

Watertown Facilities Master Plan Study

Watertown, Massachusetts

December 1, 2016

Submitted by:

SMMA

Symmes Maini & McKee Associates
Cambridge, Massachusetts

SMMA No. 16048.00

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Master Plan Study
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SECTION ONE

Introduction and Visioning

Acknowledgments

Symmes Maini & McKee Associates (SMMA) would like to acknowledge the participation and guidance provided by the Watertown Public School District, the leadership committee, educational leadership committee, administration, teachers, and staff, as well as the community and parents.

Team

- Symmes Maini & McKee Associates (SMMA) – Architecture and Educational Planning
- A.M. Fogarty and Associates - Cost estimator

Steering Committee - July 2016 through October 2016

- John Portz, Co-Chair, School Committee Chairman
- Elizabeth Yusem, Co-Chair, School Committee Member;
Chair of Buildings & Grounds Subcommittee
- Toni Carlson, Educational Technology Coordinator
- Pete Caron, Community Member
- Dr. James Kimo Carter, Principal of Watertown Middle School
- Michael Dattoli, Councilor-at-Large
- Dr. Jean M. Fitzgerald, Superintendent of Schools
- Elaina Griffith, Community Member
- Charles Kellner, Director of Business Services
- Debra King, WEA President
- Chris Lowry, Community Member
- Steven Magoon, Director of Community Development & Planning
- Alyson Morales, Community Member
- Lindsay Mosca, Community Member
- Vincent Piccirilli, District C Councilor
- Michael Shepard, Community Member

District Leadership - July 2016 through October 2016

- . Toni Carlson, Educational Technology Curriculum Coordinator
- . Dr. James Kimo Carter, Principal of Watertown Middle School
- . Mena Ciarlone, Principal of Cunniff Elementary School
- . Paula Czyrkliis, Acting Director of Special Education
- . Leandra Elion, Elementary Curriculum Coordinator
- . Yvonne Endara, English as a Second Language (ESL) Coordinator
- . Dr. Jean Fitzgerald, Superintendent of Schools
- . Dr. Barbara Gortych, Assessment & Guidance Coordinator
- . Kraig Gustafson, Social Studies Curriculum Coordinator
- . Elizabeth Kaplan, Principal of Lowell Elementary School
- . Lynsey Kraemer, Science Curriculum Coordinator
- . Joseph Lampman, Physical Education Curriculum Coordinator
- . Robert LaRoche, Principal of Hosmer Elementary School
- . Shirley Lundberg, Principal of Watertown High School
- . Maureen Regan, English Curriculum Coordinator
- . April Romano, Director of Early Childhood Education
- . Laura Rotondo, Career & Technical Education (CTE) Curriculum Coordinator
- . Donna Ruseckas, Director of Wellness and Extended Services
- . Elizabeth Sahakian, Director of Community Education
- . Adam Silverberg, World Languages Curriculum Coordinator
- . Magen Slesinger, Fine and Performing Arts (FAPA) Curriculum Coordinator
- . Daniel Wulf, Mathematics Curriculum Coordinator

1.1 Introduction

The objective of the Master Plan is to understand and evaluate the educational, facility and operational needs to support the current and forthcoming public school student population of the Watertown School District. The educational facility review consisted of: quality and quantity of appropriately-sized teaching spaces, flexibility to accommodate current and future educational delivery methodologies, and assessment of the existing interior layouts that may be able to support 21st Century teaching and learning environments and adjacencies.

Possibilities were first explored on an individual school by school basis and then holistically at the district level. Options that were reviewed include renovation, renovation with additions, or complete replacements of the educational facilities. Options were predicated on whether the buildings could meet all program elements and requirements for 21st Century education, how much building the sites would support and on evaluations of the physical characteristics of the building and engineering systems.

1.2 Overview

The Watertown School District consists of five schools: Cunniff Elementary, Lowell Elementary, Hosmer Elementary, Watertown Middle School, and Watertown High School and the School Administration Building (the former Phillips School).

1.3 Enrollment Projections

Available enrollment and two current demographic data reports were analyzed and used to make a reasonable determination of the composition and size of future enrollments¹. Specific estimates of future enrollments were also made on a grade, and grade-combination basis for the next ten years. In the development of enrollment forecasts, data relative to the general population as well as enrollment impact factors were analyzed; housing growth, live births, age and size of population, non-public school enrollments, school choice trends, charter school enrollment, students receiving special education services, students who are English Language Learners, and non-resident enrollments. The Watertown School administration and Town Planning officials also provided population information assessing Watertown housing and demographic trends. The summation of this information was reviewed and approved by the Steering Committee to project the changing student population for a five and ten year period. These projected class sizes were then used as a base for developing the future facility requirements to support Watertown's contemporary educational needs.

¹ Demographic and Enrollment Projections were provided by the Watertown School Administration and are included in the Appendix.

1.4 Visioning Process

Visioning is a process which results in a comprehensive planning tool for the district. It establishes clear goals for the most appropriate and effective educational practices, school organizational structure, and concepts for the school facilities needed to support them.

SMMA's design team facilitated the visioning process at community forums along with the Steering Committee, and the leadership team. The process established an understanding of preferred learning environments and created a basic guide for Watertown's desired educational path. The Visioning Process concluded on August 24, 2016 with a community presentation at the High School.

Visioning Schedule:

- . June 7, 2016
EDUCATIONAL LEADERSHIP TEAM
12:30 p.m. at Superintendent's Office
Concepts in Education, Visioning Preparation
- . June 14, 2016
EDUCATIONAL LEADERSHIP TEAM
10:00 a.m. to 2:00 a.m. at Superintendent's Office - Visioning Workshop
- . June 15, 2016
STEERING COMMITTEE MEETING
Introduction, Scope & Schedule Review, Existing Conditions Review,
Community Forum No. 1 - Preparation
- . June 27, 2016
COMMUNITY FORUM No. 1
Existing Conditions, Educational Visioning Workshop
- . June 29, 2016
STEERING COMMITTEE MEETING
Existing Condition Review,
Community Forum No. 1 - Commentary
- . July 6, 2016
STEERING COMMITTEE MEETING
Options Workshop
- . July 19, 2016
STEERING COMMITTEE MEETING
Options Workshop, Community Forum No. 2 - Preparation
- . July 27, 2016
COMMUNITY FORUM No. 2
Options Workshop
- . August 3, 2016
STEERING COMMITTEE MEETING
Options Refinement
- . August 16, 2016
STEERING COMMITTEE MEETING
Preliminary Conclusions, Community Forum No. 3 - Preparation
- . August 24, 2016
COMMUNITY FORUM No. 3
Preliminary Conclusions Review

1.5 Visioning - Educational Delivery

During the Educational Leadership visioning meetings, a variety of topics, methodologies and pedagogies were discussed. The elements described below are the summation of the critical systems necessary to ensure student mastery of modern proficiency in education. The educational leadership was unified on the concepts of contemporary standards, assessments, curriculum, instruction, professional development and learning environments to align and to provide a support system that produces successful outcomes for today's students.

Contemporary Basics

- Focus on skills, content knowledge and expertise.
- Build understanding across and among key subjects as well as interdisciplinary themes.
- Emphasize deep understanding rather than shallow knowledge.
- Engage students with the real world data, tools and experts they will encounter in college, on the job, and in life; students learn best when actively engaged in solving meaningful problems.
- Allow for multiple measures of mastery.

Assessment of Skills

- Support a balance of assessments, including high-quality standardized testing along with effective formative and summative classroom assessments.
- Emphasize useful feedback on student performance that is embedded into everyday learning.
- Require a balance of technology-enhanced, formative and summative assessments that measure student mastery of skills.

Curriculum and Instruction

- Teach skills discretely in the context of key subjects and interdisciplinary themes.
- Focus on providing opportunities to apply skills across content areas and for a competency-based approach to learning.
- Enable innovative learning methods that integrate the use of supportive technologies, inquiry- and problem-based approaches and higher order thinking skills.
- Encourage the integration of community resources beyond school walls.

Professional Development

- Highlight ways teachers can seize opportunities for integrating skills, tools and teaching strategies into their classroom practice — and help them identify what activities they can replace or de-emphasize.
- Balance direct instruction with project-oriented teaching methods.
- Illustrate how a deeper understanding of subject matter can actually enhance problem-solving, critical thinking skills,
- Enable professional learning communities for teachers that model the kinds of classroom learning that best promotes modern skills for students.
- Cultivate teachers' ability to identify students' particular learning styles, intelligences, strengths and weaknesses.
- Help teachers develop their abilities to use various strategies (such as formative assessments) to reach diverse students and create environments that support differentiated teaching and learning.
- Encourage knowledge sharing among communities of practitioners, using face-to-face, virtual and blended communications.
- Use a scalable and sustainable model of professional development.

Learning Environments

- Create learning practices, human support and physical environments that will support the teaching and learning of contemporary outcomes.
- Support professional learning communities that enable educators to collaborate, share best practices and integrate teaching expertise into classroom practice.
- Enable students to learn in relevant, real world contexts (e.g., through project-based or other applied work).
- Allow equitable access to quality learning tools, technologies and resources.
- Provide architectural and interior designs for group, team and individual learning.
- Support expanded community and world involvement in learning, both face-to-face and online.

1.6 Visioning - Facility Environments

The public school facilities were previously assessed to determine the facility operational capacities². An extensive review of this report accompanied by facility tours of each school building, consideration of the current space use, and adjacencies have identified space deficiencies that have an impact on the educational program and delivery methods.

Analysis of each building included:

- Study of present utilization of educational facilities, facility capacities; sites, and available space with special attention to any needed update of building capacities.
- Study of distinctive and special space needs (resource centers, art, music, physical education, special education, cafeterias, administrative offices, etc.).
- Review of present and proposed educational programs and the unique space and adjacency needs they require.
- Review of present grade organization and how it might be impacted by future enrollment or external factors, including demographic trends, student needs and future educational pedagogy.

Process

- Conducted visioning meeting with the steering committee and the educational leadership.
- Interviewed key central office administrators, principals and other administrators, key elected officials and town planning/building officials.
- Reviewed past and present enrollments, and identify salient trends.
- Determined Watertown's housing trends based on information provided by school administration and town planning office.
- Reviewed two separate current student demographic reports.
- Made enrollment comparison with regional and state enrollment data.

1.7 Visioning - Summary

Consideration of Watertown's present educational program as well as proposed educational plans were reviewed to insure that options would be consistent with the present and future program directions, mandated compliances and long term sustainability plans. One prominent goal was to move towards more student-centric and personalized models that incorporate various educational delivery methodologies. Flexibility and adaptability within the classroom and through adjacencies are key elements to supporting a student-centered learning experience that is inviting, engaging, relevant, robust, and dynamic.

In all classrooms, technology is seen as integral to teaching and learning. A future 1:1 ratio of laptops/devices to students will be assumed, as will the use of interactive technology throughout the facility.

SMMA has suggested renovations or renovations with additions in order to better respond to the demographic conclusions and the desired educational delivery models. Specific recommendations are shown in Section 3 of this report.

² Existing Facilities Physical Assessment were performed by Oudens Ello Architecture LLC

SECTION TWO
Enrollment Forecast

2.1 Projections

The student enrollment numbers for the 2015-16 school year were provided by WSD and verified by the Massachusetts Department of Elementary and Secondary Education School and District Profiles Enrollment by Grade Report.

<i>Enrollments during the 2015 – 2016 school year</i>			
School	Students	School	Students
Cunniff ES	277	Middle School	543
Lowell ES	407	High School	700
Hosmer ES	627		

SMMA worked collaboratively with the school district on space needs, primarily through the Educational Leadership Team (ELT), assembled for the purpose of researching, reviewing and recommending the Educational Vision to the Leadership Committee. The ELT included school and building committee representatives, principals and teachers. The proposed space summaries for the Watertown Master Plan are based on the enrollment projections provided by WPS.

<i>Target Enrollments for 2025</i>			
School	Students	School	Students
Cunniff ES	400	Middle School	620
Lowell ES	450	High School	770
Hosmer ES	500	Universal Early Learning Center	400

The following summarizes findings contained in the New England School Development Council (NESDEC) presentation “Watertown, Massachusetts – Enrollment Projections” by John H. Kennedy, M.A., Team Leader, and Planning, and Enrollment Forecast Report 2016 by DecisionInsite; relative to the existing Watertown School District (see Appendix for complete reports). The totals were reached by the Leadership Committee after reviewing all demographic information, an analysis of existing and future residential properties in Watertown and input provided by the community and town leaders.

<i>Demographic Totals (NESDEC & DecisionInsite)</i>														
Grade	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
K	250	223	221	208	206	207	212	216	213	209	205	202	198	195
1	209	226	200	235	206	206	208	210	210	206	203	199	196	192
2	210	201	209	209	235	208	210	209	208	208	204	201	197	194
3	182	204	188	203	205	233	208	207	205	204	204	201	197	194
4	223	172	194	192	201	205	234	206	204	202	201	201	198	194
5	170	221	166	201	195	206	212	239	206	204	202	201	201	198
6	188	166	216	168	201	198	210	213	230	202	200	198	197	197
7	189	189	169	214	173	209	206	216	214	232	203	200	198	197
8	175	184	181	167	210	173	209	204	213	212	229	200	198	196
9	187	174	164	182	165	207	171	201	198	203	202	217	192	190
10	188	172	171	168	180	165	206	171	199	195	202	201	216	190
11	185	191	170	179	173	186	171	211	171	200	196	202	201	216
12	180	184	184	168	177	171	185	169	209	170	198	194	200	200
Subtotals:	2536	2507	2433	2494	2527	2574	2642	2672	2680	2647	2649	2617	2589	2553
Pct Chg:		-1.1%	-3%	2.5%	1.3%	1.9%	2.6%	1.1%	0.3%	-1.2%	0.1%	-1.2%	-1.1%	-1.4%
SDC:	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals:	2536	2507	2433	2494	2527	2574	2642	2672	2680	2647	2649	2617	2589	2553
Capacity:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SECTION THREE

Existing Building Evaluations

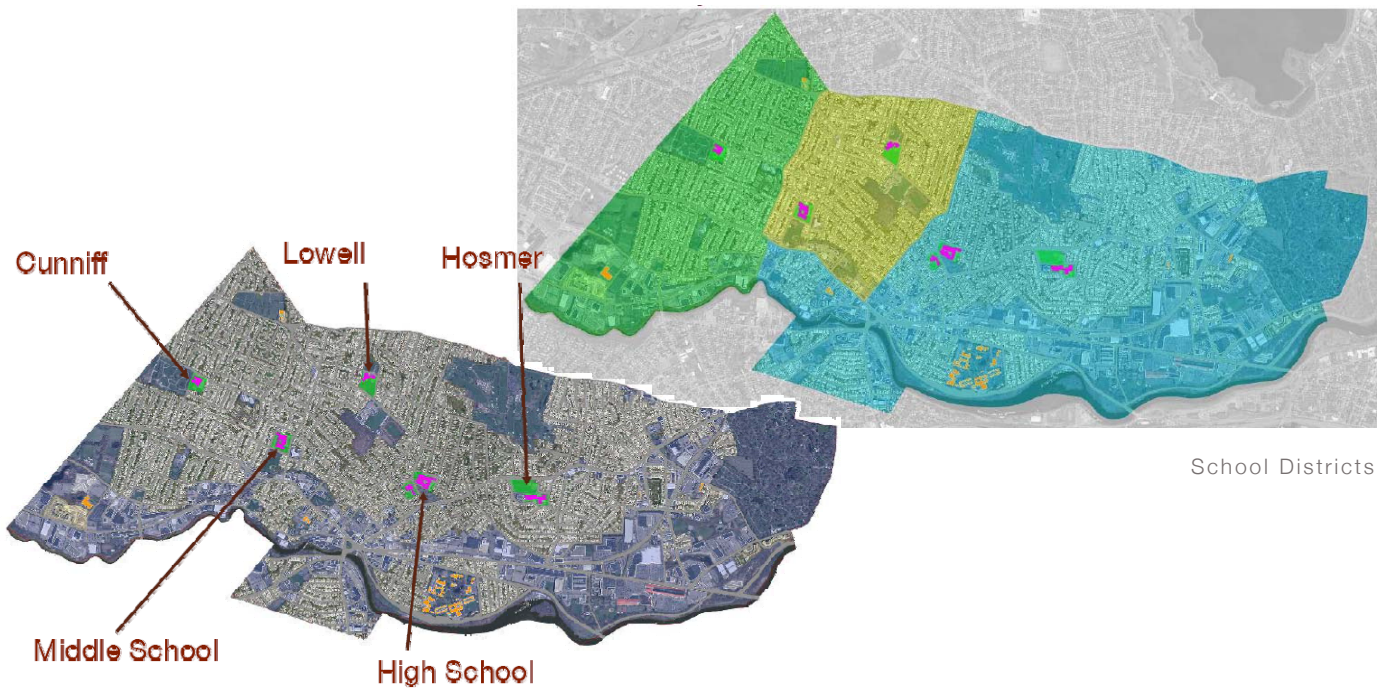
Process

To understand the existing conditions and future requirements of each school, SMMA toured each facility prior to the Visioning Process. Once with the facilities manager and then, with the Watertown Leadership Committee.

The plan review included all existing building interiors and compared them to MSBA Standards for new construction. This gave a broader understanding of deficiencies that lead to the options contained in this report (Section 3).

This study does not include SMMA doing a comprehensive physical facility assessment or an educational programming component but rather a review of the enrollment projections relative to the capacity of the existing schools.

School Locations and Current Districting



Master Plan Options

In order to review all the schools cohesively, the committee asked SMMA to develop three options to compare various degrees of building and educational facility improvements.

Options

Option One:

Essential renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option Two:

Advocated renovations include the *essential* renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.

This includes:

- The rearrangement of existing classrooms into flexible learning environments with moveable walls and partitions,
- Additional availability to access small and large multi-use rooms that are adjacent to the classrooms and learning commons,
- Reorganized spatial adjacencies to support team teaching and project based learning in a collaborative environment.
-

Option Three:

Demolition of existing structure(s) and new construction on existing site. Total square footage developed using Massachusetts School Building Authority (MSBA) guidelines.

Options Summary

Cunniff Elementary School

The total student population for the 2015-16 school year was 277 students. For the Cunniff to accommodate 400 students within MSBA guidelines, SMMA proposes building additions to allow for a larger cafeteria, gymnasium, and space for the arts, and adding a second floor to further increase square footage. Upper level renovations to Cunniff would include further updates to facilitate 21st Century learning modalities.

James Russel Lowell Elementary School

The total student population for the 2015-16 school year was 407 students. For the Lowell to accommodate 450 students within MSBA guidelines, SMMA proposes constructing an additional wing to house a new cafeteria on the first floor and classrooms on the second floor. The main entrance to the school would be remodeled as well. Upper level renovations to Lowell would include further building updates to facilitate 21st Century learning modalities.

Hosmer Elementary School

The total student population for the 2015-16 school year was 627 students. For the Hosmer to accommodate 500 students within MSBA guidelines, SMMA proposes the addition of a space for the arts, renovations to the entryway, and renovations to the existing preschool space. Upper-level renovations would include a new cafeteria, a new gymnasium, and new universal preschool space built to accommodate 400 early childhood students. Upper level renovations would also include further building updates to facilitate 21st Century learning modalities.

Watertown Middle School (WMS)

The total student population for the 2015-16 school year was 543 students. For the Middle School to accommodate 620 students, SMMA proposes remodeling the entryway and providing general facilities renovations. Upper-level renovations to WMS would include expanding the cafeteria and creating a three story media center, as well as providing further building updates to facilitate 21st Century learning modalities.

Watertown High School (WHS)

The total student population for the 2015-16 school year was 700 students. For the High School to accommodate 770 students, SMMA proposes general interior facilities renovations with upper-level renovations providing further building updates to facilitate 21st Century learning modalities.

3.1 Cunniff Elementary School

Existing Building Evaluations¹

The two-story plus basement elementary school is classified as a low-rise building in accordance with the Massachusetts State Building Code (MSBC). The building is 52,000 GSF with a primary occupancy type of the building is Group E, Educational. The original 1954 structure along with 1997 addition results in a mixed construction type classification, where a MSBC designation of 3B necessitated given the wood framing. The building is equipped with a fire alarm system with ADA compliant strobes in most public spaces. The fire alarm system reports directly to the local Fire Department via master box connection. The system is not monitored by a central station. Visual and audible appliances are provided in common corridors and large assembly areas. Smoke detection is provided throughout the building. The building is partially sprinklered in the 1997 addition.

The building is served by two exit stairways and exit doorways that discharge directly to grade. The main entrance is accessible to the disabled and an elevator provides accessible routes to all main floor levels.



Cunniff Existing Site Plan

¹ Summarized from the Oudens Ello's report.

Previous Additions, Renovations, and Major Maintenance

1997 Addition

Gymnasium, library, and program space addition to the north and east of original building, plus new roofing throughout the addition and original 1954 Building.

Wall System

1954 Building: Clay brick mass masonry.

1997 Addition: Clay brick-clad cavity wall with precast architectural elements.

Window System

1954 Building: Punched, aluminum framed, with fixed and project-in hopper windows and single-pane glass or metal panels typical. Aluminum framed storefront at stairwells.

1997 Addition: Aluminum framed punched windows and window-wall assemblies with project-out awning operable vents, and IGUs.

Door System

All Building Areas: Entrances are aluminum framed storefront with IGUs reportedly installed in 1997.

Roof System

1954 Building: Fully-adhered EPDM at low-sloped areas, except for at cafeteria area which is ballasted EPDM. All roofing membranes were reportedly installed in 1997.

1997 Addition: Ballasted EPDM, except fully adhered EPDM at the entrance canopy and white thermoplastic (appears to be PVC or TPO) at cafeteria extension.

General Building Performance

Reports of Building Enclosure Leakage/Distress

Ongoing water leakage from roofing since installation in 1997 especially at kitchen roof. Previous water leakage at skylights which have been covered with EPDM; leakage subsequently stopped. Localized pointing repairs at deteriorated locations.

Overall Building Envelope Condition/Major Concerns

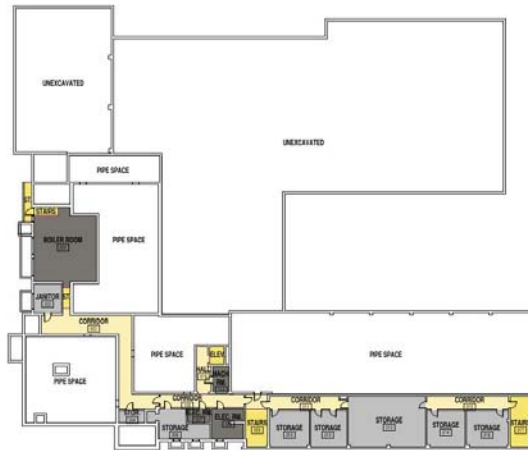
Water management issues exist throughout the building such as at canopies and window sills concentrate flows of water which accelerates deterioration of the brick masonry locally below. Visible lintel corrosion and spalling mortar joints indicates that the deterioration of the lintels is severe enough to warrant repair in the near future; if left unrepaired will likely lead to rust jacking and additional mortar and brick spalls. Windows and entrances are sound, but perimeter seals are at the end of their useful life and require replacement. The EPDM roofing membrane is nearing the end of its useful life, and an increasing number of repairs can be expected until it is replaced.



Cunniff - Existing Massing

Cunniff Program Plans:

These plans illustrate the types of spaces currently in use by a given school program and offering a quick visual tool to understand how well a program is fitting within its assigned building.



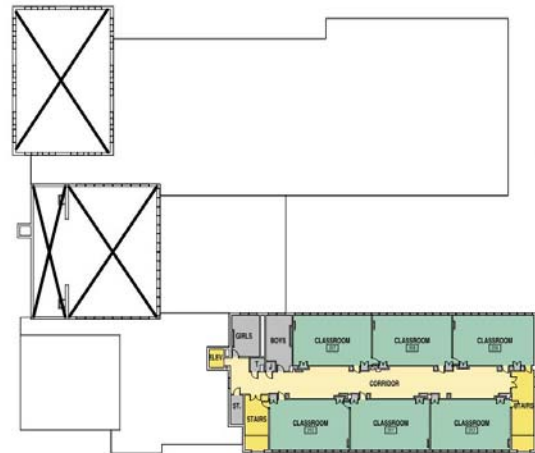
Basement Floor Plan



First Floor Plan

PROGRAM PLAN LEGEND

- ADMINISTRATION / GUIDANCE / STUDENT SERVICES / NURSE
- ART & MUSIC
- AUDITORIUM / PERFORMING ARTS & DRAMA
- BUILDING EQUIPMENT
- CAFETERIA & CIRCULATION
- CLASSROOM & GENERAL EDUCATION SUPPORT
- CUSTODIAL / MAINTENANCE / STORAGE
- KITCHEN / SERVERY
- MEDIA CENTER
- PHYSICAL EDUCATION & SPORT SUPPORT
- SPECIAL EDUCATION
- TEACHER PLANNING & SUPPORT
- VERTICAL CIRCULATION



Second Floor Plan

Cunniff Deficiency Plans:

These plans illustrate where programs fall severely short (or greatly exceed) standards as established by the MSBA. We have taken the plan analysis further to include adjacency or location inadequacies and spaces least likely supported by the MSBA grant program.



