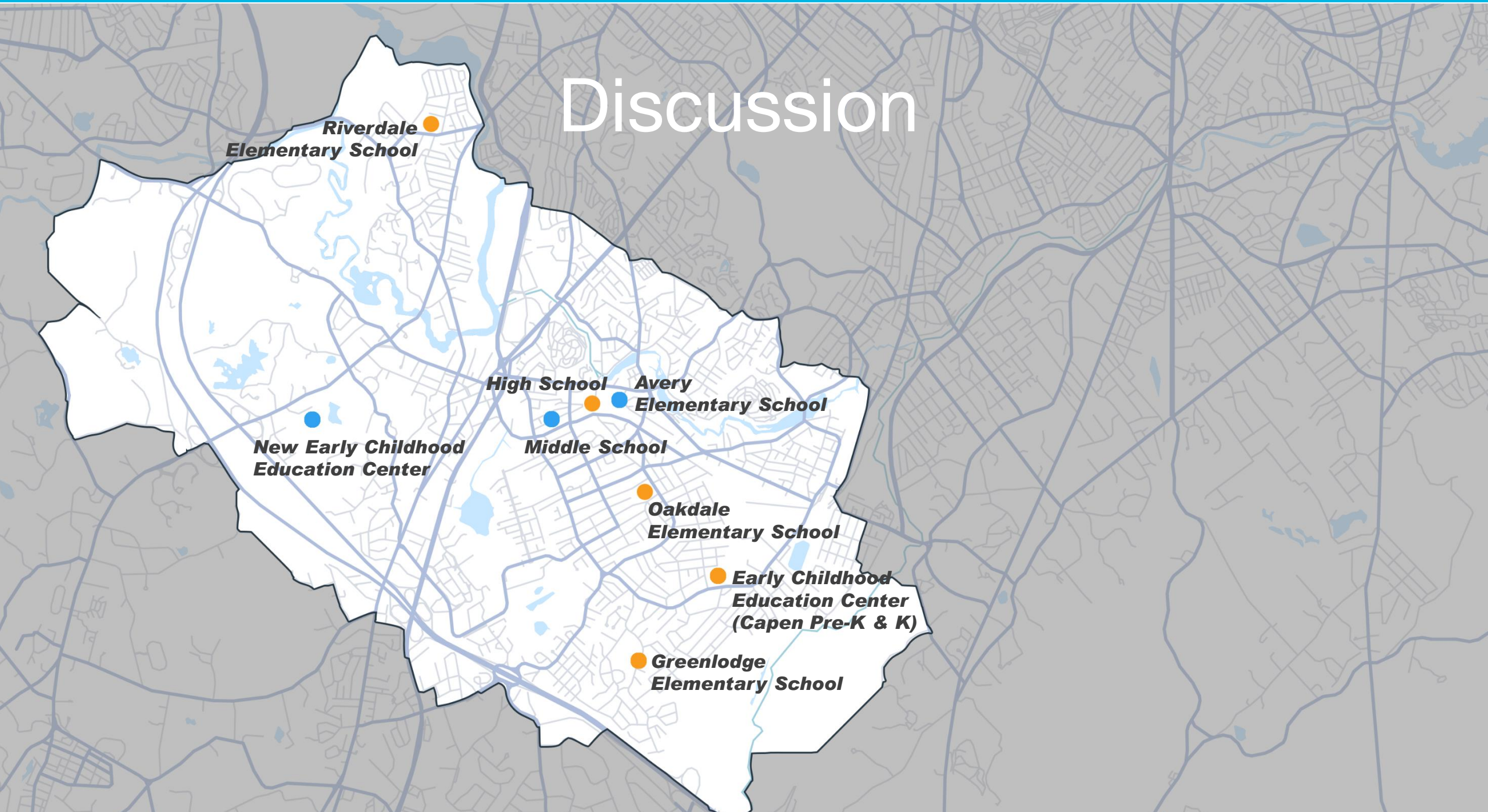
Total:

45 Classrooms
1,016 Students

Next Steps

	Current				2027 Needs w/ MSBA Criteria		
	2018-19 Population	Classrooms / Grade	Total Classrooms	Average Class Size	Class Size	Classrooms / Grade	Population
Avery	304	3	15	20.3	23	15	345
Riverdale	172	2	10	17.2	23		
Oakdale	271	3	15	18	23	30	671
Greenlodge	247	3	14	17.6	23		
	994	11	54	18.4		45	1,016

Discussion


Riverdale
Elementary School
High School
Avery
Elementary School
New Early Childhood
Education Center
Middle School
Oakdale
Elementary School
Early Childhood
Education Center
(Capen Pre-K & K)
Greenlodge
Elementary School

Navigating Contemporary Education

Pedagogy and curriculum

Curriculum delivery methodologies

Grade level pedagogy

PAST / PRESENT		GOALS
Teacher Centric	→	Student Centric
Passive Learning	→	Active Learning
Classrooms	→	Flexible Learning Environments
Conventional Technology	→	1:1 Technology Environments
Individual	→	Collaborative
Subject-Based	→	Project / Problem Based

