GROTON 2020 PLAN

SUMMARY REPORT

GROTON SCHOOL FACILITIES INITIATIVE TASK FORCE

SLAM

MILONE & MACBROOM®

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EXECUTIVE SUMMARY

The Groton Public School System serves the Town of Groton, a community of roughly 40,000, which includes the economically and racially diverse jurisdictions of the City of Groton, the Navy Submarine Base, Groton Long Point, Center Groton, Poquonnock Bridge, the Village of Noank, and Mystic. The vision of the school district revolves around development of the individual student, the learning community, and a culture of diversity and trust. In service of this district vision, the School Facilities Initiative Task Force (SFITF) was created and charged in 2013 with the formation of a long-range facility plan to address aging facilities and continued racial imbalance between schools in the district.

The result of 3 years of planning effort and community outreach is the Groton 2020 Plan.

EXISTING CONDITIONS SYNOPSIS

FACILITIES

The Groton Public School System currently operates seven elementary schools, two middle schools, and one high school. Many of these buildings were built in the 1950s and 1960s and have been maintained with little to no reinvestment or modernization. School capacity has been stretched at these schools with portable classrooms that have exceeded their useful lives and pose a security risk. Bringing three of the elementary schools and the two middle schools up to current building code and addressing critical issues would require an estimated $55 million in deferred costs, without further modernization of the 60-year-old schools.

ENROLLMENT

Enrollment at Groton Public Schools is in decline. During a period of static total population and labor force, enrollments declined by over 1,000 students from 2002 to 2015 (5,719 to 4,487 students). Enrollment decline can be partially attributed to the Great Recession, local and nationwide demographic trends as women have fewer children, and the popularity of area magnet schools drawing Groton students elsewhere.

RACIAL IMBALANCE

According to Connecticut General Statutes (CGS §§ 10-226a-10-226e), neighborhood schools within Connecticut must reflect the racial and ethnic demographics of the district as a whole (within 25 percentage points) to ensure an integrated, equitable school system. Over the last two decades, Groton has been cited numerous times for racial imbalance. In response, Groton Public Schools have repeatedly redistricted in an attempt to comply with the state's racial imbalance law. However, the increasing diversity of Groton's schoolchildren has presented an ever-changing threshold for balance, complicated by the mobile nature of families associated with the Navy Submarine Base and the disparate demographics of Groton's political subdivisions.

SFITF PROCESS AND PLAN EVOLUTION

The SFITF is comprised of 19 stakeholders from the Board of Education, school administrators, Town Council, teachers, citizens at large, and other interested groups. The SFITF has been in a planning process since 2013 to address

TIMELINE OF FACILITIES INITIATIVES

these issues. They are charged with providing recommendations for the design of a school system that reflects the system's long-term vision and takes into consideration educational programs, budgets, facilities, and demographic changes. The SFITF has held dozens of meetings and public workshops to develop educational specifications, guiding construction options and recommendations, with plans evolving over time due to public input and the changing landscape of state legislation relating to school construction projects.

RECOMMENDATIONS

The final Groton 2020 Plan represents the recommendations of the SFITF for a comprehensive long-term facilities plan:

- Build a new consolidated middle school to provide equal opportunities by bringing all middle schoolers together before high school
- Turn the two existing middle school properties into magnet elementary schools to provide modern facilities and the flexibility of a choice system to eliminate the need for further redistricting by addressing Groton's shifting demographics
- Close three aging elementary schools to consolidate facilities, avoid the cost of renovation, and streamline operational costs
- Remove from service four portables at Charles Barnum and Mary Morrison

PROJECT COSTS

Early cost estimates for this building plan, including the construction of three modern school facilities and the demolition of two outdated facilities, were roughly $191 million in 2015. Based on financial bonding estimates and 2015 state reimbursement rates for school construction projects, the net cost to Groton would be $94 million, averaging $250 per year for the average homeowner over the life of the bond. A professional telephone survey conducted by the Center for Research and Public Policy found that roughly 52% of Groton residents surveyed would support a school construction project at this amount.

However, school construction grant reimbursement rates increased for 2016, resulting in an increase of $5 million in net costs to Groton. The public opinion survey showed an inverse relationship between cost of the project and voter support, suggesting that this $5 million increase may tip the majority of voters into rejecting the project at referendum. Additionally, with continued shifts in demographics at Claude Chester Elementary School, the town has since learned they will no longer be eligible for Diversity School Construction Grants under CGS §§ 10-286h. These changes resulted in cost estimates of $196 million with a net cost to Groton of approximately $113 million. A request for special legislation to reduce the net cost to Groton did not go forward in this year's legislative session due to reasons external to Groton. The SFITF thus revised the building plan to include one new middle school and the renovation like new of the two current middle schools into elementary schools to bring down estimated construction costs to $184,405,308, with a net cost to Groton of $84,192,651. This is estimated to average $235 per year for the average homeowner over the life of the bond at $136 per $100,000 of assessed value.

CONCLUSION

The Groton 2020 Plan aims to provide one new and two renovated-like-new schools to the families of Groton to address longstanding issues of aging and outdated buildings, provide more equal access to educational programming for all Groton students, and eliminate the need for racial balance redistricting.

EXISTING CONDITIONS

This section provides a brief overview of the history of recent school facilities initiatives in Groton, enrollment projections for Groton Public Schools, and the existing conditions of school facilities.

HISTORY OF RECENT SCHOOL FACILITIES INITIATIVES

PHASE I

Three school projects were approved by the Town of Groton voters in an April 27, 2004 referendum. These projects totaling $91.9 million are the first phase of a three-part plan to overhaul the town's aging schools. The referendum approved three town ordinances that appropriated $91.9 million and authorized the issuance and sale of bonds and notes to fund the construction of two elementary schools, Catherine Kolnaski Elementary and Northeast Academy Elementary, and renovations and additions to Fitch High School. Subsequently, in the fall of 2007, an additional appropriation of $500,000 was approved to complete the Catherine Kolnaski Elementary School project. The two elementary schools were opened and occupied in 2008.

PHASE II

With the completion of Phase I, facilities and educational needs of the town were evaluated to identify additional school enhancement projects. In 2011, a Vision Committee developed a set of educational specifications for a construction project to remedy continuing issues of outdated facilities and racial imbalance. Phase II, a $133 million proposal, called for a new middle school (7th to 8th grade) to be built where Claude Chester Elementary School now stands, the renovation of Cutler Middle School into an intermediate elementary school, and the conversion of S.B. Butler Elementary and West Side Middle into early education centers. A referendum to approve Phase II was rejected by voters in spring of 2012 by a vote of 4,184 to 1,437.

REDISTRICTING EFFORTS

Groton middle schools were redistricted in 2011, due to the closing of Fitch Middle School, to distribute children between Cutler and West Side Middle Schools. Groton elementary schools were redistricted in 2013 due to racial imbalance. Connecticut has a state racial imbalance law (CGS §§ 10-226a-10-226e) that has the aim of ensuring that schools within a district are racially integrated. If a school within a district is shown to have a proportion of racial or ethnic minority students that is 25 percentage points above or below the proportion of minority students for the district as a whole, the school is said to be imbalanced. If an imbalance is reported, the local school district must submit a plan to the state to correct the imbalance.

For the fall of 2013, Groton Public Schools redistricted the elementary schools in an attempt to correct a racial imbalance at Catherine Kolnaski School; however, the following year resulted in a racial imbalance at Claude Chester School.

FORMATION OF THE TASK FORCE

The Town Council and Board of Education are again undertaking a long-range school facilities planning process to guide the school system into the future. After the redistricting effort in 2013 did not correct racial imbalance in Groton Public Schools, the stakeholder group agreed that redistricting only provided short-term solutions and that a comprehensive facilities plan was needed.

The SFITF process began in 2013 to revise a construction proposal for reconsideration at a future referendum. The SFITF has a diverse membership with representative members from the Board of Education, the Representative Town Meeting (RTM), teachers, school administrators, Town Council, Planning Commission, Permanent School Building Committee, and citizens at large.

ENROLLMENT PROJECTIONS

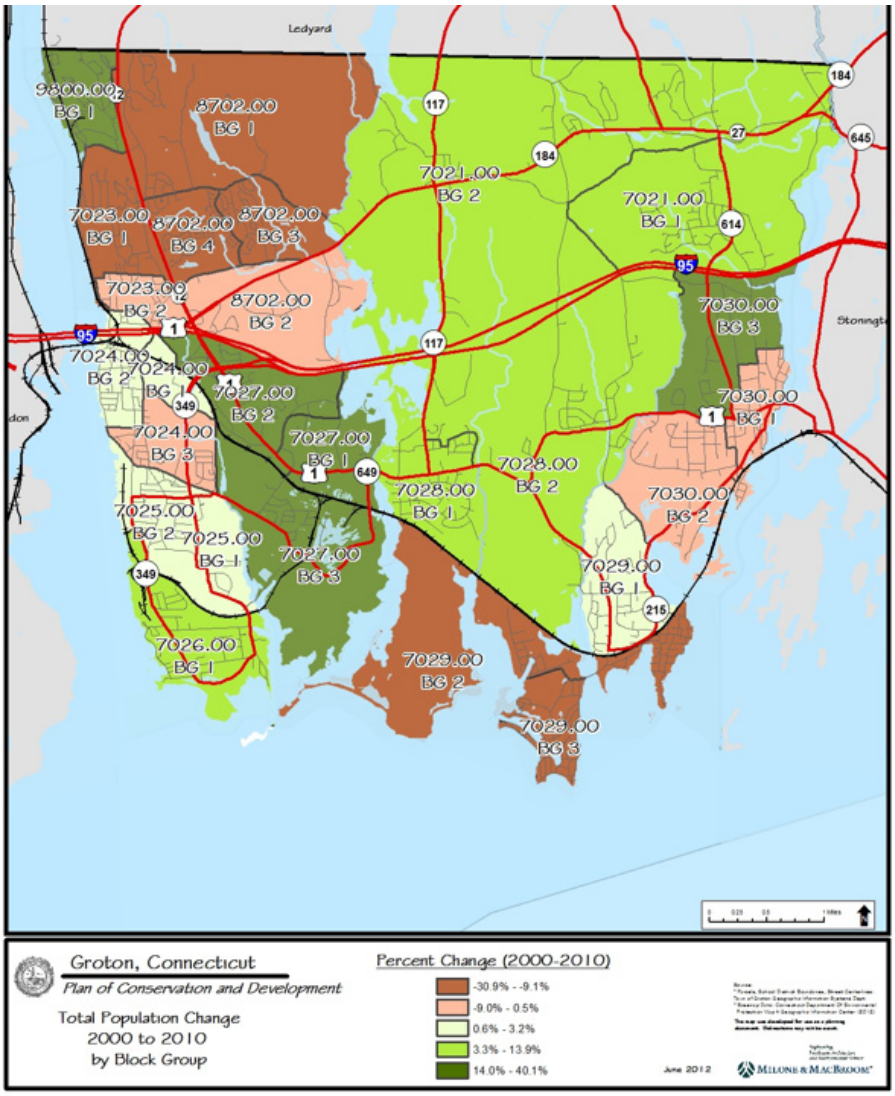
FACTORS AFFECTING ENROLLMENT

Enrollment in Groton Public Schools is affected by larger demographic trends. According to the U.S. Census Bureau, Groton's population increased by only 0.5% from 2000 to 2010. This slow change in population within the Town of Groton has not been evenly dispersed throughout the community.

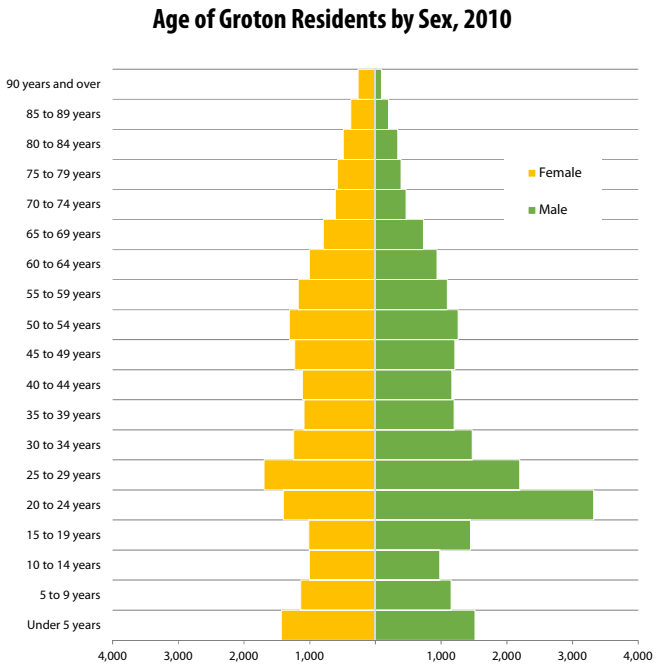
Areas traditionally housing military families in the northwest corner of the town lost population as well as Groton Long Point and Noank while other areas in central and northeastern Groton experienced growth in population. Denser population centers are located throughout the community, especially in the City of Groton, military housing developments, and of Mystic.

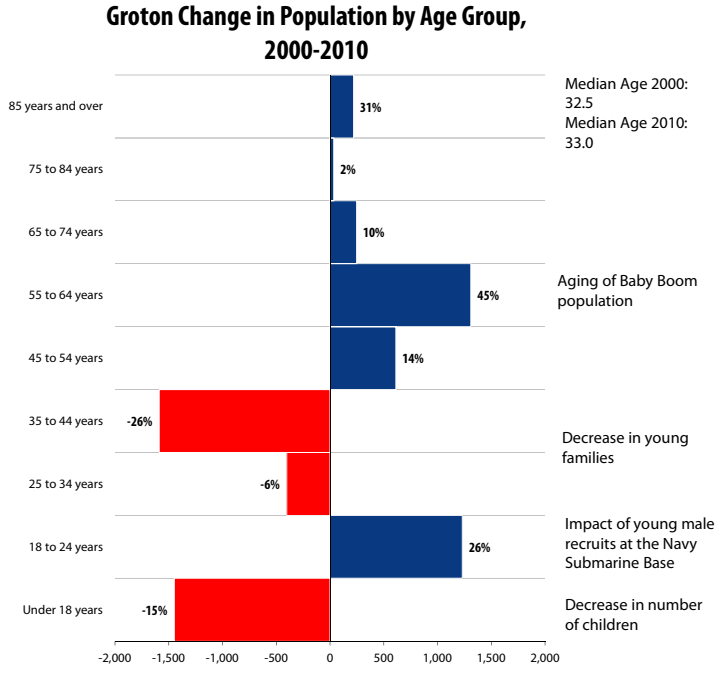
Looking more specifically at changes in population by age cohorts within Groton, a loss in children and young working age population is evident. The increase in the 18- to 24-year-old population and the sizeable 25- to 34-year-old population maintains a relatively young median age. The loss of children and increase in older age groups has implications for facilities and services planning for the town.

During the early to mid 2000s, annual births in Groton were generally above 630, with a recent



POPULATION CHANGE BY BLOCK GROUP





Source: *U.S. Census 2000 and 2010*

AGE DEMOGRAPHICS OF GROTON

peak of 684 in 2003. The annual birth rate began to decline during the second half of the 2000s, with preliminary data for 2013 showing a new record low of 576 births. This figure may be adjusted upwards from out-of-state births that are then attributed to Groton.

The unusually large number of young men and women in the 18 to 24 age range due to the submarine base inflates the numbers of total births in Groton. While it is common for these young base families to have children during their time with the base, many do not reside in Groton long enough for their newborns to attend Groton Public Schools in 5 years' time.

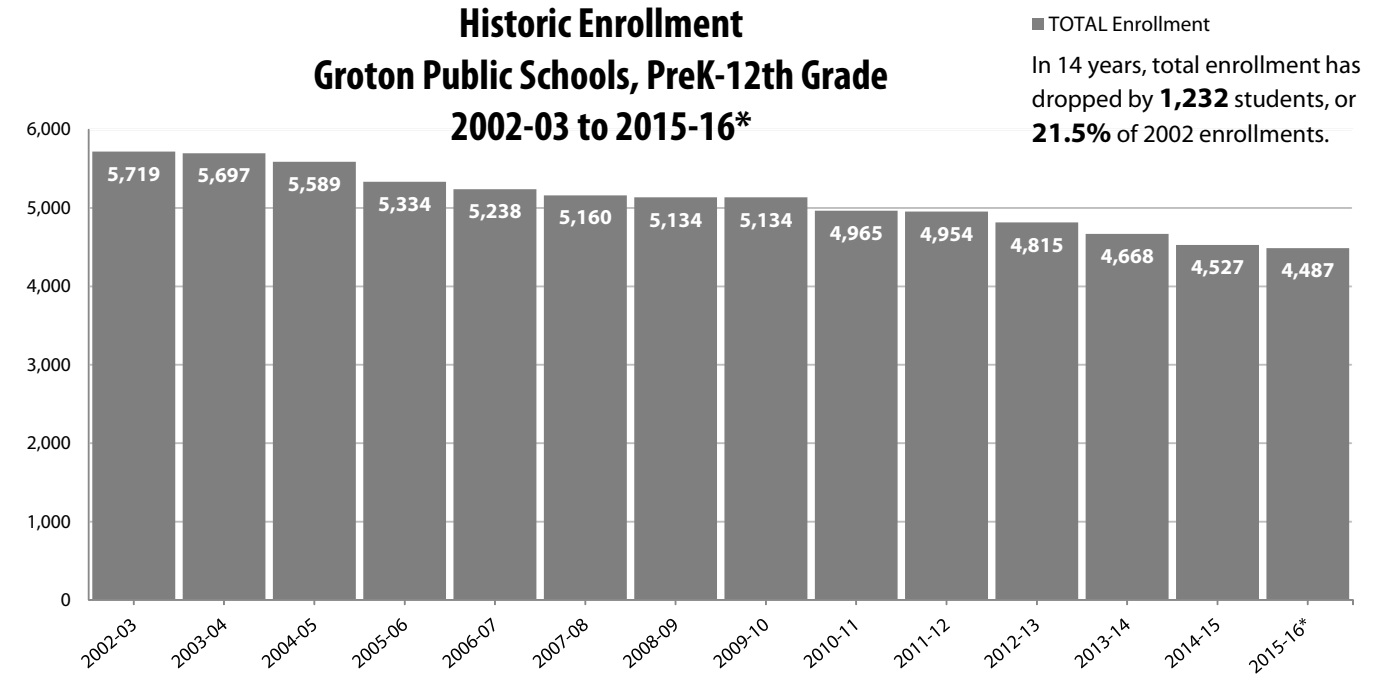
The dynamic nature of the Navy submarine base community as well as higher concentrations of multifamily housing developments in the City of Groton complicate efforts to predict future enrollments. The comprehensive Enrollment Projection Analysis discusses these communities and further analyzes broader trends and impacts of the economy and the housing market and their effects on Groton Public Schools enrollment. The full report projects future births based on these trends and demographic shifts in family formation and fertility rates among childbearing-age women in Groton. See Appendix A for details.

ENROLLMENT HISTORY AND TRENDS

Total enrollments for the Groton Public School District have been steadily declining from 2002 (5,719 students) until 2015 (4,487 students), losing roughly 100 students per year. These enrollments occurred during a time of largely static population and labor force. During this time, there was a much shallower decrease in births averaging a decrease of roughly eight births per year from 1997 (5 years prior to 2002) to 2013. The number of kindergarteners entering the system compared to the number of births in town 5 years prior is typically about 200 children fewer, indicating the level of out-migration of families in the area, including families at the Navy submarine base.

Low births will affect total enrollments until the recent rebound in children born in 2012 enter kindergarten in 2017. Enrollment declines may also be attributed to other public school options including New London Public Schools and LEARN as well as other nonpublic schools. Attendance of Groton children attending non Groton Public Schools institutions has increased 24% (from 977 to 1,212 children) just from 2011 to 2013.

The following figures show Groton School District's historic enrollments. In general, the system has experienced a 14% decrease in elementary enrollments between 2002 and

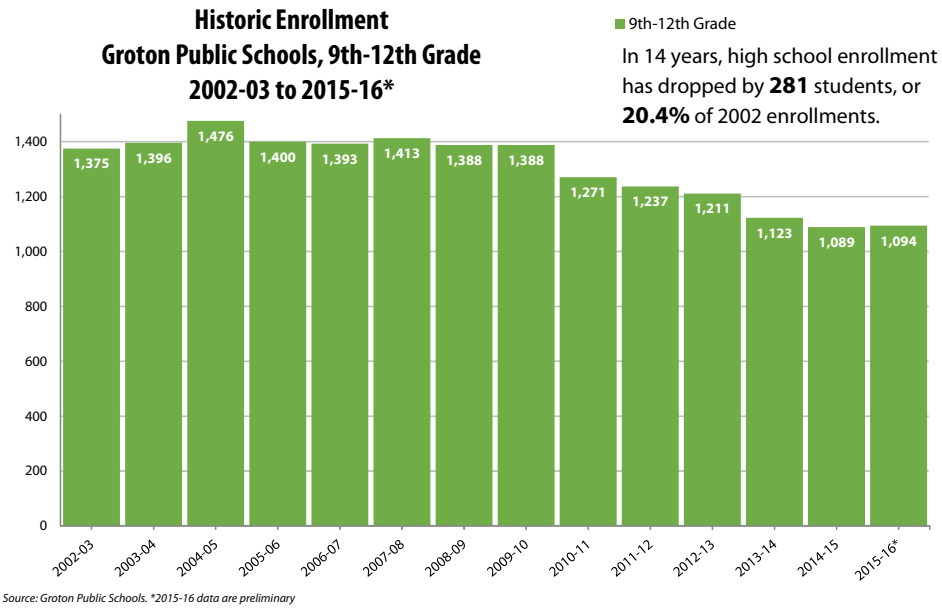


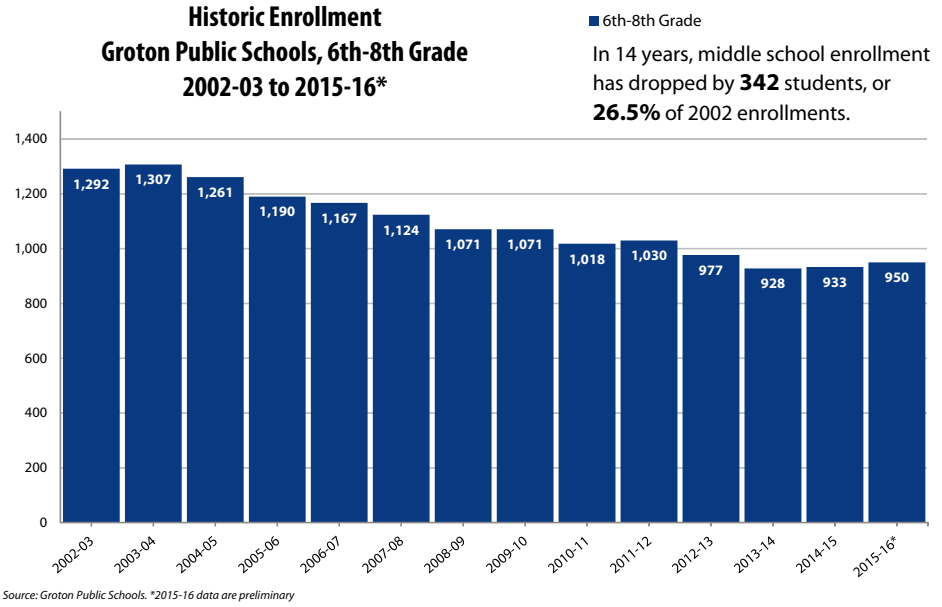
*Source: Groton Public Schools. *2015-16 data are preliminary*

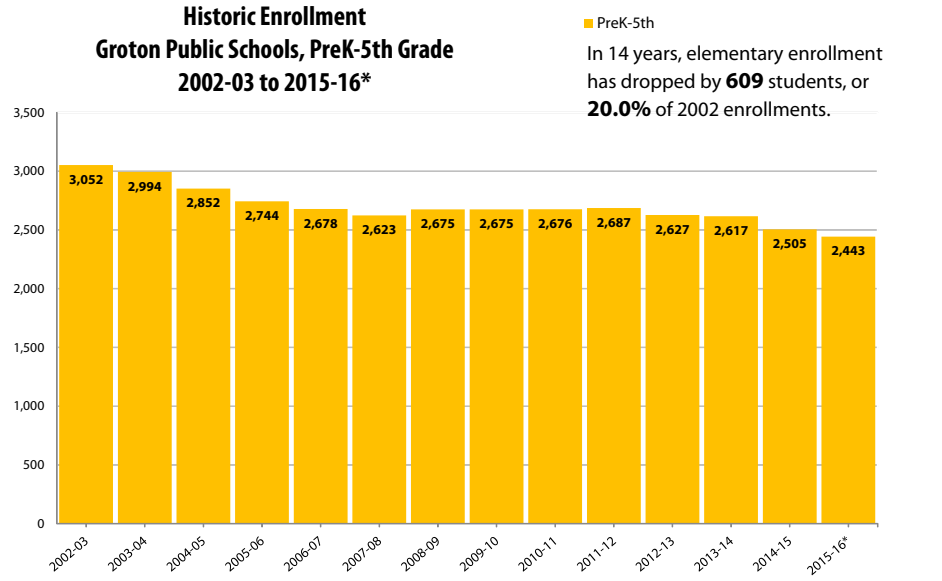
2008 and has been roughly stable at the elementary historic median of 2,677 until 2014-15, when enrollment dropped to 2,505 students. The middle school enrollments have declined steadily, falling 27% from 2002 to 2013. After staying at roughly the historic median of 1,388 students from 2002 to 2009, high school enrollments dropped precipitously 19% from 2009 to 2013, with 2014-15 enrollments at 1,089. 2015-16 data indicate some stabilization of enrollments, with elementary enrollments declining by 62 students, middle school enrollments adding 17 students, and the high school adding 5 students.

Elementary students in the Groton Public School District attend one of seven elementary schools: Charles Barnum, Catherine Kolnaski, Claude Chester, Mary Morrison, Northeast Academy, Pleasant Valley, and S.B. Butler with Catherine Kolnaski operating as an intradistrict magnet school. Catherine Kolnaski and Northeast Academy are new schools as of 2008, the same year that two other schools were closed.

Overall, enrollments at each school have been relatively stable with minor fluctuations, with the exception of a 14% drop in enrollment at Catherine Kolnaski between 2011 and 2012, which is attributed to movement of students to multiple elementary schools for that school year due to overcrowding. A subsequent redistricting of elementary schools was conducted in 2013-14 to reduce overcrowding at Catherine Kolnaski.







GROTON PUBLIC SCHOOLS ENROLLMENT BY GRADE GROUP

The 2012-13 school year marked a significant increase in Groton resident students attending other public and nonpublic schools. In that year, enrollment in private and parochial school enrollments increased 25%.

From 2011-12 to 2012-13, other public enrollments increased 28% with much of the increase being split between increasing enrollments in the LEARN program and New London Public Schools, with an additional 4% increase in the 2013-14 school year. Of particular note is the increase in numbers of students going to New London Public Schools. Total enrollments of Groton students in New London Public Schools increased 169% from 2011-12 to 2012-13 (29 students to 78), an additional 36% in the next year (78 to 106 students), and an additional 41% in 2014-15 (to 149 students).

Data from Groton Public Schools suggests that enrollments in New London magnet schools may have increased a further 21% in 2015-16 to 180 students (2014-15 data from some school programs are not yet available). The increasing popularity of other public school systems as well as nonpublic school options will continue to impact enrollments at Groton Public Schools.

ENROLLMENT PROJECTIONS

In 2015 and again in 2016, Milone & MacBroom, Inc. (MMI) prepared an Enrollment Projection Report for the Groton Public School System. Broadly, MMI calculated a persistency ratio of the proportion of students that move on to the next grade for each grade level. For example, in the 2014-15 school year, a net of 93.5% of 2013-14 kindergartners moved up to first grade. This ratio reflects the total effects of student transfers and family mobility within the district. Persistency ratios of 1.00 mean that the class size remains the same as it advances from one grade to the next. A persistency ratio of 1.05 means the class size increases by 5% or a class of 100 gains five additional students the next year.

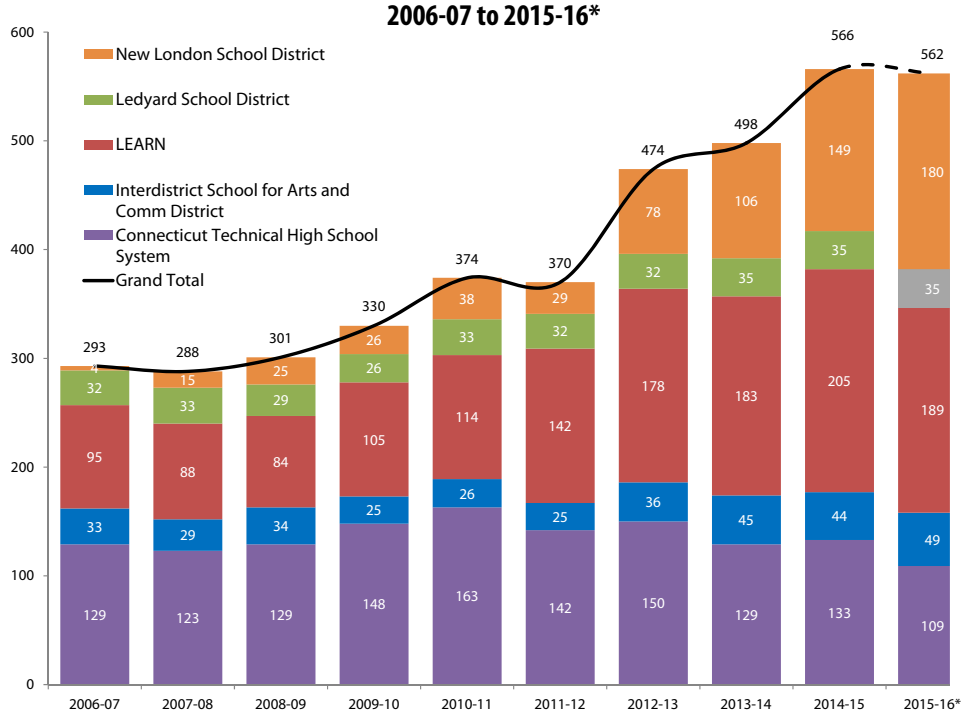
Enrollment data from 2002-03 through 2015-16 combined with birth data from 1997 to the present were used to calculate Birth-K and grade-to-grade persistency ratios. An average taken of the persistency ratios for the last 5 years was used to project future enrollments.

These projections are built on the assumption that the recent past can be a good predictor of the near future; this methodology works well for stable populations, including those that are growing or declining at a steady rate. Further assumptions built into these projections include the following:

- Programming will remain the same, including continuation of full-day kindergarten
- Based on the influence of the submarine base and trends on the nation and local level, annual births in Groton will only slightly decrease over this period
- Housing sales will stay between 200 and 250 annually

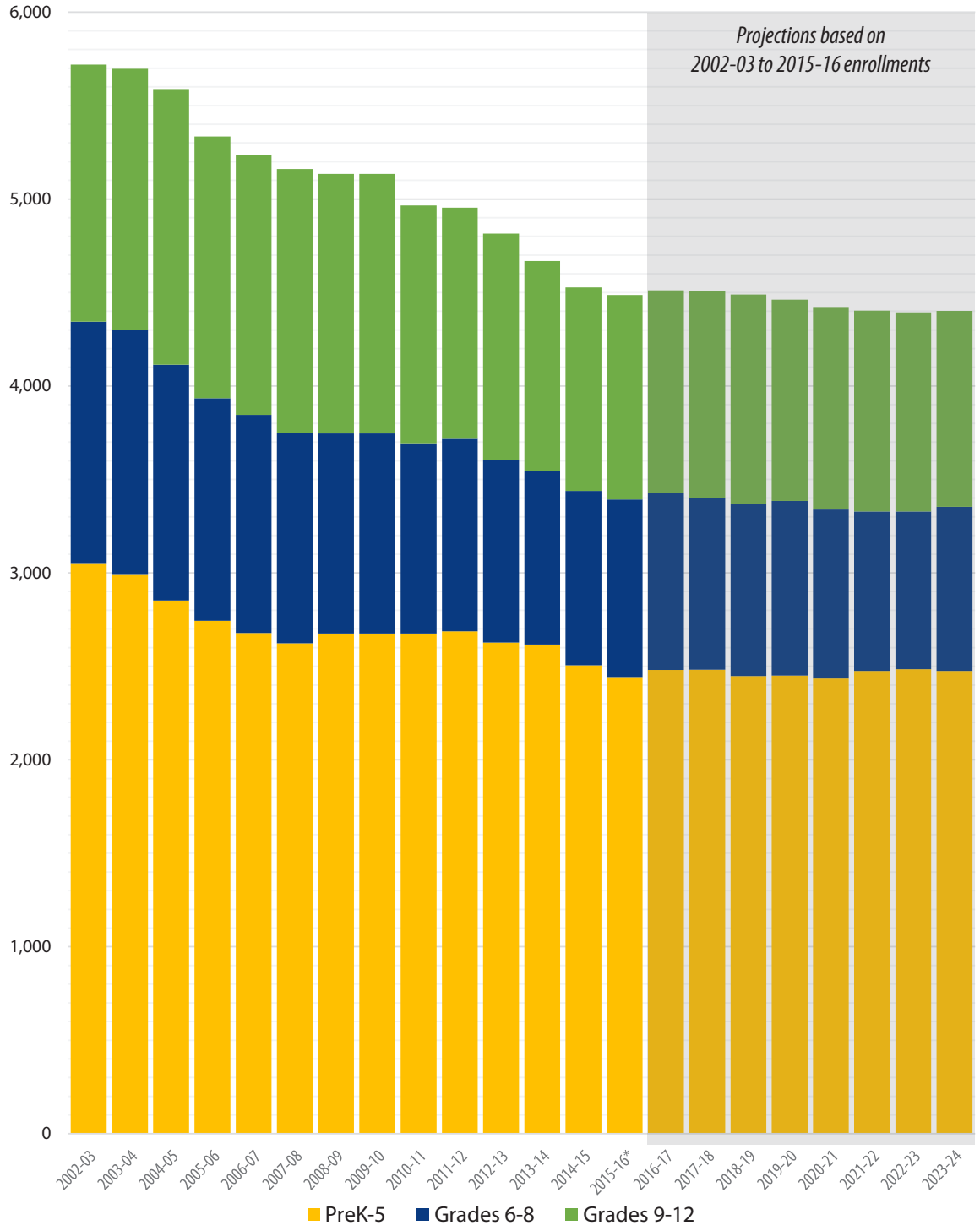
Based on these assumptions, enrollments are projected to continue their current trend of slow decline to 4,401 total PreK-12 students in the 2023-24 school year. See the full Groton School District Comprehensive School

Groton K-12 Enrollment in Other Public Schools, 2006-07 to 2015-16*



Sources: 2006-07 to 2013-14 from CEDaR. Schools with enrollments of fewer than 15 students over the 10-year period were excluded from this graphic.
*2015-16 data is preliminary data from Groton Public Schools.

Historic Enrollments and Future Projections, 2002-03 to 2024-25



*Source: Groton Public Schools. * 2015-16 data are preliminary.*

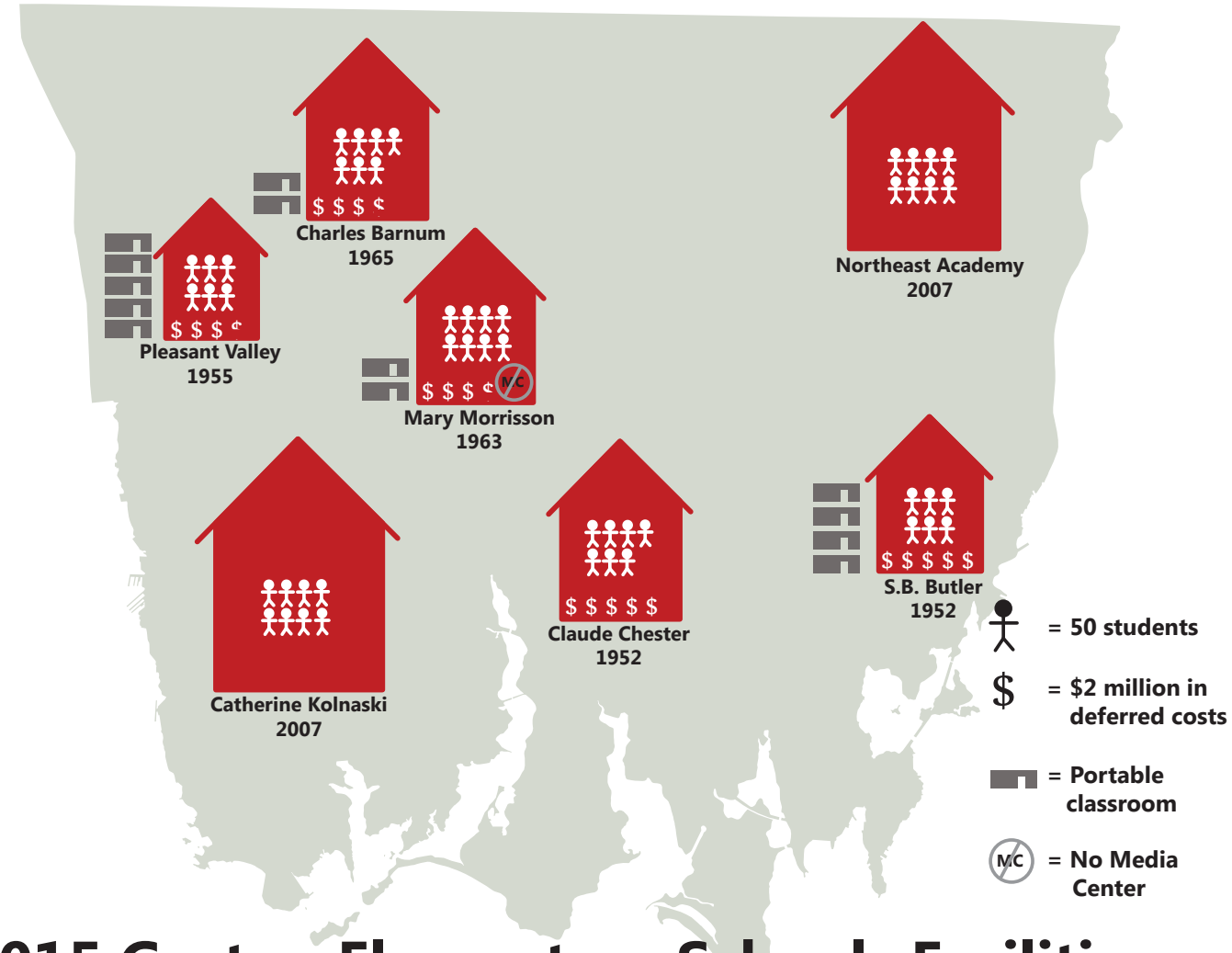
HISTORIC SCHOOL ENROLLMENTS AND FUTURE PROJECTIONS

Enrollment Study in Appendix A for more detail. The Groton 2020 Plan recommends school consolidation as part of the long-term facilities plan to address, in part, continued declining enrollment.

ELEMENTARY FACILITIES

Groton's Elementary School system has undergone substantial changes over the last decade following the 2007 completion of Phase I of the School Facilities Master Plan. Phase I built two new elementary schools (Catherine Kolnaski Magnet School and Northeast Academy) and closed five aging elementary schools. In addition to the two new facilities, Groton Public School operates five other elementary schools (Barnum, Chester, Morrisson, S.B. Butler, and Pleasant Valley), all of which were built between 1952 and 1965. Like many aging facilities, Groton's older elementary schools do not have adequate spaces for modern programming needs (computer labs, media centers, special education rooms, support functions, and office space).

In addition, deferred maintenance over the previous decades has resulted in costly upgrades that are required to bring the buildings up to code. Each of the seven elementary school facilities is described in detail below:



2015 Groton Elementary Schools Facilities

Catherine Kolnaski Magnet School

Catherine Kolnaski Magnet School is an intradistrict magnet school serving students in grades PreK-5 with a focus on STEAM – science, technology, engineering, arts, and mathematics. The school is situated on a large, 124-acre parcel, most of which is wooded and undeveloped. The site contains two playgrounds, two basketball courts, and a ballfield. Built in 2007 along with Northeast Academy, Kolnaski Magnet is the newest building in the district. The school was built for modern programming needs, and at 61,642 square feet, is the largest elementary school in the district. It contains 24 full-sized classrooms, a full-sized media center, gymnasium, cafeteria, and 11 special purpose rooms. Security improvements are the only high-priority facility need.

Northeast Academy

Northeast Academy is a K-5 school located in the Old Mystic section of northeastern Groton. The school sits on a mostly forested 21-acre site surrounded by low-density residential uses. The school site contains a small ballfield, two play areas, and a basketball court. The attendance zone covers northeastern Groton, Center Groton, Old Mystic, and the northern section of Mystic. Northeast Academy was built in 2007 making it the newest elementary facility in the district (along with Kolnaski Magnet). The building is over 55,000 square feet and suits modern programming needs. It contains 21 full-sized classrooms, separate gymnasium and cafeteria spaces, a full-sized media center, and 14 special purpose rooms for support functions and office space. Security improvements are the only high-priority facility need.

Charles Barnum

Charles Barnum Elementary School is a PreK-5 school located in the Conning Towers Nautilus Park section of northwest Groton. The school is located on a flat, wooded 16-acre site containing two playgrounds, a basketball court, and a ballfield. The surrounding neighborhood is primarily low-density residential. Built in 1965, Barnum School is the third newest elementary school facility but, nonetheless, is still over 50 years old. It has 23 full-sized classrooms, two portable classrooms, and five small special purpose rooms. Space deficiencies include a lack of adequate special purpose space, a small media center (just 835 square feet), and a lack of dedicated cafeteria space (shared with gym/auditorium). Charles Barnum School has several high-priority facility needs, including the following:

- Non-friable asbestos removal
- Energy efficiency improvements
- HVAC improvements
- Security and fire suppression systems
- ADA handicapped accessibility
- Temporary classroom elimination
- Electrical improvements

Mary Morrisson

Mary Morrison Elementary School is a K-5 facility located in the Conning Towers Nautilus Park section of northwest Groton. The school is situated on a 36-acre site, which contains three ballfields, two playgrounds, and a basketball court. The site is bound by Nautilus Park to the east and multifamily residential uses to the north. The Mary Morrisson attendance zone covers the southeastern portion of the Conning Towers Nautilus Park neighborhood and stretches south into the City of Groton to the Groton Townhouse Apartments and Groton Estates developments.

The school was built in 1963 and is 42,240 square feet, making it the third smallest elementary school facility in the district. Mary Morrisson School has numerous space deficiencies, including a lack of a media center and dedicated cafeteria space and minimal space for support functions. In addition, the school contains two portable classrooms. Several high-priority facility improvements are needed, including the following:

- Energy efficiency improvements
- HVAC improvements
- Security and fire suppression systems
- ADA handicapped accessibility
- Temporary classroom elimination
- Electrical improvements
- Boiler replacement
- Parking improvements

Pleasant Valley

Pleasant Valley is a K-5 school in the Conning Towers Nautilus Park neighborhood in northwestern Groton. The school site is about 17 acres. The site contains a small ballfield, two play areas, and a basketball court. The surrounding neighborhood contains medium-density residential (mostly multifamily homes) and commercial uses. The attendance zone is primarily on the west side of Route 1 and Route 12.

Pleasant Valley is the third oldest (built in 1955) and smallest (33,728 square feet) elementary facility in the district. It has the fewest full-sized classrooms of any school (21), a shared gymnasium/cafeteria, and five special purpose rooms that average just 110 square feet each. In addition, the school has five portables, the most of any school. An old portable annex is used for storage on the northern part of the site. In addition to space deficiencies, Pleasant Valley has many high-priority facility needs and has been identified as one of three priority elementary schools in need of significant repairs. Critical facility needs include the following:

- HVAC improvements
- Heating system replacement
- Encapsulation of dirt crawl space
- Structural repairs
- Security and fire suppression systems
- ADA handicapped accessibility
- Electrical improvements
- Boiler replacement
- Replace portables

Claude Chester

Claude Chester Elementary School is a K-5 facility located in the Poquonock Bridge section of Groton on an 11.5-acre site containing three ball fields, two basketball courts, and two playgrounds. The site is located adjacent to Poquonock Plain Park in a medium-density residential neighborhood. The attendance zone includes the Long Hill neighborhood and the western portion of the Poquonock Bridge neighborhood.

Built in 1952, Claude Chester is the oldest elementary school building in the district (along with S.B. Butler). Like the district's other pre 1970 facilities, the school lacks dedicated spaces for support services such as computer labs, special education, and administrative staff. In addition, it lacks a cafeteria space (with a multipurpose cafeteria/ gym/auditorium) and has a small media center. Claude Chester School has many high-priority facility needs and has been identified as one of three priority elementary schools in need of significant repairs. Critical facility needs include the following:

- Non-friable asbestos removal
- Parking improvements
- HVAC improvements
- Heating system replacement
- Encapsulation of dirt crawl space
- Structural repairs
- Security and fire suppression systems
- ADA handicapped accessibility
- Electrical improvements

S.B. Butler

S.B. Butler is a K-5 school located in Mystic in southeastern Groton. Situated on a 9.3-acre parcel, the site contains two ball fields, two playgrounds, and a basketball court. The surrounding neighborhood is primarily composed of single-family homes. The attendance zone includes the southern section of Mystic (south of Route 1), Noank, Groton Long Point, and the eastern part of the Poquonock Bridge neighborhood.

The school is the oldest (along with Claude Chester) and second smallest elementary facility. Four portable classrooms supplement the classroom space in the building. S.B. Butler has the costliest high-priority facility needs of any elementary school and has been identified as one of three priority elementary schools in need of significant repairs. Critical facility needs include the following:

- Non-friable asbestos removal
- Energy efficiency improvements
- HVAC improvements
- Heating system replacement
- Encapsulation of dirt crawl space
- Structural repairs
- Security and fire suppression systems
- ADA handicapped accessibility
- Electrical improvements
- Boiler replacement
- Replace portables
- Roof repairs

MIDDLE SCHOOL FACILITIES

Like many of its elementary school facilities, Groton's two middle schools are aging and have significant space and building deficiencies. Neither school was built for modern programming needs resulting in a shortage of spaces for special education, computer labs, science labs, and support services. As a result, they have had to rely on temporary solutions such as portables. In addition, the current middle school districts do not align with elementary school districts. As a result, some elementary schools are split, with some 5th graders moving on the West Side Middle School and others to Cutler Middle School. Finally, as both buildings are over 50 years old, critical building systems are approaching the end of their useful lives and require costly replacements. These issues are summarized in the sections below.

2015 Groton Middle Schools Facilities

Cutler Middle School

Cutler Middle School is a 6-8 school located in southeastern Groton between Noank and Mystic. The school is situated on a wooded 40-acre site. The site includes basketball courts, tennis courts, a ballfield, and two baseball fields. The attendance zone covers the eastern side of Groton, including Mystic, Noank, Groton Long Point, Old Mystic, and Poquonock Bridge.

Cutler was built in 1960, making it the newer of the two middle school facilities. It contains 28 full-sized classrooms and has separate cafeteria and gymnasium spaces and a media center. Nonetheless, it still has numerous space and facility deficiencies. The school relies on four portable classrooms and has fewer support spaces than needed. Critical facility needs include the following:

- Non-friable asbestos removal
- Energy efficiency improvements
- HVAC improvements
- Parking improvements
- Structural repairs
- Security and fire suppression systems
- ADA handicapped accessibility
- Electrical improvements
- Replace portables with permanent space

West Side Middle School

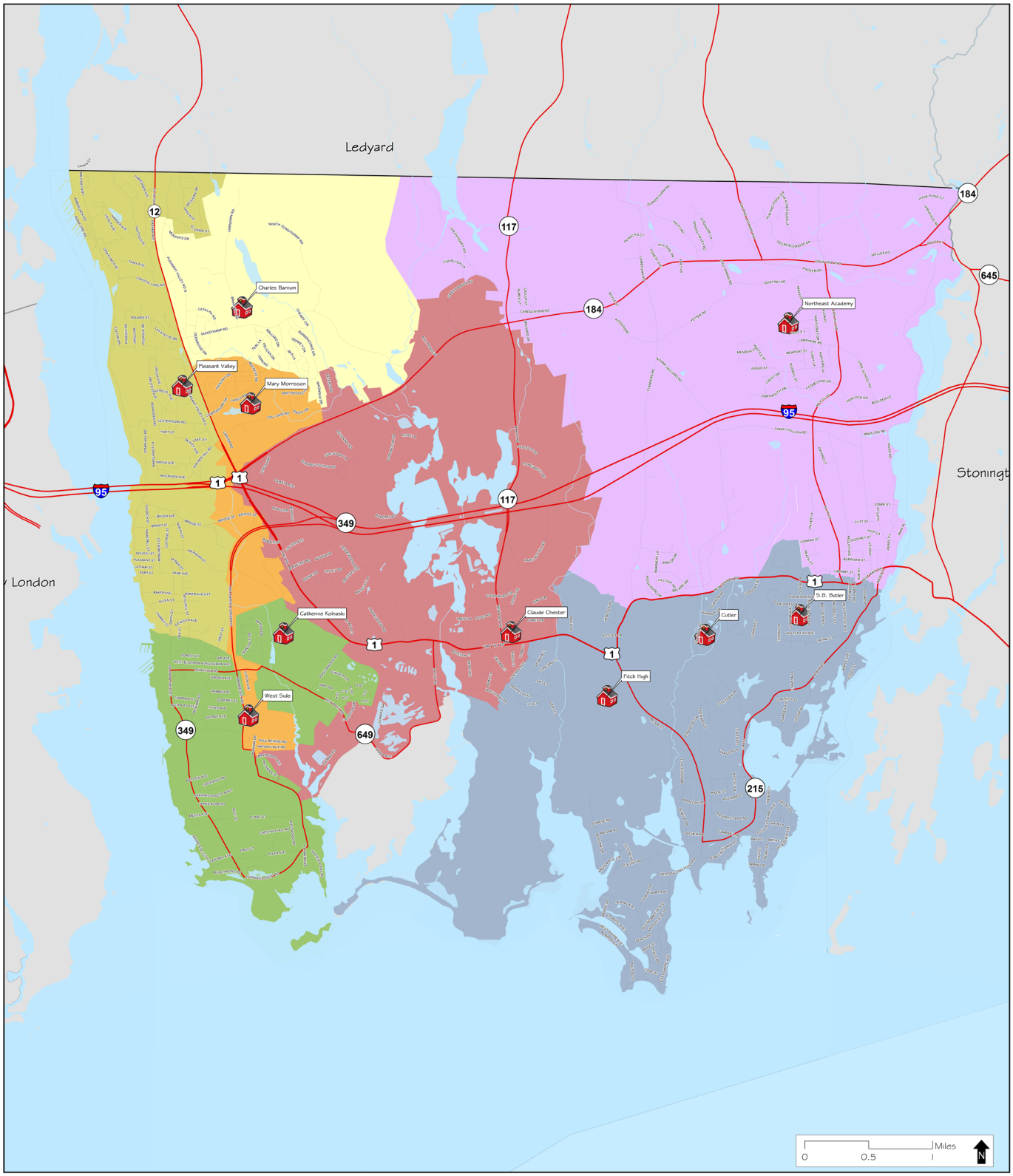
West Side Middle School serves students in grades 6-8 and is located in the City of Groton. The surrounding neighborhood is a mix of single-family and multifamily uses. The school is built into a hillside with entry on both the ground and basement levels. The 40-acre site is mostly wooded and contains a baseball field, a ballfield, and a basketball court.

West Side Middle School was built in 1956 and is the oldest and largest (76,000 square feet) middle school facility in the district. The attendance zone covers the City of Groton and the Conning Towers Nautilus Park neighborhood. Like Cutler, West Side has a shortage of special purpose rooms and offices and relies on portables to supplement building space. The aging building is in need of the most costly improvements of any facility in the district. Critical facility needs include the following:

- Non-friable asbestos removal
- Fire alarm replacement
- Replace heating system
- HVAC improvements
- Parking improvements
- Security system
- ADA handicapped accessibility
- Electrical improvements
- Roofing
- Replace portables with permanent space

Facility	Total
Non-Priority Schools	
Kolnaski	$137,500
Barnum	$7,333,750
Morrisson	$6,773,141
Northeast	$123,685
Total Non-Priority Costs	$14,368,076
Priority Elementary Schools	
Chester	$9,500,000
Pleasant Valley	$7,174,597
S.B. Butler	$10,488,117
Total Priority Elementary Costs	**$27,162,714**
Priority Middle Schools	
Cutler	$12,795,936
West Side	$15,145,721
Total Priority Middle Costs	**$27,941,657**
Total Priority School Costs	**$55,104,371**

SUMMARY OF COSTS



Groton Public Schools

Redistricting Plan

Elementary School Boundaries

Adopted January 7, 2013

Elementary School Boundaries

- Catherine Kolnaski
- Charles Barnum
- Claude Chester
- Mary Morrisson
- North East Academy
- Pleasant Valley
- S.B. Butler

Source:
* Parcels, School District Boundaries, Street Centerlines: Town of Groton Geographic Information Systems Dept.
* Basemap Data: Connecticut Department Of Environmental Protection Map & Geographic Information Center (2012)

This map was developed for use as a planning document. Delineations may not be exact.

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EDUCATIONAL VISION

The educational vision of the SFITF incorporates recommendations from the May 2014 Stakeholder Workshop, design considerations, and the State of Connecticut Grant Guidelines.

STAKEHOLDER WORKSHOP

On May 9 and 10, 2014, Superintendent of Schools Dr. Michael Graner convened a Planning Committee of various policy makers and stakeholders. This 1 ½-day intensive planning session formulated recommendations for the Board of Education regarding the future of the Groton Public Schools. This task force was charged with examining trends and factors affecting the schools' organization, teaching, and learning; identifying future school facility, program, and service needs; and identifying the critical issues that must be addressed in order to achieve the district mission and vision.

The planning committee worked in small groups to share ideas and opinions, followed by discussion by the committee as a whole. The process covered the following steps:

1. Background information
2. Planning guidelines and group processes
3. Review of the school district mission – this served as the cornerstone for planning and as a future-oriented direction for the school district
4. Visioning the future in terms of school programs and school organization in the context of the Groton community
5. Identification of critical issues, both internal and external, that impact the effectiveness and efficiency of the school district, establishing priority issues
6. Formulating recommendations for Board of Education consideration based upon the priority issues identified

As a result of this planning workshop, it was recommended that the Board of Education consider a redesign of school programs and organization to address significant issues, current and emerging, that will profoundly impact the Groton Public Schools. The workshop participants strongly recommended that the Groton Public School system should offer programs that are competitive with area magnet schools as well as increasing school intervention capacity to ensure that all students have equal program opportunities. The elementary schools are facing health and safety concerns from aging buildings that are not up to current building codes, resulting in unequal space availability, learning environment, and capacity for growth.

In order to address these programmatic issues and to achieve the school district vision and mission, the workshop group made a recommendation for a school organization and facilities plan.

HIGH SCHOOL RECOMMENDATIONS

The high school has received substantial capital investment and, with the exception of some areas of the building, meets all contemporary standards for code and educational use. Thus, it was recommended to maintain the high school program in its current facility.

The SFITF did recommend that the high school should design and implement challenging programs that will enhance the variety and rigor of opportunities available to all students. In order to stem declining enrollments, Fitch High School will need to provide an equal or better education than area schools of choice, including early graduation, college-level courses, and multiple pathways to success.

MIDDLE SCHOOL RECOMMENDATIONS

The Planning Committee recommended that the school district should build a new middle school for all Groton students, consolidating West Side and Cutler Middle Schools. A consolidated middle school will provide enhanced programming opportunities for all students. The consolidated middle school should be located in close proximity to Fitch High School to encourage and take advantage of multiple interface activities such as providing advanced coursework opportunities for students, allowing middle school students to gain high school credit for these courses.

A single middle school resolves many potential current and future issues. All middle-school-aged students in attendance at the same school resolves

such matters as declining enrollment, equity of access and opportunity to school programs and facilities, and issues related to racial balance. A single middle school enables the current middle school sites to be converted to elementary schools that have greater capacity than existing elementary facilities, thus enabling downsizing of the school district organization.

ELEMENTARY SCHOOL RECOMMENDATIONS

To address issues at the elementary schools, the Planning Committee recommended closing the three elementary schools that are in the poorest physical condition and require the most capital investment for bringing them up to code with contemporary educational space standards: Claude Chester, S.B. Butler, and Pleasant Valley. Closing these three elementary schools most in need of rehabilitation enables significant cost avoidance in capital projects as well as providing operational efficiencies through consolidation.

To replace the enrollment capacity at the three closed elementary schools, two pre-kindergarten through grade 5 schools would be built on the sites of the Cutler and Westside Middle Schools. Students would be transferred to these schools after the new middle school was completed and occupied. This recommendation was changed to renovating the two middle schools like new due to cost considerations.

DESIGN CONSIDERATIONS

Educational specifications were developed with stakeholders and helped to inform and guide the design process. Due to the differing programmatic needs at the elementary and middle schools, separate educational specifications were developed for each level. The specifications for the consolidated middle school were developed in July 2014, and the specifications for the two new elementary schools were developed in the fall of 2014.

FACILITY DESIGN GUIDING PRINCIPLES

Common educational specifications that are applicable and essential to all Groton schools are presented below. The facility designs for all three levels should accommodate projected enrollments through the year 2023, taking into account increases in student population and future needs. The designs support the concept that smaller learning communities within the fuller learning community enhance interactions among learners, increase a feeling of belonging, and emphasize the importance of individuality. The school should be physically organized in grade-level clusters that facilitate teamwork. Support services spaces should be provided juxtaposed to grade-level clusters for ease of access by students and for the facilitation of teacher collaboration.

1. School design to accommodate both current and future projected enrollments
2. Support smaller learning communities within the full school community
3. Student driven, interactive, project-oriented learning experiences
4. Adaptable space for dynamic and changing educational philosophies and programs
5. Space designed for multiple functions
6. Space for meetings of various sizes distributed throughout the facility
7. Support for contemporary technologies easily adapted for emerging technologies
8. Facilities to support 21st century learning
9. Welcoming atmosphere that provides a sense of comfort for students, staff, and community
10. Free flowing, safe, easy movement
11. Maximum exposure to natural light and airflow
12. Durable, high quality, age-appropriate furnishings that support the educational program
13. Include acoustical treatment designed to minimize the transmission of sound
14. Durable and easily maintained finishes
15. Appropriate energy efficient technologies
16. Central heating, ventilation, and cooling (HVAC)
17. Community access and use that minimizes disruption to educational activities
18. Emergency shelter if necessary
19. Outdoor spaces as an extension of the educational, athletic, and community program
20. Diverse educational philosophies such as alternative education models and magnet school models

The full educational specifications reports are in Appendix B.

SFITF recommended the following based on facility needs and education specification requirements:

- Construction of two new 86,000-square-foot, 600-student capacity elementary schools to replace Claude Chester, S.B. Butler, and Pleasant Valley
- Construction of a new, 169,000-square-foot, 938-student consolidated middle school
- Two new elementary schools constructed on the sites of Cutler and West Side Middle Schools – best use of town-owned assets and maintains historical presence of schools
- Improvements to outdoor athletic facilities and strengthen Groton's Civic Hub

This recommendation was changed to renovating Cutler Middle School and West Side Middle School into like-new elementary school facilities due to cost considerations. These buildings will each be 83,400-square-foot, 600-student.

STATE OF CONNECTICUT GRANT GUIDELINES

Section 10-282 (18) of the Connecticut General Statutes (C.G.S.) defines "Renovations" as "a school building project to totally refurbish an existing building." There is a high standard for renovation projects to meet in order to be eligible for the school renovation construction grant:

- The renovated facility must have a useful life comparable to, but cost less than, a new facility a new facility. A project can lose eligibility if its costs increase to where there is no longer the required savings. A threshold of $450 per square foot is used for this criterion.
- The facility to be renovated must not have been awarded this renovation construction grant within the last 20 years.
- At least 75% of the facility to be renovated must be at least 30 years old.
- The entire facility must be brought into 100% compliance with all applicable codes, including ADA accessibility.
- The renovation must incorporate modern education technology capability throughout the facility.
- All existing building systems must have a useful life of 20 years or comparable to a new system if less than 20 years.
- All new and replacement windows must be energy efficient.
- The site of the existing facility must be central to the area served and adequate to provide the educational programs offered.

New school construction projects reimbursement rates that are 10 percentage points lower than the reimbursement rate for renovation projects. In order to renovate Cutler and West Side Middle Schools like new, the legislature will need to waive the $450 per square foot requirement. However, this will still result in a more affordable building plan than building two new facilities.

CONNECTICUT SPACE STANDARDS

For purposes of the school construction grant program, a facility is allowed a maximum square footage per pupil. Construction projects that exceed the maximum square footage per pupil are considered oversized for grant computation purposes, and the proportion of the school that is oversized will not be eligible for grant reimbursement.

REIMBURSEMENT – CURRENT AND HISTORIC

The State of Connecticut has a grant program to help communities to fund school construction and renovation projects based on a percentage of total cost of the project. But, due to budget cuts, the reimbursement rate for school building projects has been declining. From 2012 to 2014, the reimbursement percentages fell by one percentage point per year, from 58% to 56% for renovation and 48% to 46% for new construction.

The 2015 reimbursement percentages were increased three percentage points, only to decrease by five percentage points in 2016, down to 54% reimbursement for renovation projects and 44% for new construction projects. For the proposed Groton 2020 Plan, this change in state reimbursement rates translates into a net increase of $5.3 million dollars to Groton residents from 2015 rates to 2016 rates. Due to the overall trend of falling reimbursement rates, it is likely that school construction projects will have an increasingly high cost to local taxpayers in the future.

DIVERSITY GRANT

In order to support the racial balance law, the State of Connecticut has also enacted a diversity grant program. Under Connecticut General Statute § 10-286h (2012), the Department of Construction Services (DCS) provides a school building project grant for a "diversity school" for any local or regional board of education that (1) has a school out of racial balance and (2) has demonstrated evidence of a good-faith effort to correct this racial imbalance without success. This diversity grant is for an 80% reimbursement of a building project to correct the racial imbalance within 5 years of the opening of the school.

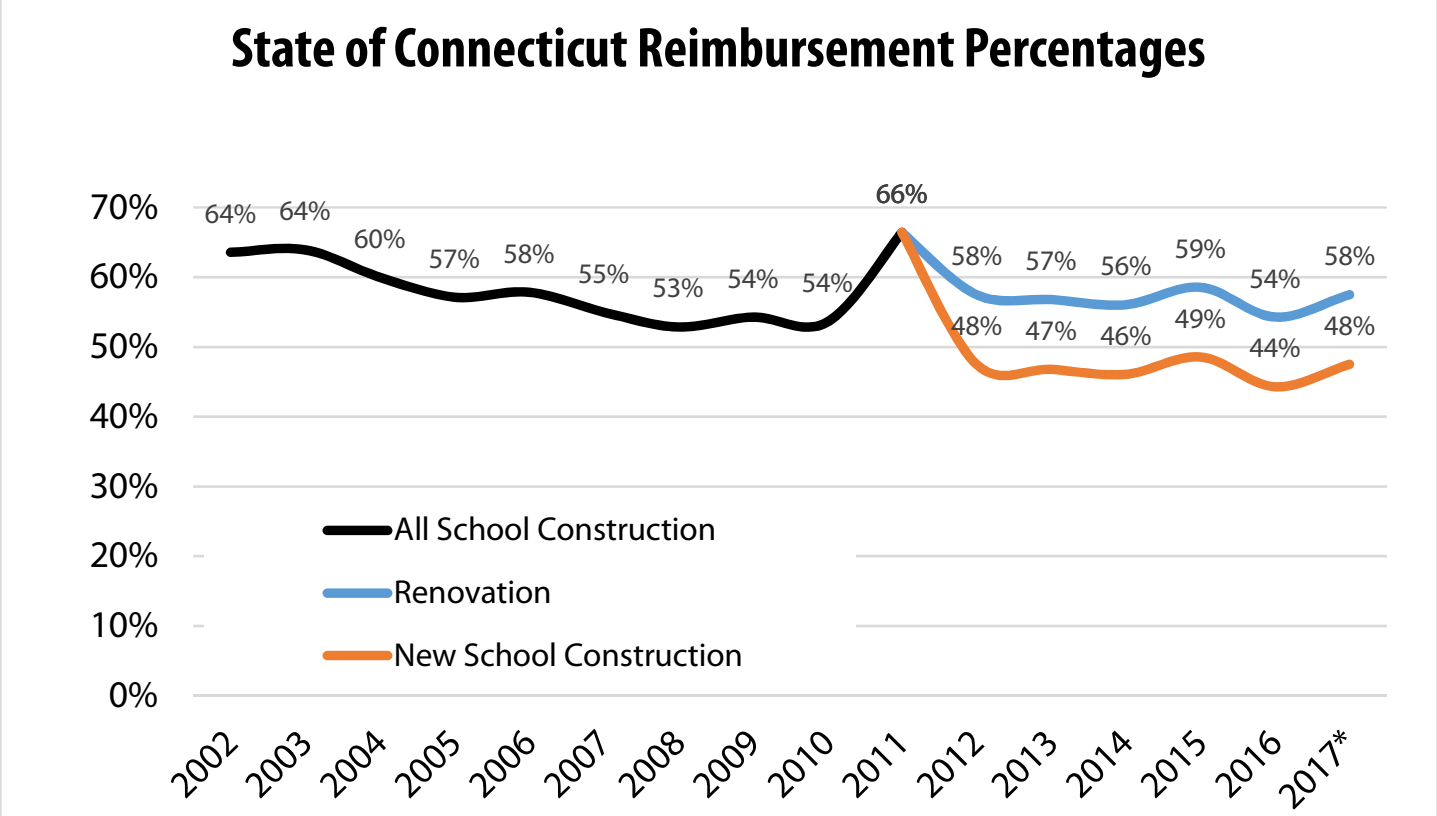
However, no schools in the Groton School District currently qualify for the diversity grant. While there have been long-standing racial balance issues at Claude Chester Elementary, the school is not out of racial balance for the 2015-16 school year. The Diversity Grant status of the Groton 2020 Plan will be based on school demographics at Claude Chester Elementary School as of October 1, 2016.

STATE STANDARD SPACE SPECIFICATIONS

Projected Enrollment	Grades PreK/K	1	2	3	4	5	6	7	8	9	10	11	12
0-350	124	124	124	124	124	156	156	180	180	180	194	194	194
351-750	120	120	120	120	120	152	152	176	176	176	190	190	190
751-1500	116	116	116	116	116	148	148	170	170	170	184	184	184
Over 1500	112	112	112	112	112	142	142	164	164	164	178	178	178

Source: CT Division of Construction Services

STATE SPACE STANDARDS



*Source: Connecticut State Department of Education *2017 data are preliminary*

SCHOOL CONSTRUCTION REIMBURSEMENT TRENDS

TASKFORCE RECOMMENDATIONS

The SFITF has formulated facility recommendations based on the existing conditions of Groton Public Schools and their educational vision for the district.

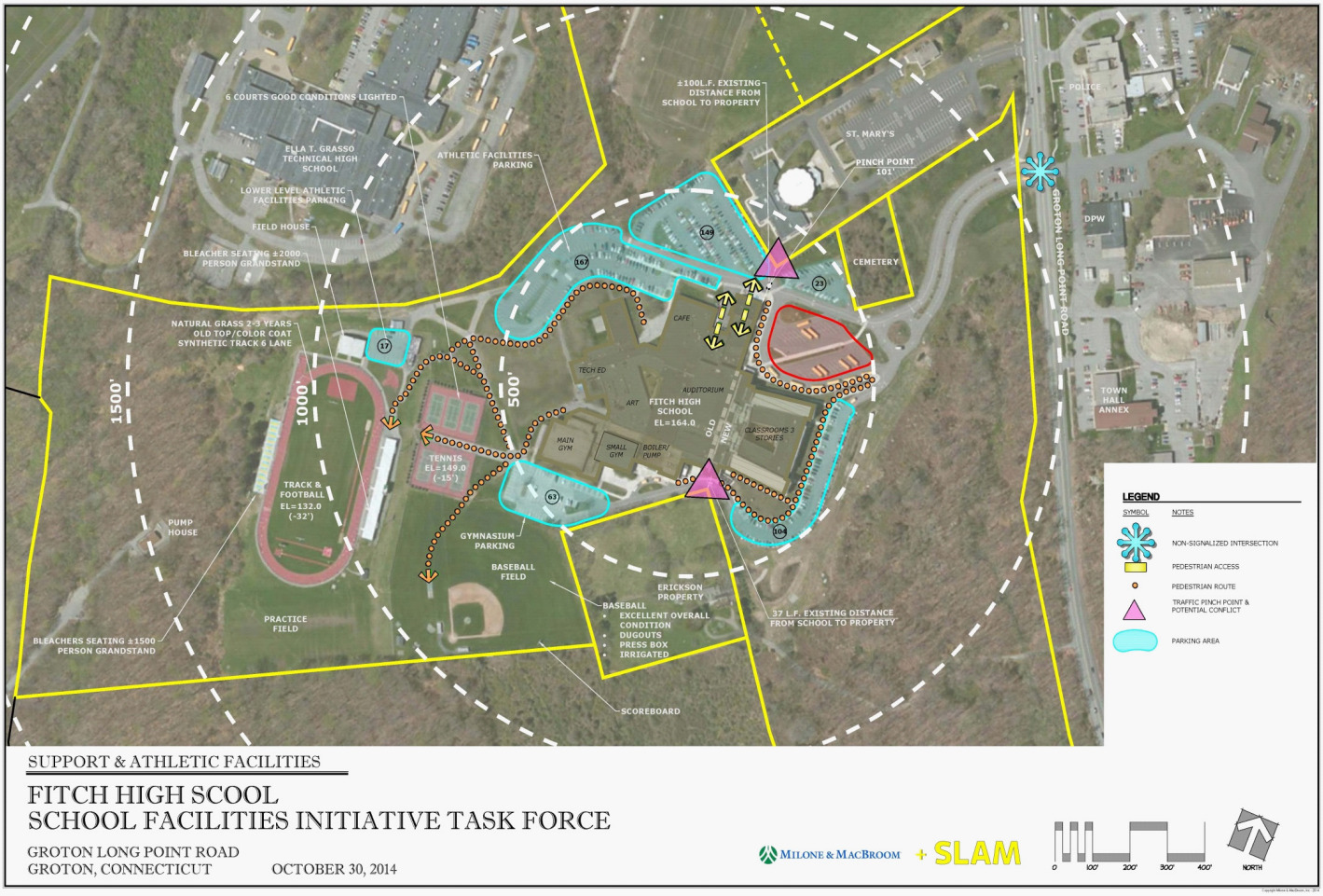
SINGLE MIDDLE SCHOOL

Two sites were evaluated as potential locations for the new consolidated Middle School: the Merritt site located on Fort Hill Road and the High School site located adjacent to Fitch High School. Both sites are located in the Poquonock Bridge neighborhood. Its central location relative to student populations made both sites attractive from a transportation perspective. In addition, the sites are located near other major institutions, including Town Hall, Groton Public Library, Fitch High School, Ella Grasso Technical High School, Sutton Park, and Poquonnock Plains Park.

In order to evaluate the feasibility of the sites, test-fits were performed. Test-fits evaluate whether the educational specifications could be accommodated on the site provided and help weigh the pros and cons of various concepts.

HIGH SCHOOL SITE

Fitch High School is located on a 75-acre parcel bordered by Haley Farm State Park, Ella Grasso Technical High School, the Water Pollution Control Facility, and Groton Long Point Road. The high school has a single access point from Long Point Road. The undeveloped western portion of the parcel is wooded and characterized by steep slopes, including several areas with slopes of 20% or higher. Similarly, the southeastern part of the site is steeply sloped, posing constraints to future development. Athletic facilities are located on the west-central portion of the site and include track and football stadium, a field house, a practice field, a baseball field, and tennis courts. The high school athletic facilities are adequately sized



AERIAL PHOTOGRAPH OF EXISTING HIGH SCHOOL AND MERRITT PROPERTY

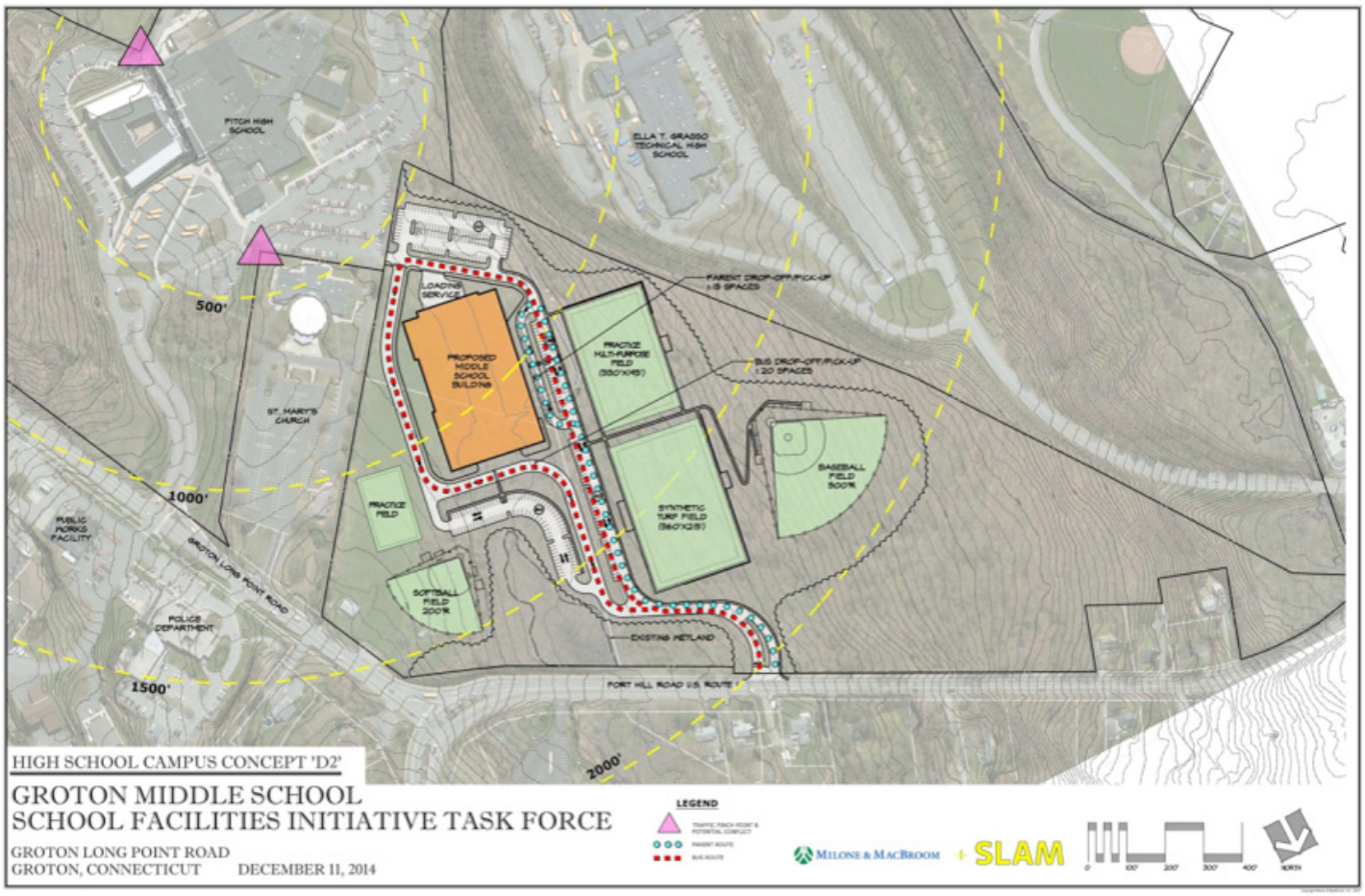
and are in good condition. The central portion of the site contains the high school building and parking areas accommodating 374 vehicles. The site has both public water and sanitary sewer service.