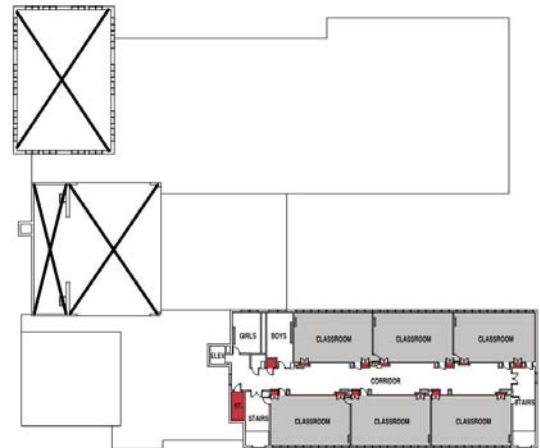
Basement Floor Plan



First Floor Plan

MSBA DEFICIENCY PLAN

- NSF 10% GREATER THAN MSBA GUIDELINES
- NSF AT LEAST 20% LESS THAN MSBA GUIDELINES
- NSF MEETS MSBA GUIDELINES (-20% TO +10%)

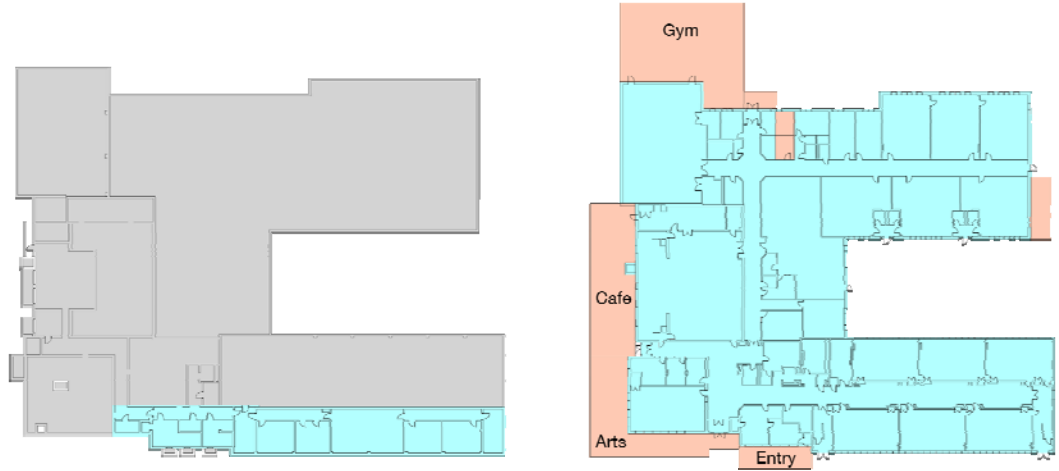


Second Floor Plan

Cunniff Master Plan Options

Option 1 | Essential Renovation 70,550 SF - \$26.5 million

For the **Cunniff Elementary School** to accommodate 400 students within MSBA guidelines, SMMA proposes building additions to allow for a larger cafeteria, gymnasium, and space for the arts, and adding a second floor to further increase square footage. Upper-level renovations to Cunniff would include further updates to facilitate 21st Century learning modalities.



Basement Floor Plan

First Floor Plan

LEGEND



Additions

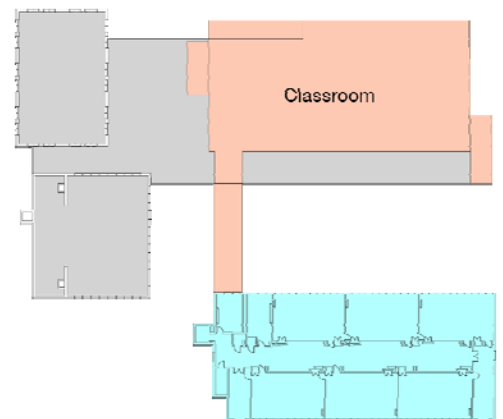
Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.



Option 2 | Advocated Renovations

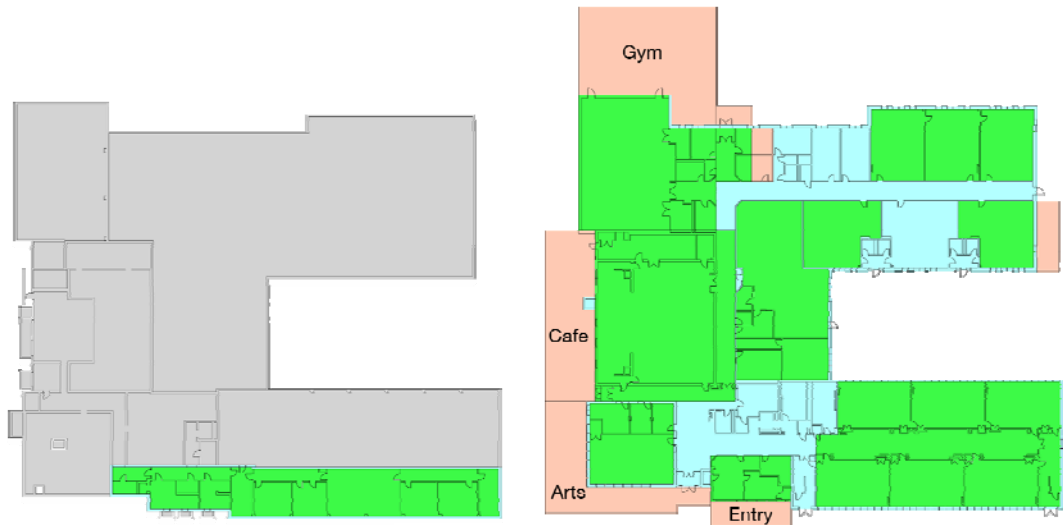
Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.



Second Floor Plan

Option 2 | Advocated Renovation
70,910 SF - \$29.8 million

For the **Cunniff Elementary School** to accommodate 400 students within MSBA guidelines, SMMA proposes building additions to allow for a larger cafeteria, gymnasium, and space for the arts, and adding a second floor to further increase square footage. Upper-level renovations to Cunniff would include further updates to facilitate 21st Century learning modalities.



Basement Floor Plan


First Floor Plan

LEGEND

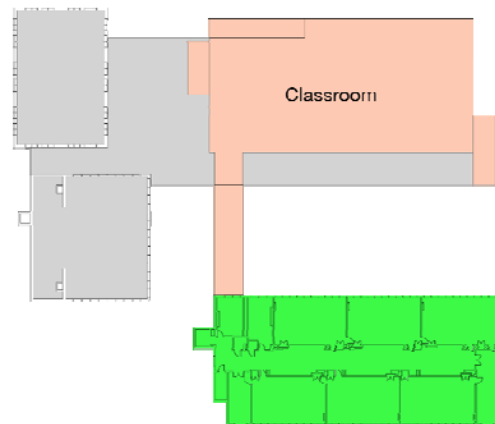
 **Additions**

 **Option 1 | Essential Renovations**

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

 **Option 2 | Advocated Renovations**

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.



Second Floor Plan

Option 3 | New Construction
69,100 SF - \$55.4 million

Demolition of existing structure and new construction on existing site. Total square footage assessed by Massachusetts School Building Authority (MSBA) guidelines.

Space Summary

SMMA has worked collaboratively with the School District on space needs, primarily through the Educational Leadership Team, assembled for the purpose of researching, reviewing and recommending the Educational Vision to the Leadership Committee. The ELT included School and Building Committee representatives, Principals and Teachers. The Proposed Space Summaries for the Watertown Master Plan is based on the enrollment projections WPS provided.

The Proposed Space Summary (below) provides an itemization of existing spaces, for each schools. Proposed spaces are tabulated based on an analysis of existing and future programs, scheduling and pro-rated design enrollment. The spaces proposed are MSBA default tabulations required to meet the Educational Program needs for each school.

The total student population for the 2015-16 school year was 277 students.

MSBA Space Summary - Cunniff Elementary School

Cunniff Elementary School		Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals		area totals	Comments
CORE ACADEMIC SPACES	14,417		16,900	2,483
<i>(List classrooms of different sizes separately)</i>				
Pre-Kindergarten w/ toilet	0		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet	3,273		3,600	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-6	11,144		13,300	900 SF min - 1,000 SF max
SPECIAL EDUCATION	1,436		4,530	3,094
<i>(List rooms of different sizes separately)</i>				
Self-Contained SPED	1,080		2,850	8% of pop. in self-contained SPED
Self-Contained SPED - toilet	0		180	
Resource Room	356		1,000	1/2 size Genl. Clrm.
Small Group Room / Reading	0		500	1/2 size Genl. Clrm.
ART & MUSIC	1,017		2,575	1,558
Art Classroom - 25 seats	1,017		1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	0		150	
Music Classroom / Large Group - 25-50 seats	0		1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble	0		225	
HEALTH & PHYSICAL EDUCATION	3,168		6,300	3,132
Gymnasium	2,889		6,000	6000 SF Min. Size
Gym Storeroom	152		150	
Health Instructor's Office w/ Shower & Toilet	127		150	
MEDIA CENTER	3,081		2,470	-611
Media Center / Reading Room	3,081		2,470	
DINING & FOOD SERVICE	4,379		6,233	1,854
Cafeteria / Dining	2,375		3,000	2 seatings - 15SF per seat
Stage	978		1,000	
Chair / Table / Equipment Storage	0		333	
Kitchen	571		1,700	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	455		200	20 SF/Occupant
MEDICAL	294		510	216
Medical Suite Toilet	0		60	
Nurses' Office / Waiting Room	294		250	
Examination Room / Resting	0		200	
ADMINISTRATION & GUIDANCE	2,707		2,115	-592
General Office / Waiting Room / Toilet	313		350	
Teachers' Mail and Time Room	0		100	
Duplicating Room	0		150	
Records Room	0		110	
Principal's Office w/ Conference Area	226		375	
Principal's Secretary / Waiting	380		125	
Assistant Principal's Office	0		-	
Supervisory / Spare Office	453		120	
Conference Room	0		250	
Guidance Office	247		150	
Guidance Storeroom	0		35	
Teachers' Work Room	1,088		350	

MSBA Space Summary - Cunniff Elementary School

Cunniff Elementary School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
CUSTODIAL & MAINTENANCE	3,306	2,000	-1,306
Custodian's Office	281	150	
Custodian's Workshop	0	375	
Custodian's Storage	0	375	
Recycling Room / Trash	0	400	
Receiving and General Supply	0	233	
Storeroom	3,025	267	
Network / Telecom Room	0	200	
OTHER	0	0	0
Other (specify)	0		
Total Building Net Floor Area (NFA)	33,805	43,633	9,828
Proposed Student Capacity / Enrollment		400	
Total Building Gross Floor Area (GFA) ²	54,149	67,333	13,185
Grossing factor (GFA/NFA)	1.60	1.54	

¹ Individual Room Net Floor Area (NFA)

² Total Building Gross Floor Area (GFA)

3.2 Lowell Elementary School

Existing Building Evaluations²

The two-story plus basement elementary school is classified as a low-rise building in accordance with the MSBC. The building is 84,600 GSF with a primary occupancy type of the building is Group E, Educational. The original 1927 structure along with 1996 addition results in a mixed construction type classification, where a MSBC designation of 2B necessitated given the unprotected steel framing.

The building is equipped with a fire alarm system with ADA compliant strobes in most public spaces. The fire alarm system reports directly to the local Fire Department via master box connection. The system is not monitored by a central station. Visual and audible appliances are provided in common corridors and large assembly areas. Smoke detection is provided in the corridors. The building is fully sprinklered, including a pre-action system in the attic.

The building is served by as many as three exit stairways and exit doorways that discharge directly to grade. The Side B (main) entrance is accessible to the disabled. An elevator provides accessible routes to all main floor levels.



Lowell - Existing Site Plan

² Summarized from the Oudens Ello's report.

Previous Additions, Renovations, and Major Maintenance:

1996 Addition: Gymnasium and program space addition to the north and east of original building, plus new windows and roofing throughout the addition and original 1927 building.

Wall System:

1927 Building: Clay brick mass masonry with decorative painted wood elements.

1996 Addition: Clay brick-clad cavity wall with decorative painted metal elements that mimic original building, and copper fabric through-wall flashings.

Window System:

All Building Areas: Punched, aluminum framed, hung windows with insulating glass units (IGUs) typical, except at large bay window at east side of the building that is curtain wall, all reportedly installed in 1996.

Door System:

All Building Areas: Entrances are aluminum framed storefront with IGUs reportedly installed in 1996.

Roof System:

1927 Building: Fully-adhered EPDM at low-sloped areas installed in 1996. Slate over wood plank at steep sloped areas, which is reportedly original.

1996 Addition: Ballasted EPDM. Approximately 1,800 sq. ft. at library replaced in 2011.

General Building Performance:

Reports of Building Enclosure Leakage/Distress:

Numerous leaks seemingly related to the roofing, which have been ongoing since its installation in 1996. Worst leakage occurs at the connection between the 1927 building and 1996 addition, as well as below a roof drain over the cafeteria.

Overall Building Envelope Condition/Major Concerns:

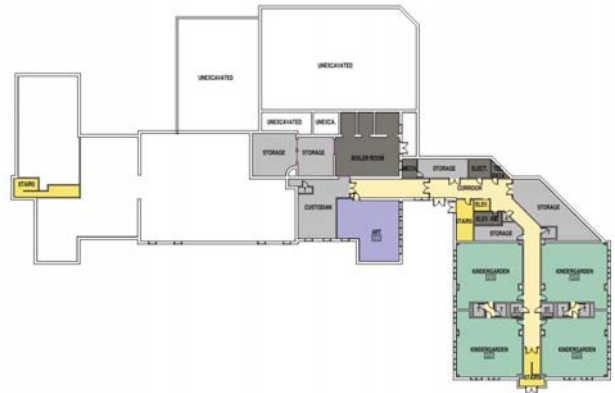
A precast concrete band course element above a first-floor window, adjacent to a site stair is cracked longitudinally, and may be unstable; immediate hands-on investigation is necessary to determine if the element is unstable and re-secure as necessary. Exterior walls of the 1927 building are in need of repointing throughout, but the 1996 addition appears in sound. Wood elements require repainting, with some replacement necessary at the cupola. Windows are sound, but perimeter seals should be replaced in the near to mid-term to avoid water leakage and more significant deterioration. EPDM roofing membrane is in poor condition, and appears to be nearing the end of its useful life. Ongoing and increased need for repairs should be expected until it is replaced. Slate is deteriorated and damaged, but still seems to generally be performing except at isolated locations. The need for continued patching and isolated replacement is expected until the slate is replaced.



Lowell - Existing Massing

Lowell Program Plans:

These plans illustrate the types of spaces currently in use by a given school program and offering a quick visual tool to understand how well a program is fitting within its assigned building.



Ground Floor Plan



First Floor Plan



Second Floor Plan

PROGRAM PLAN LEGEND

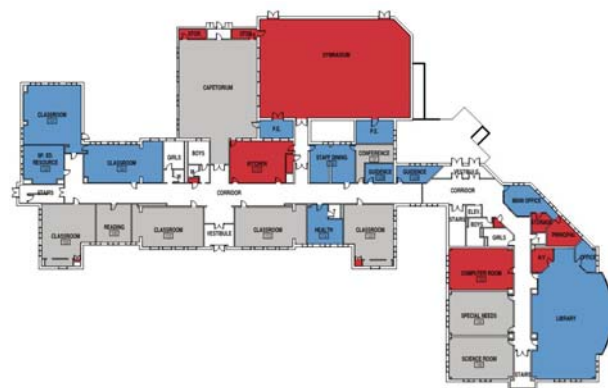
- ADMINISTRATION / GUIDANCE / STUDENT SERVICES / NURSE
- ART & MUSIC
- AUDITORIUM / PERFORMING ARTS & DRAMA
- BUILDING EQUIPMENT
- CAFETERIA & CIRCULATION
- CLASSROOM & GENERAL EDUCATION SUPPORT
- CUSTODIAL / MAINTENANCE / STORAGE
- KITCHEN / SERVERY
- MEDIA CENTER
- PHYSICAL EDUCATION & SPORT SUPPORT
- SPECIAL EDUCATION
- TEACHER PLANNING & SUPPORT
- VERTICAL CIRCULATION

Lowell Deficiency Plans:

These plans illustrate where programs fall severely short (or greatly exceed) standards as established by the MSBA. The plan analysis includes adjacency or location inadequacies and spaces least likely supported by the MSBA grant program.



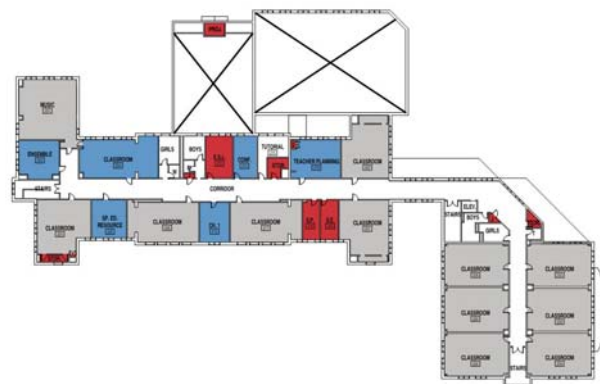
Ground Floor Plan



First Floor Plan

MSBA DEFICIENCY PLAN

- NSF 10% GREATER THAN MSBA GUIDELINES
- NSF AT LEAST 20% LESS THAN MSBA GUIDELINES
- NSF MEETS MSBA GUIDELINES (-20% TO +10%)



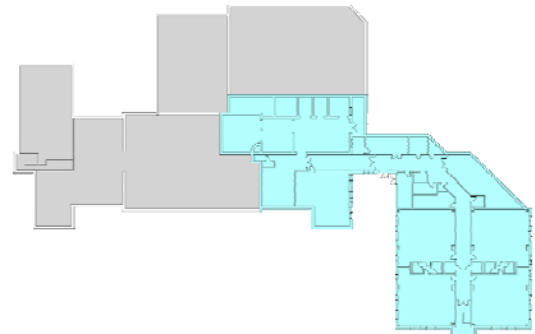
Second Floor Plan

Lowell Master Plan Options

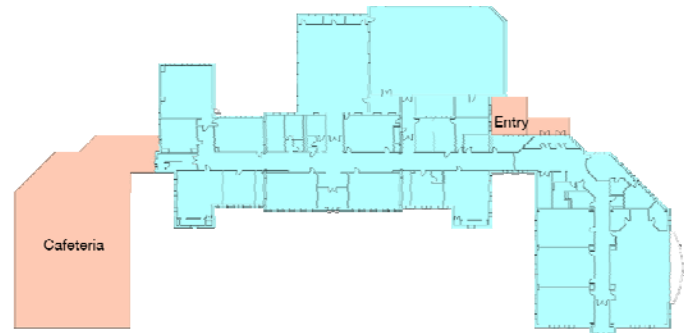
Option 1 | Essential Renovation

86,980 SF - \$28.3 million

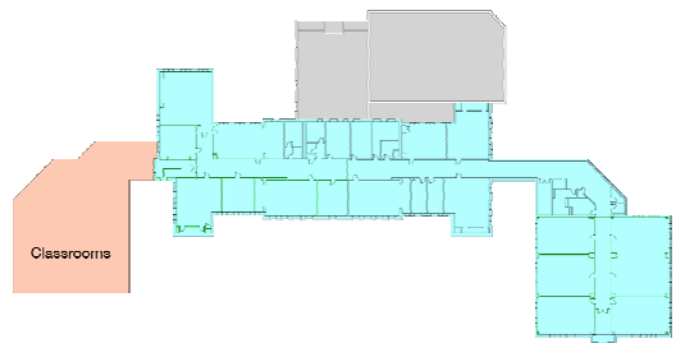
For the **James Russel Lowell Elementary School** to accommodate 450 students within MSBA guidelines, SMMA proposes constructing an additional wing to house a new cafeteria on the first floor and classrooms on the second floor. The main entrance to the school would be remodeled as well. Upper-level renovations to Lowell would include further building updates to facilitate 21st Century learning modalities.



Ground Floor Plan



First Floor Plan



Second Floor Plan

LEGEND



Additions

Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

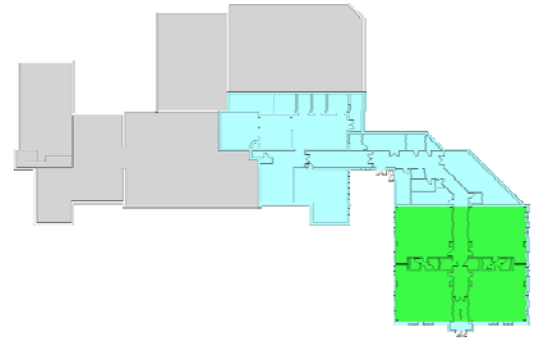
Option 2 | Advocated Renovations

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.

Option 2 | Advocated Renovation

88,470 SF - \$33.0 million

For the **James Russel Lowell Elementary School** to accommodate 450 students within MSBA guidelines, SMMA proposes constructing an additional wing to house a new cafeteria on the first floor and classrooms on the second floor. The main entrance to the school would be remodeled as well. Upper-level renovations to Lowell would include further building updates to facilitate 21st Century learning modalities.



Ground Floor Plan

LEGEND



Additions

Option 1 | Essential Renovations

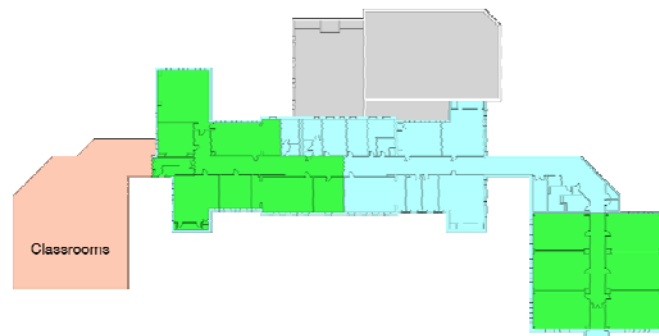
Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option 2 | Advocated Renovations

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.



Ground Floor Plan



Ground Floor Plan

Option 3 | New Construction
\$75,100 SF - \$60.7 million

Demolition of existing structure and new construction on existing site. Total square footage assessed by Massachusetts School Building Authority (MSBA) guidelines.

Space Summary

SMMA has worked collaboratively with the School District on space needs, primarily through the Educational Leadership Team, assembled for the purpose of researching, reviewing and recommending the Educational Vision to the Leadership Committee. The ELT included School and Building Committee representatives, Principals and Teachers. The Proposed Space Summaries for the Watertown Master Plan is based on the enrollment projections WPS provided.

The Proposed Space Summary (below) provides an itemization of existing spaces, for each schools. Proposed spaces are tabulated based on an analysis of existing and future programs, scheduling and pro-rated design enrollment. The spaces proposed are MSBA default tabulations required to meet the Educational Program needs for each school.

The total student population for the 2015-16 school year was 407 students.