2015 A4LE Ed Kirkbride Award

District Option 1

Three New or Renovated Schools, No Change in District Lines

All schools Grades 1-5

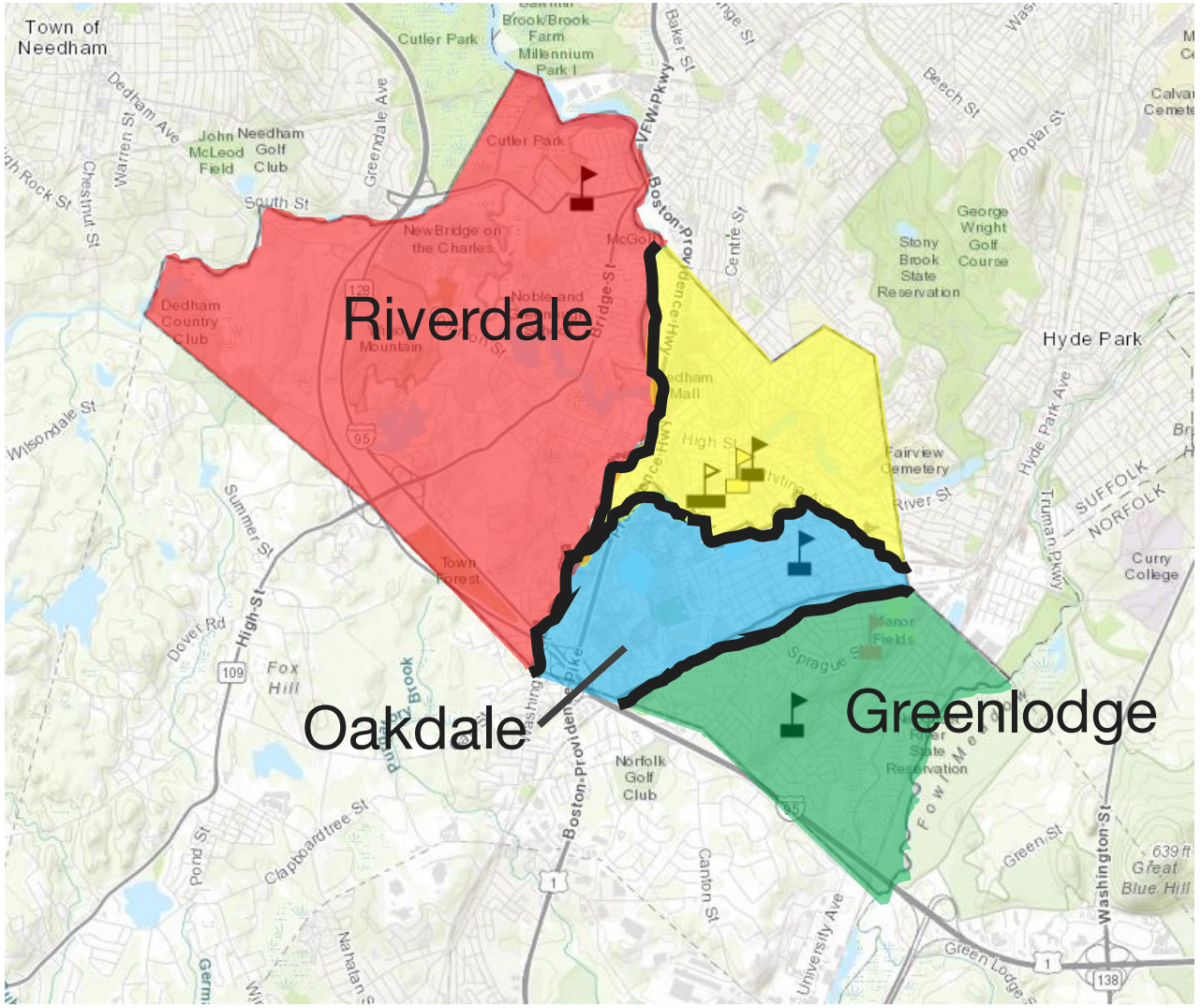
Estimated Enrollment

- Riverdale 230
- Avery (No Change) 345
- Oakdale 345
- Greenlodge 345

1,265

Approximate SF Requirement

- Riverdale 41,400
- Avery (No Change)
- Oakdale 60,289
- Greenlodge 60,289



District Option 2

Two New or Renovated Schools, New District Lines

All schools Grades 1-5

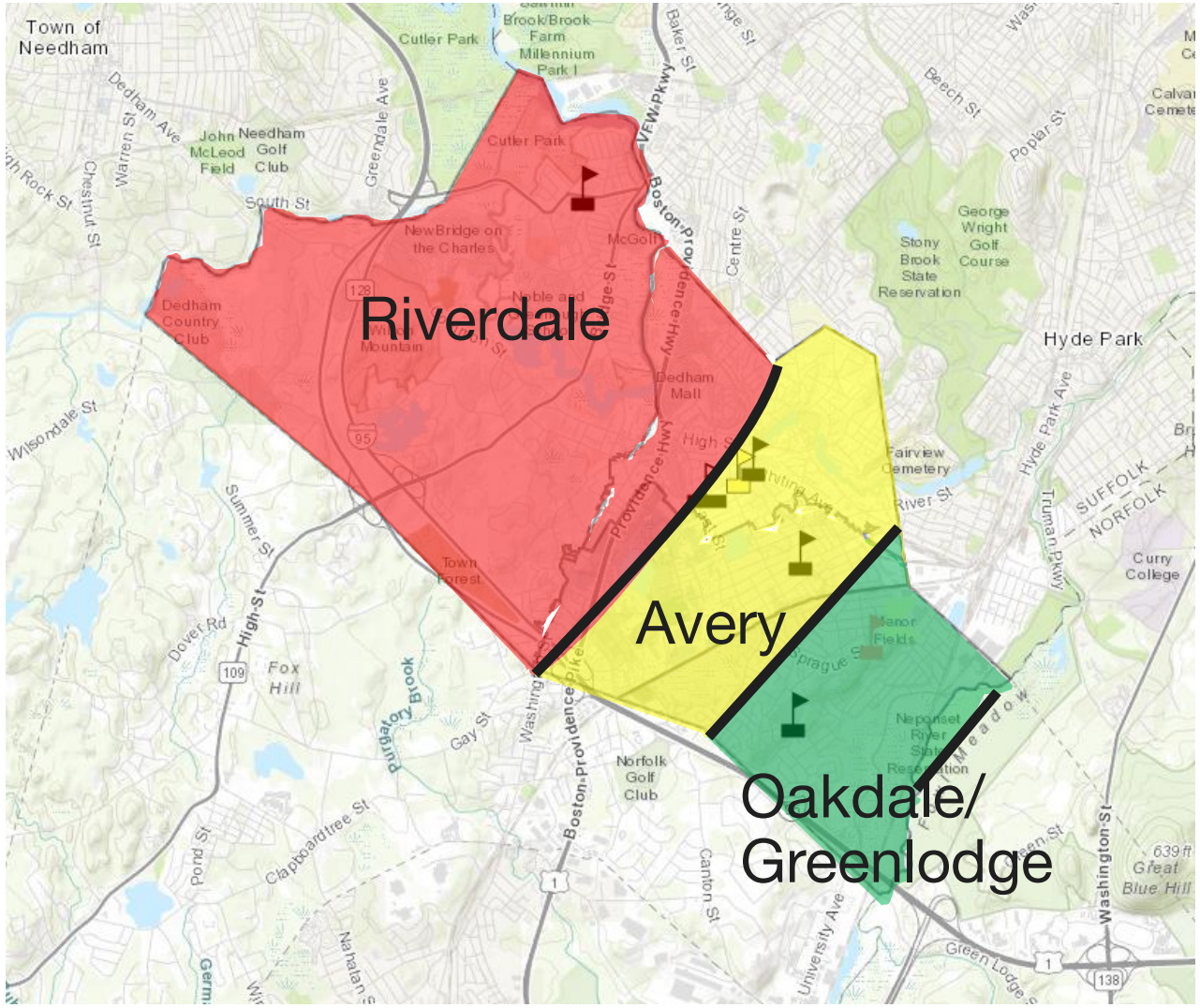
Estimated Enrollment

- Riverdale 345
- Avery (No Change) 345
- Oakdale/ Greenlodge 345

1,035

Approximate SF Requirement

- Riverdale 60,289
- Avery (No Change)
- Oakdale/ Greenlodge 60,289



District Option 3

One New School, New District Lines

All schools Grades 1-5

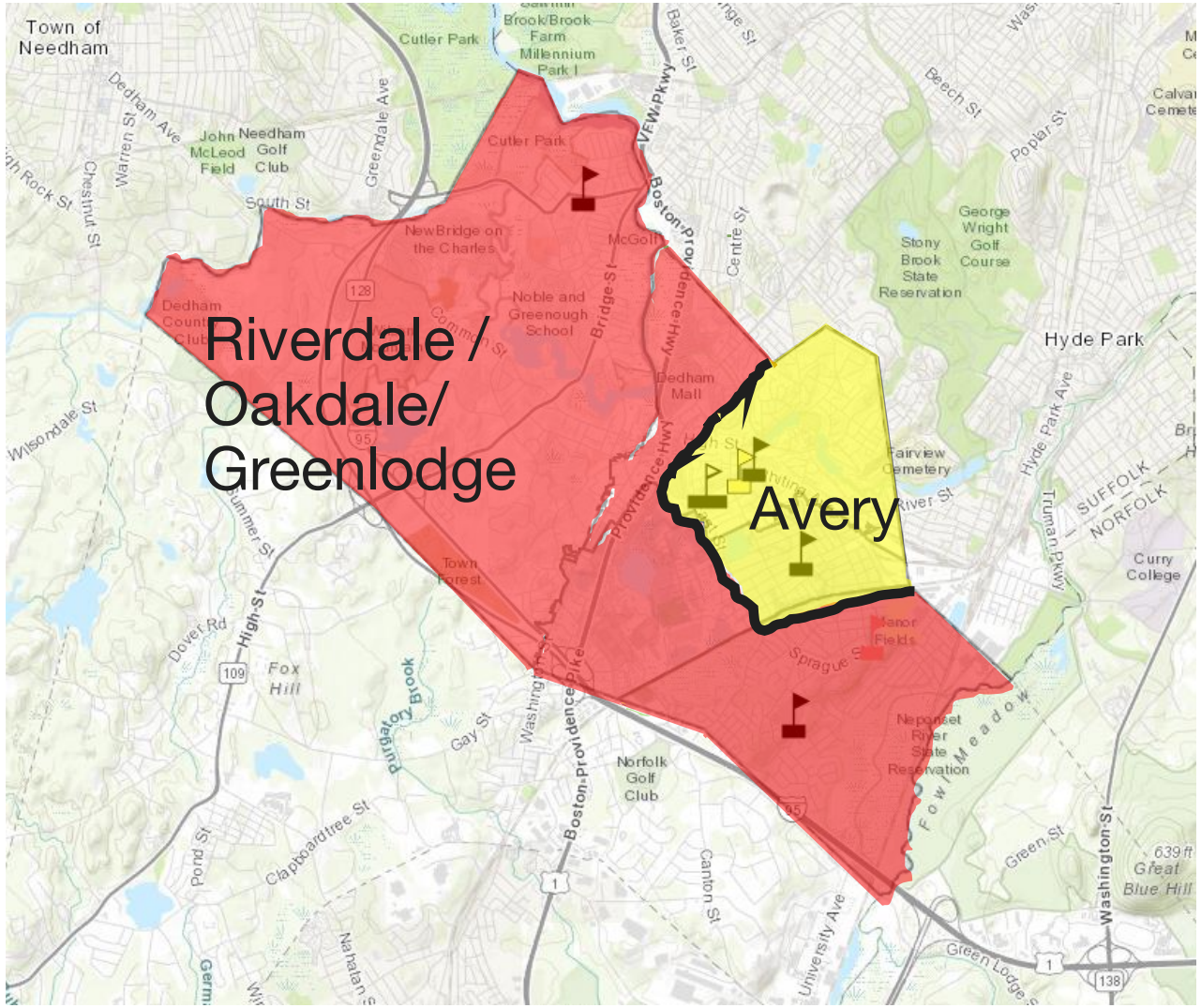
Estimated Enrollment

- Riverdale/ Oakdale/ Greenlodge 685
- Avery (No Change) 345

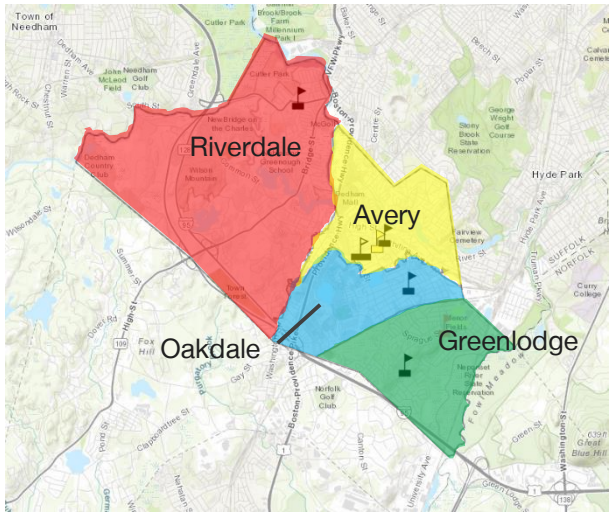
1,030

Approximate SF Requirement

- Riverdale/ Oakdale/ Greenlodge 99,325
- Avery (No Change)



Summary of Options

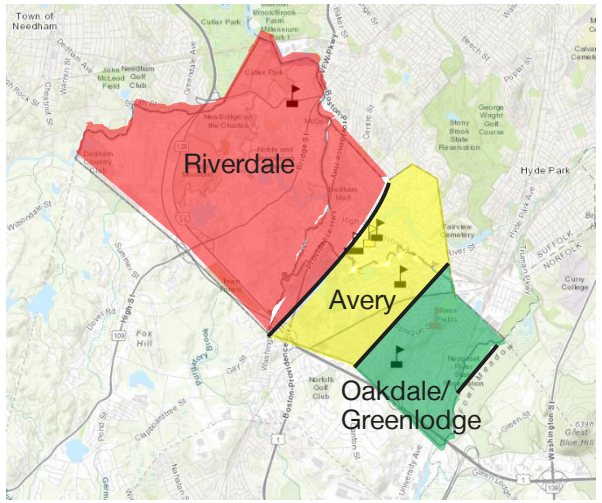


Option 1

Four Elementary Schools

Approximate SF Requirement

• New Riverdale	41,400
• Avery (No Change)	
• New Oakdale	60,289
• New Greenlodge	60,289
Total	161,978