Test-fits on the high school site were unable to meet educational specifications. Since most developable land on the site has been built on (either buildings or athletic facilities), all options placed the new middle school building on top of existing high school athletic facilities. Costs to rebuild the displaced athletic facilities ranged from $900,000 for the tennis courts and baseball fields to $3.5 million for the track and football stadium. Even if these facilities were rebuilt, they would not be large enough to accommodate both the high school and middle school populations. Finally, the site would not be able to support a secondary access point for the middle school. The two schools would share a single site access point, which would increase vehicular volume at choke points.

SELECTION OF MERRITT SITE

The Merritt site is an undeveloped town-owned property comprised of two parcels totaling 46 acres. It is located on Fort Hill Road between the Ella Grasso Technical High School and Fitch High School campuses. With the exception of the far northern section, the site has gently sloping terrain. Test-fits worked well with existing topography (no excessive cut and fill). The site was able to support independent access from Fort Hill Road with controlled access to the high school site. Test-fit concepts were able to preserve the wetlands area and the lower wooded portion of the site. Both involved building on the developable central and southern parts of the site. Depending on building placement, the middle school may visually compete with the massing of the adjacent St. Mary's Church.

In addition, the site was large enough to incorporate accessory athletic facilities to serve middle school students. These facilities were able to meet the needs of the middle school population while preserving and complementing existing facilities at the high school. The property is composed of two parcels: a 35-acre parcel that currently has a conservation deed restriction and a smaller parcel without a conservation



deed restriction. Groton Public Schools is negotiating a land conversion with DEEP in order to develop the property into a school.

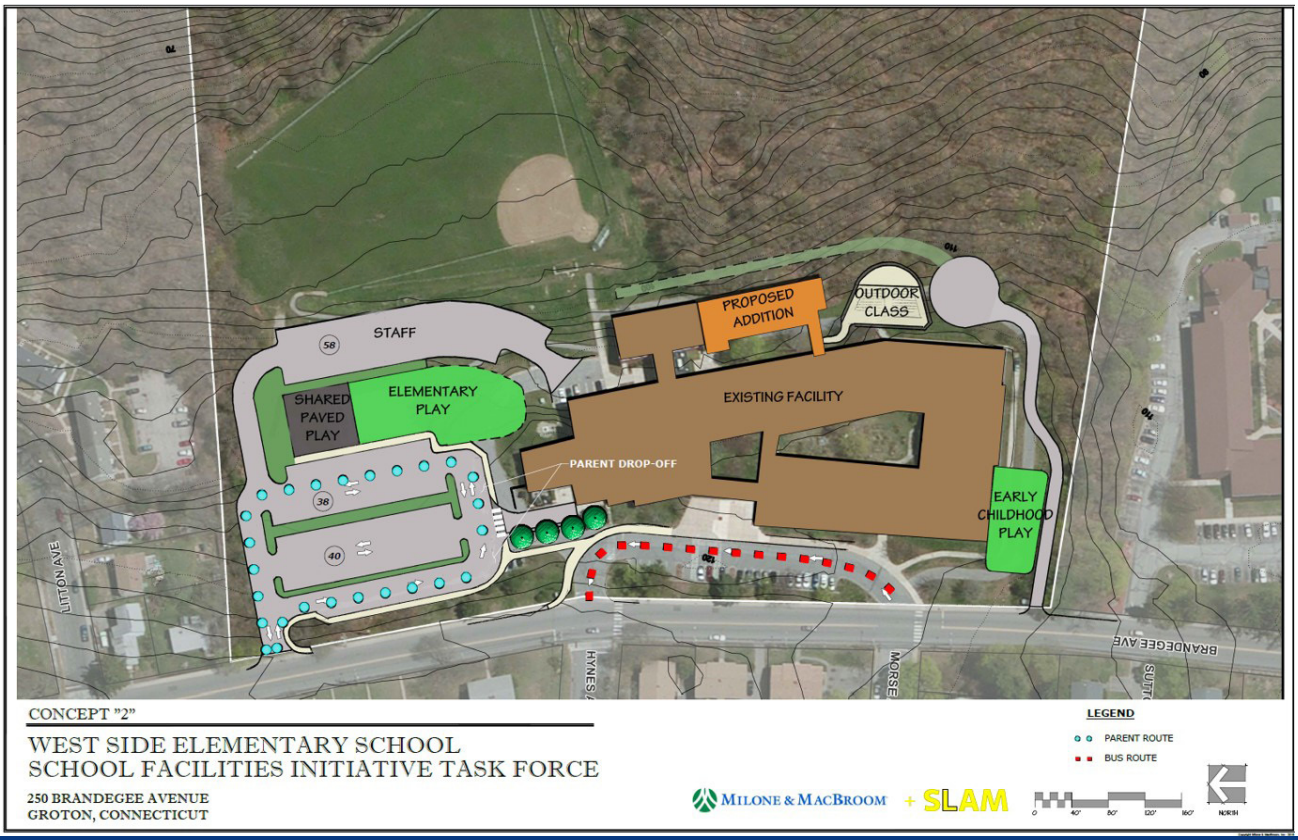
Because of its superior performance in site layout, athletics facilities, and transportation access, the Merritt property was selected as the preferred site for the new consolidated middle school.

TWO NEW ELEMENTARY SCHOOLS AT CUTLER & WEST SIDE

Two renovated-like-new 600-student elementary schools are recommended for the Cutler Middle School and West Side Middle School sites. Both schools would have dedicated attendance zones supplemented with magnet seats from Groton's other elementary school districts. The magnet seat component will help ensure long-term racial and utilization balance across all of Groton's elementary school facilities.

Like the consolidated middle school, test-fits were conducted in order to assess whether the educational specifications could be accommodated on the sites. Test-fits and cost estimates were developed for renovate-like-new and new construction options. Due to the costly retrofit and upgrade costs associated with the existing buildings coupled with caps in the construction costs for renovate-like-new status ($450 per square foot) rate for renovation projects, the SFITF committee concluded that the renovate-like-new option would require special legislation in order to move forward. The committee also explored options for new construction on both sites. In addition, new construction would allow preliminary site work (grading, utilities, etc.) to be conducted while the middle school buildings were still occupied, speeding up the construction time line and reducing project costs.

However, a request to fund a larger portion of the Groton 2020 Plan through special legislation did not move forward. A revised plan to renovate the existing middle schools into like-new elementary schools will result in a more affordable building plan overall.



CONCEPT DRAWINGS OF WEST SIDE ELEMENTARY SCHOOL

WEST SIDE

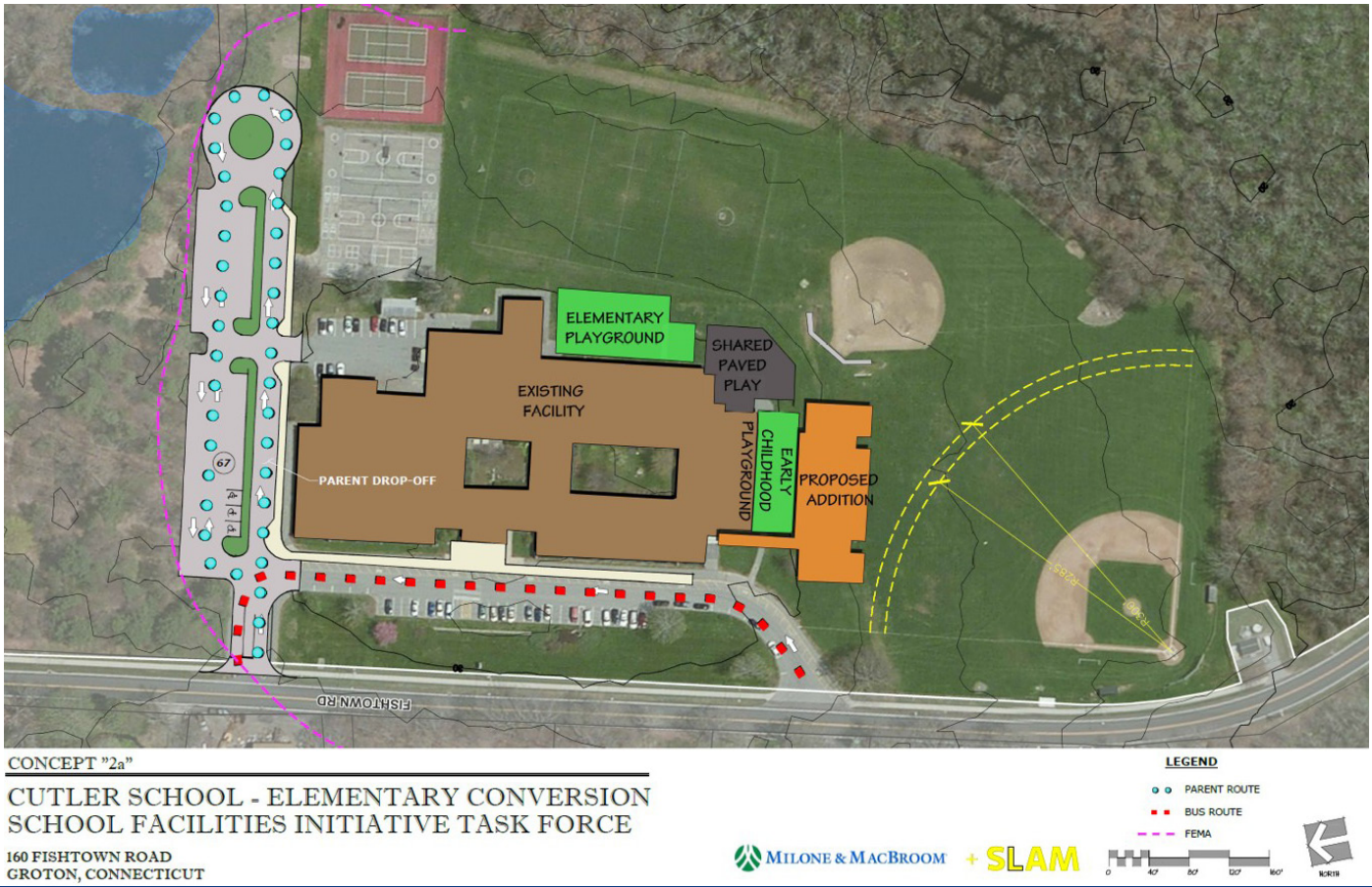
The West Side site (currently home of West Side Middle School) is located in the western portion of the City of Groton. The existing school building is on the southern part of the parcel while the northern part of the parcel contains a parking area, basketball court, and ballfield. The ballfield sits approximately 20 feet below the street. The eastern portion of the parcel is wooded and steeply sloped and is not conducive to development.

A renovated-like-new building could accommodate 600 elementary school students with an 11,700-gross-square-foot addition and a separate outdoor classroom. An early childhood play area and a separate elementary playground with grass and paved areas would also be added. A reconfigured parking lot and drop-off area would be created, roughly corresponding to the footprint of the existing parking area.

CUTLER

The Cutler site (currently home of Cutler Middle School) is located in eastern Groton between Mystic and Noank. The existing school building is located in the northwestern corner of the site. Adjacent to Cutler Middle School are three ballfields, basketball courts, tennis courts, and a parking area. The eastern portion of the site is wooded and undeveloped. The developed and undeveloped portions of the site are bifurcated by a large wetland, limiting development on the eastern side of the parcel.

The renovated-like-new construction test-fit can accommodate 600 elementary students with an 11,000-gross-square-foot addition to the building. Separate early childhood and elementary playgrounds would also be added with a shared paved play area. The parking lot would also be reconfigured to provide a more efficient student drop-off system.



CONCEPT DRAWINGS OF CUTLER ELEMENTARY SCHOOL

PUBLIC OUTREACH WORKSHOPS

MAY WORKSHOPS

On May 28, 2015, the SFITF facilitated a public meeting and community conversation on the Groton 2020 Plan. The event allowed members of the public to learn about the SFITF process and the resulting recommendations for one new middle school and two new elementary schools. After the presentation, there was an informal breakout discussion with attendees to address concerns. Feedback from this workshop was incorporated into a Frequently Asked Questions (FAQ) document to answer common questions held by the public. See Appendix C for full FAQ.

JOINT MEETING IN SEPTEMBER

On September 9, 2015, the SFITF conducted a special joint meeting to present information to the Representative Town Meeting, Town Council, and Board of Education. Chairman Jon Heller began the presentation with the resolution establishing the SFITF and the process that the group has gone through since February 2013. Superintendent Dr. Mike Graner addressed Groton's education needs for the 21st century as well as the community's interest in magnet schools and the desire to end the need for racial balance redistricting. Director of Buildings and Grounds Sam Kilpatrick discussed the building deficiencies with costs of $55 million to bring school buildings up to current building codes without any further modernization. Consultant Mike Zuba addressed planning and design considerations of the Groton 2020 Plan to build one new middle and two new elementary schools. Chairman Heller presented a cost summary and implications for taxpayers of an average of $152 per $100,000 of assessed value (reflecting cost assumptions based on 2015 school construction grant reimbursement rates).

The presenters engaged with and answered questions from the RTM. Questions and comments focused on the cost to taxpayers, but many representatives were in favor of providing equal opportunities for Groton schoolchildren in appropriate, updated buildings.

PRESENTATION OF THE GROTON 2020 PLAN AT THE MAY PUBLIC WORKSHOP

SURVEY PROCESS AND RESULTS

Over the summer of 2015, the Center for Research and Public Policy (CRPP) conducted an opinion survey of Groton residents. The sample was collected randomly by generating telephone digits that fall within Groton, including cell phones and landlines. Statistically, the random sample of 386 surveys represents a margin of error of ±4.96% at a 95% confidence interval. This means, for example, that if 50% of the sample surveyed answered yes to a question we are 95% sure that between 45% and 55% of the population as a whole would also answer yes to the same question. The survey results represent a snapshot in time, and results could be expected to shift in response to a concerted public relations or informational campaigns.

After giving survey respondents the framework of the Groton 2020 Plan, they were asked, "…if a referendum was held today, how would you vote?"

- 36.5% would definitely or probably support
- 44.6% would definitely or probably oppose
- 18.9% were unsure

Assuming that those who were unsure abstained from voting on the issue, this would represent a likely defeat at referendum. Those who opposed the Groton 2020 Plan were asked why, with the top three reasons being the cost to taxpayers, a perception that school facilities do not need to be upgraded, or that the current buildings should be renovated and maintained. Those who supported the Groton 2020 Plan believed that the school facilities are outdated and need modernization, that the Groton 2020 Plan is well thought out, and that quality education is important for the schoolchildren of Groton.

After this initial question about voting on the ballot, respondents were then asked, "If the investment in Groton's school facilities cost was $250 for the average property owner in increased annual property tax, how would you vote on the plan?" When a dollar amount was included, support for the Groton 2020 Plan increased from 36.5% to 51.8%, suggesting that most people thought that $250 was a fair price. All income groups were equally opposed to this second ballot question although those respondents reporting a household income of $0 through $40,000 were the most likely to respond that they were unsure. Support from this group jumped to 66% when asked if they would support the Groton 2020 Plan at an average cost of $150. This suggests that among this income group, the $250 is a cost barrier even if they believe in the program.

In other findings, 51.3% of respondents said that they were more likely to support the Groton 2020 Plan after being told that the five schools addressed are, on average, 60 years old. Respondents also strongly or somewhat agreed (54.2%) that a long-term fix supported by taxpayers through a limited-term bond was preferable to spending $55 million in immediate short-term repairs.

When responses were cross tabulated by whether they supported or opposed the second ballot question, one wedge issue that was found was new construction versus renovation of current schools. 58.3% of opposition voters said that new construction would make them less likely to support the Groton 2020 Plan while supporters saw it as a positive, and 57.5% said that it made them more likely to support the Plan. Both opposition voters and supportive voters agreed on the following:

- Pre-kindergarten education is important
- Groton should include in-town magnet schools
- Groton Public Schools facilities should be modernized
- Groton schools were never properly maintained or reinvested in

In general, the survey found that residents became more supportive when they were given more information that helped them make an informed decision. Residents want safe, updated, modern facilities for their children and are more likely to be supportive when they are told what the expected cost to taxpayers will be. The full survey results are included in Appendix D.

SPECIAL LEGISLATION DENIAL

Groton sought and was denied special legislation for a one-time grant from the state to achieve the goals of the Groton 2020 Plan..

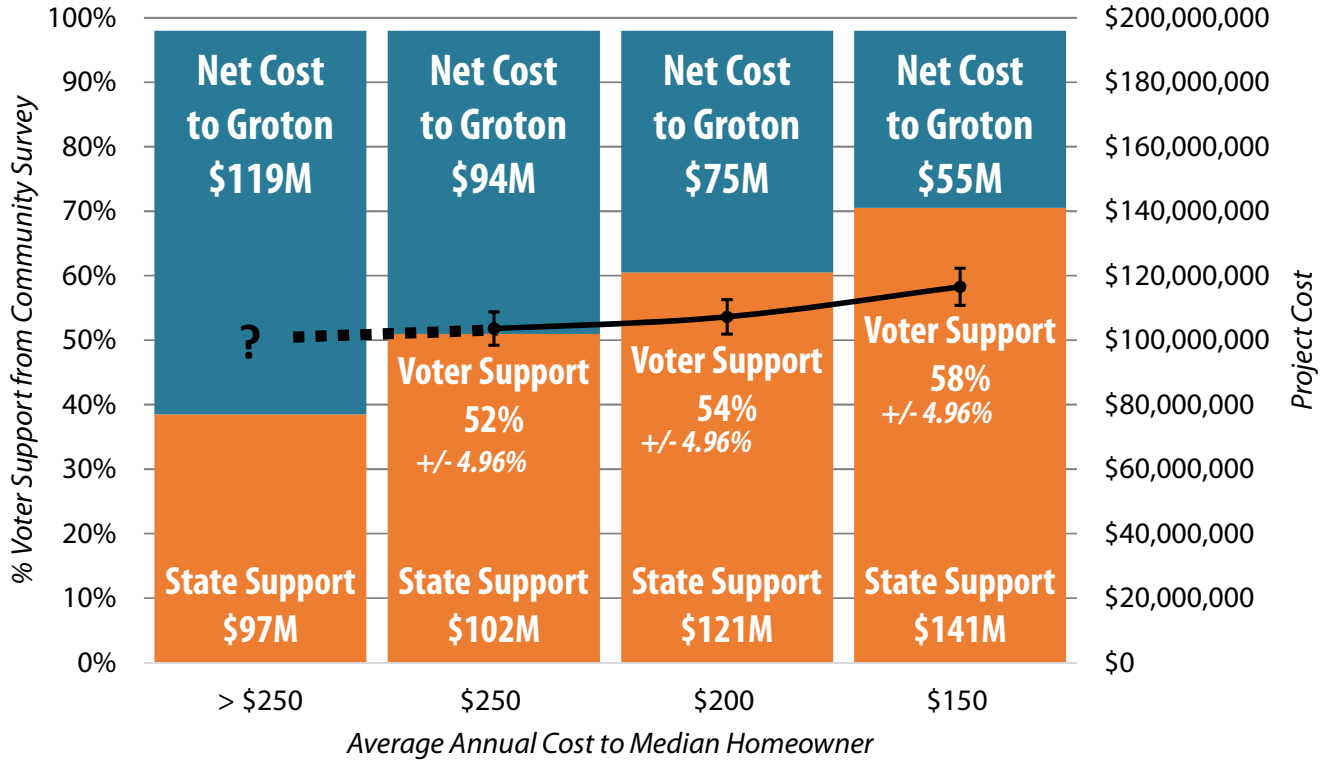
Findings from the community phone survey suggested that while most residents (52%) feel that an average of $250 a year for the average homeowner is a reasonable price, there was an increase in support among lower-income residents when the burden on taxpayers was decreased to $150 (58% support). Groton also has a history of failing previous referenda to build new schools, based on resident concerns about increasing mill rates.

In order to increase the likelihood of passing a school construction referendum, the Town of Groton sought an act of special legislation above and beyond the traditional level of school construction grant reimbursement in order to bridge this affordability gap for residents.

The requested grant was for $141 million for the Groton 2020 Plan. This would have brought Groton's share to $55 million, an average of about $152 per year to median homeowner ($88 per $100,000 of assessed value) over the life of the bond.

The request for special legislation did not go forward for this year's legislative session due to reasons external to Groton. The Groton SFITF is now moving forward with a revised building plan that aims to renovate two buildings like new rather than building new facilities. This revised plan has an estimated project cost of $184.4 million with a net cost to Groton of $84 million. The estimated tax impact will be about $235 per year to median homeowners ($136 per $100,000 of assessed value) over the life of the bond if the project passes a public referendum.

Net Project Cost, Tax Impact, and Community Support for Groton 2020 Plan



Sources: Town of Groton Pro Forma Debt & Mill Rate Impact, IBIC
Groton School Facility Initiative Task Force Community Survey, CRPP

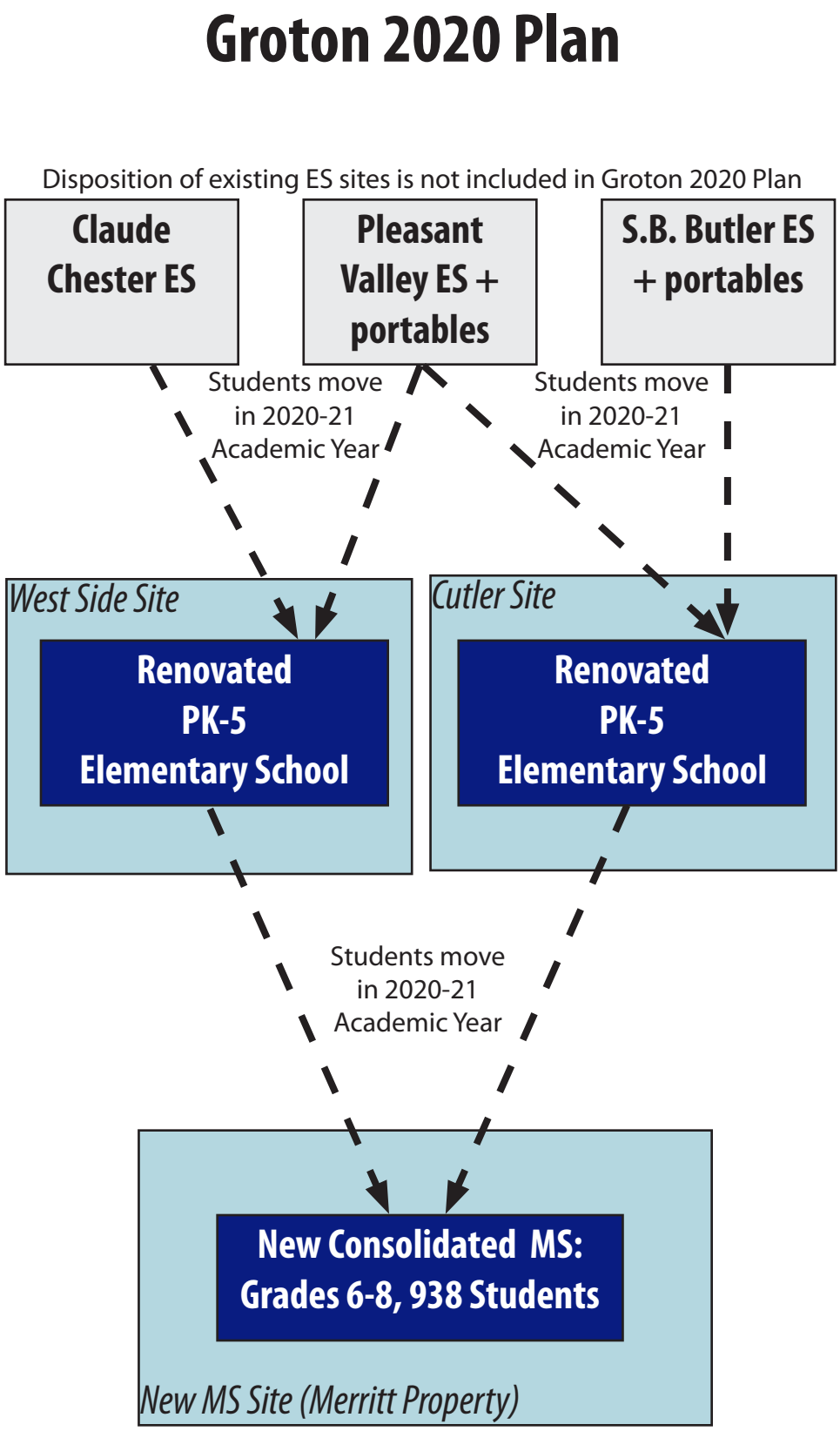
RELATIONSHIP BETWEEN NET PROJECT COST TO GROTON, TAX IMPACT, AND COMMUNITY SUPPORT

CONCLUSION

On May 18, 2016, the Council of the Whole voted on a resolution to move the Groton 2020 Plan forward to referendum in November 2016.

The recommendations of the revised Groton 2020 Plan were presented to the Town Council on May 18, 2016. The recommendations called for a $184.4 million school construction project that retires Claude Chester, Pleasant Valley, and S.B. Butler Elementary schools; builds a 169,000-square-foot middle school adjacent to Fitch High School; and repurposes the middle school sites as 83,400-square-foot, 600-student Pre-k to 5 magnet schools.

Under the proposed special legislation, the Groton 2020 Plan will cost the taxpayers of Groton roughly $84 million. Detailed opinions of probable cost can be found in Appendix E. Groton plans to submit school construction grant application for each of the three projects for June 2016. A referendum is planned for November 2016.



ACKNOWLEDGEMENTS

SCHOOL FACILITIES INITIATIVE TASK FORCE

Andrea Ackerman (Board of Education)
Jean Claude Ambroise (RTM)
Robert Beaulieu Jr. (Teacher)
Holly Bresnahan (Citizen at Large)
Jane Dauphinais (Town Council Representative)
Joe de la Cruz (Town Council)
Enrico DeMatto (Permanent School Building Committee)
Marc Denno (Citizen at Large)
Michael Doyle (Citizen at Large)
Katrina Fitzgerald (Board of Education)
Wes Greenleaf (Citizen at Large)
Jon Heller (Citizen at Large, Chair)
Craig Koehler (Citizen at Large)
Jackie Massett (Citizen at Large)
Heather Somers (Citizen at Large, City of Groton)
Kevin Trejo (Citizen at Large)
Lenny Winkler (Citizen at Large)
Hal Zod (Planning Commission)

GROTON PUBLIC SCHOOLS

Dr. Michael Graner, Superintendent
Susan Austin, Assistant Superintendent
Samuel Kilpatrick, Director of Facilities

TOWN OF GROTON STAFF

Mark Oefinger, Town Manager
Nicki Bresnyan, Executive Assistant
Jon Reiner, Director of OPDS
Rick Norris, Project/Program Manager - Planning & Development

TECHNICAL ASSISTANCE

MILONE & MACBROOM® + SLAM

CRPP The Center for Research & Public Policy

Dr. Tom Jakubaitis

APPENDICES

APPENDIX A: GROTON SCHOOL DISTRICT COMPREHENSIVE SCHOOL ENROLLMENT STUDY

APPENDIX B: EDUCATIONAL SPECIFICATIONS

B1: CUTLER ELEMENTARY SCHOOL

B2: WEST SIDE ELEMENTARY SCHOOL

B3: MIDDLE SCHOOL

APPENDIX C: FREQUENTLY ASKED QUESTIONS

APPENDIX D: GROTON SFITF COMMUNITY SURVEY

APPENDIX E: GROTON SFITF OPINIONS OF PROBABLE COSTS

Groton Public Schools
Enrollment Projection Report
Groton School Construction

Prepared for

the Groton Public Schools Board of Education

May 2016

Milone & MacBroom

EXECUTIVE SUMMARY

Milone & MacBroom, Inc. has analyzed demographic; housing; and economic trends, characteristics, and forecasts along with birth data and historic enrollment trends to create 8-year enrollment projections and facility utilization projections for the Groton School District and its elementary and middle schools. The Connecticut State Department of Education requires 8-year enrollment projections as a critical factor for determining reimbursement eligibility and project size for school construction projects. Projections must be both districtwide and school based. This projection report is intended to fulfill the districtwide enrollment projections requirement as well as the school-based requirement for the planned construction projects at West Side Elementary School, Cutler Elementary School, and the new Consolidated Middle School.

Using federal, state, local, and private sources of information, the initial demographic, housing, and economic analysis informs enrollment projections and helps the school district to plan accordingly. Key findings from the demographics and housing analysis are as follows:

- Groton's population grew by 0.5% between 2000 and 2010, a slower growth rate than both New London County and Connecticut as a whole.
- U.S. Census data indicates the school-aged population (ages 5 to 17) decreased by -17.6% from 2000 to 2010.
- Women of childbearing age (ages 18 to 44) decreased by -12.9% overall; however, 20 to 29 year olds, the age cohort with the highest birth rate, increased by 4.2%. Groton has the highest birth rate in the state.
- Annual births peaked in 1996 at 748 and have gradually decreased since then. Over the last decade, births have averaged between 575 and 650 per year.
- Housing construction in Groton is down since the early 2000s; however, the number of annual housing sales has begun to rebound from its recent low in 2009.
- The number of personnel and dependents associated with Naval Submarine Base New London is down about 30% from a decade ago but has been stable since 2011.
- Electric Boat is planning a major expansion in their workforce over the next 15 years.

In addition, a comprehensive enrollment analysis provided the basis for projecting enrollments. Existing grade configurations (K-5, 6-8, 9-12) were used in the analysis of past enrollment trends. The key enrollment trends identified are as follows:

- Enrollments have decreased each year since 2001-02.
- Total PK-12 enrollments are down -14.3% from total enrollments of a decade ago (2006-07).
- Over the last decade, all grade cohorts experienced a drop in enrollment, with high school experiencing the sharpest declines (-21.5%) and elementary schools experiencing the smallest declines (-8.6%).
- During the last 3 years, middle school (6-8) and high school (9-12) enrollments have stabilized while elementary enrollments have continued to drop.
- Enrollment of Groton residents in magnet programs in neighboring towns has increased dramatically over the last 5 years, especially at the K-5 level.
- Over the next 8 years, elementary school (K-5) enrollments are projected to decrease by -0.5%; middle school (6-8) enrollments are projected to decline by -7.6%, and high school (9-12) enrollments are projected to decrease by -4.3%.

Factors Impacting Enrollment

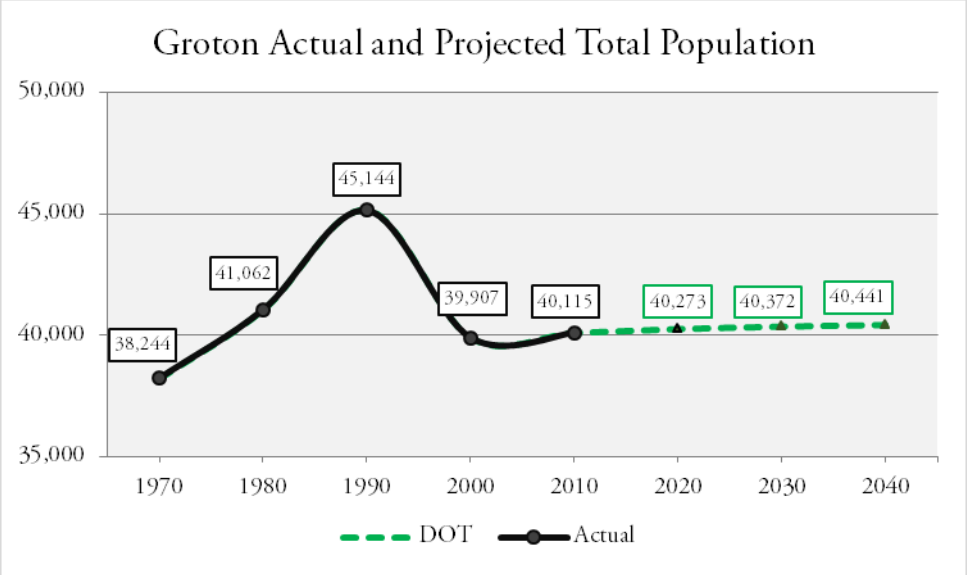
Groton Public Schools contracted with Milone & MacBroom, Inc. to conduct a school enrollment analysis and to develop enrollment projections for the district. This report examines factors that influence school enrollments, namely trends in demographics, births, housing, and economics. These trends provide a framework for the districtwide and school-by-school enrollment projections.

Demographics

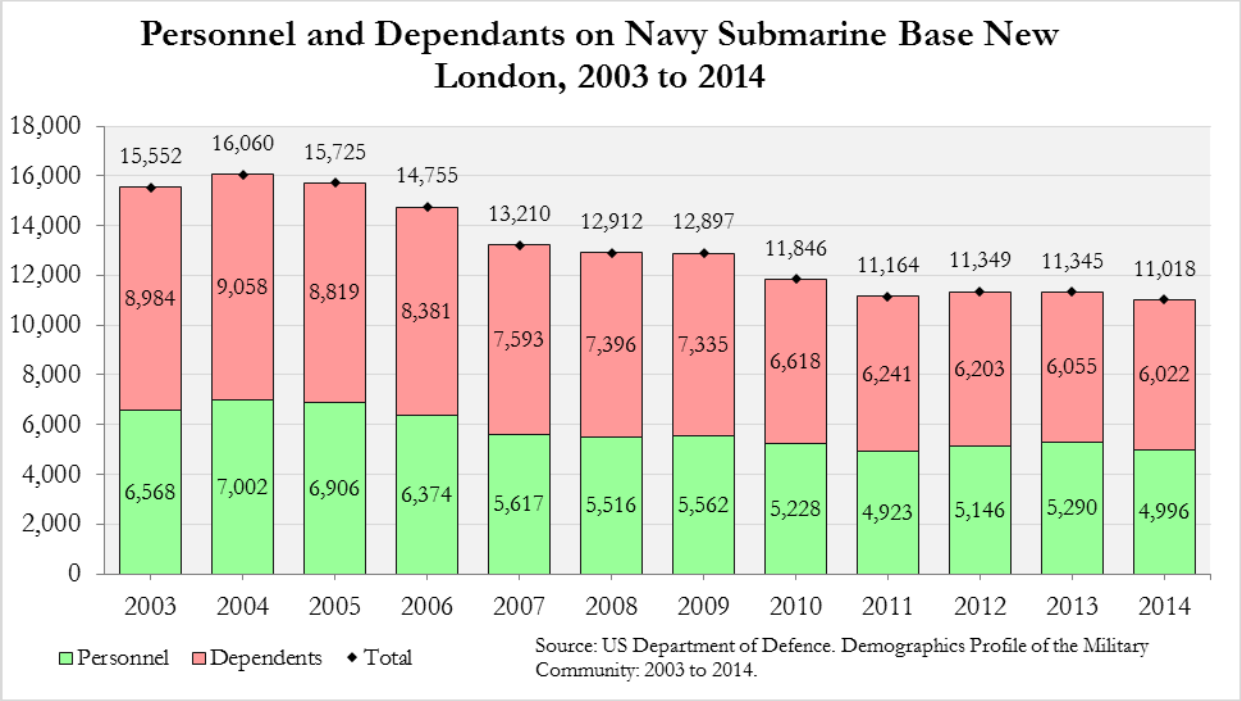
Actual and Projected Population

Over the past 40 years, Groton's population has been volatile due to the influence of Naval Submarine Base New London and large defense contractors such as Electric Boat. Groton's close ties to the defense industry make it susceptible to population expansions and contractions that correspond with the ebbs and flows of military deployment and national defense spending. From 1970 through 1990, Groton's population grew by 6,900 residents as the defense industry surged during the Cold War. After the Cold War ended in the early 1990s, Groton's military population and defense-related workforce were scaled back, resulting in a loss of over 5,200 residents between the 1990 and 2000 decennial censuses. The Town of Groton's population has stabilized since 2000 and grew by 0.5% from 2000 to 2010. However, the town's growth rate was much lower than the 5.8% increase for the entirety of New London County and the 4.9% increase for the State of Connecticut during the same period. The total population change from 39,907 persons in 2000 to 40,115 persons in 2010 resulted in a gain of 208 people.

The aforementioned instability caused by Groton's military ties make it difficult to project future population trends. Projections from the Connecticut Department of Transportation (DOT) show Groton's population remaining stable over the next 25 years, with a projected population growth of just 300 residents up to 2040. This projection would best reflect a "status quo" scenario for Groton's defense-related populations. This methodology is consistent with recent demographic data from Naval Submarine Base New London, which indicates that personnel and dependent populations on the base have stayed stable since 2011. The recently announced expansion of Electric Boat's workforce as well as the Pentagon's recommendation for further military base closures and realignments in the coming years could dramatically alter Groton's demographic landscape. However, since it is impossible to predict the outcomes of these events, it is recommended that the town continue to closely monitor these situations and update its projections annually.



Sources: U.S. Census Bureau, Connecticut Department of Transportation.



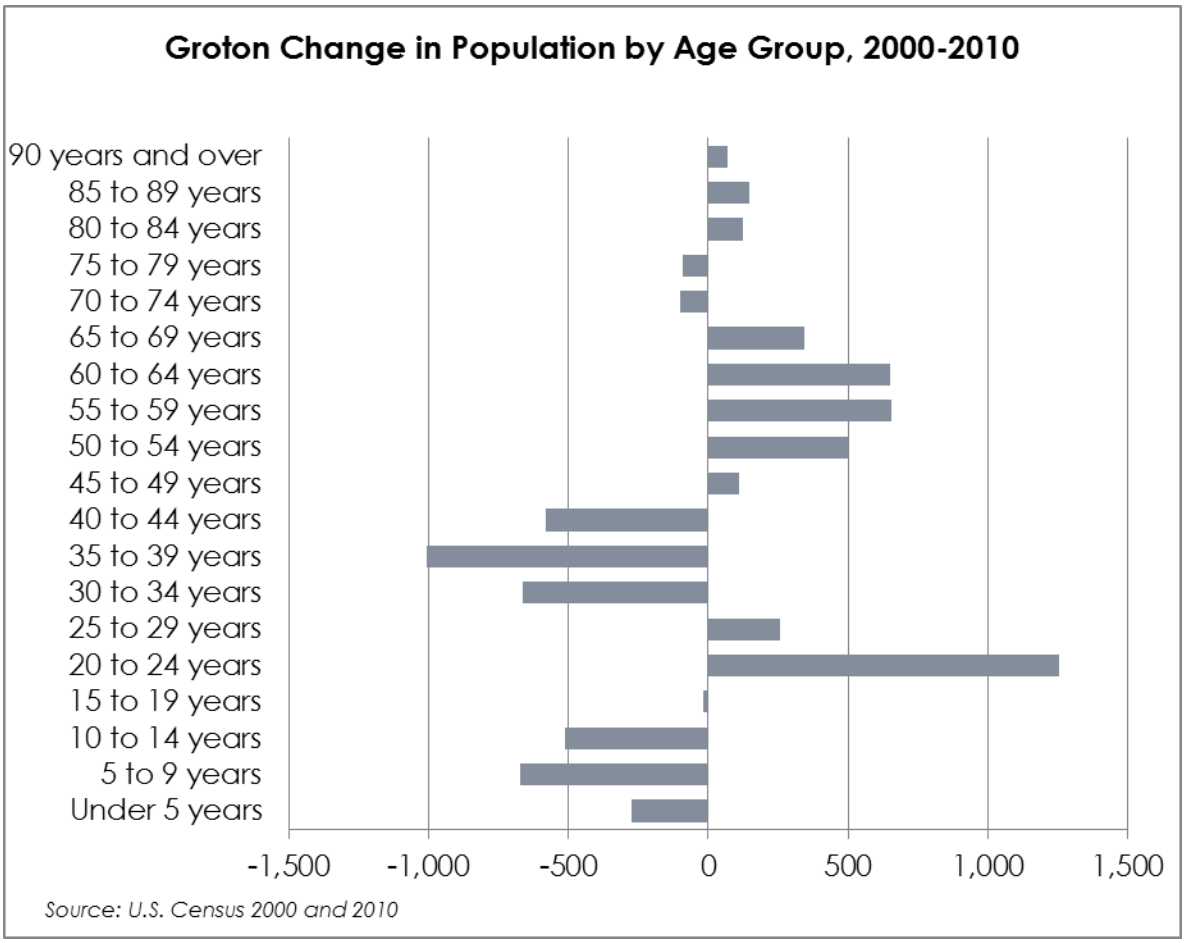
Population Change by Age Group

While the overall population of Groton grew slightly from 2000 to 2010, there was some fluctuation within age groups. Children under the age of five declined by -8.4% between 2000 and 2010, a drop of -272 children. Similarly, school-aged children (ages 5 to 17) declined by -1,177 students, or -17.6%, from 2000 to 2010. Within the school-aged cohorts, the population of high-school-age children (15 to 17 years) grew by 0.6% while elementary-school-aged (5 to 9 years) and middle-school-aged (10 to 14 years) children both declined by over -20%. While the overall population saw a decrease in school-aged children, some neighborhoods saw an increase. The southern half of the City of Groton along with the Long Hill and West Mystic neighborhoods saw an increase in school-aged populations. The northern half of the City of Groton, Groton Long Point, Noank, Mystic, and the Conning Towers-Nautilus Park neighborhood saw the largest drops in school-aged population between 2000 and 2010.

Young adults of 20 to 29, many of whom are associated with Naval Submarine Base New London, was one of the fastest growing age cohorts, increasing by 1,512 persons (21.3%). Between 2000 and 2010, the 20 to 29 age group had a persistency ratio of 1.7 (compared to 10 to 19 year olds ten years prior) indicating a high amount of in-migration. Adults between age 30 and age 64, generally in their prime working years, had a net decrease of -2.0% as a group. However, within this group, adults aged 30 to 44 decreased by -2,250 (-23.6% from 2000) while adults aged 45 to 64 increased by 1,920 (26.3% from 2000). The growth in older adult cohorts corresponds with the aging of the baby boomers, who progressed into the 45 to 64 age group and were replaced by the smaller "baby bust" cohorts who were born in the late 1960s through 1980. In addition, the 35 to 44 age cohort saw the lowest persistency ratio between 2000 and 2010 at (0.65) indicating a strong level of out-migration. The low persistency ratio for this age cohort is also strongly tied to Naval Submarine Base New London and is influenced by the departure of military families at the end of their deployments. Adults aged 65 and over, traditionally retirement age, increased by 10.3% from 2000 to 2010, growing by about 500 people. Within this group, adults aged 65 to 69 and over saw the greatest net increase with a growth of 344 persons, or 29.2%, since 2000.

The influence of Naval Submarine Base New London is evident when looking at population trends for each age cohort. A large influx of young submariners and their families is evident in the 20 to 29 age group while the sharp declines in the 30 to 44 age group corresponds with out-migration at the end of active duty for many service-members (a minimum of 8 to 10 years depending on their role). Other demographic trends include the aging of the baby boomers (age 50 to 65 in

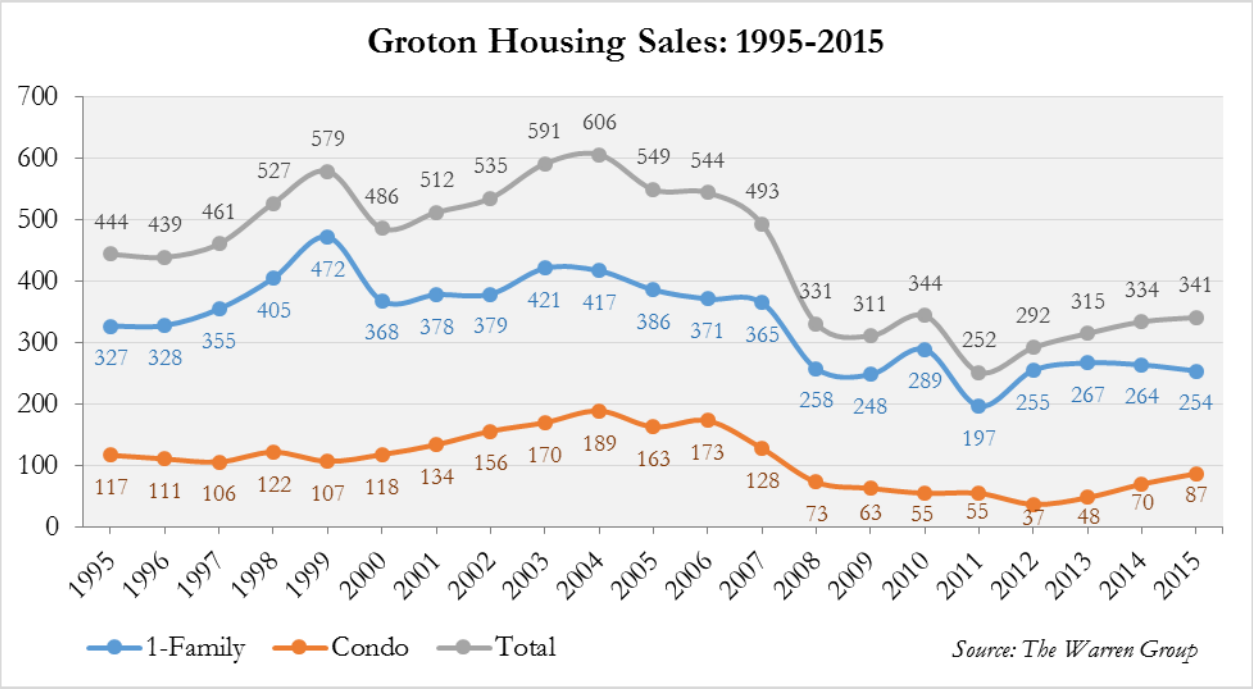
2010), a decline in elementary- and middle-school-aged children, and a growth in the number of persons age 65 years old and over.

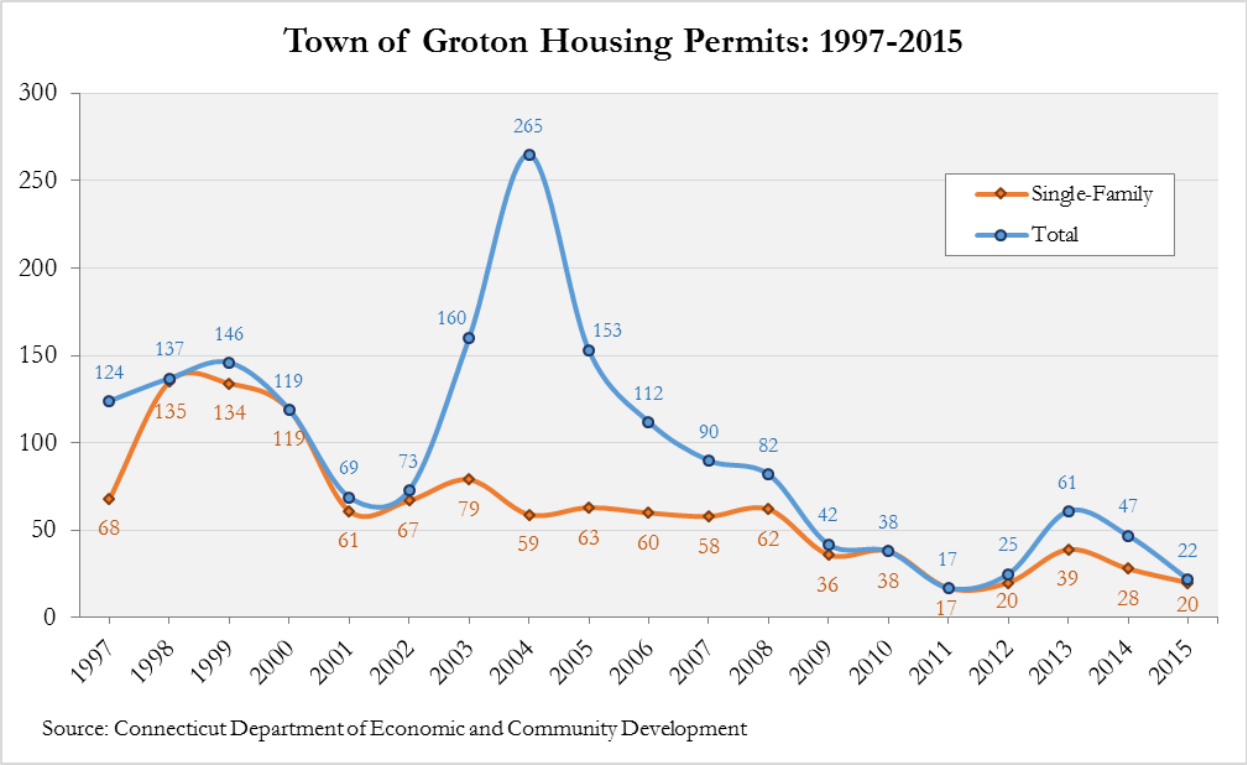


Housing

Housing sales in Groton are slowly starting to recover from the recent Great Recession. The most recent peak for annual number of home sales was 606 in 2004 before plunging to a low of just 252 sales in 2011. The past 4 years have seen modest gains, with total sales reaching 341 in 2015. Gains in the last 4 years have been driven by a surge in condominium sales, which have more than doubled from 37 in 2012 to 87 in 2015. Besides a large 1-year gain between 2011 and 2012, single-family home sales have stayed stable each of the past 4 years, averaging about 260 per year.

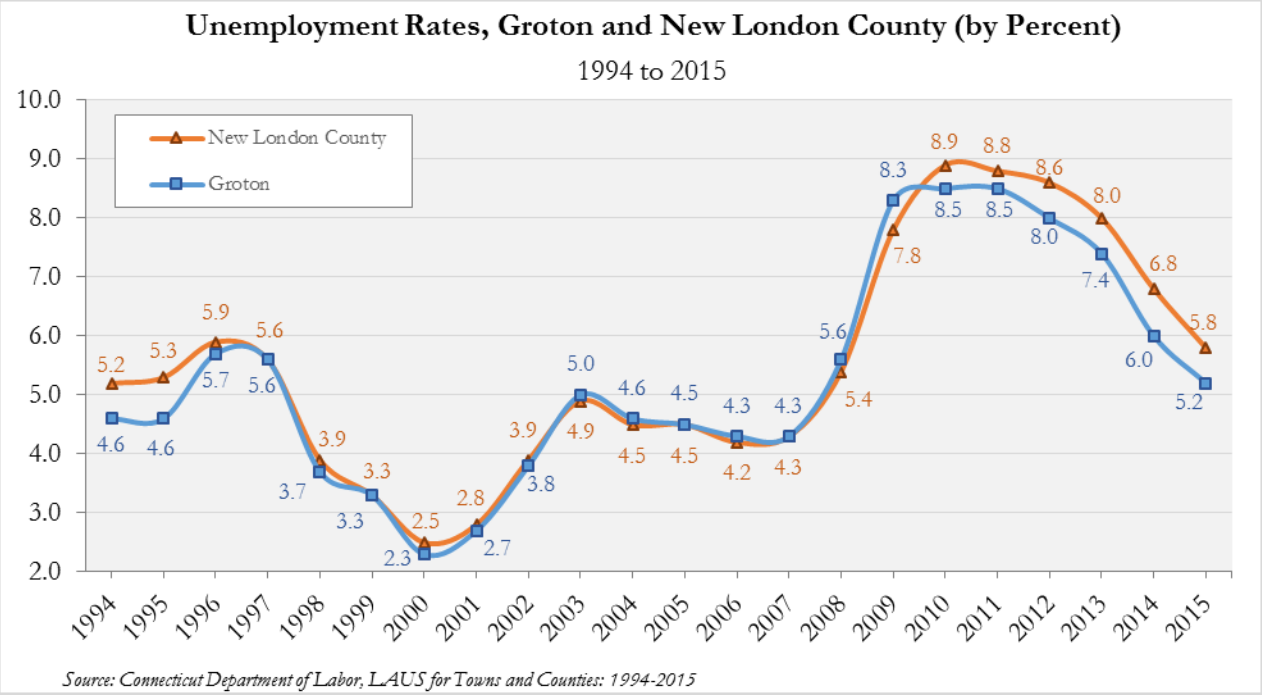
Permits for new home construction in Groton peaked in the mid 2000s, with an average of 172 permits issued annually from 2003 to 2006. These years correspond with the construction of several large multifamily complexes for military families in northwestern Groton. New housing construction for single-family homes peaked between 1998 and 2000, averaging 129 permits issued annually. Since 2000, single-family permits declined to an average of 64 per year between 2001 and 2008. Over the last decade, most single-family residential development has been in undeveloped parts of West Mystic and Center Groton. Following the Great Recession, annual permits decreased sharply. Since 2009, single-family permits have averaged just 28 per year, including a low of 17 in 2011. Single-family housing permits have risen above their 2011 low but remain well below their historical averages. Even if the housing permit activity recovers, the numbers are not expected to reach levels seen in the late 1990s anytime in the near future.


Groton Housing Sales: 1995-2015
700
600
500
400
300
200
100
0
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
444 439 461 527 579 486 512 535 591 606 549 544 493 331 311 344 252 292 315 334 341
327 328 355 405 472 368 378 379 421 417 386 371 365 258 248 289 197 255 267 264 254
117 111 106 122 107 118 134 156 170 189 163 173 128 73 63 55 55 37 48 70 87
1-Family
Condo
Total
Source: The Warren Group


Town of Groton Housing Permits: 1997-2015
300
250
200
150
100
50
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
124 137 146 119 69 73 160 265 153 112 90 82 42 38 17 25 61 47 22
68 135 134 119 61 67 79 59 63 60 58 62 36 38 17 20 39 28 20
Single-Family
Total
Source: Connecticut Department of Economic and Community Development

Economic Trends

Unemployment rates in Groton generally mimic trends for New London County as a whole. Like the state and nation, Groton saw a spike in unemployment during the Great Recession, increasing from 4.3% in 2007 to 8.5% in 2010 and 2011. Since its peak, the unemployment rate dropped to 5.2% in 2015 and is now below the state and county unemployment rates. However, a closer examination of labor force and employment data indicates that Groton's drop in unemployment has been caused primarily by labor force contraction rather than employment growth. In 2010, Groton had a labor force of 19,663 and 17,996 employed residents. By 2015 Groton's labor force shrank to 18,494 (down -6.0% from 2010) and had 17,526 employed residents (down -2.6% from 2010). This suggests that many unemployed residents stopped looking for work and dropped out of the labor force. Therefore, unemployment rate alone may not be the best indicator of current economic conditions. Unemployment rates were compared to annual birth rates and housing sales through regression analysis. The r-squared value for both births and employment as dependent variables was low, and therefore, the predictive value of unemployment rates in projecting enrollments and births in Groton is diminished.



Enrollment Trends

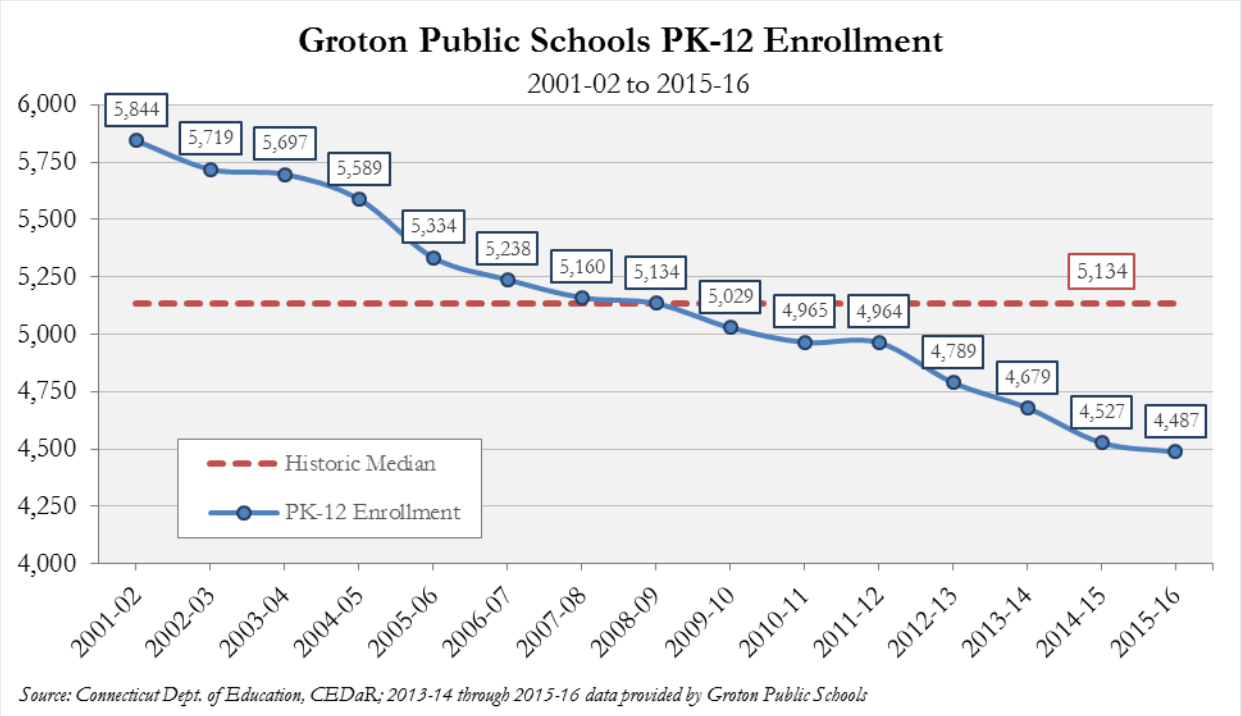
Groton Public Schools has seen a decline in enrollment each school year since 2001-02. In the 2001-02 school year, Groton had 5,844 students in pre-kindergarten (PK) through 12th grade. By the 2015-16 school year, enrollment had dropped to 4,487 students, a decline of -1,357 students, or -23.2%. This trend corresponds with the drop in school-aged children between 2000 and 2010 censuses.

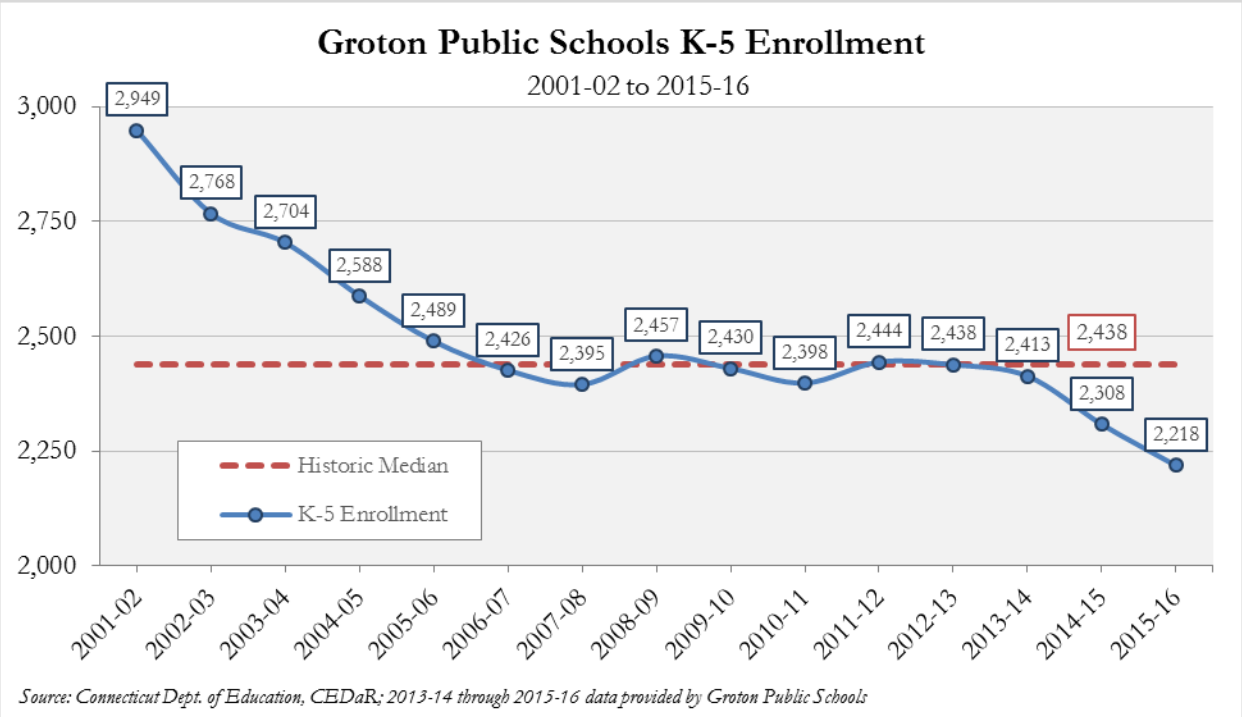
While overall enrollment is much lower than in the past, trends vary by grade cohort. Groton is currently organized as a K-5, 6-8, 9-12 system with seven elementary schools and two middle schools that roughly follow neighborhood boundaries. Between 2001-02 and 2015-16 (the highest and lowest enrollment years), elementary school (K-5) enrollement declined by -24.8%, a decrease of -731 students. The greatest consecutive declines occurred between 2001-02 and 2007-08 when elementary enrollment dropped by -554 students (-18.8%). From 2007-08 through 2013-14, K-5 enrollment stayed relatively stable around 2,400 students. However, over the last 3 school years, enrollment has declined once more, dropping from 2,413 in 2013-14 to 2,218 in 2015-16. Middle school enrollment saw steeper declines than the elementary school cohorts. From its recent peak in the 2003-04 school year of 1,307 students, middle school enrollment declined to 930 students for the 2013-14 school year, a decline of -377 students, or -28.8%. However, over the last two school years, middle school enrollment has rebounded slightly, climbing to 950 students for the 2015-16 school year. High school enrollment has experienced the largest decline of any grade cohort over the last decade. Since peaking in 2004-05 at 1,476 students, high school enrollment declined to a low of 1,089 students for the 2014-15 school year, a decline of -387 students, or -29.6%. High school enrollment was relatively stable between 2001-02 and 2008-09, averaging about 1,400 students per year during this period. The steepest declines occurred between 2008-09 and 2014-15. Enrollment increased by 5 students in 2015-16, ending a streak of eight consecutive years of enrollment decline.

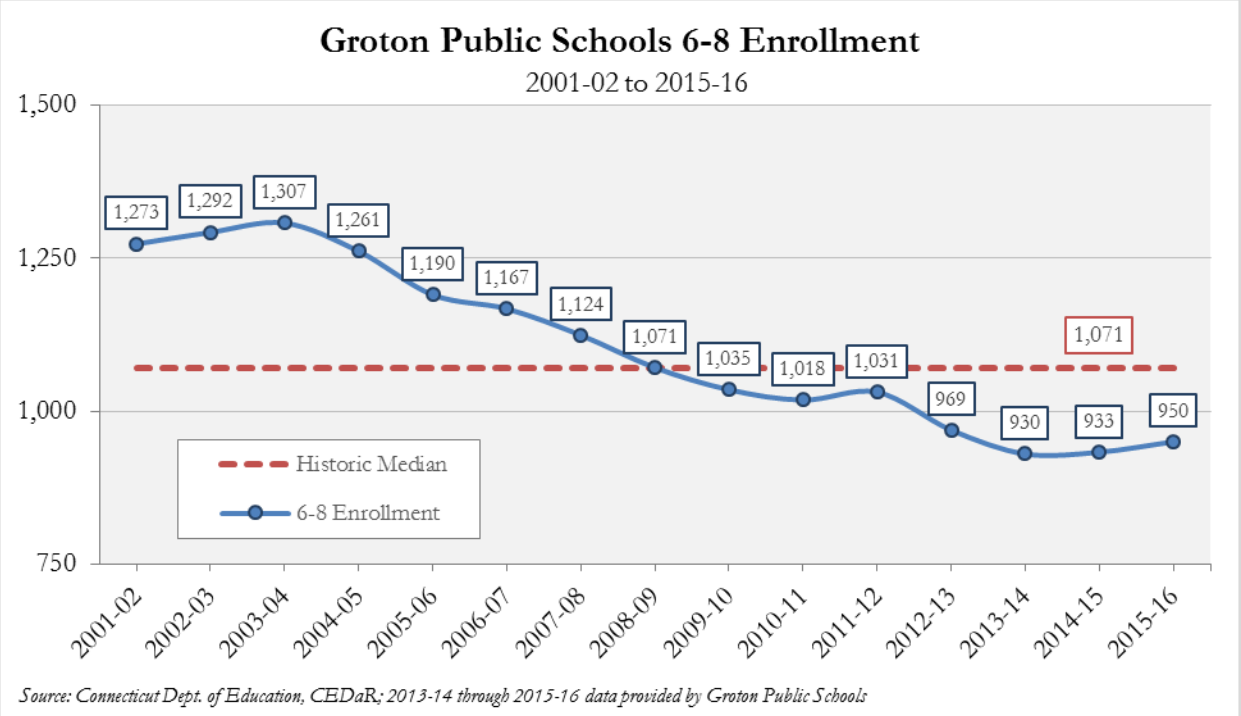
One notable trend across all grade cohorts is the steady out-migration of students as they progress to the higher grades. For example, the last three high school graduating classes averaged 270 students while their corresponding kindergarten classes from 13 years prior averaged 490 students, a drop of -44.8%. This is caused by many factors, including the out-migration of families from Groton, enrollment of Groton residents in other public and private schools, and most notably, the departure of military families with children at the end of active duty. Out-migration is most pronounced in the Charles Barnum and Mary Morrisson districts, which are comprised largely of housing for Navy personnel and their families.

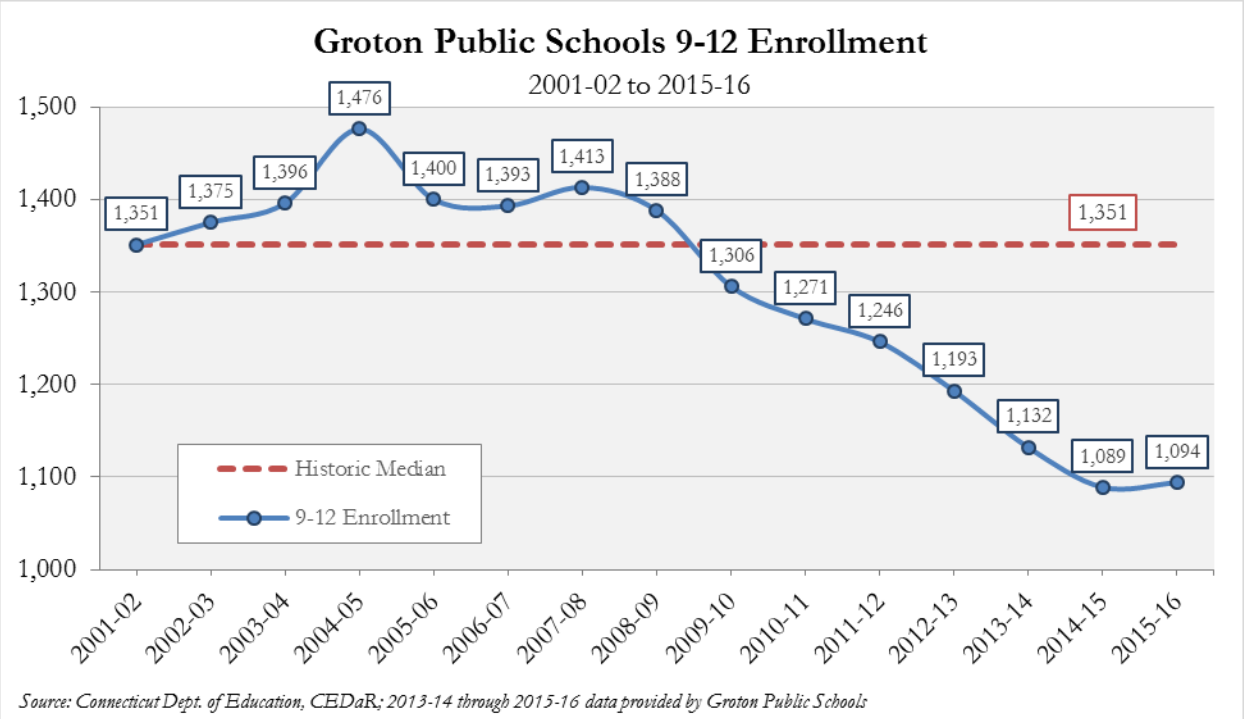
While trends districtwide declined, trends for individual neighborhoods and, therefore, individual elementary school attendance zones have been more variable. Enrollment trends for individual schools were analyzed using existing school district boundaries as shown in Appendix 2. The enrollments presented below do not include PK students, the movement of magnet students between schools, or other outplacements that the district may have granted. It should be noted that the district traditionally has a high number of outplacements, including many who were grandfathered during the last redistricting, which occurred for the 2013-14 school year. The enrollment summaries below assume that the current districts have been in place for the last seven school years and that all outplaced students have been returned to their attendance zone of residence.

- Between 2005 and 2014, births increased by 5.1% in the school districts that are comprised mostly of Navy Housing (Charles Barnum, Pleasant Valley, and Mary Morrisson). However, there was much volatility between the three schools. Pleasant Valley saw a -24.2% decline while Charles Barnum (50.1%) and Mary Morrisson (27.1%) saw substantial gains. This reflects the demolition of Navy housing in the Pleasant Valley district and the construction of new units in the Charles Barnum and Mary Morrisson districts.
- From 2005 to 2014, the S.B. Butler district saw the sharpest decline in births at -33.3%. Births also declined in the Catherine Kolnaski (-22.7%), Claude Chester (-20.5), and North East Academy (-7.9%) districts.
- Since 2009-10, the Pleasant Valley (0.3%) and Claude Chester (0.8%) attendance zones saw K-5 enrollment growth.
- Since 2009-10, K-5 enrollment in the S.B. Butler attendance zone dropped from 364 in 2009-10 to just 247 in 2015-16. This constitutes a decline of -32.1% over the last seven years.
- Since 2009-10, Catherine Kolnaski (-6.9%), Charles Barnum (-4.7%), Mary Morrisson (-3.8%), and North East Academy (-9.6%) saw more modest drops in K-5 enrollment.


Groton Public Schools PK-12 Enrollment
2001-02 to 2015-16
6,000
5,750
5,500
5,250
5,000
4,750
4,500
4,250
4,000
5,844
5,719
5,697
5,589
5,334
5,238
5,160
5,134
5,029
4,965
4,964
4,789
4,679
4,527
4,487
5,134
Historic Median
PK-12 Enrollment
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
Source: Connecticut Dept. of Education, CEDaR; 2013-14 through 2015-16 data provided by Groton Public Schools


Groton Public Schools K-5 Enrollment
2001-02 to 2015-16
3,000
2,750
2,500
2,250
2,000
2,949
2,768
2,704
2,588
2,489
2,426
2,395
2,457
2,430
2,398
2,444
2,438
2,413
2,308
2,218
2,438
Historic Median
K-5 Enrollment
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
Source: Connecticut Dept. of Education, CEDaR; 2013-14 through 2015-16 data provided by Groton Public Schools


Groton Public Schools 6-8 Enrollment
2001-02 to 2015-16
1,500
1,250
1,000
750
1,273
1,292
1,307
1,261
1,190
1,167
1,124
1,071
1,035
1,018
1,031
969
930
933
950
1,071
Historic Median
6-8 Enrollment
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
Source: Connecticut Dept. of Education, CEDaR; 2013-14 through 2015-16 data provided by Groton Public Schools


Groton Public Schools 9-12 Enrollment
2001-02 to 2015-16
1,500
1,400
1,300
1,200
1,100
1,000
1,351
1,375
1,396
1,476
1,400
1,393
1,413
1,388
1,306
1,271
1,246
1,193
1,132
1,089
1,094
1,351
Historic Median
9-12 Enrollment
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
Source: Connecticut Dept. of Education, CEDaR; 2013-14 through 2015-16 data provided by Groton Public Schools

BIRTHS

Over the last 20 years, births in Groton have gradually declined. Births peaked at 748 in 1996. During the late 1990s, births declined by -12.8% reaching 652 by 2000. Between 2000 and 2008, births in Groton stayed relatively stable, averaging around 645 per year. Due to the impacts of the Great Recession of the late 2000s, births declined to around 590 per year between 2009 through 2011. Since the recession, births have remained below their historic levels; although, 2012 saw over 600 annual births for the first time since 2008.

There are two primary factors that influence births: the number of women of childbearing age (15 to 44) and age-specific fertility rates (ASFR) for women of childbearing age. Trends for the number of women of childbearing age (15 to 44) in a town can help to predict future birth rates. According to the U.S. Census in 2000 and 2010, females in this age cohort increased by 1.5%, or about 187 in total. The younger cohort (age 20 to 34) had a large increase of 13.1%, or 832 in total, while the older cohort (age 35 to 44) declined by -17.1%, or -782 in total. Milone & MacBroom, Inc. projected future populations of women of childbearing age using 10-year persistency ratios from the 2000 to 2010 Decennial Censuses. These projections best reflect the stable 20- to 29-year-old population cohorts that are associated with Naval Submarine Base New London.