MSBA Space Summary - Lowell Elementary School

Lowell Elementary School		Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals		area totals	Comments
CORE ACADEMIC SPACES	21,671		20,000	-1,671
<i>(List classrooms of different sizes separately)</i>				
Pre-Kindergarten w/ toilet	0		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet	4,747		4,800	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-6	16,667		15,200	900 SF min - 1,000 SF max
Student Support	257			
SPECIAL EDUCATION	2,088		4,530	2,442
<i>(List rooms of different sizes separately)</i>				
Self-Contained SPED	1,663		2,850	8% of pop. in self-contained SPED
Self-Contained SPED - toilet	0		180	
Resource Room	0		1,000	1/2 size Genl. Clrm.
Small Group Room / Reading	425		500	1/2 size Genl. Clrm.
ART & MUSIC	2,591		2,575	-16
Art Classroom - 25 seats	997		1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	0		150	
Music Classroom / Large Group - 25-50 seats	1,127		1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble	467		225	
HEALTH & PHYSICAL EDUCATION	5,493		6,300	807
Gymnasium	4,644		6,000	
Gym Storeroom	468		150	
Health Instructor's Office w/ Shower & Toile	381		150	
MEDIA CENTER	3,696		2,695	-1,001
Media Center / Reading Room	3,696		2,695	
DINING & FOOD SERVICE	3,897		6,687	2,790
Cafeteria / Dining	2,601		3,375	2 seatings - 15SF per seat
Stage	0		1,000	
Chair / Table / Equipment Storage	0		350	
Kitchen	765		1,750	1800 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	531		213	20 SF/Occupant
MEDICAL	0		510	510
Medical Suite Toilet	0		60	
Nurses' Office / Waiting Room	0		250	
Examination Room / Resting	0		200	
ADMINISTRATION & GUIDANCE	3,584		2,315	-1,269
General Office / Waiting Room / Toilet	0		375	
Teachers' Mail and Time Room	0		100	
Duplicating Room	0		150	
Records Room	0		110	
Principal's Office w/ Conference Area	228		375	
Principal's Secretary / Waiting	345		125	
Assistant Principal's Office	0		-	
Supervisory / Spare Office	158		120	
Conference Room	1,003		250	
Guidance Office	376		300	
Guidance Storeroom	0		35	
Teachers' Work Room	582		375	
Sp. Ed. Office	892			

MSBA Space Summary - Lowell Elementary School

Lowell Elementary School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
CUSTODIAL & MAINTENANCE	3,784	2,050	-1,734
Custodian's Office	882	150	
Custodian's Workshop	0	375	
Custodian's Storage	0	375	
Recycling Room / Trash	0	400	
Receiving and General Supply	0	250	
Storeroom	2,850	300	
Network / Telecom Room	52	200	
OTHER	0	0	0
Other (specify)			
Total Building Net Floor Area (NFA) ¹	46,804	47,662	858
Proposed Student Capacity / Enrollment		450	
Total Building Gross Floor Area (GFA) ²	81,625	73,125	-8,500
Grossing factor (GFA/NFA)	1.74	1.53	

¹ Individual Room Net Floor Area (NFA)

² Total Building Gross Floor Area (GFA)

3.3 Hosmer Elementary School

Existing Building Evaluations

The three-story elementary school is classified as a low-rise building in accordance with the Massachusetts State Building Code (MSBC). The building is 102,500 GSF with a primary occupancy type of the building is Group E, Educational. The day care facility provides service for children no younger than two years and nine months (Group E). The original 1967 structure along with 2002 addition results in a mixed construction type classification, where a MSBC designation of 2B necessitated given the unprotected steel roof framing.

The building is equipped with a fire alarm system with ADA compliant strobes in most public spaces. The fire alarm system reports directly to the local fire department via master box connection. The system is not monitored by a central station. Visual and audible appliances are provided in common corridors and large assembly areas. Smoke detection is provided throughout the building and the 1979 addition is partially sprinklered.

The building is served by as many as five exit stairways, an exit ramp and exit doorways that discharge directly to grade. The Side C (main) and Side D (auditorium) entrances are accessible to the disabled. An elevator provides an accessible route to all main floor levels.



Hosmer Existing Site Plan

Previous Additions, Renovations, and Major Maintenance:

1967 Addition:

Original Hosmer School and Old East Junior School Constructed

2002 Addition:

Connector Building addition connecting the two schools (new combined school known solely as Hosmer School). Renovation work also included new PVC roof and fenestrations throughout all building areas.

Wall System:

1967 Original Hosmer: Clay brick mass masonry with stucco panels at second-floor spandrel areas between windows.

1967 Old East Junior: Clay brick mass masonry with stucco panels at some second-floor window spandrels. Stone panels at north elevation.

2002 Connector Building: Clay brick veneer cavity wall (back-up construction unknown) typical with multi-story, glass-aluminum curtain wall at south elevation.

Window System:

All Building Areas: Punched windows: Aluminum frames with fixed lights and project-in operable vents, green finish, and insulating glass units (IGUs). Multiple windows are mulled together with an aluminum spline. Wet glazed from the exterior.

Large Areas of Glazing: Aluminum and glass curtain wall construction, with fixed lights, spandrel panels, and project-in operable vents with IGUs. All glass is wet-glazed. Rubber exterior glazing gaskets and butyl interior seals.

Door System:

All Building Areas: Main entrances (north and south): Aluminum and glass storefront with green finish and IGUs.

Auxiliary Entrances: Hollow metal typically with light tan painted finish.

Roof System:

1967 Original Hosmer & 2002 Connector Building: Sarnafil PVC membrane typical at low-sloped areas and standing seam metal at steep sloped areas.

1967 Old East Junior: Sarnafil PVC membrane typical at low-sloped areas. Auditorium roof is a different, unmarked, white single-ply membrane that appears to be a reinforced thermoplastic. Two small roof areas above bathrooms and mechanical area at southwest building corner are EPDM and asphalt shingle. Watertown Public Schools (WPS) report that the shingle roof replaced a problematic EPDM roof in 2004.

General Building Performance:

Reports of Building Enclosure Leakage/Distress:

Multiple roof leaks, ongoing at the following locations: East side of the Connector Building elevators (between the elevators and original Hosmer School expansion joint) and below the EPDM roof at the southwest building corner. Water leakage also noted at walls of the ramp at the west end of the building at a unit ventilator in Room 156, a skylight in the Connector Building (reportedly under warranty, with repairs scheduled), and at the base of the Connector Building, south entrance canopy.

Overall Building Envelope Condition/Major Concerns:

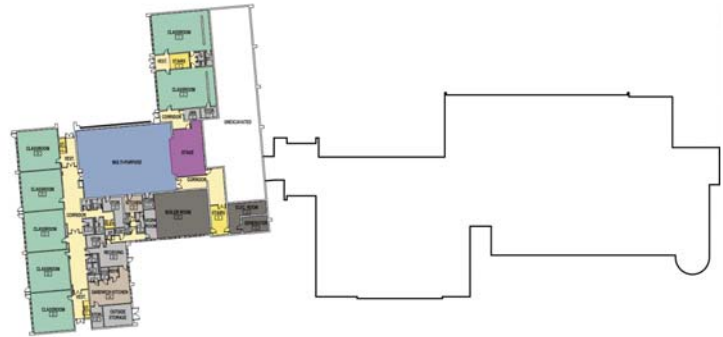
Brick masonry is generally sound with select locations of distress and efflorescence that should be addressed to avoid accelerated deterioration. Fenestrations are in sound condition, but perimeter seals have failed throughout the building, and require replacement. PVC roofing membrane and asphalt shingles are typically in sound condition. EPDM roofing is distressed and likely requires replacement. Flashing at rising walls are sound, but installed low-to-the-roof at locations related to interior leakage and should be investigated further.



Hosmer - Existing Massing

Hosmer Program Plans:

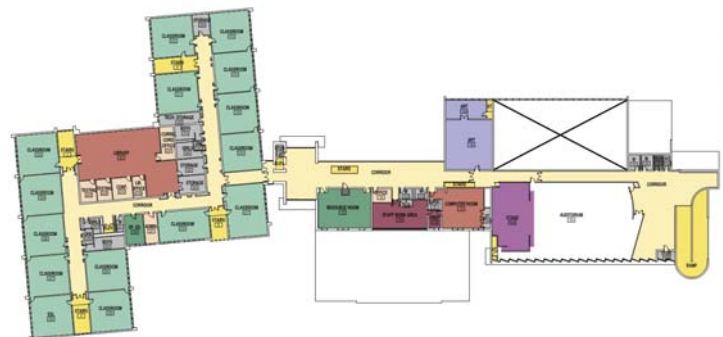
These plans illustrate the types of spaces currently in use by a given school program and offering a quick visual tool to understand how well a program is fitting within its assigned building.



Ground Floor Plan



First Floor Plan



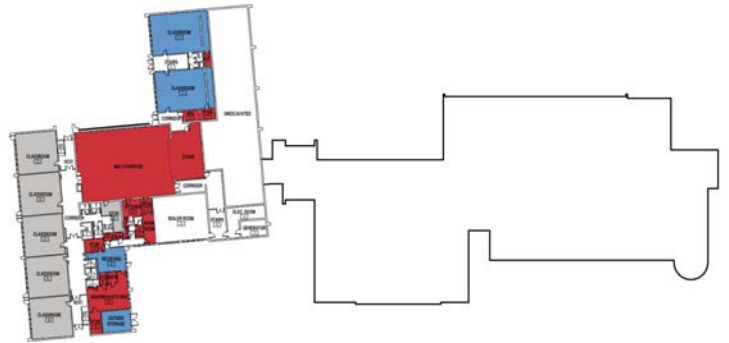
Second Floor Plan

PROGRAM PLAN LEGEND

- ADMINISTRATION / GUIDANCE / STUDENT SERVICES / NURSE
- ART & MUSIC
- AUDITORIUM / PERFORMING ARTS & DRAMA
- BUILDING EQUIPMENT
- CAFETERIA & CIRCULATION
- CLASSROOM & GENERAL EDUCATION SUPPORT
- CUSTODIAL / MAINTENANCE / STORAGE
- KITCHEN / SERVERY
- MEDIA CENTER
- PHYSICAL EDUCATION & SPORT SUPPORT
- SPECIAL EDUCATION
- TEACHER PLANNING & SUPPORT
- VERTICAL CIRCULATION

Hosmer Deficiency Plans:

These plans illustrate where programs fall severely short (or greatly exceed) standards as established by the MSBA. The plan analysis includes adjacency or location inadequacies and spaces least likely supported by the MSBA grant program.



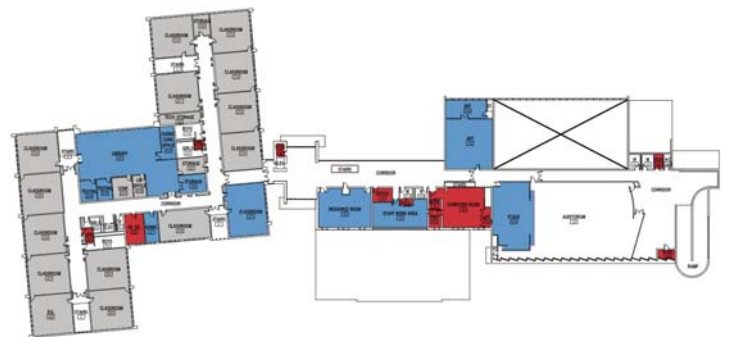
Ground Floor Plan



First Floor Plan

MSBA DEFICIENCY PLAN

- NSF 10% GREATER THAN MSBA GUIDELINES
- NSF AT LEAST 20% LESS THAN MSBA GUIDELINES
- NSF MEETS MSBA GUIDELINES (-20% TO +10%)



Second Floor Plan

Hosmer Master Plan Options

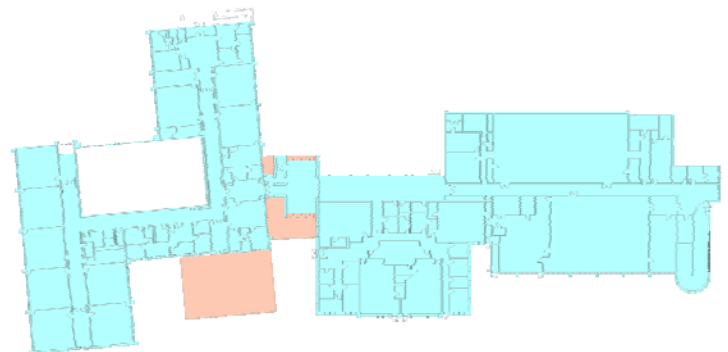
Option 1 | Essential Renovation

124,878 SF - \$29.9 million

For the **Hosmer Elementary School** to accommodate 500 students within MSBA guidelines, SMMA proposes the addition of a space for the arts, renovations to the entryway, and renovations to the existing preschool space. Upper-level renovations would include a new cafeteria, a new gymnasium, and new universal preschool space built to accommodate 400 early childhood students. Upper-level renovations would also include further building updates to facilitate 21st Century learning modalities.



Ground Floor



First Floor



Second Floor

LEGEND



Additions

Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option 2 | Advocated Renovations

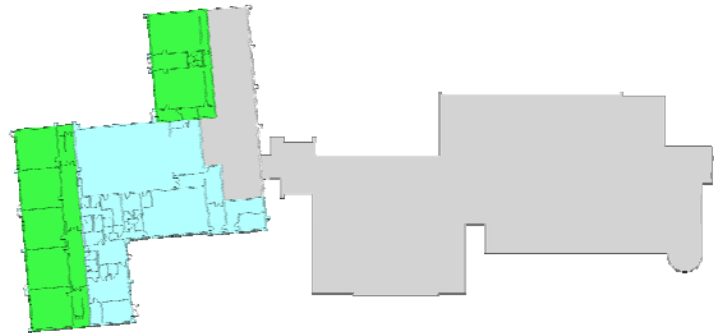
Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.

Option 2.1 | Advocated Renovation

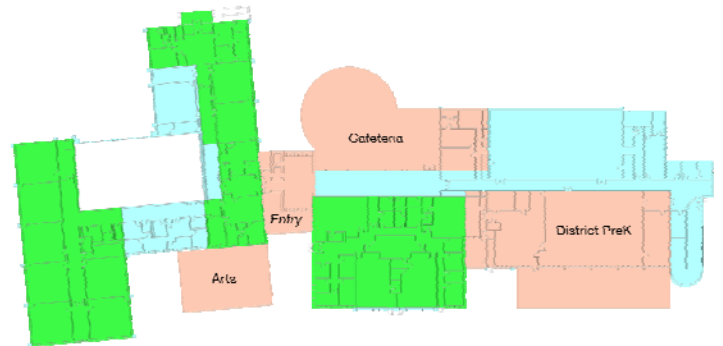
District-wide PreK

143,700 SF - \$40.7 million

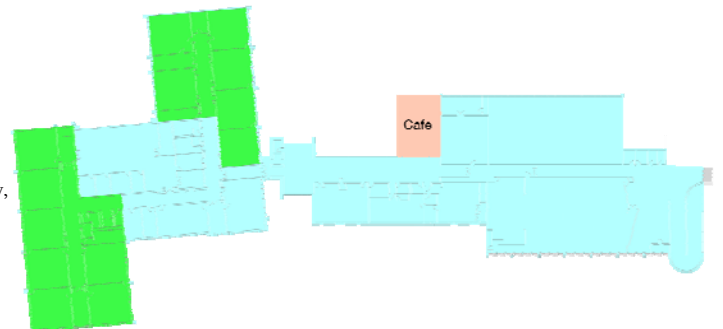
For the **Hosmer Elementary School** to accommodate 500 students within MSBA guidelines, SMMA proposes the addition of a space for the arts, renovations to the entryway, and renovations to the existing preschool space. Upper-level renovations would include a new cafeteria, a new gymnasium, and new universal preschool space built to accommodate 400 early childhood students. Upper-level renovations would also include further building updates to facilitate 21st Century learning modalities.



Ground Floor



First Floor



Second Floor

LEGEND



Additions

Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option 2 | Advocated Renovations

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.

**Option 2.2 | Advocated Renovation
(Universal Early Learning Center)**

175,870 SF - \$54.4 million

For the **Hosmer Elementary School** to accommodate 500 students within MSBA guidelines, SMMA proposes the addition of a space for the arts, renovations to the entryway, and renovations to the existing preschool space. Upper-level renovations would include a new cafeteria, a new gymnasium, and new universal preschool space built to accommodate 400 early childhood students. Upper-level renovations would also include further building updates to facilitate 21st Century learning modalities.

LEGEND



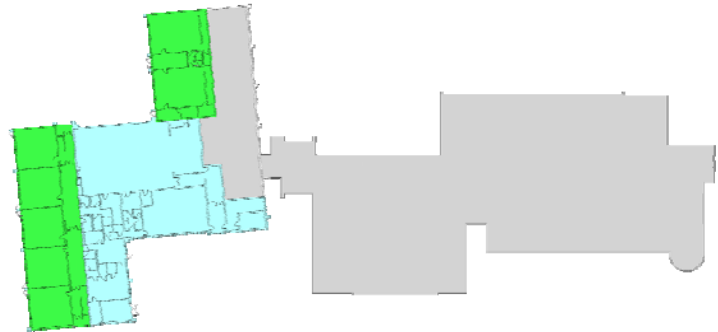
Additions

Option 1 | Essential Renovations

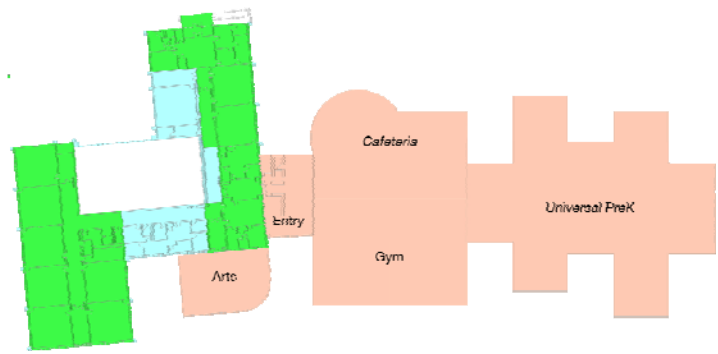
Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option 2 | Advocated Renovations

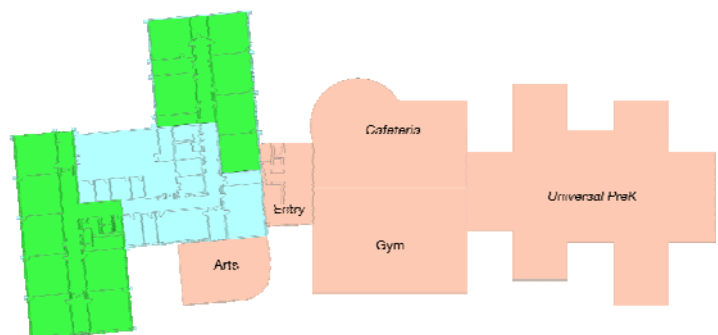
Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.



Ground Floor



First Floor



Second Floor

Option 3 | New Construction
146,300 SF - \$71.0 million

Demolition of existing structure and new construction on existing site. Total square footage assessed by Massachusetts School Building Authority (MSBA) guidelines.

Space Summary

SMMA has worked collaboratively with the School District on space needs, primarily through the Educational Leadership Team, assembled for the purpose of researching, reviewing and recommending the Educational Vision to the Leadership Committee. The ELT included School and Building Committee representatives, Principals and Teachers. The Proposed Space Summaries for the Watertown Master Plan is based on the enrollment projections WPS provided.

The Proposed Space Summary (below) provides an itemization of existing spaces, for each schools. Proposed spaces are tabulated based on an analysis of existing and future programs, scheduling and pro-rated design enrollment. The spaces proposed are MSBA default tabulations required to meet the Educational Program needs for each school.

The total student population for the 2015-16 school year was 627 students including the pre-school.

MSBA Space Summary - Hosmer Elementary School

Hosmer Elementary School		Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals		area totals	Comments
CORE ACADEMIC SPACES	29,566		21,900	-7,666
<i>(List classrooms of different sizes separately)</i>				
Pre-Kindergarten w/ toilet	3,681		-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet	0		4,800	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-6	25,885		17,100	900 SF min - 1,000 SF max
SPECIAL EDUCATION	832		6,040	5,208
<i>(List rooms of different sizes separately)</i>				
Self-Contained SPED	270		3,800	8% of pop. in self-contained SPED
Self-Contained SPED - toilet	492		240	
Resource Room	70		1,500	1/2 size Genl. Clrm.
Small Group Room / Reading	0		500	1/2 size Genl. Clrm.
ART & MUSIC	1,497		2,575	1,078
Art Classroom - 25 seats	0		1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	1,497		150	
Music Classroom / Large Group - 25-50 seats	0		1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble	0		225	
HEALTH & PHYSICAL EDUCATION	4,881		6,300	1,419
Gymnasium	4,473		6,000	6000 SF Min. Size
Gym Storeroom	0		150	
Health Instructor's Office w/ Shower & Toile	408		150	
MEDIA CENTER	3,104		2,920	-184
Media Center / Reading Room	3,104		2,920	
DINING & FOOD SERVICE	8,808		7,142	-1,666
Cafeteria / Dining	3,653		3,750	2 seatings - 15SF per seat
Stage	2,052		1,000	
Chair / Table / Equipment Storage	0		367	
Kitchen	2,409		1,800	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	694		225	20 SF/Occupant
MEDICAL	664		510	-154
Medical Suite Toilet	59		60	
Nurses' Office / Waiting Room	91		250	
Examination Room / Resting	514		200	
ADMINISTRATION & GUIDANCE	5,910		2,365	-3,545
General Office / Waiting Room / Toilet	2,089		400	
Teachers' Mail and Time Room	0		100	
Duplicating Room	0		150	
Records Room	0		110	
Principal's Office w/ Conference Area	214		375	
Principal's Secretary / Waiting	296		125	
Assistant Principal's Office	148		-	
Supervisory / Spare Office	661		120	
Conference Room	1,015		250	
Guidance Office	369		300	
Guidance Storeroom	0		35	
Teachers' Work Room	779		400	
Student Support	339			

MSBA Space Summary - Hosmer Elementary School

Hosmer Elementary School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
CUSTODIAL & MAINTENANCE	3,961	2,100	-1,861
Custodian's Office	273	150	
Custodian's Workshop	162	375	
Custodian's Storage	89	375	
Recycling Room / Trash	0	400	
Receiving and General Supply	332	267	
Storeroom	3,042	333	
Network / Telecom Room	63	200	
OTHER	7,021	0	-7,021
Other (specify)			
Multi-Purpose	3,052		
Auditorium	3,969		
Total Building Net Floor Area (NFA) ¹	66,244	51,852	-14,392
Proposed Student Capacity / Enrollment		500	
Total Building Gross Floor Area (GFA) ²	134,245	78,333	-55,912
Grossing factor (GFA/NFA)	2.03	1.51	

¹ Individual Room Net Floor Area (NFA)

² Total Building Gross Floor Area (GFA)

3.4 Watertown Middle School

Existing Building Evaluations

The three-story middle school is classified as a low-rise building in accordance with the MSBC. The building is 133,000 GSF with a primary occupancy type of the building is Group E, Educational. The original 1922 structure along with 1998 addition results in a mixed construction type classification, where a MSBC designation of 3B necessitated given the wood framing.

The building is equipped with a fire alarm system with ADA compliant strobes in most public spaces. The fire alarm system reports directly to the local Fire Department via master box connection. The system is not monitored by a central station. Visual and audible appliances are provided in common corridors and large assembly areas. Smoke detection is provided throughout the building. The building is generally sprinklered, however only two sprinkler heads are provided in each classroom of the 1922 structure.

The building is served by as many as six exit stairways and exit doorways that discharge directly to grade. The Side A (main) entrance is accessible to the disabled. Two (2) elevators provide accessible routes to all main floor levels. That said, there are some challenging floor level changes that occur given the interconnection between original construction and new addition that results in a confusing experience for the disabled.



Middle School - Existing Site Plan

Previous Additions, Renovations, and Major Maintenance

1998 Addition: Gymnasium, auditorium, and program space addition to the north and east of original building, plus new roofing throughout the addition and original 1922 Building.

2010-11: Repointed brick masonry along the west, south, and east elevations of the 1922 Building.

Wall System:

1922 Building: Clay brick mass masonry

1998 Addition: Clay brick-clad cavity wall with cast stone accent elements; no through-wall flashing is visible.

Window System:

1922 Building: Punched, aluminum framed, with fixed and project-in hopper windows and single-pane glass or metal panels typical. Aluminum framed storefront at stairwells.

1998 Addition: Aluminum framed punched windows and window-wall assemblies with project-out awning operable vents, and insulating glass units (IGUs).

Door System:

All Building Areas: Entrances are aluminum framed storefront with IGUs reportedly installed in 1998.

Roof System:

1922 Building: Fully-adhered EPDM at low-sloped areas, except for at cafeteria area which is ballasted EPDM. All roofing membranes were reportedly installed in 1998.

1998 Addition: Ballasted EPDM, except fully adhered EPDM at the entrance canopy and white thermoplastic (appears to be PVC or TPO) at cafeteria extension.

General Building Performance:

Reports of Building Enclosure Leakage/Distress:

Ongoing water leakage into gymnasium from roof, typically at mechanical equipment and parapets (school currently has issued a statement of interest to replace roof). Water leakage reported at connections between new and old building. Water infiltration issues along north gym elevation due to sloped grade (parking lot previously at this location reportedly used to flood). Ventilators are installed and run continuously below bleachers along this wall to remove moisture.