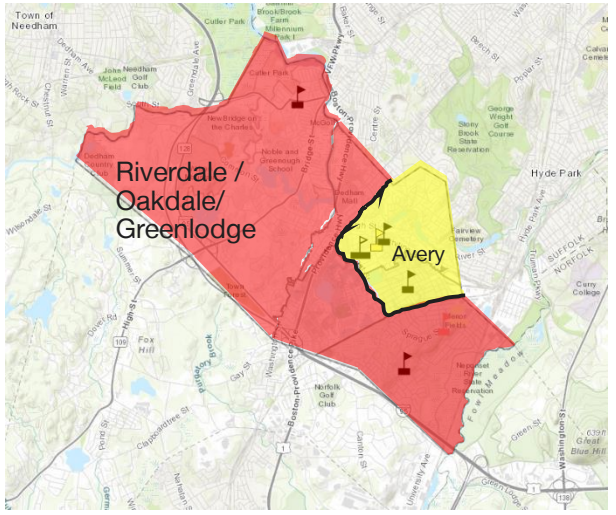


Option 2

Three Elementary Schools

Approximate SF Requirement

• New Riverdale	60,289
• Avery (No Change)	
• New Oakdale/ Greenlodge	60,289
Total	117,423



Option 3

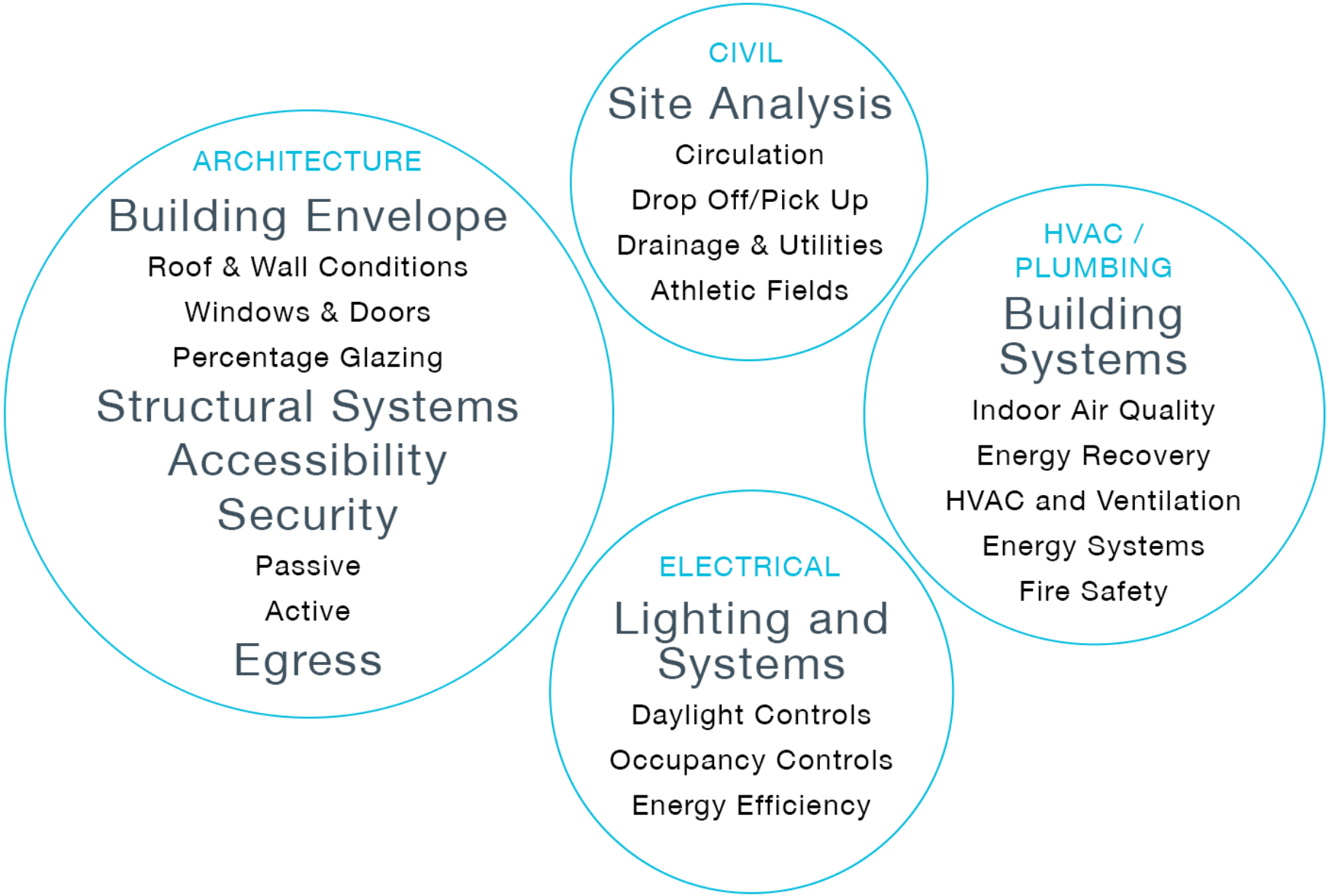
Two Elementary Schools

Approximate SF Requirement

• New Riverdale/ Oakdale/ Greenlodge	99,325
• Avery (No Change)	
Total	99,325

Manor Fields Proposal

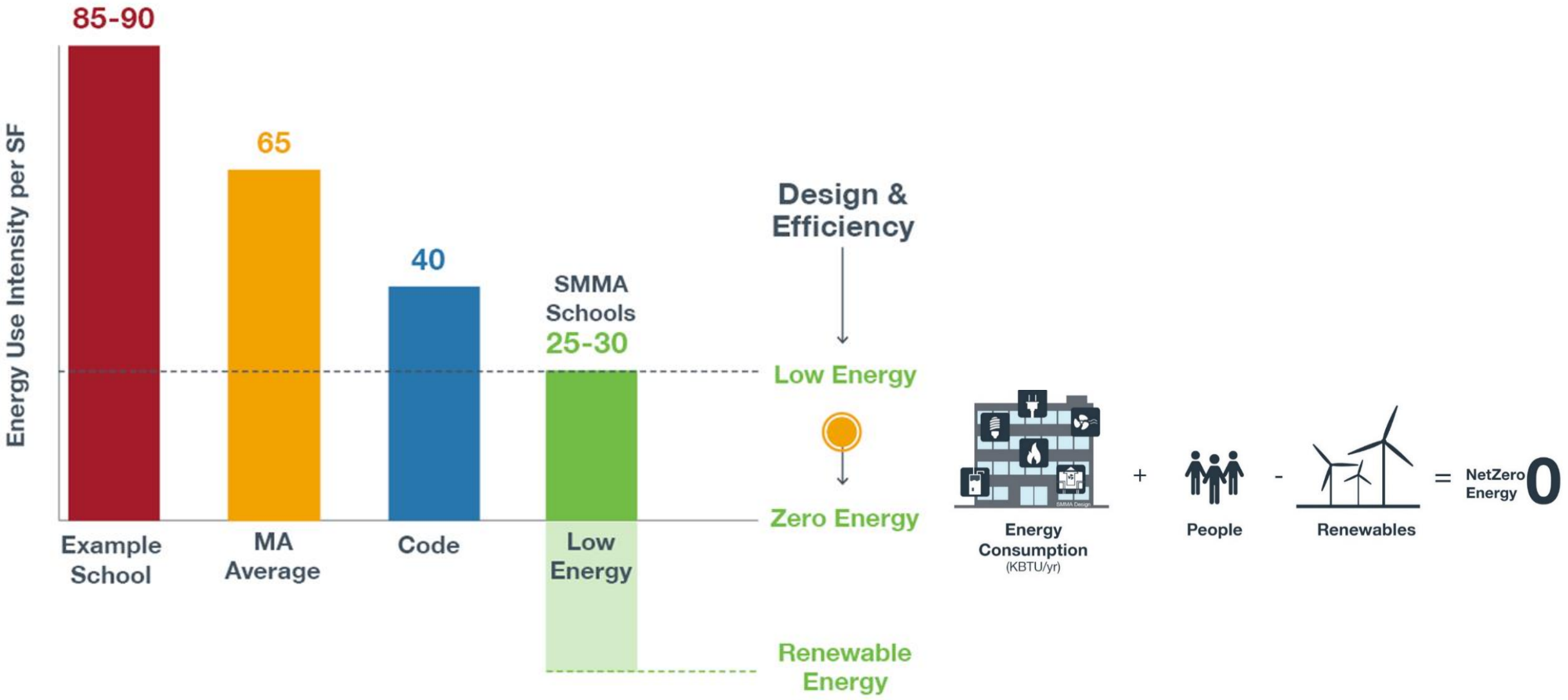
Elements of Facility Assessment



The Changing Face of Education

- Technology
- Blended Learning
- Differentiated / Personalized Learning
- Project Base / Problem Based Learning
- Increasing Special Needs
- Increasing English Learners (EL's)
- STEM / STEAM / STREAM
- New Generation Science Standards
- Flipping the Classroom
- School Safety and Security