Trend of Childbearing-Age Females Aged 15 to 49 Years Groton, Based on 10-Year Persistency Ratios 2000-2025

	History		10-Year Persistency Ratio	Projections based on Simple 10-Year Persistency Ratio			2010-2025 Change	
Age Group	**2000**	**2010**	**2000-2010**	**2015**	**2020**	**2025**	**Number**	**Percent**
15 to 19 years	1,032	1,013	0.98	1,004	994	990	-23	-2.3%
20 to 24 years	1,357	1,401	1.03	1,424	1,446	1,458	57	4.1%
25 to 29 years	1,613	1,695	1.05	1,738	1,781	1,803	108	6.4%
30 to 34 years	1,626	1,244	0.77	1,098	952	879	-365	-29.4%
35 to 39 years	1,537	1,086	0.71	927	767	688	-398	-36.7%
40 to 44 years	1,389	1,111	0.80	1,000	889	833	-278	-25.0%
45 to 49 years	1,205	1,227	1.02	1,238	1,249	1,255	28	2.3%
TOTAL	**9,759**	**8,777**	**0.91**	**8,428**	**8,079**	**7,905**	**-872**	**-9.9%**

Source: US Census. A simple 10-Year Persistency Ratio based on the 2000 - 2010 change in women of child-bearing age was used to project future age cohorts.

ASFR represent the number of live births per 1,000 women in a specific age group over the course of a specific time frame. ASFR for Groton were calculated based on 5-year age cohorts for women of childbearing age. The most recent time frame for which data was available was for the 2009-2013 time period. This ASFR calculation relied on 2009-2013 5-year population estimates from the American Community Survey. Similarly, births by mother's age were obtained from the Connecticut Department of Public Health for the same 5-year time period. Groton's annual birth rate is 78.1 births per year per 1,000 women of childbearing age, giving it the highest fertility rate of any municipality in Connecticut. This is 45% higher than the state average and 25% higher than the national average. A 2013 study titled *Demographics of Military Children and Families* indicated that service members marry younger and start families younger than civilians, which is reflected in Groton's abnormally high fertility rates for 20 to 29 year old women, averaging over 125 births per 1,000 women per year.

Town of Groton Age-Specific Fertility Rates (ASFR): 2009 to 2013

Age Cohort	Female Population (2009-2013) [1]	Births by Mothers Age (2009-2013) [2]	Age-Specific Fertility Rate		
			Groton [3]	CT [3]	USA [4]
15 to 19 years	1,066	127	23.8	12.9	26.5
20 to 24 years	1,497	832	111.2	52.4	80.7
24 to 29 years	1,377	1,019	148.0	85.7	105.5
30 to 34 years	1,454	674	92.7	106.4	98.0
35 to 39 years	881	268	60.8	56.5	49.3
40 to 44 years	1,326	50	7.5	11.5	10.4
Total	**7,601**	**2,970**	**78.1**	**53.8**	**62.5**

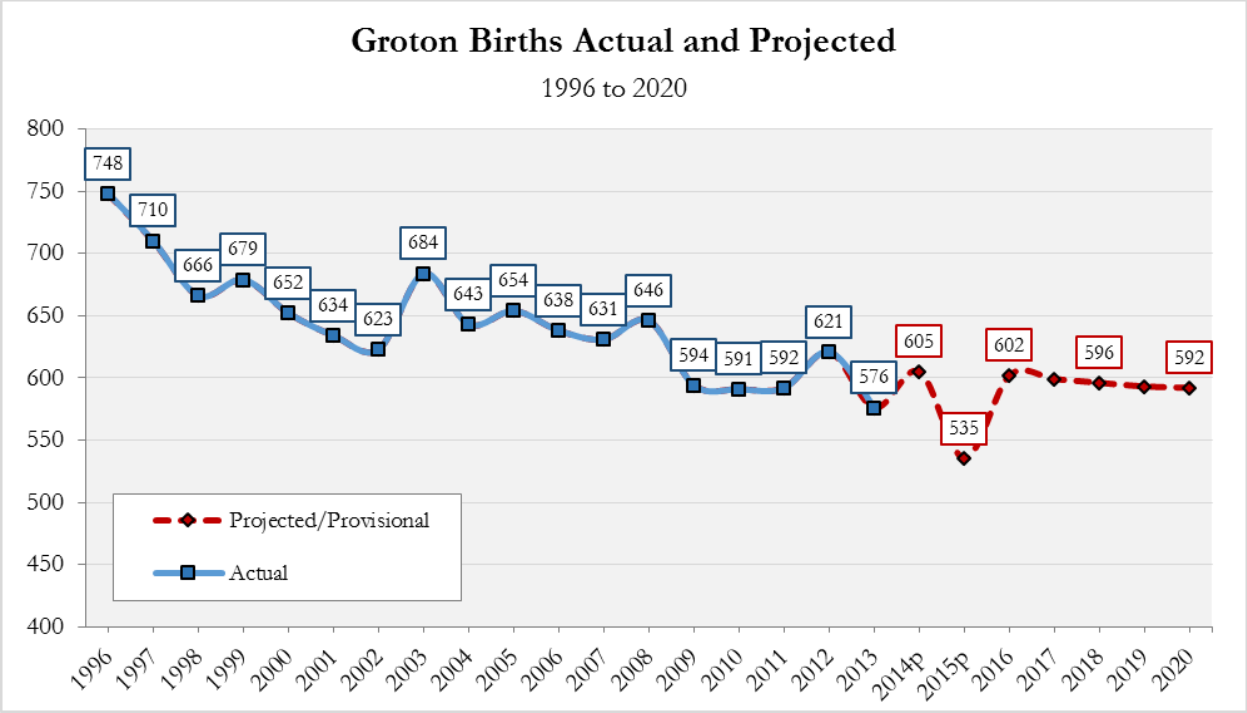
1. Female Population from the American Community Survey, 5-Year Estimates: 2009-2013

2. Source: CT Department of Public Health. Includes total births over 5-year period. Excludes 4 births that occurred to women over the age of 45.

3. ASFR was calculated by dividing the number of births by mothers age by the female populationin the corresponding age group and multiplying by 1,000. To adjust for the 5-years of birth data, the ASFR was divided by 5

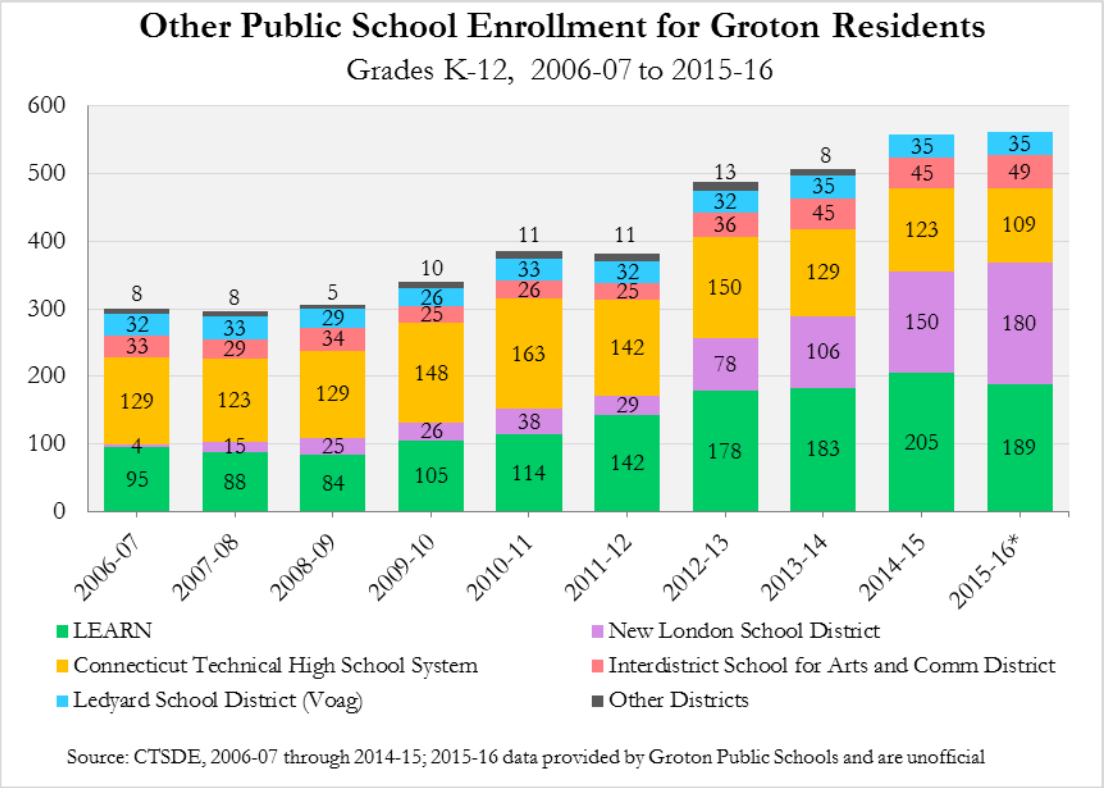
4. National ASFRs are calculated based on calendar year 2013 data. Source: Center for Disease Control and Prevention, Vital Statistics Reports Vol 64. No. 1. January 15, 2015

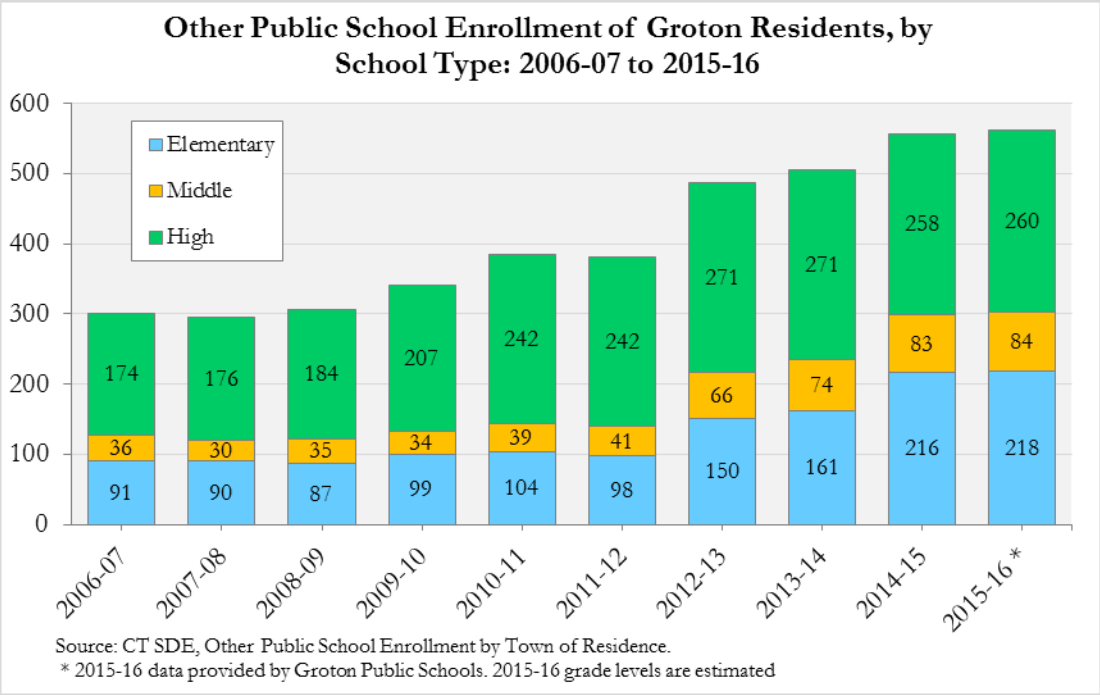
In order to prepare 8-year enrollment projections, birth forecasts were also prepared. Milone & MacBroom, Inc. applied the Town of Groton ASFR to projected females of childbearing age. Milone & MacBroom, Inc. calculated females of childbearing age for 2015, 2020, and 2025 based on a 10-year persistency ratio calculated from 2000 and 2010 Census data. The projections show the births in the Town of Groton staying relatively stable, declining slightly to 592 by 2020. Due to the preliminary nature of the 2014 and 2015 data from the Connecticut Department of Public Health (DPH), births for these years were adjusted upwards to account for out-of-state births. It should be noted that the Westerly Hospital (Rhode Island) maternity ward closed in 2013 and that out-of-state births for future years may be lower than in the past. Groton should update the preliminary 2014 and 2015 birth data as final data becomes available from the DPH. Birth projections for 2016 through 2019 represent a linear trend between the 2014 births and projected 2020 births. Because preliminary data for 2015 was anomalously low, it was removed from linear trend projections for 2016 through 2019.



Other Public School Enrollment

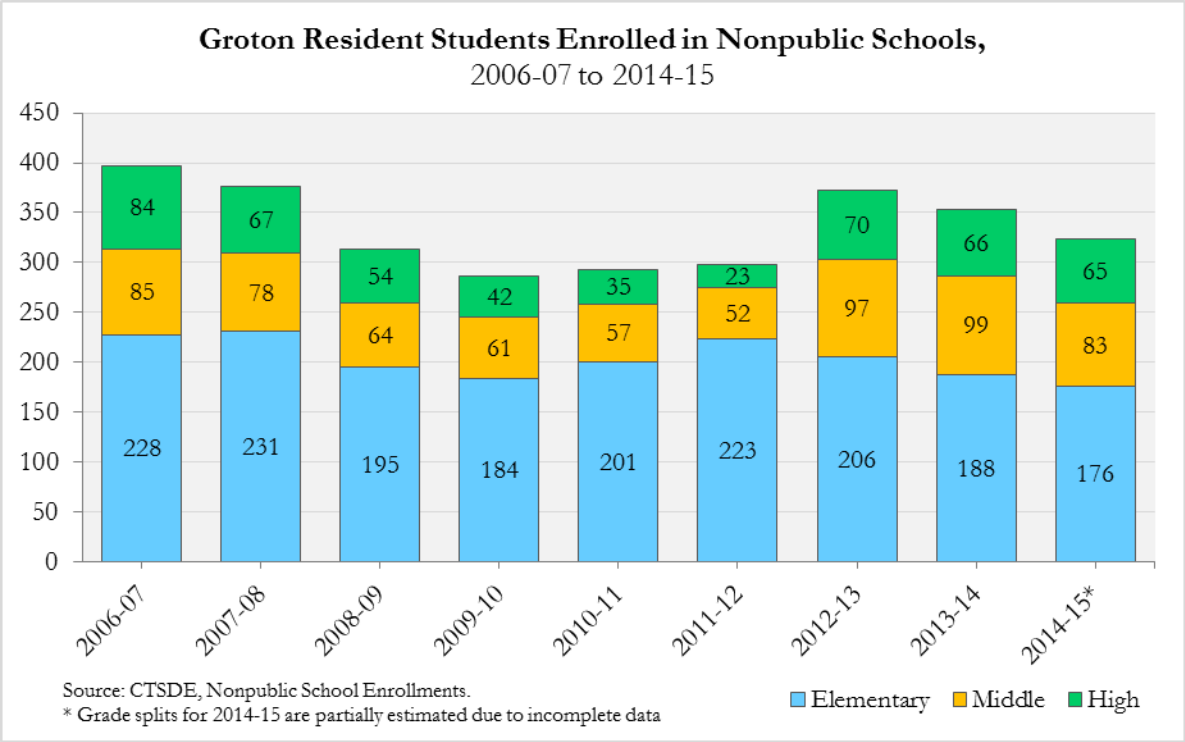
Coinciding with the declining number of students attending Groton Public Schools is a rising number of Groton residents attending other public schools in southeastern Connecticut. Other public schools include charter schools, magnet/choice schools, and vocational schools. In particular, there has been a dramatic rise in the number of Groton residents attending the magnet schools in the New London Public School District and LEARN, an educational collaborative that operates interdistrict magnet schools in Groton, Waterford, and New London. In 2011-12, 29 Groton residents attended New London Public Schools, all of which attended magnet high schools. Beginning in 2012-13, New London's K-5 magnet program was deployed and enrollment of Groton residents grew substantially. By 2014-15, 150 Groton residents attended New London magnet schools, including over 120 K-5 students. Preliminary data from 2015-16 shows a continued increase. The number of Groton residents attending LEARN magnet schools has also increased dramatically although most of the growth can be attributed to the Marine Science Magnet High School which opened in 2011. K-5 enrollment at LEARN magnet schools has stayed very stable, averaging about 91 Groton students annually over the past decade. Elementary-school-aged students are the fastest-growing group attending other public schools in the region. As of 2014-15, 216 elementary-school-aged (K-5) students attended other public schools, compared to just 91 in 2006-2007. It is anticipated that as Groton develops more robust intradistrict magnet programs, the number of Groton residents who attend magnet schools outside of the district will decrease, particularly those attending New London magnet programs.





Nonpublic Enrollment

Similar to trends across Connecticut, the number of Groton residents attending nonpublic schools decreased during the years following the Great Recession in the late 2000s. From 2006-07 to 2009-10, nonpublic enrollment declined by -110 students, or -27.7%. Elementary (PK-5) enrollments in nonpublic schools follows a similar trend with a -23.8% enrollment drop since its 2007-08 peak.



Enrollment Projection Assumptions

Enrollment projections are not predictions; rather, they forecast the future based on existing trends. The process is therefore data-driven, informed by the most reliable data available. As trends develop and anomalies happen, they should be recognized and the projections adjusted accordingly. The following projections are predicated on October 1, 2015 enrollments, following state standards, and should be updated annually as official enrollments become known.

Milone & MacBroom, Inc. uses the cohort-survival method of projecting enrollment, which is a standard method and is accepted by the State Department of Education for School Construction Projections (CGS 10-283). The cohort-survival methodology relies on observed data from the recent past in order to predict the near future. The methodology works well for stable populations, including communities that are growing or declining at a steady rate. Facility construction and programmatic changes in the district and region all have a bearing on enrollment, particularly in communities like Groton that have seen a rising number of students attending magnet programs outside of the district. It is important to remember projections are not predictions and that the basic premise of the cohort-survival methodology is that the recent past is a good indicator of the near future.

Groton 2020 School Facilities Plan

The Groton 2020 School Facilities Plan is a long-range facilities plan that aims to replace aging schools with new facilities that meet the modern educational needs of students. Phase I of the Groton 2020 School Facilities Plan was implemented and resulted in the closure of six buildings (five elementary schools and one middle school), the completion of two new elementary schools in 2007 (Catherine Kolnaski Magnet School, and North East Academy), the renovation of Fitch High School, and a comprehensive redistricting to address state-mandated racial balance in 2013. The Groton 2020 School Facilities Plan follows an unsuccessful Phase II referendum in spring of 2011. The Groton 2020 School Facilities Plan calls for additional school construction and programmatic changes as described below:

- All middle school students (grades 6-8) will be housed at a new Consolidated Middle School.
- West Side Middle School and Cutler Middle School will be closed and renovated into two new 600-student elementary schools (West Side Elementary and Cutler Elementary).
- Three elementary schools, Claude Chester, Pleasant Valley, and S.B. Butler, will be decommissioned.
- Half-day pre-kindergarten will be deployed at each elementary school. Targeted class sizes would be 15 students. PK enrollment targets at each school are as follows:

Catherine Kolnaski	60 PK students
Charles Barnum	30 PK students
Cutler Elementary	60 PK students
Mary Morrisson	30 PK students
North East Academy	30 PK students
West Side Elementary	60 PK students
Total	**270 PK students**

- Preliminary elementary school district boundaries were created for the remaining six elementary schools.
- A robust intradistrict magnet program will be developed for K-5 students. Magnet programs will include the continued science, technology, engineering, and mathematics (STEM) offerings at Catherine Kolnaski, Performing Arts at North East beginning in 2016-17, and the development of future magnet programming at Cutler Elementary and West Side Elementary.

Preliminary future elementary school district boundaries form the basis of the enrollment projections contained in this report. Births and enrollment data were assigned to their future elementary school district in order to analyze past trends and project future enrollments. These boundaries are preliminary and may be subject to change prior to student occupation of the new buildings.

Intradistrict Magnet Program

A crucial component of the Groton 2020 School Facilities Plan is the development of a robust intradistrict magnet program, which is intended to give Groton residents an alternative to enrolling in magnet schools in neighboring towns. In addition, it will provide the district with a tool to ensure long-term racial and utilization balance across all elementary schools. At full deployment, the targeted magnet enrollment for the Catherine Kolnaski STEM program will remain at 70 K-5 students from outside of its attendance zone. Similarly, the North East Academy Performing Arts magnet program will target 60 students from outside of its attendance zone. Finally, large magnet components will be developed at Cutler Elementary School (target of 120 students from outside the attendance zone) and West Side Elementary School

(target of 100 students from outside the attendance zone). The magnet program at Cutler Elementary School is larger than West Side in order to balance out the projected decline in its attendance zone enrollment over the next 8 years. The magnet themes for West Side Elementary School and Cutler Elementary School have yet to be determined. Understanding that enrollment is dynamic, Milone & MacBroom, Inc. incorporated dynamic magnet enrollments into the projections. Rather than rolling out the magnet program all at once, the projections assumed a ramp-up period that had fewer magnet students covering 2015-16 through 2016-17. By the time enrollment in the Cutler and West Side attendance zones reach their projected low, magnet enrollment was increased, hitting its full-deployment beginning in 2017-18. This corresponds with the gradual decline and leveling off of enrollment over the next 8 years.

Magnet Adjustment Table by School and Year (Net Change)

School	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Catherine Kolnaski	24	24	6	6	6	6	6	6	6	6	6
Charles Barnum	(58)	(58)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)	(65)
Cutler	42	42	62	62	62	62	62	62	62	62	62
Mary Morrisson	(58)	(58)	(71)	(71)	(71)	(71)	(71)	(71)	(71)	(71)	(71)
North East Academy	12	12	18	18	18	18	18	18	18	18	18
West Side	38	38	50	50	50	50	50	50	50	50	50
Magnet Program	**Ramp Up at Cutler and West Side**		**Full Deployment of magnet programs at West Side and Cutler. Magnet programs at Kolnaski and North East remain.**								

Net change is calculated by subtracting the number of students from the attendance attending other magnet schools by the number of magnet students that school receives from other attendance zones. For schools without a magnet program (Morrisson and Barnum), only students attending other magnet schools were counted.

Groton Public Schools Proposed Magnet Matrix (Full Deployment)

		Receiving District						
	School	Catherine Kolnaski	Cutler	North East Academy	West Side	Total Sent	Total Received	Net Gain or Loss
Sending District	Catherine Kolnaski	-	26	12	26	64	70	6
	Charles Barnum	12	27	12	14	65	0	(65)
	Cutler	20	-	12	26	58	120	62
	Mary Morrisson	12	27	12	20	71	0	(71)
	North East Academy	14	14	-	14	42	60	18
	West Side	12	26	12	-	50	100	50
	Total Received	70	120	60	100	350	350	0

Persistency ratios

Using known October 1 enrollment data as the starting point, persistency ratios are calculated to determine growth or loss in a class as it progresses through the school system. These persistency ratios account for the various external factors affecting enrollments such as housing characteristics, residential development, economic conditions, student transfers in and out of the system, and student mobility. A persistency ratio of 1.0 means the class size remains the same; 1.05 means the class size increases by 5%, or a class of 100 grows to 105 the following year. The base projections utilized 5-year persistency ratios for grades K-5 and 3-year average persistency ratios for grades 6 through 12. However, these base projections do not account for the capture and retention of students as Groton builds new school facilities and develops more competitive educational programming. Therefore, minor adjustments were made to the persistency ratios as described below.

Magnet Capture and Retention

Over the last 5 years, Groton saw a dramatic increase in the number of residents attending regional magnet schools, particularly at the K-5 level. The projections assume that as Groton Public Schools develops a more robust intradistrict magnet program it will retain more students who would have otherwise enrolled in schools outside of the district. Groton residents attend one of two K-5 magnet systems: New London Public Schools or LEARN, which operates the Multicultural Magnet School in New London. Due to the specialized nature of the Multicultural Magnet Program, it was assumed that these students would not return to Groton Public Schools. The projections assume that as Groton Public Schools develops magnet programs comparable to those offered by New London Public Schools, they will recapture half (50%) of the K-5 students who would have otherwise attended New London Public Schools magnet programs. It is expected that most of this capture will occur at the kindergarten level (i.e., kindergarteners will enroll in Groton Public Schools who would have previously enrolled in New London Public Schools). In order to incorporate the capture of prospective kindergarteners into the projections, the birth to kindergarten (B-K) ratio was adjusted to 0.72, or 72 kindergarteners yielded from 100 births 5 years prior. This corresponds with the average B-K ratio for the 2003-04 through 2011-12 school years prior to the K-5 New London Magnet programs being implemented. The adjustment to the B-K ratio increases the average projected kindergarten class by about 8 students annually, or 1.8% over the base projections. While most students who currently attend New London magnet schools will not return, a small number of 1st through 5th grade students may enter the district through in-migration (older elementary school students move to the district and enroll in Groton Public Schools rather than New London) or students who switch to Groton Public Schools to attend the same school as a sibling. To account for this minimal increase, the persistency ratios for K-1 through 4-5 were multiplied by 1.004, leading to an increase of about 1 student per grade per year or 0.3% over the base projections.

Similarly, Groton Public Schools has seen has its 5th grade to 6th grade (5-6) persistency ratio decline as more students enroll in regional magnet programs. From 2002-03 through 2010-11, Groton retained an average of 98% of its 5th grade students (100 5th grade students would become 98 6th grade students the following year). However, over the last 5 years, Groton Public Schools has seen a substantial drop in its 5th grade retention rate, averaging just 92% since the 2011-12 school year. The projections assume that as a result of the new consolidated building and expanded middle school programming Groton Public Schools' 5-6 persistency ratio will increase to 0.95, or 100 5th grade students would become 95 6th grade students the following year.

Base Projection and Magnet Adjusted Persistency Ratios

Persistency Ratio	Base Projections			MMI Magnet Adjusted	
	5-Year Avg.	3-Yr Avg.	Blended [1]	Ramp Up [2]	Full Magnet [3]
Birth-K	0.707	0.680	0.707	0.714	0.720
K-1	0.947	0.934	0.947	0.949	0.951
1-2	0.923	0.920	0.923	0.925	0.927
2-3	0.941	0.928	0.941	0.943	0.945
3-4	0.957	0.948	0.957	0.959	0.961
4-5	0.942	0.940	0.942	0.944	0.946
5-6	0.925	0.915	0.915	0.933	0.950
6-7	0.961	0.981	0.981	0.981	0.981
7-8	0.979	0.960	0.960	0.960	0.960
8-9	0.900	0.953	0.953	0.953	0.953
9-10	0.981	0.952	0.952	0.952	0.952
10-11	0.986	0.977	0.977	0.977	0.977
11-12	0.951	0.943	0.943	0.943	0.943

1. Blended Base Projections use 5-year average persistency ratios for elementary school, and 3-year average persistency ratios for middle and high schools

2. Ramp up covers two years of projections (2015-16 and 2016-17) and take the average of the Blended and Full Magnet persistency ratios

3. Full Magnet persistency ratios were used for projection years 2017-18 through 2023-24. They were adjusted to account for capture of Groton residents who attend other public schools out of district. The BK ratio was adjusted to 0.720 and the five-year persistency ratios for K-1 through 4-5 were multiplied by 1.004 . The 5-6 ratio was adjusted to 0.950 and the 6-7 through 11-12 ratios use the 3-year average.

Projection Building Blocks

Accurate birth and enrollment data used in projections is critical to overall accuracy as each year builds upon the last. Students in the system are progressed forward based on a chosen persistency ratio average. Births reported to the Connecticut Department of Health, attributed to residents of Groton, are address-matched for the past 10 years. The births become the basis for the kindergarten class five years in the future, again based on the B-K persistency ratio. More than the others, this ratio is effected by and reflective of factors external to the school district because families tend to move less after their children have started school.

Limitations and Error

There are several issues that make enrollment projections for individual schools difficult. First, projections for small areas are more likely to be subject to large percentage errors than larger area projections. A difference of relatively few students in any school in a given year has a larger impact, percentagewise, than on the entire district. Practices of grade retention can also vary year to year among different schools in the system. Students living in a given neighborhood school attendance zone may also attend a completely different school, which also affects future projections.

Kindergarten enrollment in particular presents challenges for projection. There is much variability among the factors that affect kindergarten enrollment – the number of children born in a given school district five years ago; the number of children who start kindergarten at age six; private, charter, and magnet school enrollments; family mobility (particularly for military families); the number of families with kindergarten-aged children who move into or out of any given school district; and the number of students retained from kindergarten the previous year. In Groton, the overall persistency ratio of births to kindergarten overall has varied from a high of 77.12% in 2011-12 to a low of 65.82% in 2015-16.

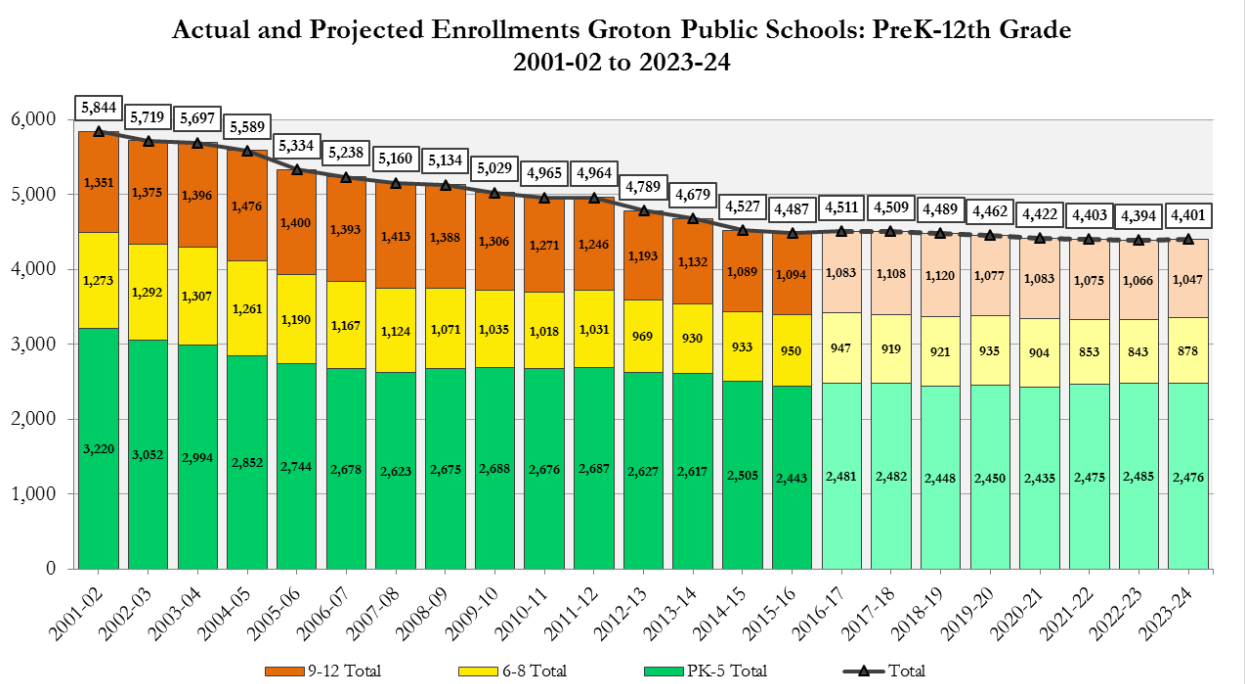
Assumptions

We prepared multiple projection models, informed by census, housing, and economic data. We used correlational analyses of the various models at district and individual school levels to account for variability within the town and school district. Individual school projections are normalized to districtwide projections. Districtwide projections have the greatest accuracy and longest horizon because of the larger dataset. Following are the key assumptions underpinning the enrollment projections:

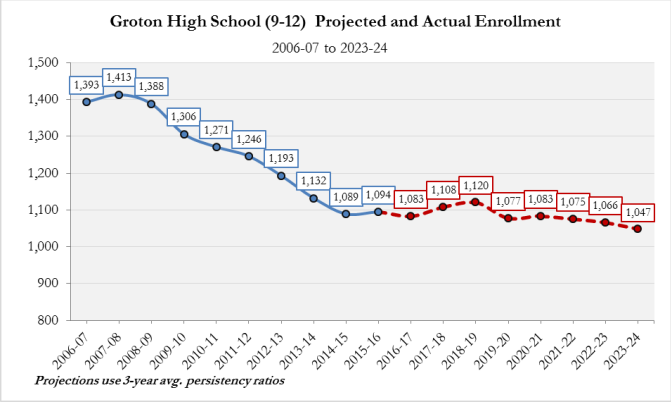
- PK enrollment targeted at 270 students per year
- Recent private school enrollments trends remain stable
- Groton will capture 50% of K-5 students who currently attend magnet programs at New London Public Schools, ~ 60 students annually over the baseline projections.
- Groton Public Schools will retain 95% of students as they transition from 5th grade to 6th grade, resulting in an increase of ~6 6th grade students annually over the baseline projections.
- Groton Public Schools will develop an intradistrict magnet program with approximately 350 students enrolled in magnet programs at Catherine Kolnaski, Cutler, North East Academy, and West Side.
- Housing market continues slow growth from 350 to 400 sales annually
- Single-family home construction remains low at ~30 annually
- Births remain stable, ranging from 590 to 600 annually over the next 5 years
- Stable population associated with Naval Submarine Base New London

Enrollment Projections

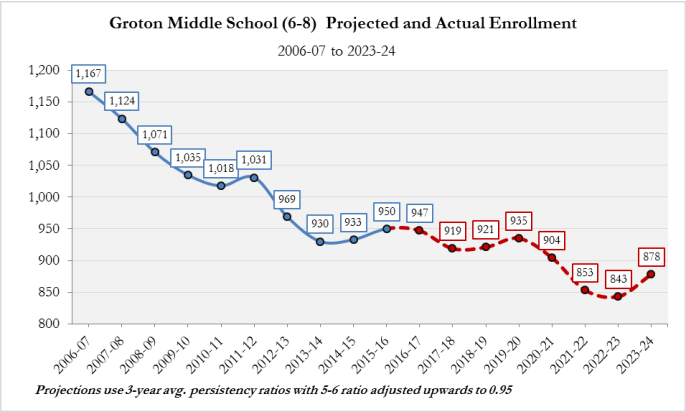
Projections based on 2015-16 baseline data project that future enrollment will continue to decline, albeit at a much slower rate than the previous decade. From the 2015-16 total of 4,487, total enrollment is projected to decrease by 86 students (-1.9%) to 4,401 by the start of the 2023-24 school year. However, the rates of change will differ between the elementary, middle, and high schools. Elementary school (PK-5) enrollments are projected to remain relatively stable, with a projected 33 student (1.4%) increase by 2023-24. On the contrary, middle school enrollment is projected to decline by -72 students or -7.6% as smaller age cohorts move into the higher grades. By 2023-24, middle school enrollment is projected to be 878 students, compared to 950 in the 2015-16 school year. High school enrollment is also projected to decrease although at a lower rate than middle school. High school enrollment is projected to drop from 1,094 in 2015-16 to 1,047 in 2023-24, a decline of -47 students or -4.3%.



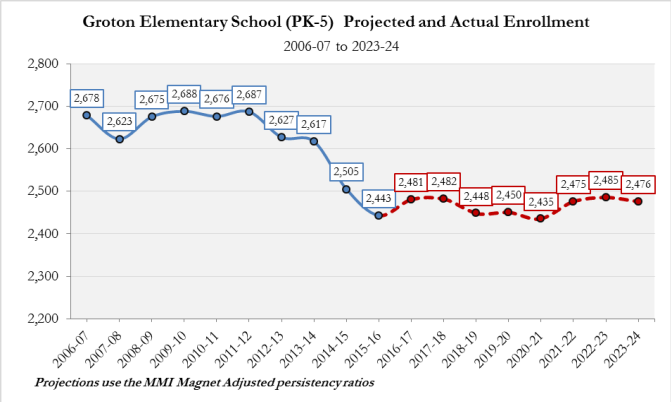
Source: CT Department of Education, CEDaR and Groton Public Schools (2014-15 through 2015-16). Projections calculated by using adjusted 5-year persistency ratios for K-5 and 3-year persistency ratios for 6-12. BK and 5-6 persistency ratios were adjusted upwards to account for recapture of magnet out students from neighboring districts. K-1 through 4-5 persistencies were multiplied by 1.004



Groton High School enrollments have steadily declined over the last decade. From 2007-08 to 2015-16, enrollment decreased by -22.6%, a loss of -319 students. High school enrollments are projected to rebound slightly in the short term, growing by 2.3% (a gain of 26 students) for the 2018-19 school year. Beginning in the 2019-20 school year, enrollments are expected gradually decline. By the 2023-24 school year, enrollment is projected to drop by -73 students, or -6.5%, from its peak as smaller incoming classes replace larger graduating classes.



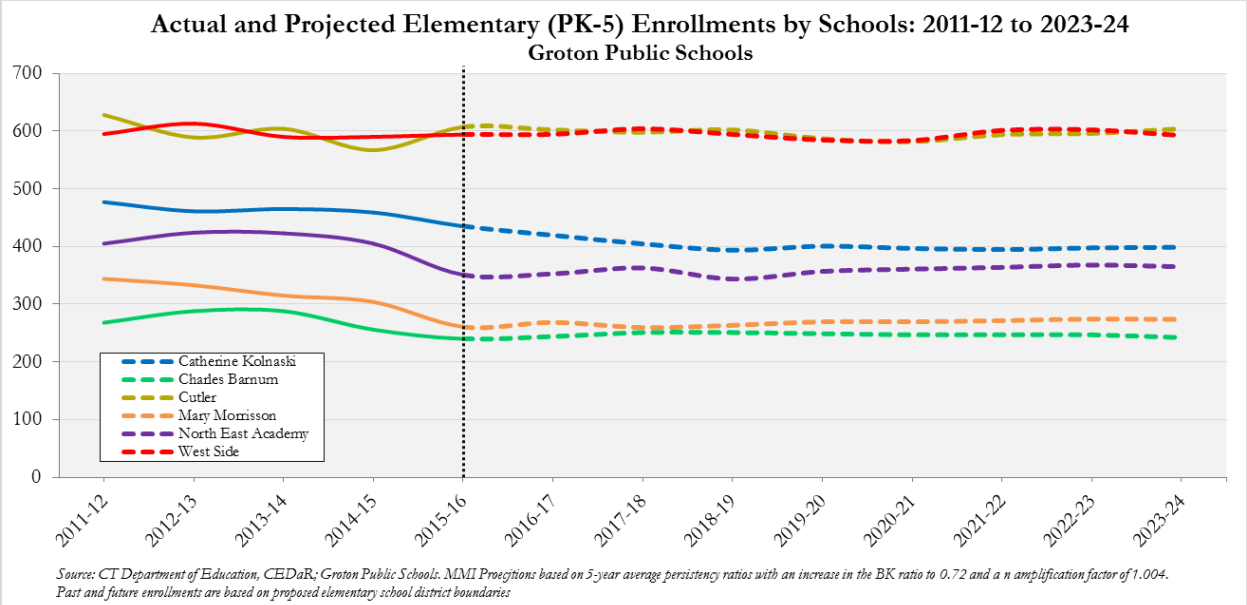
Students in grades 6 through 8 will attend the new Consolidated Middle School upon its completion. Over the last decade, enrollments have steadily decreased. Enrollment reached its peak in 2006-07 at 1,167 students. With the exception of a one-year increase in 2011-12, enrollment declined each year, reaching a low of 930 students in the 2013-14 school year (-20.3%). Enrollment has increased by 2.0% during the last two years. Over the next eight years, enrollment is projected to stay stable up to the 2019-20 school year before declining to 843 students for the 2022-23 school year. This corresponds to the year when the small birth class from the recession years (2009-2011) begin entering middle school. After 2022-23, enrollment is projected to begin rebounding.



From 2006-07 to 2013-14 elementary school (PK-5) enrollment in Groton stayed relatively stable, ranging from 2,600 to 2,700 students each year. Enrollment has dropped sharply over the last three years, declining from 2,617 in 2013-14 to 2,443 in 2015-16, a -6.6% decline. The PK-5 enrollment projections assume that the BK persistency ratio will return to 0.72 (the average between 2003 and 2013 before the New London magnet program was fully developed). As a result of higher retention of Groton residents, enrollment is projected to increase slightly up to 2017-18 and then stay stable, averaging between 2,400 and 2,500 students over the next eight years.

Eight-year enrollment projections for each school were prepared using the conceptual redistricting boundaries (see Appendix 3 for map) and magnet programs as described earlier. Breaking the elementary school group out into individual schools shows even more variation. For the next five years, enrollment is projected to decline or remain flat at all schools. The volatility in individual district projections has been mitigated in part due to the adjustment of magnet enrollments to balance utilization across all schools, notably the ramping up of the West Side and Cutler magnet programs in (see page 17 for Magnet Adjustment table) in 2015-16 through 2016-17 and the full deployment of their magnet programs in 2017-18 and beyond. Notable trends in the next 8 years include the following:

- Catherine Kolnaski is projected to decline by -8.5% (-37 students) up to 2023-24. About half of its projected decline is caused by the enrollment of students in the Catherine Kolnaski attendance zone in other magnet schools in Groton as shown in the magnet adjustment table.
- Mary Morrisson (4.0%) and North East Academy (5.0%) are projected to see modest growth as larger birth cohorts begin entering Kindergarten.
- Enrollments at Charles Barnum (0.8%), Cutler (-0.5%), and West Side (-0.3%) are projected to stay stable.
- Projected enrollment declines in the West Side and Cutler attendance zones are offset by their magnet programs. Both schools are projected to stay stable over the next eight years with a slight trough between 2019-20 and 2020-21 before increasing above the 600-student mark once again toward the end of the projections horizon.



School	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Catherine Kolnaski	477	461	465	459	435	419	404	393	400	396	394	397	398
Charles Barnum	268	288	288	256	240	244	251	251	249	247	247	247	242
Cutler	628	589	604	567	607	602	598	602	587	582	594	596	604
Mary Morrisson	344	333	315	304	261	269	260	264	270	270	272	275	274
North East Academy	405	424	423	405	351	353	363	344	357	361	364	368	365
West Side	595	613	590	590	594	594	604	594	584	583	601	602	592
Total	**2,717**	**2,708**	**2,685**	**2,581**	**2,488**	**2,481**	**2,480**	**2,448**	**2,447**	**2,439**	**2,472**	**2,485**	**2,475**

Individual school projections may differ slightly from district-wide projections due to rounding

Indudes Pre-K Enrollment and Magnet Enrollment

West Side Elementary School, Cutler elementary School, and Consolidated Middle School Construction Projections

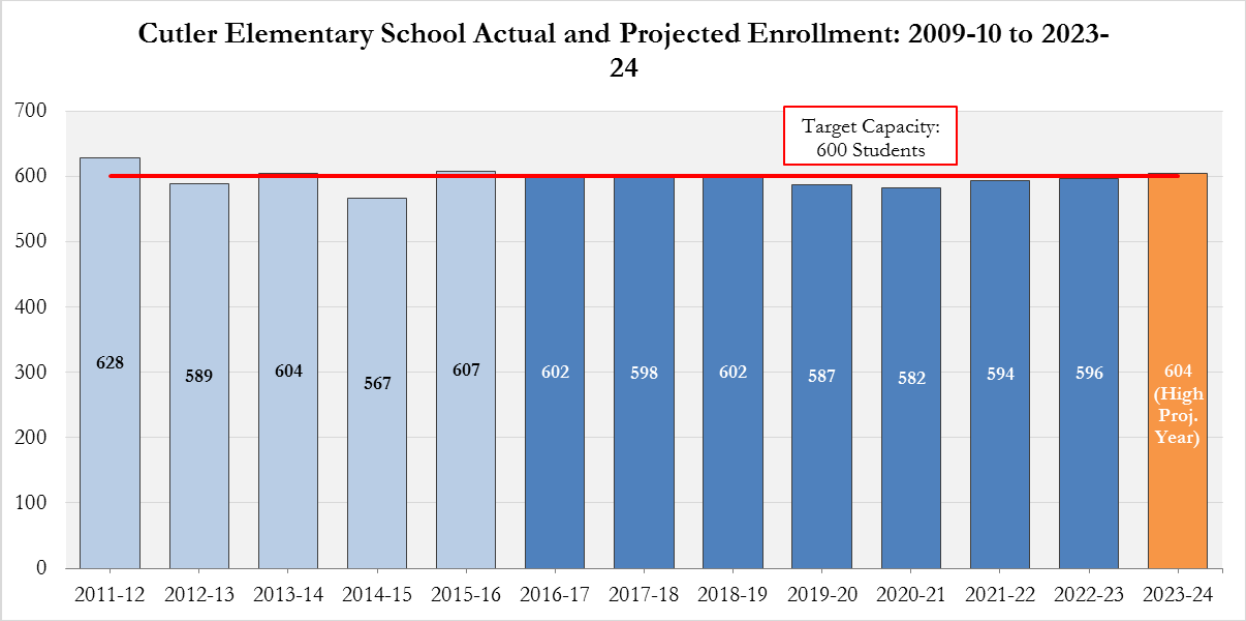
Enrollment projections for the West Side Elementary, Cutler Elementary, and Consolidated Middle School construction projects were prepared using the 2015-16 districtwide and school-specific projections as a basis. The analysis used the preliminary elementary school boundaries, grade configurations, and magnet programs that were recommended by the Groton 2020 School Facilities Initiative Task Force (SFITF). Under these assumptions, the new West Side and Cutler elementary schools would each have a targeted capacity of 600 students while the Consolidated Middle School would have a targeted capacity of 936 students.

The preliminary elementary district boundaries were created in 2016 using October 1, 2015 enrollment data. The districts were created in order to maintain reasonable average class sizes, create flexibility to accommodate future enrollment changes, and improve racial balance disparities. However, Groton's population and enrollment volatility over the last decade coupled with its unique demographic trends demonstrate the importance of updating birth and enrollment data into the projections annually. As the school construction projects near completion, preliminary district boundaries should be reevaluated to ensure that the enrollments in each school are appropriate relative to the size of the building and that the goals and objectives of the district's racial balance plan are being satisfied.

Cutler Elementary School

Cutler Elementary School will be built on the site of the decommissioned Cutler Middle School. It will have a targeted capacity of 600 students, including 60 pre-kindergarten seats. The 540 targeted K-5 seats will be filled by a combination of attendance zone enrollment and magnet seats filled by students from other parts of Groton. The proposed Cutler Elementary School attendance zone covers a large portion of southeastern Groton, including the neighborhoods of Groton Long Point, Noank, Poquonock Bridge, West Mystic, and the southern portion of Mystic. The district encompasses the entire S.B. Butler district as well as parts of the existing Claude Chester and North East Academy districts. The housing stock in the district is predominantly single-family homes and duplexes. These housing types are mostly owner-occupied and generally experience more stable student populations. Over the last 5 years, Cutler had B-K persistency averaged 0.90 (90 kindergarteners for every 100 births five years prior), with relatively stable numbers from year to year. Cutler has the second highest B-K ratio in the district after North East Academy, both of which are much higher than the district as a whole. However, the decreasing number of births and the assumption of stagnant new home construction indicate that, on average, the Cutler district will continue to see smaller kindergarten classes than in the past.

As smaller kindergarten classes replace larger graduating 5th grade classes, enrollment in the Cutler attendance zone is projected to decline over the next eight years. However, this loss will be offset by gains in magnet students from other parts of Groton. The projections assume a partial deployment of the magnet program in 2015-16 and 2016-17 with 100 magnet students attending Cutler from outside the attendance zone resulting in a net gain of 42 students overall (after taking out students from the Cutler attendance zone that attend other magnet programs in Groton). The partial deployment corresponds to the years when attendance zone enrollment is projected to be at its highest. In response to declining attendance zone enrollment, the magnet program is projected to be fully deployed at Cutler beginning in 2017-18, with 120 students attending the magnet program from outside the attendance zone, resulting in a net gain of 62 students. The highest projected enrollment year at Cutler Elementary is 2023-24 with 604 students (highlighted in the chart and table on the following page). Cutler is also projected to have over 600 students during the 2016-17 school year and 2018-19 school year.



Cutler Elementary School Enrollment Projections

School Year	K	1	2	3	4	5	PK	PK-5th
2015-16 [1]	80	84	103	85	104	91	60	607
2016-17 [1]	90	81	81	101	84	105	60	602
2017-18	89	94	83	83	103	86	60	598
2018-19	94	89	94	80	82	103	60	602
2019-20	93	94	88	91	79	82	60	587
2020-21	83	92	93	85	90	79	60	582
2021-22	96	82	92	90	84	90	60	594
2022-23	97	95	82	89	89	84	60	596
2023-24	96	96	95	79	89	89	60	604

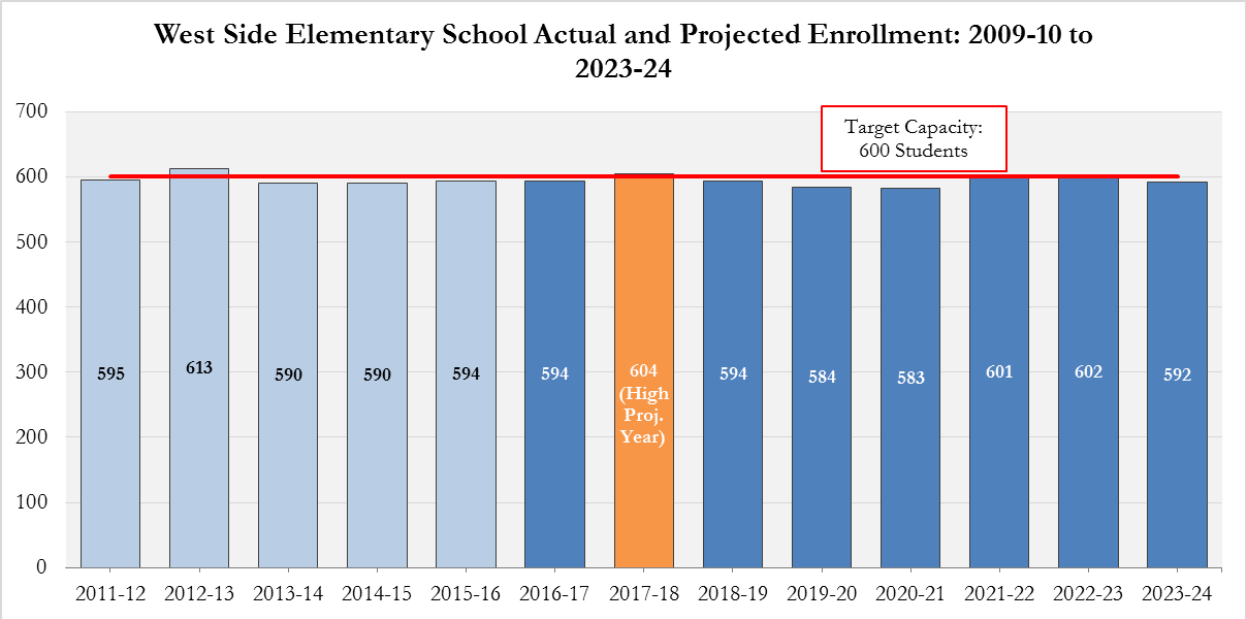
1. Assumes partial deployment of magnet program in 2015-16 and 2016-17

West Side Elementary School

West Side Elementary School will be built on the site of the decommissioned West Side Middle School. It will have a targeted capacity of 600 students, including 60 pre-kindergarten seats. Like Cutler, the remaining 540 K-5 seats will be filled by a combination of attendance zone enrollment and magnet seats filled by students from other parts of Groton. The proposed West Side Elementary School attendance zone is located in the City of Groton and encompasses portions of the existing Pleasant Valley, Catherine Kolnaski, and Mary Morrisson districts. The attendance zone contains several large apartment complexes and a significant number of multifamily homes. These housing types are mostly renter-occupied and generally experience higher turnover rates of students. In order to ensure long-term racial balance, the Branford Manor apartment complex would remain split between two districts. Students who live on the Mather Avenue portion of the apartment complex would attend West Side Elementary while the students on Branford Avenue would continue to attend Catherine Kolnaski. The area's transient population is reflected in its B-K persistency ratios, which ranged from 0.49 (49 kindergarteners for every 100 births) to 0.86 (86 kindergarteners for every 100 births) over the last 5 years, including declining B-K each of the last 5 years. The volatility in the B-K persistency ratios in recent years makes it challenging to predict kindergarten enrollments for a particular year. Unlike Cutler, the birth rate in the West

Side district is projected to remain near its historic average, so kindergarten projections are highly influenced by the B-K persistency ratio.

Like Cutler, enrollment at West Side will be augmented by PK students and magnet students from outside of its attendance zone. The projections assume a partial deployment of the West Side magnet program in 2015-16 and 2016-17 with 82 magnet students from outside the attendance zone. These are the two years where the projected attendance zone enrollment is at its highest. In response to declining attendance zone enrollment over the next five years, the magnet program is projected to be fully deployed at West Side beginning in 2017-18, with 100 students attending the magnet program from outside the attendance zone. After accounting for students in the West Side attendance zone that attend other Groton Public Schools magnet programs, this will result in a net gain of 50 K-5 students at West Side Elementary School. Because West Side's attendance zone enrollment is more stable than Cutler, the magnet program is not anticipated to be as large. The highest projected enrollment year at West Side Elementary is 2017-18 with 604 students (highlighted in the chart and table below). West Side is also projected to have over 600 students during the 2021-22 and 2022-23 school year.



West Side Elementary School Enrollment Projections

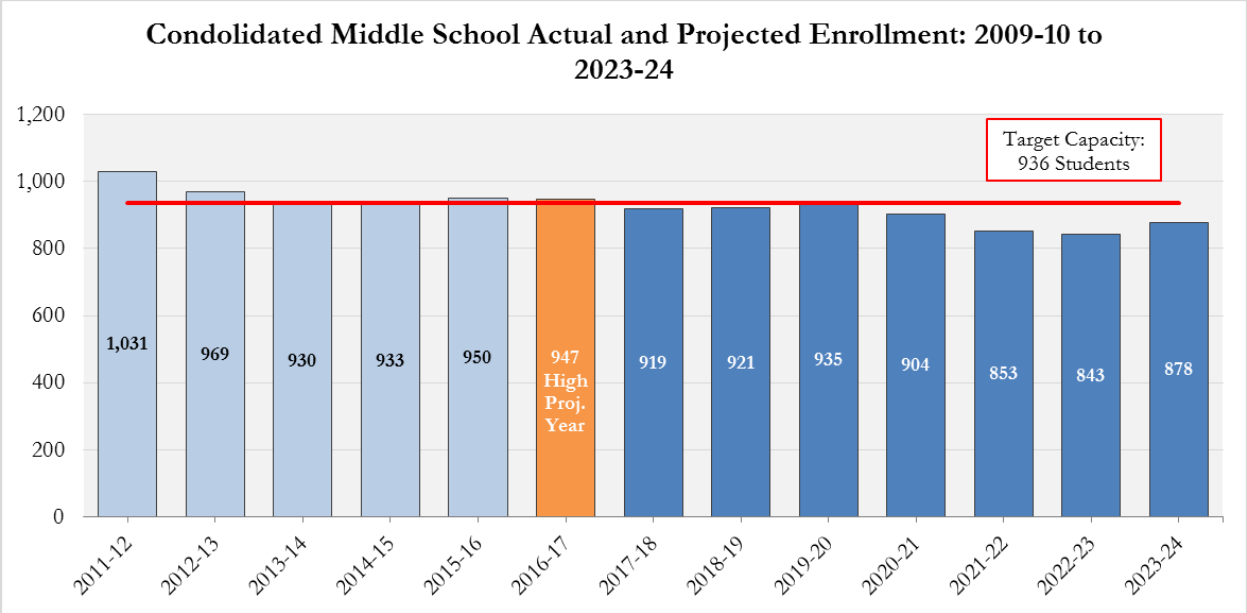
School Year	K	1	2	3	4	5	PK	PK-5th
2015-16 [1]	83	90	98	97	95	71	60	594
2016-17 [1]	99	78	77	100	93	87	60	594
2017-18	115	95	68	81	98	87	60	604
2018-19	103	109	83	70	78	91	60	594
2019-20	107	98	94	85	67	73	60	584
2020-21	96	102	84	97	82	62	60	583
2021-22	107	91	88	86	94	75	60	601
2022-23	103	101	79	89	83	87	60	602
2023-24	103	98	88	80	87	76	60	592

1. Assumes partial deployment of magnet program in 2015-16 and 2016-17

Consolidated Middle School

All of Groton's middle school students (grade 6 through grade 8) will attend a new Consolidated Middle School upon its completion. The new building will be centrally located in Groton on the Merritt property adjacent to Fitch High School and Ella Grasso Technical High School. The new Middle School will have a targeted capacity of 936 students. From 2002-03 through 2010-11, Groton retained an average of 98% of its 5th grade students (100 5th grade students would become 98 6th grade students the following year). However, over the last 5 years, Groton Public Schools has seen a substantial drop in its 5th grade retention rate, averaging just 92% (100 5th grade students become 92 6th grade students the following year) since the 2011-12 school year. The projections assume that as a result of the new school building and expanded educational programs, Groton Public Schools' 5-6 persistency ratio will increase to 0.95, or 100 5th grade students would become 95 6th grade students the following year.

Middle school projections show the recent stability continuing in the short term, with enrollments declining slightly to 935 students (-1.5%) up to 2019-20. However, as smaller classes begin entering 6th grade (as a result of lower births and out-migration to New London Public Schools), enrollment is projected to trough, declining to 843 students by 2022-23. However, this decline is only temporary. As larger birth cohorts and higher-retention kindergarten classes begin entering middle school, enrollment is projected to increase beginning in 2023-24. The highest projected enrollment year at the Consolidated Middle School is 2016-17 with 947 students (highlighted in the chart and table below).



Consolidated Middle School Enrollment Projections

School Year	6	7	8	6-8 Total
2015-16	329	335	286	950
2016-17	302	323	322	947
2017-18	313	296	310	919
2018-19	330	307	284	921
2019-20	316	324	295	935
2020-21	283	310	311	904
2021-22	277	278	298	853
2022-23	304	272	267	843
2023-24	319	298	261	878

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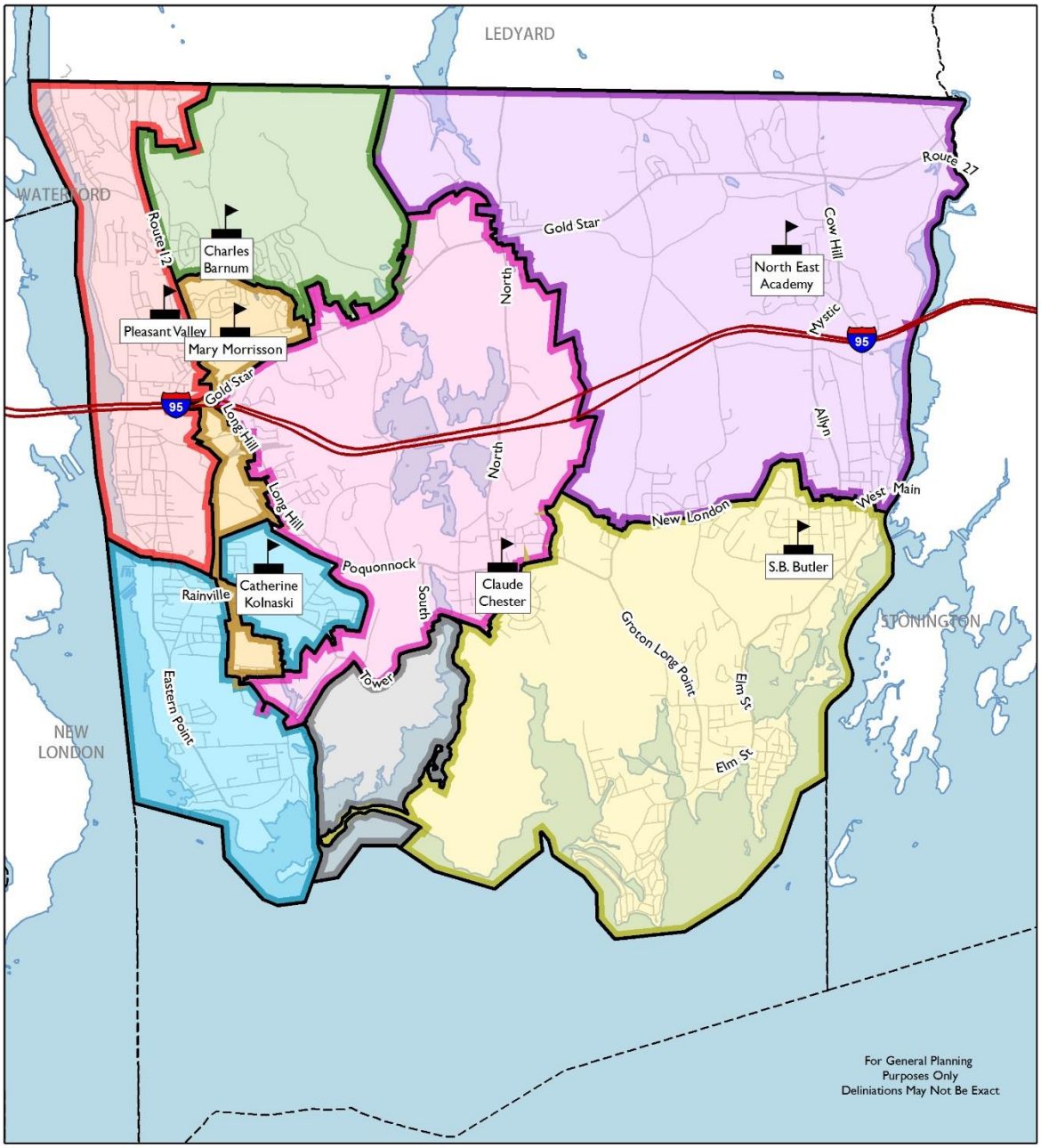
Appendix 1: District Projections

Groton Public Schools Enrollment Projections by Grade: 2015-16 to 2023-24

School Year	K	1	2	3	4	5	6	7	8	9	10	11	12	PK	PK-12	PK-5	6-8	9-12
2015-16	389	376	389	384	356	324	329	335	286	318	266	262	248	225	**4,487**	**2,443**	**950**	**1,094**
2016-17	423	369	348	367	368	336	302	323	322	273	303	260	247	270	**4,511**	**2,481**	**947**	**1,083**
2017-18	443	401	341	328	352	347	313	296	310	307	260	296	245	270	**4,509**	**2,482**	**919**	**1,108**
2018-19	415	421	372	322	315	333	330	307	284	295	292	254	279	270	**4,489**	**2,448**	**921**	**1,120**
2019-20	436	395	390	352	309	298	316	324	295	271	281	285	240	270	**4,462**	**2,450**	**935**	**1,077**
2020-21	385	415	366	369	338	292	283	310	311	281	258	275	269	270	**4,422**	**2,435**	**904**	**1,083**
2021-22	433	366	385	346	355	320	277	278	298	296	268	252	259	270	**4,403**	**2,475**	**853**	**1,075**
2022-23	431	412	339	364	333	336	304	272	267	284	282	262	238	270	**4,394**	**2,485**	**843**	**1,066**
2023-24	429	410	382	320	350	315	319	298	261	254	270	276	247	270	**4,401**	**2,476**	**878**	**1,047**

Appendix 2: Existing Elementary School Districts: 2015-16



Groton Public Schools

Existing Elementary District Boundaries: 2015-16

Elementary School Districts

- Catherine Kolnaski
- Charles Barnum
- Claude Chester
- Airport Grounds
- Mary Morrisson
- North East Academy
- Pleasant Valley
- S.B. Butler

GIS Data Sources

Town of Groton - Street Centerlines, Schools, Parcels
Groton Public Schools - PSIS Student Enrollment
Streetsmap USA - Highways, Area Roads
CT DEEP - Water, Town Boundaries
CT DPH - Births

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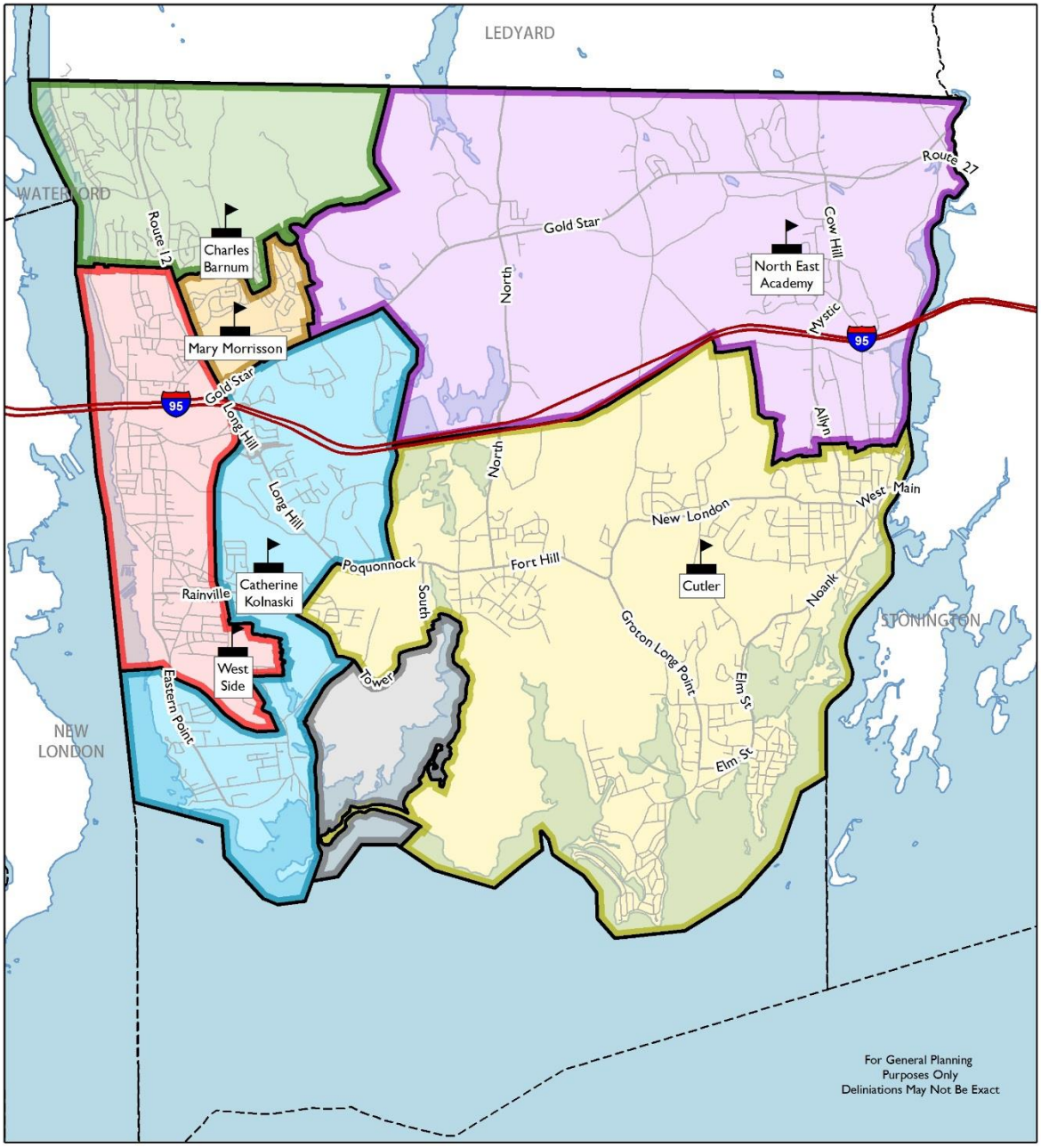
Appendix 3: Preliminary Conceptual Elementary School Districts



Groton Public Schools

Preliminary Conceptual Elementary District Boundaries

Elementary School Districts

- Catherine Kolnaski
- Charles Barnum
- Cutler
- Airport Grounds
- Mary Morrisson
- North East Academy
- West Side

GIS Data Sources

Town of Groton - Street Centerlines, Schools, Parcels
Groton Public Schools - PSIS Student Enrollment
Streetsmap USA - Highways, Area Roads
CT DEEP - Water, Town Boundaries
CT DPH - Births

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Appendix 4: Elementary School (PK-5) Projections

Groton Public Schools Elementary School Enrollment Projections 2016-17								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	69	67	59	48	67	49	60	**419**
Charles Barnum	51	45	38	37	28	15	30	**244**
Cutler	90	81	81	101	84	105	60	**602**
Mary Morrisson	60	47	43	36	28	25	30	**269**
North East Academy	55	51	49	45	68	55	30	**353**
West Side	99	78	77	100	93	87	60	**594**
TOTAL	**424**	**369**	**347**	**367**	**368**	**336**	**270**	**2,481**

Groton Public Schools Elementary School Enrollment Projections 2017-18								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	66	63	58	52	44	61	60	**404**
Charles Barnum	54	44	37	30	32	24	30	**251**
Cutler	89	94	83	83	103	86	60	**598**
Mary Morrisson	57	53	39	32	28	21	30	**260**
North East Academy	63	53	54	49	46	68	30	**363**
West Side	115	95	68	81	98	87	60	**604**
TOTAL	**444**	**402**	**339**	**327**	**351**	**347**	**270**	**2,480**

Groton Public Schools Elementary School Enrollment Projections 2018-19								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	64	63	57	55	52	42	60	**393**
Charles Barnum	48	48	37	32	27	29	30	**251**
Cutler	94	89	94	80	82	103	60	**602**
Mary Morrisson	53	53	46	32	27	23	30	**264**
North East Academy	51	59	55	54	50	45	30	**344**
West Side	103	109	83	70	78	91	60	**594**
TOTAL	**413**	**421**	**372**	**323**	**316**	**333**	**270**	**2,448**

ELEMENTARY SCHOOL (PK-5) PROJECTIONS (CONTD.)

Groton Public Schools Elementary School Enrollment Projections 2019-20								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	66	61	57	53	54	49	60	**400**
Charles Barnum	52	43	41	31	28	24	30	**249**
Cutler	93	94	88	91	79	82	60	**587**
Mary Morrisson	57	50	47	37	27	22	30	**270**
North East Academy	61	48	61	54	54	49	30	**357**
West Side	107	98	94	85	67	73	60	**584**
TOTAL	**436**	**394**	**388**	**351**	**309**	**299**	**270**	**2,447**

Groton Public Schools Elementary School Enrollment Projections 2020-21								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	58	63	57	54	53	51	60	**396**
Charles Barnum	45	47	38	35	27	25	30	**247**
Cutler	83	92	93	85	90	79	60	**582**
Mary Morrisson	50	54	44	38	32	22	30	**270**
North East Academy	53	58	51	61	55	53	30	**361**
West Side	96	102	84	97	82	62	60	**583**
TOTAL	**385**	**416**	**367**	**370**	**339**	**292**	**270**	**2,439**

Groton Public Schools Elementary School Enrollment Projections 2021-22								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	66	55	57	53	53	50	60	**394**
Charles Barnum	48	40	41	32	31	25	30	**247**
Cutler	96	82	92	90	84	90	60	**594**
Mary Morrisson	55	46	47	36	32	26	30	**272**
North East Academy	59	50	60	50	61	54	30	**364**
West Side	107	91	88	86	94	75	60	**601**
TOTAL	**431**	**364**	**385**	**347**	**355**	**320**	**270**	**2,472**

ELEMENTARY SCHOOL (PK-5) PROJECTIONS (CONTD.)

Groton Public Schools Elementary School Enrollment Projections 2022-23								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	66	64	51	54	52	50	60	**397**
Charles Barnum	49	44	35	33	28	28	30	**247**
Cutler	97	95	82	89	89	84	60	**596**
Mary Morrisson	56	53	41	39	30	26	30	**275**
North East Academy	59	56	53	59	50	61	30	**368**
West Side	103	101	79	89	83	87	60	**602**
TOTAL	**430**	**413**	**341**	**363**	**332**	**336**	**270**	**2,485**

Groton Public Schools Elementary School Enrollment Projections 2023-24								
School	**K**	**1**	**2**	**3**	**4**	**5**	**PK**	**PK-5th**
Catherine Kolnaski	66	63	58	48	53	50	60	**398**
Charles Barnum	48	44	37	29	29	25	30	**242**
Cutler	96	96	95	79	89	89	60	**604**
Mary Morrisson	55	52	46	33	33	25	30	**274**
North East Academy	59	56	58	52	60	50	30	**365**
West Side	103	98	88	80	87	76	60	**592**
TOTAL	**427**	**409**	**382**	**321**	**351**	**315**	**270**	**2,475**

GROTON PUBLIC SCHOOLS

EDUCATIONAL SPECIFICATIONS

FOR

CUTLER ELEMENTARY SCHOOL

OCTOBER 27, 2014

Educational Specifications

Cutler Elementary School

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EDUCATIONAL SPECIFICATIONS

CUTLER ELEMENTARY SCHOOL

Introduction and Project Overview

This project proposes to convert Cutler Middle School into a pre-kindergarten-grade five elementary school via a "renovate-to-new" facility construction grant with the State of Connecticut. Superintendent of Schools Michael Graner convened a Stakeholder Committee in May 2014 to study previous school district initiatives, actions and issues associated with school desegregation, and the future organization for the public schools. Of note is the fact that the school district studied population and demographics trends in 2011-2012 and took action to implement a redistricting plan in the fall of 2013 to ensure racially balanced elementary schools. In the summer of 2014, the Connecticut State Department of Education found that the Groton elementary schools continue to exceed the State racial balance guidelines and the school district submitted a plan to the State Board of Education to remedy the situation. It is the overwhelming recommendation of the Stakeholder Committee to retain the current grade level organization of the school district. However, the declining enrollment and need for substantial school renovations in older elementary schools prompted the committee to recommend the consolidation of its two middle schools as a foundation and first phase of a longer term solution to maintain racial balance in the Groton Public Schools. It is the district's view that school redistricting has had short-term success in the past and will most likely only achieve short-term results in the future unless bold and progressive action is taken now. Bringing all middle school students together in a single school provides the flexibility to enhance the learning of all students in a school and in classrooms that reflect the diversity of the community.