Overall Building Envelope Condition/Major Concerns:

Spalling brick masonry and significant deterioration of cast stone elements is indicative of severe weathering a source of potential water infiltration. Metal flashing should be considered in the near term to improve water management at 1922 building and mitigate future damage. Rusting at lintels at 1998 Addition indicate they are starting to deteriorate, and will likely require repairs in the next five to ten years. Windows and doors installed in 1998 are generally in good condition, but windows in the 1992 building are at the end of their useful life and should be replaced in the next five years. Perimeter seals around windows are in need of replacement. Roof is generally in fair condition, although is beginning to show signs of aging. Repairs are needed at areas of currently known leakage, but otherwise we expect this roof will continue to function for another five to ten years with typical maintenance and minor repairs.



Middle School - Existing Massing

Middle School Program Plans:

These plans illustrate the types of spaces currently in use by a given school program and offering a quick visual tool to understand how well a program is fitting within its assigned building.



Ground Floor Plan



First Floor Plan

PROGRAM PLAN LEGEND

- ADMINISTRATION / GUIDANCE / STUDENT SERVICES / NURSE
- ART & MUSIC
- AUDITORIUM / PERFORMING ARTS & DRAMA
- BUILDING EQUIPMENT
- CAFETERIA & CIRCULATION
- CLASSROOM & GENERAL EDUCATION SUPPORT
- CUSTODIAL / MAINTENANCE / STORAGE
- KITCHEN / SERVERY
- MEDIA CENTER
- PHYSICAL EDUCATION & SPORT SUPPORT
- SPECIAL EDUCATION
- TEACHER PLANNING & SUPPORT
- VERTICAL CIRCULATION



Second Floor Plan

Middle School Deficiency Plans:

These plans illustrate where programs fall severely short (or greatly exceed) standards as established by the MSBA. The plan analysis includes adjacency or location inadequacies and spaces least likely supported by the MSBA grant program.



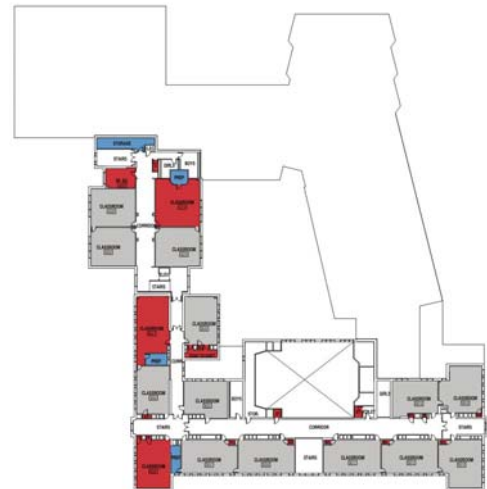
Ground Floor Plan



First Floor Plan

MSBA DEFICIENCY PLAN

- NSF 10% GREATER THAN MSBA GUIDELINES
- NSF AT LEAST 20% LESS THAN MSBA GUIDELINES
- NSF MEETS MSBA GUIDELINES (-20% TO +10%)



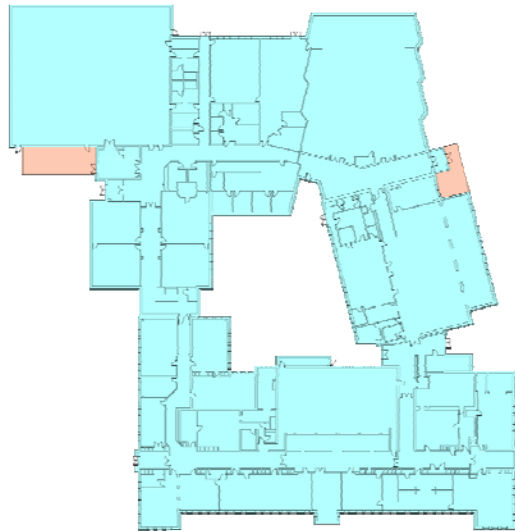
Second Floor Plan

Middle School Master Plan Options

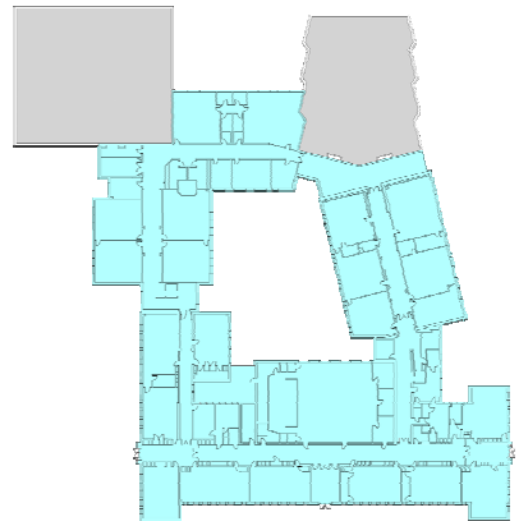
Option 1 | Essential Renovation

146,290 SF - \$35.3 million

For the **Watertown Middle School** to accommodate 620 students, SMMA proposes remodeling the entryway and providing general facilities renovations. Upper-level renovations to WMS would include expanding the cafeteria and creating a three story media center, as well as providing further building updates to facilitate 21st Century learning modalities.



Ground Floor Plan



First Floor Plan

LEGEND



Additions

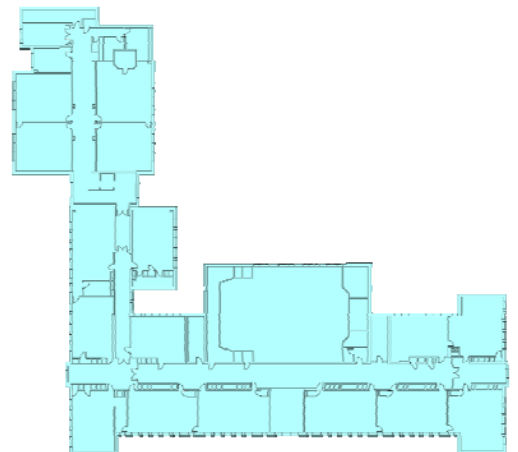
Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.



Option 2 | Advocated Renovations

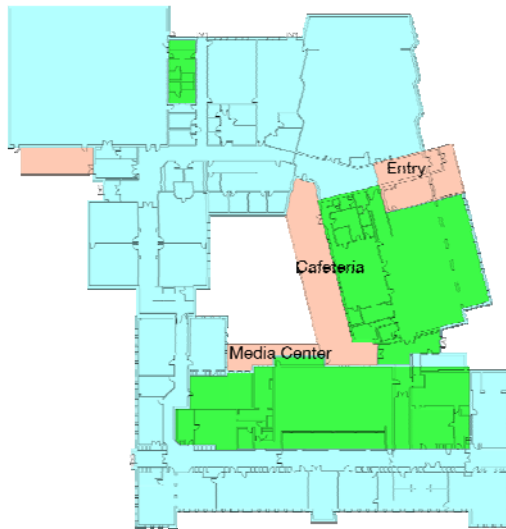
Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.



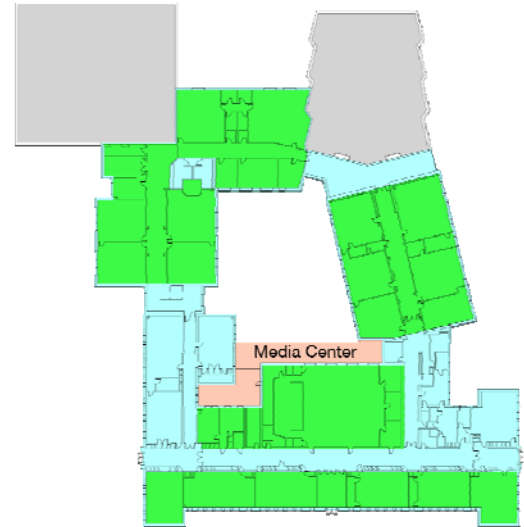
Second Floor Plan

Option 2 | Advocated Renovation
153,660 SF - \$46.3 million

For the **Watertown Middle School** to accommodate 620 students, SMMA proposes remodeling the entryway and providing general facilities renovations. Upper-level renovations to WMS would include expanding the cafeteria and creating a three story media center, as well as providing further building updates to facilitate 21st Century learning modalities.



Ground Floor Plan



First Floor Plan

LEGEND



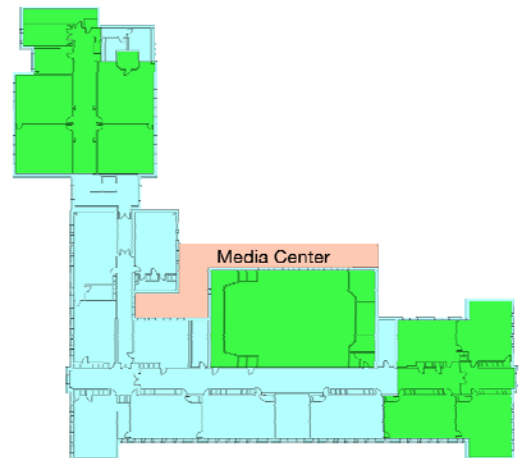
Additions

Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option 2 | Advocated Renovations

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.



Second Floor Plan

Option 3 | New Construction
\$105,520 SF - \$86.7 million

Demolition of existing structure and new construction on existing site. Total square footage assessed by Massachusetts School Building Authority (MSBA) guidelines.

Space Summary

SMMA has worked collaboratively with the School District on space needs, primarily through the Educational Leadership Team, assembled for the purpose of researching, reviewing and recommending the Educational Vision to the Leadership Committee. The ELT included School and Building Committee representatives, Principals and Teachers. The Proposed Space Summaries for the Watertown Master Plan is based on the enrollment projections WPS provided.

The Proposed Space Summary (below) provides an itemization of existing spaces, for each schools. Proposed spaces are tabulated based on an analysis of existing and future programs, scheduling and pro-rated design enrollment. The spaces proposed are MSBA default tabulations required to meet the Educational Program needs for each school.

The total student population for the 2015-16 school year was 543 students.

MSBA Space Summary - Watertown Middle School

Watertown Middle School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
CORE ACADEMIC SPACES	30,959	28,630	-2,329
<i>(List classrooms of different sizes separately)</i>			
Classroom - General	22,646	19,950	850 SF min - 950 SF max
Small Group Seminar (20-30 seats) / Resource	0	1,000	
Science Classroom / Lab	7,375	7,200	1 period / day / student
Prep Room	938	480	
SPECIAL EDUCATION	2,060	7,550	5,490
<i>(List classrooms of different sizes separately)</i>			
Self-Contained SPED	1,753	4,750	assumed 8% of pop. in self-contained SPED
Self-Contained SPED Toilet	0	300	
Resource Room	0	1,500	1/2 size Genl. Clrm.
Small Group Room / Reading	307	1,000	1/2 size Genl. Clrm.
ART & MUSIC	5,428	3,250	-2,178
Art Classroom	0	1,200	assumed use - 50% population 2 times / week
Art Workroom w/ Storage & kiln	2,350	150	
Band / Chorus - 100 seats	2,829	1,500	assumed use - 50% population 2 times / week
Music Practice / Ensemble	249	400	
VOCATIONS & TECHNOLOGY	6,861	6,400	-461
Tech Clrm. - (E.G. Drafting, Business)	1,585	2,400	Assumed use - 25% Population - 5 times/week
Tech Shop - (E.G. Consumer, Wood)	5,276	4,000	Assumed use - 25% Population - 5 times/week
HEALTH & PHYSICAL EDUCATION	15,459	8,400	-7,059
Gymnasium	11,954	6,000	
Gym Storeroom	107	150	
Health Instructor's Office w/ Shower & Toile	311	250	
Locker Rooms - Boys / Girls w/ Toilets	3,087	2,000	
MEDIA CENTER	5,421	3,905	-1,516
Media Center / Reading Room	5,421	3,905	
DINING & FOOD SERVICE	8,552	8,768	216
Cafetorium / Dining	4,444	4,598	2 seatings - 15SF per seat
Stage	1,753	1,600	
Chair / Table / Equipment Storage	418	404	
Kitchen	1,476	1,913	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	461	253	20 SF/Occupant
MEDICAL	308	610	302
Medical Suite Toilet	18	60	
Nurses' Office / Waiting Room	290	250	
Examination Room / Resting	0	300	

MSBA Space Summary - Watertown Middle School

Watertown Middle School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
ADMINISTRATION & GUIDANCE	5,177	3,413	-1,764
General Office / Waiting Room / Toilet	1,793	407	
Teachers' Mail and Time Room	0	100	
Duplicating Room	0	200	
Records Room	0	200	
Principal's Office w/ Conference Area	0	375	
Principal's Secretary / Waiting	0	125	
Assistant Principal's Office - AP1	0	150	
Assistant Principal's Office - AP2	0	150	
Supervisory / Spare Office	100	150	
Conference Room	1,267	350	
Guidance Office	429	600	
Guidance Waiting Room	315	100	
Guidance Storeroom	0	50	
Teachers' Work Room	1,273	457	
CUSTODIAL & MAINTENANCE	4,024	2,088	-1,936
Custodian's Office	656	150	
Custodian's Workshop	0	250	
Custodian's Storage	0	375	
Recycling Room / Trash	0	400	
Receiving and General Supply	0	304	
Storeroom	3,368	409	
Network / Telecom Room	0	200	
OTHER	4,748	0	-4,748
Other (specify)			
Auditorium	4,748		
Total Building Net Floor Area (NFA) ¹	88,997	73,014	-15,983
Proposed Student Capacity / Enrollment		620	
Total Building Gross Floor Area (GFA) ²	138,591	105,278	-33,313
Grossing factor (GFA/NFA)	1.56	1.44	

¹ Individual Room Net Floor Area (NFA)

² Total Building Gross Floor Area (GFA)

3.5 Watertown High School

Existing Building Evaluations

The three-story plus partial basement high school is classified as a low-rise building in accordance with the Massachusetts State Building Code (MSBC). The building is 165,000 GSF with a primary occupancy type of the building is Group E, Educational. The original 1929 structure along with 1979 addition results in a mixed construction type classification, where a MSBC designation of 3B necessitated given the wood floor framing.

The building is equipped with a fire alarm system with ADA compliant strobes in most public spaces. The fire alarm system reports directly to the local Fire Department via master box connection. The system is not monitored by a central station. Visual and audible appliances are provided in common corridors and large assembly areas. Smoke detection is provided throughout the building. The building is partially sprinklered in the 1979 addition.

The building is served by as many as 6 exit stairways and exit doorways that discharge directly to grade. The Side A (main) and Side D entrances are accessible to the disabled. An elevator provides an accessible route to all main floor levels. A lift provides an accessible route to the stage. The main lobby is served by a three-story, unenclosed monumental stairway. Though this likely was permitted at the time of construction, any renovations that occur in close proximity to this feature may necessitate partial enclosure, as to limit the designation as an atrium.



High School - Existing Site Plan

Previous Additions, Renovations, and Major Maintenance

1950's: Two-story program space addition to the northeast building corner plus one story addition at southeast corner.

1979: Program space addition at the south elevation (enclose the courtyard) plus auto shop at the northeast corner.

2004: Cafeteria addition and entire building low-sloped roof replacement.

Wall System:

All Building Areas: Clay brick mass masonry throughout with decorative precast concrete, cast stone, and coated terra-cotta accents at original 1929 structure only.

Window System

All Building Areas: Punched windows are aluminum framed, hung windows with single-pane glass.

1979 Addition features aluminum curtain wall frames with insulating glass units (IGUs).

Door System

All Building Areas: Main door at the 1979 Addition is set into the curtain wall system. Other doors are hollow or insulated metal.

Roof System

All Building Areas: Sarnafil PVC membrane typical at low-sloped areas and standing seam metal at steep sloped areas.

General Building Performance

Reports of Building Enclosure Leakage/Distress:

Localized areas of interior peeling paint, generally associated with failing mortar joints on the exterior and most severe along the parking lot (east) elevation; Watertown Public Schools (WPS) reportedly repoints failing joints on an ongoing basis to address leakage. Water leakage reportedly occurs at louvers and is dependent on wind direction during the storm. No reported leakage associated with the roofing system since its installation in 2004.

Overall Building Envelope Condition/Major Concerns:

Exterior walls are in fair condition with notable areas of distress (efflorescence, cracking, mortar spalls at lintel ends) that should be repaired in the near to mid-term to avoid more significant deterioration. Windows are significantly worn with failing seals and replacement or significant short-term repairs (e.g. wet-sealing) should be anticipated in the next several years. Roofing membrane and steep sloped metal roofing generally appear to be in good condition with only typical maintenance necessary.



High School - Existing Massing

High School Program Plans:

These plans illustrate the types of spaces currently in use by a given school program and offering a quick visual tool to understand how well a program is fitting within its assigned building.



Ground Floor Plan



First Floor Plan
















Second Floor Plan



Third Floor Plan

PROGRAM PLAN LEGEND

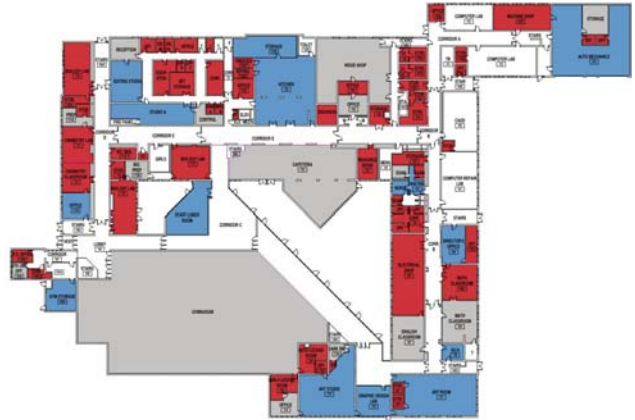
- | | |
|--|--|
|  ADMINISTRATION / GUIDANCE / STUDENT SERVICES / NURSE |  KITCHEN / SERVERY |
|  ART & MUSIC |  MEDIA CENTER |
|  AUDITORIUM / PERFORMING ARTS & DRAMA |  PHYSICAL EDUCATION & SPORT SUPPORT |
|  BUILDING EQUIPMENT |  SPECIAL EDUCATION |
|  CAFETERIA & CIRCULATION |  TEACHER PLANNING & SUPPORT |
|  CLASSROOM & GENERAL EDUCATION SUPPORT |  VERTICAL CIRCULATION |
|  CUSTODIAL / MAINTENANCE / STORAGE | |

High School Deficiency Plans:

These plans illustrate where programs fall severely short (or greatly exceed) standards as established by the MSBA. The plan analysis includes adjacency or location inadequacies and spaces least likely supported by the MSBA grant program.



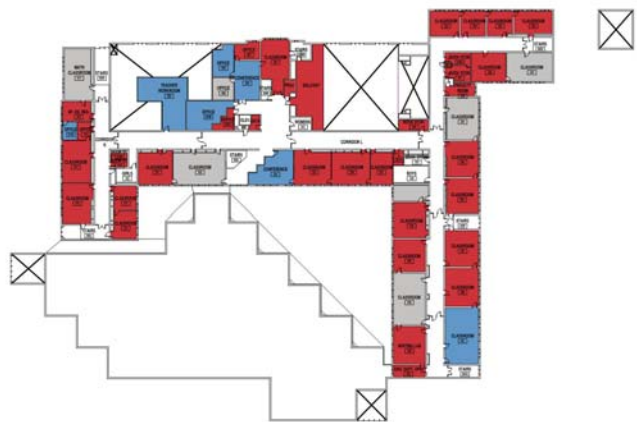
Ground Floor Plan



First Floor Plan






Second Floor Plan



Third Floor Plan

MSBA DEFICIENCY PLAN

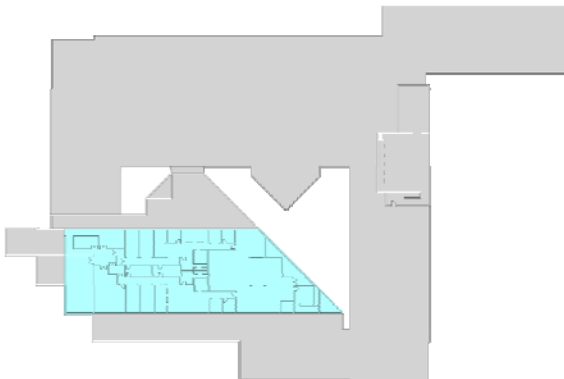
-  NSF 10% GREATER THAN MSBA GUIDELINES
-  NSF AT LEAST 20% LESS THAN MSBA GUIDELINES
-  NSF MEETS MSBA GUIDELINES (-20% TO +10%)

High School Master Plan Options

Option 1 | Essential Renovation

193,280 SF - \$44.9 million

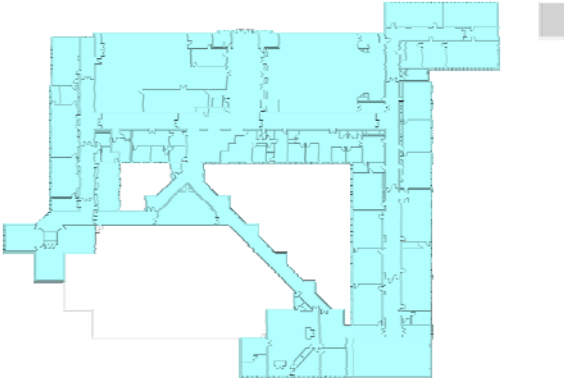
For the **Watertown High School** to accommodate 770 students, SMMA proposes general interior facilities renovations with upper-level renovations providing further building updates to facilitate 21st Century learning modalities.



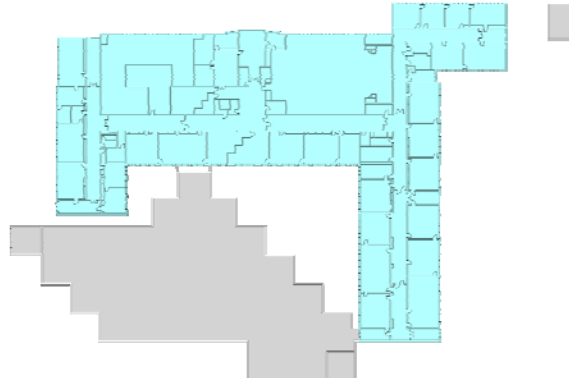
Ground Floor Plan



First Floor Plan



Second Floor Plan



Third Floor Plan

LEGEND



Additions

Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.



Option 2 | Advocated Renovations

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.

Option 2 | Advocated Renovation

193,280 SF - \$53.4 million

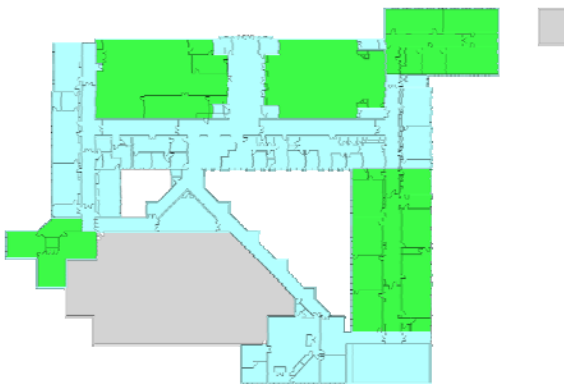
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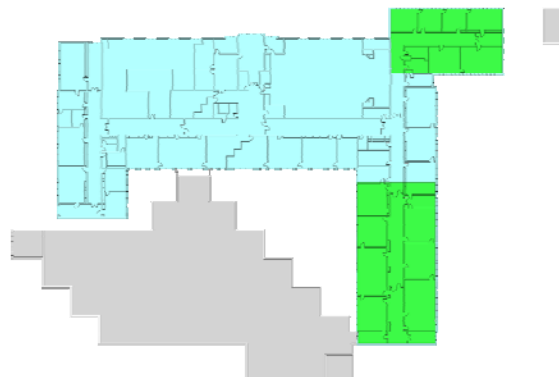
Ground Floor Plan



First Floor Plan



Second Floor Plan



Third Floor Plan

LEGEND



Additions

Option 1 | Essential Renovations

Essential Renovations of the schools interiors and addition(s) to accommodate a growing student population and/or populace adjustments due to redistricting. The essential renovation would also include selected window replacements, roof replacements, and improvements to building security, advanced internet connectivity with technology support, and upgrades to lighting, finishes and furniture.

Option 2 | Advocated Renovations

Advocated Renovations would include the essential renovations with the supplement of additional modernizations that reconfigure the physical interior environment to facilitate contemporary methods of teaching and learning.

Option 3 | New Construction
\$161,140 SF - \$131.5 million

Demolition of existing structure and new construction on existing site. Total square footage assessed by Massachusetts School Building Authority (MSBA) guidelines.