Path to a Zero Energy School

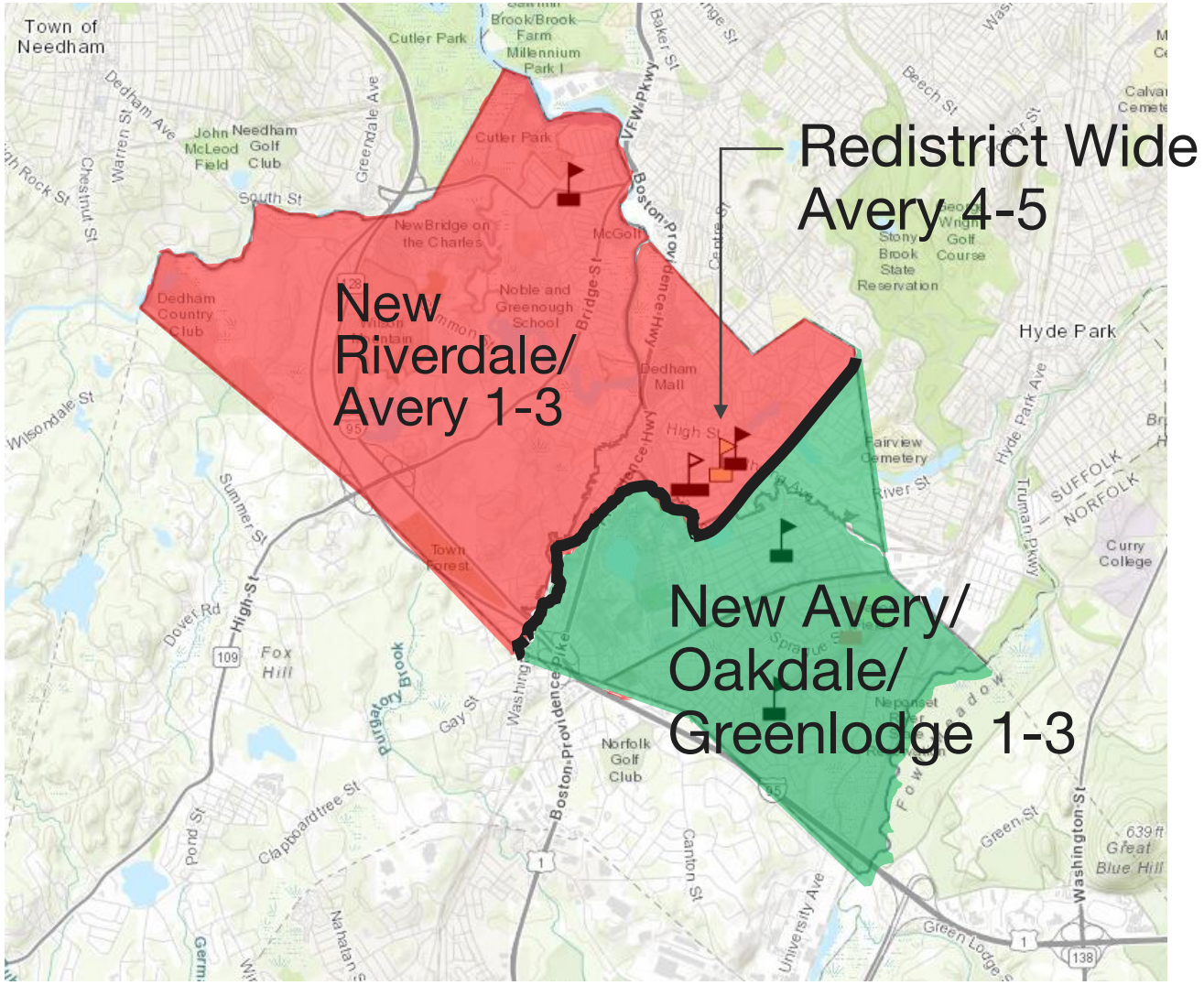


Option 3

New grade structure
2 new/reno buildings

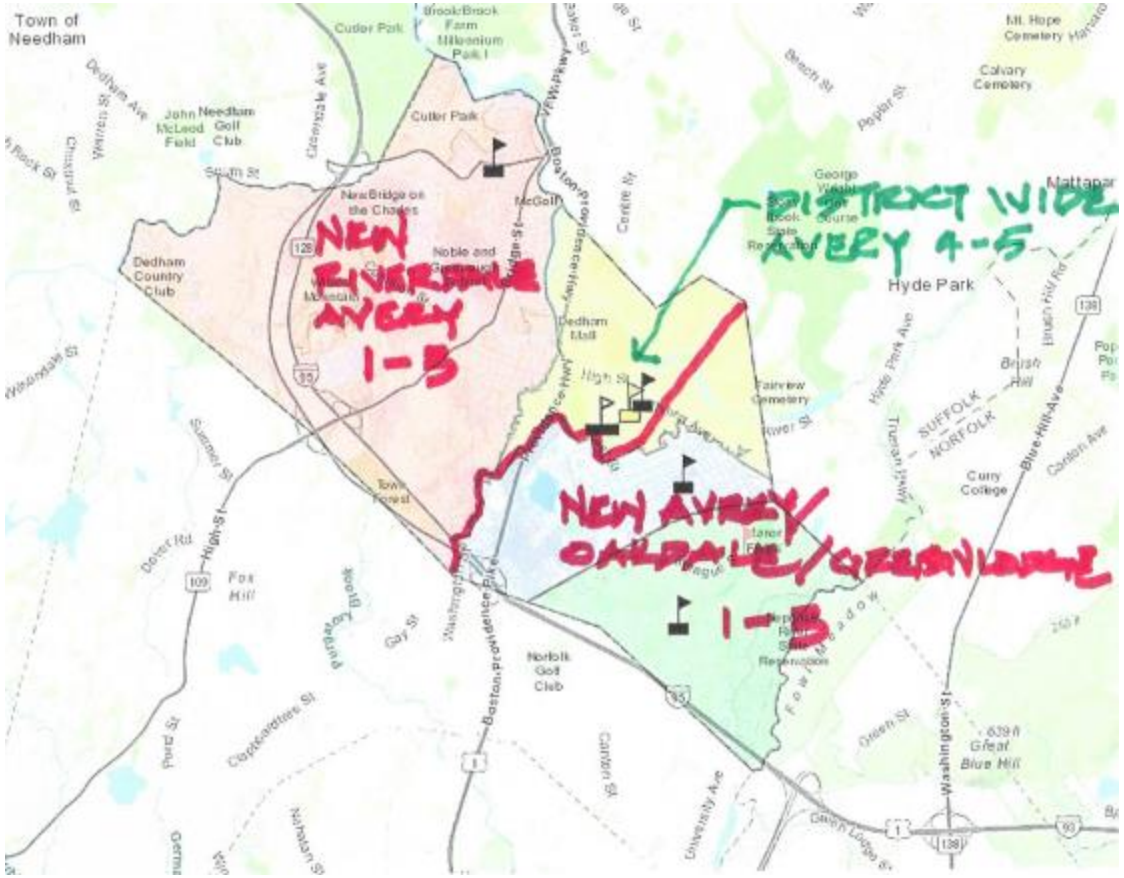
- New Riverdale/ (Avery) 1-3 300
- New (Avery)/ Oakdale/ Greenlodge 1-3 300
- Avery 4-5 (too small) 410