This project is one of a two-part second phase of the overall racial balance plan that proposes the conversion of two middle school facilities, [Cutler and Westside], to prekindergarten-grade five elementary schools. Three elementary schools, [Claude Chester, S.B. Butler, and Pleasant Valley], would be closed upon the completion of construction of the second phase of the overall racial balance plan and their student population redistributed to other schools in a manner that would promote racial balance throughout the elementary schools. Further, in order to maintain racial balance in the long-term, one or both of the renovated elementary school facilities would be re-opened as "diversity schools" under the provisions of Connecticut General Statutes 10-286H (as amended by Section 12 of Public Act 12-179). This plan reduces the overall size of the school district organization, modernizes two elementary school facilities to conform to contemporary education needs, improves the overall efficiency of building operations, and avoids considerable cost for renovation and repairs to outmoded elementary school facilities [Chester, Butler, and Pleasant Valley].
The construction of a consolidated middle school will enable the school district to convert the current middle school facilities into Pre-kindergarten through grade 5 elementary schools that are larger in capacity than current elementary schools and capable of absorbing students from within the school district and, possibly, students from neighboring towns as well. Three older elementary schools, one of which has been the subject of racial imbalance issues, will close and all students will be transferred to one of the reconstituted middle-to-elementary schools or other elementary schools in the district. Subsequent action for a long-term racial balance plan is still

under development but one option being considered is a controlled choice process for new school registrants that will strive to ensure all Groton elementary schools are racially balanced and provide diverse learning environments for all students moving forward.
The Cutler Elementary School will accommodate approximately 500 students in grades pre-kindergarten through grade five. The following chart summarizes the targeted capacity of the school, given class size standards as illustrated.

Grade	Class Size Targets	Number of Classrooms	Enrollment Capacity
Pre-Kindergarten	15	2 @ half days	60
Kindergarten	20	5	100
One	22	4	88
Two	22	4	88
Three	22	4	88
Four	22	4	88
Five	22	4	88
	TOTAL:	**27**	**600**

The space specifications for this project may exceed the allowable square footage delineated in the Space Standards Worksheet. This is due to the fact that schools designed as middle schools have core facilities and specialized classrooms "sized" for an older student population with different program requirements. In addition, basic classrooms for the early childhood population in the retrofitted school require more space than generally provided for in the school design. Site modifications and overall safety and security upgrades will also require attention. These modifications will be addressed later in this proposed project. The superintendent of schools will seek a waiver of the space standards to enable the project to be constructed as specified with full construction grant reimbursement.

An **"existing conditions study"** is required to evaluate the structural and operating systems of the Westside school facility in order to specifically determine the renovations and new construction required to convert the building to a modern and efficient elementary school. Among the anticipated renovation needs are the following:

- ***Electrical distribution***
- ***HVAC systems – Air conditioning***
- ***Non-friable asbestos removal***
- ***Fire sprinkler system***
- ***Energy efficient windows***
- ***Fire alarm replacement – security systems***
- ***Parking***
- ***Structural analysis and renovations***
- ***Handicapped access and signage***

- ***Replace portable classrooms with permanent structures connected to the main building***

New construction and/or extensive renovation is anticipated as follows: *(to be determined via architectural design based on existing conditions, existing space and program needs)*

- Pre-kindergarten and kindergarten classes of approximately 1,000 square feet with appropriately sized bathrooms and fixtures
- Play areas with appropriately designed and sized equipment and fields
- Ensure adequate space for the school-based health clinic

Executive Summary of the Planning Committee Report

The goal of the Planning Committee was to identify educational specifications for facilities that reflect educational programs, which address sound strategies for the elementary school learner. A deliberate emphasis was placed to propose structures that facilitate 21st Century learning. The designs presented in this document consider present practice, current research, and future needs. They describe schools unique to Groton which reflect our beliefs and philosophies. As stated in the *Groton District Vision (our belief system that focuses and aligns our decisions)*, "Students should have access to resources and facilities that support optimal learning". The information presented here validates, and gives coherence to, our best ideas about education.

Research shows that architecture affects learning; therefore, the proposed design of our schools enhances and brings to life the educational programs for our students and community. Indeed, improving the physical learning environment can improve student achievement. The school structure takes into account the ever-advancing technological world with sensitivity to the development of the whole child including growth in academic, emotional, social-behavioral and physical health domains. The elementary school facility proposal is one which facilitates interaction among students, faculty and staff, and fosters a sense of belonging. Students are able to fulfill their learning potential through the accommodation of virtually any type of subject matter and multiple forms of instruction.

The design of the facilities creates environments that promote the pursuit of academic excellence in an information-based technological society. The proposed architecture allows learning spaces indoors and outdoors to be inherently flexible to meet the current variety of needs as well as the changing needs of a dynamic learning environment. Flexible learning spaces allow for increased collaborative work among students and more opportunities for students to develop skills in communication, leadership, teamwork and innovation. Schools will be designed to take advantage of environmentally friendly technologies and wherever practical systems will be accessible for learning opportunities.

PURPOSE OF EDUCATIONAL SPECIFICATIONS

Educational specifications are the cornerstone of successful school building programs. Good educational specifications provide a comprehensive overview of the program of instruction to be housed, the activities to be encouraged, and the facilities necessary to carry out the goals and objectives of the school system.

The Connecticut State Department of Education defines educational specifications as a description of the general nature and purposes of the proposed school building project, including the applicant's long-range educational plan and relationship of the proposed project to such plan; enrollment data and proposed project capacity; the nature and organization of the educational program; support facilities; space needs; specialized equipment; environmental controls; and site needs.

The specific purposes for educational specifications as part of the construction grant approval process are as follows:

1. For the educational agency to justify the need for the proposed school building project

2. For the educational agency to describe the educational activities that a proposed school building project is to support and the types of spaces that will best accommodate program requirements

3. For the Department of Administrative Services to determine the nature, scope, feasibility and funding level for the proposed school building project

LONG RANGE PLANS

The Groton Public Schools district is experiencing enrollment decline and demographic changes in its student population. According to the latest demographic study, the student population will peak during the 2017-18 school year. The State Department of Education cited Groton for racial imbalance in one of its elementary schools in the summer of 2014. This situation follows the recent (2013) redistricting of elementary schools to avoid such a circumstance. While a comprehensive and long-term plan to maintain racially balanced schools is still being developed, the Stakeholder Group (May 2014) made the following recommendations to the Board of Education, who subsequently adopted it:

- Construct a new, consolidated middle school adjacent to the high school to the extent practical and feasible
- Re-purpose the current middle schools as larger elementary schools for grades pre-kindergarten through grade 5
- Close three elementary schools; schools that are in need of substantial facility renovations (Claude Chester, Pleasant Valley, and S.B. Butler schools)
- Redistrict the elementary student population to ensure racially and economically diverse schools

- Develop long-term plans to maintain racially balanced elementary schools; diversity schools, controlled choice enrollments and school assignments may be considered

The new middle school is the foundation for a long-term solution to the District's enrollment and racial balance challenges. It constitutes the first phase in a long-term solution and must be accomplished before subsequent action steps. All middle school students in Groton would attend the same school. Issues associated with racial balance would then reside exclusively at the elementary school level.

The second phase of the long-term plan would be to retrofit both of the current middle schools as Pre-kindergarten through grade five elementary schools.

The third phase of the long-term plan is the closing of Claude Chester, Pleasant Valley and S.B. Butler elementary schools and the redefining of all elementary school attendance zones. This action would create attendance patterns that could more easily and accurately predict longer-term racial balance at the elementary school level. Further, the net loss of two buildings to the school district inventory will produce immediate and long-term savings while the one middle school may, over time, result in greater efficiencies and lower operating costs than two middle school buildings.

CAPACITY – ENROLLMENT DATA

In February 2014, Mike Zuba of Milone & McBroom presented a comprehension study of enrollment for the Groton Public Schools (appended). This report forecasts district and school enrollments through 2023.
The projected enrollment for the Cutler Elementary School will result from a re-defining of attendance zones. The following chart depicts enrollment projections for the three elementary schools that will comprise the bulk of students to be divided among the two new elementary schools (retrofitted middle schools; Westside and Cutler).

YEAR	Claude Chester	S.B. Butler	Pleasant Valley	TOTAL
2014-15	351	280	299	930
2015-16	354	271	290	915
2016-17	331	281	284	896
2017-18	324	272	285	881
2018-19	326	271	286	883
2019-20	330	272	280	882
2020-21	332	271	278	881
2021-22	331	272	281	884
2022-23	332	271	283	886

The enrollment trend for the attendance zones likely to affect the Cutler Elementary School consistently produces a student population of about 885 students from 2017-2022. If students are split evenly between the two new elementary schools, each school would accommodate about 443 students. In addition, each new elementary school would provide a prekindergarten program for about 30-60 students bringing the total school enrollment to about 473-503 students.

The peak enrollment year for this project is 2015-16. It should be noted that revised enrollment projections should be calculated as the project draws closer to actual construction to ensure adequate and appropriate space is provided for the peak enrollment year. The initiation of this project is likely to occur five-six years from the adoption of these specifications.

A projected class organization for the Cutler Elementary School is as follows, based upon year 2022-23 enrollment projections. Minor variations in class sizes will occur from grade level to grade level depending upon the attendance zones selected for assignment to this school and the number of students opting for a ”diversity” school education..

Grade	Projected Enrollment	Number of Classes	Average Class Size	Class Size Standard	Functional Capacity
Pre-K	30-60	2-4	15	15	30-60
Kindergarten	81	5	16.2	20	100
One	79	4	19.75	25	100
Two	73	4	18.25	25	100
Three	65	4	21.7	25	100
Four	70	4	17.5	25	100
Five	74	4	18.5	25	100
TOTALS:	**472-502**				**630-660**

The functional capacity of the school would be 630-660 students based upon district class size standards, depending on the number of pre-kindergarten classes offered.
Note: It makes sense to provide four classrooms per grade level for grades 1-5 as higher lower grade enrollments will work their way upwards and require additional space at upper grade levels in subsequent years. As time draws nearer to designing the building changes, it would be prudent to calculate more up-to-date enrollment projections to determine if, in fact, the school should have “five” classrooms at each grade level, if enrollment is trending higher.
In addition, the following chart depicts the capacity for enrolling in and out-of-district “choice” students in the diversity school.

Grade	Projected Enrollment	Number of Classes	Functional Capacity	Capacity for Choice
Pre-K	30-60	2-4	30-60	Open
Kindergarten	81	5	100	19
One	79	4	100	21
Two	73	4	100	27
Three	65	4	100	35
Four	70	4	100	30
Five	74	4	100	26
TOTALS:	**472-502**		**630-660**	**158**

CATEGORY PRIORITY

This is a Category One Project in accordance with the requirements of Section 10-283 (a-6) of the Regulations of Connecticut State Agencies, which states that Category One Projects are primarily required to do the following:

> "Create new facilities or alter existing facilities to provide for mandatory instructional programs pursuant to Title 10 of the general Statutes, including, but not limited to special education; the arts; career education; consumer education; health and safety; language arts, including reading, writing, grammar, speaking, spelling, and library media centers; mathematics; physical education; science, including laboratories; and at the secondary level one or more foreign languages and vocational education including shops; or for physical education facilities in compliance with Title IX of the US Elementary and Secondary Education Act of 1972 where such programs or such compliance cannot be provided within existing facilities."

EDUCATIONAL SPECIFICATIONS COMMON TO ALL SCHOOLS

Common educational specifications that are applicable and essential to all Groton schools are presented below. The facility designs for all three levels should accommodate projected enrollments through the year 2025, taking into account increases in student population and future needs. The designs support the concept that smaller learning communities within the fuller learning community enhance interactions among learners, increase a feeling of belonging, and emphasize the importance of individuality. The school should be physically organized in grade level clusters that facilitate teamwork in grade level clusters. Support services spaces should be provided juxtaposed to grade level clusters for ease of access by students and for the facilitation of teacher collaboration.

Facility Design Guiding Principles

1. School design to accommodate both current and future projected enrollments
2. Support smaller learning communities within the full school community
3. Student driven, interactive, project-oriented learning experiences
4. Adaptable space for dynamic and changing educational philosophies and programs
5. Space designed for multiple functions
6. Space for meetings of various sizes distributed throughout the facility
7. Support for contemporary technologies easily adapted for emerging technologies
8. Facilities to support 21st Century learning
9. Welcoming atmosphere which provides a sense of comfort for students, staff, and community
10. Free flowing, safe, easy movement
11. Maximum exposure to natural light and airflow
12. Durable, high quality, age-appropriate furnishings which support the educational program
13. Include acoustical treatment designed to minimize the transmission of sound
14. Durable and easily maintained finishes

15. Appropriate energy efficient technologies
16. Central Heating Ventilation and Cooling (HVAC)
17. Community access and use that minimizes disruption to educational activities
18. Emergency Shelter, if necessary
19. Outdoor spaces as an extension of the educational, athletic, and community program
20. Diverse educational philosophies such as alternative education models and magnet school models

School Safety and Security

The committees deemed security a vital factor. As documented in the Groton Public Schools Strategic Plan, a safe learning environment is one of the district's key goals. Our children must have a sense of physical and emotional well-being, which in turn, will enhance student achievement. Therefore, interior and exterior surveillance cameras are requested throughout the buildings. Electronic door locks are required to control access to the entire school. In particular, front doors must be designed to control entry to the school. For security purposes, one entry door will lead directly to the main office. The designs of the buildings will ensure a secured vestibule as well as clear views of all main entry areas, incorporating the inclusion of shatter-proof glass to provide maximum visibility and safety for the monitoring of pedestrian traffic in and out of the school. To maintain security, an addressable intrusion alarm system is essential. Areas designated for community use will be provided with accessible parking and convenient entry doors. Designated community use areas include athletic facilities, auditoriums, media centers, and cafeteria. Storage space will be provided for community-based programs.

The school design should conform to the school safety standards as recommended by the School Safety Infrastructure Council, as charged by Public Act 13-3, Section 80(b), or its subsequent revisions. These standards include, but are not limited to, (1) entry ways to school buildings and classrooms, (2) the use of cameras throughout the school building and at all entrances and exits, including the use of closed-circuit television monitoring, (3) penetration resistant vestibules, and (4) other infrastructure devices and services as they become industry standards. A risk assessment of the school site will enable school district leadership, its building committee, and architects to determine an "all hazards" threshold level response to potential threats in order to plan the most effective mitigation for attaining the desired level of protection. Critical compliance areas to be considered in school construction and site development are:

1. School site perimeter
2. Parking areas and vehicular and pedestrian routes
3. Recreation areas (playgrounds, athletic areas, multi-purpose fields, etc.)
4. Communication systems
5. School building exterior
6. School building interior
7. Roofs
8. Critical assets/utilities
9. Other areas as may be indicated by the proposed school location, its site, design features

Community Use

All schools will serve as town centers that can support community-based programs, activities, and events for the citizens of Groton. The designs will allow for specific activity zones of the buildings to be isolated for after-school activities and for community use, as well as for security and maintenance reasons.

The contemporary public school facility serves the educational interests of its student clientele as a primary function, while it embraces the needs of its community for an increasing range of activities that enhance the quality of life its citizens. Therefore, areas of the building need to be accessible after school hours for a variety of activities ranging from scouts to sports activities to adult education enrichment classes and gatherings of people for meetings, entertainment(,) or recreation. The philosophy of the Groton Board of Education is based on the premise that school buildings belong to the community. They should, therefore, be made available to the public to the fullest extent practical, while maintaining as their primary foremost consideration, their function as learning places for children.

Areas most in demand for community use are the following:

- Gymnasiums
- Auditorium
- Library-Media Center
- Cafeteria
- Computer Labs
- Outdoor athletic facilities

The building design must accommodate public access, including handicapped citizens, to all public places, including lavatories, telephones, water fountains, and seating. The design, however, should respect the need for security of core school facilities and public areas. Visitors during the school day, therefore, should be directed to a single point of entry to the building.

Areas of the building should be designed for display of varied art works and student work products. Areas of the building should accommodate visiting lecturers and artists who address gatherings of students and interested adults in formal and informal settings that promote interaction among and between these groups.

EDUCATION PROGRAM

The new Cutler Elementary School will serve selected elementary age students from Pre-kindergarten through grade five primarily from previous attendance zones for Claude Chester, S.B. Butler, and Pleasant Valley elementary schools. Other schools may be affected by the overall redistricting and balancing of schools as determined by the demographic and geographic make-up of the school attendance zones at the time this project is completed. Classrooms in the school are organized on a self-contained basis, one teacher per each group of 20-25 students. Seven (7) classrooms are needed for prekindergarten and all-day kindergarten. Five classes are

needed for kindergarten. Four (4) classrooms for each of the other grade levels will be needed to meet the student enrollment throughout the projection period, as well as ensuring the school district of the flexibility to provide additional services for special needs students and emerging programs that may or may not be related to "No Child Left Behind" requirements or other state/federal initiatives related to improved school performance. Each grade level should be located in a distinctive part of the building, each class juxtaposed to other classrooms assigned to that grade. The pre-kindergarten, kindergarten and grade one students should be clustered in one part of the building[1], preferably near the bus drop-off or main entrance to the building and having access to core facilities on the same level as their classrooms. Grades 2-3 should be clustered together as well as grades 4-5.

The upper elementary school program provides for the active engagement of all students in the learning process. Students need classroom space to work on projects cooperatively with others as well as areas to work independently. The teacher will work with students in a variety of approaches including whole class instruction, small group and individualized instruction. The movement toward "all-inclusive" classrooms as a result of State policy and regulations will often find more than one adult in classrooms providing supportive as well as direct instruction to one or more special need student. The space and furnishings in these classrooms must be flexible and adaptable to these different approaches. Student learning is the focus of attention of the school programs. The facility must enable flexibility in both teaching and learning processes through its design and the environment created within the school. Abundant and creative displays of student work that celebrate achievements while adding to the ambience of each classroom and the school as a place for children to learn, build a sense of pride in the student body as well as a welcoming environment for visitors to the school.

Core Academic Subjects

The following subjects are provided within the regular classroom program:

Language Arts and Reading

It is the expectation of the Groton Public Schools that every student will read with fluency and comprehension by the end of the third grade. By the end of fifth-grade, students are expected to move beyond the development of basic word fluency and literal comprehension to the ability to read for deeper understanding. The following instructional strategies are typical in the contemporary reading-language arts classroom and have implications for organization of space, furnishings and fixtures in the classroom.

- Classroom based assessment is emphasized. There is a trend to do more of this via computers and related technologies.
- Flexible grouping of students based on instructional needs. Groups of students may be working on different assignments simultaneously while the teacher is providing direct instruction to individuals or a small group of students.

[1] Using a color schema tile path from the bus drop-off entrance to the "primary" grade school cluster will enable young children to easily locate their classroom, and consequently feel more self-assured and comfortable in the school environment.

- Instructional materials and classroom libraries substantially exceed the traditional basal text and related materials approach to literacy instruction.
- Students work with peers in literature circles, monitored by a teacher, assistant, or volunteer.
- Writing about what is being read is emphasized. Pupils demonstrate how they can make a personal connection to what is being read.
- Special needs students included in the literacy program may require the assistance of another adult, either a teacher assistant or specialized instructor, to meet the Individualized Education Plan (IEP) for that child. Some classrooms may have more than one "included" special needs student, possibly increasing the number of adults in a classroom for the duration of particular lessons.
- Supportive services are provided within and outside the general classroom for students who may require such additional instruction. The goal of such service is to enable each student to maintain or achieve a reading level that would enable independent work in other grade level academic areas.
- Modern language arts programs require bookshelves for leveled reading books; about 300 books per classroom.

Mathematics

It is the expectation of the Groton Public Schools that all students become mathematically literate. The following types of activities are typical of contemporary elementary school mathematics instruction and student learning. Classroom space, furnishing and fixtures should accommodate these approaches to teaching and learning.

- Direct, whole class instruction.
- Student cooperative learning activities.
- Demonstration and explanation of problem solving strategies and procedures by teachers and students.
- Small group instruction.
- Independent guided practice and independent practice of skills.
- Use of manipulative learning tools.
- Use of technology as a learning tool.
- Application of mathematical ideas to other subjects and various practical tasks.
- Use of various reference materials, including textbooks.

Social Studies

The social studies curriculum focuses on important concepts such as community, culture, region and immigration, history and geography. Map and globe skills are integrated into all aspects of the program. Students develop a sense of time and place as they learn about earlier events in history. The following activities are typical of contemporary elementary grade social studies teaching and learning.

- Large and small group instruction.
- Cooperative learning groups.
- Library research and use of the Internet to gather data; database reference sources.
- Multimedia is used to augment and illustrate concepts.
- Student projects and multimedia reports.

- Discussion groups.
- Use of primary sources for inquiry; mentors or experts from outside the school may be contacted through email or teleconferencing.
- Computer simulation activities.
- Primary and secondary text material.
- Field trips to relevant local and state sites

Science

Upon completion of the science program, students will have a fund of scientific concepts, the ability to employ basic scientific reasoning, and be capable of extending his/ her knowledge through additional schooling and independent reading in order to understand and appreciate events and their impact upon society. Students are expected to integrate skills acquired in the language arts, mathematics and fine arts, and apply them in science learning.

The following types of activities are characteristic of contemporary elementary grade science classrooms.

- Large and small group instruction.
- Discussion and cooperative lab groups.
- Use of technology as a learning tool for data collection, calculations, simulations and Internet references.
- Observing, estimating, measuring, collecting data.
- Inferring, predicting, interpreting data, hypothesizing.
- Communicating, classifying, creating models, making graphs.
- Multimedia sources to illustrate concepts and provide information.
- Investigations using scientific tools and methods.

SPACE SPECIFICATIONS

A project goal for design professionals will be to configure school spaces in such a manner as to minimize project cost. Design priorities should be directed to the following principles:

- Personalization of learning and teaching spaces
- Flexibility in the current and future use of school space
- Access to appropriate technologies for teaching, learning and management
- Serving the needs of diverse learners
- Indoor air quality and overall environmental impact of materials used
- LEED[2] standards for energy conservation and environmental impact design
- Potential for adding classroom space at a future date

General Classrooms (27):

- 7 Pre-kindergarten & Kindergarten classrooms @ 1,000 SF

[2] LEED is a third-party certification program and the nationally accepted benchmark for the design, construction, and operation of high-performance "green" buildings. LEED = Leadership in Energy and Environmental Design.

- 20 Grades 1-5 classrooms @ 800 SF

All general classrooms must be flexible and adaptable to different future uses. Cabinetry and other fixtures will need to be carefully designed for ease of relocation. Floor space should be maximized to enable the teacher to reconfigure furniture and learning spaces within the classroom. Smart Technologies, areas to display student work, projection spaces and computer workstations for students and teachers need to be carefully designed and strategically placed in order to facilitate teaching and learning. A wireless network capacity throughout the building will provide flexibility for student workstations and classroom organization.

The district Special Services Director should be consulted to determine how and where "sound field systems" should be installed in selected classrooms as assistive technology (one classroom per grade level or grade level cluster).

Seven (7)) pre-kindergarten and kindergarten classrooms of about 1,000-1,200 square feet are needed for this school. Twenty regular classrooms of approximately 800-900 SF are needed to support the student population for grades 1-5 in the core academic areas. One classroom at the fifth grade levels should be designed as science classroom-lab or mobile science centers could be brought into the rooms for demonstration purposes and tables or perimeter counter space would serve as lab workstations for students.

The general classrooms for grades 1-5 should have ample space to permit flexible grouping and regrouping of students, as well as whole class instruction. Sufficient room and teaching stations need to be accessible in the room for two or more teachers to be working simultaneously with students in small groups, or one teacher or assistant providing supportive assistance for one or more students while the classroom teacher is providing direct instruction to the whole class. Different types of workstations or "learning" centers may be created in areas within the classroom. Each classroom should have a technology center with at least 3-4 student workstations (laptops or tablet devices may preclude the need for this center) and a teacher computer workstation. Storage for instructional supplies within the classroom or in a readily accessible shared location is important to maintain continuity in the flow of instruction. All rooms should be equipped with wireless capability for use of portable laptop labs and/or tablet devices.

The pre-kindergarten and kindergarten classrooms should have the same features described above/below and, in addition should have cubbies for storing student work and materials. The shelving, fixtures and equipment in the room should be accessible to and suited to the physical attributes of 4-6 year old children. All pre-kindergarten through grade one classrooms should be configured to contain [shared] accessible lavatory space designed for young children. These classrooms need to be located at ground level.

Number of teachers:

During peak enrollment periods, twenty-seven regular classroom teachers are needed to provide class sizes of 20-24 students. The following space specifications are desired outcomes of the project. The classroom square footage specified should provide direction but reserve some flexibility and freedom of design in retrofitting the middle school building to accommodate pre-school and elementary school aged children.

General Conditions

All instructional space should have the following:

- Display boards
- White boards
- SMART Technologies smart-boards
- Counters with enclosed storage cabinets above and below the counter
- Tile flooring (preference is for tile rolls that are heat sealed at seams)
- Connection to the school communication system
- Room darkening shades
- Full data/ voice/ video capacity (*access to a network integrated media distribution system*)
- Student computer workstations [*via school district's Technology Plan*]; access to a wireless LAN and WAN.
- Teacher computer workstation, hard-wire drop.
- Teacher desk and chair
- Student work table (mobile) and chairs according to function and grade level
- File cabinets
- Electrical outlets, at least one on each wall; additional outlets alongside computer workstations to support peripheral devices
- Clock, flag, pencil sharpener
- Appropriate heat, ventilation, and air conditioning
- Consultation with the Director of Special Services about anticipated assistive technologies in various classrooms will be necessary (some rooms will need to be equipped with audio support systems).
- Appropriately sized lockers or wardrobe areas for storing clothing and personal learning resources

Other Instructional Program Spaces

All students enrolled in the school generally participate in all of the following programs:

Physical Education

All students participate in physical education/health education classes once per week. The program goal is to instill in students a desire to become practitioners of lifelong fitness and well-being. Physical education classes take place in a gymnasium and out-of-doors, depending upon the season and weather conditions. The following types of activity take place in the contemporary upper elementary physical education classroom.

- Fitness activities.
- Games; team and individual sports.
- Rhythmic activities, including dance
- Gymnastics and tumbling.
- Adaptive physical education as specified by student needs
- Health education

Classroom Space:

1 full size gymnasium @ 5,600 SF
Storage @ 400 SF
Office space@ 200 SF

One (1) gymnasium with a regulation size basketball/volleyball court and equipment storage and office space; the gym should have retractable bleachers along one wall for seating 150-200 people. The gymnasium should be easily configured for two separate teaching stations. Lavatory access within or adjacent to the gymnasium is desirable for student and public use. The gymnasium would be extensively used by the community during non-school hours. It should be configured in such a way as to permit direct access to the public while retaining the security of the remainder of the school building. It is preferable that the gym floor be of wood construction. A protective covering should be available for events that bring the public to the facility for large group meetings.

It is highly desirable to provide bleacher seating in the gymnasium to the extent this is possible.

Outdoor physical education facilities should include kickball, softball, soccer and basketball areas and a blacktop area for skill games and activities. A walking/jogging trail around the perimeter of the fields is desirable. Outdoor age-appropriate playscapes should be provided for recreational and recess activities for primary and intermediate grade students in their designated play areas.

Office space for two teachers with visual sight-lines to the gym should be provided. It would be ideal if the gymnasium and cafeteria could be juxtaposed with a low platform stage area separating the two. [The stage area would be used as the instrumental music teaching station – sound-proof paneling and movable walls].

Teachers:

One and one-half (1.5) teachers are needed to implement physical education and health curricula and schedule for all students.

Music

The lower elementary school classes are exposed to music activities that engaged them in performance and appreciation activities. Rhythm instruments and movement activities enable young children to use various senses and learning modalities to learn musical concepts.

The music program in the upper elementary school develops students' musicality through experiences in vocal, instrumental and music theory. Children learn music by behaving in musical ways, by listening to, creating and performing music. Grade three students focus their study on singing accurately and independently. Beginning instrumental study is begun with the recorder.

Grade four students continue their vocal music activities through choral and independent activities. Personal voice performance, harmony and rhythm are emphasized. Instrumental music instruction begins at the fourth grade level. Students perform independently, in small ensembles,

and in band. Electronic keyboards are used to facilitate student development of music theory and beginning composition.

In grade five, the program further develops and extends the concepts and theory of musicality, adding the study of composers and folkdances at this level. Choral music involves continued voice development with more involved harmony and vocal rhythm. Instrumental study continues with increased participation in small ensemble and band activities. Music theory and composition are extended via electronic keyboards.

Teachers:

Two (2.0-2.5) teachers are needed, two specializing in vocal/ choral activities and a part-time teacher in instrumental/ band activities. It would be desirable to have all teachers capable of teaching both vocal and instrumental music in order to have maximum scheduling flexibility.

Space Specifications:

One (1) general music @ 1,000 SF.
Shared storage of 400 SF
One (1) instrumental music room @ 1,200 SF

The General and Instrumental music programs need space that is strategically located and acoustically treated. The rooms should be located near the stage area to the extent possible and practical. Storage for the music library, instruments and music stands needs to be provided. Display boards, electronic keyboards, and a projection screen need to be strategically located to facilitate teaching and learning. Multiple electric outlets are required alongside each wall to enable class use of various electronic instruments and devices that support the instructional and learning programs.

The instrumental music room should have the capacity to provide for electronic keyboarding instruction. It is suggested that the instrumental music room be located on a low platform stage between the cafeteria and gymnasium. Movable, acoustical walls will enable flexible us of this space. Storage for instruments and music should be provided.

Art

Art education in the Groton Public Schools offers experiences for students to observe, analyze, synthesize, and evaluate the essence of the physical world and to translate its components into works of art. The historical and cultural significance of art provides the opportunity for the students to understand and appreciate the role of the artist as a visual historian and the creator of new and original modes of perception. Primary grade students explore such concepts as color, shape, line, texture using a variety of media and art forms. Some three-dimensional work is also part of the program. Among the topics studied in the upper elementary art classroom are drawing, painting, graphic design, sculpture and crafts. It is important to design art rooms and adjacent hallways with display cases, wall display structures and appropriate lighting to present completed students art projects for audience appreciation.

Teachers:

Two (2.0) teachers are needed to implement the art curriculum for all students.

Space Specifications:

2@ 1,000-1,200 SF

Storage/kiln area @ 400 SF

The art program requires use of two large instructional spaces. These spaces should have a great deal of natural light, built-in storage, sinks with appropriate drainage and numerous opportunities to display completed student work and store work in progress. Worktables and stools should be mobile in order to allow teachers the flexibility to re-arrange instructional space according to planned activities and the various physical abilities represented by the age range of students served (4-10 years old). A white board, SMART Board and computer workstations need to be strategically located to facilitate teaching and learning. About 300 square feet of this space should be allocated for shared storage of supplies and materials, and storage of works in progress. The area outside the art room should contain tack board and wall-mounted display cases to showcase student work (a glass wall may be installed in the classroom to display completed or work in progress into the hallways).

Library-Media Center (Learning Center)

The library-media center is the hub of learning activity for the school. It provides space where the concept of "learning community" comes alive. Teachers, students and members of the community can be observed actively engaged in learning in this space – learning from the various print and non-print materials accessible in the library as well as learning from other people. Technology plays an integral role in the use of the modern library. Access to a vast array of information in a variety of forms is available through the Internet. Teleconferencing is facilitated through use of computers. Distribution, retrieval and storage of various materials and information sources is facilitated through electronic card catalogs and scanning devices. Computer workstations are an important component of the library-media center. The computer lab is made a part of the library-media center or it is located juxtaposed to the library for ease of access and supervision.

The library-media center should have the capability to broadcast SMART Technologies to all classrooms for internal programming as well as through the local cable network for public meetings or functions.

Space needed:

1 @ 4,100 SF

The library-media center should be a minimum of 2,800 SF (without an integrated computer lab) with additional office space, work space, wiring closet and technician workroom and, portable computer lab charging station storage totaling about 500-600 SF. An additional 600-800 SF would be needed for an integrated computer lab in this space.

A part of the library should be readily adaptable to use as a classroom for storytelling and other instructional purposes. The library-media center should also have wireless capacity and space to recharge mobile wireless laptop labs. The modern library media center serves multiple functions. It continues to accommodate traditional book and media storage and retrieval for student research and acquiring research skills. Access to the electronic information highway exponentially multiplies the capacity of the library-media center and, consequentially, opens new

vistas to student learning. One section of the library should be carpeted and furnished so that children can comfortably read books or view various media. The library resources should be digitally catalogued and bar-coded for a scanning system checkout and return. The library media center should be the hub of a multi-media distribution system via classroom monitors and/ or digital projection devices. Various forms of media technology and software should be accessible to children. A professional library section will enable teachers to model research and study skills in their work for students to emulate. A computer lab should be located within the library-media center or juxtaposed to the center for easy access to whole class instruction and individual research. All computers should be connected to the school LAN, the district WAN and the Internet (wireless capacity will provide flexibility and economies in fixed space assets for labs). If the computer lab is a separate room, it should be easily visible from the library for ease of supervision. The library-media center makes a statement to citizens, teachers and students that the culture of the school is that of a "community of learners." Areas for display of student and adult artwork should be created. An area that would create an amphitheater effect for presentations by guests, or lessons presented by the library-media teacher is desirable. Providing as much daylight as possible is a desirable feature for this space.

Storage and workrooms should be built into the space. Space to store and charge mobile computer labs should be provided.

- connection to the school communication system;
- voice/video/data capacity with several computer work stations;
- a wall-mounted TV/DVD/VCR in one learning area with 25 chairs and 4 wooden tables, ceiling mounted projection screen, mobile Smart-board;
- quality double faced book cases and book stacks at a height appropriate to the student population;
- mobile, matching furniture throughout;
- charging station near the entrance situated so that a small work area with a rectangular table and laminating machine can be accommodated behind the charging desk;
- full static-free carpeting;
- computerized book security system with appropriate software;
- media specialist desk/chair, computer work station, telephone;
- bulletin boards on two walls;
- card catalog stand, book cart, reference book stand, magazine rack;
- two clocks, one in learning area and one near entrance;
- flag.
- Flooring should be a durable, non-static carpet that can be easily repaired.
- Book storage room (10'X10')

Teachers:

One (1) full-time library-media specialist, adept in the use of the computer and media technologies is needed. One (1) instructional assistant is needed to support the operation of this instructional area.

<u>Computer Lab</u>

One computer lab should be made available for instructional purposes. An NCLB computer competency requires the need to have an articulated program of instruction for all

students. The district conforms to the State of Connecticut computer competencies for students, as well as the International Society for Technology Education specified standards. Direct instruction, as well as applications integrated throughout the curriculum, is an essential component of an effective technology instructional program.

Space needed:
1 @ 600 SF

One computer lab, preferably located within the structure of the library-media center, or adjacent to the library-media center and easily accessible and monitored from that area is needed. This space should be about 600-800 SF and have from 24-30 student workstations and one teacher workstation. A ceiling mounted projection device, SMART Board and white boards are important components of the instructional program for this space. Flooring in the room should be non-static carpeting.

Teachers:

One (1) teacher is needed to provide instruction to all students in the school. This teacher also provides assistance to other personnel in the school regarding technology applications to teaching and learning, in support of the curriculum.

Special Programs and Instructional Support Services

Special Services:

Various types of special service rooms are required to meet actual or potential needs of students. Instruction may be provided in specialized rooms as directed by the student's Individualized Education Plan (IEP) for varying amounts of time during the course of a school day. Most students receiving special education are placed in a general classroom and receive resource room or tutorial assistance in individual or small group settings within and/or outside the general classroom. Some children may need physical or occupational therapy as part of their IEP and a space with specialized equipment to deliver these services is needed.

Generally, those rooms where academic skills are developed and reinforced would require the same features as general classrooms with permanently installed SMART Technologies.

Resource Rooms:
4 SPED Resource @ 200 SF
2 SPED Classroom [dividable via movable wall] @ 800 SF
Sensory/Therapy Room @ 150
These rooms will vary in size from 400 SF for tutorial rooms to an 800 SF room required for use by the same group of students for a large percentage of their school day; this room should be equipped with a movable wall and configured so that it could become two 400 SF teaching stations for future flexibility in room use. These rooms should be adaptable to the varied needs of students and their instructional requirements. It is likely that several students will be receiving different types of instruction in the room at the same time. It would not be unusual for several teachers to be working in these rooms simultaneously, along with several instructional assistants.

These rooms should have all the features of general classrooms. The teacher will require additional storage for materials and records of student IEPs. The furniture in these rooms should be tables and chairs that can be easily moved and configured in a variety of patterns for varying grouping of students.

Teachers:

Five-six (5-6) teachers may be needed for these services.

Remedial and Corrective Services – English Language Learners:

5 @ 200 SF

Students in need of additional support in maintaining or achieving appropriate skill in English language skills, reading and/or mathematics receive such support, generally, outside the general classroom environment; such as, Title I, remedial reading, ELL instruction, enrichment and tutorial instruction. Teachers would work with one-four students to supplement classroom instruction for students in need of such support for their learning. These rooms should have all the features of the general classroom, except to a lesser size or quantity. They should be flexible in design because it is likely they will support more than one function within the school.

Teachers:

Five (5) teachers are needed to provide additional learning support for those students in need of such services.

Physical Therapy/ Occupational Therapy

1 @ 400 SF

Space is needed for physical therapy and occupational therapy when a student's needs warrant such instructional support. A room should be dedicated to these functions with ample storage for apparatus and space for large muscle activity. There may be times when such activity needs to take place in the gymnasium; the room should be located near the gymnasium to facilitate access to space and equipment needed. Movable floor mats are required. Specific apparatus should be determined in consultation with teachers, based on the clients they are currently serving and those they know will be attending the school in the future (birth to three programs).

Teachers:

One or two teachers may be needed for these services.

Speech Therapy

2 @ 150 SF

Spaces are needed for speech therapy services. This room could be shared with other functions as schedules permit. A teacher's workstation, student's workstation, table and chairs, white board and display areas are needed in this room. A teacher's desk and two, two-drawer file cabinets are needed. Storage for testing and instructional materials, equipment is needed. Multiple electrical outlets are needed along walls to support a variety of equipment. Counter

space is desirable for holding equipment. This room should be acoustically treated to prevent outside noise from intruding on therapy and instructional sessions.

Teacher:

One teacher is required for these services.

Psychologist & Social Worker

2 @ 150 SF

An office with space for testing and counseling of students is needed. This could be a shared space depending upon the ability to manage schedules. A teacher's computer workstation, a telephone with access to outside and long-distance lines, round table and chairs, and a four-drawer lockable file cabinet is needed. White boards and display capacity on walls are also needed.

Teacher:

Two teachers may be required for these services.

Conference Rooms:

2 @ 200 SF

Conference rooms should be furnished with an oval table and seating for 8-14 people. Counter space with cabinets to accommodate refreshments and supplies is needed. The room should be well lit and acoustically treated to maintain privacy. The room should have a telephone and electrical outlets along each wall to support recording devices and other electronic equipment. Multiple outlets should be located over the counter space.

Non-Instructional Space

There are several types of non-instructional space needed for the Westside Elementary School. Spaces for school administration, student services and health services should be juxtaposed and located by the main entrance to the building, to the extent possible. A space that could double as an auditorium (cafeteria and/or gymnasium) should be located in an area of the building that is accessible to outdoor play areas and minimally disruptive to classrooms via traffic or noise. This space should have direct access for the community while maintaining security throughout the remainder of the building. Student and staff lavatories and storage for custodians and general supplies should be strategically located throughout the building for ease of access. Faculty and parent workrooms should be located near the faculty dining area or the library-media center; whichever is most practical within the design limitations of the current facility. The following non-instructional spaces are specified for this project.

Administration (general office area):

- 1 principal's office @ 300 SF
- 1 assistant principal's office @ 250 SF

- 1 secretary/reception area @ 400 SF (Workstations for 2 secretaries)
- One (1) conference rooms @ 200 SF
- 1 workroom @ 250 SF
- 2 storage areas, one (1) for records @ 150 SF; one (1) general storage @ 100 SF
- 1 lavatory @ 80 SF
- 1 Computer kiosk for parent use @ 150 SF (as feasible)

The administrative area requires space for the school principal and assistant principal with workstations and desks. Bookshelves and storage cabinets are needed. A circular table and chairs for seating 4-6 people is needed.

A reception area, office workroom with copying equipment and network printer, supplies storage and ample counter space for collation of multiple projects is needed. The receptionist and secretary need workstations and access to the school communication system controls. The school security system should be managed from this area. Faculty and staff mailboxes should be discreetly located in the reception area or office workroom.

A conference room with an oval table and seating for 12-14 adults is needed. The room should have counter space with cabinet storage for supplies and materials. Electrical outlets are needed on each wall to support used of various electronic devices.

School-Based Health Center

The Health Center should be about 1,000-1,200 SF and it should have defined areas for the following functions.

- 1 nurses office
- Reception area with a secretary/aide station
- Secure medicine and records storage
- 1 examination room
- 1 cot room with 5-6 sick bays
- 2 lavatories, one adult and one student; the student lavatory should be capable of serving as a changing room with a lift and personal shower for non-ambulatory students.

Health services space needs to include a reception area, space for records storage, an examining area, an area with 4-6 that could be curtained off from the rest of the area, an accessible lavatory with shower facilities, space to store lifts for disabled persons and an examination table. Two four drawer, lockable files are needed. A lockable storage cabinet for medicines and a refrigerator with a lock or lockable compartment is needed for medicines requiring cold storage. The Health Center should be located adjacent to or near the administrative offices/reception area.

Workrooms:

- 1 faculty & parent workroom @ 300-400 SF

Cafeteria/Kitchen:

- 1 student dining area @ 3,000 SF
- 1 kitchen and servery @ 1,200 SF

- 1 storage area @ 400 SF

The cafeteria and serving area need to accommodate the varying physical attributes of children aged 5-10 years old. Serving stations should be carefully designed to maximize ease of access and smooth, quick flow of students through them. Stations should offer a variety of choices in meal options from hot lunch, to a la carte choices on a daily basis. Up to two hundred students may be served at during any one of three 30 minute lunch waves.

The design of the cafeteria should feature elements that make it a colorful, inviting place to eat. It would be highly desirable to create an atmosphere more akin to a restaurant than an institutional style cafeteria – this will create a receptive climate and an standard for the type of behavior expected. Acoustical treatments should be strategically placed to lessen the noise of walking and talking. A message board and LCD projector should be installed to enable viewing notices and large group presentations. Tables and chairs should be easily moved for ease of cleaning and adapting to the various functions of this "multi-purpose" room. Round or hexagon shaped tables with attached seats should be considered to furnish this area; such seating enables conversations to be directed within the table and should cause for a lower speaking volume than rectangular table alternatives. Storage for tables/chairs should be considered within the cafeteria complex.

The cafeteria is a multi-purpose room also serving as an auditorium. A stage should be constructed (or provide for a portable stage) between the gym and cafeteria to enable school assemblies for performances and presentations. The space should be adequate to accommodate half of the projected peak enrollment of students per seating. The cafeteria is ideally located juxtaposed to the gymnasium so a low platform stage, capable of opening to both areas, can be used for presentations and performances, and can also serve as a instrumental music teaching station.

The kitchen area needs to be located next to the cafeteria and easy access to appropriate cooking and cleaning equipment for the volume of meals served and resultant cleaning of tray, plates, utensils and cookware. Dry storage, refrigeration, and freezers need to be located near a loading dock for ease of receiving and storing shipments of foodstuff and supplies. Recycling bins for various refuse types should be located off the loading dock area.

Faculty Dining and Workrooms

1 dining @ 800 SF

1 workroom @ 400

The dining space provides comfortable seating for about 30-35 persons to sit at lunch tables. Lounge chairs should also be available for non-lunch time use. A refrigerator, coffee maker and microwave oven should be made available here. A sink and cabinet storage for supplies is to be provided. Adjacent to the dining area construct a teacher workroom by providing appropriate equipment and storage for preparation of instructional materials. The room should be equipped with a teacher workstation, telephone, copy machine, shelving and closed cabinets. Counter space is needed for sorting and collating materials as well as for using various electrical devices. Several electric outlets are needed on each wall and more should be located over the counter top. A portion of the room should contain chairs for reading and relaxation. A computer workstation connected to a network copy machine should also be installed here.

Miscellaneous Spaces:

These spaces need to be strategically placed in the overall school design to provide proximity and ease of access for students and adult employees requiring their use.

Custodial storage areas need to be strategically located throughout the building for ease of access and to prevent frequent moving of cleaning equipment and supplies throughout the building and, in particular, up and down stairs.

Storage areas for supplies, equipment and instructional materials should be located within proximity of each grade level cluster (PreK-1, 2-3, 4-5). These spaces should have open shelving at a height that permits easy access. The rooms should be well lit and ventilated to prevent spoilage of supplies and materials. Space should be set-aside for school-wide equipment and textbook storage.

- male student lavatories
- female student lavatories
- staff lavatories
- custodial closets
- school storage areas
- custodial office, storage areas and mechanical rooms
- District-wide storage is needed with a loading dock (preferably built into basement areas within the footprint of the building design)
- Book storage, preferably located near grade level clusters

Custodial Services

1 @ 200 SF (at a minimum)

A room with a computer workstation to process work orders and manage the school climate control system is needed. The room should have a telephone with long-distance calling capacity. A work bench and space for storage of tools is needed to perform minor repairs on furniture and equipment.

SUMMARY OF SPACE NEEDS

Approximate Number of Students Projected = 500

Total Number of General Classrooms = 27

Note: ***The square footage requirements indicated below are what would be allocated for new construction. The actual square footage for each designated space will most likely be lower as design professionals "fit" various space needs into the existing building.***

SPACE	NUMBER OF ROOMS/SQUARE FOOTAGE	TOTAL SQUARE FOOTAGE REQUIREMENTS
Pre-kindergarten	2 @ 1,000	2,000
Kindergarten	5 @ 1,000	5,000
Grade One-Five	20 @ 800	16,000
		23,000

Art: 3-dimensional classroom 2-dimensional classroom Storage	 1 @ 1,200 1@ 1,000 1 @ 400	 **2,600**
Music: General Choral & Instrumental Storage	 1 @ 1,000 1@ 1,200 @ 400	 **2,600**
Physical Education & Health: Gymnasium Offices Storage	 1 @ 5,600 1 @ 200 1 @ 400	 **6,200**
Auditorium Stage Seating	Portable platform stage for use in the cafeteria/multi-purpose room or gymnasium - storage	**400**
Learning Center/Support Services: English Language Learners Special Services Education Tutorial (RTI) Conference Rooms Sensory/Therapy Room Occupational Therapy & Physical Therapy Speech Services SPED Classroom (dividable)	 1 @ 200 4@ 200 4 @ 200 2 @ 200 1 @ 150 1 @ 400 1 @ 150 2 @ 800	 **4,500**
Conference Rooms Social Work, Psychologist Offices Records storage	 2 @ 150 1 @ 100	 **400**
Administrative Office Complex: Offices Conference Rooms Secretary/Reception Storage Equipment/ Workroom Computer Kiosk for parent access Lavatory	 1 @ 250; 1 @ 300 1 @ 200 1 @ 400 1 @ 150; 1 @ 100 1 @ 200 1 @ 150 1 @ 80	 **1,830**
Health Offices: Reception Area Offices Examination Room Medicine storage	 1 @ 200 2 @ 100 1 @ 100 1 @ 50	

Records Storage Cot/privacy space Lavatory Lavatory/Shower Room	1 @ 100 1 @ 120 (5-6 bays) 1 @ 80 1 @ 180	**1,030**
Library Media Center: Stacks & Reading/Study Areas Computer Lab/ Classroom Offices Workroom & Media Distribution Meeting Rooms Storage/wiring closet/technician workspace	1 @ 2,400 1 @ 600 1 @ 200 1 @ 200 2 @ 200 1 @ 500	**4,100**
Custodial: Offices Workroom Storage Bookroom Recycling Center	1 @ 75 1 @ 200 2 @ 200 1@ 400 1 @ 800	**1,675**
Cafeteria Servery/ Food Stations/Kitchen Storage; cold, dry, freezer	3,000 1,200 600	**4,800**
Faculty & Staff Dining	1 @ 800	**800**
Faculty/Parent Workrooms	1 @ 400	**400**
Storage for Instructional Materials & Equipment	1 @ 800	**800**
Play Areas: Early Childhood Elementary Grades	Outdoor playscapes	
Outdoor Learning	TBD	
Security: SRO/Security Office Video Surveillance Room Admittance Kiosk (Vestibule)	1@ 100	**100**
	Total Space S. F. =	**55,235**
	Circulation =	**27,618**
	TOTAL Building S.F. =	**82,853**

*Note: The current building has a footprint of approximately 73,761 SF. An addition of from 6,000-10,000 square feet **may** be needed to accommodate the elementary school program. The actual total square footage will be substantially influenced by the existing building conditions as most available general classroom space is smaller than that specified above.*

Revised – October 13, 2014

TECHNOLOGY INFRASTRUCTURE

The schools we build will need to serve the Groton community beyond the middle of the 21st century. Technology continues to assume a greater role in the professional and personal lives of our children. In order to support an adequate telecommunications infrastructure, the school building must have a centralized, accessible server room, which serves as the converging point for all aspects of the technology infrastructure, including voice, video, and data capability and accessibility in all classrooms, administrative, support, and common areas.

The general guidelines for the technology infrastructure of the new Cutler Elementary School must conform to the "Guidelines for Infrastructure in Connecticut Schools," as published by the Connecticut state Department of Education, December 1995, or its most recent revision. The specific technology requirements prepared by architects or engineers must be reviewed by School Building Committees and their technical advisors to ensure that the most advanced and flexible system is being installed. The infrastructure should provide for both wired and wireless connectivity to the LAN, WAN, and Internet, with sufficient broadband width to support wireless one-to-one computing for students and all school employees.

Design

A data design will be performed for this school that includes specific recommendations for the following:

- Wiring closet locations
- Location and quantity of drops for classrooms
- Backbone requirements for wired and wireless computer workstations
- Wiring closet electronics specifications at current industry standard
- Testing requirements to ensure all systems and connectivity function
- Power requirements (a separate, independent power source for the technology systems is recommended, with surge protection at the power source); multiple outlets on classroom perimeter
- Documentation requirements
- Whole building access to the wireless system
- Sufficient broadband width to support one-to-one computing

Internet Connection

The building must have routers and DSU, capable of connecting to an Internet Service Provider in varying speeds. The building will have dedicated Internet connections.

Standards

The system will conform to all current industry standards.

Applications

An integrated technology system (SMART Technologies) shall be installed to support administration, teaching and learning activities. The system should provide the following:

- Video time display, instant messaging, all call and retrieval systems
- Digital time displays, electronic clock, and bell system
- Classroom and office telephone/intercom
- Vandal alarm and video security system in strategic parts of the building and outdoor areas; annunciator panels to inform of security breaches and fire alarms
- Public address system
- Connections to the public voice system in strategic parts of the building (classrooms, gym, cafeteria, auditorium, media center, main office), voice messaging and room-to-room calling
- Electronic mail, bulletin board, and conferencing
- Facsimile capability
- Wired and wireless LAN, WAN and Internet connectivity
- Remote collaboration capabilities with other schools, universities, and business experts in specialized fields

Video Distribution

The video system should enable media retrieval from a variety of sources including:

- Local origination, CATV, ITFS, microwave signal antenna; Decoder, satellite dish, DVD/VCR, CD-ROM, video file server, classroom, or school programming
- Each teacher should be able to control the technology devices from the classroom: power, program selection, volume, and lighting
- The system is to be safeguarded; equipment, file server data, and program access
- All instructional and administrative areas to support live video program generation
- The video component of the network must be capable of supporting multiple channels.
- Classrooms are to have the ability to access multiple channels, independent from each other.
- Broadcast capability is to be available from the media center, gym and auditorium

Installation

The wiring installation shall meet or exceed the recommended minimum standards established by the Connecticut state Department of Education as specified in its publication, “Guidelines for Technology Infrastructure,” 1995 or its most recent update.

- All wiring to be placed above ceilings or behind walls, and permanent installation should be affixed to appropriate support; CAT 6 wiring, color coded based on function
- Wire runs to be supported at intervals that do not permit visible sags, using cable trays
- All penetrations of firewalls to be properly and completely sealed with non-flammable material
- Safe distances to be maintained from sources of electromagnetic interference

<u>Technology Equipment and Services</u>

Goals of the Technology Program:

A. Technology to enhance students learning

1. Students will determine and apply the appropriate technology to their learning and information needs across curriculum areas.
2. Students will have equal access to technology.
3. Students will participate in ever expanding learning communities.

B. Technology to enhance productivity

1. To enhance the interactive communication system among schools, community, educational partners, and homes, creating more opportunities to advance learning
2. To expand and enhance a data management system to inform decision-making
3. To continue to increase organizational efficiency through the acquisition of up-to-date resources and through ongoing training in how to utilize those resources

<u>Description of Technology Equipment Needs for a Westside Elementary School</u>

1. All regular classrooms shall be equipped with sufficient mobile computing devices to enable one-to-one computing, SMART Technologies, interactive white boards with HD capability, and a [networked] printer located in classrooms or a shared space. These computing devices shall have access to a LAN and to the Internet. Several hard-wire drops should be strategically located in each classroom to support a teacher workstation connected to the LAN and WAN with access to appropriate software to manage routine classroom functions as well as computer-assisted and/or computer-managed instruction programs. All classrooms teachers shall have laptop computers for school and home use.

2. Resource rooms and other specialized instructional space should be equipped with suitably sized Smart Board white boards connected to the school LAN and WAN. Teacher workstations should also be provided in all specialized instructional areas.

3. The Library-Media Center shall serve as the hub of the computer network serving the school. One thirty-station computer lab should be located within, or juxtaposed to, the media center (now used for SBAC as well). The computers should be connected to defined

copy machines (as determined by the technology coordinator). A head-end for video broadcasting should be located in an area of the media center where public gatherings/meetings are likely to take place. The media center should be equipped with an electronic card catalog system and a bar code scanning circulation system. The Library office/work area should be equipped with one teacher workstation and other basic communication devices. A state of the art media distribution system shall be installed, preferably in the media center. Secure storage and charging stations are also needed.

A wiring room/computer management space should be located in the vicinity of the media center. This area should contain computer workstations to enable district computer coordinators/technicians to manage the networks as well as sufficient space for equipment storage and work benches for various routine computer repairs. Centralized wiring closets shall be strategically located for security and operational effectiveness.

4. Within their classrooms, Teachers should have access to controls to enable them to manage media presentations from the distribution system integrated within the voice, data, and video network.

5. Administrative areas shall be equipped with computers for the principal and secretaries. Telephones, facsimile machines, and high quality network printers are required. A TV monitor for the clock and bell system and school announcements shall be provided in each classroom. High volume and high quality copier systems shall be provided in the general office areas.

6. All special instructional areas shall be connected to the network for teacher and students use. Special services personnel should have computer workstations located in their office or work area.

7. The gymnasium and cafeteria shall have cabling for video and data drops. A large portable video presentation projector, monitor and twenty-foot screens should be installed or available in these areas.

8. Art, music, and physical education areas or offices should be equipped with computer workstations connected to the LAN and WAN. Ceiling mounted presentation screens should be installed. The music rooms should have access to recording equipment. The music rooms should be equipped with sound systems (surround sound) and wireless voice amplification through that system.

9. Electronic bulletin boards should be located at the main entrance, in the cafeteria, and the gymnasium.

10. A separate, dedicated electrical wiring system and independent power source are recommended for operating the technology infrastructure and its equipment. This is intended to provide appropriate surge protection at the power source and to ensure an adequate supply of power to operate the system without disruption.

11. Each regular classroom and specific spaces in, or juxtaposed to, the Learning Center shall have the capability of virtual collaboration with other schools or with business and education partners, working as a whole class, in small groups, or individually.

12. The Director of Special Services should be consulted during the design phase regarding assistive technologies required to meet the needs of students and teachers.

Note: The Building Committee is encouraged to establish a Technical Advisory Committee to assist with the design and implementation of the technology component of this project. School district personnel and community volunteers with expertise in this area should be called upon, at the appropriate time, to ensure the technology plan, infrastructure design, and equipment requests that represent the state of the art. For example, the Alliance for Wireless Power (A4WP) expects to provide wireless chargers for tablets and other devices before this project is underway.

SYSTEMS CONSIDERATIONS

Internal Communications and Security

- Communications System - Telephone – Intercom- Public Address System: Each classroom in the school should be equipped with an integrated communication system that allows for receiving emergency and routine announcements, making local area calls and communicating with the main office, accessing voice mail service inside and outside the building, and directing emergency assistance calls to one or more designated areas. Offices and other specific designated areas in the building should be equipped with the same integrated system as listed above with the additional services that: allow local and long distance calls, the ability to switch calls to specific telephones after hours with voice mail services, and back-up emergency power for telephone, voice mail, and intercom services. The system should include adequate service for future expansion of telephones throughout the building. The intercom system should also provide for exterior building speakers. The building should have approved radio coverage for first responders within the building, in compliance with Federal Communications Commission rules for communication coordinated with the band frequencies of first responders. Radio frequency access control devices should be considered at primary points of entry that permit rapid entry by emergency responders.

- Clock and bell system: Each room should be equipped with a time display showing both hours and minutes. The display shall originate from a central electronic clock module that shall also control chime or tone system circuits and other time-based functions. The system should be capable of being corrected or re-programmed from the master clock module.

- Fire alarm and vandal alarm system: The school should be equipped with a fully code compliant smoke detection, alarm and sprinkler system. All equipment should be state of the art. Remote annunciator panels showing location of the source of the alarm shall be located near the administrative area and front door of the school and the custodial office. Upon activation of an alarm, an evacuation signal shall be transmitted to a central station monitoring service. The alarm shall signal until manually reset. Sprinkler heads should be carefully located and positioned to prohibit tampering. Alarms should be easily heard

throughout the building, outside the building and visual alarms should be provided as per code. All required fire extinguishers should be placed into recessed cabinets with the doors on audible local alarms.

To protect the building when it is unoccupied, each room shall be equipped to electronically monitor the normal "closed door" status. Interruption of the "closed door" status shall automatically initiate a silent alarm to the local police or other security agency. High value areas shall be equipped with additional sensing devices to detect the presence of an intruder.

Building Systems

- Code compliance: All construction associated with the Westside Elementary School shall be in compliance with local and state building, health and handicapped codes and safety/security regulations.

- Custodial storage: Custodial storage should be strategically located for convenience and efficiency of work.

- HVAC System: The heating, ventilating and air conditioning system (HVAC) shall be thoroughly studied so the most reliable, flexible and energy efficient system is provided. An alternate energy efficient source of hot water for domestic use shall be provided for summer operation so major boilers may be shut down during non-heating seasons.

  The HVAC system will be controlled by a computerized energy system located in the custodial office with access from outside the school. The building will contain "zones" for managing temperature control for day and evening functions.

  Connection to external emergency power sources should be provided to keep vital building components and areas functioning in an emergency.

  The HVAC system should have the following characteristics:
  - Should be able to provide uniform temperature in all areas of the teaching space.
  - Should eliminate drafts and cold areas.
  - Should provide superior ventilation in all rooms and bathrooms.
  - Should eliminate noise in the classroom from the systems.
  - Should be able to provide for varying degrees of humidity control.
  - Should provide unquestioned reliability.
  - Should be energy efficient.
  - Should ensure air quality standards; filtering air borne allergens to the extent current technology allows.

- Windows: Window frames and sash should be of a material that is maintenance free. The provision of glazing in the classroom is both an educational and psychological enhancement because it provides visual relief and outdoor observation opportunities. The provision of windows or glazing does, however, enable heat loss or gain and presents a vulnerable point

in security. Design features should minimize these effects. The provision of solar block glazing is desirable and should be considered in each room.

- Handicapped access: The building shall be in full compliance with state and federal handicapped codes and regulations. An elevator (if required) must be strategically located to ensure its suitability to meet current code requirements.

- Plumbing: The school should meet all code requirements for the number of toilet fixtures, sinks and drinking fountains. Lavatories should be strategically located. All fixtures should be of the heaviest duty, vandal resistant design and include automatic source for water closets, urinals and sinks in the student bathrooms. Adequate clean outs shall be provided and all restrooms must have floor drains. Piping should run in accessible pipe chases. Valves should be ball valves. Toilet partitions should be constructed of solid plastic with color all the way through the product, vandal resistant and equipped with heavy-duty hardware. Fixtures should be wall hung. The building should be divided into sections with isolation drain valves in each section.

- Electrical distribution: The school should meet all code requirements for electrical service. Each normally occupied space shall be furnished with numerous electrical convenience outlets located throughout the space for maximum flexibility of room layout and eliminating a need for use of extension cords. Power in each classroom should come from two sources, one for exclusive use of the technology infrastructure and the other for general use. Each electrical panel should have 25% free space to add future circuits. Emergency lighting should be on individual wall packs. All three phase motors should have phase protection. All exit signs should be L.E.D. type with cast housings and Lexan lenses.

  If the school is to be used as an emergency shelter, a source of emergency power should be considered so all utilities, the building cafeteria and gymnasium can function in an emergency.

- Exterior building structure: All windows should be high “e” insulated windows with screens. The exterior of the building (new construction) should be brick or pre-cast material to suit the ambiance of the setting of the school.

- Interior building products: Interior walls in the corridors should be brick, glazed block, epoxy paint or a suitable substitute material of high durability and ease of maintenance. Student lockers should be adequately sized to secure coats, book bags and other small items and be constructed of a heavy-duty material with heavy-duty hardware. Window covering should be a durable blind product capable of reducing the amount of light in classrooms when video demonstrations are conducted. Carpet, where used, should be of the highest quality, durable and void of any odors. It is recommended that heat sealed tiling be used for floor covering due to its ease of maintenance and support of air quality standards. Doormats or run-outs should be installed at all entranceways.

- Energy conservation: The school building plans should be reviewed by the Connecticut Light and Power Company and should comply in so far as possible with their energy rebate

program, to the extent this incentive is currently available. LEED standards should be applied to the school design as deemed appropriate and practical.

- Hardware: All hardware in the school should be heavy duty. Keying should be mastered with restricted key blanks. The key system (magnetic cards or fobs) shall automatically disallow entrance with regular keys after a specific time of day, when only the master key will operate the doors.

  All panic devices should be rim type with removable mullions rather than vertical rod type. All doors such as stairwell doors and corridor smoke doors should be held open with magnetic devices connected to the fire alarm system.

- Security System: An integrated security system should be designed to control and monitor visitor access to the building during school hours. The system should have direct connections to police, fire, and other security responders. The system should provide for visual verification of persons requesting access to the school building through the main office or a security office/kiosk; general parking and other areas of the school site should be considered for visual monitoring as recommended by architects and/or security specialists.

SITE CONSIDERATIONS

External

The outdoor facilities for the Cutler Elementary School complex should provide for the following considerations:

1. Separate access to the building for bus transportation and parent vehicular traffic
2. Visitor and general parking for approximately 250 cars
3. Separate faculty and staff parking area for approximately 75 cars
4. Shade and ornamental trees with low maintenance ground cover and other low height plant material
5. New roads and driveways to accommodate parking areas, bus queue, and separate parent drop-off areas
6. Site lighting, utilities, storm drainage and snow plowing considerations, grading and landscaping in all construction areas
7. Fenced, attractive, sturdy school and cafeteria refuse pick-up areas with locking gates large enough to allow dumpster style trucks to enter (and with an area to accommodate bins recycling and for waste food
8. Outside, removable faucets at intervals to allow for window washing and maintenance of plantings
9. Well-lighted parking areas and walkways to the parking areas
10. Athletic fields suitable for outdoor physical education activities along with soccer and softball with a walking/jogging trail around the perimeter of the field

11. School name in at least two outside locations, visible from both student and general public access roads and driveways

Internal

The following considerations should be made in the design of the interior features of new and altered portions of the building:

1. All electrical switches in hallways throughout the building to be key-type
2. Access to building operations [mechanical] systems to be restricted to designated users and these areas to be equipped with intruder detection systems integrated with the school security devices (annunciator panel)
3. Ceiling materials to be attractive, durable and noise reducing, as well as removable for utility access
4. All exit doors to be monitored through the administrative offices for controlling access to the building. Annunciator panels to alert office personnel to a breach of security
5. A security system design to control and monitor visitor access to the school
   A buzzer and video observation system controlled from the office and/or a security kiosk to control entrance to a main entrance vestibule where additional security clearance would be required for access to the school lobby. All materials used in this area to be bullet and blast resistant and designed in a manner as to thwart intrusion
6. Wire trays located above all spaces be large enough and have the capacity to handle additional wiring and cabling for future use
7. Drinking fountains to be handicapped accessible and not traffic restrictive
8. Recessed lighted display cases with lockable doors and adjustable shelving to be strategically located
9. Student lockers to be appropriately sized and located for the convenience of students in their grade level cluster
10. Classroom doors not to be recessed and, optimally, to swing 180 degrees
11. Each door to have a magnetic release for emergency evacuation or intrusion situations as well as a penetration resistant vision panel. Doors to be lockable from both sides, tamper resistant, and allow for quick release from the interior with one motion
12. Handicapped elevator service to be available with key type restricted operation should the building design require more than one level
13. Stairways/ ramps to be planned so students can move quickly from one classroom to another. All space under stairwells to be enclosed
14. All hallway bulletin and tack boards to be code compliant
15. Grade level color schemes by cluster to be different and distinguishable
16. All hallway windows to be code compliant
17. Signs for each room to be handicapped coded and set into a space to prevent removal, except by maintenance personnel
18. Exit signs to be code compliant and areas of refuge to be located strategically in selected stair areas

Environment

1. Acoustics: All classroom and hallway space to be constructed to minimize noise that would interfere with the teaching and learning process. Attention to be given identified areas for special acoustical treatment
2. Air quality: The building to be fully air-conditioned with adequate controls to shut down or reduce service when rooms will be unoccupied for significant periods of time. Increased attention to be given to minimize dust and air borne particles that may affect allergic reactions
3. Well-controlled heat, cooling and humidity systems to accommodate large technology infrastructure and operating system
4. Flooring: Each room's flooring to be specific to its use. Tile to be of high quality and easily replaced (roll tile with heat seal seams preferred). Carpeting, where installed, to be of high density, mold resistant fabric that is easily repaired
5. Hallways: Hallways to be acoustically treated to lessen traffic noise. Lighting in hallways to be recessed
6. Hallway surfaces to be bright and finished with an epoxy (or similarly durable) glaze for ease of maintenance
7. Aesthetics: The interior design and color scheme of the building to be inviting and comfortable to immerse persons entering the building in a warm atmosphere that celebrates student learning through color, sound, and creative displays of student work and achievements

Outdoor Areas for Learning, Athletics, and Support

Learning, athletics and support spaces allow for multiple fields and play areas to be utilized by students and community members. Storage areas are essential to safely house school and Parks and Recreation equipment. Parking areas and traffic flow patterns need to accommodate large volumes of traffic.

1. Multiple field and play areas to support the physical education program, community sports, activities, outdoor education, and play
2. Gym accessible to playing field
3. Access to secured storage for outdoor activities and school sponsored athletics
4. Separate secure storage for school and Parks and Recreation equipment
5. Direct access to field for outdoor activities and school sponsored events
6. Electrical outlets and water to each outdoor learning area designed for easy supervision and safety
7. Water fountains
8. Landscaping to include shade trees and student garden areas
9. Separate traffic flow for busses and individual drop-off and pick-up
10. Handicap accessible drop-off, pick-up and parking at front entrance
11. Well-lit parking, roads, and driveway areas
12. Adequate parking for staff and visitors
13. Cost effective irrigation for fields

14. Outdoor learning area for classes to meet for special projects or activities requiring more space than classrooms or other interior learning spaces provide

APPENDICES

A. – Enrollment Projections (Milone & McBroom)
B. – Planning Committee
C. – School Facilities Task Force
D. - Stakeholder Group

See Appendices at the end of Educational Specifications for West Side Elementary School

GROTON PUBLIC SCHOOLS

EDUCATIONAL SPECIFICATIONS

FOR

WESTSIDE ELEMENTARY SCHOOL

OCTOBER 27, 2014

Educational Specifications

Westside Elementary School

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EDUCATIONAL SPECIFICATIONS

WESTSIDE ELEMENTARY SCHOOL

Introduction and Project Overview

This project proposes to convert Westside Middle School into a pre-kindergarten-grade five elementary school via a "renovate-to-new" facility construction grant with the State of Connecticut. Superintendent of Schools Michael Graner convened a Stakeholder Committee in May 2014 to study previous school district initiatives, actions and issues associated with school desegregation, and the future organization for the public schools. Of note is the fact that the school district studied population and demographics trends in 2011-2012 and took action to implement a redistricting plan in the fall of 2013 to ensure racially balanced elementary schools. In the summer of 2014, the Connecticut State Department of Education found that the Groton elementary schools continue to exceed the State racial balance guidelines and the school district submitted a plan to the State Board of Education to remedy the situation. It is the overwhelming recommendation of the Stakeholder Committee to retain the current grade level organization of the school district. However, the declining enrollment and need for substantial school renovations in older elementary schools prompted the committee to recommend the consolidation of its two middle schools as a foundation and first phase of a longer term solution to maintain racial balance in the Groton Public Schools. It is the district's view that school redistricting has had short-term success in the past and will most likely only achieve short-term results in the future unless bold and progressive action is taken now. Bringing all middle school students together in a single school provides the flexibility to enhance the learning of all students in a school and in classrooms that reflect the diversity of the community.

This project is one of a two-part second phase of the overall racial balance plan that proposes the conversion of two middle school facilities, [Cutler and Westside], to prekindergarten-grade five elementary schools. Three elementary schools, [Claude Chester, S.B. Butler, and Pleasant Valley], would be closed upon the completion of construction of the second phase of the overall racial balance plan and their student population redistributed to other schools in a manner that would promote racial balance throughout the elementary schools. Further, in order to maintain racial balance in the long-term, one or both of the renovated elementary school facilities would be re-opened as "diversity schools" under the provisions of Connecticut General Statutes 10-286H (as amended by Section 12 of Public Act 12-179). This plan reduces the overall size of the school district organization, modernizes two elementary school facilities to conform to contemporary education needs, improves the overall efficiency of building operations, and avoids considerable cost for renovation and repairs to outmoded elementary school facilities [Claude Chester, S. B. Butler, and Pleasant Valley].
The construction of a consolidated middle school will enable the school district to convert the current middle school facilities into Pre-kindergarten through grade 5 elementary schools that are larger in capacity than current elementary schools and capable of absorbing students from within the school district and, possibly, students from neighboring towns as well. Three older elementary schools, one of which has been the subject of racial imbalance issues, will close and all students will be transferred to one of the reconstituted middle-to-elementary schools or other elementary schools in the district. Subsequent action for a long-term racial balance plan is still

under development but one option being considered is a controlled choice process for new school registrants that will strive to ensure all Groton elementary schools are racially balanced and provide diverse learning environments for all students moving forward.
The Westside Elementary School will accommodate approximately 500 students in grades pre-kindergarten through grade five. The following chart summarizes the targeted capacity of the school.

Grade	Class Size Targets	Number of Classrooms	Enrollment Capacity
Pre-Kindergarten	15	2 @ half days	60
Kindergarten	20	5	100
One	22	4	88
Two	22	4	88
Three	22	4	88
Four	22	4	88
Five	22	4	88
	TOTAL:	**27**	**600**

The space specifications for this project may exceed the allowable square footage delineated in the Space Standards Worksheet. This is due to the fact that schools designed as middle schools have core facilities and specialized classrooms "sized" for an older student population with different program requirements. In addition, basic classrooms for the early childhood population in the retrofitted school require more space than generally provided for in the school design. Site modifications and overall safety and security upgrades will also require attention. These modifications will be addressed later in this proposed project. The superintendent of schools will seek a waiver of the space standards to enable the project to be constructed as specified with full construction grant reimbursement.

An **"existing conditions study"** is required to evaluate the structural and operating systems of the Westside school facility in order to specifically determine the renovations and new construction required to convert the building to a modern and efficient elementary school. Among the anticipated renovation needs are the following:

- **Replace the heating system [boilers] and convert the system to hot water**
- **Install air conditioning throughout the building; HVAC systems**
- **Electrical distribution**
- **Roofing**
- **Friable and non-friable asbestos removal**
- **Fire alarm and security systems**
- **Install modern window systems throughout the building, as needed**
- **Replace flooring with materials that are durable, easily maintained, and promote a healthy environment (heat sealed rolled tile in lieu of carpeting)**

- **Replace temporary classrooms with permanent structures attached to the main building**
- **Remove asbestos from the dirt crawl space**
- **Redesign the bus drop-off and traffic pattern for improved parking, safety and efficiency**

New construction and/or extensive renovation is anticipated as follows: *(to be determined via architectural design based on existing conditions, existing space and program needs)*

- Pre-kindergarten and kindergarten classes of approximately 1,000 square feet with appropriately sized bathrooms and fixtures
- Play areas with appropriately designed and sized equipment and fields
- Kitchen and cafeteria areas need to be better aligned and re-designed to serve an elementary school population
- Ensure adequate space for the school-based health clinic

Executive Summary of the Planning Committee Report

The goal of the Planning Committee was to identify educational specifications for facilities that reflect educational programs, which address sound strategies for the elementary school learner. A deliberate emphasis was placed to propose structures that facilitate 21st Century learning. The designs presented in this document consider present practice, current research, and future needs. They describe schools unique to Groton which reflect our beliefs and philosophies. As stated in the *Groton District Vision (our belief system that focuses and aligns our decisions)*, "Students should have access to resources and facilities that support optimal learning". The information presented here validates, and gives coherence to, our best ideas about education.

Research shows that architecture affects learning; therefore, the proposed design of our schools enhances and brings to life the educational programs for our students and community. Indeed improving the physical learning environment can improve student achievement. The school structure takes into account the ever-advancing technological world with sensitivity to the development of the whole child including growth in academic, emotional, social-behavioral and physical health domains. The elementary school facility proposal is one which facilitates interaction among students, faculty and staff, and fosters a sense of belonging. Students are able to fulfill their learning potential through the accommodation of virtually any type of subject matter and multiple forms of instruction.

The design of the facilities creates environments that promote the pursuit of academic excellence in an information-based technological society. The proposed architecture allows learning spaces indoors and outdoors to be inherently flexible to meet the current variety of needs as well as the changing needs of a dynamic learning environment. Flexible learning spaces allow for increased collaborative work among students and more opportunities for students to develop skills in communication, leadership, teamwork and innovation. Schools will be designed to take advantage of environmentally friendly technologies and wherever practical systems will be

accessible for learning opportunities.

PURPOSE OF EDUCATIONAL SPECIFICATIONS

Educational specifications are the cornerstone of successful school building programs. Good educational specifications provide a comprehensive overview of the program of instruction to be housed, the activities to be encouraged, and the facilities necessary to carry out the goals and objectives of the school system.