Space Summary

SMMA has worked collaboratively with the School District on space needs, primarily through the Educational Leadership Team, assembled for the purpose of researching, reviewing and recommending the Educational Vision to the Leadership Committee. The ELT included School and Building Committee representatives, Principals and Teachers. The Proposed Space Summaries for the Watertown Master Plan is based on the enrollment projections WPS provided.

The Proposed Space Summary (below) provides an itemization of existing spaces, for each schools. Proposed spaces are tabulated based on an analysis of existing and future programs, scheduling and pro-rated design enrollment. The spaces proposed are MSBA default tabulations required to meet the Educational Program needs for each school.

The total student population for the 2015-16 school year was 700 students.

MSBA Space Summary - Watertown High School

Watertown High School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
CORE ACADEMIC SPACES	35,924	38,330	2,406
<i>(List classrooms of different sizes separately)</i>			
Classroom - General	29,016	22,950	825 SF min - 950 SF max
Teacher Planning	0	2,700	
Small Group Seminar (20-30 seats)	0	1,000	
Science Classroom / Lab	6,484	10,080	3 x85% ut=20 Seats-1 per /day/student
Prep Room	424	1,400	
Central Chemical Storage Rm	0	200	
SPECIAL EDUCATION	1,823	9,060	7,237
<i>(List classrooms of different sizes separately)</i>			
Self-Contained SPED	0	5,700	assumed 8% of pop. in self-contained SPED
Self-Contained SPED Toilet	0	360	
Resource Room	1,823	1,500	1/2 size Genl. Clrm.
Small Group Room	0	1,500	1/2 size Genl. Clrm.
ART & MUSIC	7,998	6,625	-1,373
Art Classroom - 25 seats	0	2,400	Assumed use - 25% Population - 5 times/week
Art Workroom w/ Storage & kiln	5,581	300	
Band - 50 - 100 seats	1,615	1,500	Assumed use - 25% Population - 5 times/week
Chorus - 50 - 100 seats	0	1,500	
Ensemble	0	200	
Music Practice	330	225	
Music Storage	472	500	
VOCATIONS & TECHNOLOGY	6,414	6,400	-14
Tech Clrm. - (E.G. Drafting, Business)	0	2,400	Assumed use - 50% Population - 5 times/week
Tech Shop - (E.G. Consumer, Wood)	6,414	4,000	Assumed use - 50% Population - 5 times/week
HEALTH & PHYSICAL EDUCATION	17,666	20,518	2,852
Gymnasium	13,045	12,000	
PE Alternatives	0	3,000	
Gym Storeroom	917	300	
Locker Rooms - Boys / Girls w/ Toilets	2,862	4,318	5.6 sf/student total
Phys. Ed. Storage	0	500	
Athletic Director's Office	120	150	
Health Instructor's Office w/ Shower & Toilet	722	250	
MEDIA CENTER	8,851	4,719	-4,132
Media Center / Reading Room	4,300	4,719	
Computer Lab	4,551		
AUDITORIUM / DRAMA	6,575	7,983	1,408
Auditorium	5,324	5,140	2/3 Enrollment @ 10 SF/Seat - 750 seats MAX
Stage	875	1,600	
Auditorium Storage	0	443	
Make-up / Dressing Rooms	0	600	
Controls / Lighting / Projection	376	200	
DINING & FOOD SERVICE	6,778	7,312	14,090
Cafeteria / Student Lounge / Break-out	3,231	3,855	3 seatings - 15SF per seat
Chair / Table Storage	0	343	
Scramble Serving Area	0	600	
Kitchen	2,483	2,071	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	1,064	443	20 SF/Occupant
MEDICAL	485	810	325
Medical Suite Toilet	0	60	
Nurses' Office / Waiting Room	263	250	
Interview Room	0	100	
Examination Room / Resting	222	400	

MSBA Space Summary - Watertown High School

Watertown High School	Existing Conditions	MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)	
ROOM TYPE	area totals	area totals	Comments
ADMINISTRATION & GUIDANCE	12,193	3,755	-8,438
General Office / Waiting Room / Toilet	7,284	386	
Teachers' Mail and Time Room	0	100	
Duplicating Room	0	200	
Records Room	0	200	
Principal's Office w/ Conference Area	248	375	
Principal's Secretary / Waiting	489	125	
Assistant Principal's Office - AP1	0	150	
Assistant Principal's Office - AP2	0	-	
Supervisory / Spare Office	0	120	
Conference Room	2,075	450	
Guidance Office	399	600	
Guidance Waiting Room	603	100	
Guidance Storeroom	0	100	
Career Center	0	343	
Records Room	0	121	
Teachers' Work Room	959	386	
Sp. Ed. Office	136	-	
CUSTODIAL & MAINTENANCE	8,634	2,203	-6,431
Custodian's Office	164	150	
Custodian's Workshop	0	250	
Custodian's Storage	0	375	
Recycling Room / Trash	0	400	
Receiving and General Supply	313	343	
Storeroom	7,790	486	
Network / Telecom Room	367	200	
OTHER	0	0	0
Other (specify)	0		
Total Building Net Floor Area (NFA)¹	113,341	107,714	-5,627
Proposed Student Capacity / Enrollment		770	209
Total Building Gross Floor Area (GFA)²	192,270	161,139	-31,131
Grossing factor (GFA/NFA)	1.70	1.50	

¹ Individual Room Net Floor Area (NFA)

² Total Building Gross Floor Area (GFA)

SECTION FOUR Cost Analysis

4.0 General definition of construction and project cost.

1. CONSTRUCTION COSTS

Costs associated with the foundation and the building itself.

- HVAC
- Plumbing
- Walls
- Windows
- Lumber
- Hardware (bolts, nails, screws)
- Concrete
- Wiring
- etc

2. PROJECT COSTS

Costs associated with financing, permitting, regulatory fees, furnishings, etc.

- **Land Acquisition:** Purchase Price, Financing, Legal fees, titling & documents fees; all costs associated with obtaining the land on which the building will be constructed
- **Site Planning:** Soils Reports, Environmental Studies, transportation studies and surveying for utilities, easements, and topography. It also includes regulatory agency review fees where applicable for the pertinent federal, state, county, and/or city agencies that have jurisdiction over the site design.
- **Professional Fees:** Architect and Civil, Structural, Electrical, Mechanical, Engineers, as well as Landscape Architect, Interior Designer, and other specialty consultants depending on the size and complexity of the project.
- **Fixtures & Furnishings / Equipment:** Tables, chairs, and anything that is not built-in or included with the actual construction. This may also include systems that are being installed by others not included in the building construction such as sound systems, communications and wi-fi technology systems, security systems. Window shades are an item that is often overlooked.
- **Other:** Some projects may require additional legal or special accounting professional, fund raising or grant writing consultants and those fees should also be addressed.

4.1 Master Plan Costs

<i>Watertown School Assessment – Option 1</i>						
		Cunniff Elementary	J R Lowell Elementary	Hosmer Elementary	Watertown Middle	Watertown High
OPTION NO. 1						
RENOVATION		\$6,216,000	\$8,618,400	\$14,408,400	\$17,257,200	\$23,193,600
ADDITION		\$7,425,000	\$6,003,360	\$1,900,800	\$982,080	
	TOTAL DIRECT COST	\$13,641,000	\$14,621,760	\$16,309,200	\$18,239,280	\$23,193,600
GENERAL CONDITIONS	8%	\$1,091,280	\$1,169,741	\$1,304,736	\$1,459,142	\$1,855,488
OVERHEAD & PROFIT	5%	\$736,614	\$789,575	\$880,697	\$984,921	\$1,252,454
BOND AND INSURANCE	2%	\$309,378	\$331,622	\$369,893	\$413,667	\$526,031
DESIGN CONTINGENCY	15%	\$2,366,741	\$2,536,905	\$2,829,679	\$3,164,552	\$4,024,136
CM CONTINGENCY	3%	\$544,350	\$583,488	\$650,826	\$727,847	\$925,551
ESCALATION (WINTER 2018)	6%	\$1,121,362	\$1,201,985	\$1,340,702	\$1,499,365	\$1,906,636
	TOTAL CONSTRUCTION COST	\$19,810,725	\$21,235,075	\$23,685,732	\$23,685,732	\$33,683,896
	TOTAL PROJECT COST	\$26,500,000	\$28,300,000	\$29,900,000	\$35,300,000	\$44,900,000
	SQUARE FOOTAGE	70,550	86,980	124,870	146,290	193,280
	COST PER S.F.	\$280.80	\$244.14	\$189.68	\$181.07	\$174.28

<i>Watertown School Assessment – Option 2</i>						
		Cunniff Elementary	J R Lowell Elementary	Hosmer Elementary	Watertown Middle	Watertown High
OPTION NO. 2 (Option No. 2.1 Hosmer)						
RENOVATION		\$7,963,800	\$10,509,450	\$13,563,390	\$19,993,200	\$27,621,690
ADDITION		\$7,425,000	\$6,498,360	\$7,453,512	\$3,900,600	
	TOTAL DIRECT COST	\$15,388,800	\$17,007,810	\$21,016,902	\$23,893,800	\$27,621,690
GENERAL CONDITIONS	8%	\$1,231,104	\$1,360,625	\$1,681,352	\$1,911,504	\$2,209,735
OVERHEAD & PROFIT	5%	\$918,422	\$918,422	\$1,134,913	\$1,290,265	\$1,491,571
BOND AND INSURANCE	2%	\$385,737	\$385,737	\$476,663	\$541,911	\$626,460
DESIGN CONTINGENCY	15%	\$2,950,889	\$2,950,889	\$3,646,475	\$4,145,622	\$4,792,418
CM CONTINGENCY	3%	\$614,097	\$678,704	\$838,689	\$953,493	\$1,102,256
ESCALATION (WINTER 2018)	6%	\$1,265,040	\$1,398,131	\$1,727,700	\$1,964,196	\$2,270,648
	TOTAL CONSTRUCTION COST	\$22,349,042	\$24,700,318	\$30,522,694	\$34,700,791	\$40,114,779
	SQUARE FOOTAGE	70,910	88,740	143,700	153,660	193,280
	COST PER S.F.	\$315.17	\$278.34	\$254.98	\$225.83	\$207.55
	TOTAL PROJECT COST	\$29,800,000	\$33,000,000	\$40,700,000	\$46,300,000	\$53,400,000

Watertown School Assessment – Option 2.2

Hosmer Elementary

**OPTION NO. 2.2
(Hosmer ONLY)**

RENOVATION			\$9,748,350
ADDITION			\$18,362,520
TOTAL DIRECT COST			\$28,110,870
GENERAL CONDITIONS	8%		\$2,248,870
OVERHEAD & PROFIT	5%		\$1,517,987
BOND AND INSURANCE	2%		\$637,555
DESIGN CONTINGENCY	15%		\$4,877,292
CM CONTINGENCY	3%		\$1,121,777
ESCALATION (WINTER 2018)	6%		\$2,310,861
TOTAL CONSTRUCTION COST			\$40,825,212
SQUARE FOOTAGE			175,870
COST PER S.F.			\$352.34
TOTAL PROJECT COST			\$54,400,000

Watertown School Assessment – Option 3

		Cunniff Elementary	J R Lowell Elementary	Hosmer Elementary	Watertown Middle	Watertown High	New Preschool
OPTION NO. 3							
NEW CONSTRUCTION		\$28,598,350	\$31,337,680	\$36,630,605	\$44,739,145	\$67,886,830	\$24,090,000
TOTAL DIRECT COST		\$28,598,350	\$31,337,680	\$36,630,605	\$44,739,145	\$67,886,830	\$24,090,000
GENERAL CONDITIONS	8%	\$2,287,868	\$2,507,014	\$2,930,448	\$3,579,132	\$5,430,946	\$1,927,200
OVERHEAD & PROFIT	5%	\$1,544,311	\$1,692,235	\$1,978,053	\$2,415,914	\$3,665,889	\$1,300,860
BOND AND INSURANCE	2%	\$648,611	\$710,739	\$830,782	\$1,014,684	\$1,539,673	\$546,361
DESIGN CONTINGENCY	15%	\$4,961,871	\$5,437,150	\$6,355,483	\$7,762,331	\$11,778,501	\$4,179,663
CM CONTINGENCY	3%	\$1,141,230	\$1,250,545	\$1,461,761	\$1,785,336	\$2,709,055	\$961,323
ESCALATION (WINTER 2018)	6%	\$2,350,934	\$2,576,122	\$3,011,228	\$3,677,792	\$5,580,654	\$1,980,324
TOTAL CONSTRUCTION COST		\$41,533,175	\$45,511,484	\$53,198,361	\$64,974,334	\$98,591,548	\$34,985,731
SQUARE FOOTAGE		69,100	75,108	146,300	105,520	161,140	60,000
COST PER S.F.		\$739.68	\$658.35	\$543.56	\$615.75	\$611.84	\$583.10
TOTAL PROJECT COST		\$55,400,000	\$60,700,000	\$71,000,000	\$86,700,000	\$131,500,000	\$46,700,000

SECTION FIVE
Appendix

- 1) A.M. Fogarty Cost Assessment
- 2) NESDEC Enrollment Projections
- 3) DecisionInsite Enrollment Forecast
- 4) Oudens Ello School Facilities Assessment Report

Watertown School Assessment
Watertown, MA
 August 16, 2016

		<u>CUNNIFF</u>	<u>HOSMER</u>	<u>J R LOWELL</u>	<u>WATERTOWN</u>	<u>WATERTOWN</u>
		<u>ELEM</u>	<u>ELEM</u>	<u>ELEM</u>	<u>MIDDLE</u>	<u>HIGH</u>
OPTION NO. 1						
RENOVATION		\$6,216,000	\$14,408,400	\$8,618,400	\$17,257,200	\$23,193,600
ADDITION		\$7,425,000	\$1,900,800	\$6,003,360	\$982,080	
TOTAL DIRECT COST		\$13,641,000	\$16,309,200	\$14,621,760	\$18,239,280	\$23,193,600
GENERAL CONDITIONS	8%	\$1,091,280	\$1,304,736	\$1,169,741	\$1,459,142	\$1,855,488
OVERHEAD & PROFIT	5%	\$736,614	\$880,697	\$789,575	\$984,921	\$1,252,454
BOND AND INSURANCE	2%	\$309,378	\$369,893	\$331,622	\$413,667	\$526,031
DESIGN CONTINGENCY	15%	\$2,366,741	\$2,829,679	\$2,536,905	\$3,164,552	\$4,024,136
CM CONTINGENCY	3%	\$544,350	\$650,826	\$583,488	\$727,847	\$925,551
ESCALATION (WINTER 2018)	6%	\$1,121,362	\$1,340,702	\$1,201,985	\$1,499,365	\$1,906,636
TOTAL CONSTRUCTION COST		\$19,810,725	\$23,685,732	\$21,235,075	\$26,488,773	\$33,683,896
SQUARE FOOTAGE		70,550	124,870	86,980	146,290	193,280
COST PER S.F.		\$280.80	\$189.68	\$244.14	\$181.07	\$174.28

		<u>CUNNIFF</u>	<u>HOSMER</u>	<u>J R LOWELL</u>	<u>WATERTOWN</u>	<u>WATERTOWN</u>
		<u>ELEM</u>	<u>ELEM</u>	<u>ELEM</u>	<u>MIDDLE</u>	<u>HIGH</u>
OPTION NO. 2						
RENOVATION		\$7,963,800	\$13,563,390	\$10,509,450	\$19,993,200	\$27,621,690
ADDITION		\$7,425,000	\$7,453,512	\$6,498,360	\$3,900,600	
TOTAL DIRECT COST		\$15,388,800	\$21,016,902	\$17,007,810	\$23,893,800	\$27,621,690
GENERAL CONDITIONS	8%	\$1,231,104	\$1,681,352	\$1,360,625	\$1,911,504	\$2,209,735
OVERHEAD & PROFIT	5%	\$830,995	\$1,134,913	\$918,422	\$1,290,265	\$1,491,571
BOND AND INSURANCE	2%	\$349,018	\$476,663	\$385,737	\$541,911	\$626,460
DESIGN CONTINGENCY	15%	\$2,669,988	\$3,646,475	\$2,950,889	\$4,145,622	\$4,792,418
CM CONTINGENCY	3%	\$614,097	\$838,689	\$678,704	\$953,493	\$1,102,256
ESCALATION (WINTER 2018)	6%	\$1,265,040	\$1,727,700	\$1,398,131	\$1,964,196	\$2,270,648
TOTAL CONSTRUCTION COST		\$22,349,042	\$30,522,694	\$24,700,318	\$34,700,791	\$40,114,779
SQUARE FOOTAGE		70,910	119,706	88,740	153,660	193,280
COST PER S.F.		\$315.17	\$254.98	\$278.34	\$225.83	\$207.55

		<u>CUNNIFF</u>	<u>HOSMER</u>	<u>J R LOWELL</u>	<u>WATERTOWN</u>	<u>WATERTOWN</u>
		<u>ELEM</u>	<u>ELEM</u>	<u>ELEM</u>	<u>MIDDLE</u>	<u>HIGH</u>
OPTION NO. 3						
RENOVATION			\$9,748,350			
ADDITION			\$18,362,520			
TOTAL DIRECT COST		\$0	\$28,110,870	\$0	\$0	\$0
GENERAL CONDITIONS	8%	\$0	\$2,248,870	\$0	\$0	\$0
OVERHEAD & PROFIT	5%	\$0	\$1,517,987	\$0	\$0	\$0
BOND AND INSURANCE	2%	\$0	\$637,555	\$0	\$0	\$0
DESIGN CONTINGENCY	15%	\$0	\$4,877,292	\$0	\$0	\$0
CM CONTINGENCY	3%	\$0	\$1,121,777	\$0	\$0	\$0
ESCALATION (WINTER 2018)	6%	\$0	\$2,310,861	\$0	\$0	\$0
TOTAL CONSTRUCTION COST		\$0	\$40,825,212	\$0	\$0	\$0
SQUARE FOOTAGE		70,550	115,870	86,980	146,290	193,280
COST PER S.F.		\$0.00	\$352.34	\$0.00	\$0.00	\$0.00

		<u>CUNNIFF</u>	<u>HOSMER</u>	<u>J R LOWELL</u>	<u>WATERTOWN</u>	<u>WATERTOWN</u>	<u>NEW</u>
		<u>ELEM</u>	<u>ELEM</u>	<u>ELEM</u>	<u>MIDDLE</u>	<u>HIGH</u>	<u>PRESCHOOL</u>
OPTION NO. 4							
NEW CONSTRUCTION		\$28,598,350	\$36,630,605	\$31,337,680	\$44,739,145	\$67,886,830	\$24,090,000
TOTAL DIRECT COST		\$28,598,350	\$36,630,605	\$31,337,680	\$44,739,145	\$67,886,830	\$24,090,000
GENERAL CONDITIONS	8%	\$2,287,868	\$2,930,448	\$2,507,014	\$3,579,132	\$5,430,946	\$1,927,200
OVERHEAD & PROFIT	5%	\$1,544,311	\$1,978,053	\$1,692,235	\$2,415,914	\$3,665,889	\$1,300,860
BOND AND INSURANCE	2%	\$648,611	\$830,782	\$710,739	\$1,014,684	\$1,539,673	\$546,361
DESIGN CONTINGENCY	15%	\$4,961,871	\$6,355,483	\$5,437,150	\$7,762,331	\$11,778,501	\$4,179,663
CM CONTINGENCY	3%	\$1,141,230	\$1,461,761	\$1,250,545	\$1,785,336	\$2,709,055	\$961,323
ESCALATION (WINTER 2018)	6%	\$2,350,934	\$3,011,228	\$2,576,122	\$3,677,792	\$5,580,654	\$1,980,324
TOTAL CONSTRUCTION COST		\$41,533,175	\$53,198,361	\$45,511,484	\$64,974,334	\$98,591,548	\$34,985,731
SQUARE FOOTAGE		56,150	97,870	69,130	105,520	161,140	60,000
COST PER S.F.		\$739.68	\$543.56	\$658.35	\$615.75	\$611.84	\$583.10



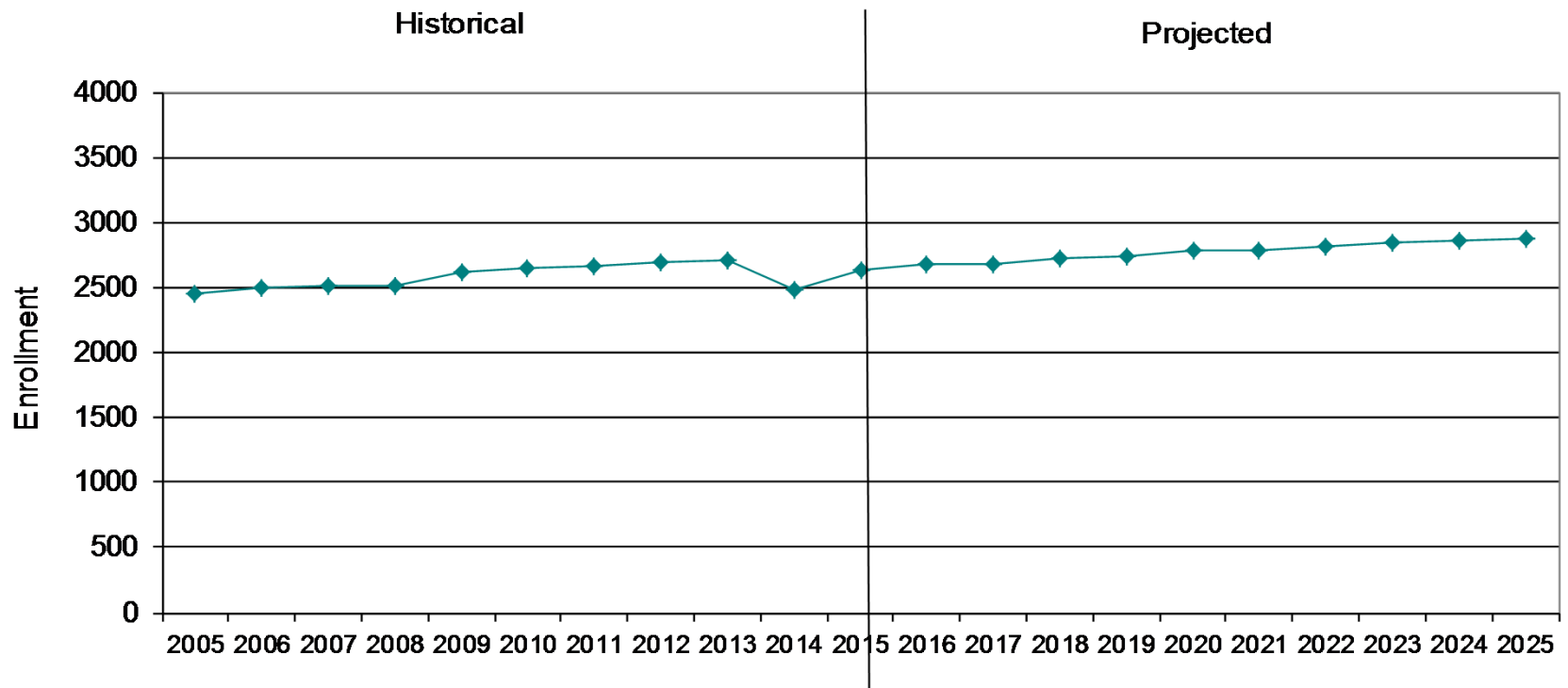
WATERTOWN, MASSACHUSETTS Enrollment Projections