1,010

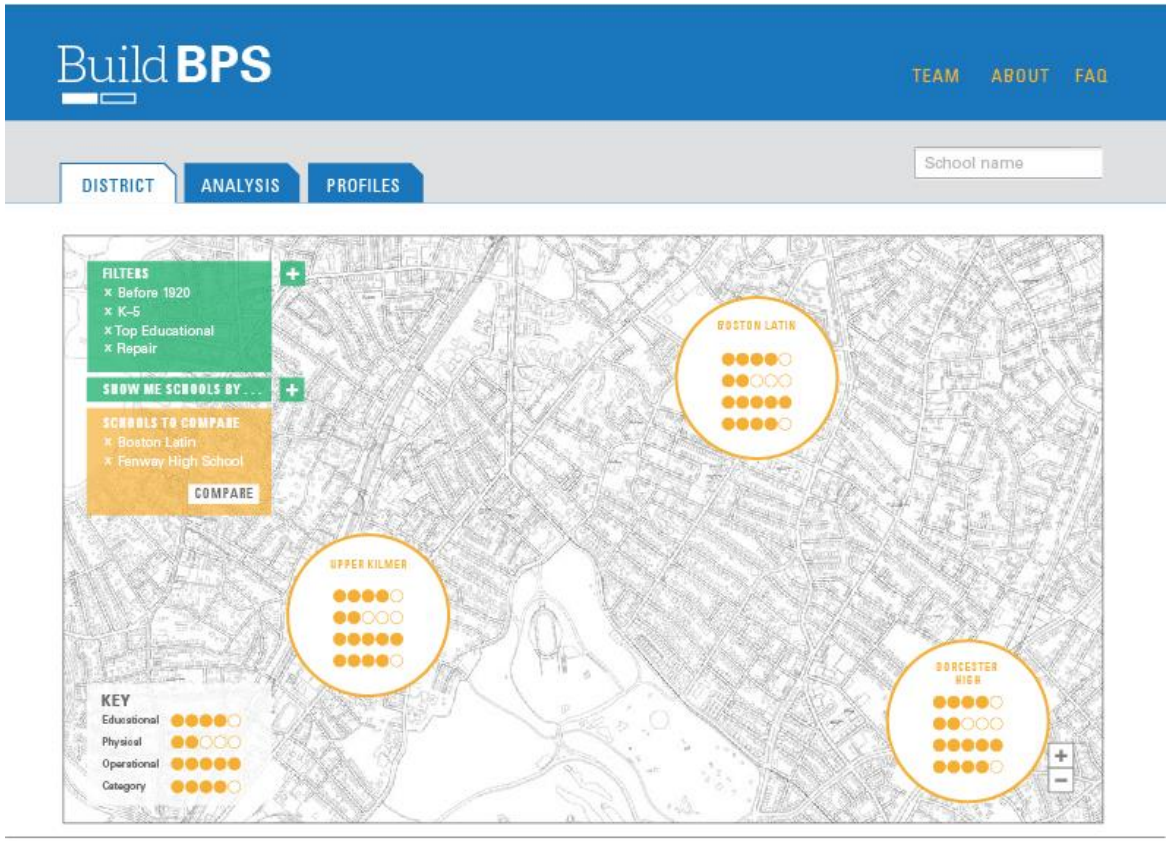


District Option – 3

Two New or Renovated Schools, Grade Re-alignment, New District Lines

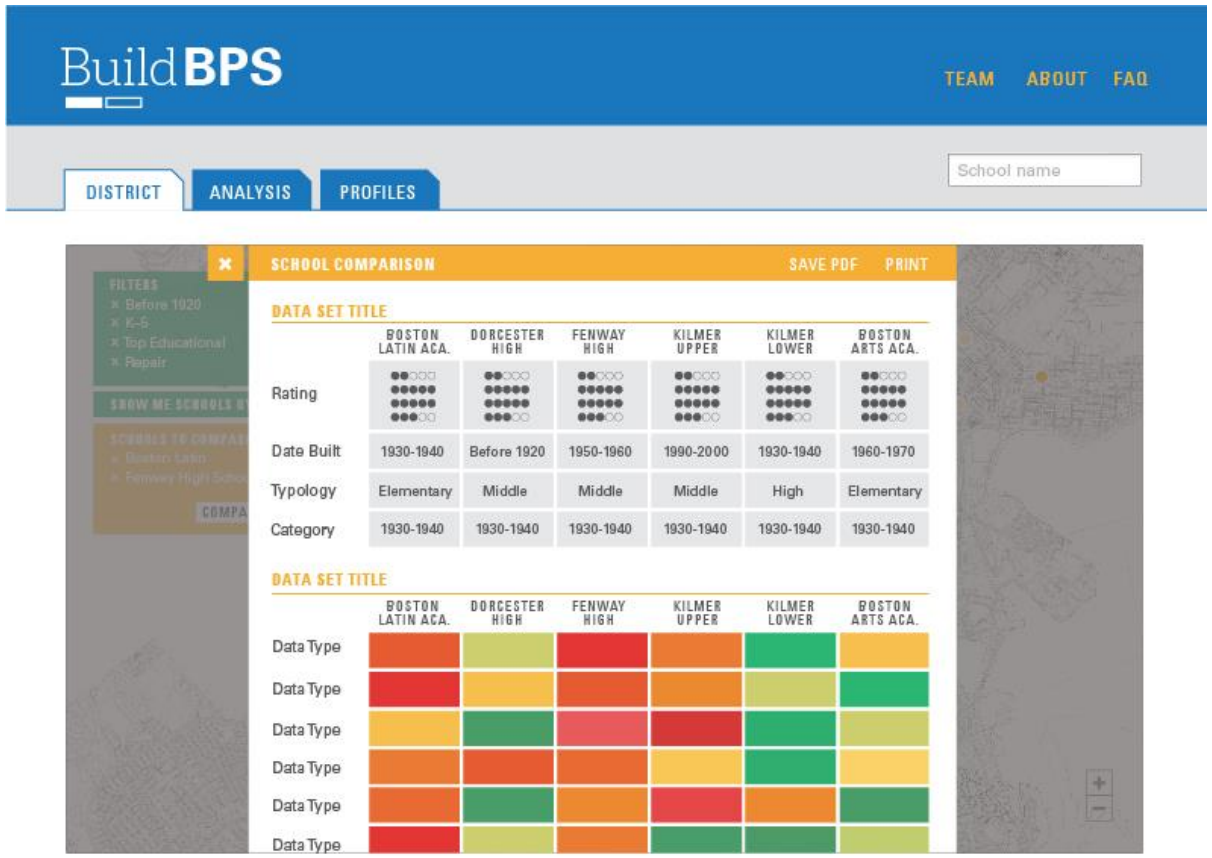


Boston Public Schools
District-Wide Master Plan



Zoomed with rating bubbles. Key only appears at zoom levels that bubbles appear.
If the map is in a contained box, where will the key end up if the filter and compare list are long?

DISTRICT 3a

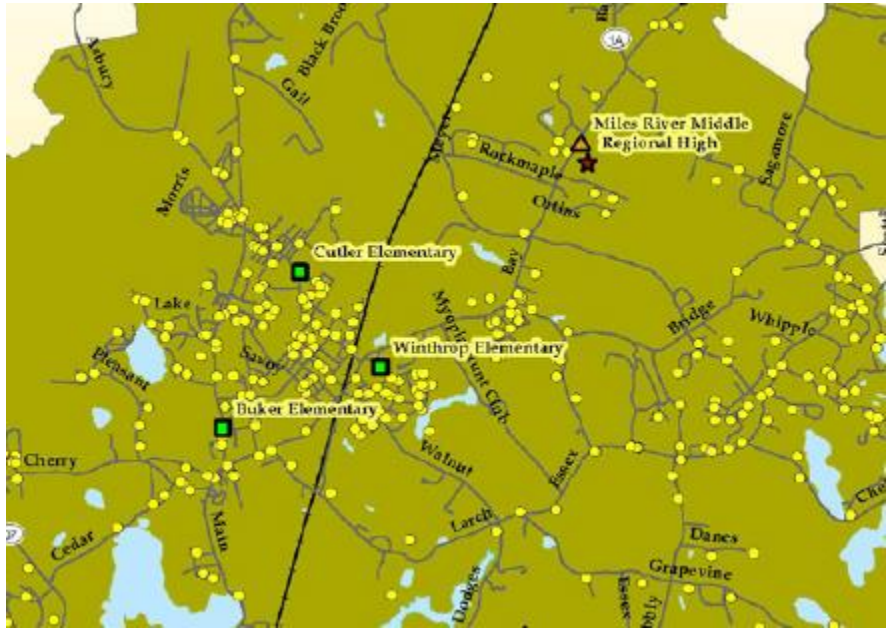


Compare tool pop-up. How many data types will we need to account for?
Will hovering over reveal actual data for that square and school?

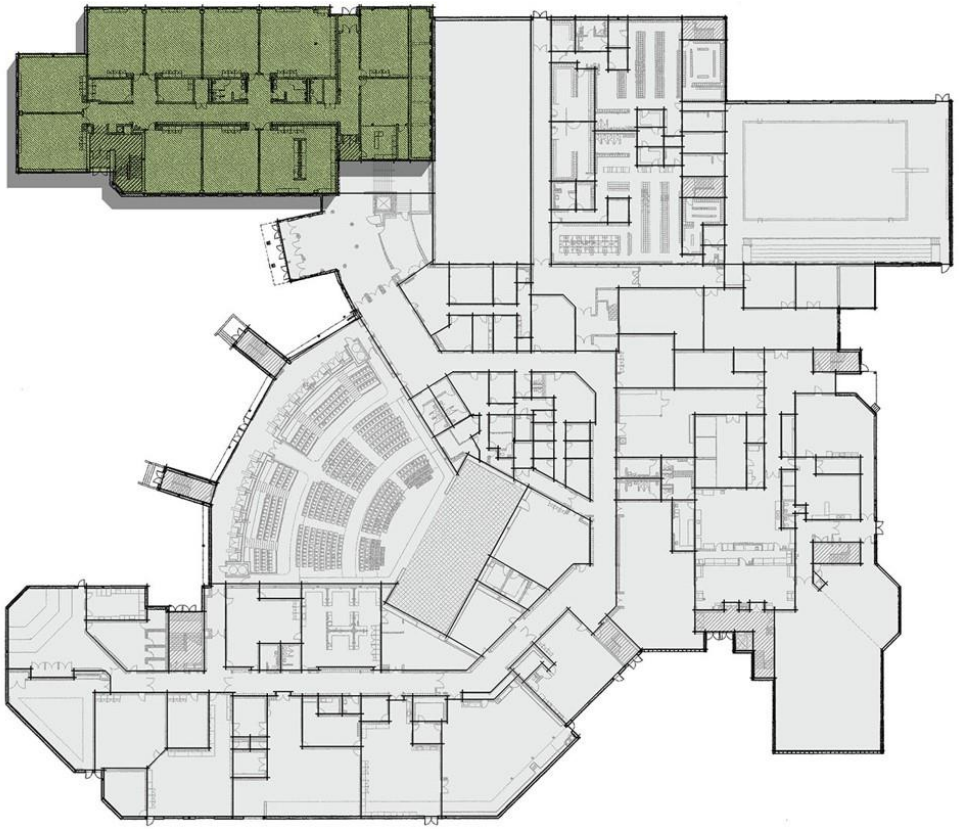
DISTRICT 4c

Lexington Public Schools
District-Wide Master Plan

Hamilton-Wenham Public Schools
District-Wide Master Plan



Sandwich Public Schools
District-Wide Master Plan



Final Decision

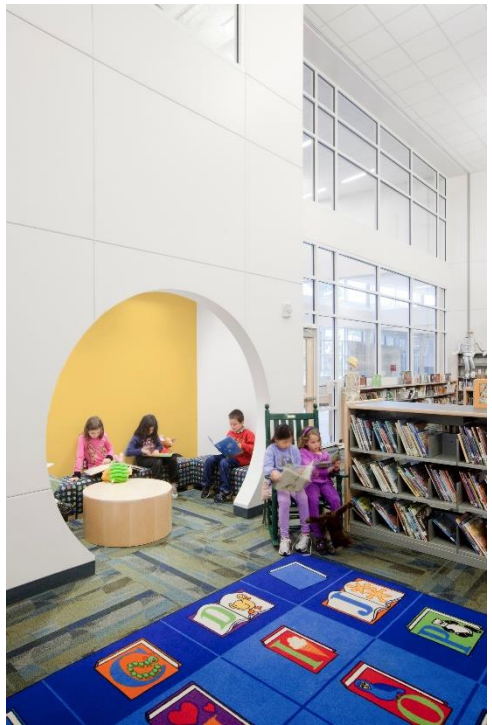
- Closure of one K-8 School
- Consolidation of K-6 into two schools
- New 7/8 STEM Academy at the previously underutilized High School