The Connecticut State Department of Education defines educational specifications as a description of the general nature and purposes of the proposed school building project, including the applicant's long-range educational plan and relationship of the proposed project to such plan; enrollment data and proposed project capacity; the nature and organization of the educational program; support facilities; space needs; specialized equipment; environmental controls; and site needs.

The specific purposes for educational specifications as part of the construction grant approval process are as follows:

1. For the educational agency to justify the need for the proposed school building project

2. For the educational agency to describe the educational activities that a proposed school building project is to support and the types of spaces that will best accommodate program requirements

3. For the Department of Administrative Services to determine the nature, scope, feasibility and funding level for the proposed school building project

LONG RANGE PLANS

The Groton Public Schools district is experiencing enrollment decline and demographic changes in its student population. According to the latest demographic study, the student population will peak during the 2017-18 school year. The State Department of Education cited Groton for racial imbalance in one of its elementary schools in the summer of 2014. This situation follows the recent (2012) redistricting of elementary schools to avoid such a circumstance. While a comprehensive and long-term plan to maintain racially balanced schools is still being developed, the Stakeholder Group (May 2014) made the following recommendations to the Board of Education, who subsequently adopted it:

- Construct a new, consolidated middle school adjacent to the high school to the extent practical and feasible
- Re-purpose the current middle schools as larger elementary schools for grades pre-kindergarten through grade 5
- Close three elementary schools; schools that are in need of substantial facility renovations (Claude Chester, Pleasant Valley, and S.B. Butler schools)

- Redistrict the elementary student population to ensure racially and economically diverse schools
- Develop long-term plans to maintain racially balance elementary schools; diversity schools, controlled choice enrollments and school assignments may be considered

The new middle school is the foundation for a long-term solution to the District's enrollment and racial balance challenges. It constitutes the first phase in a long-term solution and must be accomplished before subsequent action steps. All middle school students in Groton would attend the same school. Issues associated with racial balance would then reside exclusively at the elementary school level.

The second phase of the long-term plan would be to retrofit both of the current middle schools as Pre-kindergarten through grade five elementary schools.

The third phase of the long-term plan is the closing of Claude Chester, Pleasant Valley and S.B. Butler elementary schools and the redefining of all elementary school attendance zones. This action would create attendance patterns that could more easily and accurately predict longer-term racial balance at the elementary school level. Further, the net loss of two buildings to the school district inventory will produce immediate and long-term savings while the one middle school may, over time, result in greater efficiencies and lower operating costs than two middle school buildings.

CAPACITY – ENROLLMENT DATA

In February 2014, Mike Zuba of Milone & McBroom presented a comprehension study of enrollment for the Groton Public Schools (appended). This report forecasts district and school enrollments through 2023.
The projected enrollment for the Westside Elementary School will result from a re-defining of attendance zones. The following chart depicts enrollment projections for the three elementary schools that will comprise the bulk of students to be divided among the two new elementary schools (retrofitted middle schools; Westside and Cutler).

YEAR	Claude Chester	S.B. Butler	Pleasant Valley	TOTAL
2014-15	351	280	299	930
2015-16	354	271	290	915
2016-17	331	281	284	896
2017-18	324	272	285	881
2018-19	326	271	286	883
2019-20	330	272	280	882
2020-21	332	271	278	881
2021-22	331	272	281	884
2022-23	332	271	283	886

The enrollment trend for the attendance zones likely to affect the Westside Elementary School consistently produces a student population of about 885 students from 2017-2022. If students are split evenly between the two new elementary schools, each school would accommodate about

443 students. In addition, each new elementary school would provide a prekindergarten program for about 30-60 students bringing the total school enrollment to about 473-503 students.
The peak enrollment year for this project is 2015-16. It should be noted that revised enrollment projections should be calculated as the project draws closer to actual construction to ensure adequate and appropriate space is provided for the peak enrollment year. The initiation of this project is likely to occur five-six years from the adoption of these specifications.

A projected class organization for the Westside Elementary School is as follows, based upon year 2022-23 enrollment projections. Minor variations in class sizes will occur from grade level to grade level depending upon the attendance zones selected for assignment to this school.

Grade	Projected Enrollment	Number of Classes	Average Class Size	Class Size Standard	Functional Capacity
Pre-K	30-60	2-4	15	15	30-60
Kindergarten	81	5	16.2	20	100
One	79	4	19.75	25	100
Two	73	4	18.25	25	100
Three	65	4	21.7	25	100
Four	70	4	17.5	25	100
Five	74	4	18.5	25	100
TOTALS:	**472-502**				**630-660**

The functional capacity of the school would be 630-660 students based upon district class size standards, depending on the number of pre-kindergarten classes offered.
Note: It makes sense to provide four classrooms per grade level for grades 1-5 as higher lower grade enrollments will work their way upwards and require additional space at upper grade levels in subsequent years. As time draws nearer to designing the building changes, it would be prudent to calculate more up-to-date enrollment projections to determine if, in fact, the school should have "five" classrooms at each grade level, if enrollment is trending higher.
In addition, the following chart depicts the capacity for enrolling in and out-of-district "choice" students in the diversity school.

Grade	Projected Enrollment	Number of Classes	Functional Capacity	Capacity for Choice
Pre-K	30-60	2-4	30-60	Open
Kindergarten	81	5	100	19
One	79	4	100	21
Two	73	4	100	27
Three	65	4	100	35
Four	70	4	100	30
Five	74	4	100	26
TOTALS:	**472-502**		**630-660**	**158**

CATEGORY PRIORITY

This is a Category One Project in accordance with the requirements of Section 10-283 (a-6) of the Regulations of Connecticut State Agencies, which states that Category One Projects are primarily required to do the following:

> "Create new facilities or alter existing facilities to provide for mandatory instructional programs pursuant to Title 10 of the general Statutes, including, but not limited to special education; the arts; career education; consumer education; health and safety; language arts, including reading, writing, grammar, speaking, spelling, and library media centers; mathematics; physical education; science, including laboratories; and at the secondary level one or more foreign languages and vocational education including shops; or for physical education facilities in compliance with Title IX of the US Elementary and Secondary Education Act of 1972 where such programs or such compliance cannot be provided within existing facilities."

EDUCATIONAL SPECIFICATIONS COMMON TO ALL SCHOOLS

Common educational specifications that are applicable and essential to all Groton schools are presented below. The facility designs for all three levels should accommodate projected enrollments through the year 2025, taking into account increases in student population and future needs. The designs support the concept that smaller learning communities within the fuller learning community enhance interactions among learners, increase a feeling of belonging, and emphasize the importance of individuality. The school should be physically organized in grade level clusters that facilitate teamwork in grade level clusters. Support services spaces should be provided juxtaposed to grade level clusters for ease of access by students and for the facilitation of teacher collaboration.

Facility Design Guiding Principles

1. School design to accommodate both current and future projected enrollments
2. Support smaller learning communities within the full school community
3. Student driven, interactive, project-oriented learning experiences
4. Adaptable space for dynamic and changing educational philosophies and programs
5. Space designed for multiple functions
6. Space for meetings of various sizes distributed throughout the facility
7. Support for contemporary technologies easily adapted for emerging technologies
8. Facilities to support 21st Century learning
9. Welcoming atmosphere which provides a sense of comfort for students, staff, and community
10. Free flowing, safe, easy movement
11. Maximum exposure to natural light and airflow

12. Durable, high quality, age-appropriate furnishings which support the educational program
13. Include acoustical treatment designed to minimize the transmission of sound
14. Durable and easily maintained finishes
15. Appropriate energy efficient technologies
16. Central Heating Ventilation and Cooling (HVAC)
17. Community access and use that minimizes disruption to educational activities
18. Emergency Shelter, if necessary
19. Outdoor spaces as an extension of the educational, athletic, and community program
20. Diverse educational philosophies such as alternative education models and magnet school models

School Safety and Security

The committees deemed security a vital factor. As documented in the Groton Public Schools Strategic Plan, a safe learning environment is one of the district's key goals. Our children must have a sense of physical and emotional well-being, which in turn, will enhance student achievement. Therefore, interior and exterior surveillance cameras are requested throughout the buildings. Electronic door locks are required to control access to the entire school. In particular, front doors must be designed to control entry to the school. For security purposes, one entry door will lead directly to the main office. The designs of the buildings will ensure a secured vestibule as well as clear views of all main entry areas, incorporating the inclusion of shatter-proof glass to provide maximum visibility and safety for the monitoring of pedestrian traffic in and out of the school. To maintain security, an addressable intrusion alarm system is essential. Areas designated for community use will be provided with accessible parking and convenient entry doors. Designated community use areas include athletic facilities, auditoriums, media centers, and cafeteria. Storage space will be provided for community-based programs.

The school design should conform to the school safety standards as recommended by the School Safety Infrastructure Council, as charged by Public Act 13-3, Section 80(b), or its subsequent revisions. These standards include, but are not limited to, (1) entry ways to school buildings and classrooms, (2) the use of cameras throughout the school building and at all entrances and exits, including the use of closed-circuit television monitoring, (3) penetration resistant vestibules, and (4) other infrastructure devices and services as they become industry standards. A risk assessment of the school site will enable school district leadership, its building committee, and architects to determine an "all hazards" threshold level response to potential threats in order to plan the most effective mitigation for attaining the desired level of protection. Critical compliance areas to be considered in school construction and site development are:

1. School site perimeter
2. Parking areas and vehicular and pedestrian routes
3. Recreation areas (playgrounds, athletic areas, multi-purpose fields, etc.)
4. Communication systems
5. School building exterior
6. School building interior
7. Roofs
8. Critical assets/utilities

9. Other areas as may be indicated by the proposed school location, its site, design features

Community Use

All schools will serve as town centers that can support community-based programs, activities, and events for the citizens of Groton. The designs will allow for specific activity zones of the buildings to be isolated for after-school activities and for community use, as well as for security and maintenance reasons.

The contemporary public school facility serves the educational interests of its student clientele as a primary function, while it embraces the needs of its community for an increasing range of activities that enhance the quality of life its citizens. Therefore, areas of the building need to be accessible after school hours for a variety of activities ranging from scouts to sports activities to adult education enrichment classes and gatherings of people for meetings, entertainment(,) or recreation. The philosophy of the Groton Board of Education is based on the premise that school buildings belong to the community. They should, therefore, be made available to the public to the fullest extent practical, while maintaining as their primary foremost consideration, their function as learning places for children.

Areas most in demand for community use are the following:

- Gymnasiums
- Auditorium
- Library-Media Center
- Cafeteria
- Computer Labs
- Outdoor athletic facilities

The building design must accommodate public access, including handicapped citizens, to all public places, including lavatories, telephones, water fountains, and seating. The design, however, should respect the need for security of core school facilities and public areas. Visitors during the school day, therefore, should be directed to a single point of entry to the building.

Areas of the building should be designed for display of varied art works and student work products. Areas of the building should accommodate visiting lecturers and artists who address gatherings of students and interested adults in formal and informal settings that promote interaction among and between these groups.

EDUCATION PROGRAM

The new Westside Elementary School will serve selected elementary age students from Pre-kindergarten through grade five primarily from previous attendance zones for Claude Chester, S.B. Butler, and Pleasant Valley elementary schools. Other schools may be affected by the overall redistricting and balancing of schools as determined by the demographic and geographic make-up of the school attendance zones at the time this project is completed.

Classrooms in the school are organized on a self-contained basis, one teacher per each group of 20-25 students. Seven (7) classrooms are needed for prekindergarten and all-day kindergarten. Five classes are needed for kindergarten. Four (4) classrooms for each of the other grade levels will be needed to meet the student enrollment throughout the projection period, as well as ensuring the school district of the flexibility to provide additional services for special needs students and emerging programs that may or may not be related to "No Child Left Behind" requirements or other state/federal initiatives related to improved school performance. Each grade level should be located in a distinctive part of the building, each class juxtaposed to other classrooms assigned to that grade. The pre-kindergarten, kindergarten and grade one students should be clustered in one part of the building[1], preferably near the bus drop-off or main entrance to the building. Grades 2-3 should be clustered together as well as grades 4-5.

The upper elementary school program provides for the active engagement of all students in the learning process. Students need classroom space to work on projects cooperatively with others as well as areas to work independently. The teacher will work with students in a variety of approaches including whole class instruction, small group and individualized instruction. The movement toward "all-inclusive" classrooms as a result of State policy and regulations will often find more than one adult in classrooms providing supportive as well as direct instruction to one or more special need student. The space and furnishings in these classrooms must be flexible and adaptable to these different approaches. Student learning is the focus of attention of the school programs. The facility must enable flexibility in both teaching and learning processes through its design and the environment created within the school. Abundant and creative displays of student work that celebrate achievements while adding to the ambience of each classroom and the school as a place for children to learn, build a sense of pride in the student body as well as a welcoming environment for visitors to the school.

Core Academic Subjects

The following subjects are provided within the regular classroom program:

Language Arts and Reading

It is the expectation of the Groton Public Schools that every student will read with fluency and comprehension by the end of the third grade. By the end of fifth-grade, students are expected to move beyond the development of basic word fluency and literal comprehension to the ability to read for deeper understanding. The following instructional strategies are typical in the contemporary reading-language arts classroom and have implications for organization of space, furnishings and fixtures in the classroom.

- Classroom based assessment is emphasized. There is a trend to do more of this via computers and related technologies.

[1] Using a color schema tile path from the bus drop-off entrance to the "primary" grade school cluster will enable young children to easily locate their classroom, and consequently feel more self-assured and comfortable in the school environment.

- Flexible grouping of students based on instructional needs. Groups of students may be working on different assignments simultaneously while the teacher is providing direct instruction to individuals or a small group of students.
- Instructional materials and classroom libraries substantially exceed the traditional basal text and related materials approach to literacy instruction.
- Students work with peers in literature circles, monitored by a teacher, assistant, or volunteer.
- Writing about what is being read is emphasized. Pupils demonstrate how they can make a personal connection to what is being read.
- Special needs students included in the literacy program may require the assistance of another adult, either a teacher assistant or specialized instructor, to meet the Individualized Education Plan (IEP) for that child. Some classrooms may have more than one "included" special needs student, possibly increasing the number of adults in a classroom for the duration of particular lessons.
- Supportive services are provided within and outside the general classroom for students who may require such additional instruction. The goal of such service is to enable each student to maintain or achieve a reading level that would enable independent work in other grade level academic areas.
- Modern language arts programs require bookshelves for leveled reading books; about 300 books per classroom.

Mathematics

It is the expectation of the Groton Public Schools that all students become mathematically literate. The following types of activities are typical of contemporary elementary school mathematics instruction and student learning. Classroom space, furnishing and fixtures should accommodate these approaches to teaching and learning.

- Direct, whole class instruction.
- Student cooperative learning activities.
- Demonstration and explanation of problem solving strategies and procedures by teachers and students.
- Small group instruction.
- Independent guided practice and independent practice of skills.
- Use of manipulative learning tools.
- Use of technology as a learning tool.
- Application of mathematical ideas to other subjects and various practical tasks.
- Use of various reference materials, including textbooks.

Social Studies

The social studies curriculum focuses on important concepts such as community, culture, region and immigration, history and geography. Map and globe skills are integrated into all aspects of the program. Students develop a sense of time and place as they learn about earlier events in history. The following activities are typical of contemporary elementary grade social studies teaching and learning.

- Large and small group instruction.
- Cooperative learning groups.

- Library research and use of the Internet to gather data; database reference sources.
- Multimedia is used to augment and illustrate concepts.
- Student projects and multimedia reports.
- Discussion groups.
- Use of primary sources for inquiry; mentors or experts from outside the school may be contacted through email or teleconferencing.
- Computer simulation activities.
- Primary and secondary text material.
- Field trips to relevant local and state sites

Science

Upon completion of the science program, students will have a fund of scientific concepts, the ability to employ basic scientific reasoning, and be capable of extending his/ her knowledge through additional schooling and independent reading in order to understand and appreciate events and their impact upon society. Students are expected to integrate skills acquired in the language arts, mathematics and fine arts, and apply them in science learning.

The following types of activities are characteristic of contemporary elementary grade science classrooms.

- Large and small group instruction.
- Discussion and cooperative lab groups.
- Use of technology as a learning tool for data collection, calculations, simulations and Internet references.
- Observing, estimating, measuring, collecting data.
- Inferring, predicting, interpreting data, hypothesizing.
- Communicating, classifying, creating models, making graphs.
- Multimedia sources to illustrate concepts and provide information.
- Investigations using scientific tools and methods.

SPACE SPECIFICATIONS

A project goal for design professionals will be to configure school spaces in such a manner as to minimize project cost. Design priorities should be directed to the following principles:

- Personalization of learning and teaching spaces
- Flexibility in the current and future use of school space
- Access to appropriate technologies for teaching, learning and management
- Serving the needs of diverse learners
- Indoor air quality and overall environmental impact of materials used
- LEED[2] standards for energy conservation and environmental impact design
- Potential for adding classroom space at a future date

General Classrooms (27):

[2] LEED is a third-party certification program and the nationally accepted benchmark for the design, construction, and operation of high-performance "green" buildings. LEED = Leadership in Energy and Environmental Design.

- 7 Pre-kindergarten & Kindergarten classrooms @ 1,000 SF
- 20 Grades 1-5 classrooms @ 800 SF

All general classrooms must be flexible and adaptable to different future uses. Cabinetry and other fixtures will need to be carefully designed for ease of relocation. Floor space should be maximized to enable the teacher to reconfigure furniture and learning spaces within the classroom. Smart Technologies, areas to display student work, projection spaces and computer workstations for students and teachers need to be carefully designed and strategically placed in order to facilitate teaching and learning. A wireless network capacity throughout the building will provide flexibility for student workstations and classroom organization.

The district Special Services Director should be consulted to determine how and where "sound field systems" should be installed in selected classrooms as assistive technology (one classroom per grade level or grade level cluster).

Seven (7)) pre-kindergarten and kindergarten classroom of about 1,000-1,200 square feet are needed for this school. Twenty regular classrooms of approximately 800-900 SF are needed to support the student population for grades 1-5 in the core academic areas. One classroom at the fifth grade levels should be designed as science classroom-lab or mobile science centers could be brought into the rooms for demonstration purposes and tables or perimeter counter space would serve as lab workstations for students.

The general classrooms for grades 1-5 should have ample space to permit flexible grouping and regrouping of students, as well as whole class instruction. Sufficient room and teaching stations need to be accessible in the room for two or more teachers to be working simultaneously with students in small groups, or one teacher or assistant providing supportive assistance for one or more students while the classroom teacher is providing direct instruction to the whole class. Different types of workstations or "learning" centers may be created in areas within the classroom. Each classroom should have a technology center with at least 3-4 student workstations (laptops or tablet devices may preclude the need for this center) and a teacher computer workstation. Storage for instructional supplies within the classroom or in a readily accessible shared location is important to maintain continuity in the flow of instruction. All rooms should be equipped with wireless capability for use of portable laptop labs and/or tablet devices.

The pre-kindergarten and kindergarten classrooms should have the same features described above/below and, in addition should have cubbies for storing student work and materials. The shelving, fixtures and equipment in the room should be accessible to and suited to the physical attributes of 4-6 year old children. All pre-kindergarten through grade one classrooms should be configured to contain [shared] accessible lavatory space designed for young children. These classrooms need to be located at ground level.

Number of teachers:

During peak enrollment periods, twenty-seven regular classroom teachers are needed to provide class sizes of 20-24 students. The following space specifications are desired outcomes of the project. The classroom square footage specified should provide direction but reserve some

flexibility and freedom of design in retrofitting the middle school building to accommodate pre-school and elementary school aged children.

General Conditions

All instructional space should have the following:

- Display boards
- White boards
- SMART Technologies smart-boards
- Counters with enclosed storage cabinets above and below the counter
- Tile flooring (preference is for tile rolls that are heat sealed at seams)
- Connection to the school communication system
- Room darkening shades
- Full data/ voice/ video capacity (*access to a network integrated media distribution system*)
- Student computer workstations [*via school district's Technology Plan*]; access to a wireless LAN and WAN.
- Teacher computer workstation, hard-wire drop.
- Teacher desk and chair
- Student work table (mobile) and chairs according to function and grade level
- File cabinets
- Electrical outlets, at least one on each wall; additional outlets alongside computer workstations to support peripheral devices
- Clock, flag, pencil sharpener
- Appropriate heat, ventilation, and air conditioning
- Consultation with the Director of Special Services about anticipated assistive technologies in various classrooms will be necessary (some rooms will need to be equipped with audio support systems).
- Appropriately sized lockers or wardrobe areas for storing clothing and personal learning resources

Other Instructional Program Spaces

All students enrolled in the school generally participate in all of the following programs:

Physical Education

All students participate in physical education/health education classes once per week. The program goal is to instill in students a desire to become practitioners of lifelong fitness and well-being. Physical education classes take place in a gymnasium and out-of-doors, depending upon the season and weather conditions. The following types of activity take place in the contemporary upper elementary physical education classroom.

- Fitness activities.
- Games; team and individual sports.
- Rhythmic activities, including dance
- Gymnastics and tumbling.
- Adaptive physical education as specified by student needs

- Health education

Classroom Space:

1 full size gymnasium @ 5,600 SF
Storage @ 400 SF
Office space@ 200 SF

One (1) gymnasium with a regulation size basketball/volleyball court and equipment storage and office space; the gym should have retractable bleachers along one wall for seating 150-200 people. The gymnasium should be easily configured for two separate teaching stations. Lavatory access within or adjacent to the gymnasium is desirable for student and public use. The gymnasium would be extensively used by the community during non-school hours. It should be configured in such a way as to permit direct access to the public while retaining the security of the remainder of the school building. It is preferable that the gym floor be of wood construction. A protective covering should be available for events that bring the public to the facility for large group meetings.

It is highly desirable to provide bleacher seating in the gymnasium to the extent this is possible.

Outdoor physical education facilities should include kickball, softball, soccer and basketball areas and a blacktop area for skill games and activities. A walking/jogging trail around the perimeter of the fields is desirable. Outdoor age-appropriate playscapes should be provided for recreational and recess activities for primary and intermediate grade students in their designated play areas.

Office space for two teachers with visual sight-lines to the gym should be provided. It would be ideal if the gymnasium and cafeteria could be juxtaposed with a low platform stage area separating the two. [The stage area would be used as the instrumental music teaching station – sound-proof paneling and movable walls].

Teachers:

One and one-half (1.5) teachers are needed to implement physical education and health curricula and schedule for all students.

Music

The lower elementary school classes are exposed to music activities that engaged them in performance and appreciation activities. Rhythm instruments and movement activities enable young children to use various senses and learning modalities to learn musical concepts.

The music program in the upper elementary school develops students' musicality through experiences in vocal, instrumental and music theory. Children learn music by behaving in musical ways, by listening to, creating and performing music. Grade three students focus their study on singing accurately and independently. Beginning instrumental study is begun with the recorder.

Grade four students continue their vocal music activities through choral and independent activities. Personal voice performance, harmony and rhythm are emphasized. Instrumental music

instruction begins at the fourth grade level. Students perform independently, in small ensembles, and in band. Electronic keyboards are used to facilitate student development of music theory and beginning composition.

In grade five, the program further develops and extends the concepts and theory of musicality, adding the study of composers and folkdances at this level. Choral music involves continued voice development with more involved harmony and vocal rhythm. Instrumental study continues with increased participation in small ensemble and band activities. Music theory and composition are extended via electronic keyboards.

Teachers:

Two (2.0) teachers are needed. It would be desirable to have all teachers capable of teaching both vocal and instrumental music in order to have maximum scheduling flexibility.

Space Specifications:

One (1) general music @ 1,000 SF.
Shared storage of 400 SF
One (1) instrumental music room @ 1,200 SF.[3]

The General and Instrumental music programs need space that is strategically located and acoustically treated. The rooms should be located near the stage area to the extent possible and practical. Storage for the music library, instruments and music stands needs to be provided. Display boards, electronic keyboards, and a projection screen need to be strategically located to facilitate teaching and learning. Multiple electric outlets are required alongside each wall to enable class use of various electronic instruments and devices that support the instructional and learning programs.

The instrumental music room should have the capacity to provide for electronic keyboarding instruction. It is suggested that the instrumental music room be located on a low platform stage between the cafeteria and gymnasium. Movable, acoustical walls will enable flexible us of this space. Storage for instruments and music should be provided.

Art

Art education in the Groton Public Schools offers experiences for students to observe, analyze, synthesize, and evaluate the essence of the physical world and to translate its components into works of art. The historical and cultural significance of art provides the opportunity for the students to understand and appreciate the role of the artist as a visual historian and the creator of new and original modes of perception. Primary grade students explore such concepts as color, shape, line, texture using a variety of media and art forms. Some three-dimensional work is also part of the program. Among the topics studied in the upper elementary art classroom are drawing, painting, graphic design, sculpture and crafts. It is important to design art rooms and adjacent hallways with display cases, wall display structures and appropriate lighting to present completed students art projects for audience appreciation.

[3] If the site permits a design lay-out for juxtaposing the cafeteria and gymnasium with a low platform stage area between the two, it may be advantageous to use that area as an instrumental music learning station in order to conserve on the overall square footage of the school footprint. The stage area should open to both the cafeteria and gymnasium for maximum flexibility of use.

Teachers:

Two (2.0) teachers are needed to implement the art curriculum for all students.

Space Specifications:

2@ 1,000-1,200 SF

Storage/kiln area @ 400 SF

The art program requires use of two large instructional spaces. These spaces should have a great deal of natural light, built-in storage, sinks with appropriate drainage and numerous opportunities to display completed student work and store work in progress. Worktables and stools should be mobile in order to allow teachers the flexibility to re-arrange instructional space according to planned activities and the various physical abilities represented by the age range of students served (4-10 years old). A white board, SMART Board and computer workstations need to be strategically located to facilitate teaching and learning. About 300 square feet of this space should be allocated for shared storage of supplies and materials, and storage of works in progress. The area outside the art room should contain tack board and wall-mounted display cases to showcase student work (a glass wall may be installed in the classroom to display completed or work in progress into the hallways).

Library-Media Center (Learning Center)

The library-media center is the hub of learning activity for the school. It provides space where the concept of "learning community" comes alive. Teachers, students and members of the community can be observed actively engaged in learning in this space – learning from the various print and non-print materials accessible in the library as well as learning from other people. Technology plays an integral role in the use of the modern library. Access to a vast array of information in a variety of forms is available through the Internet. Teleconferencing is facilitated through use of computers. Distribution, retrieval and storage of various materials and information sources is facilitated through electronic card catalogs and scanning devices. Computer workstations are an important component of the library-media center. The computer lab is made a part of the library-media center or it is located juxtaposed to the library for ease of access and supervision.

The library-media center should have the capability to broadcast SMART Technologies to all classrooms for internal programming as well as through the local cable network for public meetings or functions.

Space needed:

1 @ 4,300 SF

The library-media center should be a minimum of 2,800 SF (without an integrated computer lab) with additional office space, work space, wiring closet and technician workroom and, portable computer lab charging station storage totaling about 500-600 SF. An additional 600-800 SF would be needed for an integrated computer lab in this space.

A part of the library should be readily adaptable to use as a classroom for storytelling and other instructional purposes. The library-media center should also have wireless capacity and space to recharge mobile wireless laptop labs. The modern library media center serves multiple

functions. It continues to accommodate traditional book and media storage and retrieval for student research and acquiring research skills. Access to the electronic information highway exponentially multiplies the capacity of the library-media center and, consequentially, opens new vistas to student learning. One section of the library should be carpeted and furnished so that children can comfortably read books or view various media. The library resources should be digitally catalogued and bar-coded for a scanning system checkout and return. The library media center should be the hub of a multi-media distribution system via classroom monitors and/ or digital projection devices. Various forms of media technology and software should be accessible to children. A professional library section will enable teachers to model research and study skills in their work for students to emulate. A computer lab should be located within the library-media center or juxtaposed to the center for easy access to whole class instruction and individual research. All computers should be connected to the school LAN, the district WAN and the Internet (wireless capacity will provide flexibility and economies in fixed space assets for labs). If the computer lab is a separate room, it should be easily visible from the library for ease of supervision. The library-media center makes a statement to citizens, teachers and students that the culture of the school is that of a "community of learners." Areas for display of student and adult artwork should be created. An area that would create an amphitheater effect for presentations by guests, or lessons presented by the library-media teacher is desirable. Providing as much daylight as possible is a desirable feature for this space.

Storage and workrooms should be built into the space. Space to store and charge mobile computer labs should be provided.

- connection to the school communication system;
- voice/video/data capacity with several computer work stations;
- a wall-mounted TV/DVD/VCR in one learning area with 25 chairs and 4 wooden tables, ceiling mounted projection screen, mobile Smart-board;
- quality double faced book cases and book stacks at a height appropriate to the student population;
- mobile, matching furniture throughout;
- charging station near the entrance situated so that a small work area with a rectangular table and laminating machine can be accommodated behind the charging desk;
- full static-free carpeting;
- computerized book security system with appropriate software;
- media specialist desk/chair, computer work station, telephone;
- bulletin boards on two walls;
- card catalog stand, book cart, reference book stand, magazine rack;
- two clocks, one in learning area and one near entrance;
- flag.
- Flooring should be a durable, non-static carpet that can be easily repaired.
- Book storage room (10'X10')

Teachers:

One (1) full-time library-media specialist, adept in the use of the computer and media technologies is needed. One (1) instructional assistant is needed to support the operation of this instructional area.

Computer Lab

One computer lab should be made available for instructional purposes. An NCLB computer competency requires the need to have an articulated program of instruction for all students. The district conforms to the State of Connecticut computer competencies for students, as well as the International Society for Technology Education specified standards. Direct instruction, as well as applications integrated throughout the curriculum, is an essential component of an effective technology instructional program.

Space needed:

1 @ 600 SF

One computer lab, preferably located within the structure of the library-media center, or adjacent to the library-media center and easily accessible and monitored from that area is needed. This space should be about 600-800 SF and have from 24-30 student workstations and one teacher workstation. A ceiling mounted projection device, SMART Board and white boards are important components of the instructional program for this space. Flooring in the room should be non-static carpeting.

Teachers:

One (1) teacher is needed to provide instruction to all students in the school. This teacher also provides assistance to other personnel in the school regarding technology applications to teaching and learning, in support of the curriculum.

Special Programs and Instructional Support Services

Special Services:

Various types of special service rooms are required to meet actual or potential needs of students. Instruction may be provided in specialized rooms as directed by the student's Individualized Education Plan (IEP) for varying amounts of time during the course of a school day. Most students receiving special education are placed in a general classroom and receive resource room or tutorial assistance in individual or small group settings within and/or outside the general classroom. Some children may need physical or occupational therapy as part of their IEP and a space with specialized equipment to deliver these services is needed.

Generally, those rooms where academic skills are developed and reinforced would require the same features as general classrooms with permanently installed SMART Technologies.

Resource Rooms:

4 SPED Resource @ 200 SF
2 SPED Classroom [dividable via movable wall] @ 800 SF
Sensory/Therapy Room @ 150
These rooms will vary in size from 400 SF for tutorial rooms to an 800 SF room required for use by the same group of students for a large percentage of their school day; this room should be

equipped with a movable wall and configured so that it could become two 400 SF teaching stations for future flexibility in room use. These rooms should be adaptable to the varied needs of students and their instructional requirements. It is likely that several students will be receiving different types of instruction in the room at the same time. It would not be unusual for several teachers to be working in these rooms simultaneously, along with several instructional assistants. These rooms should have all the features of general classrooms. The teacher will require additional storage for materials and records of student IEPs. The furniture in these rooms should be tables and chairs that can be easily moved and configured in a variety of patterns for varying grouping of students.

Teachers:

Five-six (5-6) teachers may be needed for these services.

Remedial and Corrective Services – English Language Learners:

5 @ 200 SF

Students in need of additional support in maintaining or achieving appropriate skill in English language skills, reading and/or mathematics receive such support, generally, outside the general classroom environment; such as, Title I, remedial reading, ELL instruction, enrichment and tutorial instruction. Teachers would work with one-four students to supplement classroom instruction for students in need of such support for their learning. These rooms should have all the features of the general classroom, except to a lesser size or quantity. They should be flexible in design because it is likely they will support more than one function within the school.

Teachers:

Five (5) teachers are needed to provide additional learning support for those students in need of such services.

Physical Therapy/ Occupational Therapy

1 @ 400 SF

Space is needed for physical therapy and occupational therapy when a student's needs warrant such instructional support. A room should be dedicated to these functions with ample storage for apparatus and space for large muscle activity. There may be times when such activity needs to take place in the gymnasium; the room should be located near the gymnasium to facilitate access to space and equipment needed. Movable floor mats are required. Specific apparatus should be determined in consultation with teachers, based on the clients they are currently serving and those they know will be attending the school in the future (birth to three programs).

Teachers:

One or two teachers may be needed for these services.

Speech Therapy

2 @ 150 SF

Spaces are needed for speech therapy services. This room could be shared with other functions as schedules permit. A teacher's workstation, student's workstation, table and chairs, white board and display areas are needed in this room. A teacher's desk and two, two-drawer file cabinets are needed. Storage for testing and instructional materials, equipment is needed. Multiple electrical outlets are needed along walls to support a variety of equipment. Counter space is desirable for holding equipment. This room should be acoustically treated to prevent outside noise from intruding on therapy and instructional sessions.

Teacher:

One teacher is required for these services.

Psychologist & Social Worker

2 @ 150 SF

An office with space for testing and counseling of students is needed. This could be a shared space depending upon the ability to manage schedules. A teacher's computer workstation, a telephone with access to outside and long-distance lines, round table and chairs, and a four-drawer lockable file cabinet is needed. White boards and display capacity on walls are also needed.

Teacher:

Two teachers may be required for these services.

Conference Rooms:

1 @ 200 SF

1 @ 300 SF

Conference rooms should be furnished with an oval table and seating for 8-14 people. Counter space with cabinets to accommodate refreshments and supplies is needed. The room should be well lit and acoustically treated to maintain privacy. The room should have a telephone and electrical outlets along each wall to support recording devices and other electronic equipment. Multiple outlets should be located over the counter space.

Non-Instructional Space

There are several types of non-instructional space needed for the Westside Elementary School. Spaces for school administration, student services and health services should be juxtaposed and located by the main entrance to the building, to the extent possible. A space that could double as an auditorium (cafeteria and/or gymnasium) should be located in an area of the building that is accessible to outdoor play areas and minimally disruptive to classrooms via traffic or noise. This space should have direct access for the community while maintaining security throughout the remainder of the building. Student and staff lavatories and storage for custodians and general supplies should be strategically located throughout the building for ease of access. Faculty and parent workrooms should be located near the faculty dining area or the

library-media center; whichever is most practical within the design limitations of the current facility. The following non-instructional spaces are specified for this project.

Administration (general office area):

- 1 principal's office @ 300 SF
- 1 assistant principal's office @ 250 SF
- 1 secretary/reception area @ 400 SF (Workstations for 2 secretaries)
- One (1) conference rooms @ 200 SF
- 1 workroom @ 250 SF
- 2 storage areas, one (1) for records @ 150 SF; one (1) general storage @ 100 SF
- 1 lavatory @ 80 SF
- 1 Computer kiosk for parent use @ 150 SF (as feasible)

The administrative area requires space for the school principal and assistant principal with workstations and desks. Bookshelves and storage cabinets are needed. A circular table and chairs for seating 4-6 people is needed.

A reception area, office workroom with copying equipment and network printer, supplies storage and ample counter space for collation of multiple projects is needed. The receptionist and secretary need workstations and access to the school communication system controls. The school security system should be managed from this area. Faculty and staff mailboxes should be discreetly located in the reception area or office workroom.

A conference room with an oval table and seating for 12-14 adults is needed. The room should have counter space with cabinet storage for supplies and materials. Electrical outlets are needed on each wall to support used of various electronic devices.

School-Based Health Center

The Health Center should be about 1,000-1,200 SF and it should have defined areas for the following functions.

- 1 nurses office
- Reception area with a secretary/aide station
- Secure medicine and records storage
- 1 examination room
- 1 cot room with 5-6 sick bays
- 2 lavatories, one adult and one student; the student lavatory should be capable of serving as a changing room with a lift and personal shower for non-ambulatory students.

Health services space needs to include a reception area, space for records storage, an examining area, an area with 4-6 that could be curtained off from the rest of the area, an accessible lavatory with shower facilities, space to store lifts for disabled persons and an examination table. Two four drawer, lockable files are needed. A lockable storage cabinet for medicines and a refrigerator with a lock or lockable compartment is needed for medicines requiring cold storage. The Health Center should be located adjacent to or near the administrative offices/reception area.

Workrooms:

- 1 faculty & parent workroom @ 300-400 SF

Cafeteria/Kitchen:

- 1 student dining area @ 3,000 SF
- 1 kitchen and servery @ 1,200 SF
- 1 storage area @ 400 SF

The cafeteria and serving area need to accommodate the varying physical attributes of children aged 5-10 years old. Serving stations should be carefully designed to maximize ease of access and smooth, quick flow of students through them. Stations should offer a variety of choices in meal options from hot lunch, to a la carte choices on a daily basis. Up to two hundred students may be served at during any one of three 30 minute lunch waves.

The design of the cafeteria should feature elements that make it a colorful, inviting place to eat. It would be highly desirable to create an atmosphere more akin to a restaurant than an institutional style cafeteria – this will create a receptive climate and an standard for the type of behavior expected. Acoustical treatments should be strategically placed to lessen the noise of walking and talking. A message board and LCD projector should be installed to enable viewing notices and large group presentations. Tables and chairs should be easily moved for ease of cleaning and adapting to the various functions of this "multi-purpose" room. Round or hexagon shaped tables with attached seats should be considered to furnish this area; such seating enables conversations to be directed within the table and should cause for a lower speaking volume than rectangular table alternatives. Storage for tables/chairs should be considered within the cafeteria complex.

The cafeteria is a multi-purpose room also serving as an auditorium. A stage should be constructed (or provide for a portable stage) between the gym and cafeteria to enable school assemblies for performances and presentations. The space should be adequate to accommodate half of the projected peak enrollment of students per seating. The cafeteria is ideally located juxtaposed to the gymnasium so a low platform stage, capable of opening to both areas, can be used for presentations and performances, and can also serve as an instrumental music teaching station.

The kitchen area needs to be located next to the cafeteria and easy access to appropriate cooking and cleaning equipment for the volume of meals served and resultant cleaning of tray, plates, utensils and cookware. Dry storage, refrigeration, and freezers need to be located near a loading dock for ease of receiving and storing shipments of foodstuff and supplies. Recycling bins for various refuse types should be located off the loading dock area.

<u>Faculty Dining and Workrooms</u>

1 @ 800 SF

This space provides a comfortable setting for about 30-35 persons to sit at lunch tables. Adjacent to the dining area construct a teacher workroom by providing appropriate equipment and storage for preparation of instructional materials. The room should be equipped with a teacher workstation, telephone, copy machine, refrigerator, shelving and closed cabinets. Counter space is needed for sorting and collating materials as well as for using various electrical devices. Several electric outlets are needed on each wall and more should be located over the

counter top. A portion of the room should contain chairs for reading and relaxation. A computer workstation connected to a network printer should also be installed here.

Miscellaneous Spaces:

These spaces need to be strategically placed in the overall school design to provide proximity and ease of access for students and adult employees requiring their use.

Custodial storage areas need to be strategically located throughout the building for ease of access and to prevent frequent moving of cleaning equipment and supplies throughout the building and, in particular, up and down stairs.

Storage areas for supplies, equipment and instructional materials should be located within proximity of each grade level cluster (PreK-1, 2-3, 4-5). These spaces should have open shelving at a height that permits easy access. The rooms should be well lit and ventilated to prevent spoilage of supplies and materials. Space should be set-aside for school-wide equipment and textbook storage.

- male student lavatories
- female student lavatories
- staff lavatories
- custodial closets
- school storage areas
- custodial office, storage areas and mechanical rooms
- District-wide storage is needed with a loading dock (preferably built into basement areas within the footprint of the building design)
- Book storage, preferably located near grade level clusters

Custodial Services

1 @ 200 SF (at a minimum)

A room with a computer workstation to process work orders and manage the school climate control system is needed. The room should have a telephone with long-distance calling capacity. A work bench and space for storage of tools is needed to perform minor repairs on furniture and equipment.

SUMMARY OF SPACE NEEDS

Approximate Number of Students Projected = 500

Total Number of General Classrooms = 27

Note: ***the square footage requirements indicated below are what would be allocated for new construction. The actual square footage for each designated space will most likely be lower as design professionals "fit" various space needs into the existing structure.***

SPACE	NUMBER OF ROOMS/SQUARE FOOTAGE	TOTAL SQUARE FOOTAGE REQUIREMENTS

Pre-kindergarten	2 @ 1,000	2,000
Kindergarten	5 @ 1,000	5,000
Grade One-Five	20 @ 800	16,000
		23,000
Art: 3-dimensional classroom 2-dimensional classroom Storage	 1 @ 1,200 1@ 1,000 1 @ 400	**2,600**
Music: General Choral & Instrumental Storage	 1 @ 1,000 1@ 1,200 @ 400	**2,600**
Physical Education & Health: Gymnasium Offices Storage	 1 @ 5,600 1 @ 200 1 @ 400	**6,200**
Auditorium Stage Seating	Portable platform stage for use in the cafeteria/multi-purpose room or gymnasium - storage	**400**
Learning Center/Support Services: English Language Learners Special Services Education Tutorial (RTI) Conference Rooms Sensory/Therapy Room Occupational Therapy & Physical Therapy Speech Services SPED Classroom (dividable)	 1 @ 200 4@ 200 4@ 200 2 @ 200 1 @ 150 1 @ 400 1 @ 150 2 @ 800	**4,500**
Conference Rooms Social Work, Psychologist Offices Records storage	 2 @ 150 1 @ 100	**400**
Administrative Office Complex: Offices Conference Rooms Secretary/Reception Storage Equipment/ Workroom Computer Kiosk for parent access Lavatory	 1 @ 250; 1 @ 300 1 @ 200 1 @ 400 1 @ 250 1 @ 200 1 @ 150 1 @ 80	**1,830**
Health Offices: Reception Area Offices	 1 @ 200 2 @ 100	

Examination Room Medicine storage Records Storage Cot/privacy space Lavatory Lavatory/Shower Room	1 @ 100 1 @ 50 1 @ 100 1 @ 120 (5-6 bays) 1 @ 80 1 @ 180	**1,030**
Library Media Center: Stacks & Reading/Study Areas Computer Lab/ Classroom Offices Workroom & Media Distribution Meeting Rooms Storage/wiring closet/technician workspace	 1 @ 2,400 1 @ 600 1 @ 200 1 @ 200 2 @ 200 1 @ 500	**4,100**
Custodial: Offices Workroom Storage Recycling Center	 1 @ 75 1 @ 200 2 @ 200 1@ 400 1 @ 800	**1,675**
Cafeteria Server y/ Food Stations/Kitchen Storage; cold, dry, freezer	3,000 1,200 600	**4,800**
Faculty & Staff Dining	1 @ 800	**400**
Faculty/Parent Workrooms	1 @ 400	**400**
Storage for Instructional Materials & Equipment	1 @ 800	**800**
Play Areas: Early Childhood Elementary Grades	Outdoor playscapes	
Outdoor Learning	TBD	
Security: SRO/Security Office Video Surveillance Room Admittance Kiosk (Vestibule)	 1@ 100	**100**
	Total Space S. F. =	**54,835**
	Circulation =	**27,418**
	TOTAL Building S.F. =	**82,253**

*Note: The current building has a footprint of approximately 71,000 SF. An addition of from 10,000-12,000 square feet **may** be needed to accommodate the elementary school program. The actual total square footage will be substantially influenced by the existing building conditions as most available general classroom space is smaller than that specified above.*

Revised – October 13, 2014

TECHNOLOGY INFRASTRUCTURE

The schools we build will need to serve the Groton community beyond the middle of the 21st century. Technology continues to assume a greater role in the professional and personal lives of our children. In order to support an adequate telecommunications infrastructure, the school building must have a centralized, accessible server room, which serves as the converging point for all aspects of the technology infrastructure, including voice, video, and data capability and accessibility in all classrooms, administrative, support, and common areas.

The general guidelines for the technology infrastructure of the new Groton Middle School must conform to the "Guidelines for Infrastructure in Connecticut Schools," as published by the Connecticut state Department of Education, December 1995, or its most recent revision. The specific technology requirements prepared by architects or engineers must be reviewed by School Building Committees and their technical advisors to ensure that the most advanced and flexible system is being installed. The infrastructure should provide for both wired and wireless connectivity to the LAN, WAN, and Internet, with sufficient broadband width to support wireless one-to-one computing for students and all school employees.

Design

A data design will be performed for this school that includes specific recommendations for the following:

- Wiring closet locations
- Location and quantity of drops for classrooms
- Backbone requirements for wired and wireless computer workstations
- Wiring closet electronics specifications at current industry standard
- Testing requirements to ensure all systems and connectivity function
- Power requirements (a separate, independent power source for the technology systems is recommended, with surge protection at the power source); multiple outlets on classroom perimeter
- Documentation requirements
- Whole building access to the wireless system
- Sufficient broadband width to support one-to-one computing

Internet Connection

The building must have routers and DSU, capable of connecting to an Internet Service Provider in varying speeds. The building will have dedicated Internet connections.

Standards

The system will conform to all current industry standards.

Applications

An integrated technology system (SMART Technologies) shall be installed to support administration, teaching and learning activities. The system should provide the following:

- Video time display, instant messaging, all call and retrieval systems
- Digital time displays, electronic clock, and bell system
- Classroom and office telephone/intercom
- Vandal alarm and video security system in strategic parts of the building and outdoor areas; annunciator panels to inform of security breaches and fire alarms
- Public address system
- Connections to the public voice system in strategic parts of the building (classrooms, gym, cafeteria, auditorium, media center, main office), voice messaging and room-to-room calling
- Electronic mail, bulletin board, and conferencing
- Facsimile capability
- Wired and wireless LAN, WAN and Internet connectivity
- Remote collaboration capabilities with other schools, universities, and business experts in specialized fields

Video Distribution

The video system should enable media retrieval from a variety of sources including:

- Local origination, CATV, ITFS, microwave signal antenna; Decoder, satellite dish, DVD/VCR, CD-ROM, video file server, classroom, or school programming
- Each teacher should be able to control the technology devices from the classroom: power, program selection, volume, and lighting
- The system is to be safeguarded; equipment, file server data, and program access
- All instructional and administrative areas to support live video program generation
- The video component of the network must be capable of supporting multiple channels.
- Classrooms are to have the ability to access multiple channels, independent from each other.
- Broadcast capability is to be available from the media center, gym and auditorium

Installation

The wiring installation shall meet or exceed the recommended minimum standards established by the Connecticut state Department of Education as specified in its publication, “Guidelines for Technology Infrastructure,” 1995 or its most recent update.

- All wiring to be placed above ceilings or behind walls, and permanent installation should be affixed to appropriate support; CAT 6 wiring, color coded based on function
- Wire runs to be supported at intervals that do not permit visible sags, using cable trays
- All penetrations of firewalls to be properly and completely sealed with non-flammable material
- Safe distances to be maintained from sources of electromagnetic interference

<u>Technology Equipment and Services</u>

Goals of the Technology Program:

A. Technology to enhance students learning

1. Students will determine and apply the appropriate technology to their learning and information needs across curriculum areas.
2. Students will have equal access to technology.
3. Students will participate in ever expanding learning communities.

B. Technology to enhance productivity

1. To enhance the interactive communication system among schools, community, educational partners, and homes, creating more opportunities to advance learning
2. To expand and enhance a data management system to inform decision-making
3. To continue to increase organizational efficiency through the acquisition of up-to-date resources and through ongoing training in how to utilize those resources

<u>Description of Technology Equipment Needs for a Westside Elementary School</u>

1. All regular classrooms shall be equipped with sufficient mobile computing devices to enable one-to-one computing, SMART Technologies, interactive white boards with HD capability, and a [networked] printer located in classrooms or a shared space. These computing devices shall have access to a LAN and to the Internet. Several hard-wire drops should be strategically located in each classroom to support a teacher workstation connected to the LAN and WAN with access to appropriate software to manage routine classroom functions as well as computer-assisted and/or computer-managed instruction programs. All classrooms teachers shall have laptop computers for school and home use.

2. Resource rooms and other specialized instructional space should be equipped with suitably sized Smart Board white boards connected to the school LAN and WAN. Teacher workstations should also be provided in all specialized instructional areas.

3. The Library-Media Center shall serve as the hub of the computer network serving the school. One thirty-station computer lab should be located within, or juxtaposed to, the

media center (now used for SBAC as well). The computers should be connected to defined copy machines (as determined by the technology coordinator). A head-end for video broadcasting should be located in an area of the media center where public gatherings/meetings are likely to take place. The media center should be equipped with an electronic card catalog system and a bar code scanning circulation system. The Library office/work area should be equipped with one teacher workstation and other basic communication devices. A state of the art media distribution system shall be installed, preferably in the media center. Secure storage and charging stations are also needed.

A wiring room/computer management space should be located in the vicinity of the media center. This area should contain computer workstations to enable district computer coordinators/technicians to manage the networks as well as sufficient space for equipment storage and work benches for various routine computer repairs. Centralized wiring closets shall be strategically located for security and operational effectiveness.

4. Within their classrooms, Teachers should have access to controls to enable them to manage media presentations from the distribution system integrated within the voice, data, and video network.

5. Administrative areas shall be equipped with computers for the principal and secretaries. Telephones, facsimile machines, and high quality network printers are required. A TV monitor for the clock and bell system and school announcements shall be provided in each classroom. High volume and high quality copier systems shall be provided in the general office areas.

6. All special instructional areas shall be connected to the network for teacher and students use. Special services personnel should have computer workstations located in their office or work area.

7. The gymnasium and cafeteria shall have cabling for video and data drops. A large portable video presentation projector, monitor and twenty-foot screens should be installed or available in these areas.

8. Art, music, and physical education areas or offices should be equipped with computer workstations connected to the LAN and WAN. Ceiling mounted presentation screens should be installed. The music rooms should have access to recording equipment. The music rooms should be equipped with sound systems (surround sound) and wireless voice amplification through that system.

9. Electronic bulletin boards should be located at the main entrance, in the cafeteria, and the gymnasium.

10. A separate, dedicated electrical wiring system and independent power source are recommended for operating the technology infrastructure and its equipment. This is intended to provide appropriate surge protection at the power source and to ensure an adequate supply of power to operate the system without disruption.

11. Each regular classroom and specific spaces in, or juxtaposed to, the Learning Center shall have the capability of virtual collaboration with other schools or with business and education partners, working as a whole class, in small groups, or individually.

12. The Director of Special Services should be consulted during the design phase regarding assistive technologies required to meet the needs of students and teachers.

Note: The Building Committee is encouraged to establish a Technical Advisory Committee to assist with the design and implementation of the technology component of this project. School district personnel and community volunteers with expertise in this area should be called upon, at the appropriate time, to ensure the technology plan, infrastructure design, and equipment requests that represent the state of the art. For example, the Alliance for Wireless Power (A4WP) expects to provide wireless chargers for tablets and other devices before this project is underway.

SYSTEMS CONSIDERATIONS

Internal Communications and Security

- Communications System - Telephone – Intercom- Public Address System: Each classroom in the school should be equipped with an integrated communication system that allows for receiving emergency and routine announcements, making local area calls and communicating with the main office, accessing voice mail service inside and outside the building, and directing emergency assistance calls to one or more designated areas. Offices and other specific designated areas in the building should be equipped with the same integrated system as listed above with the additional services that: allow local and long distance calls, the ability to switch calls to specific telephones after hours with voice mail services, and back-up emergency power for telephone, voice mail, and intercom services. The system should include adequate service for future expansion of telephones throughout the building. The intercom system should also provide for exterior building speakers. The building should have approved radio coverage for first responders within the building, in compliance with Federal Communications Commission rules for communication coordinated with the band frequencies of first responders. Radio frequency access control devices should be considered at primary points of entry that permit rapid entry by emergency responders.

- Clock and bell system: Each room should be equipped with a time display showing both hours and minutes. The display shall originate from a central electronic clock module that shall also control chime or tone system circuits and other time-based functions. The system should be capable of being corrected or re-programmed from the master clock module.

- Fire alarm and vandal alarm system: The school should be equipped with a fully code compliant smoke detection, alarm and sprinkler system. All equipment should be state of the art. Remote annunciator panels showing location of the source of the alarm shall be located near the administrative area and front door of the school and the custodial office. Upon activation of an alarm, an evacuation signal shall be transmitted to a central station monitoring service. The alarm shall signal until manually reset. Sprinkler heads should be

carefully located and positioned to prohibit tampering. Alarms should be easily heard throughout the building, outside the building and visual alarms should be provided as per code. All required fire extinguishers should be placed into recessed cabinets with the doors on audible local alarms.

To protect the building when it is unoccupied, each room shall be equipped to electronically monitor the normal "closed door" status. Interruption of the "closed door" status shall automatically initiate a silent alarm to the local police or other security agency. High value areas shall be equipped with additional sensing devices to detect the presence of an intruder.

Building Systems

- Code compliance: All construction associated with the Westside Elementary School shall be in compliance with local and state building, health and handicapped codes and safety/security regulations.

- Custodial storage: Custodial storage should be strategically located for convenience and efficiency of work.

- HVAC System: The heating, ventilating and air conditioning system (HVAC) shall be thoroughly studied so the most reliable, flexible and energy efficient system is provided. An alternate energy efficient source of hot water for domestic use shall be provided for summer operation so major boilers may be shut down during non-heating seasons.

  The HVAC system will be controlled by a computerized energy system located in the custodial office with access from outside the school. The building will contain "zones" for managing temperature control for day and evening functions.

  Connection to external emergency power sources should be provided to keep vital building components and areas functioning in an emergency.

  The HVAC system should have the following characteristics:
  - Should be able to provide uniform temperature in all areas of the teaching space.
  - Should eliminate drafts and cold areas.
  - Should provide superior ventilation in all rooms and bathrooms.
  - Should eliminate noise in the classroom from the systems.
  - Should be able to provide for varying degrees of humidity control.
  - Should provide unquestioned reliability.
  - Should be energy efficient.
  - Should ensure air quality standards; filtering air borne allergens to the extent current technology allows.

- Windows: Window frames and sash should be of a material that is maintenance free. The provision of glazing in the classroom is both an educational and psychological enhancement because it provides visual relief and outdoor observation opportunities. The provision of windows or glazing does, however, enable heat loss or gain and presents a vulnerable point

in security. Design features should minimize these effects. The provision of solar block glazing is desirable and should be considered in each room.

- Handicapped access: The building shall be in full compliance with state and federal handicapped codes and regulations. An elevator (if required) must be strategically located to ensure its suitability to meet current code requirements.

- Plumbing: The school should meet all code requirements for the number of toilet fixtures, sinks and drinking fountains. Lavatories should be strategically located. All fixtures should be of the heaviest duty, vandal resistant design and include automatic source for water closets, urinals and sinks in the student bathrooms. Adequate clean outs shall be provided and all restrooms must have floor drains. Piping should run in accessible pipe chases. Valves should be ball valves. Toilet partitions should be constructed of solid plastic with color all the way through the product, vandal resistant and equipped with heavy-duty hardware. Fixtures should be wall hung. The building should be divided into sections with isolation drain valves in each section.

- Electrical distribution: The school should meet all code requirements for electrical service. Each normally occupied space shall be furnished with numerous electrical convenience outlets located throughout the space for maximum flexibility of room layout and eliminating a need for use of extension cords. Power in each classroom should come from two sources, one for exclusive use of the technology infrastructure and the other for general use. Each electrical panel should have 25% free space to add future circuits. Emergency lighting should be on individual wall packs. All three phase motors should have phase protection. All exit signs should be L.E.D. type with cast housings and Lexan lenses.

  If the school is to be used as an emergency shelter, a source of emergency power should be considered so all utilities, the building cafeteria and gymnasium can function in an emergency.

- Exterior building structure: All windows should be high “e” insulated windows with screens. The exterior of the building (new construction) should be brick or pre-cast material to suit the ambiance of the setting of the school.

- Interior building products: Interior walls in the corridors should be brick, glazed block, epoxy paint or a suitable substitute material of high durability and ease of maintenance. Student lockers should be adequately sized to secure coats, book bags and other small items and be constructed of a heavy-duty material with heavy-duty hardware. Window covering should be a durable blind product capable of reducing the amount of light in classrooms when video demonstrations are conducted. Carpet, where used, should be of the highest quality, durable and void of any odors. It is recommended that heat sealed tiling be used for floor covering due to its ease of maintenance and support of air quality standards. Doormats or run-outs should be installed at all entranceways.

- Energy conservation: The school building plans should be reviewed by the Connecticut Light and Power Company and should comply in so far as possible with their energy rebate

program, to the extent this incentive is currently available. LEED standards should be applied to the school design as deemed appropriate and practical.

- Hardware: All hardware in the school should be heavy duty. Keying should be mastered with restricted key blanks. The key system (magnetic cards or fobs) shall automatically disallow entrance with regular keys after a specific time of day, when only the master key will operate the doors.

  All panic devices should be rim type with removable mullions rather than vertical rod type. All doors such as stairwell doors and corridor smoke doors should be held open with magnetic devices connected to the fire alarm system.

- Security System: An integrated security system should be designed to control and monitor visitor access to the building during school hours. The system should have direct connections to police, fire, and other security responders. The system should provide for visual verification of persons requesting access to the school building through the main office or a security office/kiosk; general parking and other areas of the school site should be considered for visual monitoring as recommended by architects and/or security specialists.

SITE CONSIDERATIONS

External

The outdoor facilities for the Westside Elementary School complex should provide for the following considerations:

1. Separate access to the building for bus transportation and parent vehicular traffic
2. Visitor and general parking for approximately 250 cars
3. Separate faculty and staff parking area for approximately 75 cars
4. Shade and ornamental trees with low maintenance ground cover and other low height plant material
5. New roads and driveways to accommodate parking areas, bus queue, and separate parent drop-off areas
6. Site lighting, utilities, storm drainage and snow plowing considerations, grading and landscaping in all construction areas
7. Fenced, attractive, sturdy school and cafeteria refuse pick-up areas with locking gates large enough to allow dumpster style trucks to enter (and with an area to accommodate bins recycling and for waste food
8. Outside, removable faucets at intervals to allow for window washing and maintenance of plantings
9. Well-lighted Parking areas and walkways to the parking areas
10. Athletic fields suitable for outdoor physical education activities along with soccer and softball with a walking/jogging trail around the perimeter of the field

11. School name in at least two outside locations, visible from both student and general public access roads and driveways

Internal

The following considerations should be made in the design of the interior features of new and altered portions of the building:

1. All electrical switches in hallways throughout the building to be key-type
2. Access to building operations [mechanical] systems to be restricted to designated users and these areas to be equipped with intruder detection systems integrated with the school security devices (annunciator panel)
3. Ceiling materials to be attractive, durable and noise reducing, as well as removable for utility access
4. All exit doors to be monitored through the administrative offices for controlling access to the building. Annunciator panels to alert office personnel to a breach of security
5. A security system design to control and monitor visitor access to the school
   A buzzer and video observation system controlled from the office and/or a security kiosk to control entrance to a main entrance vestibule where additional security clearance would be required for access to the school lobby. All materials used in this area to be bullet and blast resistant and designed in a manner as to thwart intrusion
6. Wire trays located above all spaces be large enough and have the capacity to handle additional wiring and cabling for future use
7. Drinking fountains to be handicapped accessible and not traffic restrictive
8. Recessed lighted display cases with lockable doors and adjustable shelving to be strategically located
9. Student lockers to be appropriately sized and located for the convenience of students in their grade level cluster
10. Classroom doors not to be recessed and, optimally, to swing 180 degrees
11. Each door to have a magnetic release for emergency evacuation or intrusion situations as well as a penetration resistant vision panel. Doors to be lockable from both sides, tamper resistant, and allow for quick release from the interior with one motion
12. Handicapped elevator service to be available with key type restricted operation should the building design require more than one level
13. Stairways/ ramps to be planned so students can move quickly from one classroom to another. All space under stairwells to be enclosed
14. All hallway bulletin and tack boards to be code compliant
15. Grade level color schemes by cluster to be different and distinguishable
16. All hallway windows to be code compliant
17. Signs for each room to be handicapped coded and set into a space to prevent removal, except by maintenance personnel
18. Exit signs to be code compliant and areas of refuge to be located strategically in selected stair areas

Environment

1. Acoustics: All classroom and hallway space to be constructed to minimize noise that would interfere with the teaching and learning process. Attention to be given identified areas for special acoustical treatment
2. Air quality: The building to be fully air-conditioned with adequate controls to shut down or reduce service when rooms will be unoccupied for significant periods of time. Increased attention to be given to minimize dust and air borne particles that may affect allergic reactions
3. Well-controlled heat, cooling and humidity systems to accommodate large technology infrastructure and operating system
4. Flooring: Each room's flooring to be specific to its use. Tile to be of high quality and easily replaced (roll tile with heat seal seams preferred). Carpeting, where installed, to be of high density, mold resistant fabric that is easily repaired
5. Hallways: Hallways to be acoustically treated to lessen traffic noise. Lighting in hallways to be recessed
6. Hallway surfaces to be bright and finished with an epoxy (or similarly durable) glaze for ease of maintenance
7. Aesthetics: The interior design and color scheme of the building to be inviting and comfortable to immerse persons entering the building in a warm atmosphere that celebrates student learning through color, sound, and creative displays of student work and achievements

Outdoor Areas for Learning, Athletics, and Support

Learning, athletics and support spaces allow for multiple fields and play areas to be utilized by students and community members. Storage areas are essential to safely house school and Parks and Recreation equipment. Parking areas and traffic flow patterns need to accommodate large volumes of traffic.

1. Multiple field and play areas to support the physical education program, community sports, activities, outdoor education, and play
2. Gym accessible to playing field
3. Access to secured storage for outdoor activities and school sponsored athletics
4. Separate secure storage for school and Parks and Recreation equipment
5. Direct access to field for outdoor activities and school sponsored events
6. Electrical outlets and water to each outdoor learning area designed for easy supervision and safety
7. Water fountains
8. Landscaping to include shade trees and student garden areas
9. Separate traffic flow for busses and individual drop-off and pick-up
10. Handicap accessible drop-off, pick-up and parking at front entrance
11. Well-lit parking, roads, and driveway areas
12. Adequate parking for staff and visitors
13. Cost effective irrigation for fields
14. Outdoor learning area for classes to meet for special projects or activities requiring more space than classrooms or other interior learning spaces provide

APPENDICES

A. – Enrollment Projections (Milone & McBroom)
B. – Planning Committee
C. – School Facilities Task Force
D. - Stakeholder Group

Groton School District Comprehensive School Enrollment Study

February 2014

Prepared for:

Groton School District

Prepared by:

Milone & MacBroom®

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Introduction

Groton School District contracted with Milone & MacBroom, Inc. to conduct a comprehensive school enrollment analysis and to develop enrollment projections for the school district. The district-wide and school-specific projections in this report are meant to serve as a planning tool for the ongoing budget process and facility study as well as to represent the most likely direction of Groton School District enrollment over the next ten years.

This report examines factors that influence school enrollments, namely trends in demographics, births, housing and development, and private school enrollments. These trends are accounted for in the methodology used to project district-wide enrollments on a grade-by-grade level. As with any enrollment projection report, Groton School District should pay close attention to the variables that are discussed in this report, as changes can impact enrollment. Through annual updates, enrollment projections can be fine-tuned to increase accuracy, providing Groton School District with an on-going planning tool to assist them in determining the future direction of the district.

Demographic Overview

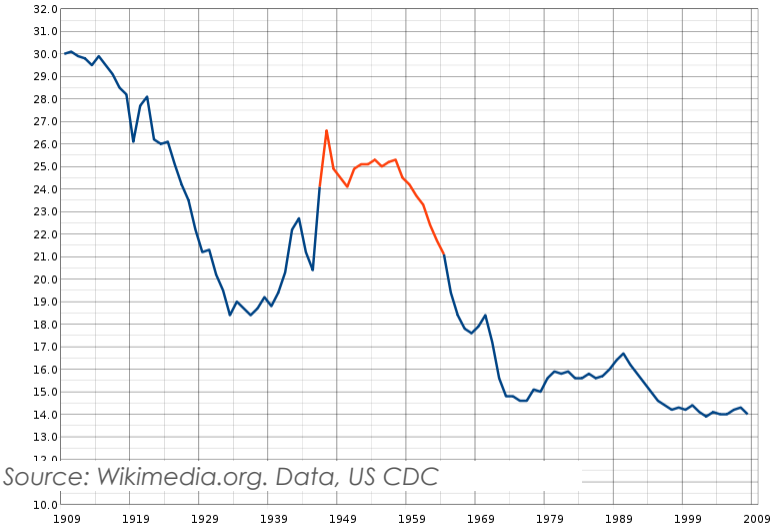
Following the nation's public school enrollment back over the last half century reveals demographic, economic, and social changes. The United States as a whole continues to undergo population shifts in public student enrollment, driven by past events including the baby boom, echo baby boom, sprawl and the development of suburbs, changing workforce composition, and technological advances. The baby boom of the late 1940s and 1950s was followed by the baby bust of the 1960s and 1970s. This gave rise to the echo baby boom of the 1980s, followed by the echo baby bust of the 1990s (see Figure 1). Nationally, districts are experiencing the enrollment declines from the echo baby bust. Looking back, the baby bust of the 1960s and 70s lead to a rapid downsizing of the American family and the subsequent decline in school enrollment of the 1970s and 1980s. According to the 2010 Census, the size of a family as well as birth rate was at an all-time low in 2010.

According to the U.S. Census Bureau, Groton's population increased by 0.5% from 2000 to 2010. This is compared to a 5.8% increase for New London County and a 4.9% increase for the State during the same time period. While there are many rural communities in New London County, both Norwich and New London, communities more similar to Groton in terms of size and character, experienced significantly stronger growth than Groton from 2000 to 2010. Norwich gained 12.1% and New London 7.6% in that time period. However, recent growth in Norwich and New London contrasts with population decreases in those cities from 1970 to 2000, when Groton's population was continuously growing slowly.

Change in population within the Town of Groton has not been evenly dispersed throughout the community. Map 1 shows changes in population at the Census Block Group level from 2000 to 2010. Note that due to changes in Census geographies, some Block Groups were merged in order to compare like areas. Areas traditionally housing

military families in the northwest corner of the Town lost population, as well as Groton Long Point and Noank, while other areas in central and northeastern Groton experienced growth in population. Denser population centers are located throughout the community, especially in the City of Groton, in the areas of military housing developments, and areas of Mystic. Population density for 2010 by Census Block Group is shown in Map 2.

Figure 1: US Birth Rates 1909-2008, with Baby Boom Period Highlighted



Source: Wikimedia.org. Data, US CDC

In contrast to State and regional trends, Groton's population did not significantly age between 2000 and 2010. The median age in Groton was only 33 in 2010, up just 1.5% from 2000 figures. These numbers reflect the influence of navy personnel and their families on the demographics of Groton. The median age for the State in 2010 was 40, up 7% from 2000.

Looking more specifically at changes in population by age cohorts within Groton, it is evident that Groton has experienced a loss in children and young working age population, despite its relatively stable median age. Figure 2 shows changes by age groups from 2000 to 2010. The increase in 18- to 24-year old population and the sizeable 25- to 34-year old population maintain a relatively young median age. The loss of children and increase in older age groups evident in Figure 2 has implications on facilities and service planning for the Town.

The Connecticut State Data Center at the University of Connecticut and the Connecticut Department of Transportation have both projected populations for Groton. The projections are shown in Figure 3. The projections show either overall continued stability in the population over the next ten years, or a gradual decline.

A significant decline in the population under 18 can have an impact on a community's school system, especially if certain neighborhoods are declining much faster than others. Figure 2 shows Town-wide changes in population by age cohort, and Map 3 shows change in school age population (ages 5-19) at the Census Block Group level from 2000 to 2010. While most of the comparable Block Groups experienced a decline in school age population, West Pleasant Valley, West Mystic and areas of Poquonnock Bridge experienced an increase in this age group.

FIGURE 2

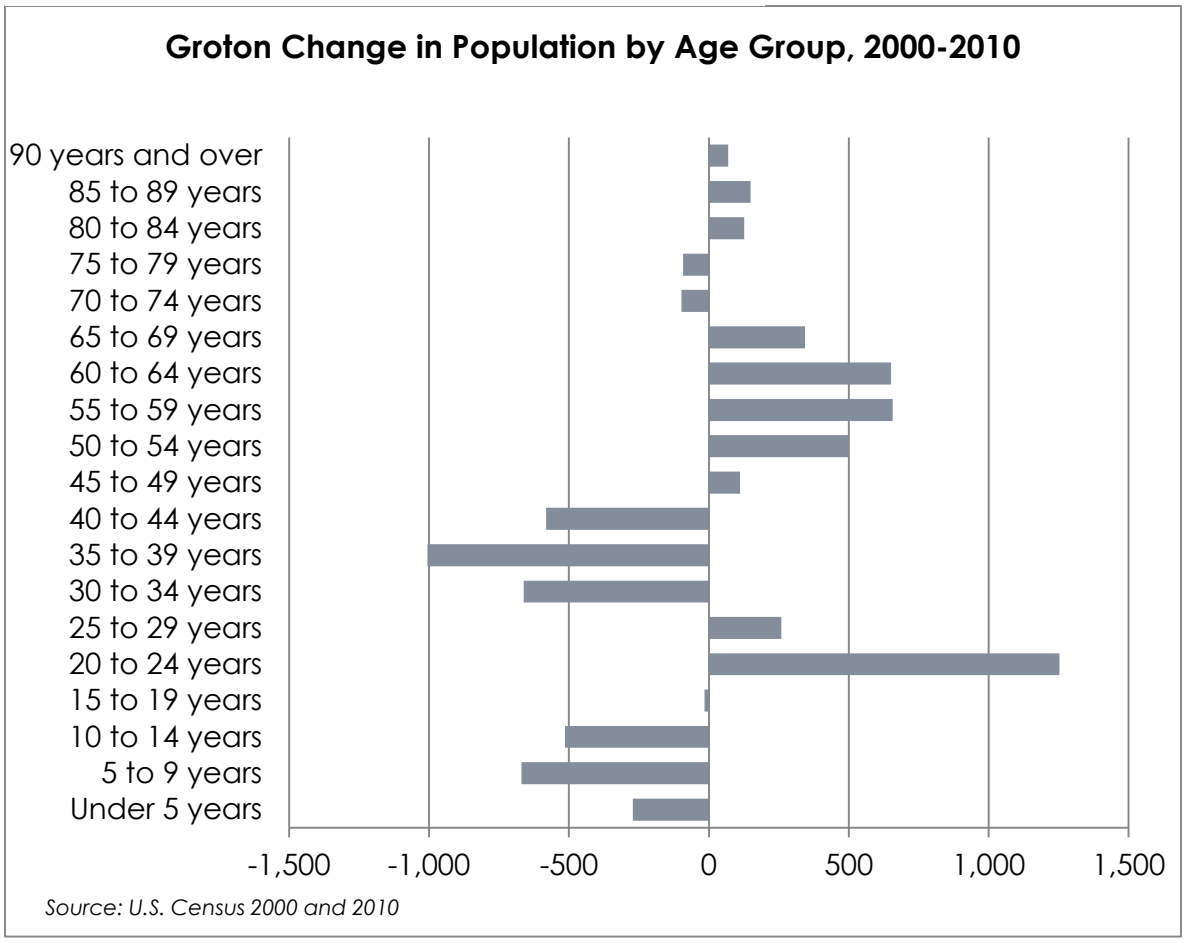
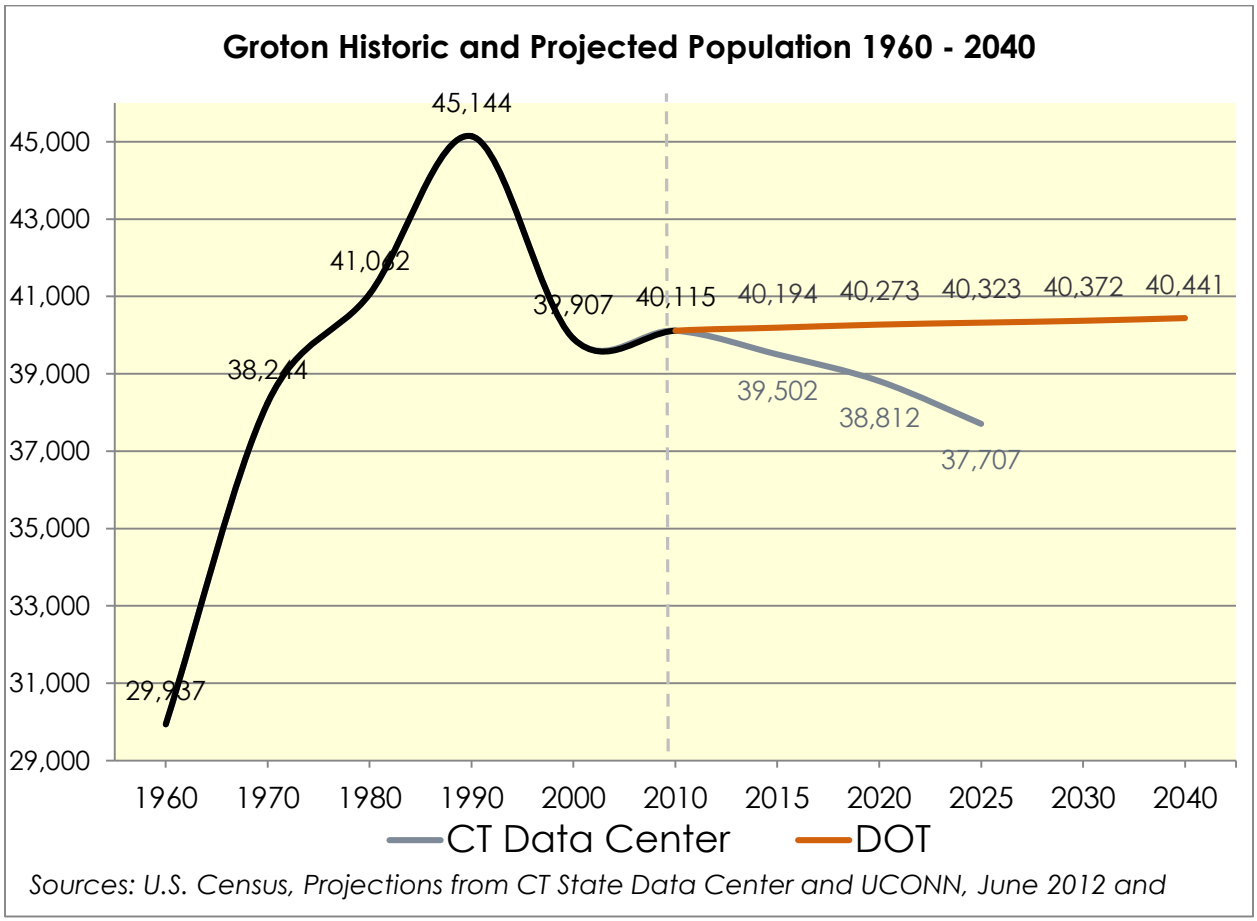


FIGURE 3



ECONOMIC AND EMPLOYMENT TRENDS

Over the past several years, New London County has seen its total employment decline by -4.4% as the region struggled through the most recent economic recession. The goods producing industries of construction and manufacturing were particularly hard hit, experiencing employment declines of -10.8% and -15.8%, respectively. Service producing industries as a whole only declined by -2.5%, although specific industries within the service producing realm saw much more significant declines. Information services had a decrease in employment of -29.4% between 2006 and 2011, and administrative & waste management; finance, insurance and real estate (FIRE); and government sectors all experienced significant declines in employment as well.