John H. Kennedy, M.A.,

January 5, 2016

Watertown, MA Historical & Projected Enrollment

PK-12, 2005-2025



Watertown, MA Historical Enrollment

School District: **Watertown, MA**

10/26/2015

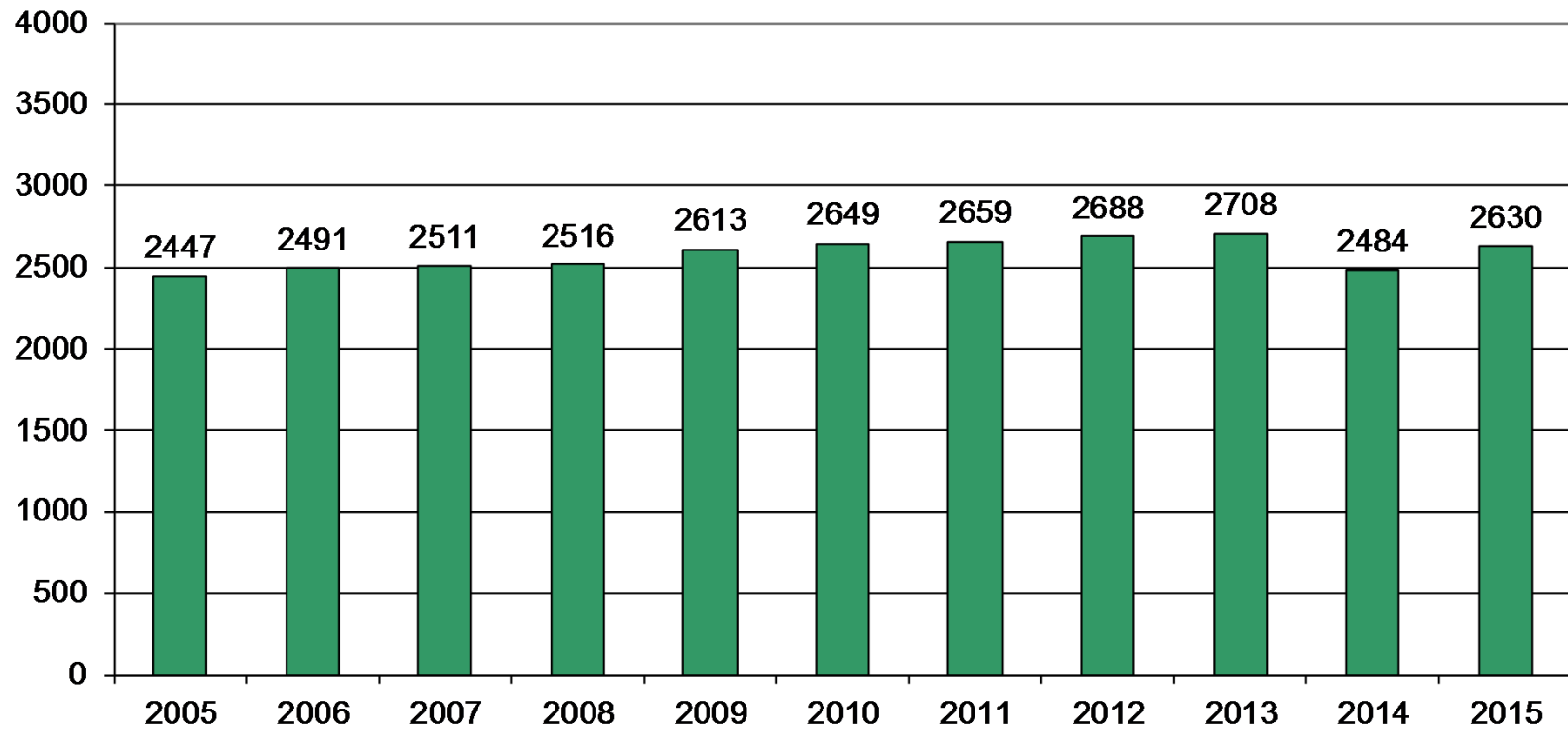
Historical Enrollment By Grade																			
Birth Year	Births	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2000	388	2005-06	70	195	189	189	176	188	185	174	176	203	141	199	202	160	0	2377	2447
2001	340	2006-07	86	199	186	178	198	177	184	187	183	175	189	136	212	201	0	2405	2491
2002	363	2007-08	149	192	184	181	178	190	174	189	188	180	176	178	148	204	0	2362	2511
2003	414	2008-09	130	245	186	183	176	171	192	183	186	188	173	167	191	145	0	2386	2516
2004	335	2009-10	155	187	242	182	182	188	169	196	190	194	200	175	172	181	0	2458	2613
2005	392	2010-11	141	226	182	230	177	184	197	184	202	193	194	196	178	165	0	2508	2649
2006	403	2011-12	133	233	229	175	222	172	184	193	174	197	187	198	191	171	0	2526	2659
2007	403	2012-13	145	251	221	208	177	226	170	187	186	171	182	191	194	179	0	2543	2688
2008	465	2013-14	139	237	237	210	208	178	223	167	191	183	178	176	191	190	0	2569	2708
2009	445	2014-15	53	223	199	207	184	191	163	221	165	185	160	171	173	189	0	2431	2484
2010	477	2015-16	156	214	231	207	202	189	194	165	212	165	181	164	178	168	4	2474	2630

Historical Enrollment in Grade Combinations									
Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2005-06	1192	1122	1296	1675	738	553	379	1081	702
2006-07	1208	1122	1309	1667	729	545	358	1096	738
2007-08	1248	1099	1288	1656	731	557	368	1074	706
2008-09	1283	1153	1336	1710	749	557	374	1050	676
2009-10	1305	1150	1346	1730	749	580	384	1112	728
2010-11	1337	1196	1380	1775	776	579	395	1128	733
2011-12	1348	1215	1408	1779	748	564	371	1118	747
2012-13	1398	1253	1440	1797	714	544	357	1103	746
2013-14	1432	1293	1460	1834	764	541	374	1109	735
2014-15	1220	1167	1388	1738	734	571	350	1043	693
2015-16	1393	1237	1402	1779	736	542	377	1068	691

Historical Percentage Changes			
Year	K-12	Diff.	%
2005-06	2377	0	0.0%
2006-07	2405	28	1.2%
2007-08	2362	-43	-1.8%
2008-09	2386	24	1.0%
2009-10	2458	72	3.0%
2010-11	2508	50	2.0%
2011-12	2526	18	0.7%
2012-13	2543	17	0.7%
2013-14	2569	26	1.0%
2014-15	2431	-138	-5.4%
2015-16	2474	43	1.8%
Change		97	4.1%

Watertown, MA Historical Enrollment

PK-12, 2005-2015



Watertown, MA Projected Enrollment

School District: **Watertown, MA**

10/26/2015

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
2010	477		2015-16	156	214	231	207	202	189	194	165	212	165	181	164	178	168	4	2474	2630
2011	511		2016-17	157	266	201	221	199	201	184	193	163	209	159	178	165	174	4	2517	2674
2012	465		2017-18	158	242	250	192	212	198	196	183	191	160	202	156	179	162	4	2527	2685
2013	494		2018-19	159	257	227	239	184	211	193	195	181	188	154	199	157	175	4	2564	2723
2014	478	(est.)	2019-20	160	249	242	217	229	183	205	192	193	178	181	152	201	154	4	2580	2740
2015	485	(est.)	2020-21	161	253	234	231	208	228	178	204	190	190	172	178	153	197	4	2620	2781
2016	487	(est.)	2021-22	162	253	238	223	222	207	222	177	202	187	183	169	179	150	4	2616	2778
2017	482	(est.)	2022-23	163	251	238	227	214	221	201	221	175	199	180	180	170	175	4	2656	2819
2018	485	(est.)	2023-24	164	253	236	227	218	213	215	200	219	172	192	177	181	167	4	2674	2838
2019	483	(est.)	2024-25	165	252	238	225	218	217	207	214	198	216	166	189	178	177	4	2699	2864
2020	484	(est.)	2025-26	166	252	237	227	216	217	211	206	212	195	208	163	191	174	4	2713	2879

*Projections should be updated on an annual basis.

Based on an estimate of births

Based on children already born

Based on students already enrolled

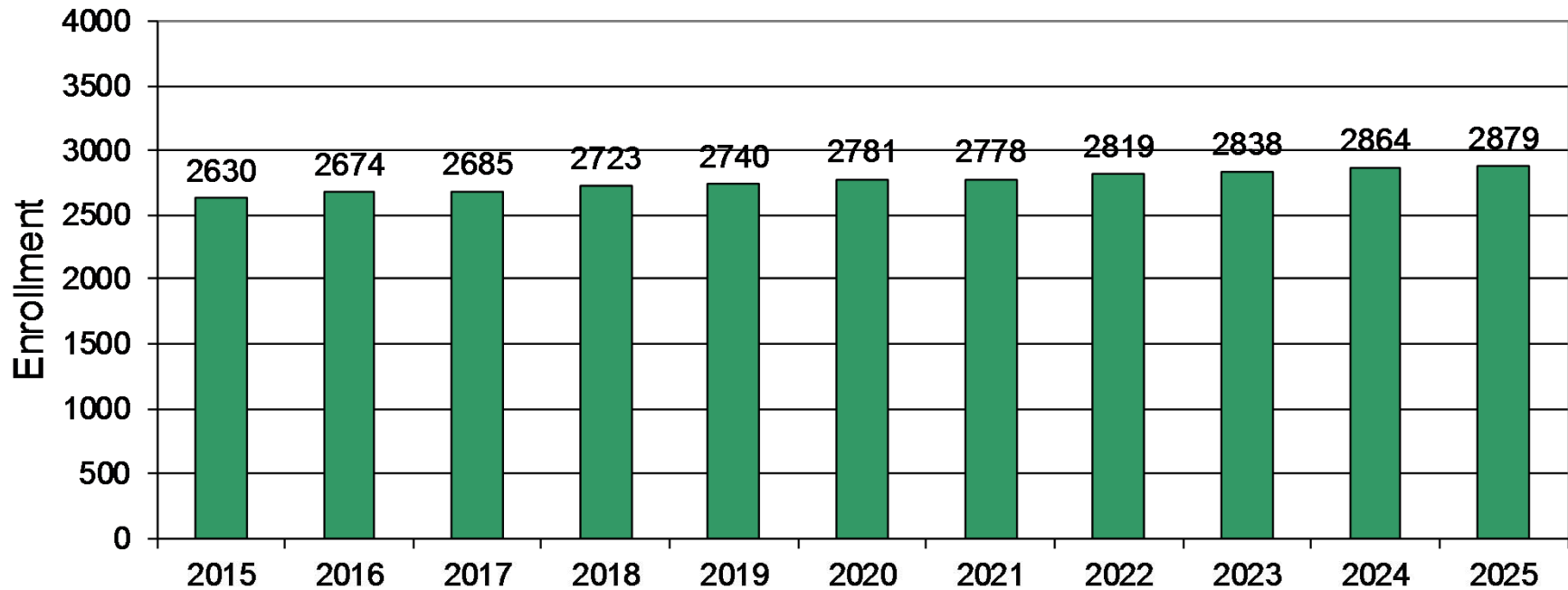
Projected Enrollment in Grade Combinations*									
Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2015-16	1393	1237	1402	1779	736	542	377	1068	691
2016-17	1429	1272	1465	1837	749	565	372	1048	676
2017-18	1448	1290	1473	1824	730	534	351	1050	699
2018-19	1470	1311	1506	1875	757	564	369	1054	685
2019-20	1485	1325	1517	1888	768	563	371	1059	688
2020-21	1493	1332	1536	1916	762	584	380	1080	700
2021-22	1527	1365	1542	1931	788	566	389	1070	681
2022-23	1515	1352	1573	1947	796	595	374	1079	705
2023-24	1526	1362	1562	1953	806	591	391	1108	717
2024-25	1522	1357	1571	1985	835	628	414	1124	710
2025-26	1526	1360	1566	1973	824	613	407	1143	736

Projected Percentage Changes			
Year	K-12	Diff.	%
2015-16	2474	0	0.0%
2016-17	2517	43	1.7%
2017-18	2527	10	0.4%
2018-19	2564	37	1.5%
2019-20	2580	16	0.6%
2020-21	2620	40	1.6%
2021-22	2616	-4	-0.2%
2022-23	2656	40	1.5%
2023-24	2674	18	0.7%
2024-25	2699	25	0.9%
2025-26	2713	14	0.5%
Change	239		9.7%

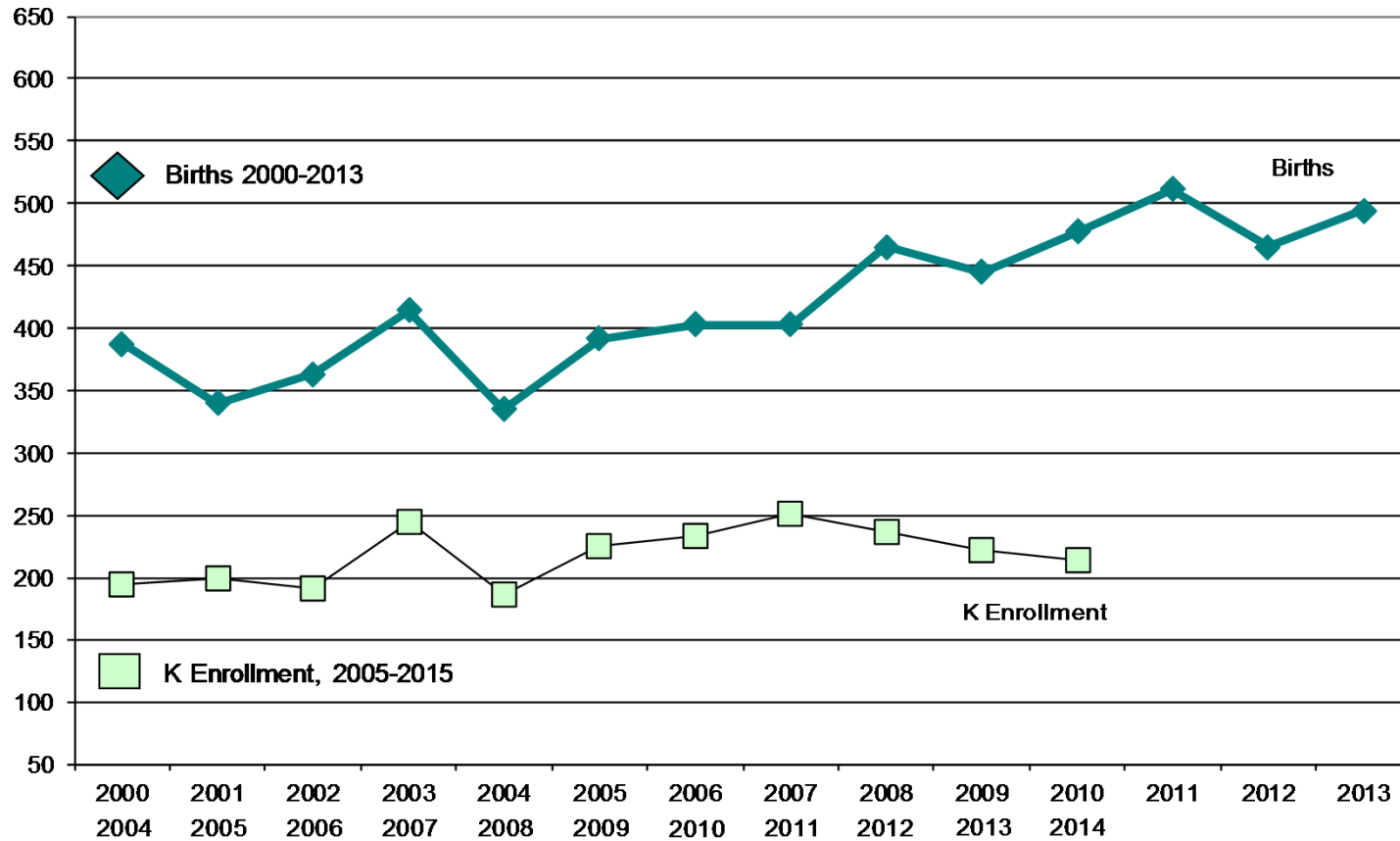
See "Reliability of Enrollment Projections" section of accompanying letter.
Projections are more reliable for Years #1-5 in the future than for Years #6 and beyond.

Watertown, MA Projected Enrollment

PK-12 TO 2025 Based On Data Through School Year 2015-16



Watertown, MA Birth-to-Kindergarten Relationship



Watertown, MA Additional Data

Building Permits Issued		
Year	Single-Family	Multi-Units
2005	7	27
2011	0	220
2012	2	12
2013	7	461
2014	2	11
2015	1 to Oct.	318 to Oct.

Source: HUD and Building Department

Enrollment History		
Year	Voc-Tech 9-12 Total	Non-Public K-12 Total
2005-06	n/a	n/a
2011-12	n/a	n/a
2012-13	n/a	n/a
2013-14	n/a	n/a
2014-15	n/a	n/a
2015-16	63	419

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
	43	30	28	31	27	22	23	20	20	41	35	56	43	419

K-12 Home-Schooled Students	
2015	36

K-12 Residents "Choiced-out" or in Charter or Magnet Schools	
2015	4

K-12 Special Education Outplaced Students	
2015	41

K-12 Choiced-In, Tuitioned-In, & Other Non-Residents	
2015	12

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

Watertown Public Schools

Enrollment Forecast Report 2016

Presented by

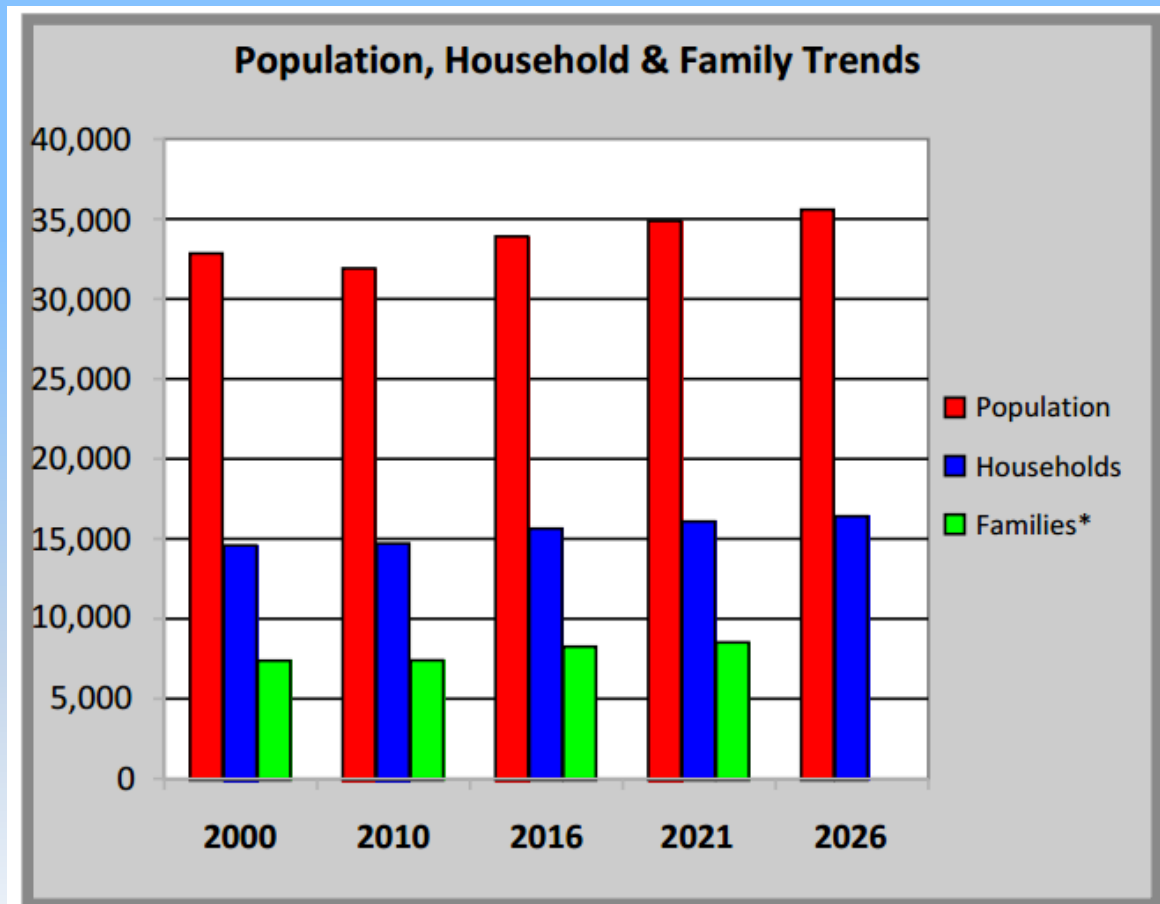


Presentation

- Selected Community Demographic Data & Trends
- Historical Enrollment Analysis
- Enrollment Forecast

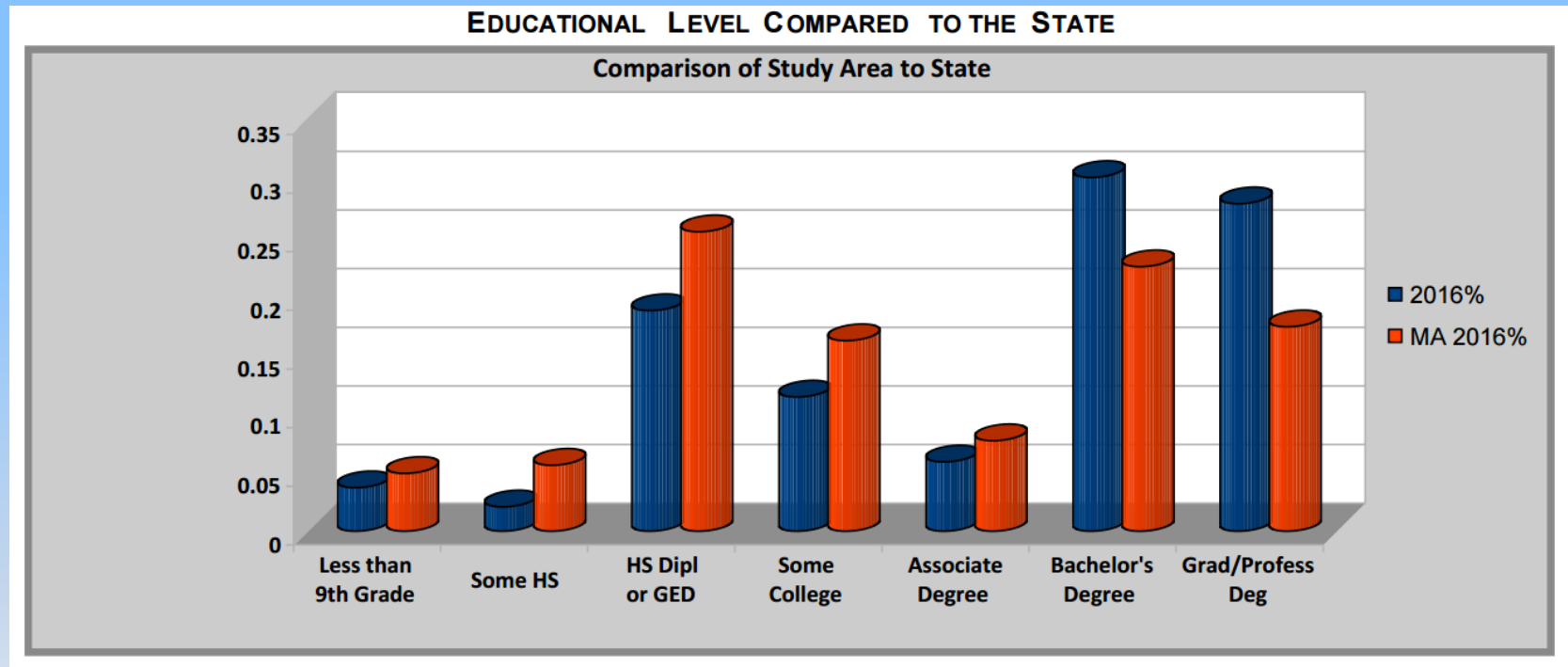
Selected Community Demographic Data & Trends

Population Trends

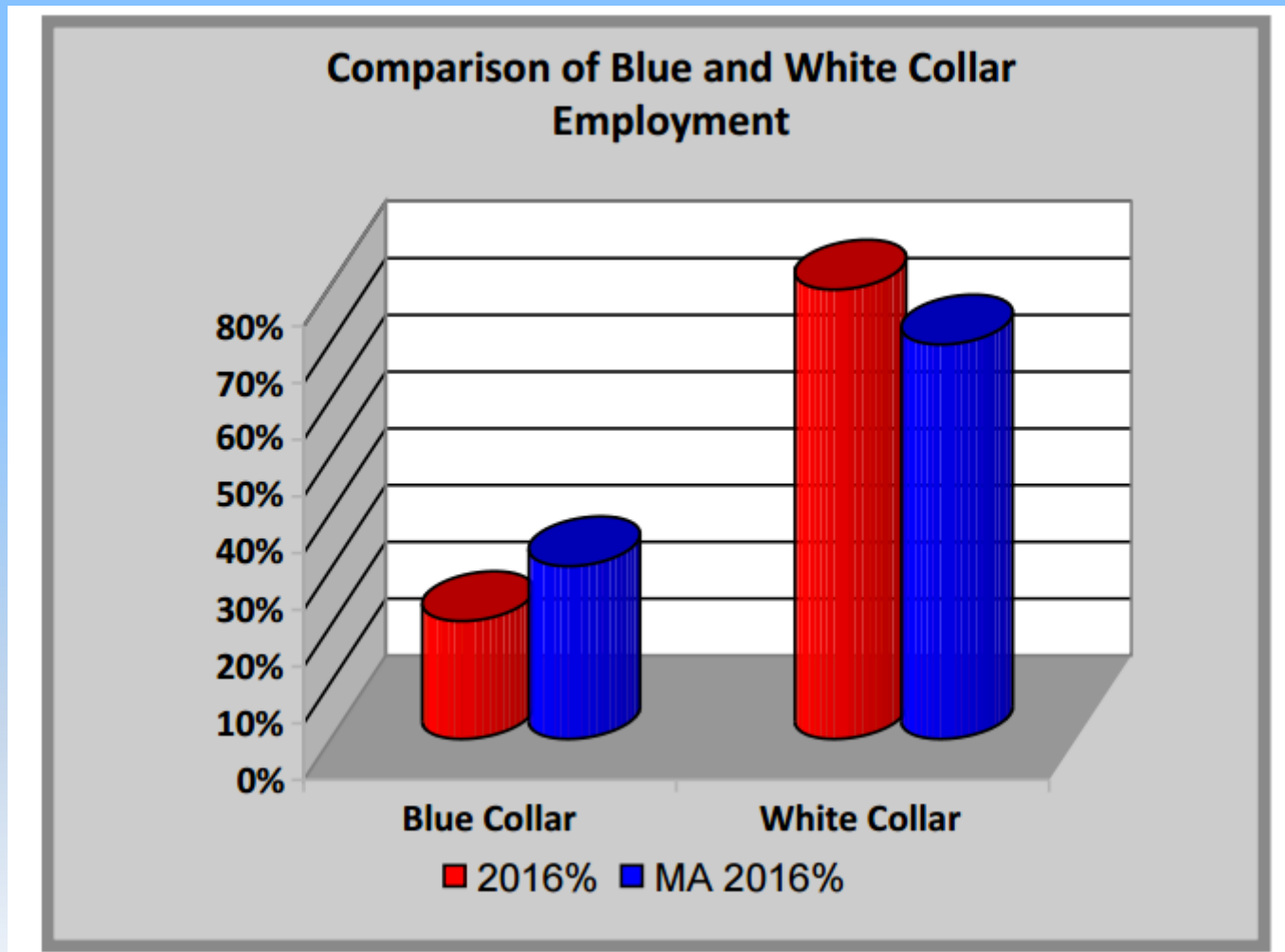


NOTE: Family Household data is not projected out 10 years.