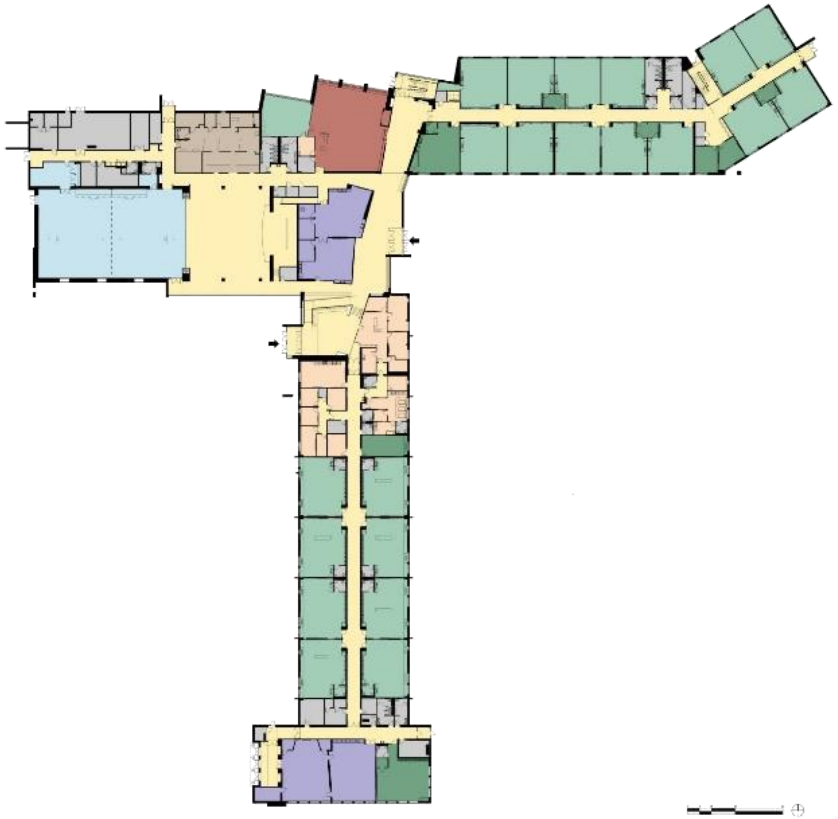
Resulting Educational Benefit

- Grades 7 & 8 have access to more sophisticated High School spaces
- Significant additions to curriculum offerings
- Change to Project Based Learning (PBL)
- Small investments to accomplish transformations

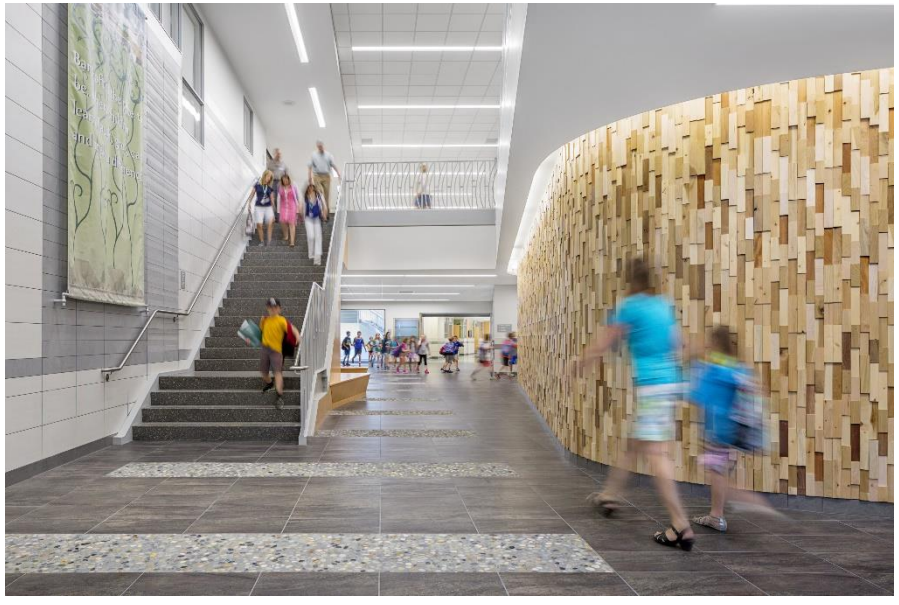
Addition / Renovation: Ayer Shirley Regional High School

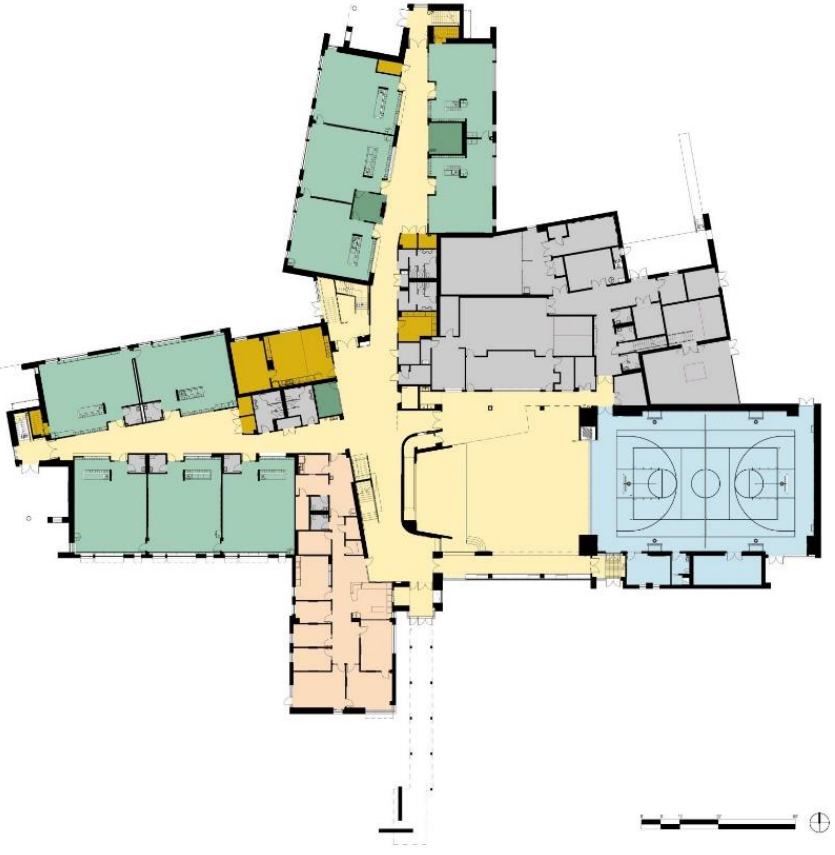
Addition / Renovation: The Center School, Stow





New Construction: Bancroft Elementary School, Andover



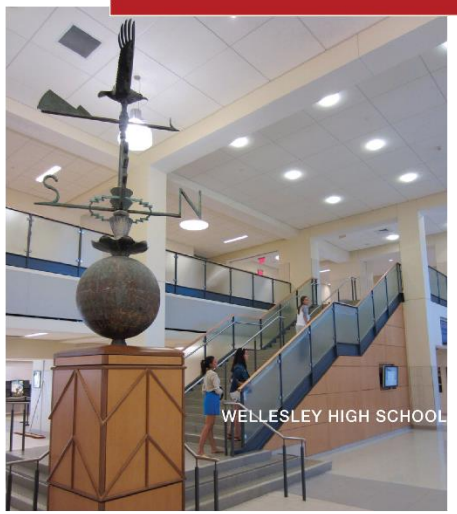


New Construction: Parker Elementary School, Billerica

Sustainable Design

RECYCLED CONTENT

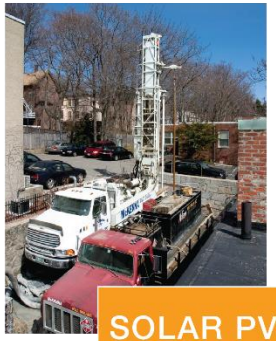
REGIONAL MATERIALS



RAINWATER HARVESTING

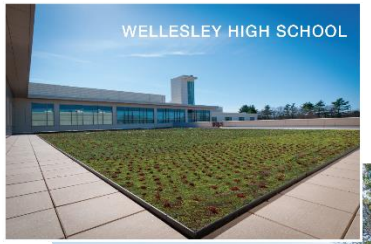
ABUNDANT DAYLIGHT

BIOPHILIA



SOLAR PV

GEOTHERMAL



BIOSWALES

OUTDOOR LEARNING CLASSROOM

GREEN ROOF

Capen-Curran

Quick Facts

- Built in 1931
- Additions in 1970
- 250 Students (PreK-K)
- Historic Status – none
- Modest Site Size (4-5 acres)
- Classrooms are undersized
- Traditional Layout