There were several economic bright spots in this data, however. The management of companies sector grew by 36.9% during the recession, and the wholesale trade sector increased its employment total by 30.3%. The transportation & warehousing; health care & social assistance; and accommodation& food service sectors also experienced strong gains in employment. The health care and social assistance sector had the largest numerical increase, adding 1,650 new jobs. Finally, the farming sector experienced a 3.6% increase in employment, although the raw number of new employees was still quite small in comparison to other larger employment sectors.

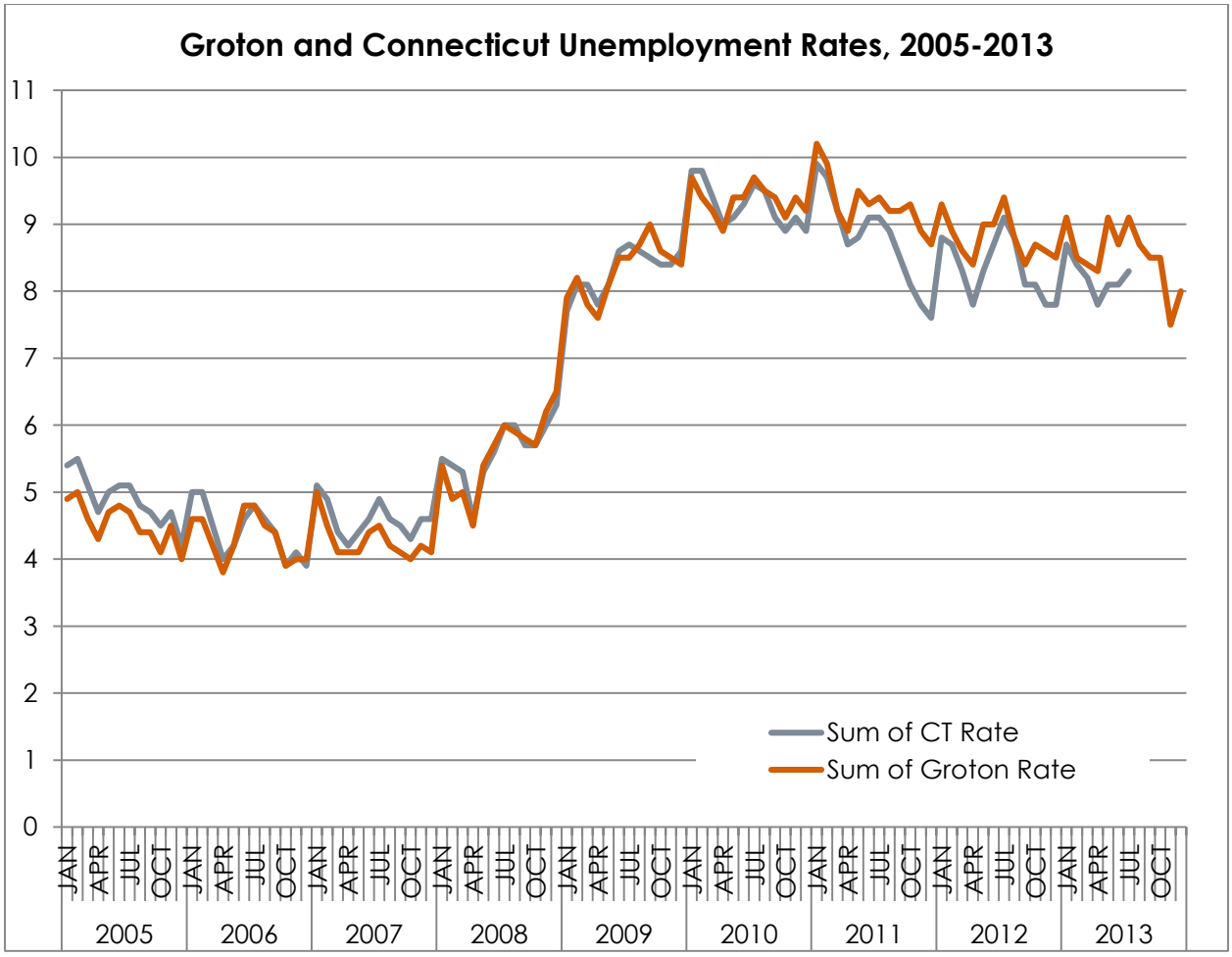
Unemployment rates are strongly tied to both housing sales and births, and so the expected continued elevated unemployment figures for the next several years suggest that housing sales and births may continue at lower levels.

According to State Labor Market Information, these terms are defined as follows:

> "Labor force measures are based on the civilian noninstitutional population 16 years old and over. People with jobs are counted as employed. People who are jobless, looking for jobs, and available for work are regarded as unemployed, and people who are neither employed nor unemployed are considered not in the labor force. The unemployment rate represents the percentage of the labor force that is unemployed. Annual average data is published after benchmark revisions are made."

The unemployment rate does not capture people who are institutionalized, cannot work due to a disability, or are otherwise not in the labor force. It also counts anyone over the age of 16 having any job as being employed, and so includes people who may be working part-time or underemployed. These are important caveats to using this data.

FIGURE 4



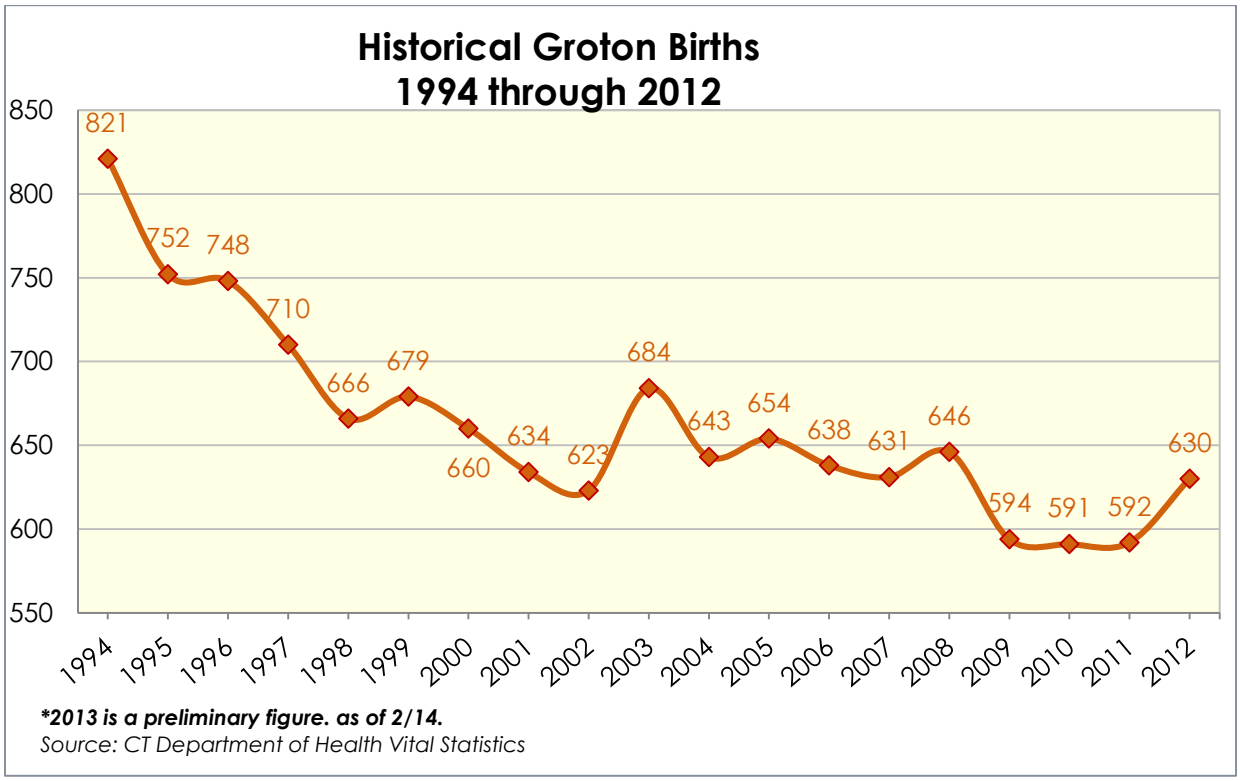
As shown in Figure 4, unemployment rates in Groton have fairly closely followed total Connecticut unemployment rates. Between 2008 and 2009, during the start of the Great Recession, the unemployment rate in Groton increased from an average between 4% and 5% to over 9%. Over the past three years, unemployment rates are very gradually beginning to decline, with rates averaging between 8% and 9% in 2013.

Birth Trends and Projections

During the early to mid-2000s, annual births in Groton were generally above 630, with a recent peak of 684 in 2003 (see Figures 5). The annual birth rate began to decline during the second half of the 2000s, and in 2009, the number fell below 600 births per year and has averaged fewer than 600 births per year until 2011. In 2010, the lowest number of births in the last 15 years occurred, with only 588 children being born. Preliminary data for 2012 indicate that births may be rebounding.

The Census Bureau recently lowered its national population projections partially as a result of lower forecasted birth rates. In addition, some demographers have suggested that as more women enter college, and more households and families increasingly rely on female earnings, fertility rates may remain low.[1]

Figure 5



[1] Mather, Mark. 2012. *Fact Sheet: The Decline in U.S. Fertility*, Population Research Bureau.

Childbearing-Age Women

Table 1 below illustrate the historical data for the number of childbearing women in Groton for the years 2000, 2005, and 2010 and the projected number of childbearing women for the years 2015, 2020, and 2025. The number of childbearing age women in Groton is projected to decrease by 17.3% between 2010 and 2025. The age cohorts with the highest fertility rates (ages 20-34) are expected to decrease substantially as well.

TABLE 1

Trend of Childbearing-Age Females Aged 15 to 49 Years Groton, 2000-2025							
	History		Projections			2010-2025 Change	
Age Group	**2000**	**2010**	**2015**	**2020**	**2025**	**Number**	**Percent**
15 to 19 years	1,032	1,013	735	619	802	-211	-20.8%
20 to 24 years	1,357	1,401	869	591	475	-926	-66.1%
25 to 29 years	1,613	1,695	1635	1103	826	-869	-51.3%
30 to 34 years	1,626	1,244	1924	1864	1334	90	7.2%
35 to 39 years	1,537	1,086	1076	1754	1694	608	56.0%
40 to 44 years	1,389	1,111	846	836	1512	401	36.1%
45 to 49 years	1,205	1,227	890	627	617	-610	-49.7%
TOTAL	**9,759**	**8,777**	**7,975**	**7,394**	**7,260**	**-1,517**	**-17.3%**
Source: US Census, CT State Data Center							

However, CT State Data Center projections do not accurately capture the mobility of the population at the Navy Sub Base. The young adult cohort of 18-24 especially has grown in Groton over the last ten years, but the population associated with the Sub Base may not become permanent residents of Groton.

Calculation of Births

With the projected number of childbearing women by age cohort for Groton and the two sets of fertility rates by age cohort, we are able to produce two sets of projected birth data for the years 2015, 2020, and 2025, as well as an estimate of what the births would have been projected to be in 2010 using this methodology. Table 2present the projected number of births by age cohort for each of the four selected points in time using the national-level fertility rates, along with a summary of the total births projected using the previously calculated Connecticut fertility rates.

TABLE 2

Calculation of Births Based on the Number of Childbearing Age Women and US Age-Specific Fertility Rates, Groton, 2010-2025						
	Projections				2010-2025 Change	
Age Group	**2010***	**2015**	**2020**	**2025**	**Number**	**Percent**
15 to 19 years	24	15	13	16	-7	-30.9%
20 to 24 years	105	61	41	33	-72	-68.2%
25 to 29 years	179	171	115	86	-93	-51.9%
30 to 34 years	124	193	187	134	10	7.9%
35 to 39 years	48	50	82	79	31	65.5%
40 to 44 years	10	8	8	14	4	34.6%
45 to 49 years	1	1	0	0	0	-49.7%
Births estimated by US fertility rates	**491**	499	447	363	-128	-26.0%
Births by 20-34 years	409	425	344	254	-155	-37.9%
% of total births	83.17%	85.23%	77.00%	69.78%		
*Projected here to test the model. Actual number is used for enrollment projections						

Calculation of Births Based on the Number of Childbearing Age Women and CT Age-Specific Fertility Rates, Groton, 2010-2025						
	Projections				2010-2025 Change	
Age Group	**2010***	**2015**	**2020**	**2025**	**Number**	**Percent**
15 to 19 years	19	14	12	15	-4	-20.8%
20 to 24 years	82	51	34	28	-54	-66.1%
25 to 29 years	152	146	99	74	-78	-51.3%
30 to 34 years	136	210	203	145	10	7.2%
35 to 39 years	61	60	98	95	34	56.0%
40 to 44 years	13	10	10	18	5	36.1%
45 to 49 years	0	0	0	0	0	-49.7%
Births estimated by CT fertility rates	**462**	491	456	375	-87	-18.9%
Births by 20-34 years	369	407	336	247	-122	-33.0%
% of total births	79.85%	82.85%	73.73%	65.90%		
*Projected here to test the model. Actual number is used for enrollment projections						

When the models using the age-specific fertility rate analysis are used to "predict" births for 2010, the predicted number of births are over 100 births below the actual number of births for that year (591). The initial influx of young men and women in the 18-24 age range due to the Sub Base inflates the numbers of total births. While it is

common for these young base families to have children during their time with the Base, many do not reside in Groton long enough for their newborns to attend Groton Public Schools in five years' time. Due to the inability of the age-specific fertility rates to accurately account for the number of births in Groton, a mathematical model was used instead to predict future births.

Projection of Groton School District Births – Comparative Analysis

Milone and MacBroom generated a mathematical 5 year moving averages model to compare to the projections based on the fertility rates. Table 3 compares the three different sets of birth projections. In addition, an average of the three sets of projections was also calculated and presented in Table 3 as a point of comparison. As the table illustrates, the projected number of births under both the US and CT fertility rate models mirror one another relatively closely, but are far below even historic lows for the Town. In part due to the impact of the families at the Sub Base, a mathematical projection using a 5-year moving average was used instead. These projections show a stabilization of the birth trend through 2020.

TABLE 3

COMPARISON OF 3 SETS OF BIRTH PROJECTIONS BY DIFFERENT METHODS AND ASSUMPTIONS						
GROTON SCHOOL DISTRICT, 2015-2025						
	HISTORY			PROJECTIONS		
METHODOLOGY	2000	2005	2010	2015	2020	2025
MMI MATHEMATICAL PROJECTION (5 YEAR MOVING AVERAGE)	660	654	591	605	608	
POPULATION PROJECTIONS US FERTILITY RATE	660	654	591	499	447	363
POPULATION PROJECTIONS CT FERTILITY RATES	660	654	591	491	456	375

Births based on the 5-year moving average were considered to be the most probable, and therefore were used for this analysis. Table 4 shows the known and projected births per year, used for the following enrollment projections.

TABLE 4

Known Births and Birth Projections by Year													
YEAR	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BIRTHS	646	594	591	592	630	611	604	605	608	612	608	607	608

HOUSING

The amount of housing in Groton has increased at a higher rate than the population for the last ten years. As shown in Table 5, between 2000 and 2010 the total population of Groton grew by 0.5% and housing units grew by 6.8%. Groton's average household size declined slightly during the same period, from 2.41 in 2000 to 2.31 in 2010. This number is lower than the average for New London County (2.51) or the State average (2.52). The County, State, and nation have also seen declining average household size during the last ten years.

TABLE 5

Summary of Population and Housing Change						
	2000 Census Population	2010 Census Population	% Population Change	2000 Housing Units	2010 Housing Units	% Housing Unit Change
Groton	39,907	40,115	0.5%	16,820	17,978	6.8%

The growth in housing units is at a slightly higher rate than the growth in households in Groton, as shown in Tables 5 and 6. Between 2000 and 2010, Groton gained 336 households, or 2.2%. The largest increase among household groups was among nonfamily households at 14.2%, which includes people living by themselves. Family households decreased during the period, at -4.4%; however, families with children under age 18 decreased by -11.2%.

TABLE 6

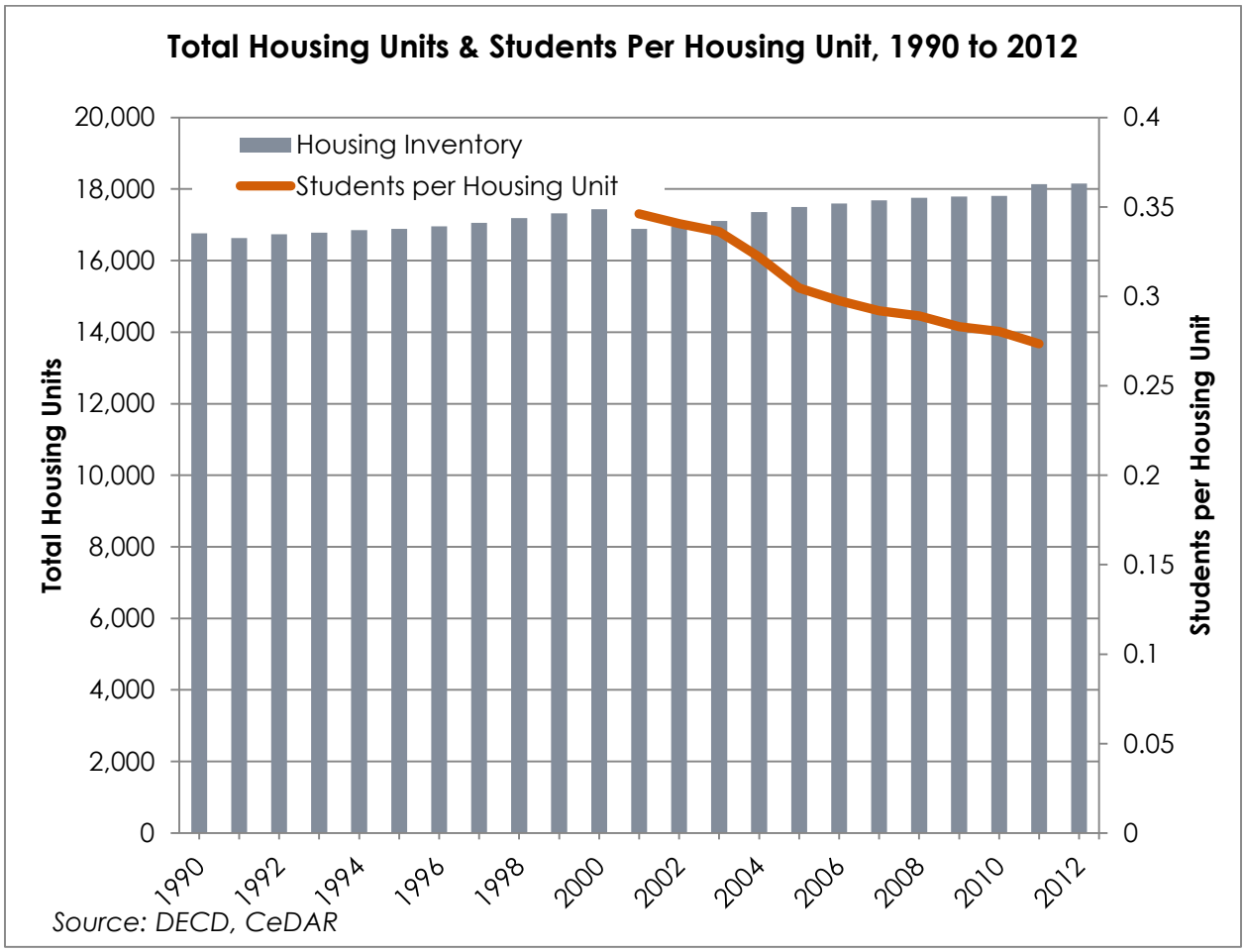
Household and Family Composition				
Groton	**2000**	**2010**	**Change**	**Percent Change**
Total households	15,473	15,809	336	2.2%
Family households	9,977	9,534	-443	-4.4%
With related children under 18 years	5,385	4,782	-603	-11.2%
Nonfamily households	5,496	6,275	779	14.2%
Average household size	2.41	2.31	-0.1	-4.1%
Average family size	2.99	2.94	-0.05	-1.7%

Total housing units had an overall slight upward trend, growing by about 1,158 units between 2000 and 2010. Comparing the number of housing units to student enrollments shows that the students per unit have been decreasing recently, from 0.346 students per unit in 2001 to 0.273 students per unit in 2011. Map 4 shows total change in households between 2000 and 2010.

TABLE 7

	2000		2010	
	Occupied Housing Units	Owner Occupied Units	Occupied Housing Units	Owner Occupied Units
Groton	15,473	7,815	15,809	8,153
Source: US Census				

FIGURE 6



Housing Starts and Permit Activity

While Census data is useful to show general housing trends, the location and extent of actual housing sales and construction, along with the type of this activity, is a more relevant indicator for school enrollments. As shown in Figure 7, new residential construction permits recently experienced an anomalous boom in 2004 at 265 units,

followed by a steep decline in the years since. During the Great Recession, permit activity was cut in half from 2008 to 2009, and have continued to decline to 17 in 2011 and 20 in 2012. It is helpful to remember that any new large scale development would take a minimum of five years from proposal to move-in ready and so the effect of any yet unknown developments will not likely impact enrollments during the projection window.

FIGURE 7

Housing Sales

Housing sales were high throughout the 2000s and then dipped after 2008. With some fluctuations, Groton housing sales have been largely stable for the last five years at around 350 sales per year.

Median housing sales prices in Groton and the neighboring communities have relatively stable for the last 10 years, with only a small dip in 2008. Average single-family house prices have remained between $200,000 and $275,000 since the early 2000s. Compared to the neighboring communities in New London County, Groton offers a more affordable housing alternative for single-family houses than Stonington, more expensive housing than New London, and roughly comparable housing to Ledyard and Waterford.

FIGURE 8

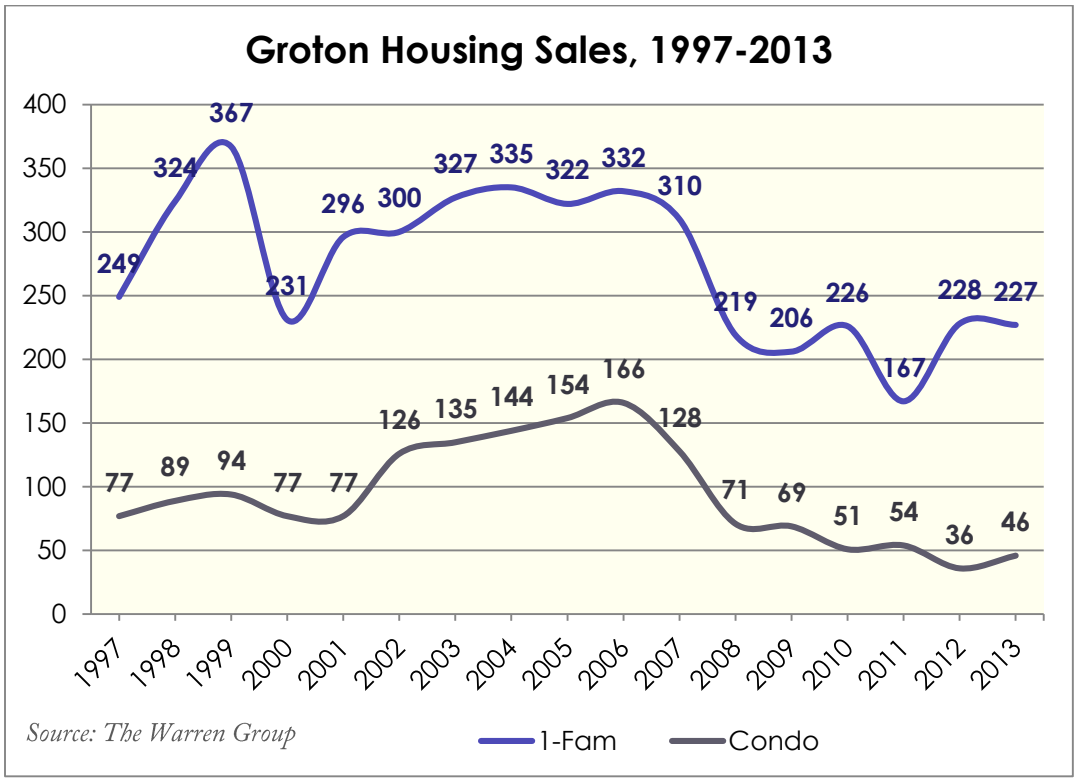
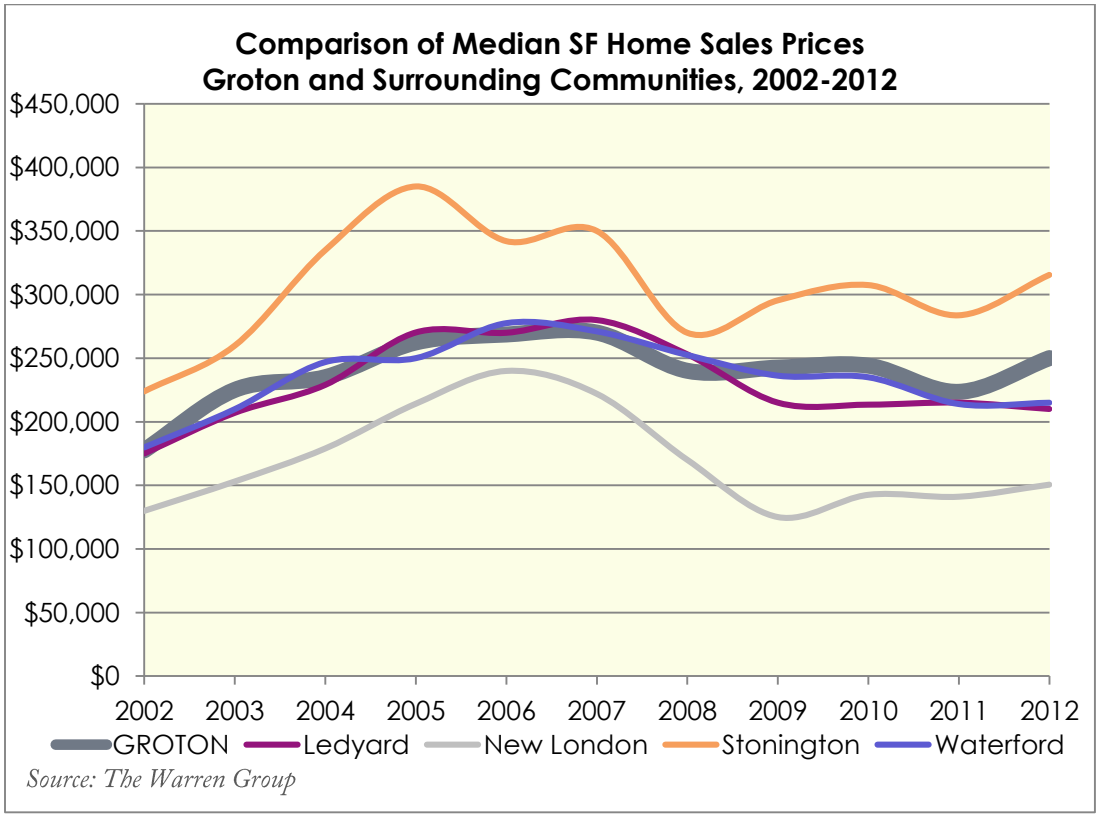


FIGURE 9



As is the case with many Connecticut communities, ownership by those over age 65 has increased throughout Groton slightly by 6.14% between 2000 and 2010 (from 27.7% to 29.4%), as the median age increased by about 6 months from 32.5 to 33 (compared to the Connecticut average of 40.0). This aging of the population is coupled with a much larger decrease in the number of householders between 25 and 44 by 28.4% in Groton, from 31.7% in 2000 to 22.7% in 2010.

Enrollment History & Trends

Enrollments for Groton School District have been steadily declining from 2002 (5,719 students) until 2013 (4,668 students), with a median of 5,147 students during that period. These stable enrollments occurred during a time of largely static population and labor force. The enrollment trends are reflective of a period with an overall decline in births in Groton School District. From 1994 to 1998, births fell steeply from 821 to 666, an 18.9% drop in five years. The next ten years, from 1999 to 2009, showed a slower decline with fluctuations from 679 in 1999, to 684 in 2003, and down to 646 in 2008. From 2009 to 2011 births experienced another steep drop down to the 590s, an 8% drop in one year due to the Great Recession. The latest full-year data available for 2012 shows signs of a rebound, with births climbing back to 630.

Total PreK-12th grade enrollments fell below the historic median in 2008, and have decreased by an average of 78 students each year since then. Enrollments declined in part due to declining births for the five years that precede this period. Low births will affect total enrollments until the recent rebound in children born in 2012 enter Kindergarten in 2017.

FIGURE 10

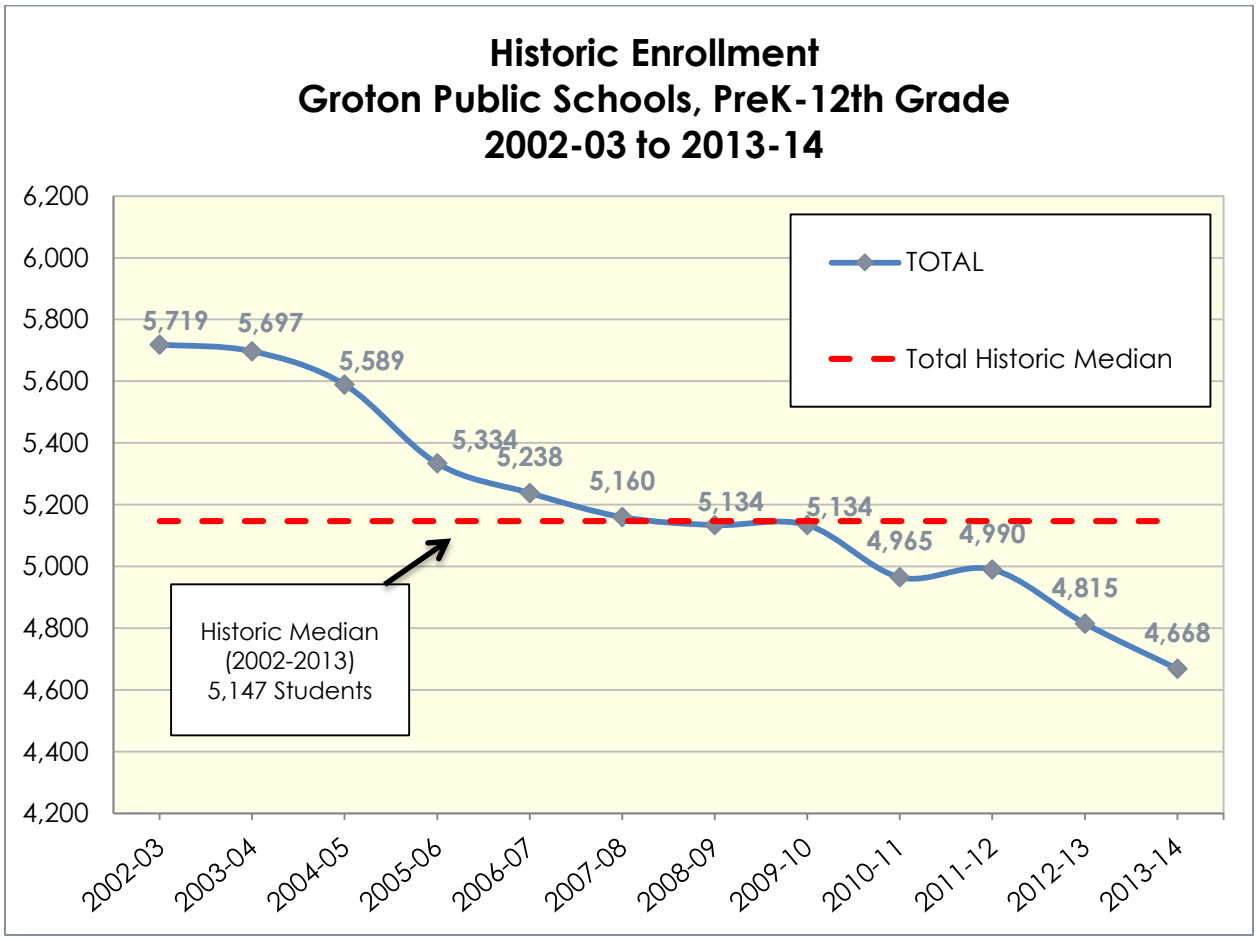


Table 8 shows by-grade historic enrollments for the district, along with births five years earlier. Overall, births have been falling since 1997, with the exception of a a year of relatively high births in 2003. The number of kindergarteners entering the system compared to the number of births in Town five years prior is typically about 200 children fewer, indicating the level of out-migration of families in the area, including families at the Navy Sub Base.

TABLE 8

Groton School District Enrollments 2002 - 2013																	
School Year	Birth Year	Births	K	1	2	3	4	5	6	7	8	9	10	11	12	PK	TOTAL
2002-03	1997	710	479	462	485	432	458	452	439	450	403	348	397	323	307	284	5,719
2003-04	1998	666	480	455	444	453	435	437	457	416	434	372	345	403	276	290	5,697
2004-05	1999	679	493	440	409	423	432	391	413	435	413	401	348	336	391	264	5,589
2005-06	2000	660	473	458	393	382	376	407	390	390	410	390	382	333	295	255	5,334
2006-07	2001	637	453	430	441	372	372	358	409	379	379	374	371	363	285	252	5,238
2007-08	2002	621	429	428	412	401	372	353	367	381	376	361	346	383	323	228	5,160
2008-09	2003	683	480	407	411	405	393	361	335	363	373	342	343	329	374	218	5,134
2009-10	2004	643	480	407	411	405	393	361	335	363	373	342	343	329	374	218	5,134
2010-11	2005	654	443	453	389	369	379	365	356	338	324	313	326	335	297	278	4,965
2011-12	2006	640	492	436	417	391	360	352	341	342	354	273	322	338	329	243	4,990
2012-13	2007	630	456	466	408	382	378	348	335	309	333	285	282	318	326	189	4,815
2013-14	2008	644	460	422	421	387	365	360	308	323	297	285	275	268	295	202	4,668

The following figures show Groton School District's historic enrollments. In general, the system has experienced a 14% decrease in elementary enrollments between 2002 and 2008, and has been roughly stable at the elementary historic median of 2,677 since then. The middle school enrollments have declined steadily, falling 28% from 2002 to 2013. After staying at roughly the historic median of 1,388 students from 2002 to 2009, high school enrollments dropped precipitously 19% from 2009 to 2013.

FIGURE 11

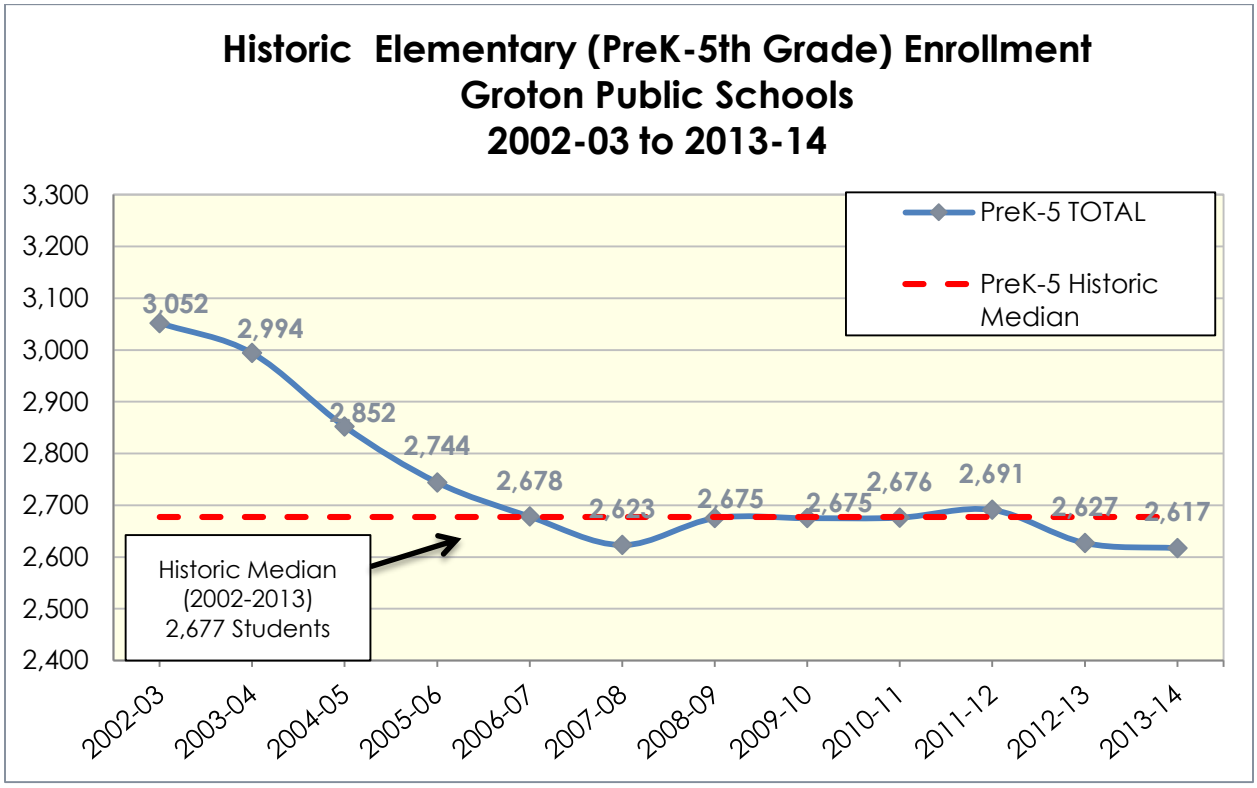


FIGURE 12

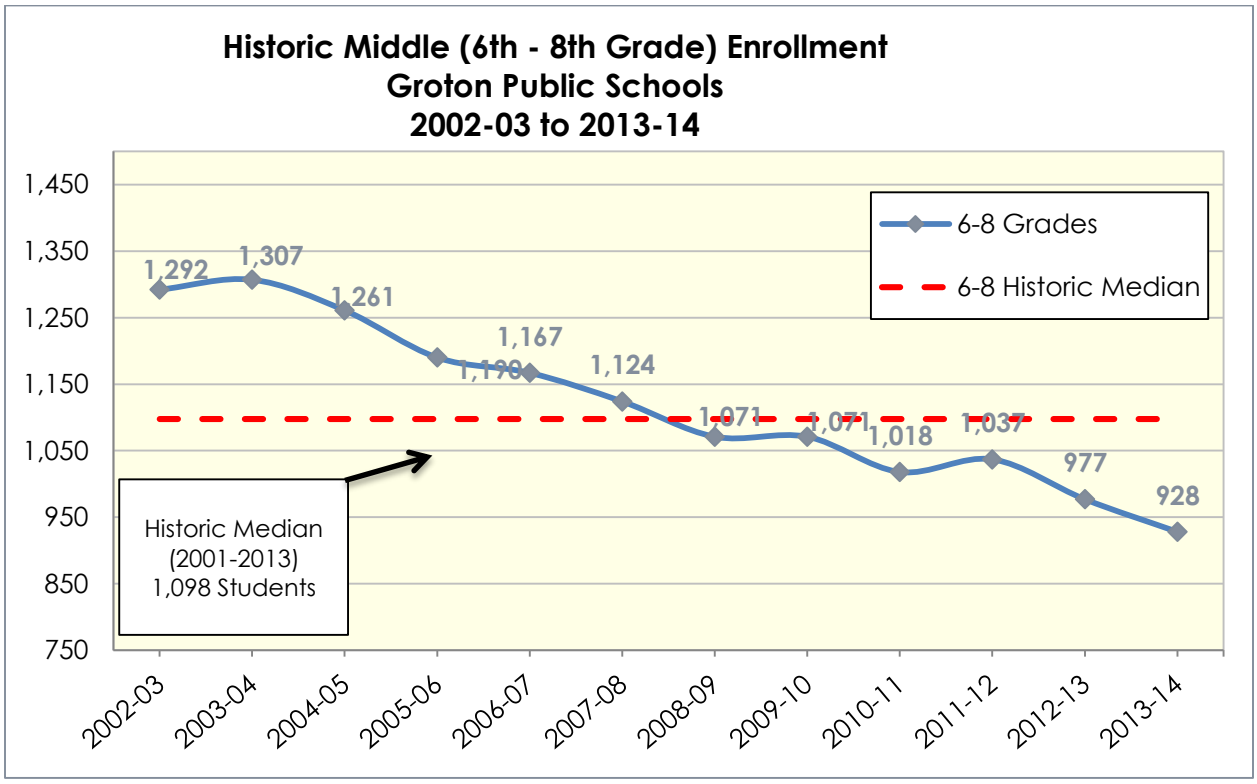
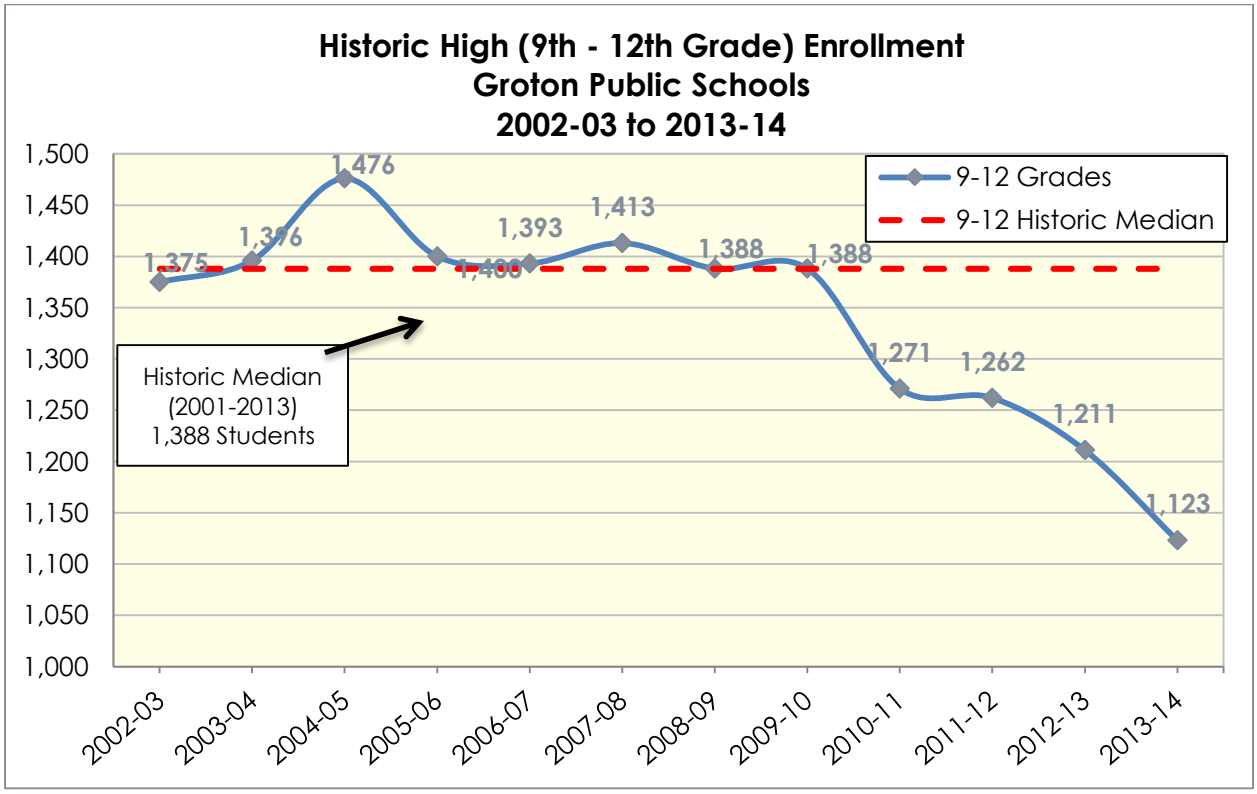


FIGURE 13



Elementary students in Groton Public School District attend one of of seven elementary schools: Charles Barnum, Catherine Kolnaski, Claude Chester, Mary Morrison, Northeast Academy, Pleasant Valley, and S.B. Butler, with Catherine Kolnaski operating as an intra-district magnet school. Catherine Kolnaski and Northeast Academy are new schools as of 2008, the same year that two other schools were closed, as shown in Table 9. Overall, enrollments at each school have been relatively stable with minor fluctuations, with the exception of 26% drop in enrollment at Catherine Kolnaski between 2011 and 2012. When comparing enrollment trends from 2013-14 to prior years, it is important to note that a system-wide redistricting occurred in 2012. Adopted elementary school boundaries are shown in Map 5.

TABLE 9

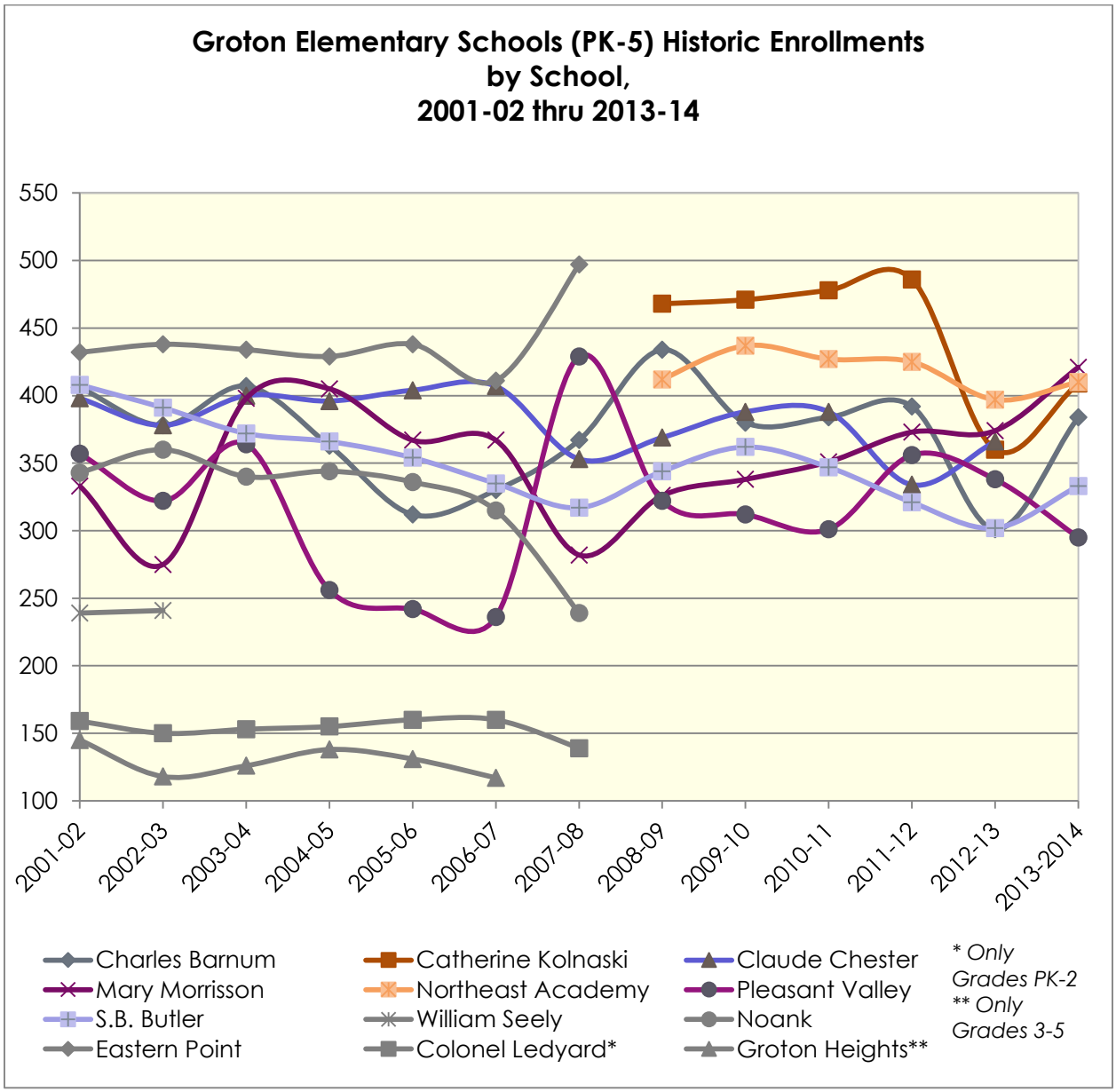
Historic Elementary School Enrollments (PK-5)

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-2014
Charles Barnum	406	378	407	363	312	330	367	434	380	384	392	301	384
Catherine Kolnaski								468	471	478	486	360	409
Claude Chester	398	378	400	396	404	407	353	369	388	388	334	366	365
Colonel Ledyard*	159	150	153	155	160	160	139						
Eastern Point	432	438	434	429	438	411	497						
Groton Heights**	145	118	126	138	131	117							
Mary Morrisson	333	275	398	405	367	367	282	326	338	351	373	374	421
Noank	343	360	340	344	336	315	239						
Northeast Academy								412	437	427	425	397	410
Pleasant Valley	357	322	364	256	242	236	429	322	312	301	356	338	295
S.B. Butler	408	391	372	366	354	335	317	344	362	347	321	302	333
William Seely	239	241											
TOTAL:	**3,220**	**3,051**	**2,994**	**2,852**	**2,744**	**2,678**	**2,623**	**2,675**	**2,688**	**2,676**	**2,687**	**2,438**	**2,617**

***Only grades PK-2**

****Only grades 3-5**

FIGURE 14



Changes in non-public school enrollment and regional public school enrollments are also influencing total enrollment at Groton School District. Figure 15 shows a slightly decreasing rate of private and parochial school enrollments in the region. Enrollments of resident students in other public schools has been increasing during the same period, as shown in the Figure 16, accounting for 385 students in 2010-11. Many of these students are High School students who attend the Technical High School. It should be noted that the magnet programs in New London are attracting an increasing number of Groton residents.

FIGURE 15

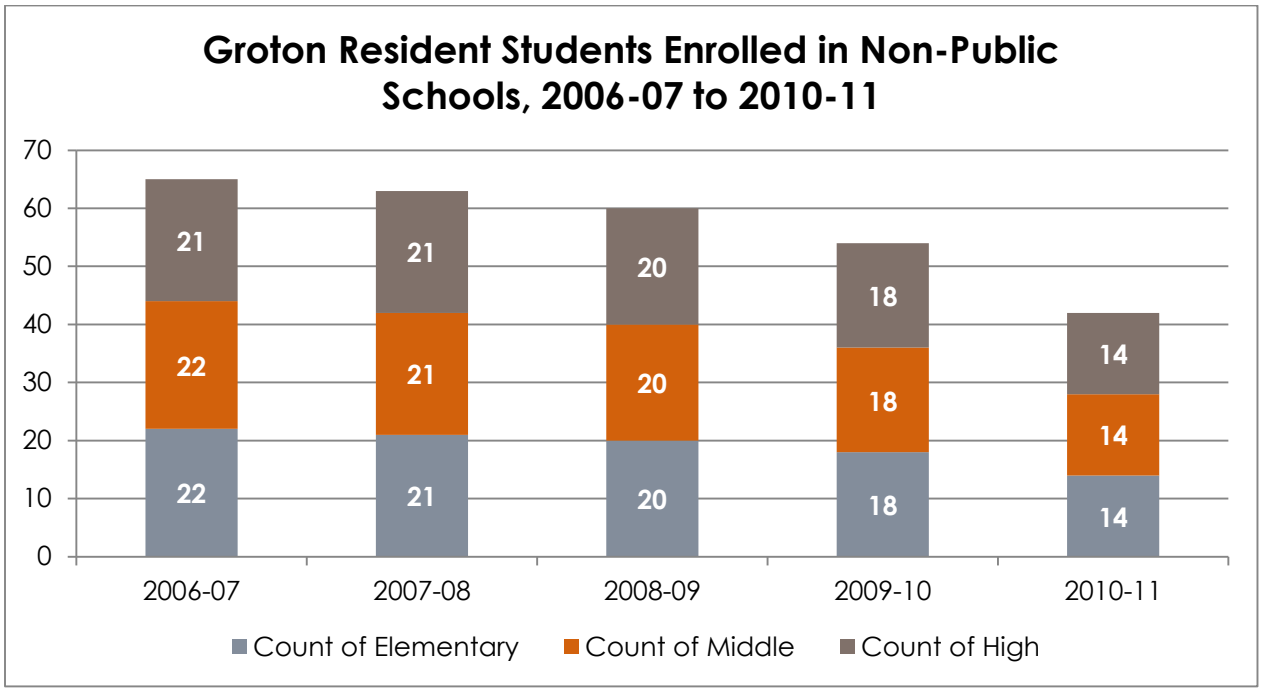
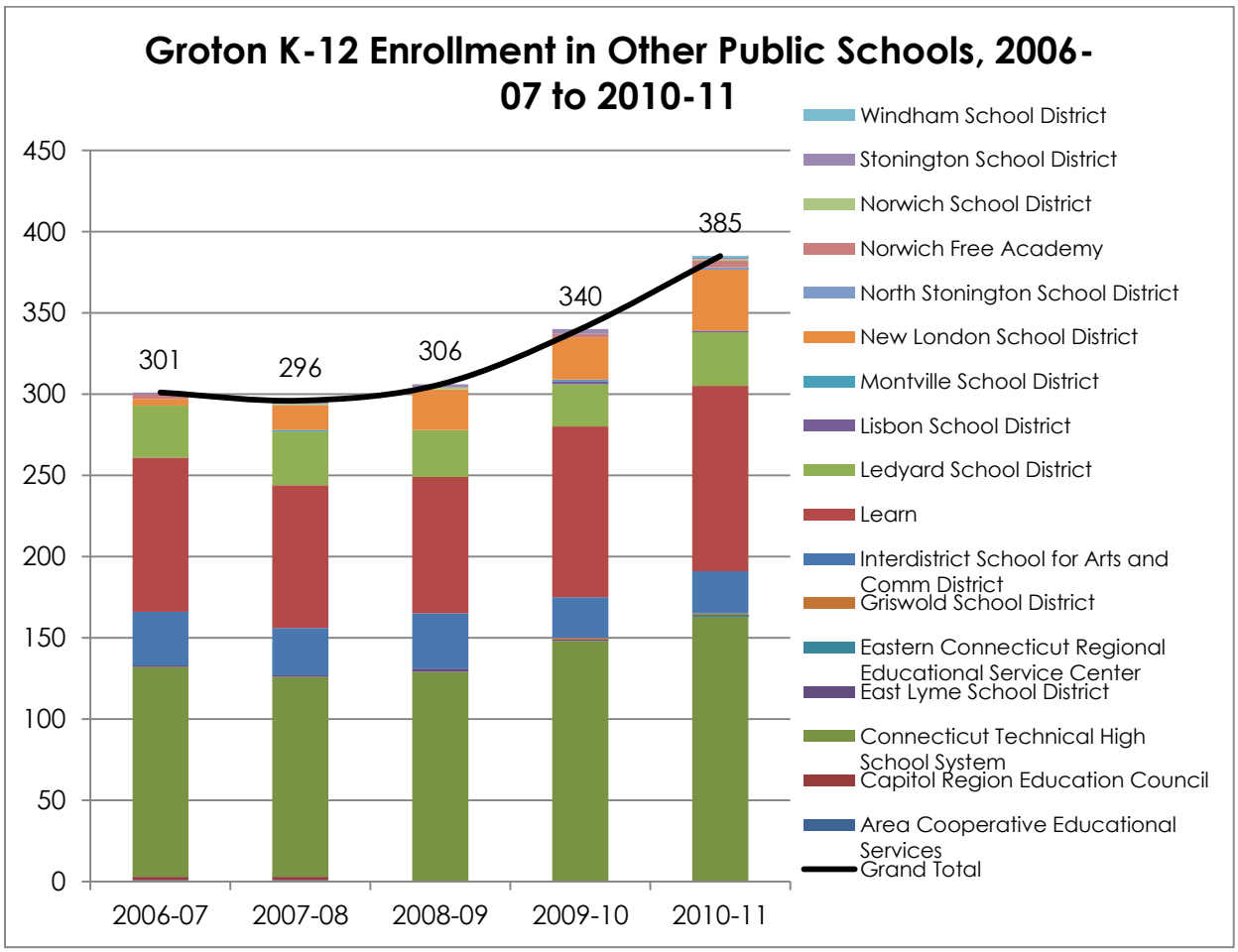


FIGURE 16



Enrollment Projections

The cohort-survival methodology, with some modifications, was used develop projections in this report. This is a standard methodology for projecting populations and student enrollments. It is important to remember that the foundation of the cohort-survival methodology is the recent past can be a good predictor of the near future, and therefore this methodology works well for stable populations, including those that are growing or declining at a steady rate. The persistency ratios calculated in this method account for the sets of known external data points which have an effect on enrollments, including housing development, economic conditions, student transfers, and mobility into and out of a school district. Accurate birth and enrollment data used in this projection methodology are critical to its overall accuracy, as each year builds upon the last. Kindergarten enrollments are based on the number of births five years previous. In addition, events and policies locally, regionally and nationally all exert influence on enrollment. With that said, the economic recession, local employment and housing market conditions in Groton are factors that contribute to a much different enrollment climate than just five years ago. Therefore, assumptions were made in the projections to adequately capture these external factors. For the purpose of this enrollment projection report, we have been asked to prepare projections based on a ten-year time horizon.

A persistency ratio was calculated based on historic enrollment data to determine growth or loss in a class as it progresses through the school system. Persistency ratios of 1.00 mean that the class size remains the same as it advances from one grade to the next. A persistency ratio of 1.05 means the class size increases by 5% or a class of 100 gains five additional students the next year. Enrollment data from 2002-03 through 2013-14 combined with birth data from 1997 to the present were used to calculate Birth-K and grade-to-grade persistency ratios. Table 10 shows the calculated ratios.

Table 10

Kindergarten through 12th Grade Persistency Ratios by School Year
2002-03 to 2012-13

Year	Birth-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
2003-04		0.950	0.961	0.934	1.007	0.954	1.011	0.948	0.964	0.923	0.991	1.015	0.854
2004-05	0.726	0.917	0.899	0.953	0.954	0.899	0.945	0.952	0.993	0.924	0.935	0.974	0.970
2005-06	0.717	0.929	0.893	0.934	0.889	0.942	0.997	0.944	0.943	0.944	0.953	0.957	0.878
2006-07	0.711	0.909	0.963	0.947	0.974	0.952	1.005	0.972	0.972	0.912	0.951	0.950	0.856
2007-08	0.691	0.945	0.958	0.909	1.000	0.949	1.025	0.932	0.992	0.953	0.925	1.032	0.890
2008-09	0.703	0.949	0.960	0.983	0.980	0.970	0.949	0.989	0.979	0.910	0.950	0.951	0.977
2009-10	0.747	0.848	1.010	0.985	0.970	0.919	0.928	1.084	1.028	0.917	1.003	0.959	1.137
2010-11	0.677	0.944	0.956	0.898	0.936	0.929	0.986	1.009	0.893	0.839	0.953	0.977	0.903
2011-12	0.769	0.984	0.923	1.008	0.973	0.923	0.929	0.949	1.044	0.840	1.016	1.021	0.946
2012-13	0.724	0.947	0.936	0.914	0.964	0.969	0.957	0.912	0.985	0.807	1.037	1.000	0.979
2013-14	0.717	0.925	0.903	0.949	0.955	0.952	0.885	0.964	0.961	0.856	0.965	0.950	0.928
Long Term Average	0.7180	0.9297	0.9401	0.9479	0.9595	0.9405	0.9607	0.9706	0.9789	0.8901	0.9688	0.9772	0.9463
Last 5-Yr Average	0.7266	0.9297	0.9455	0.9507	0.9598	0.9385	0.9370	0.9835	0.9822	0.8518	0.9948	0.9815	0.9785
Last 3-Yr Average	0.7364	0.9523	0.9207	0.9567	0.9642	0.9484	0.9237	0.9417	0.9969	0.8342	1.0059	0.9906	0.9510
Last 2-Yr Average	0.7202	0.9363	0.9196	0.9312	0.9599	0.9609	0.9211	0.9378	0.9732	0.8316	1.0008	0.9752	0.9533
Weighted 3-Yr Average	0.7314	0.9456	0.9163	0.9547	0.9620	0.9494	0.9140	0.9473	0.9880	0.8396	0.9956	0.9805	0.9451

Source: Calculated by MMI from State Department of Education, Public School Information System (2002-2010), Groton Public Schools 2011-12, and CT Department of Public Health (CT DPH) Birth Data.

Several assumptions were made in choosing which persistency ratios would be used for future projections. Typically, projections should be based on at least three years of valid data. However, due to recent redistricting at the middle and elementary school level, projections need to be based on two years of valid data for the middle school

(redistricted in 2011) and only one year of valid data for the elementary school (redistricted in 2012). In order to produce three years of data, past years were tabulated with students re-allocated to the currently adopted school boundaries. Because there is only one year of valid data, a three- year persistency ratio was calculated that more heavily weighted the valid year. As more years of valid enrollments are available under the current redistricting, persistency ratios and projections should be updated.

The following section shows projected enrollments at the district-wide and current grade configuration levels. The following inherent assumptions were built into the projections, and therefore any large divergences from these assumptions would necessitate new projections.

Assumptions:

- A persistency ratio weighted on one year of valid, post-redistricting data was used.
- Programming will remain the same, including continuation of full day Kindergarten
- Annual births in Groton will recover slightly to around 600 births a year
- Housing sales will stay between 300-400 annually

District-Wide Enrollment Projections

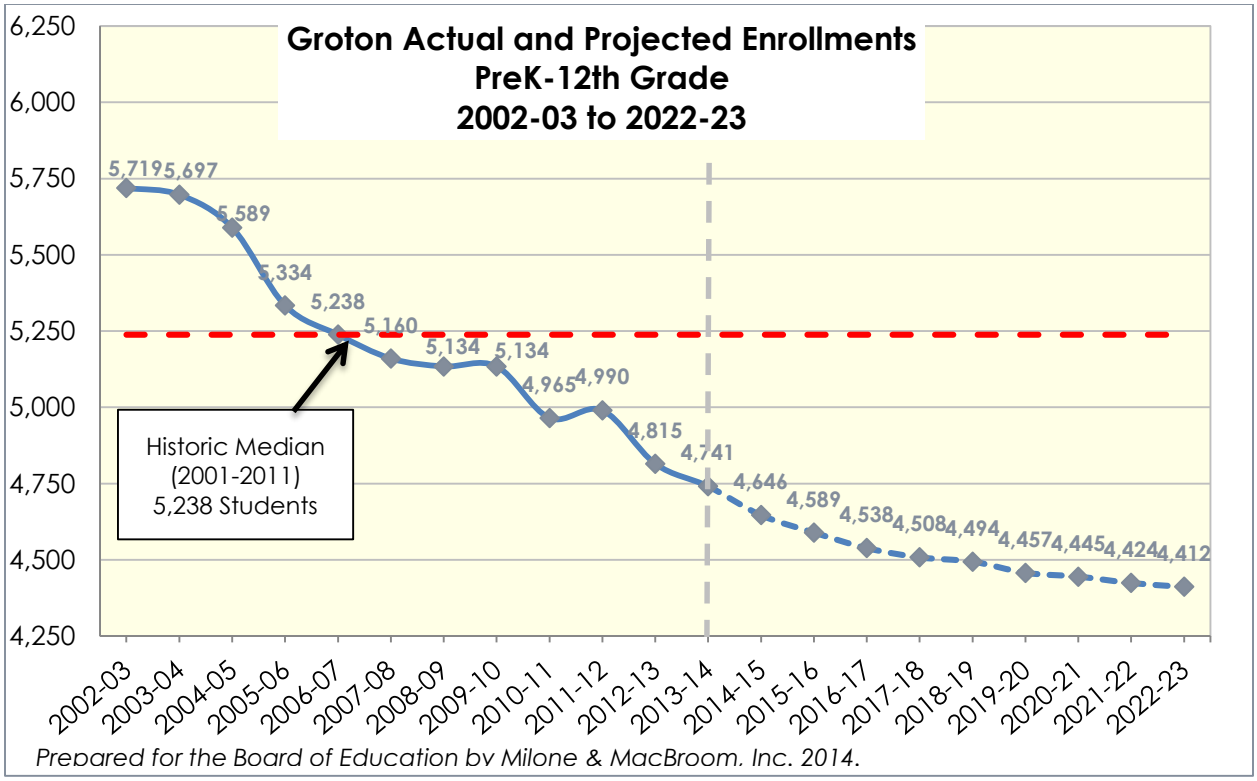
The following Tables 11 presents the summary of the enrollment projections by grade grouping. They are based on 3 year weighted average persistency ratios, shown in the previous Table 10. The projections strongly reflect both the sharp recent decrease in births and the last six years of low elementary enrollments matriculating though the school system. 2014-2019 are based on actual births and are therefore the most accurate. The five subsequent years of enrollment projections through 2023 are based on birth projections and the assumptions that govern them.

TABLE 11

DISTRICTWIDE PROJECTIONS USING 3-YEAR WEIGHTED AVERAGE																
School Year	**Birth Year**	**Births**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**PK**
2013-14	2008	642	460	422	421	387	365	360	308	323	297	285	275	268	295	275
2014-15	2009	592	433	435	387	402	372	347	329	292	319	249	284	270	253	275
2015-16	2010	589	431	409	399	369	387	353	317	312	288	268	248	278	255	275
2016-17	2011	591	432	407	375	381	355	367	323	300	308	242	267	243	263	275
2017-18	2012	630	461	408	373	358	366	337	336	306	296	259	241	262	230	275
2018-19	2013	604	442	436	374	356	345	348	308	318	302	249	257	236	247	275
2019-20	2014	597	437	418	399	357	343	327	318	292	314	254	248	252	223	275
2020-21	2015	598	437	413	383	381	344	325	299	301	288	264	253	243	239	275
2021-22	2016	600	439	413	378	366	367	326	297	283	297	242	263	248	230	275
2022-23	2017	601	440	415	379	361	352	348	298	282	280	250	241	257	234	275

	PK-12 total		**PK-5th**		**6th-8th**		**9th-12th**	
School Year	**TOTAL**	**% Change**	**PK-5 Total**	**% Change**	**6-8 Total**	**% Change**	**9-12 Total**	**% Change**
2013-14	4,741	-1.5%	2,690	2.4%	928	-5.0%	1,123	-7.3%
2014-15	4,646	-2.0%	2,650	-1.5%	940	1.3%	1,056	-6.0%
2015-16	4,589	-1.2%	2,623	-1.0%	917	-2.5%	1,049	-0.6%
2016-17	4,538	-1.1%	2,592	-1.2%	931	1.6%	1,015	-3.2%
2017-18	4,508	-0.7%	2,579	-0.5%	938	0.7%	991	-2.4%
2018-19	4,494	-0.3%	2,575	-0.1%	928	-1.0%	990	-0.1%
2019-20	4,457	-0.8%	2,556	-0.8%	924	-0.5%	977	-1.3%
2020-21	4,445	-0.3%	2,558	0.1%	888	-3.8%	998	2.1%
2021-22	4,424	-0.5%	2,564	0.2%	878	-1.2%	982	-1.6%
2022-23	4,412	-0.3%	2,569	0.2%	860	-2.1%	982	0.0%
1st 5-Yr Percent Change	-5.2%		-4.3%		0.0%		-11.9%	
10-Yr Percent Change	-6.9%		-4.5%		-7.3%		-12.5%	

FIGURE 17

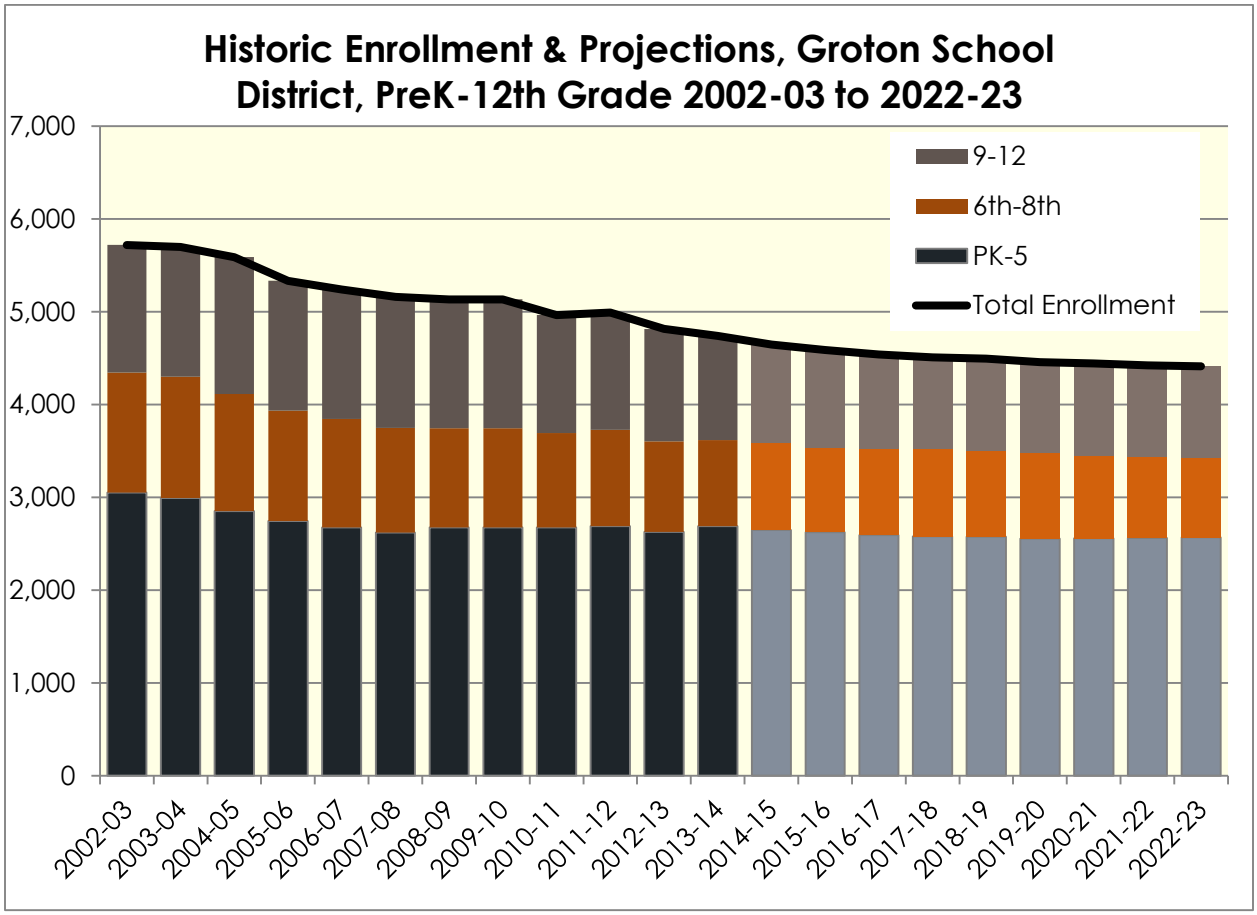


All district-wide projections show a continuation of the ten year trend of declining enrollment in the district. The PreK-12 enrollment is projected to decline about 7% over the next ten years to approximately 4,412 students district-wide. The rate of decline is expected to decline from -2.00% in the next year to less than -0.30% in 2022-23.

The enrollment decreases are projected to vary slightly among the grade groups, with the largest decline among high school enrollments and the least decline among the elementary school enrollments, which have already seen much of their decline. Additionally the elementary enrollments are projected to "bottom-out" during the second half of the ten-year horizon, and are projected to increase slightly after 2019-20, although the rate of this increase is strongly tied to the birth projections.

Over the next five years, elementary enrollments are projected to decline by roughly 5%, middle school enrollment to stay roughly stable, and high school enrollments to decline by nearly 12%. However, the second five-year window paints a much different picture. Elementary enrollments are projected to flatten, whereas, middle school enrollment is projected to fall an additional 7% while high school enrollments stabilize during the second five-year window as the leading edge of the current elementary decline matriculates through the system. The reported births for 2010 were 589, which is an historic low. Due to the historic low births of 2009-2011 and the time lag for full matriculation into the middle school from the elementary school system, the full impact will not be felt at the high school during this 10-year horizon. As apparent in Figure 18, the elementary trough is projected to occur in 2019-20. If assumptions are proven accurate, the stabilization and possible increases in the elementary enrollments will not be felt in the middle nor high school projections until well outside of the projection study window.

FIGURE 18



SCHOOL BY SCHOOL ENROLLMENT PROJECTIONS

Elementary Schools

As with the district-wide enrollment projections, the cohort-survival methodology has been utilized to create projections for each of the seven Elementary programs and two middle programs in Groton. There is no division of students for grades 9-12 so the enrollments projections for Fitch High School are the same as the forecasts for grades 9-12 in the district-wide enrollment projections.