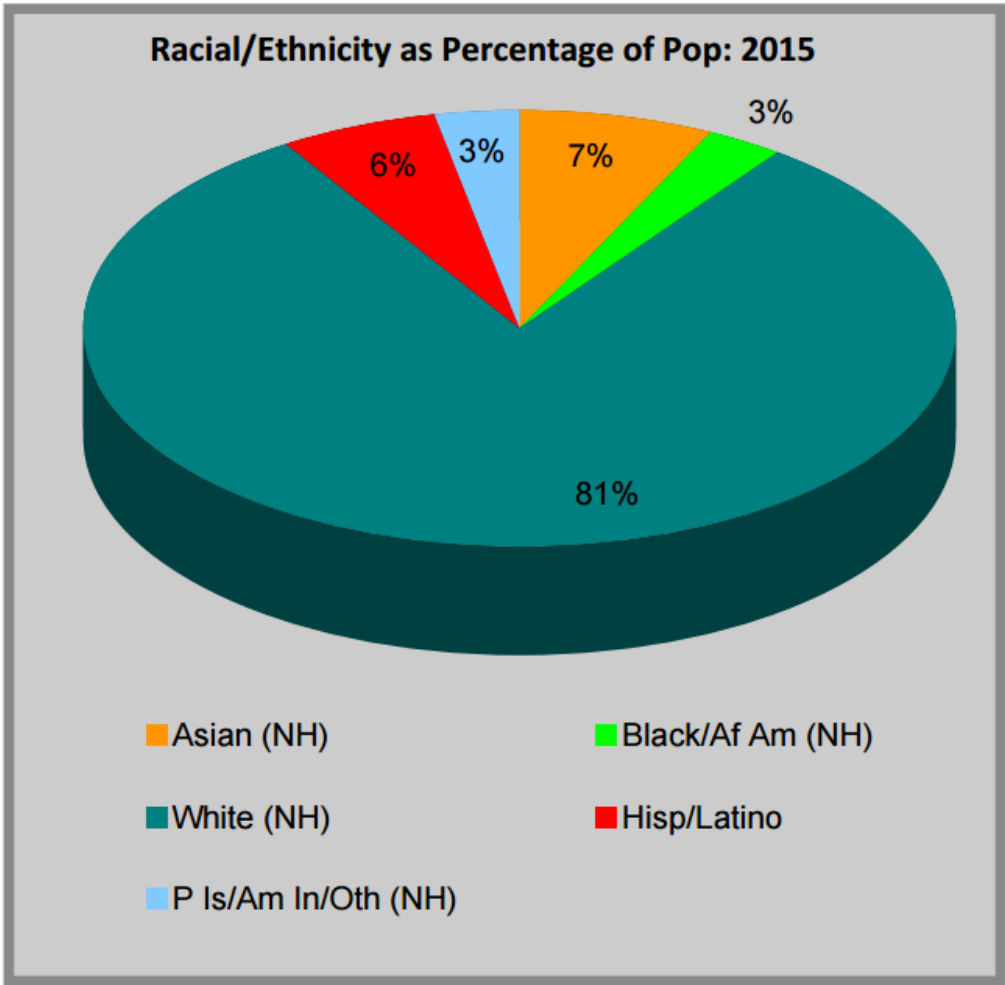
Level of Adult Education



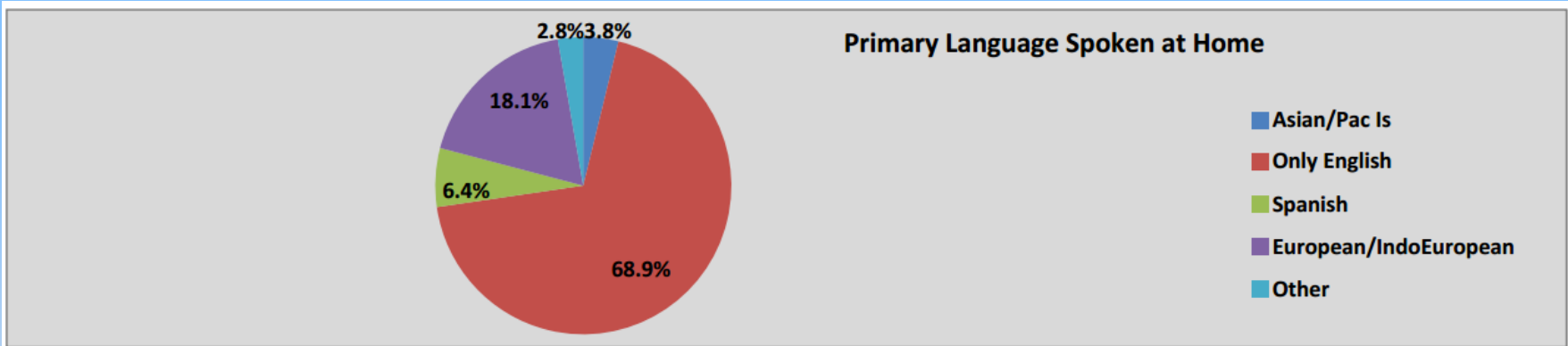
Employment



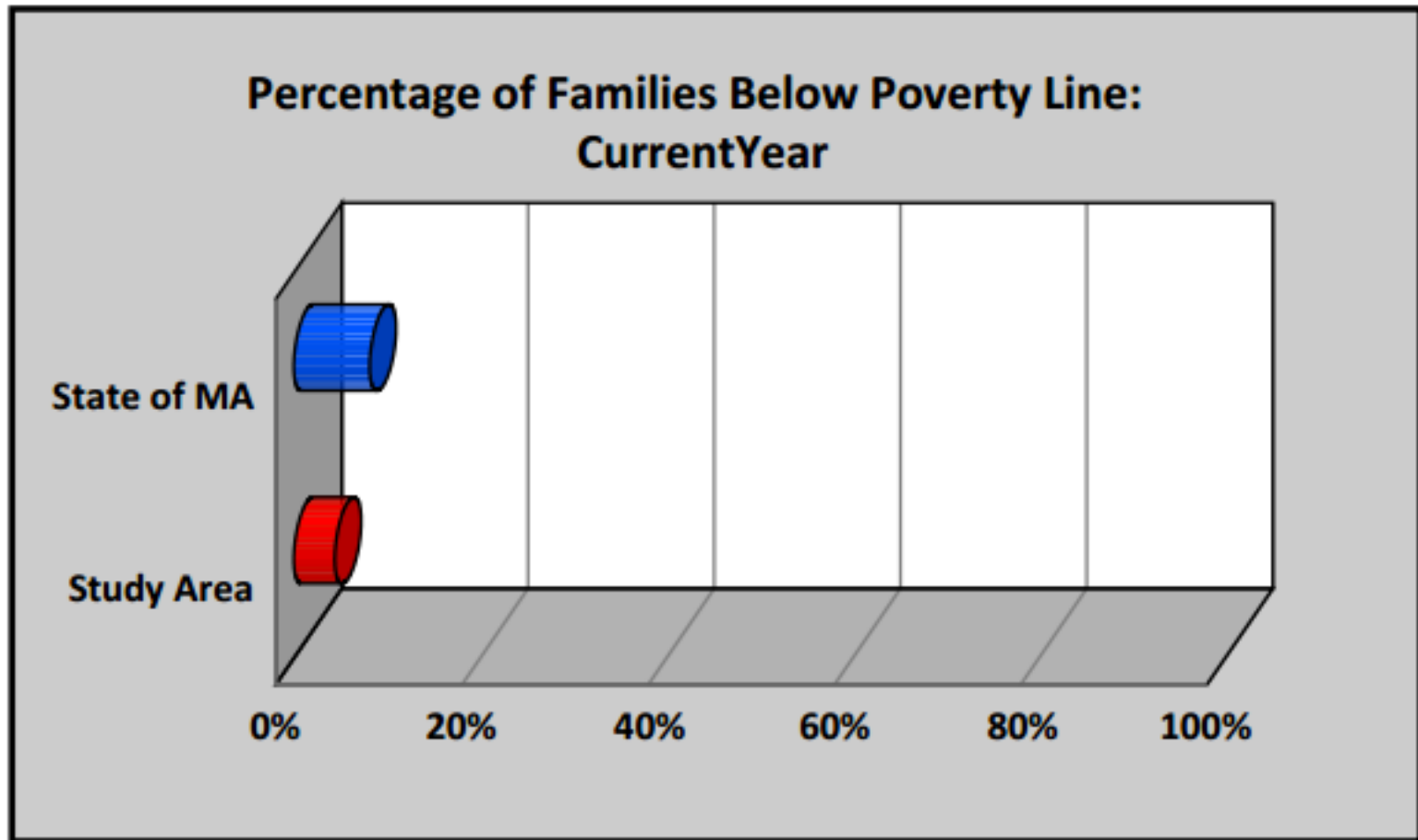
Racial/Ethnicity



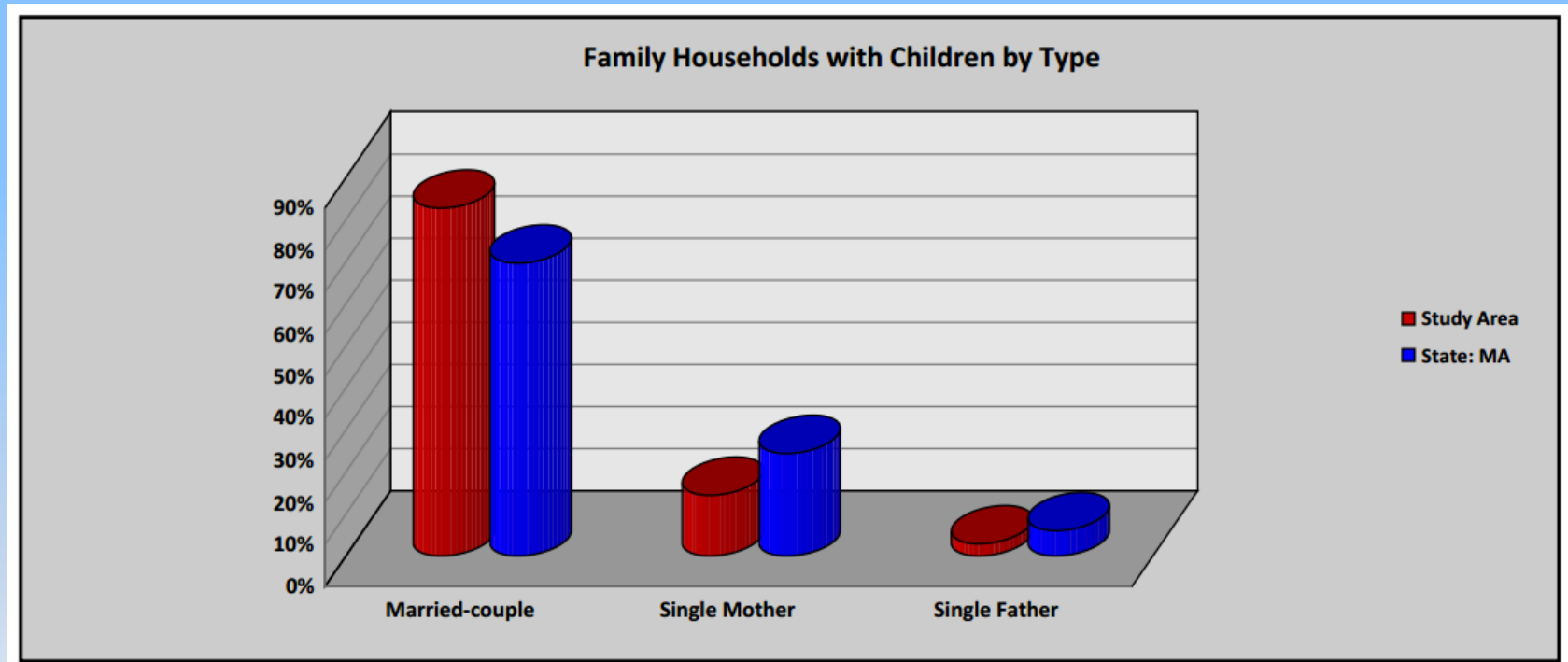
Primary Language

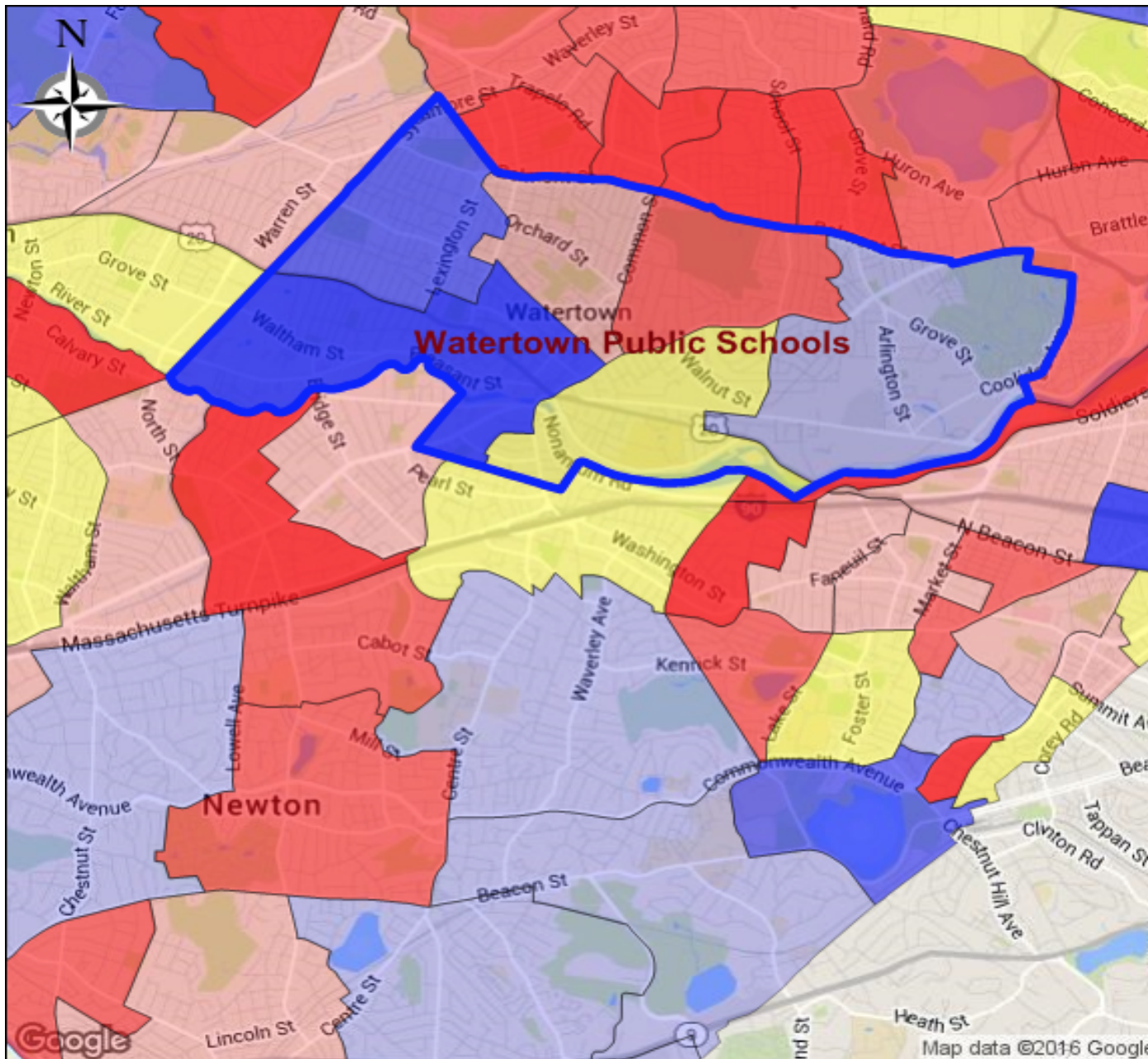


Poverty



Single Parent Families





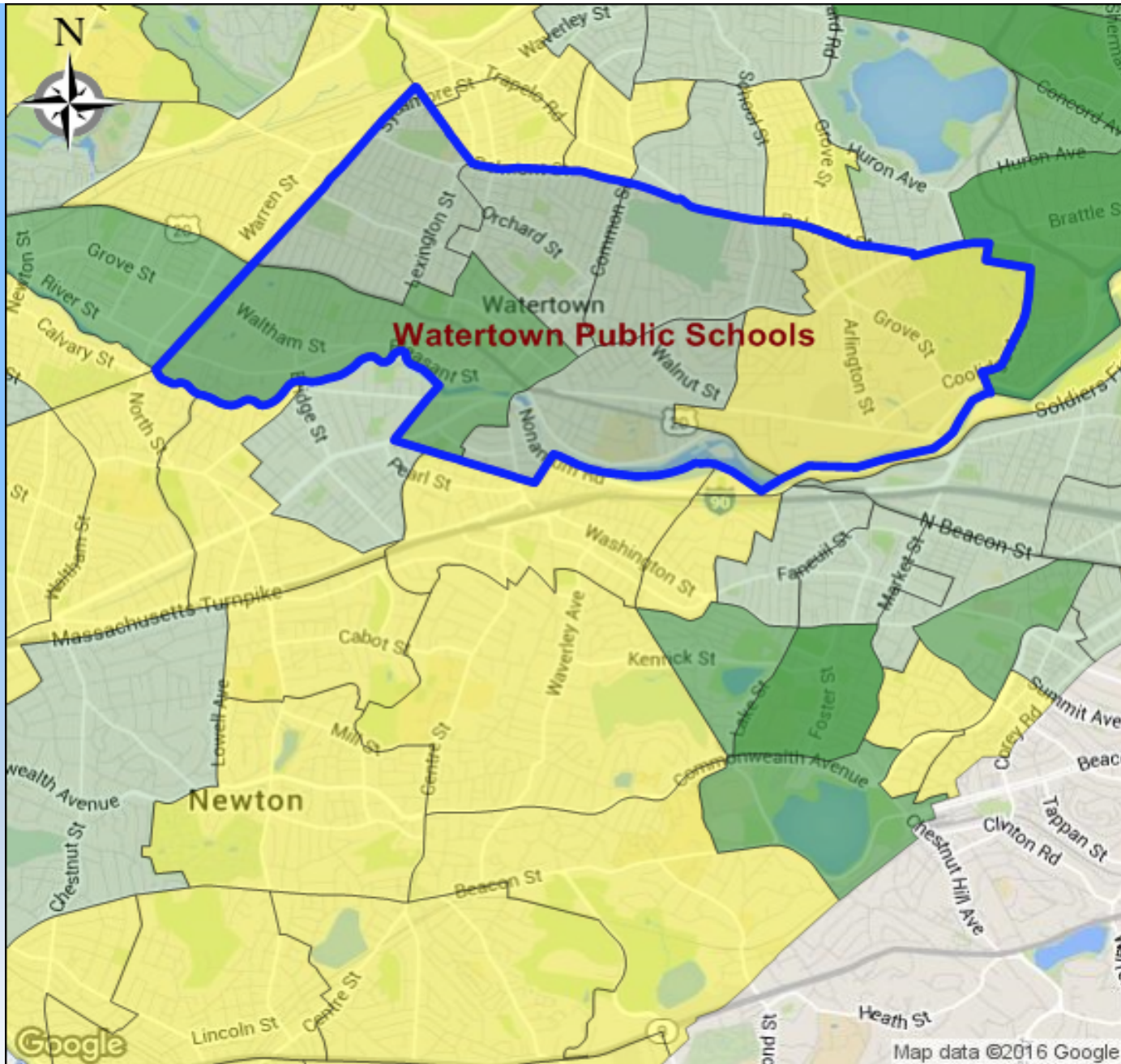
Population 2016

Geography Size: Census Tracts

- Less than 3119
- Between 3119 and 3972
- Between 3972 and 4825
- Between 4825 and 5678
- Between 5678 and 6531
- Between 6531 and 7384
- Greater than 7384

Source: US Census Bureau, Synergos Technologies Inc., Experian





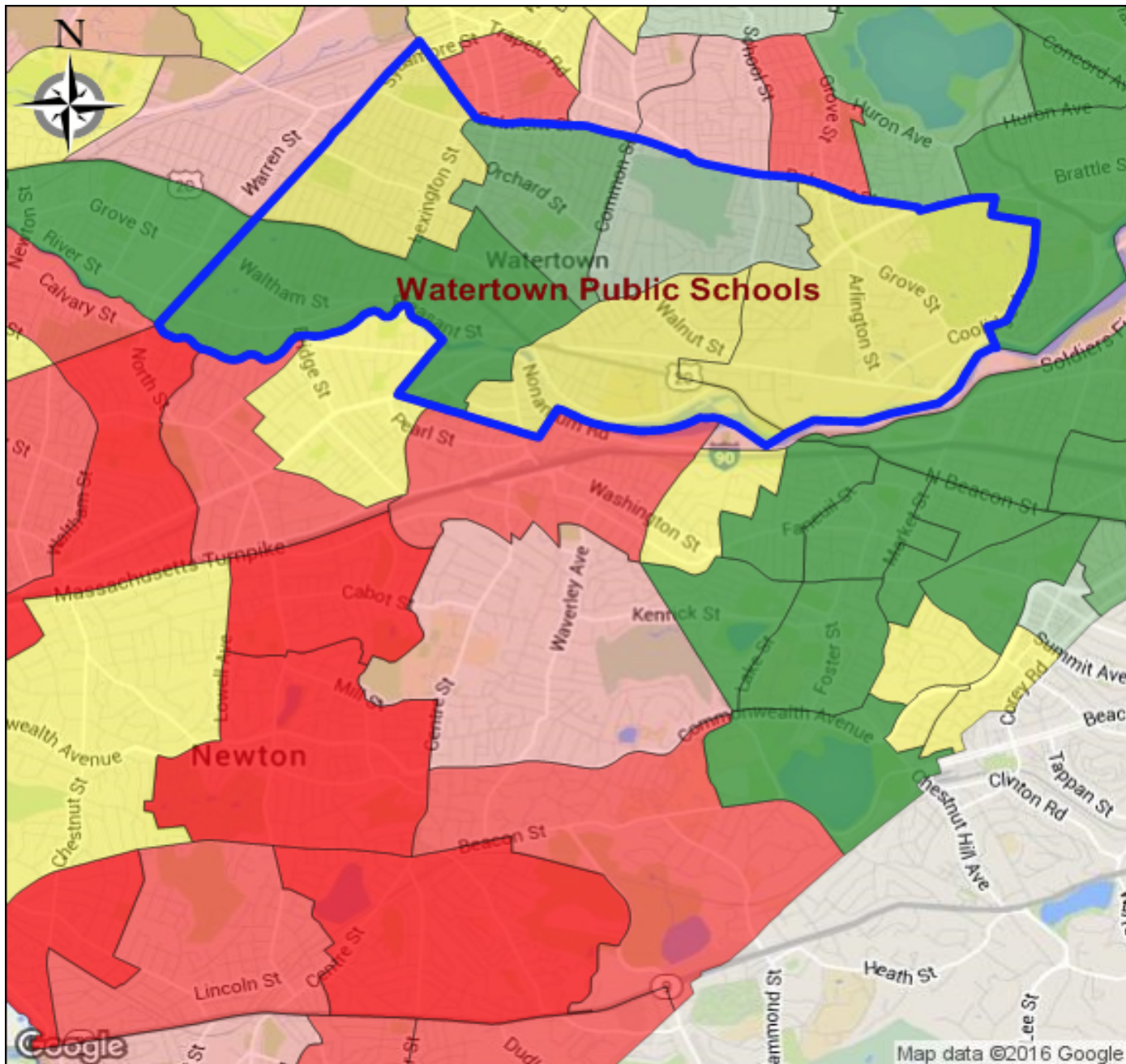
Population 2016-2021

Geography Size: Census Tracts

- Less than -15%
- Between -15% and -10%
- Between -10% and -5%
- Between -5% and 0%
- Between 0% and 5%
- Between 5% and 10%
- Greater than 10%