Proposed Space Summary- Elementary Schools

Date: Enter Date Enter Submittal

Two Section School	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			**0**		**12**	**11,200**	
(List classrooms of different sizes separately)							
Pre-Kindergarten w/ toilet				1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet (1-5 ONLY)				1,200	2	2,400	1,100 SF min - 1,300 SF max; 2 sinks min. req
General Classrooms - Grade 1-6 (1-5 ONLY)				950	8	7,600	900 SF min - 1,000 SF max; 2 sinks min. req
STE Room- Grade 3-6				1,080	1	1,080	Refer to STE Guidelines for Additi
STE Storage				120	1	120	Refer to STE Guidelines for Additi
SPECIAL EDUCATION			**0**			**3,020**	
(List rooms of different sizes separately)							
Self-Contained SPED				950	2	1,900	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toilet				60	2	120	
Resource Room				500	1	500	1/2 size Genl. Clrm.
Small Group Room / Reading				500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			**0**			**2,500**	
Art Classroom - 25 seats				1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln				150	1	150	
Music Classroom / Large Group - 25-50 seats				1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble				75	2	150	
HEALTH & PHYSICAL EDUCATION			**0**			**6,300**	Excess PE Spaces Policy
Gymnasium				6,000	1	6,000	6000 SF Min. Size
Gym Storeroom				150	1	150	
Health Instructor's Office w/ Shower & Toile				150	1	150	
MEDIA CENTER			**0**			**2,020**	
Media Center / Reading Room				2,020	1	2,020	
DINING & FOOD SERVICE			**0**			**4,725**	
Cafeteria / Dining				1,725	1	1,725	2 seatings - 15SF per seat
Stage				1,000	1	1,000	
Chair / Table / Equipment Storage				200	1	200	
Kitchen				1,600	1	1,600	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room				200	1	200	20 SF/Occupant
MEDICAL			**0**			**410**	
Medical Suite Toilet				60	1	60	
Nurses' Office / Waiting Room				250	1	250	
Examination Room / Resting				100	1	100	
ADMINISTRATION & GUIDANCE			**0**			**2,015**	
General Office / Waiting Room / Toilet				300	1	300	
Teachers' Mail and Time Room				100	1	100	
Duplicating Room				150	1	150	
Records Room				110	1	110	
Principal's Office w/ Conference Area				375	1	375	
Principal's Secretary / Waiting				125	1	125	
Assistant Principal's Office				120	0	-	
Supervisory / Spare Office				120	1	120	
Conference Room				250	1	250	
Guidance Office				150	1	150	
Guidance Storeroom				35	1	35	
Teachers' Work Room				300	1	300	
CUSTODIAL & MAINTENANCE			**0**			**1,900**	
Custodian's Office				150	1	150	
Custodian's Workshop				375	1	375	
Custodian's Storage				375	1	375	
Recycling Room / Trash				400	1	400	
Receiving and General Supply				200	1	200	
Storeroom				200	1	200	
Network / Telecom Room				200	1	200	
OTHER			**0**			**0**	
Other *(specify)*							
Total Building Net Floor Area (NFA)			**0**			**34,090**	
Proposed Student Capacity / Enrollment						**230**	Enter grade enrollments below
						92	Lower Elementary; Grades K-2
						138	Upper Elementary; Grades 3-6
NON-PROGRAMMED SPACES							
Other Occupied Rooms (list separately)							Non-Programmed space areas are
							required to be included in the
							following submittals:
							Schematic Design Submittal
Unoccupied MEP/FP Spaces							Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms							60% Construction Documents
Toilet Rooms							90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)							Final Construction Documents
Remaining[3]							
Total Building Gross Floor Area (GFA)[2]			**0**			**41,400**	**51,135 gsf at 1.5 multiplier**
Grossing factor (GFA/NFA)			**#DIV/0!**			**1.21**	

Proposed Space Summary- Elementary Schools

Date: Enter Date | Enter Submittal

Three Section School

ROOM TYPE	Existing Conditions: ROOM NFA[1]	# OF RMS	area totals	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines): ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			0		18	17,150	
(List classrooms of different sizes separately)							
Pre-Kindergarten w/ toilet				1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet(1-5 ONLY)				1,200	3	3,600	1,100 SF min - 1,300 SF max; 2 sinks min. req
General Classrooms - Grade 1-6(1-5 ONLY)				950	13	12,350	900 SF min - 1,000 SF max; 2 sinks min. req
STE Room- Grade 3-6				1,080	1	1,080	Refer to STE Guidelines for Additi
STE Storage				120	1	120	Refer to STE Guidelines for Additi
SPECIAL EDUCATION			0			4,530	
(List rooms of different sizes separately)							
Self-Contained SPED				950	3	2,850	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toile				60	3	180	
Resource Room				500	2	1,000	1/2 size Genl. Clrm.
Small Group Room / Reading				500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			0			2,500	
Art Classroom - 25 seats				1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln				150	1	150	
Music Classroom / Large Group - 25-50 seats				1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble				75	2	150	
HEALTH & PHYSICAL EDUCATION			0			6,300	Excess PE Spaces Policy
Gymnasium				6,000	1	6,000	6000 SF Min. Size
Gym Storeroom				150	1	150	
Health Instructor's Office w/ Shower & Toile				150	1	150	
MEDIA CENTER			0			2,223	
Media Center / Reading Roon				2,223	1	2,223	
DINING & FOOD SERVICE			0			5,747	
Cafeteria / Dining				2,588	1	2,588	2 seatings - 15SF per seat
Stage				1,000	1	1,000	
Chair / Table / Equipment Storage				315	1	315	
Kitchen				1,645	1	1,645	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room				200	1	200	20 SF/Occupant
MEDICAL			0			510	
Medical Suite Toile				60	1	60	
Nurses' Office / Waiting Room				250	1	250	
Examination Room / Resting				100	2	200	
ADMINISTRATION & GUIDANCE			0			2,060	
General Office / Waiting Room / Toile				323	1	323	
Teachers' Mail and Time Roon				100	1	100	
Duplicating Room				150	1	150	
Records Room				110	1	110	
Principal's Office w/ Conference Area				375	1	375	
Principal's Secretary / Waiting				125	1	125	
Assistant Principal's Office				120	0	-	
Supervisory / Spare Office				120	1	120	
Conference Room				250	1	250	
Guidance Office				150	1	150	
Guidance Storeroom				35	1	35	
Teachers' Work Room				323	1	323	
CUSTODIAL & MAINTENANCE			0			1,945	
Custodian's Office				150	1	150	
Custodian's Workshop				375	1	375	
Custodian's Storage				375	1	375	
Recycling Room / Trash				400	1	400	
Receiving and General Suppl				215	1	215	
Storeroom				230	1	230	
Network / Telecom Room				200	1	200	
OTHER			0			0	
Other *(specify)*							
Total Building Net Floor Area (NFA			0			42,965	
Proposed Student Capacity / Enrollmen						345	Enter grade enrollments belov
						138	Lower Elementary; Grades K-2
						207	Upper Elementary; Grades 3-5
NON-PROGRAMMED SPACES							
Other Occupied Rooms (list separately)							Non-Programmed space areas are required to be included in the following submittals:
							Schematic Design Submittal
Unoccupied MEP/FP Spaces							Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms							60% Construction Documents
Toilet Rooms							90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)							Final Construction Documents
Remaining[3]							
Total Building Gross Floor Area (GFA)[2]			0			60,289	64,448 gsf at 1.5 multiplier
Grossing factor (GFA/NFA)			#DIV/0!			1.40	

[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 particular

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

[3] **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the differ

Architect Certificatior

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 the Massachusetts

Name of Architect Firm:

Name of Principal Architect

Signature of Principal Architect

Date:

Proposed Space Summary- Elementary Schools

Date: Enter Date Enter Submittal

Four Section School	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			**0**		**23**	**21,900**	
(List classrooms of different sizes separately)							
Pre-Kindergarten w/ toilet				1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet (1-5 ONLY)				1,200	3	3,600	1,100 SF min - 1,300 SF max; 2 sinks min. req
General Classrooms - Grade 1-6 (1-5 ONLY)				950	18	17,100	900 SF min - 1,000 SF max; 2 sinks min. req
STE Room- Grade 3-6				1,080	1	1,080	Refer to STE Guidelines for Additi
STE Storage				120	1	120	Refer to STE Guidelines for Additi
SPECIAL EDUCATION			**0**			**5,540**	
(List rooms of different sizes separately)							
Self-Contained SPED				950	4	3,800	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toilet				60	4	240	
Resource Room				500	2	1,000	1/2 size Genl. Clrm.
Small Group Room / Reading				500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			**0**			**2,575**	
Art Classroom - 25 seats				1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln				150	1	150	
Music Classroom / Large Group - 25-50 seats				1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble				75	3	225	
HEALTH & PHYSICAL EDUCATION			**0**			**6,300**	Excess PE Spaces Policy
Gymnasium				6,000	1	6,000	6000 SF Min. Size
Gym Storeroom				150	1	150	
Health Instructor's Office w/ Shower & Toile				150	1	150	
MEDIA CENTER			**0**			**2,740**	
Media Center / Reading Room				2,740	1	2,740	
DINING & FOOD SERVICE			**0**			**6,778**	
Cafeteria / Dining				3,450	1	3,450	2 seatings - 15SF per seat
Stage				1,000	1	1,000	
Chair / Table / Equipment Storage				353	1	353	
Kitchen				1,760	1	1,760	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room				215	1	215	20 SF/Occupant
MEDICAL			**0**			**510**	
Medical Suite Toilet				60	1	60	
Nurses' Office / Waiting Room				250	1	250	
Examination Room / Resting				100	2	200	
ADMINISTRATION & GUIDANCE			**0**			**2,325**	
General Office / Waiting Room / Toilet				380	1	380	
Teachers' Mail and Time Room				100	1	100	
Duplicating Room				150	1	150	
Records Room				110	1	110	
Principal's Office w/ Conference Area				375	1	375	
Principal's Secretary / Waiting				125	1	125	
Assistant Principal's Office				120	0	-	
Supervisory / Spare Office				120	1	120	
Conference Room				250	1	250	
Guidance Office				150	2	300	
Guidance Storeroom				35	1	35	
Teachers' Work Room				380	1	380	
CUSTODIAL & MAINTENANCE			**0**			**2,060**	
Custodian's Office				150	1	150	
Custodian's Workshop				375	1	375	
Custodian's Storage				375	1	375	
Recycling Room / Trash				400	1	400	
Receiving and General Supply				253	1	253	
Storeroom				307	1	307	
Network / Telecom Room				200	1	200	
OTHER			**0**			**0**	
Other *(specify)*							
Total Building Net Floor Area (NFA)			**0**			**50,728**	
Proposed Student Capacity / Enrollment						**460**	Enter grade enrollments below
						184	Lower Elementary; Grades K-2
						276	Upper Elementary; Grades 3-6
NON-PROGRAMMED SPACES							
Other Occupied Rooms (list separately)							Non-Programmed space areas are required to be included in the following submittals:
							Schematic Design Submittal
							Design Development Submittal
Unoccupied MEP/FP Spaces							60% Construction Documents
Unoccupied Closets, Supply Rooms & Storage Rooms							90% Construction Documents
Toilet Rooms							Final Construction Documents
Circulation (corridors, stairs, ramps & elevators)							
Remaining[3]							
Total Building Gross Floor Area (GFA)[2]			**0**			**74,213**	**76,092 gsf at 1.5 multiplier**
Grossing factor (GFA/NFA)			**#DIV/0!**			**1.46**	