Creating enrollment projections for individual schools can prove challenging due to smaller number of data points, which may lead to a greater percentages of error than for the larger area projections. For this reason, the individual school-by-school projections have been normalized against the district-wide projections so that the individual schools projections collectively equal the district-wide projections. In addition to the various limitations and considerations of the individual school projections, they too must be governed by additional assumptions. These assumptions include:

- Full-day kindergarten will remain in place;
- There will not be significant changes to deployment of pre-kindergarten programs;
- Recent private school and other public school enrollment trends will remain stable;
- The historic balance of students between the programs will remain.

Enrollment projections for the seven elementary programs were done using a similar methodology as for the entire district. Persistency ratios were developed to determine how student cohorts survive through the system from year to year and are shown in Table 12. The numbers represent how externalities, including the interest in programming, affect how students in Groton progress through elementary school. This includes, but is not limited to the in and out migration of students to other towns and districts spurred by programmatic choice, housing markets, and economic activity; and the movement of students between school programs from year to year for social or educational reasons. These factors affect each Town and each school differently, and so the effect of these externalities results in significantly different persistency ratios.

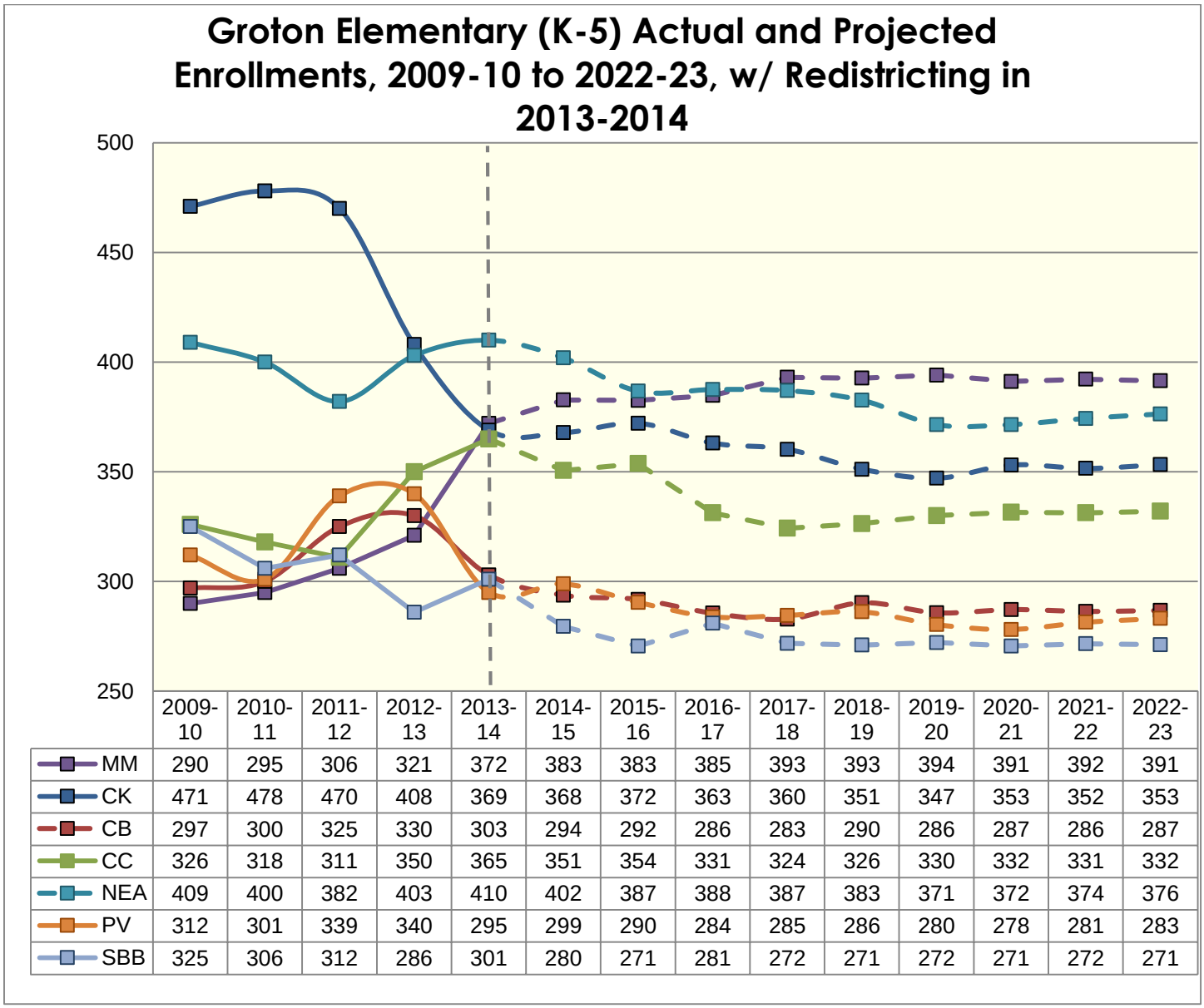
TABLE 12

3-Year Weighted Average	Birth-K	K-1	1-2	2-3	3-4	4-5
Catherine Kolnaski	0.97098	1.00532	0.96398	1.07540	1.01600	0.93125
Charles Barnum	0.84402	0.87075	0.87660	0.89445	0.89119	0.95047
Claude Chester	0.55768	0.93920	0.92720	0.95545	0.95561	0.99615
Mary Morrison	0.87407	0.90926	0.82498	0.90243	0.85569	1.01809
Northeast Academy	0.86071	1.00974	0.99015	0.95222	0.99000	1.00047
Pleasant Valley	0.41750	0.94787	0.82866	0.88290	1.03333	1.06306
S.B. Butler	1.43475	0.95434	1.05305	1.03814	0.98717	0.97395

Figure 19 presents the results of the ten-year K-5th grade enrollment projections for each elementary school. With a continued projected decline in the elementary enrollment at the district level, it is not surprising that most of the elementary schools will decline over the next five years. It should be noted that the first five-year projection horizon relies on students in the system and reported births. This does not include Pre-K as the location of these programs change due to classroom availability at the elementary schools.

The enrollment decline for the second five-year time horizon shows a much more moderate decline, flattening, and the start of a rebound. As with any projections out past five years, the accuracy of the next five years is predicated on the aforementioned assumptions holding true and proving to be accurate. The second five year projections, especially at the individual school level, are influenced by the accuracy of the projected births, birth estimate allocation at individual schools and local growth factors. With that said, Figure 19 illustrates the projections model which indicates a flattening and the early stages of a rebound.

FIGURE 19

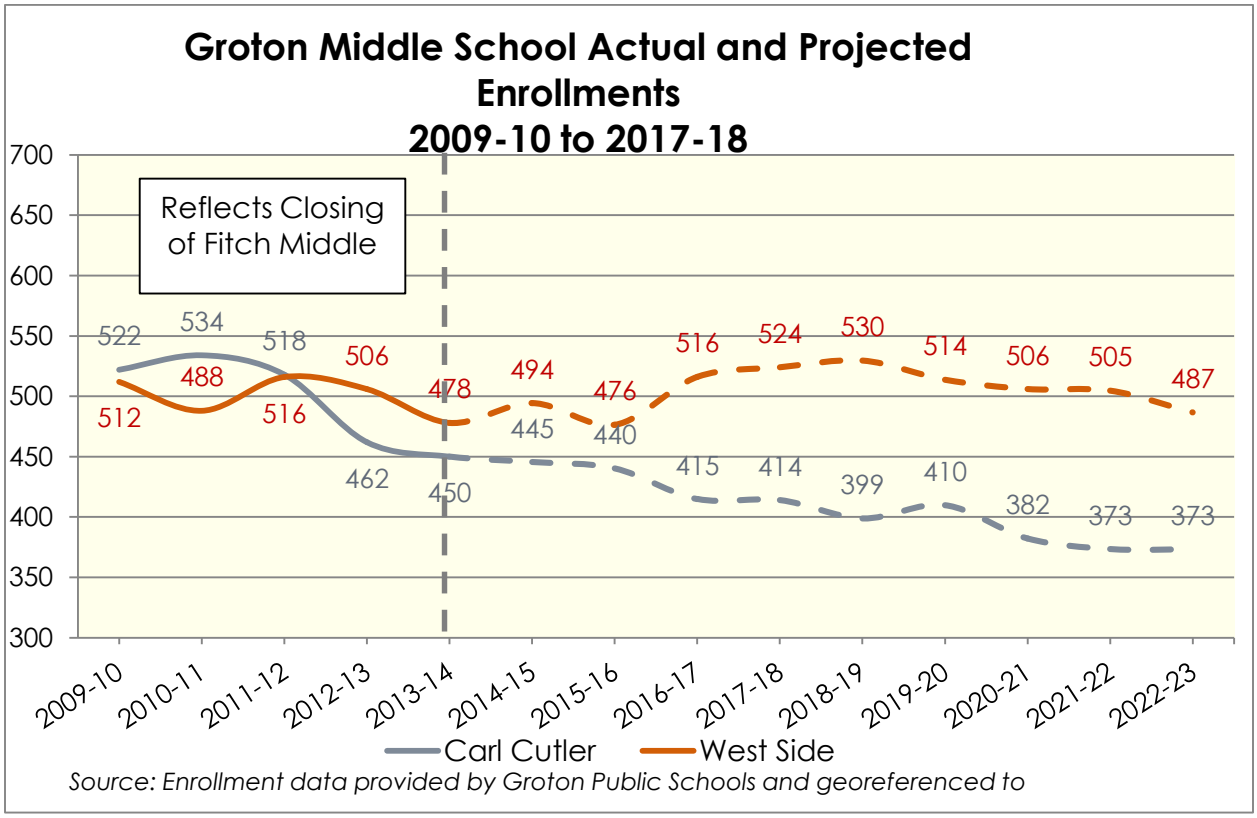


	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
MM	290	295	306	321	372	383	383	385	393	393	394	391	392	391
CK	471	478	470	408	369	368	372	363	360	351	347	353	352	353
CB	297	300	325	330	303	294	292	286	283	290	286	287	286	287
CC	326	318	311	350	365	351	354	331	324	326	330	332	331	332
NEA	409	400	382	403	410	402	387	388	387	383	371	372	374	376
PV	312	301	339	340	295	299	290	284	285	286	280	278	281	283
SBB	325	306	312	286	301	280	271	281	272	271	272	271	272	271

Middle Schools

While the overall trend for middle school enrollments is in decline, the two different middle schools behave very differently over the projected time period. While Carl Cutler Middle School is projected to gradually decline, the West Side Middle School is projected to see enrollments stabilize and slightly increase over the projection period. Especially after the first five years of projections, enrollments are determined by births in each district, and the West Side district has historically had much higher birthrates than the Cutler attendance area.

FIGURE 20



Source: Enrollment data provided by Groton Public Schools and georeferenced to

Appendix A: Elementary & Middle School Projections by School and Grade

Groton Public Schools Elementary School Enrollment Projections 2014-15							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	52	62	66	66	69	52	368
Charles Barnum	61	62	38	51	45	37	294
Claude Chester	61	54	54	65	73	44	351
Mary Morrisson	91	77	66	52	49	48	383
Northeast Academy	63	77	71	65	57	69	402
Pleasant Valley	59	61	45	44	46	45	299
S.B. Butler	46	42	46	59	35	51	280
TOTAL	433	435	387	402	372	347	2,375

Groton Public Schools Elementary School Enrollment Projections 2015-16							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	60	52	60	71	67	62	372
Charles Barnum	65	53	54	34	45	41	292
Claude Chester	64	58	50	51	62	70	354
Mary Morrisson	85	83	64	59	45	48	383
Northeast Academy	61	64	76	67	65	54	387
Pleasant Valley	53	56	50	40	45	47	290
S.B. Butler	44	44	44	48	58	32	271
TOTAL	431	409	399	369	387	353	2,348

Groton Public Schools Elementary School Enrollment Projections 2016-17							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	56	60	50	64	72	60	363
Charles Barnum	63	56	47	48	30	41	286
Claude Chester	62	60	53	48	48	59	331
Mary Morrisson	88	77	68	57	50	44	385
Northeast Academy	62	61	63	72	66	62	388
Pleasant Valley	56	50	46	44	41	46	284
S.B. Butler	45	42	47	46	47	54	281
TOTAL	432	407	375	381	355	367	2,317

Groton Public Schools Elementary School Enrollment Projections 2017-18							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	62	56	58	54	65	64	360
Charles Barnum	66	55	49	42	43	28	283
Claude Chester	67	59	55	51	46	46	324
Mary Morrisson	89	80	64	62	49	49	393
Northeast Academy	68	63	61	60	71	64	387
Pleasant Valley	62	53	42	41	46	42	285
S.B. Butler	47	43	44	49	45	44	272
TOTAL	461	408	373	358	366	337	2,304

Groton Public Schools Elementary School Enrollment Projections 2018-19							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	58	62	54	62	55	59	351
Charles Barnum	64	58	48	44	37	39	290
Claude Chester	64	63	54	53	49	44	326
Mary Morrisson	87	81	66	57	53	48	393
Northeast Academy	66	69	62	58	60	69	383
Pleasant Valley	58	58	44	37	42	47	286
S.B. Butler	45	45	45	46	48	42	271
TOTAL	442	436	374	356	345	348	2,300

Groton Public Schools Elementary School Enrollment Projections 2019-20							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	57	59	60	58	63	49	347
Charles Barnum	63	56	51	43	39	34	286
Claude Chester	63	60	58	52	51	47	330
Mary Morrisson	87	79	67	59	49	52	394
Northeast Academy	63	66	68	59	57	57	371
Pleasant Valley	57	55	48	39	38	43	280
S.B. Butler	45	43	47	47	45	45	272
TOTAL	437	418	399	357	343	327	2,281

Groton Public Schools Elementary School Enrollment Projections 2020-21							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	58	58	57	64	59	57	353
Charles Barnum	64	55	49	45	38	36	287
Claude Chester	63	59	55	55	50	48	332
Mary Morrisson	87	80	65	60	51	48	391
Northeast Academy	63	64	66	65	59	55	372
Pleasant Valley	57	54	46	43	40	39	278
S.B. Butler	45	43	45	49	47	42	271
TOTAL	437	413	383	381	344	325	2,283

Groton Public Schools Elementary School Enrollment Projections 2021-22							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	58	59	56	61	66	53	352
Charles Barnum	64	56	48	44	40	35	286
Claude Chester	63	60	55	53	53	48	331
Mary Morrisson	87	79	66	59	52	50	392
Northeast Academy	64	64	64	62	64	56	374
Pleasant Valley	57	54	45	40	44	41	281
S.B. Butler	45	43	45	47	48	44	272
TOTAL	439	413	378	366	367	326	2,289

Groton Public Schools Elementary School Enrollment Projections 2022-23							
School	K	1	2	3	4	5	K-5th
Catherine Kolnaski	58	58	57	60	62	59	353
Charles Barnum	64	55	49	43	39	37	287
Claude Chester	64	60	55	52	51	51	332
Mary Morrisson	87	79	65	59	51	51	391
Northeast Academy	64	65	64	60	62	61	376
Pleasant Valley	58	54	45	39	42	45	283
S.B. Butler	45	43	45	47	46	45	271
TOTAL	440	415	379	361	352	348	2,294

Groton Public Schools Middle School Enrollment Projections 2014-15				
School	6	7	8	6-8th
Carl Cutler	156	138	151	445
West Side	173	154	168	494
TOTAL	329	292	319	940

Groton Public Schools Middle School Enrollment Projections 2015-16				
School	6	7	8	6-8th
Carl Cutler	155	149	135	440
West Side	161	162	153	476
TOTAL	317	312	288	917

Groton Public Schools Middle School Enrollment Projections 2016-17				
School	6	7	8	6-8th
Carl Cutler	119	148	147	415
West Side	204	152	161	516
TOTAL	323	300	308	931

Groton Public Schools Middle School Enrollment Projections 2017-18				
School	6	7	8	6-8th
Carl Cutler	154	114	146	414
West Side	182	192	150	524
TOTAL	336	306	296	938

Groton Public Schools Middle School Enrollment Projections 2018-19				
School	6	7	8	6-8th
Carl Cutler	140	147	112	399
West Side	168	171	190	530
TOTAL	308	318	302	928

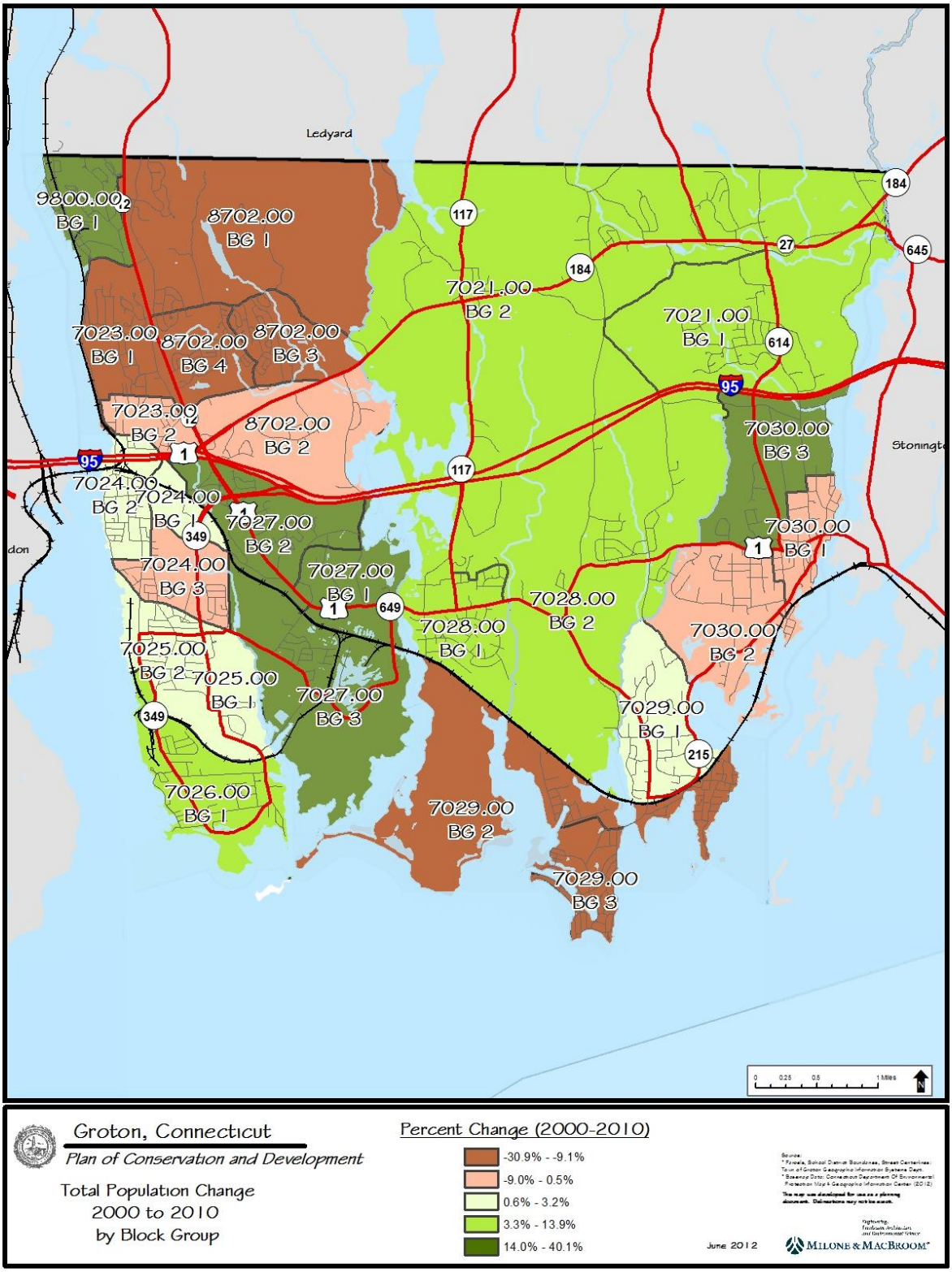
Groton Public Schools Middle School Enrollment Projections 2019-20				
School	6	7	8	6-8th
Carl Cutler	132	134	144	410
West Side	186	158	170	514
TOTAL	318	292	314	924

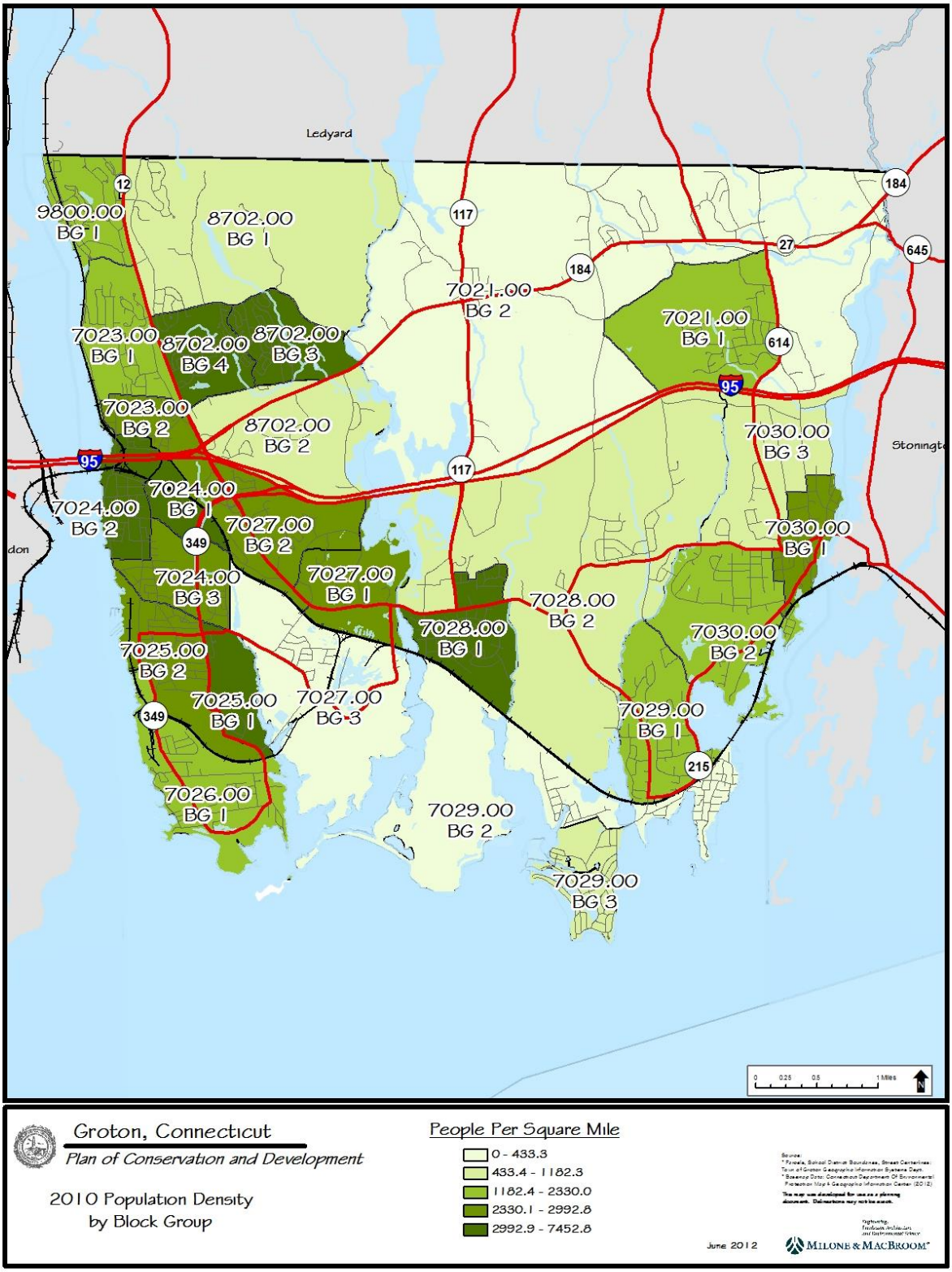
Groton Public Schools Middle School Enrollment Projections 2020-21				
School	6	7	8	6-8th
Carl Cutler	125	126	131	382
West Side	174	175	157	506
TOTAL	299	301	288	888

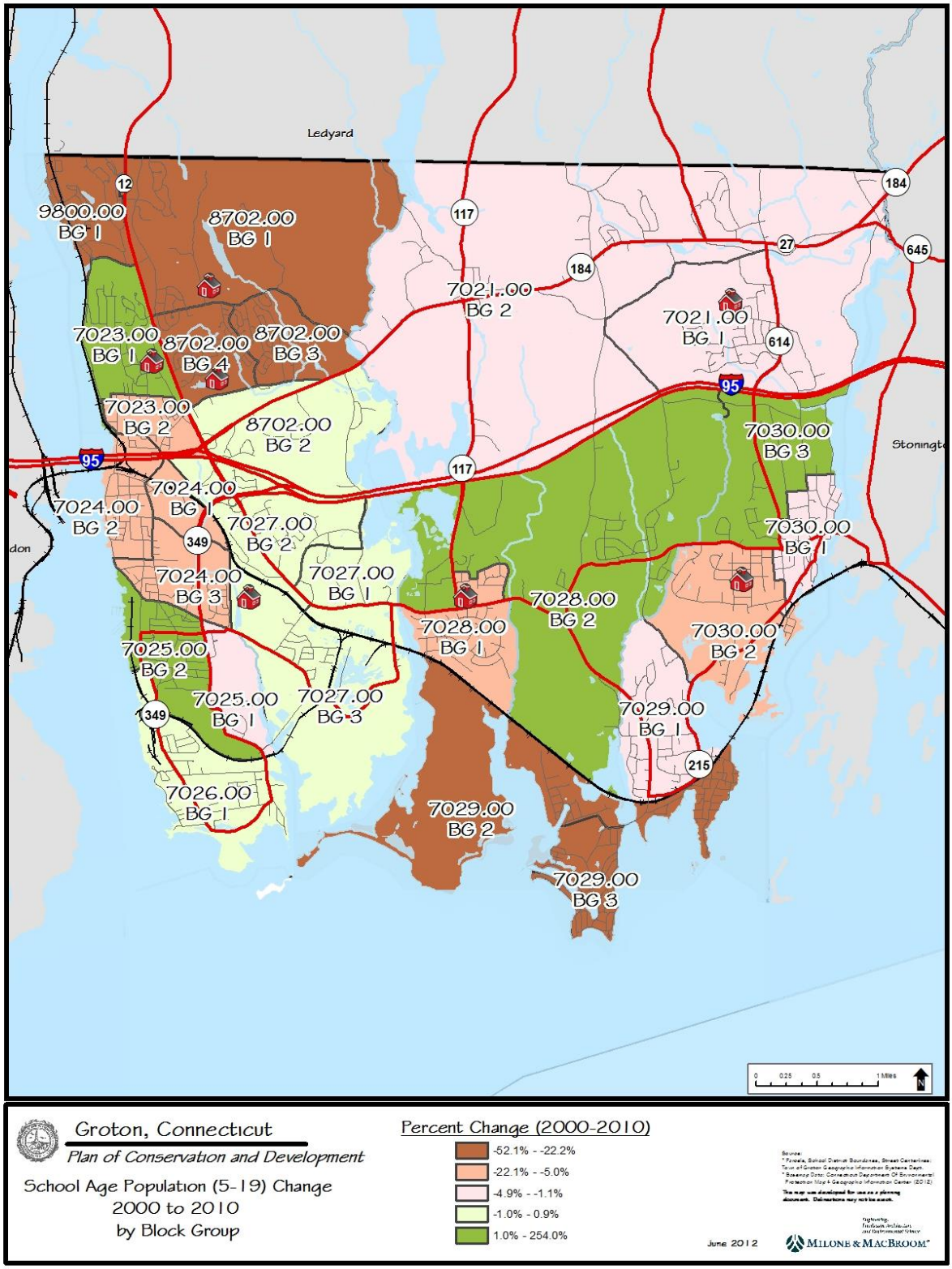
Groton Public Schools Middle School Enrollment Projections 2021-22				
School	6	7	8	6-8th
Carl Cutler	130	119	124	373
West Side	167	164	173	505
TOTAL	297	283	297	878

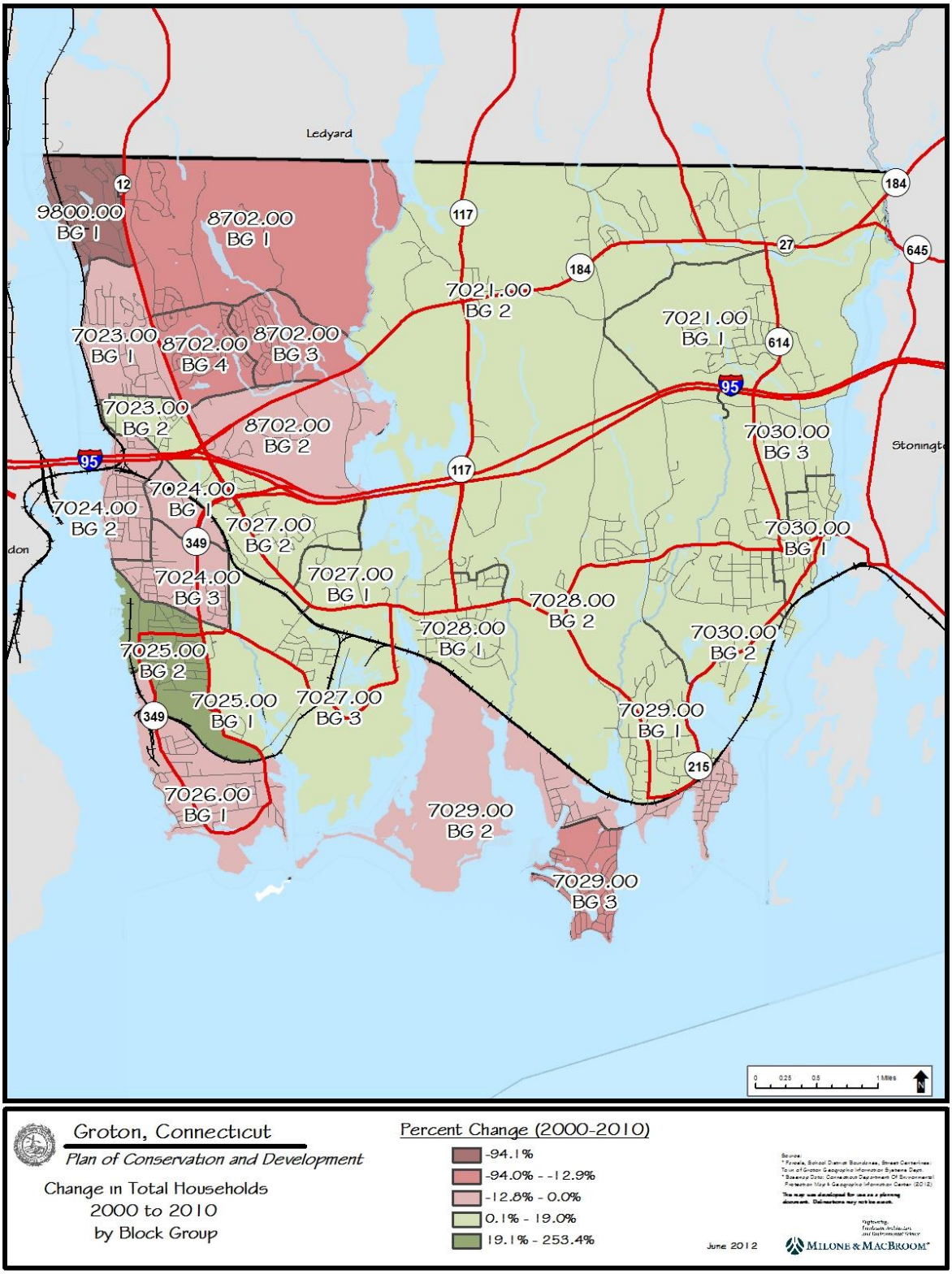
Groton Public Schools Middle School Enrollment Projections 2022-23				
School	6	7	8	6-8th
Carl Cutler	132	124	117	373
West Side	167	158	163	487
TOTAL	298	282	280	860

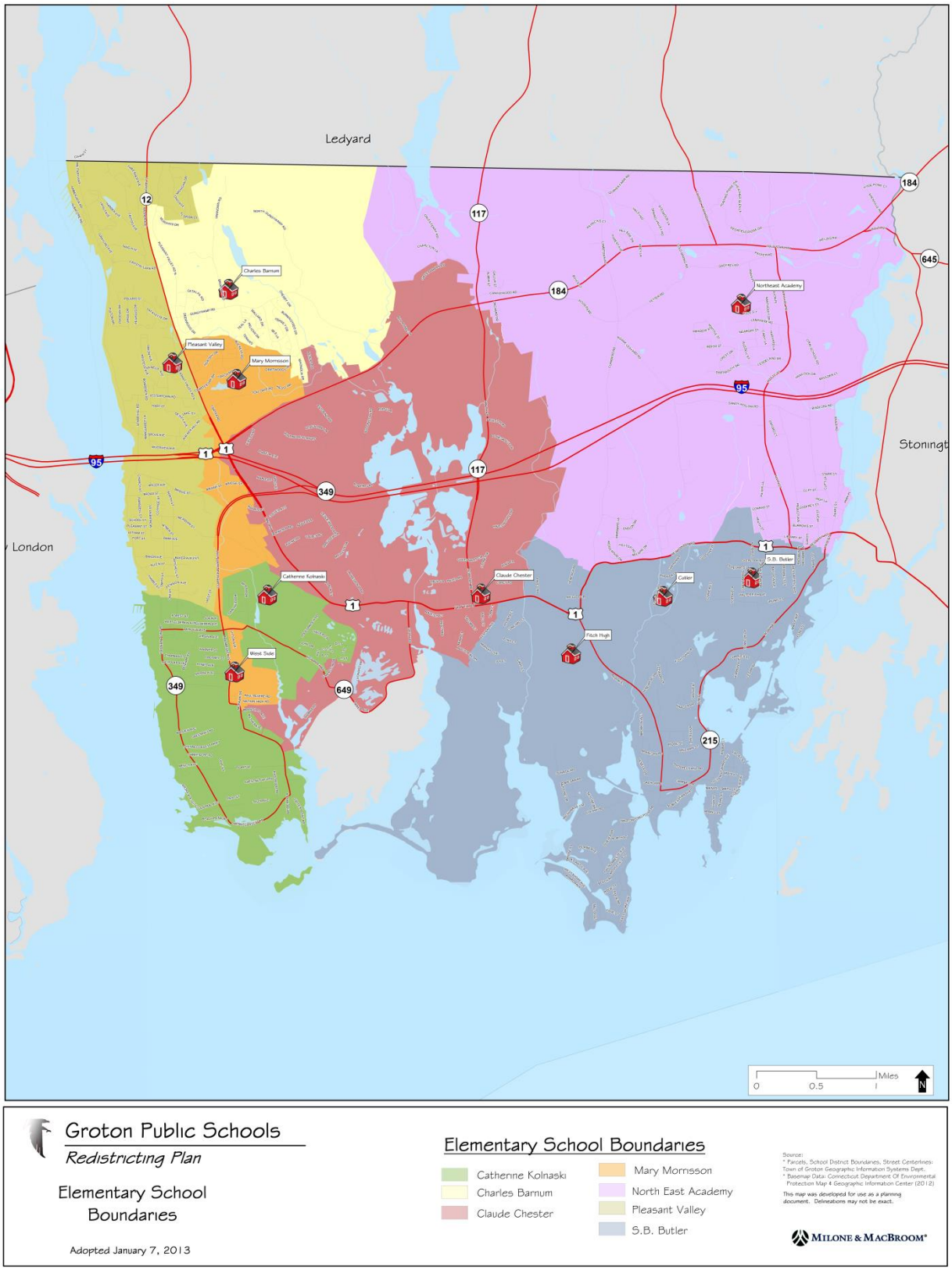
Appendix B: Maps


Ledyard
9800.00 BG 1
8702.00 BG 1
7023.00 BG 1
8702.00 BG 4
8702.00 BG 3
7023.00 BG 2
8702.00 BG 2
7024.00 BG 2
7024.00 BG 1
7027.00 BG 2
7024.00 BG 3
7027.00 BG 1
7025.00 BG 2
7025.00 BG 1
7027.00 BG 3
7026.00 BG 1
7021.00 BG 2
7021.00 BG 1
7028.00 BG 2
7028.00 BG 1
7029.00 BG 1
7029.00 BG 2
7029.00 BG 3
7030.00 BG 3
7030.00 BG 1
7030.00 BG 2
Stonington
Groton, Connecticut
Plan of Conservation and Development
Total Population Change
2000 to 2010
by Block Group
Percent Change (2000-2010)
-30.9% - -9.1%
-9.0% - 0.5%
0.6% - 3.2%
3.3% - 13.9%
14.0% - 40.1%
June 2012
MILONE & MACBROOM


Ledyard
Stonington
9800.00 BG 1
8702.00 BG 1
8702.00 BG 4
8702.00 BG 3
8702.00 BG 2
7021.00 BG 2
7021.00 BG 1
7023.00 BG 1
7023.00 BG 2
7024.00 BG 1
7024.00 BG 2
7024.00 BG 3
7025.00 BG 2
7025.00 BG 1
7026.00 BG 1
7027.00 BG 2
7027.00 BG 1
7027.00 BG 3
7028.00 BG 2
7028.00 BG 1
7029.00 BG 1
7029.00 BG 2
7029.00 BG 3
7030.00 BG 3
7030.00 BG 1
7030.00 BG 2
12
117
184
27
645
614
95
349
215
0 0.25 0.5 1 Miles
N
Groton, Connecticut
Plan of Conservation and Development
2010 Population Density
by Block Group
People Per Square Mile
0 - 433.3
433.4 - 1182.3
1182.4 - 2330.0
2330.1 - 2992.8
2992.9 - 7452.8
June 2012
MILONE & MACBROOM


Ledyard
9800.00 BG 1
8702.00 BG 1
7023.00 BG 1
8702.00 BG 4
8702.00 BG 3
7023.00 BG 2
8702.00 BG 2
7021.00 BG 2
7021.00 BG 1
7030.00 BG 3
7030.00 BG 1
7030.00 BG 2
7024.00 BG 1
7024.00 BG 2
7024.00 BG 3
7027.00 BG 2
7027.00 BG 1
7027.00 BG 3
7028.00 BG 1
7028.00 BG 2
7025.00 BG 2
7025.00 BG 1
7026.00 BG 1
7029.00 BG 1
7029.00 BG 2
7029.00 BG 3
Stonington
Groton, Connecticut
Plan of Conservation and Development
School Age Population (5-19) Change
2000 to 2010
by Block Group
Percent Change (2000-2010)
-52.1% - -22.2%
-22.1% - -5.0%
-4.9% - -1.1%
-1.0% - 0.9%
1.0% - 254.0%
June 2012
MILONE & MACBROOM


Ledyard
Stonington
9800.00 BG 1
8702.00 BG 1
8702.00 BG 4
8702.00 BG 3
8702.00 BG 2
7023.00 BG 1
7023.00 BG 2
7024.00 BG 1
7024.00 BG 2
7024.00 BG 3
7025.00 BG 1
7025.00 BG 2
7026.00 BG 1
7027.00 BG 1
7027.00 BG 2
7027.00 BG 3
7028.00 BG 1
7028.00 BG 2
7029.00 BG 1
7029.00 BG 2
7029.00 BG 3
7030.00 BG 1
7030.00 BG 2
7030.00 BG 3
7021.00 BG 1
7021.00 BG 2
12
117
184
27
645
614
95
349
215
Groton, Connecticut
Plan of Conservation and Development
Change in Total Households
2000 to 2010
by Block Group
Percent Change (2000-2010)
-94.1%
-94.0% - -12.9%
-12.8% - 0.0%
0.1% - 19.0%
19.1% - 253.4%
June 2012
MILONE & MACBROOM


Ledyard
Stoningt
London
Charles Barnum
Pleasant Valley
Mary Morrisson
Northeast Academy
Catherine Kolnaski
Claude Chester
Cutler
S.B. Butler
Fitch High
West Side
12
117
184
645
95
1
349
649
215
Miles
0
0.5
1
N
Groton Public Schools
Redistricting Plan
Elementary School Boundaries
Adopted January 7, 2013
Elementary School Boundaries
Catherine Kolnaski
Charles Barnum
Claude Chester
Mary Morrisson
North East Academy
Pleasant Valley
S.B. Butler
Source:
* Parcels, School District Boundaries, Street Centerlines: Town of Groton Geographic Information Systems Dept.
* Basemap Data: Connecticut Department Of Environmental Protection Map & Geographic Information Center (2012)
This map was developed for use as a planning document. Delineations may not be exact.
MILONE & MACBROOM®

APPENDIX C: DIVERSITY

Percentage of Minority Elementary School Students													
	2001-02	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Charles Barnum	21.2%	18.8%	22.1%	25.3%	29.8%	30.6%	32.7%	29.3%	26.3%	32.3%	31.63%	33.92%	31.02%
Catherine Kolnaski								56.4%	60.3%	66.9%	70.0%	73.4%	61.2%
Claude Chester	40.7%	41.5%	43.1%	48.2%	50.0%	54.5%	51.6%	52.0%	51.0%	55.9%	60.2%	62.6%	68.8%
Colonel Ledyard*	36.5%	36.2%	34.4%	31.6%	40.6%	41.2%	17.3%						
Eastern Point	48.8%	53.2%	55.3%	57.6%	55.9%	59.6%	58.1%						
Groton Heights*	27.6%	30.5%	31.7%	37.7%	35.9%	39.3%							
Mary Morrisson	23.1%	27.6%	25.2%	24.7%	21.5%	22.3%	24.1%	21.2%	23.4%	26.6%	32.2%	33.3%	47.3%
Noank	12.8%	14.7%	14.7%	15.1%	15.8%	17.1%	19.6%						
Northeast Academy								22.3%	22.7%	23.8%	23.8%	23.1%	25.1%
Pleasant Valley	24.6%	25.8%	27.7%	28.1%	28.9%	27.1%	31.0%	38.5%	41.7%	43.4%	44.9%	41.2%	40.0%
S.B. Butler	11.0%	11.8%	12.8%	11.7%	12.4%	11.0%	12.9%	17.2%	16.6%	17.0%	19.9%	27.6%	25.6%
William Seely	25.5%	19.8%											
District K-5 Average	**26.0%**	**26.7%**	**28.7%**	**30.1%**	**30.6%**	**31.7%**	**32.9%**	**33.8%**	**34.6%**	**38.0%**	**40.4%**	**42.4%**	**43.3%**

Source: 2001-2010 data from State Department of Education Strategic School Profiles. 2010-2012 data from Groton Public Schools, with MMI calculation of district-wide average.

Impending Imbalance
Imbalanced

*Col. Ledyard Grades PK-2, Groton Heights Grades 3-5

APPENDIX B

Vision Committee

Elizabeth Gianacoplos	Board of Education	
Kirsten Hoyt	Board of Education	
Jennifer Sim	Board of Education	
Rita Volkmann	Board of Education	
Mary Anne Butler	Assistant Superintendent	Central Office
Wesley Greenleaf	Director of Buildings & Grounds	Central Office
Robert Pendolphi	Administrator	Fitch Middle
Mark Masterjoseph	Administrator	Catherine Kolnaski
Henry Martinez	Math Curriculum Coordinator	Central Office
Robert Beaulieu	Teacher	West Side Middle
Kathy Wilson	Teacher	Fitch Middle
Jean Claude Ambroise	Parent, RTM Member	
Robert Butler	Parent	
Lyndie Collins	Parent	
Nancy Gilly	Parent	
Michael Kane	Parent	
Lea Graner Kennedy	Parent, Groton PTO	
Lisa Tess	Parent	

Ad Hoc

Paul Kadri	Superintendent	Central Office
Wesley Greenleaf	Director Building & Grounds	Central Office

Support

Laurie LePine	Personnel Manager	Central Office
Carolyn Dickey	Business Manager	Central Office

APPENDIX C

School Facilities Task Force

Andrea Ackerman	Board of Education
Jean Claude Ambroise	RTM
Robert Beaulieu Jr.	Teacher
Holly Bresnahan	Citizen at Large
Karen Bryer	School Administrator
Christine Cabral	Citizen at Large (City)
Jane Dauphinais	Town Council
Joe de la Cruz	Town Council
Enrico DeMatto	Permanent School

Building Committee:

Marc Denno	Citizen at Large
Kevin Fiftal	Citizen at Large
Wes Greenleaf	Citizen at Large
Jon Heller	Citizen at Large
Craig Koehler	Citizen at Large
Dan O'Donnell	Citizen at Large
Kevin Trejo	Citizen at Large
Kim Shepardson Watson	Board of Education
Hal Zod	Planning Commission

Ex Officio Members:

Heather Bond Somers	Town Council (for Mayor)
Rita Volkmann	Board of Education

Staff:

Mark Oefinger	Town Manager
Gary Schneider	Director of Public Works
Mike Murphy	Director of OPDS
Mike Graner	Superintendent
Bill Robarge	Director of Buildings and Grounds
Nicki Bresnyan	Executive Assistant

Facilitators:

Mike Zuba	Milone & MacBroom

APPENDIX D

Stakeholder Group

Andrea Ackerman	Board of Education
Gary Baker	Parent
Robert Beaulieu	Teacher
Holly Bresnahan	Parent
Karen Bryer	Central Office Staff
Miranda Chapman	Military Liaison
Enrico DeMatto	Community Member
Elizabeth Gianacoplos	Board of Education
Jamie Giordano	Principal
Michael Graner	Superintendent
Wesley Greenleaf	Community Member
Jonathan Heller	School Facilities Task Force Member
Tom Jokubaitis	Consultant
Mary Kelly	Board of Education
Clint Kennedy	Community Member
Ernie Koschmieder	Food Service Director
David Laffargue	Teacher
Sean McKenna	Assistant Superintendent
Val Nelson	Principal
Mark Oefinger	Town Manager
Bill Robarge	Director of Building and Grounds
Brenda S.	Groton Parent Council
Joey Schick	Board of Education
John Scott	RTM Member
Kim Shepardson Watson	Board of Education
Archie Swindell	RTM Member
Rita Volkmann	Board of Education
Mike Zuba	Consultant

GROTON PUBLIC SCHOOLS
GROTON, CONNECTICUT

EDUCATIONAL SPECIFICATIONS
for a
NEW CONSOLIDATED MIDDLE SCHOOL
GRADES 6 – 8

Developed July, 2014

TABLE OF CONTENTS

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Long Range Plans	5
Capacity – Enrollment Data	6
Category Priority	7
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Education Program	11
Space Specifications	12
Stakeholder Group Report	18
Systems Considerations	28
Site Considerations	31

Appendix A – Space Specification Summary

Appendix B – Vision Committee

Appendix C – School Facilities Task Force

Appendix D – Stakeholder Group

Mission Statement

The mission of the Groton Public Schools is in partnership with parents and community to enable all learners to achieve their highest potential by fostering excellence through a challenging program of study and a safe environment. Our schools will promote the pursuit of lifelong learning, responsible citizenship, and informed decision-making in a culturally diverse world.

INTRODUCTION AND PROJECT OVERVIEW

These educational specifications propose that the Groton Public Schools construct a new, consolidated middle school for grades 6-8, preferably adjacent to the high school in order to create greater potential for resource sharing and for program enhancement in both schools. The proposed school construction plan is the result of work done by several groups over a three year period. In December of 2011, a set of educational specifications was developed by a Vision Committee charged by the Board of Education with determining the needs of the Groton education system, grades 6-8, as part of the next stage of a larger construction project that was being implemented by the town. The charge of the committee was to develop educational specifications for grades 6-8 to foster 21st Century teaching and learning. Committee membership consisted of educators with expertise in middle school education, in addition to parents, administrators, and members of the Board of Education. (The committee members are listed in Appendix B.)

On December 12, 2011, the Groton Board of Education unanimously approved the Vision Committee Report which included the educational specifications for the construction project. The Town of Groton held a referendum on May 2, 2012; the project was rejected by the voters.

In January 2013, a School Facilities Task Force was appointed by the Mayor of the Town of Groton, and the Task Force began work to revise a construction proposal for possible reconsideration at a future referendum. (The Task Force members are listed in Appendix C.) The Task Force considered options for school renovation, as well as construction of a new facility and its site selection.

In January 2014, the Groton Board of Education hired Dr. Michael Graner to serve as Superintendent of Schools and requested that he work with the School Facilities Task Force to finalize a plan and to develop educational specifications for the proposed project. Dr. Graner convened a Stakeholder Group in May 2014 to study previous school district initiatives, actions, and issues associated with school desegregation and the future organization for the public schools. In particular, the school district studied population and demographic trends in 2011-2012 and took action to implement a redistricting plan in the fall of 2013 to ensure racially balanced elementary schools. In the summer of 2014, the Connecticut State Department of Education found that Groton Public Schools continues to exceed the State racial balance guidelines at the elementary level and is now required to resubmit a plan of remedy. The overwhelming recommendation of the Stakeholder Group is to retain the current grade level organization of the school district. The declining enrollment and the need for substantial school renovations in older elementary schools, however, prompted the committee to recommend the consolidation of its two middle schools as a foundation and first phase of a longer term solution to maintain racial balance. The District believes that school redistricting has had short-term success in the past and will most likely achieve only short-term results in the future unless bold and progressive action is taken now. Bringing all middle school students together in a single school provides the flexibility to enhance the learning of all students in the school as a whole as well as in individual classrooms that reflect the diversity of the community.

The construction of a consolidated middle school will enable the district to convert the current middle school facilities into pre-kindergarten through grade 5 elementary schools that are larger in capacity and capable of absorbing students from within the school district, and possibly, students from neighboring towns as well. Two older elementary schools, one of which has been the subject of racial imbalance, will close, and all students will be reassigned either to one of the reconstituted middle-to-elementary schools or to other elementary schools in the district. Subsequent action for a long-term racial balance plan is still under development, but one option being considered is a controlled choice process for new school registrants that will strive to ensure that all Groton elementary schools are racially balanced and will provide diverse learning environments for all students.

The new consolidated middle school will accommodate 938 students, as projected in the upcoming peak enrollment year. The school will be organized with four teaching teams at each grade level that have the capacity to instruct about 80-100 students. The theoretical capacity of the building is about 1,200 students.

Because educational programs directly affect space requirements, consideration to these provisions is essential. The space specifications for this school project will exceed the allowable square footage delineated in the Space Standards Worksheet. The Superintendent of schools will seek a waiver of these space standards to enable the project to be constructed as specified with full construction grant reimbursement. Groton is experiencing increasing loss of students to neighboring magnet schools. The program features specified in the new consolidated Groton Middle School will put it on a more equitable footing to compete for student interest and enrollment. All specified space is required to achieve this opportunity for a more level playing field in that area school districts are competing for the same students.

The education specifications that follow were developed by a group consisting of the following people:

Dr. Michael H. Graner, Superintendent of Schools
Mr. Michael Lovetere, Interim Assistant Superintendent
Dr. Thomas Jokubaitis, Consultant
Mr. Michael Zuba, Consultant
Mr. Wes Greenleaf, Director of Maintenance
Mr. Sam Kilpatrick, Director of Maintenance

EXECUTIVE SUMMARY OF THE STAKEHOLDER GROUP REPORT

The goal of the committee was to identify educational specifications for facilities that reflect educational programs which address sound strategies for the middle school learner. A deliberate emphasis was placed on the need to propose structures that facilitate 21st Century learning. The designs presented in this document consider present practice, current research, and future needs. They describe schools unique to Groton which reflect its beliefs and philosophies. As stated in the *Groton Core Beliefs*, "Students should have access to resources and facilities that support optimal learning." The information presented herein validates, and gives coherence to, our best ideas about education.

Research shows that architecture affects learning; therefore, the proposed design of our schools enhances and brings to life the educational programs for our students and community. Indeed, improving physical learning environments can improve student achievement. The school structure must take into account the ever-advancing technological world, with sensitivity to the development of the whole child, including growth in academic, emotional, social-behavioral, and physical health domains. The middle school proposal facilitates interaction among students, faculty, and staff, and fosters a sense of belonging. Students will be able to fulfill their learning potential through the accommodation of virtually any type of subject matter and through multiple forms of instruction.

The design will create environments that promote the pursuit of academic excellence in an information-based technological society. The proposed architecture will allow indoor and outdoor learning spaces, to be inherently flexible to meet the current variety of needs as well as the changing demands of a dynamic learning environment. Flexible learning spaces will allow increased collaborative work and more opportunities to develop skills in communication, leadership, teamwork, and innovation. Schools will be designed to make maximum use of environmentally friendly technologies, and wherever practical, systems will be accessible for learning opportunities.

PURPOSE OF EDUCATIONAL SPECIFICATIONS

Educational specifications are the cornerstone of successful school building programs and must provide a comprehensive overview of the program of instruction to be housed, the activities to be encouraged, and the facilities necessary to carry out the goals and objectives of the school system.

The Connecticut State Department of Education defines educational specifications as, "a description of the general nature and purposes of the proposed school building project, including the applicant's long-range educational plan and relationship of the proposed project to such plan; enrollment data and proposed project capacity; the nature and organization of the educational program; support facilities; space needs; specialized equipment; environmental controls; and site needs."

The specific purposes of educational specifications as part of the construction grant approval process are for:

1. The educational agency to justify the need for the proposed school building project

2. The educational agency to describe the academic activities that a proposed school building project is to support and the types of spaces that will best accommodate program requirements

3. The Department of Administrative Services to determine the nature, scope, feasibility and funding level for the proposed school building project

LONG RANGE PLANS

Groton Public Schools is experiencing enrollment decline and demographic changes in its student population. According to the latest demographic study, the number of students will peak during the 2017-18 school year. In the summer of 2014, the State Department of Education cited Groton for racial imbalance in one of its elementary schools. This challenge follows even in light of the recent (2012) redistricting of elementary schools to avoid such a circumstance. While a comprehensive and long-term plan to maintain racially balanced schools is still being developed, the Stakeholder Group (May 2014) made the following recommendations to the Board of Education, who subsequently adopted it:

- Construct a new, consolidated middle school adjacent to the high school to the extent practical and feasible
- Re-purpose the current middle schools as larger elementary schools for grades pre-kindergarten through grade 5
- Close the three elementary schools in need of substantial renovations (Claude Chester, Pleasant Valley, and S.B. Butler Schools)
- Redistrict the elementary student population to ensure racially and economically diverse schools
- Develop long-term plans to maintain racially balance elementary schools (controlled choice enrollments and school assignments may be considered)

The new middle school is the foundation for a long-term solution to the District's enrollment and racial balance challenges. It constitutes the first phase in a long-term solution and must be accomplished before subsequent action steps. All middle school students in Groton will attend the same school. Issues associated with racial balance will then reside exclusively at the elementary school level.

The second phase of the long-term plan is to retrofit both of the current middle schools as Pre-kindergarten through grade five elementary schools.

The third phase of the long-term plan is the closing of Claude Chester, Pleasant Valley, and S.B. Butler Schools with the redefining of all elementary school attendance zones. This action will create attendance patterns that could more easily and accurately predict longer-term racial balance at the elementary school level. Further, the net loss of two buildings to the school district inventory will produce immediate and long-term savings, while one middle school may, over time, result in greater efficiencies and lower operating costs.

CAPACITY – ENROLLMENT DATA

In February 2014, Mike Zuba of Milone & McBroom presented a comprehension study of enrollment for the Groton Public Schools (appended). This report forecasts district and school enrollments through 2023. The projected middle school enrollments for a consolidated middle school are as follows:

YEAR	WEST SIDE	CUTLER	NEW SCHOOL
2014-15	494	445	940
2015-16	476	440	917
2016-17	516	415	931
2017-18	524	414	938
2018-19	530	399	928
2019-20	514	410	924
2020-21	506	382	888
2021-22	505	373	878
2022-23	487	373	860

The peak enrollment year for this project is 2017-18. The capacity for the new middle school during that year is as follows:

Grade	Enrollment	Number of Classes	Average Class Size	Theoretical Capacity
Six	336	16	21.0	400
Seven	306	16	19.1	400
Eight	296	16	18.5	400
TOTALS:	**938**	**48**	**19.5**	**1,200**

The functional capacity of the school is 1056 students (22 students per class X 48 classes). This number assumes a district policy that targets class size maximums at or around 22 students per class. The theoretical capacity depicts the maximum number of students who could reasonably be accommodated in each class at twenty-five per class.

CATEGORY PRIORITY

This is a Category One Project in accordance with the requirements of Section 10-283 (a-6) of the Regulations of Connecticut State Agencies, which states that Category One Projects are primarily required to:

> "Create new facilities or alter existing facilities to provide for mandatory instructional programs pursuant to Title 10 of the general Statutes, including, but not limited to special education; the arts; career education; consumer education; health and safety; language arts, including reading, writing, grammar, speaking, spelling, and library media centers; mathematics; physical education; science, including laboratories; and at the secondary level one or more foreign languages and vocational education including shops; or for physical education facilities in compliance with Title IX of the US Elementary and Secondary Education Act of 1972 where such programs or such compliance cannot be provided within existing facilities."

EDUCATIONAL SPECIFICATIONS COMMON TO ALL SCHOOLS

Common educational specifications applicable and essential to all middle schools: The facility designs for all three levels should accommodate projected enrollments through the year 2025, taking into account increases in student population and future needs. The designs support the concept that smaller learning communities within the fuller learning community enhance interactions among learners, increase a feeling of belonging, and emphasize the importance of individuality. The school will be physically organized in grade level clusters that facilitate teams of four academic core subject teachers [language arts, mathematics, science, and social studies] working with the same group of 80-100 students. There will be four teams per grade level. Support services spaces will be provided within each grade level cluster for ease of access by students and for the facilitation of teacher collaboration.

Facility Design Guiding Principles

1. Accommodations for both current and future projected enrollments
2. Smaller learning communities within the full school community
3. Student driven, interactive, project-oriented learning experiences
4. Adaptable space for dynamic and changing educational philosophies and programs
5. Spaces for multiple functions
6. Spaces for meetings of various sizes distributed throughout the facility
7. Support for contemporary and emerging technologies
8. Support for 21st Century learning
9. Atmosphere to provide a welcoming sense of comfort for students, staff, and community
10. Free flowing, safe, easy movement
11. Maximum exposure to natural light and airflow
12. Durable, high quality, age-appropriate furnishings to support the educational program
13. Acoustical treatment designed to minimize transmission of sound
14. Durable, easily maintained finishes
15. Appropriate energy efficient technologies
16. Central Heating, ventilation, and cooling (HVAC)
17. Community access and use to minimize disruption to educational activities
18. Emergency Shelter, if necessary
19. Outdoor spaces as an extension of the educational, athletic, and community program
20. Diverse educational philosophies such as alternative education models and magnet school models

School Safety and Security

The committees deemed security a vital factor. As documented in the Groton Public Schools Strategic Plan, a safe learning environment is one of the district's key goals. Our children must have a sense of physical and emotional well-being, which in turn, will enhance student achievement. Therefore, interior and exterior surveillance cameras will be placed throughout the buildings. Electronic door locks will control access to the entire school. In particular, front doors will be designed to control entry to the school. For security purposes, one entry door will lead directly to the main office. The designs of the buildings will ensure a secured

vestibule as well as clear views of all areas, incorporating the inclusion of glass to provide maximum visibility for the monitoring of traffic. To maintain security, an addressable intrusion alarm system is essential. Areas designated for community use will be provided with accessible parking and convenient entry doors. Designated community use areas will include athletic facilities, auditoriums, media centers, and cafeteria. Storage space will be provided for community-based programs.

The school design will conform to the school safety standards as recommended by the School Safety Infrastructure Council, as charged by Public Act 13-3, Section 80(b), or its subsequent revisions. These standards include, but are not limited to, (1) entry ways to school buildings and classrooms, (2) cameras throughout the school building and at all entrances and exits, including closed-circuit television monitoring, (3) penetration resistant vestibules, and (4) other infrastructure devices and services as they become industry standards. A risk assessment of the potential school site will enable school district leadership, its building committee, and architects to determine an "all hazards" threshold level response to potential threats in order to plan the most effective mitigation for attaining the desired level of protection. Critical compliance areas to be considered in school construction and site development are:

1. School site perimeter
2. Parking areas and vehicular and pedestrian routes
3. Recreation areas (playgrounds, athletic areas, multi-purpose fields)
4. Communication systems
5. School building exterior
6. School building interior
7. Roofs
8. Critical assets/utilities
9. Other areas as may be indicated by the proposed school location, its site, design features

Community Use

All schools will serve as town centers that can support community-based programs, activities, and events for the citizens of Groton. The designs will identify specific activity zones to be isolated for after-school activities and for community use, as well as for security and maintenance.

The contemporary public school facility serves the educational interests of its studens as a primary function, while it embraces the needs of its community for an increasing range of activities that enhance the quality of life its citizens. Therefore, areas of the building need to be accessible after school hours for activities ranging from scouts to sports activities to adult education enrichment classes as well as for gatherings of people for meetings, entertainment, or recreation. The philosophy of the Groton Board of Education is based on the premise that school buildings belong to the community. They should, therefore, be made available to the public to the fullest extent practical, while maintaining as their primary foremost consideration, their function as learning places for children.

Areas most in demand for community use are:

- Gymnasiums
- Auditorium
- Library-Media Center
- Cafeteria
- Computer Labs
- Outdoor athletic facilities

The building design will accommodate public access, including handicapped citizens, to all public places, including lavatories, telephones, water fountains, and seating. The design, however, will respect the need for security of core school facilities and public areas. Visitors during the school day, therefore, will be directed to a single point of entry to the building.

Areas of the building will accommodate the display of student art works and academic projects and will provide space for visiting lecturers and artists in formal and informal settings that promote interaction among audiences.

EDUCATION PROGRAM

The new middle school will incorporate programs and services currently provided at West Side and Cutler Middle Schools, albeit in learning environments more reflective of contemporary approaches to teaching and learning and the use of technology as an integral component of the educational process.

All grade levels will be organized with four-teacher teams [mathematics, science, language arts, and social studies], with twelve teachers for each discipline, for a total of forty-eight core subject teachers. Grade level teams will be clustered in the same part of the building, preferably in pods where "between" classroom space will also be used for gatherings of classes.

A significant feature of the middle school program is the commitment to the performing and to the fine arts, with opportunities for one and two-dimensional art projects and for music opportunities in band, chorus, and orchestra. A performance stage is highly desirable in that it also serves as an instructional area for drama, band, and orchestra. With its inclusion, school will have ample settings for student art projects as well as for music and theater performances. Classrooms supporting these activities will be strategically placed for access and for minimizing disruption to classes.

The unified arts program will continue to cycle students through a variety of subjects including integrated project-based STEM activities, music, art, health, and computer education while World language opportunities in Spanish, French, and other languages will be available for all students.

Learning support services will be available in each grade level cluster for English Language Learners, Response to Intervention (RTI), tutorials, and resource room settings.
The school will also continue to provide an inclusive setting for special needs students with behavioral disorders as well as for students on the Asperger spectrum. Occupational and physical therapy, speech and language therapies, and counseling approaches will be maintained to ensure a comprehensive array of services for students requiring specialized approaches for their learning.

Physical education and health will provide opportunities for personal fitness and nutrition awareness. A multi-sport field and a walking-jogging trail around the perimeter of the athletic complex will accommodate team-sports and other outdoor activities.

SPACE SPECIFICATIONS

Classroom Attributes

Physical and curricular implications for classrooms include factors common to building. All spaces will be climate-controlled to accommodate the changing seasonal temperatures of the New England environment and to allow all year use. The maximum use of natural light will be sought. Environmentally friendly but durable construction materials will be used. Furniture will be mobile, enabling individual, small group, and whole class instruction. Access to technology and equipment to accommodate students' diverse learning styles will be provided.

Students will have opportunities to collaborate directly with classmates, and remotely with others, through interactive technology. Wireless connectivity with sufficient broadband width to support one-to-one computing will be accessible throughout the school. Classrooms will be strategically located to accommodate the needs of individual disciplines in conjunction with other required services. Voice, video, and data access will be incorporated to enable students to learn technological skills essential in today's world, as well as in the world of the future. Telephones capable of internal and external communication will facilitate efficiency, ensure safety, and allow for collaboration and teamwork among staff members as well as with parents and the overall school community.

All classrooms will have counter space with storage above and below; bulletin boards, white boards, or IDEA painted walls; and current technologies. Room darkening shades and a lockable coat closet or teacher wardrobe will be provided. Each room will have appropriate classroom equipment and an American flag. Teachers will have access to a four drawer lockable file cabinet.

Four science laboratory classrooms per grade level will be equipped with all of the above features in addition to:

- Room ventilation fume hoods
- Handicapped accessible work stations
- Reconfigurable tables with chairs
- Fire blanket and extinguisher
- Safety glasses cabinet
- Eye wash drench station
- Emergency shower

Science prep rooms will have:

- Appropriate ventilation
- Chemical resistant counters and floor tiles
- Flammable materials storage cabinet; chemical storage cabinet
- Fire blanket
- Counter space with wall sink and chemical resistant plumbing
- Storage space for equipment and materials
- Eye wash station
- Fire extinguisher

Library/Media Center

The media center serves as the hub of the school in all of the designs. It will, therefore, be located in proximity to instructional areas and will be technologically and electronically equipped. Ample space will be provided for shelving, equipment, and storage. Acoustical treatments and appropriate lighting levels for daytime and nighttime uses will be included. A professional development area adjacent to the media center will provide staff with ease of access to resources to keep current of educational trends and to provide space for training, for seminars for small group presentation. The media center will be accessible for community use after school hours.

Main Office/Principal's Office

The principal's, or main office, located at the school's entry, serves as its center for communications, security, and attendance procedures. For security purposes, one entry door will lead directly to the main office. The office will be large enough to accommodate seating for a minimum of eight people, since the principal often meets with parents, students, small teams of teachers or other staff members, as well as with community groups. The general administrative office will present a comfortable and inviting reception area, signifying that visitors are welcomed and valued. There also will be ample space for secretarial workstations and for office equipment. Telephones with internal and external capabilities with a sufficient number of lines to handle the volume of phone calls will be installed.

Kitchen

A full service kitchen, sufficient for school and community use, will be equipped with an accessible loading dock.

Custodial

The custodial office, connected to a general storage/receiving area with a loading dock isolated from students, will be equipped with a phone, computer, washbasin, shower, toilet, and deep service sinks with floor basin. Satellite custodial closets will be located throughout the school.

Corridors

Corridors and stairwells throughout the school will have sufficient length, width, and depth to accommodate two-way circulation and general movement; additionally, they will have directional signage for ease of traffic flow and for safety. A floor plan graphic will be located on a wall near the entrance to the school. Lighting and acoustical treatments will be appropriate to specific uses. Adequate electrical outlets for technology-related educational and maintenance purposes will be installed. A combination of secured and open display areas for student work and aesthetically pleasing wall décor will enhance the environment.

Outdoor Accessible Storage

One double-door storage room for playground and sports equipment, as well as one adequately sized maintenance area will provide storage.

Technology Infrastructure

Since technology continues to assume a greater role in professional and personal lives, schools need to seek to serve the community through the middle of the 21st century. In order to support an adequate telecommunications infrastructure, the building will have a centralized, server room to accommodate all aspects of the technology infrastructure, including voice, video, and data capability for all classrooms, administrative, support, and common areas.

The general guidelines for the technology infrastructure of the new middle school will conform to the "Guidelines for Infrastructure in Connecticut Schools," as published by the Connecticut state Department of Education, December 1995, or its most recent revision. The specific technology requirements prepared by architects or engineers will be reviewed by School Building Committees and their technical advisors to ensure that the most advanced and flexible system is installed. The infrastructure will facilitate both wired and wireless connectivity to the LAN, WAN, and Internet, with sufficient broadband width to support wireless one-to-one computing for students and for all school employees.

Design

The data design for this school will include specific recommendations for:

- Wiring closet locations
- Location and quantity of drops for classrooms
- Backbone requirements for wired and wireless computer workstations
- Wiring closet electronics specifications at current industry standards
- Testing requirements to ensure that all systems and connectivity function
- Power requirements with a separate, independent power source with surge protection
- Documentation requirements
- Whole building access to the wireless system
- Sufficient broadband width to support one-to-one computing

Internet Connection

The building will have routers and DSU capable of connecting to an Internet Service Provider in varying speeds and dedicated Internet connections.

Standards

The system will conform to all current industry standards.

Applications

An integrated technology system (SMART Technologies) will be installed to support administration, teaching, and learning activities. The system will provide the following:

- Video time display, instant messaging, all call and retrieval systems
- Digital time displays, electronic clock, and bell system

- Classroom and office telephone/intercom
- Vandal alarm and video security system in strategic parts of the building and outdoor areas; annunciator panels to report security breaches and fire alarms
- Public address system
- Connections to the public voice system in strategic parts of the building , voice messaging and room-to-room calling
- Electronic mail, bulletin board, and conferencing
- Facsimile capability
- Wired and wireless LAN, WAN and Internet connectivity
- Remote collaboration capabilities with other schools, universities, and businesses expert in specialized fields

Video Distribution

The video system will access media from a variety of sources including:

- Local origination, CATV, ITFS, microwave signal antenna; Decoder, satellite dish, DVD/VCR, laserdisc, CD-ROM, video file server, classroom, or school programming

In addition:

- Each teacher will control technology devices from the classroom.
- The system will be safeguarded.
- All instructional and administrative areas will support live video program generation
- The video component of the network will be capable of supporting multiple channels.
- Classrooms will have the ability to access multiple channels, independent from each other.
- Broadcast capability will be available from various areas of the school.

Installation

The wiring installation will meet or exceed the recommended minimum standards established by the Connecticut state Department of Education as specified in its publication, "Guidelines for Technology Infrastructure," 1995 or its most recent update.

- All wiring will be placed above ceilings or behind walls, and permanent installation should be affixed to appropriate support
- Wire runs will be supported at intervals that do not permit visible sags, using cable trays
- All penetrations of firewalls will be properly and completely sealed with non-flammable material
- Safe distances will be maintained from sources of electromagnetic interference

Technology Equipment and Services

Goals of the Technology Program:

A. Technology will enable students to

1. Determine and apply the appropriate technology to their learning across curriculum areas.
2. Have equal access to technology.
3. Participate in ever expanding learning communities.

B. Technology will enhance:

1. Interactive communication among schools, community, educational partners, and homes, creating more opportunities to advance learning
2. Expansion of data management to inform decision-making
3. Organizational efficiency through the acquisition of up-to-date resources and training

Description of Technology Equipment Needs for a New Groton Middle School

1. All regular classrooms will be equipped with sufficient mobile computing devices to enable one-to-one computing, SMART Technologies, interactive white boards with HD capability, and a [networked] printer located in classrooms or a shared space. These computing devices will have access to a LAN and to the Internet. Several hard-wire drops will be strategically located in each classroom to support a teacher workstation connected to the LAN and WAN with access to appropriate software to manage routine classroom functions as well as computer-assisted and/or computer-managed instruction programs. All classrooms teachers will have laptop computers for school and home use.

2. Resource rooms and other specialized instructional space will be equipped with suitably sized Smart Board white boards connected to the school LAN and WAN. Teacher workstations will also be provided in all specialized instructional areas.

3. The Library-Media Center will serve as the hub of the computer network. Two thirty-station computer labs with three/four network laser printers will be located within, or juxtaposed to, the media center. A head-end for video broadcasting will be located in an area of the media center where public gatherings/meetings take place. The media center will be equipped with an electronic card catalog system and a bar code scanning circulation system. The Library office/work area will be equipped with one teacher workstation and other basic communication devices. A state of the art media distribution system will be installed, preferably in the media center. Secure storage and charging stations will also be installed.

   A wiring room/computer management space will be located in the vicinity of the media center. This area will contain computer workstations for managing the networks as well as sufficient space for equipment storage and work benches for routine computer repairs. Centralized wiring closets will be strategically located for security and operational effectiveness.

4. Within their classrooms, teachers will manage media presentations integrated within the voice, data, and video network. A TV monitor for the clock and bell system and school announcements will be provided in each classroom.

5. Administrative areas will be equipped with computers, telephones, facsimile machines, and printers, and high volume and high quality copier systems.

6. All special instructional areas will be connected to the network. Special services personnel will have computer workstations located in their offices or work areas.

7. The gymnasium and cafeteria will have cabling for video and data drops, large portable video presentation projector, monitor, and twenty-foot screens.

8. Art, music, and physical education areas or offices will be equipped with computer workstations and ceiling mounted presentation screens. Music rooms will have access to recording equipment.

9. Electronic bulletin boards will be located at the main entrance, in the cafeteria, and in the gymnasium.

10. A separate, dedicated electrical wiring system and independent power source with appropriate surge protection for operating the technology infrastructure and its equipment will be installed to ensure an adequate supply of power to operate the system without disruption.

11. Regular classroom and specific spaces will have the capability of virtual collaboration with other schools or educational partners, for whole class, small group, or individual instruction.

12. The Director of Special Services will be consulted regarding assistive technologies required to meet the needs of students and teachers.

STAKEHOLDER GROUP REPORT

In alignment with the Groton Public Schools Mission Statement, the goal of the Stakeholder Group is to propose specifications for facilities that support the middle school learner. Evidence from medical science and psychology studies show that middle school students change dramatically in all aspects during this very critical period in their lives. The design of this middle school fosters a sense of belonging, enabling students to fulfill their learning potential intellectually, emotionally, physically, and socially. This design allows teaming, instruction through exploration, and authentic interdisciplinary learning.

The proposed facilities will also strengthen the school/community relationship by serving as community centers.

A. Classroom Attributes: LA, Social Studies, Math, World Languages, Special Education

1. Appropriate size for the support of a variety of instructional methods and equipment
2. Variety of floor finishes
3. Flexible, multiple-use learning spaces with adjustable spacing and movable equipment to afford opportunities to learn and to collaborate
4. Easy access to locker areas not to interfere with the teaching/learning process
5. Storage areas for teachers and students
6. Climate control
7. Communication and technology capabilities with access to floor outlets
8. Telephones capable of internal and external communications
9. Public address system
10. Project work areas
11. Classrooms to include:
    a. Adjustable height tables, bench tops, and workstations easily configured for a variety of classroom activities and uses
    b. Stackable chairs
    c. Interactive whiteboards
    d. Dry eraser boards (White boards or IDEA Paint)
    e. Desktop computers
    f. Secured and unsecured storage
    g. Sink with hot and cold water
    h. Window coverings
    i. Multi-level bulletin and display boards
    j. Cork tack strips
    k. Ceiling strips with attaching hooks for hanging student work to be reviewed by Fire Marshal
    l. Adjustable lighting areas determined by activities

B. Science Classrooms

A science classroom is a unique place for hands-on learning, where students can participate in experiments within a laboratory setting. Physical attributes identified for the classroom in addition to the following will provide:

1. Teacher demonstration areas with electrical outlets with access to gas and water
2. Student stations with electrical outlets
3. Deep sinks for experimentation and washing glassware
4. Electrical outlets at work stations
5. Chemical and moisture-resistant bench tops, tabletops, cabinetry, and floor system
6. Low benches near exterior windows for horticulture studies
7. Ample counter and bench space
8. Vented chemical storage cabinet
9. Chemical fume hood or fume extraction system with waste sink
10. Cabinet for safety glasses storage with ultraviolet sanitizing light
11. Direct access to storage room
12. Built-in cold storage
13. Safety furnishings (eyewash station and emergency shower)
14. Department storage area for materials, lab equipment, and chemicals
15. Dishwasher in science storage/prep area
16. One lab for each team
17. Flexible space to adapt to future technology

C. Special Education: Self-Contained

Special Education classrooms are places where all students with disabilities can learn to their fullest potential. An alternative education program is housed within the mainstream environment for students who need a more restrictive setting due to their disabilities. The facility requirements listed below will ensure optimal learning.