Source: US Census Bureau, Synergos
Technologies Inc., Experian

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Population 2021-2026

Geography Size: Census Tracts

- Less than -1.2%
- Between -1.2% and -0.5%
- Between -0.5% and 0.2%
- Between 0.2% and 0.9%
- Between 0.9% and 1.6%
- Between 1.6% and 2.3%
- Greater than 2.3%

Source: US Census Bureau, Synergos Technologies Inc., Experian



Historical Enrollment Analysis

Recent Historical Changes

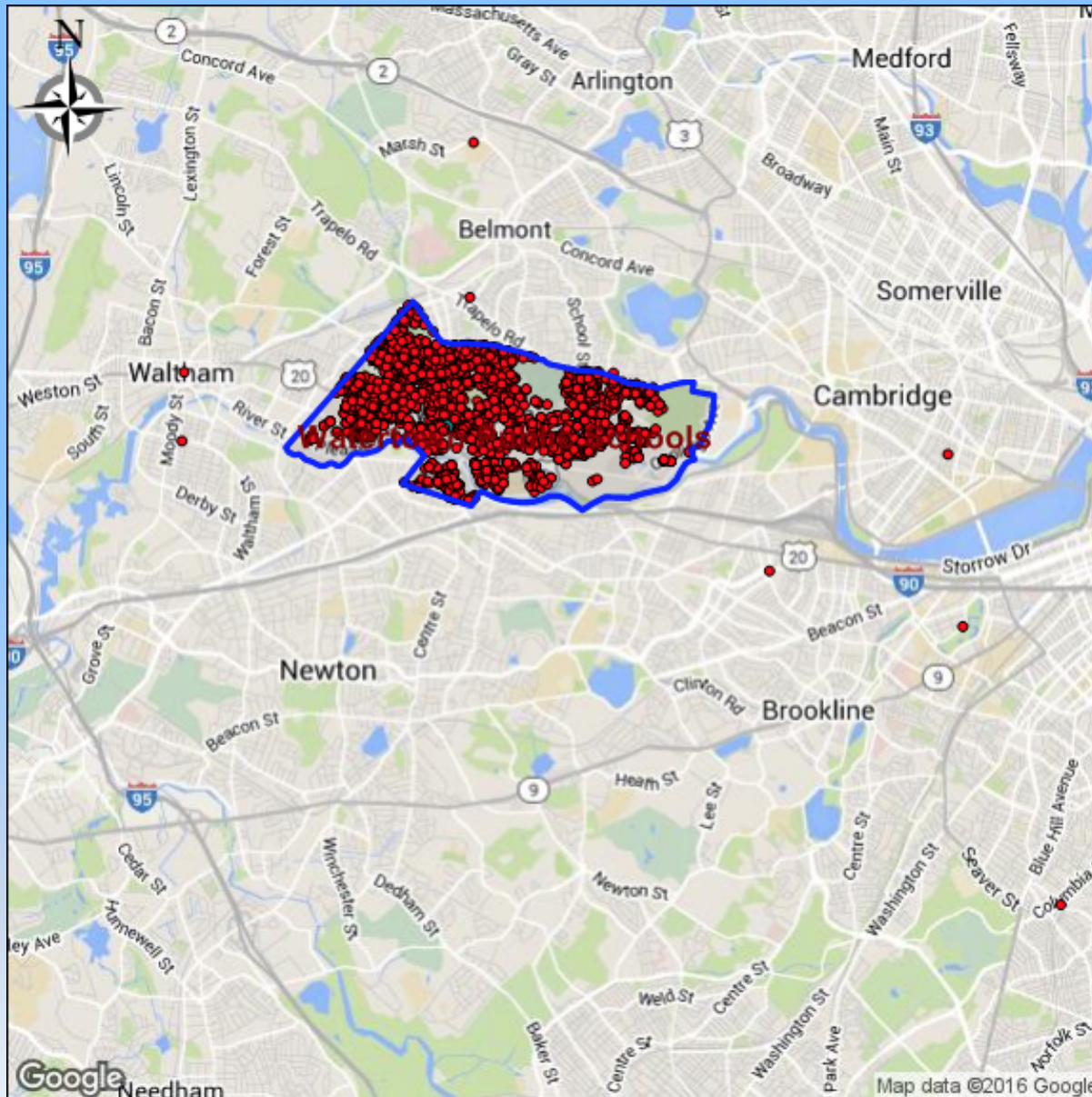
District History Years Enrollment					
Grade	2011	2012	2013	2014	2015
K	236	250	223	221	208
1	224	209	226	200	235
2	176	210	201	209	209
3	220	182	204	188	203
4	174	223	172	194	192
5	181	170	221	166	201
6	189	188	166	216	168
7	174	189	189	169	214
8	196	175	184	181	167
9	188	187	174	164	182
10	194	188	172	171	168
11	183	185	191	170	179
12	165	180	184	184	168
Subtotals:	2500	2536	2507	2433	2494
Pct Chg:		1.44%	-1.14%	-2.95%	2.51%
SDC:	0	0	0	0	0
Totals:	2500	2536	2507	2433	2494

Senior vs. Kinder Impact

District History Years Enrollment					
Grade	2011	2012	2013	2014	2015
K	236	250	223	221	208
1	224	209	226	200	235
2	176	210	201	209	209
3	220	182	204	188	203
4	174	223	172	194	192
5	181	170	221	166	201
6	189	188	166	216	168
7	174	189	189	169	214
8	196	175	184	181	167
9	188	187	174	164	182
10	194	188	172	171	168
11	183	185	191	170	179
12	165	180	184	184	168
Subtotals:	2500	2536	2507	2433	2494
Pct Chg:		1.44%	-1.14%	-2.95%	2.51%
SDC:	0	0	0	0	0
Totals:	2500	2536	2507	2433	2494

Cohort Aging

District History Years Enrollment					
Grade	2011	2012	2013	2014	2015
K	236	250	223	221	208
1	224	209	226	200	235
2	176	210	201	209	209
3	220	182	204	188	203
4	174	223	172	194	192
5	181	170	221	166	201
6	189	188	166	216	168
7	174	189	189	169	214
8	196	175	184	181	167
9	188	187	174	164	182
10	194	188	172	171	168
11	183	185	191	170	179
12	165	180	184	184	168
Subtotals:	2500	2536	2507	2433	2494
Pct Chg:		1.44%	-1.14%	-2.95%	2.51%
SDC:	0	0	0	0	0
Totals:	2500	2536	2507	2433	2494



Student Plot 2016
Entire District
Grades K - 12
 2494 students plotted.
 2475 students contained (99.2%).

Source: DecisionInsite
DECISIONINSITE

Summary of Historical Enrollment Trends

- **Kindergarten:** Somewhat irregular enrollment
- **Cohort Changes:** Some instability in cohorts as they age, in particular, from grades K through 3
- **District Enrollment:** 2.51% increase in enrollment increase over previous year.

Enrollment Forecast

Method

- Primary factors that influence calculations
 - Kindergarten
 - Aging of grade cohorts through system
 - Impact of new residential development
- Other factors that can influence
 - Private school enrollment
 - Housing market fluctuations
 - Anomalous events/trends (natural disasters, economic upheaval, etc.)

Conservative 10 Year Projection

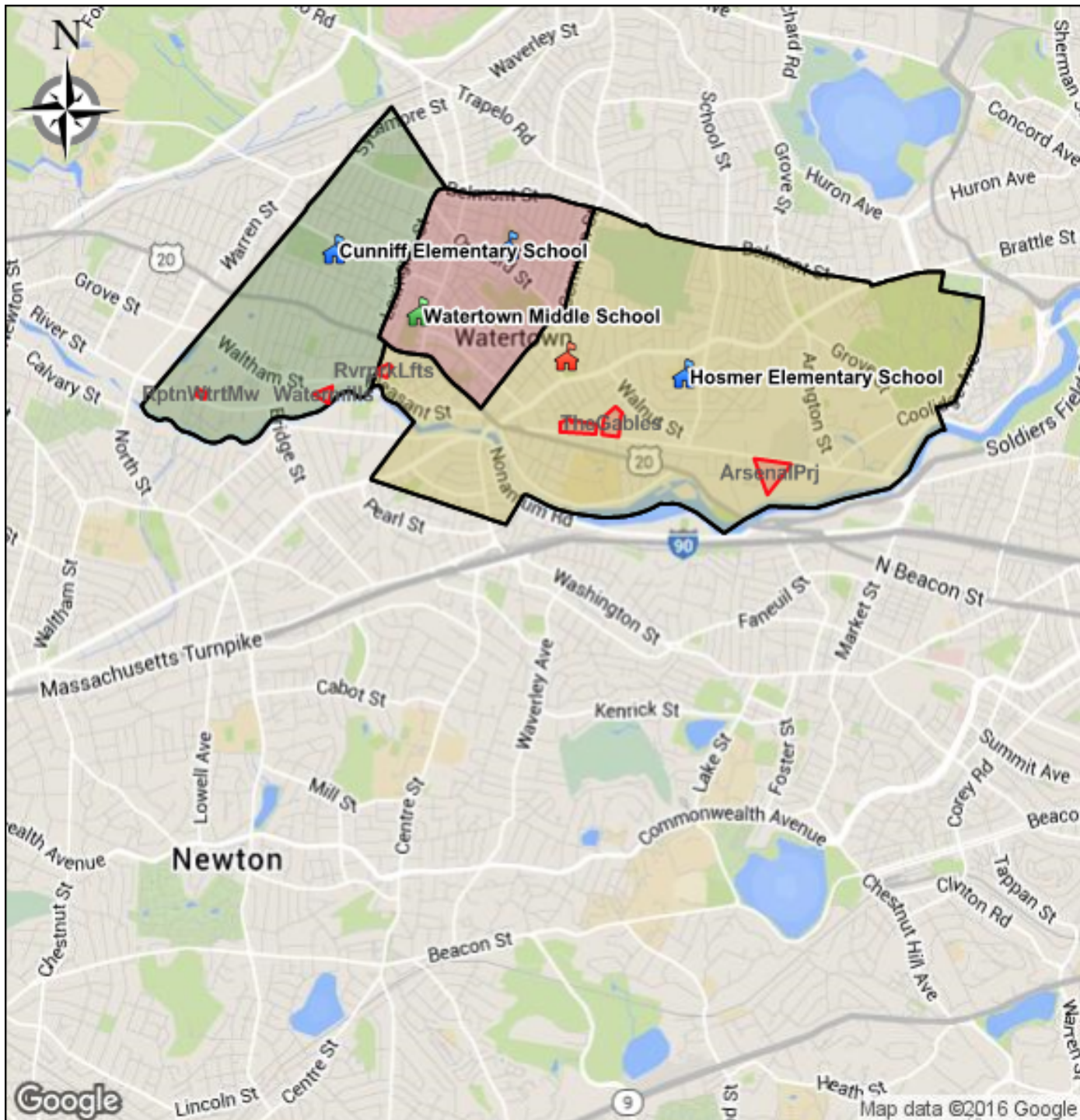
Watertown Public Schools (Wtrtn16Cnsv) (DU Scn 2016 Default SGR + Mews)

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Pre-K 3	23	15	17	23	23	23	24	25	24	24	23	23	23	22
Pre-K 4	153	149	137	162	162	163	167	172	169	166	163	160	158	155
K	250	223	221	208	206	207	212	216	213	209	205	202	198	195
1	209	226	200	235	206	206	208	210	210	206	203	199	196	192
2	210	201	209	209	235	208	210	209	208	208	204	201	197	194
3	182	204	188	203	205	233	208	207	205	204	204	201	197	194
4	223	172	194	192	201	205	234	206	204	202	201	201	198	194
5	170	221	166	201	195	206	212	239	206	204	202	201	201	198
6	188	166	216	168	201	198	210	213	230	202	200	198	197	197
7	189	189	169	214	173	209	206	216	214	232	203	200	198	197
8	175	184	181	167	210	173	209	204	213	212	229	200	198	196
9	187	174	164	182	165	207	171	201	198	203	202	217	192	190
10	188	172	171	168	180	165	206	171	199	195	202	201	216	190
11	185	191	170	179	173	186	171	211	171	200	196	202	201	216
12	180	184	184	168	177	171	185	169	209	170	198	194	200	200
Subtotals:	2712	2671	2587	2679	2712	2760	2833	2869	2873	2837	2835	2800	2770	2730
Pct Chg:		-1.5%	-3.1%	3.6%	1.2%	1.8%	2.6%	1.3%	0.1%	-1.3%	-0.1%	-1.2%	-1.1%	-1.4%

Proposed New Dwelling Units (1,398 MF)

Proposed Dwelling Units Closing by Oct of Year indicated - (Wtrtwn16Cnsv)(2016 Default SGR + Mews)

ProjectName	Type	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Repton/Watertown Mews	Multi-family	206	0	0	0	0	0	0	0	0	0
Riverpark Lofts	Multi-family	0	32	33	0	0	0	0	0	0	0
The Arsenal Project	Multi-family	0	0	225	225	0	0	0	0	0	0
The Gables	Multi-family	74	222	0	0	0	0	0	0	0	0
Union Market/Elan	Multi-family	0	141	141	0	0	0	0	0	0	0
Watermills	Multi-family	0	0	49	50	0	0	0	0	0	0
	Multi-family:	280	395	448	275	0	0	0	0	0	0
	Single Unit Attached:	0	0	0	0	0	0	0	0	0	0
	Single Unit Detached:	0	0	0	0	0	0	0	0	0	0
	Total:	280	395	448	275	0	0	0	0	0	0



Watertown Public Schools Elementary School Attendance Areas

- Cunniff Elementary School
- Hosmer Elementary School
- Lowell Elementary School

Students Generated by New Housing

**Students Generated by Proposed Residential Development Summary -
(Wrtwn16Cnsv)(2016 Default SGR + Mews)**

Grade	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
K	5	12	20	25	25	25	25	25	25	25
1	5	12	20	25	25	25	25	25	25	25
2	5	12	20	25	25	25	25	25	25	25
3	5	12	20	25	25	25	25	25	25	25
4	4	11	19	24	25	25	25	25	25	25
5	4	10	17	22	24	25	25	25	25	25
6	4	10	17	21	22	24	25	25	25	25
7	4	10	16	21	21	22	24	25	25	25
8	3	8	14	19	21	21	22	24	25	25
9	3	8	13	18	19	21	21	22	24	25
10	3	8	13	17	18	19	21	21	22	24
11	3	8	13	16	17	18	19	21	21	22
12	1	5	10	15	16	17	18	19	21	21
Elementary:	28	69	116	147	150	151	151	151	151	151
Middle:	11	28	48	61	64	68	72	74	75	75
High:	11	29	50	65	70	74	79	83	89	93
Aggregate Impact:	50	125	213	273	284	293	301	309	315	319
New Students Annually:		76	93	70	25	25	25	25	25	25

Projection by School

Cunniff Elementary School

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
K	56	55	52	44	47	45	44	45	44	43	42	42	41	40
1	52	50	46	55	45	46	44	43	43	42	41	41	40	39
2	53	51	45	51	57	44	46	44	43	43	42	41	40	40
3	49	51	49	45	52	55	44	45	43	42	42	41	40	40
4	35	47	56	53	49	53	57	46	46	44	43	43	42	41
5	38	36	46	57	57	50	55	59	46	46	44	43	43	42
Subtotals:	283	290	294	305	307	293	290	282	265	260	254	251	246	242
Pct Chg:		2.5%	1.4%	3.7%	0.7%	-4.6%	-1%	-2.8%	-6%	-1.9%	-2.3%	-1.2%	-2%	-1.6%

Hosmer Elementary School

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
K	119	103	96	95	94	98	104	108	106	105	103	101	100	98
1	107	110	95	98	94	99	103	106	106	104	103	101	99	98
2	85	98	102	92	94	96	100	102	104	104	102	100	99	97
3	86	81	90	93	87	94	96	98	99	101	101	99	97	96
4	110	76	75	85	88	87	94	94	95	96	98	98	96	95
5	77	105	71	74	83	91	89	94	92	94	95	96	96	95
Subtotals:	584	573	529	537	540	565	586	602	602	604	602	595	587	579
Pct Chg:		-1.9%	-7.7%	1.5%	0.6%	4.6%	3.7%	2.7%	0%	0.3%	-0.3%	-1.2%	-1.3%	-1.4%

Projection by School

Lowell Elementary School

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
K	75	65	73	69	65	64	63	64	62	61	60	59	58	57
1	50	66	59	82	67	62	61	61	61	60	59	58	56	55
2	72	52	62	66	84	68	64	63	62	62	60	59	58	57
3	47	72	49	65	67	84	69	64	63	62	62	60	59	58
4	78	49	63	54	64	66	83	67	63	62	61	61	60	59
5	55	80	49	70	56	66	68	85	68	64	63	62	62	60
Subtotals:	377	384	355	406	403	410	408	404	379	371	365	359	353	346
Pct Chg:		1.9%	-7.6%	14.4%	-0.7%	1.7%	-0.5%	-1%	-6.2%	-2.1%	-1.6%	-1.6%	-1.7%	-2%

Watertown Middle School

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
6	188	166	216	168	201	198	210	213	230	202	200	198	197	197
7	189	189	169	214	173	209	206	216	214	232	203	200	198	197
8	175	184	181	167	210	173	209	204	213	212	229	200	198	196
Subtotals:	552	539	566	549	584	580	625	633	657	646	632	598	593	590
Pct Chg:		-2.4%	5%	-3%	6.4%	-0.7%	7.8%	1.3%	3.8%	-1.7%	-2.2%	-5.4%	-0.8%	-0.5%

Projection by School

Watertown High School

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
9	187	174	164	182	165	207	171	201	198	203	202	217	192	190
10	188	172	171	168	180	165	206	171	199	195	202	201	216	190
11	185	191	170	179	173	186	171	211	171	200	196	202	201	216
12	180	184	184	168	177	171	185	169	209	170	198	194	200	200
Subtotals:	740	721	689	697	695	729	733	752	777	768	798	814	809	796
Pct Chg:		-2.6%	-4.4%	1.2%	-0.3%	4.9%	0.5%	2.6%	3.3%	-1.2%	3.9%	2%	-0.6%	-1.6%

General Conclusions

Projection of increasing district enrollment driven by Kindergarten counts and new residential development projects.

~194 student increase over next five years.*

*includes pre-K enrollment

Watertown Public Schools

Enrollment Forecast Report 2016

Presented by



Comparative Student Generation Rates

Palo Alto			
3159 El Camino Real	MF	E	0.23
3159 El Camino Real	MF	M	0.12
3159 El Camino Real	MF	H	0.15
Irvine			
Heritage Fields District 1N	MF	E	0.16
Heritage Fields District 1N	MF	M	0.04
Heritage Fields District 1N	MF	H	0.06
Buffalo City			
Campus Square/The Pilgrim	MF	E	0.10
Campus Square/The Pilgrim	MF	M	0.04
Campus Square/The Pilgrim	MF	H	0.04
Watertown			
The Arsenal Project	MF	E	0.04
The Arsenal Project	MF	M	0.01
The Arsenal Project	MF	H	0.01

Combined SGR Totals

Palo Alto = .50

Irvine = .26

Buffalo (default) = .18

Watertown = .6

Conservative 10 Year Projection w/City SGRSans Mews

Watertown Public Schools (Wtrtwn16CitySGRCnsv) (DU Scn 2016 City SGR)

Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Pre-K 3	23	15	17	23	22	22	22	23	22	22	21	21	21	20
Pre-K 4	153	149	137	162	158	155	156	158	155	153	150	147	144	142
K	250	223	221	208	202	198	198	201	197	193	190	186	183	179
1	209	226	200	235	201	198	195	194	194	191	187	184	180	177
2	210	201	209	209	231	200	197	193	192	192	189	185	182	178
3	182	204	188	203	200	224	195	192	189	189	189	185	182	178
4	223	172	194	192	197	197	222	191	189	186	186	186	182	179
5	170	221	166	201	192	199	201	225	191	189	186	185	185	182
6	188	166	216	168	197	190	198	199	216	187	184	182	181	181
7	189	189	169	214	170	201	194	201	200	217	188	185	183	182
8	175	184	181	167	208	166	197	190	199	198	215	185	182	180
9	187	174	164	182	162	200	161	188	184	189	189	203	177	175
10	188	172	171	168	177	158	197	159	186	181	187	187	202	175
11	185	191	170	179	170	180	161	199	159	187	182	188	188	202
12	180	184	184	168	176	167	177	159	198	158	185	181	186	186
Subtotals:	2712	2671	2587	2679	2663	2655	2671	2672	2671	2632	2628	2590	2558	2516
Pct Chg:		-1.5%	-3.1%	3.6%	-0.6%	-0.3%	0.6%	0%	0%	-1.5%	-0.2%	-1.4%	-1.2%	-1.6%

Students Generated CitySGRCnsv

(Wtrtw16CitySGRCnsv)(2016 City SGR)

Grade	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
K	1	3	7	10	10	10	10	10	10	10
1	1	3	7	10	10	10	10	10	10	10
2	1	3	7	10	10	10	10	10	10	10
3	1	3	7	10	10	10	10	10	10	10
4	0	3	7	9	10	10	10	10	10	10
5	0	3	6	8	9	10	10	10	10	10
6	0	2	5	7	8	9	10	10	10	10
7	0	2	4	6	7	8	9	10	10	10
8	0	1	3	5	6	7	8	9	10	10
9	0	1	3	4	5	6	7	8	9	10
10	0	1	3	4	4	5	6	7	8	9
11	0	1	3	4	4	4	5	6	7	8
12	0	1	2	4	4	4	4	5	6	7
Elementary:	3	19	41	56	57	58	58	58	58	58
Middle:	1	5	12	19	22	25	27	28	29	29
High:	1	5	11	17	18	20	23	27	31	34
Aggregate Impact:	4	29	64	92	98	103	108	114	118	121
New Students Annually:		24	36	30	10	10	10	10	10	10

Study Comparatives

	2016-2017		2020-2021		2025-2026
Study A	2680		2840		2699
Study B	2633		2641		2488
Net Diff.	47		199		211

Mews Totals

	2016-2017		2020-2021		2025-2026
Study A	2680		2840		2699
Study B	2633		2641		2488
Net Diff.	47		199		211

Students Generated Mews Project Only

Repton/Watertown Mews (215702 Cnnff)										
Grade	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
K	4	4	4	4	4	4	4	4	4	4
1	4	4	4	4	4	4	4	4	4	4
2	4	4	4	4	4	4	4	4	4	4
3	4	4	4	4	4	4	4	4	4	4
4	3	4	4	4	4	4	4	4	4	4
5	3	3	4	4	4	4	4	4	4	4
6	3	3	3	4	4	4	4	4	4	4
7	3	3	3	3	4	4	4	4	4	4
8	2	3	3	3	3	4	4	4	4	4
9	2	2	3	3	3	3	4	4	4	4
10	2	2	2	3	3	3	3	4	4	4
11	2	2	2	2	3	3	3	3	4	4
12	1	2	2	2	2	3	3	3	3	4
Elementary:	21	22	22	22	22	22	22	22	22	22
Middle:	8	9	9	9	11	11	11	11	11	11
High:	8	9	10	11	11	12	13	13	14	15
Total:	37	40	41	42	44	45	46	47	48	48

Symmes Maini & McKee
Associates

SMMA