Proposed Space Summary- Elementary Schools

Date: Enter Date Enter Submittal

Seven Section School

ROOM TYPE	Existing Conditions: ROOM NFA[1]	# OF RMS	area totals	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines): ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**0**		**37**	**35,950**	
(List classrooms of different sizes separately)							
Pre-Kindergarten w/ toilet				1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet (1-5 ONLY)				1,200	6	7,200	1,100 SF min - 1,300 SF max; 2 sinks min. req
General Classrooms - Grade 1-6 (1-5 ONLY)				950	29	27,550	900 SF min - 1,000 SF max; 2 sinks min. req
STE Room- Grade 3-6				1,080	1	1,080	Refer to STE Guidelines for Additi
STE Storage				120	1	120	Refer to STE Guidelines for Additi
SPECIAL EDUCATION			**0**			**9,060**	
(List rooms of different sizes separately)							
Self-Contained SPED				950	6	5,700	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toile				60	6	360	
Resource Room				500	4	2,000	1/2 size Genl. Clrm.
Small Group Room / Reading				500	2	1,000	1/2 size Genl. Clrm.
ART & MUSIC			**0**			**5,075**	
Art Classroom - 25 seats				1,000	2	2,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln				150	2	300	
Music Classroom / Large Group - 25-50 seats				1,200	2	2,400	assumed schedule 2 times / week / student
Music Practice / Ensemble				75	5	375	
HEALTH & PHYSICAL EDUCATION			**0**			**6,300**	Excess PE Spaces Policy
Gymnasium				6,000	1	6,000	6000 SF Min. Size
Gym Storeroom				150	1	150	
Health Instructor's Office w/ Shower & Toile				150	1	150	
MEDIA CENTER			**0**			**4,189**	
Media Center / Reading Roon				4,189	1	4,189	
DINING & FOOD SERVICE			**0**			**9,703**	
Cafeteria / Dining				5,865	1	5,865	2 seatings - 15SF per seat
Stage				1,000	1	1,000	
Chair / Table / Equipment Storage				461	1	461	
Kitchen				2,082	1	2,082	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room				296	1	296	20 SF/Occupant
MEDICAL			**0**			**710**	
Medical Suite Toile				60	1	60	
Nurses' Office / Waiting Room				250	1	250	
Examination Room / Resting				100	4	400	
ADMINISTRATION & GUIDANCE			**0**			**2,917**	
General Office / Waiting Room / Toile				541	1	541	
Teachers' Mail and Time Roon				100	1	100	
Duplicating Room				150	1	150	
Records Room				110	1	110	
Principal's Office w/ Conference Area				375	1	375	
Principal's Secretary / Waiting				125	1	125	
Assistant Principal's Office				120	1	120	
Supervisory / Spare Office				120	1	120	
Conference Room				250	1	250	
Guidance Office				150	3	450	
Guidance Storeroom				35	1	35	
Teachers' Work Room				541	1	541	
CUSTODIAL & MAINTENANCE			**0**			**2,382**	
Custodian's Office				150	1	150	
Custodian's Workshop				375	1	375	
Custodian's Storage				375	1	375	
Recycling Room / Trash				400	1	400	
Receiving and General Suppl				361	1	361	
Storeroom				521	1	521	
Network / Telecom Room				200	1	200	
OTHER			**0**			**0**	
Other *(specify)*							
Total Building Net Floor Area (NFA			**0**			**76,286**	
Proposed Student Capacity / Enrollmen						**782**	Enter grade enrollments belov
						313	Lower Elementary; Grades K-2
						469	Upper Elementary; Grades 3-5
NON-PROGRAMMED SPACES							
Other Occupied Rooms (list separately)							Non-Programmed space areas are required to be included in the following submittals:
							Schematic Design Submittal
Unoccupied MEP/FP Spaces							Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms							60% Construction Documents
Toilet Rooms							90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)							Final Construction Documents
Remaining[3]							
Total Building Gross Floor Area (GFA)[2]			**0**			**113,390**	**114,429 at 1.5 multiplier**
Grossing factor (GFA/NFA)			**#DIV/0!**			**1.49**	

[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 particular

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

[3] **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the differ

Architect Certificatior

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 the Massachusetts

Name of Architect Firm:

Name of Principal Architect

Signature of Principal Architect

Date:

Proposed Space Summary- Elementary Schools

Date: Enter Date Enter Submittal

Eight Section School	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			**0**		**44**	**42,850**	
(List classrooms of different sizes separately)							
Pre-Kindergarten w/ toilet				1,200		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet (1-5 ONLY)				1,200	7	8,400	1,100 SF min - 1,300 SF max; 2 sinks min. req
General Classrooms - Grade 1-6 (1-5 ONLY)				950	35	33,250	900 SF min - 1,000 SF max; 2 sinks min. req
STE Room- Grade 3-6				1,080	1	1,080	Refer to STE Guidelines for Additi
STE Storage				120	1	120	Refer to STE Guidelines for Additi
SPECIAL EDUCATION			**0**			**10,570**	
(List rooms of different sizes separately)							
Self-Contained SPED				950	7	6,650	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toilet				60	7	420	
Resource Room				500	5	2,500	1/2 size Genl. Clrm.
Small Group Room / Reading				500	2	1,000	1/2 size Genl. Clrm.
ART & MUSIC			**0**			**6,300**	
Art Classroom - 25 seats				1,000	3	3,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln				150	3	450	
Music Classroom / Large Group - 25-50 seats				1,200	2	2,400	assumed schedule 2 times / week / student
Music Practice / Ensemble				75	6	450	
HEALTH & PHYSICAL EDUCATION			**0**			**6,300**	Excess PE Spaces Policy
Gymnasium				6,000	1	6,000	6000 SF Min. Size
Gym Storeroom				150	1	150	
Health Instructor's Office w/ Shower & Toile				150	1	150	
MEDIA CENTER			**0**			**4,810**	
Media Center / Reading Room				4,810	1	4,810	
DINING & FOOD SERVICE			**0**			**10,956**	
Cafeteria / Dining				6,900	1	6,900	2 seatings - 15SF per seat
Stage				1,000	1	1,000	
Chair / Table / Equipment Storage				506	1	506	
Kitchen				2,220	1	2,220	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room				330	1	330	20 SF/Occupant
MEDICAL			**0**			**710**	
Medical Suite Toilet				60	1	60	
Nurses' Office / Waiting Room				250	1	250	
Examination Room / Resting				100	4	400	
ADMINISTRATION & GUIDANCE			**0**			**3,055**	
General Office / Waiting Room / Toilet				610	1	610	
Teachers' Mail and Time Room				100	1	100	
Duplicating Room				150	1	150	
Records Room				110	1	110	
Principal's Office w/ Conference Area				375	1	375	
Principal's Secretary / Waiting				125	1	125	
Assistant Principal's Office				120	1	120	
Supervisory / Spare Office				120	1	120	
Conference Room				250	1	250	
Guidance Office				150	3	450	
Guidance Storeroom				35	1	35	
Teachers' Work Room				610	1	610	
CUSTODIAL & MAINTENANCE			**0**			**2,520**	
Custodian's Office				150	1	150	
Custodian's Workshop				375	1	375	
Custodian's Storage				375	1	375	
Recycling Room / Trash				400	1	400	
Receiving and General Supply				406	1	406	
Storeroom				614	1	614	
Network / Telecom Room				200	1	200	
OTHER			**0**			**0**	
Other *(specify)*							
Total Building Net Floor Area (NFA)			**0**			**88,071**	
Proposed Student Capacity / Enrollment						**920**	Enter grade enrollments below
						368	Lower Elementary; Grades K-2
						552	Upper Elementary; Grades 3-6
NON-PROGRAMMED SPACES							
Other Occupied Rooms (list separately)							Non-Programmed space areas are required to be included in the following submittals:
							Schematic Design Submittal
							Design Development Submittal
Unoccupied MEP/FP Spaces							60% Construction Documents
Unoccupied Closets, Supply Rooms & Storage Rooms							90% Construction Documents
Toilet Rooms							Final Construction Documents
Circulation (corridors, stairs, ramps & elevators)							
Remaining[3]							
Total Building Gross Floor Area (GFA)[2]			**0**			**133,400**	132,106 at 1.5 multiplier
Grossing factor (GFA/NFA)			**#DIV/0!**			**1.51**	

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/

SMMA

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.)

Philip J. Poinelli, FAIA, CEFP
617.520.9219
ppoinelli@smma.com
1000 Massachusetts Avenue
Cambridge, MA 02138