1. Areas of service for speech and language, occupational and physical therapy, hearing and visually impaired, English for Speakers of Other Languages, and assessment and/or evaluations
2. Acoustical privacy
3. Large air-conditioned, carpeted classroom, with kitchen area and bathroom
4. Time-out facility area in each learning skills classroom
5. School psychologist area
6. Secured file and record storage areas
7. Proximity to office
8. Centrally located evaluation/assessment room with one-way glass for screening and evaluation
9. Secured file and record storage areas
10. Alternative education classroom
11. Appropriate safety mechanisms for specialized programs

D. Faculty Office, Workroom, Meeting Room

These faculty facilities will provide an area for small group meetings, privacy for communication purposes, and storage for typical office equipment with:

1. Communication and technology capabilities
   a. Voice mail
   b. Telephone capable for internal, external, and long distance
2. Storage Area
3. Faculty work areas at each grade level with copy machines and space to assemble documents
4. Access to computers
5. Meeting room with capacity for 8-10
6. Direct access to private restrooms
7. Furnishings
   a. Easily reconfigurable tables and chairs for meetings
   c. Secured and unsecured secured file cabinets
   d. Storage cabinets

E. Thematic Corridors

1. Width accommodating two-way circulation
2. Distinct pedestrian walkways by locker areas
3. Full-length lockers with recessed combination locks
4. Finishes to reduce noise levels
5. Appropriate lighting levels
6. Directional signage
   Secured, as well as open, display areas
7. Open stairwells
8. Wall Decoration
9. Security cameras
10. Individually secured hallways

F. Music Classrooms

A learning environment with appropriate acoustical design and climate control will provide soundproofing and protection of instruments and sheet music. Various spaces will accommodate instrumental, vocal, and choral groups scheduled simultaneously. Built-in risers will allow the elimination of transport. Easy access to loading areas/outdoors as well as double entry doors will facilitate the movement of equipment. Attributes identified to meet classroom needs:

1. Band space for 125-150 students
2. Vocal space for 125-150 students
3. String space for 100-125 students
4. Instrumental space for band and string small lesson groups ensemble rooms
5. Two Choral rooms with retractable, built-in risers

6. Easy access to the stage from the music rooms
7. Appropriate acoustical design for vocal and instrumental music
8. Sound-proofing
9. Double entry doors for choral and instrumental rehearsal rooms
10. Humidity controlled for protection of instruments and sheet music storage and sink to wash a full size tuba
11. Audio and video recording capabilities compatible with updated electronic devices
12. Sheet music storage space:
13. Secured instrument storage
14. Amplification and speaker systems
15. Portable risers
16. Direct access to outdoors and/or leading area and performance auditorium

G. Visual Arts – (should reflect a studio atmosphere)

A large room with appropriate storage will house equipment and supplies. Two large sink areas will accommodate projects, hygiene requirements, and maintenance of equipment. Computers will enhance instruction in graphics and design.

Attributes identified for classroom in addition:

1. Location at center of school with direct access to outside and adjacent specialty classrooms
2. Teacher demonstration area
3. Areas for full class critiques
4. Appropriate storage space including upper and lower cabinets, cubbies, bookcases, specialty casework for portfolio storage, and dry rack area
5. Maximized display spaces
6. Multiple stacked/moveable display boards
7. Adjustable spot track lighting
8. Computer stations
9. Water to art rooms with a minimum of two large sink areas with deep sinks and floor drains
10. Non-slip and water resistant flooring
11. Kiln/Ceramic room to include:
    a. Kilns and clay storage
    b. Ceramics work adjacent to kiln room
    c. Two to three kilns
    d. Appropriate exhaust and ventilation systems
    e. Spray booth for glazing
12. Art Storage:
    a. Separate room with correct size and type of storage furniture and shelving
    b. Should accommodate of 4' x 8' sheets of plywood
13. Art office:
    a. Adjacent to work area with clear line of sight to all areas
    b. Accommodates up to three staff
14. Interactive whiteboard and dry erase white board

H. Technology Education Suite

A technology suite, electronically and technologically equipped, will include the following spaces: video production facility, computer lab, school-wide broadcasting studio, and computer support.

Computer Lab/Rooms Capabilities

1. Adjacent to media center
2. Teacher workstation
3. Internal access to media center
4. Visual link to production facility and broadcast studio
5. Twenty-five work stations
6. Projection device and screen
7. Connection to school network
8. Glass wall for visual link to media center and adjacent technology suite
9. Independent access to corridors
10. Space designed to support computers and other devices
11. Acoustical treatments
12. Ability to vary lighting levels
13. Appropriate flooring
14. Video editing station
15. Built in smart boards
16. Built in lockable storage
17. Secure file cabinets

School-Wide Broadcasting System

1. Two SVHS video cameras with tripods
2. Studio lighting
3. Microphones
4. Furniture to accommodate flexible groupings
5. Interactive whiteboard and dry erase white board

I. Media Center

1. Proximity to all instructional areas
2. Warm, inviting room with lights, windows, and skylights that create a positive environment for students
3. Multiple rooms for small groups use that necessitate glass or other architectural designs for soundproofing and monitoring
4. Controlled, direct outside access allowing for community use
5. Varity of floor finishes throughout, dependent upon usage
6. Access to lockable storage space for equipment storage
7. Expanded workroom for cataloging, processing, and repair,
8. Clear vision lines into media center
9. Counters and tables in workroom
10. Secured and accessible office with clear lines of vision into the media center

11. Voice, video, and data access and internal and external telephone access for media center office
12. Shelving and cabinetry for media center office
13. Secured and unsecured storage cabinets
14. Large circulation area
15. Publishing area for faculty and students
16. Separate instructional space within the media center
17. Controlled, independent lighting
18. Communication and Technology:
    a. Telephones capable of internal and external access in office and workroom
    b. Ability to connect microphones to public address system
    c. Online resources
    d. Computer projection capabilities and COW
    e. Monitoring system for internet access
    f. Additional outlets for charging stations
19. Security system for books, resources, and materials
20. Video production area with connectivity to the school telecommunications system for daily announcements and special productions

J. Staff Professional Library-Learning Area

1. Interactive whiteboard and dry eraser whiteboard with projection capabilities
2. Seminar/training seating arrangement for small groups
3. Flexible furniture easily reconfigured for a variety of staff development activities
4. Reference material storage
5. Professional material display systems
6. Storage areas, secured and unsecured

K. Physical Education Complex

The fitness and well-being of students is a priority. Additionally, mental acuity is enhanced by physical fitness. This suite has spaces allowing for one large gym for regularly scheduled classes and a small gym for use by teams or by adaptive Physical Education. The office area will employ current technology for communication purposes.

<u>Gymnasium, Physical Education, Locker Rooms</u>

1. One large gymnasium with a divider; one auxiliary gym; one fitness/exercise room for equipped for specialty classes
2. Drop in volleyball systems
3. Direct access to outdoors
4. Doors allowing access from outdoors equipped with keyless locks
5. Public telephones
6. Strategic access to restrooms
7. Separate, secured storage areas for school and community use
8. Access to storage spaces through double doors
9. Lighting levels for daytime and nighttime use
10. Direct access to locker rooms
11. Locker rooms with individual showers and toilets

12. Double doors at all entries and exits with removable mullions
13. Office area
    a. Centrally located near gymnasium
    b. Space for four to six faculty members
    c. Storage areas
    d. Direct access to restroom with shower and sink with hot and cold water
14. Acoustical treatments throughout
15. Public address system speakers from school in gymnasium, locker rooms, and staff offices/areas
16. Public address system
17. Furnishings
    a. Water fountains
    b. Free-floating wood gymnasium floor
    c. Aerobic exercise equipment
    d. Circuit weight lifting equipment
    e. Free weight lifting equipment
    f. Retractable bleachers with mechanical assistance
    g. Lockers in locker room to accommodate sports bags and winter clothing
    h. Climbing wall preferably located in the auxiliary gym

L. Cafeteria

The cafeteria is located next to the gym and away from the academic areas to permit use during after school and non-academic events. The configuration of space facilitates the ease of circulation for serving, eating, and waste recycling. A platform stage will be located between the cafeteria and gym, which have movable walls that allow presentations in either the gym or cafeteria. In addition, this area serve as an added instructional space for music and drama. The cafeteria will be organized along a "food court" concept with a variety of options for student lunches to expedite traffic flow through the serving area. The seating area of the cafeteria will be designed to promote an ambiance of comfort and appeal.

1. Ease of serving, dining, and waste recycling
2. Multiple serving lines with a minimum of two hot lunch lines and two a la carte lines
3. Appropriate acoustic treatments for this space
4. Total capacity for student dining not to exceed 300
5. Controlled access allowing for community use
6. Access to restrooms
7. Access to outdoor areas with naturalized outdoor seating
8. Variety of floor finishes
9. Access to storage space
10. Access to drinking water
11. Well-ventilated with local temperature control in both kitchen and dining area
12. Lighting levels for daytime and nighttime use
13. Furnishings:
    a. Round tables for cafeteria seating
    b. Cubicles for student storage
    c. Water fountains

14. Communication and technology:
    a. Ability to connect to video network
    b. Public address speakers
    c. Ability to connect microphone to public address system
    d. Computer station in kitchen connected to network
    e. Telephone in kitchen capable of internal and external communication
    f. Access to projector, screen and computer workstation
15. Accessible to teams without disturbing other instructional areas

M. Auditorium

An auditorium will accommodate a capacity of 50. Acoustical design and independent climate control will regulate sound and heat factors. The stage area will be used as an instructional space for band and orchestra.

1. Padded seating capacity for 500
2. Outside access including large double doors at rear for stage equipment
3. Large open space with carpeted in front of stage
4. Riser access to stage
5. Electrically operated stage curtains,
6. Secured storage spaces to include: closets, prop room with large sink, and dressing rooms
7. Sound system for auditorium
8. Access to restrooms for general public and back stage restrooms for performers
9. Acoustical design,
10. Auditorium lighting system
11. Lighting and sound booth
12. Video recording capabilities
13. Close proximity to music rehearsal and classrooms

N. Administrative Suite

<u>Main Office/Principal's Office</u>

Attributes identified for administrative office:

1. Central location with other office space distributed throughout the building to provide student and staff services
2. Main office to function as the center of school communications
3. Waiting and reception area to accommodate 12 people and designed within visual contact with secretarial areas
4. Secured file and records storage area with records safe
5. Mailroom, servicing up to 80 staff members, accessible without passing through administrative office area
6. Copy center accessible without passing through administrative office area
7. Work center large enough to handle a variety of clerical tasks
8. Space for 2 secretarial workstations
9. Secured and unsecured storage areas
10. Direct access to restrooms

11. Principal's office with adjacent conference room accommodating 10-12
12. Two assistant principal offices
13. Kiosk area for parent use of computers to access school information

Assistant Principal's office suite:

1. Easily accessible by normal traffic pattern to encourage frequent student visits
2. Full view of adjacent corridors
3. Reception area to accommodate 6-8 people, within visual contact of the secretarial area
4. One secretarial workstation with view of reception area
5. Work area for copy machine and space to assemble documents
6. Secured file storage area
7. Two separate means of access: one to reception area and the other to corridor
8. Access to conference area with whiteboards, seating, and tack walls and space to accommodate 10-12 people
9. Convenient access to restrooms

O. Pupil Services Offices

Pupil Services offices will be located adjacent to the main office. Space will be allocated for a full complement of mental health staff and volunteer/mentor coordinators.

1. Guidance offices, located adjacent to the main office, with access to corridor
2. Office spaces to accommodate 10 people
3. Access to the computer network
4. Reception area for guidance secretary with seating for 6 people
5. Acoustical privacy
6. Display racks for guidance information
7. Access to conference area with overhead and computer projection capabilities
8. Area for student secured records

P. Health Services Area/School Based Health and Dental Center

This center will allow space for appropriate staffing, cots, and waiting/treatment areas as well as standard health room equipment. Examination rooms, lavatories, and storage areas will be shared between the health Clinic and nurses' office. Computers and phones with internal and external capabilities will be provided. In addition, the health services area will include space for the continuation of a grant funded school-based health center and dental care facility. The Health Center will have separate entrances and reception areas. All persons outside the school community will be required to enter the building through the "single point of entry" and will gain access to the Health Clinic once they once they have been authorized. This will be carefully designed to ensure school security.

1. Outside entrance
2. Adjacent to administrative office
3. Space to accommodate 10-12 students, divided between cot and waiting/treatment areas
4. Acoustical privacy for hearing screen and confidential interviews

5. Tile floor surfaces
6. Waiting/treatment area to include sink, and adequate counter and storage space
7. Double locking medication storage cabinet in separate alcove
8. Direct access to private restrooms with shower, light, and exhaust fan
9. Localized lighting control in cot area
10. Entrances to cot areas visible from health office, but equipped with privacy screens
11. Information display system
12. Five work stations with computers with access to school network
13. Clinic capabilities for health monitoring
14. Medical waste disposal system
15. Examination rooms, one conference room, and one full service dental office

Q. In-School Suspension Room

This room and concept will provide an alternative to students' out-of-school suspensions. Students' behavior and work can be directly monitored by staff to ensure that the suspensions are completed appropriately.

1. Space to serve up to 12 students separated by dividers
2. Storage area
3. Climate control
4. Telephone capable of internal and external communication
5. Technology access
6. Dry eraser board

R. Custodial

1. Office and work/storage area accessible to each other and near loading dock
2. Office with washbasin and toilet facilities
3. Closets with deep sinks placed appropriately throughout the building
4. Work/storage area with floor drain and 2 deep service sinks
5. Computer access to school network
6. Personal storage lockers

SYSTEMS CONSIDERATIONS

Internal Communications and Security

- Communications System - Telephone – Intercom- Public Address System: Each classroom in the school should be equipped with an integrated communication system that allows for receiving emergency and routine announcements, making local area calls and communicating with the main office, accessing voice mail service inside and outside the building, and directing emergency assistance calls to one or more designated areas. Offices and other specific designated areas in the building should be equipped with the same integrated system as listed above with the additional services that: allow local and long distance calls, the ability to switch calls to specific telephones after hours with voice mail services, and back-up emergency power for telephone, voice mail, and intercom services. The system should include adequate service for future expansion of telephones throughout the building. The intercom system should also provide for exterior building speakers. The building should have approved radio coverage for first responders within the building, in compliance with Federal Communications Commission rules for communication coordinated with the band frequencies of first responders. Radio frequency access control devices should be considered at primary points of entry that permit rapid entry by emergency responders.

- Clock and bell system: Each room should be equipped with a time display showing both hours and minutes. The display shall originate from a central electronic clock module that shall also control chime or tone system circuits and other time-based functions. The system should be capable of being corrected or re-programmed from the master clock module.

- Fire alarm and vandal alarm system: The school should be equipped with a fully code compliant smoke detection, alarm and sprinkler system. All equipment should be state of the art. Remote annunciator panels showing location of the source of the alarm shall be located near the administrative area and front door of the school and the custodial office. Upon activation of an alarm, an evacuation signal shall be transmitted to a central station monitoring service. The alarm shall signal until manually reset. Sprinkler heads should be carefully located and positioned to prohibit tampering. Alarms should be easily heard throughout the building, outside the building and visual alarms should be provided as per code. All required fire extinguishers should be placed into recessed cabinets with the doors on audible local alarms.

  To protect the building when it is unoccupied, each room shall be equipped to electronically monitor the normal "closed door" status. Interruption of the "closed door" status shall automatically initiate a silent alarm to the local police or other security agency. High value areas shall be equipped with additional sensing devices to detect the presence of an intruder.

Building Systems

- Code compliance: All construction associated with the new Groton Middle School shall be in compliance with local and state building, health and handicapped codes and safety/security regulations.

- Custodial storage: Custodial storage should be strategically located for convenience and efficiency of work.

- HVAC System: The heating, ventilating and air conditioning system (HVAC) shall be thoroughly studied so the most reliable, flexible and energy efficient system is provided. An alternate energy efficient source of hot water for domestic use shall be provided for summer operation so major boilers may be shut down during non-heating seasons.

  The HVAC system will be controlled by a computerized energy system located in the custodial office with access from outside the school. The building will contain "zones" for managing temperature control for day and evening functions.

  Connection to external emergency power sources should be provided to keep vital building components and areas functioning in an emergency.

  The HVAC system should have the following characteristics:
  - Should be able to provide uniform temperature in all areas of the teaching space.
  - Should eliminate drafts and cold areas.
  - Should provide superior ventilation in all rooms and bathrooms.
  - Should eliminate noise in the classroom from the systems.
  - Should be able to provide for varying degrees of humidity control.
  - Should provide unquestioned reliability.
  - Should be energy efficient.
  - Should ensure air quality standards; filtering air borne allergens to the extent current technology allows.

- Windows: Window frames and sash should be of a material that is maintenance free. The provision of glazing in the classroom is both an educational and psychological enhancement because it provides visual relief and outdoor observation opportunities. The provision of windows or glazing does, however, enable heat loss or gain and presents a vulnerable point in security. Design features should minimize these effects. The provision of solar block glazing is desirable and should be considered in each room.

- Handicapped access: The building shall be in full compliance with state and federal handicapped codes and regulations. An elevator (if required) must be strategically located to ensure its suitability to meet current code requirements.

- Plumbing: The school should meet all code requirements for the number of toilet fixtures, sinks and drinking fountains. Lavatories should be strategically located. All fixtures should be of the heaviest duty, vandal resistant design and include automatic source for water closets, urinals and sinks in the student bathrooms. Adequate clean outs shall be provided and all restrooms must have floor drains. Piping should run in accessible pipe chases. Valves should be ball valves. Toilet partitions should be constructed of solid plastic with color all the way through the product, vandal resistant and equipped with heavy-duty hardware. Fixtures should be wall hung. The building should be divided into sections with isolation drain valves in each section.

- Electrical distribution: The school should meet all code requirements for electrical service. Each normally occupied space shall be furnished with numerous electrical convenience outlets located throughout the space for maximum flexibility of room layout and eliminating a need for use of extension cords. Power in each classroom should come from two sources, one for exclusive use of the technology infrastructure and the other for general use. Each electrical panel should have 25% free space to add future circuits. Emergency lighting should be on individual wall packs. All three phase motors should have phase protection. All exit signs should be L.E.D. type with cast housings and Lexan lenses.

  If the school is to be used as an emergency shelter, a source of emergency power should be considered so all utilities, the building cafeteria and gymnasium can function in an emergency.

- Exterior building structure: All windows should be high "e" insulated windows with screens. The exterior of the building (new construction) should be brick or pre-cast material to suit the ambiance of the setting of the school.

- Interior building products: Interior walls in the corridors should be brick, glazed block, epoxy paint or a suitable substitute material of high durability and ease of maintenance. Student lockers should be adequately sized to secure coats, book bags and other small items and be constructed of a heavy-duty material with heavy-duty hardware. Window covering should be a durable blind product capable of reducing the amount of light in classrooms when video demonstrations are conducted. Carpet, where used, should be of the highest quality, durable and void of any odors. It is recommended that heat sealed tiling be used for floor covering due to its ease of maintenance and support of air quality standards. Doormats or run-outs should be installed at all entranceways.

- Energy conservation: The school building plans should be reviewed by the Connecticut Light and Power Company and should comply in so far as possible with their energy rebate program, to the extent this incentive is currently available. LEED standards should be applied to the school design as deemed appropriate and practical.

- Hardware: All hardware in the school should be heavy duty. Keying should be mastered with restricted key blanks. The key system (magnetic cards or fobs) shall automatically disallow entrance with regular keys after a specific time of day, when only the master key will operate the doors.

  All panic devices should be rim type with removable mullions rather than vertical rod type. All doors such as stairwell doors and corridor smoke doors should be held open with magnetic devices connected to the fire alarm system.

- Security System: An integrated security system should be designed to control and monitor visitor access to the building during school hours. The system should have direct connections to police, fire, and other security responders. The system should provide for visual verification of persons requesting access to the school building through the main office or a security office/kiosk; general parking and other areas of the school site should be considered for visual monitoring as recommended by architects and/or security specialists.

SITE CONSIDERATIONS

External

The outdoor facilities for the Groton Middle School complex should provide for the following considerations:

1. Separate access to the building for bus transportation and parent vehicular traffic
2. Visitor and general parking for approximately 300 cars
3. Separate faculty and staff parking area for approximately 100 cars
4. Shade and ornamental trees with low maintenance ground cover and other low height plant material
5. New roads and driveways to accommodate parking areas, bus queue, and separate parent drop-off areas
6. Site lighting, utilities, storm drainage and snow plowing considerations, grading and landscaping in all construction areas
7. Fenced, attractive, sturdy school and cafeteria refuse pick-up areas with locking gates large enough to allow dumpster style trucks to enter (and with an area to accommodate bins recycling and for waste food
8. Outside, removable faucets at intervals to allow for window washing and maintenance of plantings
9. Well-lighted Parking areas and walkways to the parking areas
10. An artificial turf athletic field suitable for outdoor physical education activities along with soccer, lacrosse, and a multi-use field with a walking/jogging trail around the perimeter of the field
11. School name in at least two outside locations, visible from both student and general public access roads and driveways

Internal

The following considerations should be made in the design of the interior features of new and altered portions of the building:

1. All electrical switches in hallways throughout the building to be key-type
2. Access to building operations [mechanical] systems to be restricted to designated users and these areas to be equipped with intruder detection systems integrated with the school security devices (annunciator panel)
3. Ceiling materials to be attractive, durable and noise reducing, as well as removable for utility access
4. All exit doors to be monitored through the administrative offices for controlling access to the building. Annunciator panels to alert office personnel to a breach of security
5. A security system design to control and monitor visitor access to the school
   A buzzer and video observation system controlled from the office and/or a security kiosk to control entrance to a main entrance vestibule where additional security clearance would be required for access to the school lobby. All materials used in this area to be bullet and blast resistant and designed in a manner as to thwart intrusion

6. Wire trays located above all spaces be large enough and have the capacity to handle additional wiring and cabling for future use
7. Drinking fountains to be handicapped accessible and not traffic restrictive
8. Recessed lighted display cases with lockable doors and adjustable shelving to be strategically located
9. Student lockers to be appropriately sized and located for the convenience of students in their grade level cluster
10. Classroom doors not to be recessed and, optimally, to swing 180 degrees
11. Each door to have a magnetic release for emergency evacuation or intrusion situations as well as a penetration resistant vision panel. Doors to be lockable from both sides, tamper resistant, and allow for quick release from the interior with one motion
12. Handicapped elevator service to be available with key type restricted operation should the building design require more than one level
13. Stairways/ ramps to be planned so students can move quickly from one classroom to another. All space under stairwells to be enclosed
14. All hallway bulletin and tack boards to be code compliant
15. Grade level color schemes by cluster to be different and distinguishable
16. All hallway windows to be code compliant
17. Signs for each room to be handicapped coded and set into a space to prevent removal, except by maintenance personnel
18. Exit signs to be code compliant and areas of refuge to be located strategically in selected stair areas

Environment

1. Acoustics: All classroom and hallway space to be constructed to minimize noise that would interfere with the teaching and learning process. Attention to be given identified areas for special acoustical treatment
2. Air quality: The building to be fully air-conditioned with adequate controls to shut down or reduce service when rooms will be unoccupied for significant periods of time. Increased attention to be given to minimize dust and air borne particles that may affect allergic reactions
3. Well-controlled heat, cooling and humidity systems to accommodate large technology infrastructure and operating system
4. Flooring: Each room's flooring to be specific to the its use. Tile to be of high quality and easily replaced (roll tile with heat seal seams preferred). Carpeting, where installed, to be of high density, mold resistant fabric that is easily repaired
5. Hallways: Hallways to be acoustically treated to lessen traffic noise. Lighting in hallways to be recessed
6. Hallway surfaces to be bright and finished with an epoxy (or similarly durable) glaze for ease of maintenance
7. Aesthetics: The interior design and color scheme of the building to be inviting and comfortable to immerse persons entering the building in a warm atmosphere that celebrates student learning through color, sound, and creative displays of student work and achievements

Outdoor Areas for Learning, Athletics, and Support

Learning, athletics and support spaces allow for multiple fields and play areas to be utilized by students and community members. Storage areas are essential to safely house school and Parks and Recreation equipment. Parking areas and traffic flow patterns need to accommodate large volumes of traffic.

1. Multiple field and play areas to support the physical education program, interscholastic sports, intramurals, outdoor education, and play
2. Gym accessible to playing field
3. Access to secured storage for outdoor activities and school sponsored athletics
4. Separate secure storage for school and Parks and Recreation equipment
5. Direct access to field for outdoor activities and school sponsored athletics
6. Electrical outlets and water to each outdoor learning area designed for easy supervision and safety
7. Water fountains
8. Landscaping to include shade trees and student garden areas
9. Separate traffic flow for busses and individual drop-off and pick-up
10. Handicap accessible drop-off, pick-up and parking at front entrance
11. Well-lit parking, roads, and driveway areas
12. Adequate parking for staff and visitors
13. Cost effective irrigation for fields
14. Outdoor learning area for classes to meet for special projects or activities requiring more space than classrooms or other interior learning spaces provide

APPENDIX A

Space Specification Summary

Anticipated Number of Students (Peak Year 2017-18 @ 938 students; average class = 19.5):[1]

Grade 6 = 336 (average class size = 21.0)
Grade 7 = 306 (average class size = 19.1)
Grade 8 = 296 (average class size = 18.5)
Four teams of four teachers (Social Studies, Language Arts, Mathematics, and Science) at each grade level.

SPACE	NUMBER OF ROOMS/SQUARE FOOTAGE	TOTAL SQUARE FOOTAGE REQUIREMENTS
Grade Six-Eight:		
General Classrooms	36 @ 800	28,800
Science classroom	12 @ 1,000	12,000
Science Prep/Storage	3 @ 400	1,200
		42,000
Art:		
2-Dimensional	1 @ 1,000	
3-Dimensional	1 @ 1,200	
Storage	1 @ 500	
Office	1 @ 200	2,900
Music:		
General Music/Chorus	1 @ 1,600	
Band	1 @ 1,600	
Orchestra	1 @ 1,600	
Office & Storage	1@ 400	
Practice rooms	2@ 150	5,500
Physical Education & Health:		
Classroom (Health)	2 @ 800	1,600
Gymnasium w/bleachers	1 @ 5,000	5,000
Auxiliary Gym	1 @ 1,800	1,800
Exercise/Fitness Room	1 @ 1,000	1,000
Climbing Wall	(In Auxiliary Gym)	
Offices	1 @ 400	400
Storage	1 @ 800	800
Locker Changing Room	2 @ 900	1,800
w/showers [2 stalls]		12,400
Unified Arts:		
Technology	2 @ 1,000	2,000
Storage	1 @ 200	200
		2,200
World Languages:		
Basic classrooms	5 @ 800	4,000
		4,000
Auditorium/Theater:		
Stage	1,800	
Seating	12,000 (approx. 500 students)	
Scenery Prep/Storage	1,000	
		14,800

[1] Note: The functional capacity of the school would be 1,200 students @ 25 students per class.

Learning Center/Support Services:			
English Language Learners	2 @ 200	400	
Special Services Education	5@ 800 w/movable wall divider	4,000	
Tutorial (RTI)	3 @ 200	600	
Conference Rooms	3 @ 200 (one for each grade)	600	
In-school Suspension	1 @ 400	400	
Occupational/Physical Therapy	1 @ 500	500	
IBS Classroom w/ bathroom &	1 @ 1,000	1,000	
Sensory Time Out room	1 @ 150	150	
ABS Classroom w/ bathroom	1 @ 1,000	1,000	
			8,650
Pupil Services/Guidance:			
Counselor Offices	5 @ 150	750	
Conference Rooms	1 @ 200 & 1 @ 300	500	
Social Work, Psychologist Offices	3 @ 150	450	
Records storage	1 @ 200	200	
Reception Area/Secretary office	1 @ 400	400	
Speech & Hearing	2 @ 150	300	
			2,600
Administrative Office Complex:			
Offices	2 @ 250; 1 @ 300	800	
Conference Rooms	2 @ 200	400	
Reception	1 @ 300	300	
Storage	1 @ 250	250	
Equipment/ Workroom	1 @ 200	200	
Computer Kiosk for parent (flex office)	1 @ 150	150	
			2,100
Health Clinic & Offices:			
Reception Area	2 @ 100	200	
Offices	5 @ 100	500	
Examination Room	2 @ 100	200	
Medicine storage	1 @ 50	50	
Records Storage	1 @ 100	100	
Cot/privacy space	6 @ 80	480	
Lavatories	2 @ 80	160	
Shower Room	1 @ 150	150	
			1,840
Library Media Center:			
Stacks & Reading/Study Areas	3,500	3,500	
Computer Lab/ Classroom	2 @ 800	1,600	
TV Production Area	1 @400	400	
Offices	1 @ 200	200	
Workroom	1 @ 400	400	
Media Distribution/ Technician	1 @ 200	200	
Meeting Rooms	4 @ 200	800	
Storage & Supplies	1 @ 150	150	
			7,250
Custodial:			
Offices	3 @ 75	225	
Workroom	1 @ 300	300	
Supplies & Equipment Closets	6 @ 100 (two per floor)	600	
Receiving/ Storage	1@ 1,000	1,000	
			2,125

Food Services: Cafeteria Kitchen & Servery Storage; cold, dry, freezer Office & Lavatory Washer & Drier	 6,000 1,800 1,000 220 100	9,120
Other Spaces:		
Faculty & Staff Dining	800	800
Faculty Workrooms	3 @ 300 (one per grade level)	900
Storage for Instructional Materials & Equipment	3 @ 200 (one per grade level)	600
Volunteer Workroom and Lounge	1 @ 150	150
Outdoor Areas: Baseball Softball Soccer (Youth) Artificial surface Multi-sport field Walking/Jogging Trail	 2.3-2.6 Acres 0.8-1.4 Acres 1.7-2.1 Acres No set dimensions - locate around perimeter of field area	Not applicable to square footage calculation.
Outdoor Learning	1 @ 400 (Area for outdoor teaching)	Not applicable to square footage calculation.
Security: SRO/Security Office Video Surveillance Room Admittance Kiosk (Vestibule)	 1 @ 100 1 @ 100 1 @ 50	250
	Space Specifications S. F. =	120,185
	Circulation Space @ 50% =	60,093
	TOTAL PROJECT SPACE =	180,278

Rough estimate of space standards and allowable square footage for the construction grant:

Grade	Number of Students[2]	S. F. Per Student	Total S. F.
Six	336	148	49,728
Seven	306	170	52,020
Eight	296	170	50,320
		TOTAL:	**152,068 S. F.**

The listed program space exceeds the SDE allowable square footage for the construction grant by about 19,150 S.F.

Note the following office dimensions/capacity:

1. 100 - 120 S.F. = 1 workstation and one-two guest chairs
2. 150 S.F. = 1 workstation; 4 chairs or a table w/ 3 chairs
3. 180 S.F. = 1 workstation; table a five chairs
4. 200 S.F. = 1 workstation; table and six chairs
5. 250 S.F. = 1 workstation; table and seven chairs + storage cabinets and counter space

[2] S.F. determined by the SDE space standards calculation formula.

APPENDIX B

Vision Committee

Elizabeth Gianacoplos	Board of Education	
Kirsten Hoyt	Board of Education	
Jennifer Sim	Board of Education	
Rita Volkmann	Board of Education	
Mary Anne Butler	Assistant Superintendent	Central Office
Wesley Greenleaf	Director of Buildings & Grounds	Central Office
Robert Pendolphi	Administrator	Fitch Middle
Mark Masterjoseph	Administrator	Catherine Kolnaski
Henry Martinez	Math Curriculum Coordinator	Central Office
Robert Beaulieu	Teacher	West Side Middle
Kathy Wilson	Teacher	Fitch Middle
Jean Claude Ambroise	Parent, RTM Member	
Robert Butler	Parent	
Lyndie Collins	Parent	
Nancy Gilly	Parent	
Michael Kane	Parent	
Lea Graner Kennedy	Parent, Groton PTO	
Lisa Tess	Parent	

Ad Hoc

Paul Kadri	Superintendent	Central Office
Wesley Greenleaf	Director Building & Grounds	Central Office

Support

Laurie LePine	Personnel Manager	Central Office
Carolyn Dickey	Business Manager	Central Office

APPENDIX C

School Facilities Task Force

Andrea Ackerman	Board of Education
Jean Claude Ambroise	RTM
Robert Beaulieu Jr.	Teacher
Holly Bresnahan	Citizen at Large
Karen Bryer	School Administrator
Christine Cabral	Citizen at Large (City)
Jane Dauphinais	Town Council
Joe de la Cruz	Town Council
Enrico DeMatto	Permanent School

Building Committee:

Marc Denno	Citizen at Large
Kevin Fiftal	Citizen at Large
Wes Greenleaf	Citizen at Large
Jon Heller	Citizen at Large
Craig Koehler	Citizen at Large
Dan O'Donnell	Citizen at Large
Kevin Trejo	Citizen at Large
Kim Shepardson Watson	Board of Education
Hal Zod	Planning Commission

Ex Officio Members:

Heather Bond Somers	Town Council (for Mayor)
Rita Volkmann	Board of Education

Staff:

Mark Oefinger	Town Manager
Gary Schneider	Director of Public Works
Mike Murphy	Director of OPDS
Mike Graner	Superintendent
Bill Robarge	Director of Buildings and Grounds
Nicki Bresnyan	Executive Assistant

Facilitators:

Mike Zuba	Milone & MacBroom

APPENDIX D

Stakeholder Group

Andrea Ackerman	Board of Education
Gary Baker	Parent
Robert Beaulieu	Teacher
Holly Bresnahan	Parent
Karen Bryer	Central Office Staff
Miranda Chapman	Military Liaison
Enrico DeMatto	Community Member
Elizabeth Gianacoplos	Board of Education
Jamie Giordano	Principal
Michael Graner	Superintendent
Wesley Greenleaf	Community Member
Jonathan Heller	School Facilities Task Force Member
Tom Jokubaitis	Consultant
Mary Kelly	Board of Education
Clint Kennedy	Community Member
Ernie Koschmieder	Food Service Director
David Laffargue	Teacher
Sean McKenna	Assistant Superintendent
Val Nelson	Principal
Mark Oefinger	Town Manager
Bill Robarge	Director of Building and Grounds
Brenda S.	Groton Parent Council
Joey Schick	Board of Education
John Scott	RTM Member
Kim Shepardson Watson	Board of Education
Archie Swindell	RTM Member
Rita Volkmann	Board of Education
Mike Zuba	Consultant

Frequently Asked Questions: Groton School Facilities

The Groton 2020 Plan aims to address aging facilities requiring significant capital investments and expanding educational opportunities for all Groton residents. The plan calls for the construction of a new 169,000 sq. ft. middle school adjacent to the high school. Upon completion of the middle school construction project, two new 86,000 sq. ft. elementary schools will be built at Cutler and West Side. Pleasant Valley, Claude Chester and SB. Butler will be closed.

Over the last few months, a number of community members have raised questions regarding the long- term facilities plan recently approved by the Board of Education. In an effort to help inform the community, the questions are listed below and responses follow each question.

Financial

Did we save money by closing Fitch Middle School?

Yes. Groton School District saved a significant amount of funds through the closing of Fitch Middle School. The administrative staff was reduced, as the positions of principal, assistant principal, and clerical staff were eliminated from the budget. In addition, the operating costs for the building were also eliminated; the Board no longer is required to provide heat, electricity, or utilities to the building. In addition, the custodial and maintenance costs at Fitch Middle School are no longer a part of the school budget.

Why not reopen Fitch Middle School?

Fitch Middle School is in dire need of renovations. The cost would be prohibitive. It has never been fully renovated since constructed in 1928. The building has served as a high school, junior high, middle school, and the D wing is a former elementary school. The site is too small and parking is shared with the Town Hall. Fitch Middle School will be much more useful to the Town in the future to house Town of Groton and the Board of Education administration.

Will reducing the number of schools from ten to eight reduce operating costs?

Yes. It will reduce the number of staff, reduce travel time between schools for staff, and reduce the number of schools to maintain. The reduction in the number of schools will make the remaining eight schools more efficient and allow the district to maintain more appropriate and equitable class sizes among the elementary schools. Potential savings estimates are provided below. It should be noted that these savings do not include grade level instructional staff.

- School buildings average annual maintenance of ~$134,500/bldg. potentially yields savings of ~$269,000 annually.
- Potential administrative staff savings of ~$1.2 million annually
- Total Potential Annual Cost Avoidance: ~$1.47 million
- Additional Operational staffing efficiency through consolidation to larger schools

Does this proposal address all the needs of the district?

No. At some point in time, Charles Barnum Elementary School and Mary Morrisson Elementary School may need renovation and expansion to be fully functional, code compliant, safe, and meet future educational needs. At Fitch High School, the district will need to address handicap accessibility in the older section, remove sources of non-friable asbestos, provide air conditioning in older classrooms, and renovate older locker rooms and sports facilities.

Project Cost

How much will this project cost?

The estimated total cost for the proposed project will be roughly $195.6 million dollars for the construction of a new middle school and two new elementary schools, based on current construction costs and a test-fit (not final) designs for the three schools on their sites:

- $90 million for one new middle school on the Merritt Site
- $52.9 million to build a new elementary school on the West Side site and demolish the existing middle school
- $52.7 million to build a new elementary school on the Cutler site and demolish the existing middle school
- *The Town of Groton is seeking special legislation assistance for $141 million (see below).*

What is the expected state reimbursement?

The 2017 reimbursement rates are as follows:

- New School Construction: 47.5%
- School Renovation: 57.50%

Not all expenses are eligible for reimbursement funds. In total, the Groton 2020 Plan would be eligible for roughly $82.5 million in reimbursement grants from the state. The Town of Groton would be responsible for the remaining $113 million dollars of the project.

What is required to get the 80% reimbursement for one of the elementary school projects? An 80% reimbursement grant is available from the School Diversity Grant Eligibility – CGS Sec. 10-286h:

> *"School building project grants for diversity schools.* (a)(1) The Department of Construction Services, in consultation with the Department of Education, shall provide a school building project grant in accordance with the provisions of this chapter for a diversity school for any local or regional board of education that has one or more schools under the jurisdiction of such board where the proportion of pupils of racial minorities in all grades of the school is **greater than twenty-five per cent of the proportion of pupils of racial minorities in the public schools** in all of the same grades of the school district in which said school is situated taken together, and (2) such board has demonstrated evidence of **a good-faith effort to correct the existing disparity** in the proportion of pupils of racial minorities in the district, as determined by the Commissioner of Education. Such diversity school shall be open to resident students of the school district for the purpose of correcting the existing disparity in the proportion of pupils of racial minorities in the district not later than five years after the opening of the diversity school. For purposes of this section, "pupils of racial minorities" means those whose race is defined as other than white, or whose ethnicity is defined as Hispanic or Latino by the federal Office of Management and Budget for use by the Bureau of Census of the United States Department of Commerce."

However, Groton will not be eligible for the School Diversity Grant in 2016. The diversity grant requires that the 25% imbalance occurs in the same year of the construction grant application. Among all elementary schools in the 2015-16 school year, 44.41% of all students are racial and ethnic minorities. Claude Chester Elementary, a K-5 elementary school, is currently at 69.18% minority, or less than one percentage point from crossing the racially imbalanced threshold of 69.99% minority. Catherine Kolnaski Magnet School is also categorized as an impending imbalance at 60.51%, while Northeast Academy Elementary School is a low impending imbalance school at 25.53% minority. Thus, Groton will not be able to use the 80% reimbursement for any school construction projects in 2016.

What is Special Legislation?

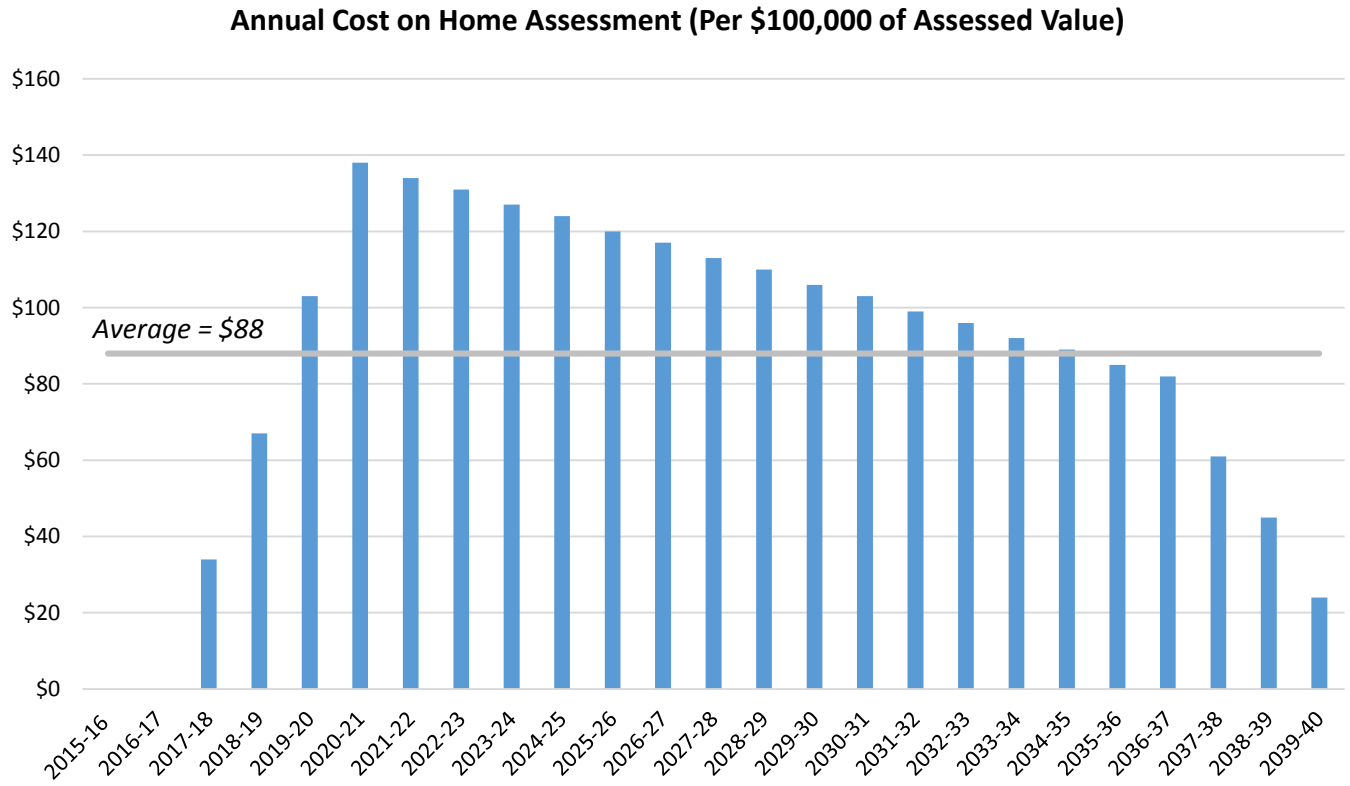
Due to the high cost of the facilities project and the low state reimbursement level, the Town is seeking additional financial assistance from the State in the form of special legislation for a one-time school construction grant to Groton

for $141 million. The Town is currently consulting with the State Division of Construction Services, and the outcome of the special legislation request is anticipated for late spring 2016.

How will Groton pay for the rest?

The SFITF will make recommendations to the Town Council Committee-of-the-Whole (COW) on March 16th for a November referendum to approve issuing bonds to cover the remainder of the construction costs of the Groton 2020 Plan. The principal and interest on the bonds will be repaid over 23 years through increases to the mill rate to pay the cost of the debt service. The total mill rate in any given year will be determined by the total debt service costs of all municipal bonds. Based on the results of a professional public opinion survey, willingness to support the Groton 2020 Plan went up as cost to individual costs to taxpayers went down. Support for the Groton 2020 Plan was greatest at an average of $150 for the average home owner in Groton per year, reflecting a $55 million net total cost to Groton.

The precise impact on the average homeowner will vary year to year based on the repayment schedule, starting at $34 per $100,000 of assessed value in 2017 to a high of $138 in 2020, with an average cost of $88 per year. Based on the median home value of $247,000 and median assessed value of $172,900 (properties are assessed and taxed at 70% of market value), this would result in an additional average cost of $152 to the median homeowner, with a maximum yearly cost of $239 in 2020. The graph below shows how the annual cost on home assessments will change over time.



Source: "Town of Groton, CT Pro Forma Debt & Mill Rate Impact: Proposed School Projects - $55M Net Cost to the Town" by IBIC LLC

Can we include the cost of school demolition in the referendum?

The demolition costs could be included in the referendum; however, those costs would not be reimbursable from the state. The demolition of Cutler and West Side is included in the current project costs. However, the disposition of Claude

Chester, Pleasant Valley, and S.B. Butler are not included in the project costs, as the SFITF has not been charged with determining the end use or possible demolition of these buildings.

If the referendum fails, what will be the cost of maintaining the current facilities?

The chart below summarizes the estimated costs (2012 dollars) for maintaining the identified schools over the next decade. These costs include the removal of non-friable asbestos, replacement of fire alarms and fire sprinklers, replacing heating systems and electrical distribution, handicap accessibility, and other improvements to bring the elementary and middle school buildings up to current building code compliance and life safety goals. This $55 million total would also need to pass a bond referendum in order to proceed

Summary of Deferred Costs by Building

Facility: Elementary	**Total**
Kolnaski	$137,500
Barnum	$7,333,750
Morrisson	$6,773,141
Northeast	$123,685
Pleasant Valley	$7,174,597
Chester	$9,500,000
S.B. Butler	$10,488,117
Priority Elementary Subtotal	***$27,162,714***

Facility: Middle	**Total**
Cutler	$12,795,936
West Side	$15,145,721
Middle Subtotal	***$27,941,657***
Total Deferred Costs	**$55,104,371**

Will the project move forward without assurance from the state that Groton will receive a construction grant?

The project will not move forward to the design and construction phase without the grant approval from the state.

I'm a homeowner without kids in school in Groton. Why is this plan beneficial to me?

Quality schools add value to the prices of homes within the district. Investment in schools may help Groton to position itself as a desirable place to live as the economy recovers, and help to attract businesses and younger families. Improvements in the condition of the public school system will contribute to an overall increase in the quality of life for all Groton residents. One report from Pennsylvania State University ("Pennsylvania's Best Investment: The Social and Economic Benefits of Public Education" http://www.elc-pa.org/wp-content/uploads/2011/06/BestInvestment_Full_Report_6.27.11.pdf) found that improved education greatly increases tax revenue, "…such as a return of at least 7 dollars for every dollar invested in pre-kindergarten education" (pg. 3).

Location

Why not site the new middle school on the King property adjacent to Catherine Kolnaski Magnet School as planned in 2002 and as presented to the voters as part of the master plan in the successful 2004 referendum?

The King property site is not large enough to accommodate a consolidated middle school.

What was the selection process and criteria for the location? Were there other options?

A two-day stakeholder workshop was conducted in May of 2014. One outcome of the workshop was the concept of developing an educational campus through the construction of a middle school on or adjacent to the high school property. Throughout the summer of 2014, this concept was further discussed and embraced by Groton's Board of Education (BOE) who asked the SFITF to conduct a feasibility assessment. A short-list of other potential sites was developed; however, the campus concept became a central piece of the Groton 2020 plan with the task force moving forward with the Merritt Site.

Cutler Middle School is surrounded by a flood plain. Will this affect any future construction on that site?

The proposed location of the new elementary school is above the elevation for the 500-year flood plain. As an additional precaution, the site will be elevated slightly to provide additional freeboard as a safety margin. Due to the surrounding floodplain, the district will likely need special approval from Planning & Zoning, as well as from the state, to expand the school's footprint in the future.

Can we lease parking during the week from St. Mary's?

We have asked in the past and the answer is no. They need to keep parking available for funerals and other church functions that occur on week days. The church and high school have shared parking for special events in the past.

I thought Merritt Farm was supposed to be used for recreation. What's happening with that under this plan?

The Merritt Site under the Groton 2020 Plan will enhance the overall recreational inventory and opportunities for Groton. In fact, under the proposed plan, the completed project will have 3 rectangular multi-purpose fields, a baseball field, and a softball field. One of the multi-purpose fields is tournament sized with synthetic turf affording greater use over traditional grass surfaces. These fields will be paid for by the project saving the Town money on field construction.

For over a year, the Town has been working with DEEP on land conversion in order for the Merritt property to be utilized for a new middle school. An agreement is expected to be reached by June 2016 at the latest.

The Parks and Rec plan for the Merritt Property includes a trail connection between the Sutton Park facilities, the Merritt property, and then across the street to the Merritt Forest. Will a trail connection be possible through the MS property?

A trail connection was also identified in the Educational Specifications for the proposed Middle School. It is envisioned that a trail can be incorporated to "loop" the school property and ultimately connect to Sutton Park and to Poquonnock Plains Park.

Sports and Recreation at the Middle School

How will one middle school affect sports? Who will they play? Will the middle school be too large to compete locally?

The consolidation of the middle school will reduce the number of interscholastic teams from two teams per sport to one. To compensate for that reduction, the district plans to implement an intramural program that would engage middle school children in a variety of afterschool sports that will expand athletic competition beyond what is available today. In terms of competition with local middle schools, the proposed consolidated school would be approximately the same size as East Lyme Middle School; the size of the school would not prevent the school from competing locally.

Would MS programming after school prevent use of the MS athletic fields by HS athletic teams?

No; however, it will require scheduling between the middle school and high school athletics departments to communicate and coordinate uses as well.

Is there State Department of Education grant money available to build a pool or an artificial turf field?

School construction grants do not include reimbursement for swimming pools. If an artificial turf field was installed at the high school football field, that aspect of the project would not be eligible for reimbursement.

What will be the net change to the number of playing fields at the schools?

Net Change in Playing Fields

School Site	Reductions	Additions	Net Change
Middle School		2 triangular 3 rectangular	+2 triangular +3 rectangular
Cutler	2 triangular 1 rectangular	1 triangular 1 rectangular	+1 triangular +0 rectangular
West Side	1 triangular	 3 rectangular	-1 triangular +3 rectangular
Total	**3 triangular** **1 rectangular**	**3 triangular** **7 rectangular**	**+0 triangular fields** **+6 rectangular fields**

There will be a net addition of 6 rectangular playing fields at the schools.

Racial Balance/Enrollments

What is Racial Balance?

CT General Statutes § 10-226

- Schools whose minority composition varies 15% or more from the district's minority composition for the same grades are impending racial imbalance
- Schools whose minority composition varies 25% or more are racially imbalanced
    - Whenever the State Board of Education finds that racial imbalance exists in a public school, it shall notify in writing the board of education having jurisdiction over said school that such finding has been made.
    - Any board of education receiving notification of the existence of racial imbalance as specified in section 10-226b shall forthwith prepare a plan to correct such imbalance and file a copy of said plan with the State Board of Education.

How will this plan resolve racial balancing into the future?

The plan, which calls for a consolidated middle school, will permanently resolve issues regarding racial balance for children in grades 6- 8. The proposed construction of new elementary schools, each with a magnet school component, will enable the district to achieve racial balance at each of the schools. Children from S. B. Butler Elementary School and many children from Claude Chester Elementary School will be combined at the new Cutler School; projections of this enrollment pattern indicate the racial composition would be close to the district average. Likewise, children from Pleasant Valley Elementary School and the remaining children from Claude Chester Elementary School would attend the new West Side School. Again, projections of this enrollment pattern indicate the racial composition would be close to the district average. Furthermore, the district plans to operate both schools as intra-district magnet schools using a controlled lottery where students would be selected based on the neighborhood elementary school.

Did you project out expected enrollment in Groton schools in the future? What does that look like?

School enrollment projections have been estimated for the Groton Public School System out to the 2024-25 school year, and predicted a continued decline in enrollments. Enrollments for Groton School District have been steadily declining from 2002 (5,719 students) until 2014 (4,564 students). These enrollments occurred during a time of largely static population and labor force. The enrollment trends are reflective of a period with an overall decline in births in the Groton School District, as well as the increasing popularity of other regional magnet school options. Preliminary data from Groton Public Schools suggests that enrollments in New London magnet schools have increased from 29 students in the 2011-12 school year to 180 students in 2015-16. Parents of Kindergarten students may now be starting to enroll their children in NLPS rather than sending them to private or parochial schools in the area. The increasing popularity of LEARN and New London School Magnet offerings will continue to impact enrollments at Groton Public Schools.

Based on these conditions, the Groton School District Comprehensive Enrollment Analysis projected PreK-12 enrollment out to 2019-20. Elementary school enrollments are projected to average approximately 2,420 students over the next five years, while the middle school average 920 students. However it's important to note that these projections could be impacted by changes in the Groton Public School facilities and offerings, especially by actions that make enrollment in GPS more desirable than enrollment in the New London Magnet Schools.

What about racial imbalance at the elementary schools?

Racial imbalance is a consideration of the Groton 2020 Plan. Groton, like much of the region, is becoming increasingly diverse; however, in Groton this diversity is not equally distributed throughout the community. Assuming that recent trends continue into the near future, the district-wide minority enrollment will continue to increase by an estimated 1.48% per year. This presents a moving target for racial balance goals, with school enrollments of minorities required to remain within 25 percentage points of the district average. This poses a significant challenge for developing school facility plans. The two new 600-student elementary schools are planned to have both local neighborhood boundaries as well as magnet/choice components. By having a significant choice/magnet component, students from all over Groton may choose to attend either one of these schools. The flexibility provided by this type of learning environment can provide long-term compliance with state mandates and eliminate the need for further redistricting.

Why doesn't the district hire a lawyer to fight the unfunded State mandate to balance the district?

The State mandate requiring racial balance in public schools reflects both federal and state law. The Board of Education has a responsibility to provide free and appropriate public education to all children in Groton in an equitable manner.

What is our backup plan?

If the referendum fails, the Board of Education and School Facilities Task Force members would reconvene to develop an alternative plan to meet the needs of the middle school students, to ensure racial balance in all schools, and to address the deteriorating conditions of the existing school buildings.

Elementary Schools

We keep abandoning/closing schools and nothing gets done with them. What about that?

In summary, of the seven school facilities that have been closed and turned over to the Town since the mid-1990s, two have been sold, two have been leased, one school building is in the process of being demolished and will remain in Town ownership, one school has been mothballed awaiting an improvement in market conditions so it can be sold, and one school is slated to be turned into a new Town Hall/municipal complex.

Why close three operating elementary schools? What is wrong with what we have?

This is a valid question to many who are not familiar with operating costs and the condition of these schools. School facilities staff have developed a list of deficiencies for each school, and the analysis indicates that the cost of bringing the schools into compliance would be excessive. The required upgrades would include life safety codes, making the buildings energy efficient, complying with handicap accessibility codes, upgrading outdated and worn out building systems, and expanding each school to provide appropriate educational and support spaces. Surveys done in the past indicate that each school needs to be renovated as new and the cost to do so would be more than is practical.

What will become of Pleasant Valley Elementary School, Claude Chester Elementary School, and S. B. Butler Elementary School should they close?

Once the Board of Education votes to close the three elementary schools, the facilities would be turned over to the Town for possible use as recreation areas or for economic development. Because Pleasant Valley may be in a commercial zone, it could be sold for that purpose. Both the Claude Chester and S. B. Butler properties could be converted for use as community parks; having both properties converted as playing fields would address the community desire for additional parks.

Why do we want to build elementary schools at West Side Middle School and Cutler Middle School?

Both West Side and Cutler Middle School sites can accommodate construction of new elementary school while the site is currently occupied by middle school students. Both sites are well located to serve the current and future school population and future use as a school meshes with the character and uses of the area. The new construction will also provide developmentally appropriate classrooms for young children and enable the district to expand preschool education.

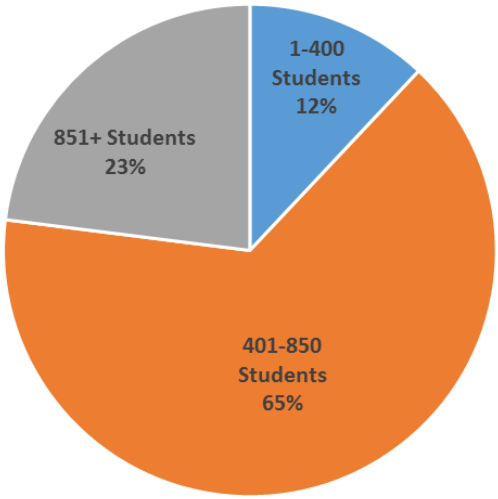
Proposed Building and Building Size

The size of the consolidated middle school has raised concerns from parents and community members. Is the proposed middle school too large and will educational results will be affected?

In proposing a middle school of approximately 900 students, the staff conducted a search for other middle schools of similar size in Connecticut. The list that follows identifies the middle schools in Connecticut with enrollments ranging from 850 students to 1,300 students. Many of the schools listed below are considered some of the finest schools in our state.

Connecticut Middle Schools **Student Enrollment: 850+**		
School District	**School**	**Enrollment**
East Lyme	East Lyme Middle School	873
Fairfield	Roger Ludlowe Middle School	892
Brookfield	Whisconier Middle School	917
Glastonbury	Smith Middle School	940
Danbury	Rogers Park Middle School	1,002
West Hartford	Sedgwick Middle School	1,014
West Hartford	King Philip Middle School	1,066
Danbury	Broadview Middle School	1,085
Darien	Middlesex Middle School	1,162
Branford	Francis Walsh Intermediate	1,197
New Canaan	Saxe Middle School	1,310

The chart to the right indicates that approximately one quarter of the middle schools in Connecticut are approximately the same size as the proposed middle school.



Why have we included a double lecture hall in the middle school plan?

This was provided as an option for the programmatic test-fit, and any design of the auditorium has yet to be determined. The architectural consultants have presented an option for a 350 seat auditorium with dividers which would allow the hall to be separated into two 175 seat lecture halls. In addition, a divider would also separate the stage from the auditorium seating; this would allow for three instructional spaces when the auditorium is not being fully used. The lecture halls would be used as instructional spaces for multiple class presentations for middle school students. In addition, since the school will be in close proximity to the high school, the lecture halls would be available for use by high school classes.

The new wing of the High School had classrooms sized at 650 sq. ft. Why are the new MS classrooms sized at 800 sq. ft.? The MS kids are smaller than HS students. Why do they need more room?

Space standards vary by grade and are generally inversely proportional to grade and age of the student. Pre K and Kindergarten classrooms typically require the most space, at 1,000 sq. ft.

How did you decide what to include in the building and what not to include?

Educational Specifications developed for each of the three school projects provided the programming and space specifications for each building. The educational specifications were developed through stakeholder involvement and input from administration/staff, and adopted by the Groton Board of Education.

Education

What are the other benefits of combined middle schools?

A Single Middle School provides the following benefits:

- Early integration and parity
- Consolidated resources
- Improved district operational efficiency; better use of fiscal resources
- One less facility to maintain
- Students have more choices in regards to academic and after-school activities
- Greater opportunity for teacher collaboration
- Opportunity for a community center for middle school students
- Avoid split teams
- Stable class size with larger grade cohorts
- Need for redistricting eliminated

- Ability to expand programs
- Better space utilization
- Easier to address security
- Bigger core facilities, i.e. auditorium and cafeteria, and the opportunity to leverage State funding for larger core facilities

What is an IB middle school program? Why would we want to consider pursuing that in Groton?

The IB Middle Years Program is a five-year program for students age 11-16 (generally grades 6-10). Its curricula differs from standard middle school programming. Middle Years IB requires at least 50 hours of teaching time for each of 8 subject groups in each year of the program. Subject groups include: language acquisition, language and literature, individuals and societies, sciences, mathematics, arts, physical and health education, and design. In years 4 and 5, students have the option to take courses from six of the eight subject groups within certain limits, to provide greater flexibility in meeting local requirements and individual student learning needs. Each year, students engage in at least one collaboratively planned interdisciplinary unit that involves at least two subject groups. IB Middle Years students also complete a long-term project, where they decide what they want to learn about, identify what they already know, discover what they will need to know to complete the project, and create a proposal or criteria for completing it.

Is this plan forward thinking about the possibility of state-wide all-day preschool in the future?

Yes. Even though the state initiatives for universal Pre K may be a number of years out, the Groton 2020 Plan is ensuring that there is flexibility for this initiative. Once completed, there will be space gained to provide some level of Pre K programming at each elementary with 60 seats planned at each of the new elementary schools.

Safety

Is the existing non-friable asbestos in Pleasant Valley Elementary School, Claude Chester Elementary School, S. B. Butler Elementary School, Cutler Middle School, West Side Middle School, Fitch High School, and the Administration building dangerous?

The non-friable asbestos is not considered dangerous; however, the State Department of Education is concerned about asbestos in schools because over time it may become damaged and pose a potential health risk. The asbestos referred to is contained in floor tile. As long as the asbestos remains in good condition and we continue to use non-abrasive methods of cleaning the floors, the district is not in violation. The school Board's comprehensive asbestos abatement plan is documented in the Capital Improvement Plan.

Is it safe for middle school students to be next door to high school students?

Yes. The campuses will be separated, and the starting and closing times of the schools will be different. There is no reason to believe middle school students will come into contact with high school students unsupervised.

Portable Classrooms

Was the money spent on portable classrooms in 2011 wasted?

Due to budget restraints and a decreasing middle school enrollment, closing Fitch Middle School became necessary. The only way to move students from Fitch Middle School to West Side Middle School and Cutler Middle School without overcrowding classrooms and limiting programs was to add classroom space. Using portable classrooms was a cost effective way to enable closing Fitch Middle School.

What will become of the six new portable classrooms at the current middle schools?

They may be used in their current location or used to replace the aging 1992 portables located at Charles Barnum Elementary School and Mary Morrisson Elementary School until the Town is able to address space issues there.

Busing

How long will middle school students, especially sixth graders, be on the bus as compared to current bus runs?

The bus runs calculated for students to attend the new middle school adjacent to the high school would be approximately the same length as the current bus system on average.

Will the cost of busing change?

The current fleet of buses will be used; no additional expense is anticipated.

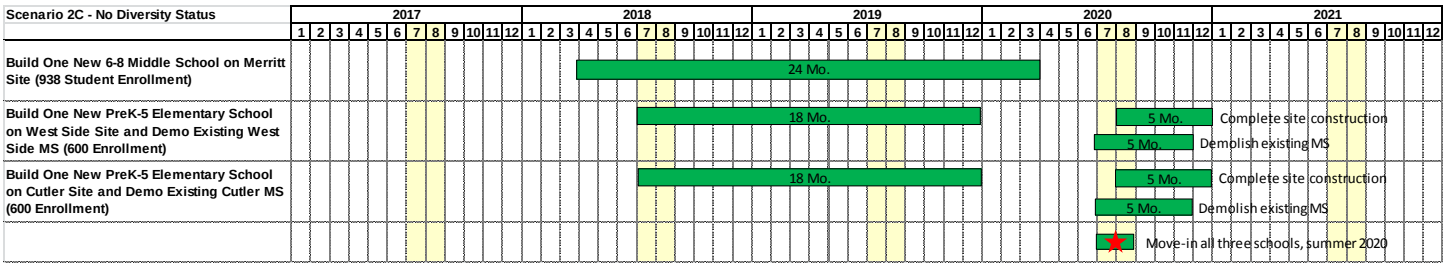
Planning Process

Who's on the school planning task force?

The task force is comprised of members from the following: Board of Education, RTM, Teachers, Citizens at large, School Administrators, Town Council, Planning Commission, and the Permanent School Building Committee. The task force was established by the Town Council on 8/2012 along with appointments of original membership.

Can this project be done in phases?

Due to the nature of this construction program, for both local approval and construction it requires a single a referendum and plan. However, school construction will be done in phases since the elementary school construction is contingent on the completion of the consolidated middle school. See preliminary timeline below.



Why is now the time to do this?

There are various factors at play making this the right time for the Groton 2020 Plan. First, the Town is faced with significant maintenance and repairs needs at S.B. Butler, Pleasant Valley, Claude Chester, Cutler Middle School, and West Side Middle School. These critical repairs total $55 million over the next decade, with nearly $27 million requiring attention in the next 6 years at these schools alone. Additionally, the consolidated middle school and magnet programming at the two new elementary schools are critical components to Groton Public Schools long-term diversity plan.. Diversity grant status would have provided 80% reimbursement for an elementary school construction project (which translates into an estimated $16 million dollars reduction in net cost to the town) if the project had moved forward in 2015, when Claude Chester was officially imbalanced. That is not the case now. The Town is now seeking special legislation for additional assistance in completing this building project.

The ability to expand educational offerings in the midst of a magnet school explosion in the region are also key factors to the timing. A rapidly growing number of Groton students are voting with their feet and opting out of Groton schools to attend programming elsewhere. Continued erosion of Groton students is detrimental to Groton's educational system, financial bottom line, attractiveness to new residents, and to the cohesiveness of the school community.

What are the next steps in this process?

The SFITF will make the recommendation to the Town Council Committee-of-the-Whole (COW) on March 16th, 2016 for a November referendum. In late spring of 2016, the outcome of Groton's request for special legislation for $141 million will determine the net cost to Groton residents. The Town will also complete the Application for School Construction Grant to the State in June 2016. If the voters of Groton pass the referendum to approve the bonding required to move forward in November 2016, the Groton 2020 Plan will begin construction activities in the summer of 2017.

GROTON SCHOOL FACILITY INITIATIVE TASK FORCE COMMUNITY SURVEY

Prepared for:

July 2015

Statement of Confidentiality and Ownership

All of the analyses, findings and recommendations contained within this report are the exclusive property of the Groton School Facility Initiative Task Force.

As required by the Code of Ethics of the National Council on Public Polls and the United States Privacy Act of 1974, The Center for Research and Public Policy maintains the anonymity of respondents to surveys the firm conducts. No information will be released that might, in any way, reveal the identity of the respondent.

Moreover, no information regarding these findings will be released without the written consent of an authorized representative of the Task Force or Milone & MacBroom.

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SECTION 5

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1 INTRODUCTION

The Center for Research & Public Policy (CRPP) is pleased to present the results of a Groton community survey on behalf of the Groton School Facility Initiative Task Force. The survey was conducted among residents of Groton including the City of Groton, the Town, Groton Long Point & Noank, Mystic and the Naval Base area.

The survey was designed to collect input on public school facilities in town.

The research included a comprehensive telephone survey. CRPP, working together with Task Force members and representatives of Milone & MacBroom, Inc., designed the survey instrument to be used when calling Groton residents.

This report summarizes information collected from telephone surveys conducted June 9 – 25, 2015.

The survey instrument employed in the Community Survey included the following areas for investigation:

- Current quality of life living in Groton, Connecticut;
- Awareness of the School Facilities Initiative Task Force and their efforts;
- Levels of interest in the planning process for the School Facility Initiative's Groton 2020 Plan;
- Support or opposition to The Groton 2020 Plan;
- Perceptions held regarding varied school facility options, issues, investments;
- Impact of varied Plan details/characteristics on support or opposition;
- Support for the Plan at various increased property tax levels;
- Sources for information about Groton schools; and
- Demographics.

Section II of this report discusses the Methodology used in the study, while Section III includes Highlights derived from an analysis of the quantitative research. Section IV is a Summary of Findings for the telephone surveys - a narrative account of the data.

Section V is an Appendix to the report containing a cross tabulation table and a copy of the survey instrument.

2 METHODOLOGY

Using a quantitative research design, CRPP completed 386 interviews among Groton residents.

All telephone interviews were conducted June 9 - 25, 2015. Residents were contacted between 5:00 p.m. and 9:00 p.m. weekdays and 10:00 a.m. and 4:00 p.m. on the weekend.

Survey input was provided by Task Force officials and representatives of Milone & MacBroom, Inc.

Survey design at CRPP is a careful, deliberative process to ensure fair, objective and balanced surveys. Staff members, with years of survey design experience, edit out any bias. Further, all scales used by CRPP (either numeric, such as one through ten, or wording such as strongly agree, somewhat agree, somewhat disagree, or strongly agree) are balanced evenly. And, placement of questions is carefully accomplished so that order has minimal impact.

CRPP utilized a super random digit telephone sample. This process allows randomization of numbers, which equalizes the probability of qualified respondents being included in the sampling frame. A mixed access sample was utilized that included both cell phone and landline numbers.

Respondents qualified for the survey if they confirmed they were registered to vote in Groton and were at least 18 years of age or older.

Training of telephone researchers and pre-test of the survey instrument occurred on June 8-9, 2015.

The facets of the study included: sample design, survey design, pre-test, computer programming, fielding, coding, editing, verification, validation and logic checks, computer analysis, analysis, and report writing.

Completion rates are a critical aspect of any telephone survey research. Because one group of people might be easier to reach than another group, it is important that concentrated efforts are made to reach all groups to an equal degree. A high completion rate means that a high percentage of the respondents within the original sample were actually contacted, and the resulting sample is not biased toward one potential audience. CRPP maintained a 70% completion rate on all calls made during the Community Survey. And, a high completion rate, many times indicates an interest in the topic.

Statistically, a sample of 386 surveys represents a margin for error of +/-4.96% at a 95% confidence level. Weighting of data occurred based on age.

In theory, a sample of Groton residents will differ no more than +/-4.96% than if all users were contacted and included in the survey. That is, if random probability sampling procedures were reiterated over and over again, sample results may be expected to approximate the large population values within plus or minus 4.96% -- 95 out of 100 times.

Readers of this report should note that any survey is analogous to a snapshot in time and results are only reflective of the time period in which the survey was undertaken. Should concerted public relations or information campaigns be undertaken during or shortly after the fielding of the survey, the results contained herein may be expected to change and should be, therefore, carefully interpreted and extrapolated.

Furthermore, it is important to note that all surveys contain some component of "sampling error". Error that is attributable to systematic bias has been significantly reduced by utilizing strict random probability procedures. This sample was strictly random in that selection of each potential respondent was an independent event, based on known probabilities.

Each qualified resident had an equal chance for participating in the study. Statistical random error, however, can never be eliminated but may be significantly reduced by increasing sample size.

3 HIGHLIGHTS

ON QUALITY OF LIFE…

- **A large majority of Groton residents surveyed, 80.6%, reported being very or somewhat satisfied with the community as a "place to live".**

- **Nearly three-quarters, 70.7%, reported their current standard of living -- compared to two years ago -- as "good" or "no movement, but good".**

- **Respondents provided the Groton Public Schools a fair overall rating. Just 42.2% rated the schools positively using a scale of one to ten. Another 25.9% provided poor or very poor ratings. The remainder were either neutral in their ratings or were unsure. When "don't know" respondents were removed from the data, the positive rating moved to 47.5%.**

ON AWARENESS…

- **Nearly two-thirds of all respondents, 64.2%, reported being very or somewhat aware that a group of appointed Groton residents called the "School Facilities Initiative Task Force" has been at work on a plan to upgrade and modernize school facilities in town.**

ON INTEREST…

- **Interest in the planning process for the "School Facility Initiative's Groton 2020 Plan" is strong. Three-quarters, 74.8%, suggested they are very or somewhat interested in the plan for upgrades and modernization of school facilities in town.**

- **Further, 64.7%, indicated they are following the planning process very or somewhat closely. Just 10.4% suggested "not at all closely".**

ON THE PLAN: BALLOT I…

- **Once researchers introduced the Groton 2020 Plan to respondents, each was asked how they might vote in a referendum "held today" on the Plan. Just over one-third, 36.5%, indicated they would definitely or probably support the Plan while 44.6% noted they would probably or definitely oppose the Plan as they understand it. A significant percentage, 18.9%, were unsure or didn't know.**

- **When "don't know" respondents are removed from the data, 45.0% would likely support the Plan while 55.0% would likely oppose the Plan.**

- **Reasons offered by those opposed to the Plan included (in declining order by frequency of mention): taxes already too high / the cost, don't need it / a waste, renovate / don't build – maintain the current buildings / not needed, fix administration problems first, schools already were upgraded / they closed schools and no details / not necessarily opposed but need more information.**

- **Reasons offered by those in support of the Plan included (in declining order): outdated facilities are in bad shape / need upgrade / modernize aging buildings, well thought out Plan / right thing to do / trust them, quality education is important, improves education system, and consolidating centralizing is good.**

ON PERCEPTIONS…

Resident survey respondents were presented with a number of statements and asked if they strongly agreed, somewhat agreed, somewhat disagreed or strongly disagreed.

- **There exists significant agreement (strongly/somewhat) among residents in a number of areas…**

  - ✓ **Pre-K education in Groton is important – 83.2%**
  - ✓ **In general, I'm a supporter of modernizing Groton Public School facilities – 75.1%**

- **More moderate but strong agreement was found in other areas…**

  - ✓ **Land at any closed schools should become playing fields – 64.0%**
  - ✓ **Education quality is impacted by facility quality – 62.2%**
  - ✓ **Improved school facilities will impact economic development – 61.1%**

- **Majorities agreed with the following…**

  - ✓ **The long term fix offered by the Plan makes more sense than short term repairs – 54.1%**
  - ✓ **Groton schools were never properly maintained – 53.9%**
  - ✓ **In-town Magnet Schools should be included in any Plan – 53.4%**

- **And, some statements met agreement that was short of a majority…**

  - ✓ **Surrounding towns are surpassing Groton in quality of education – 46.9%**
  - ✓ **Groton needs more playing fields – 40.2%**

ON VOTE IMPACT…

- **Some specific characteristics of the Groton 2020 Plan are more likely than others to move respondents to support the effort. These characteristics are displayed here with the associated percentage of respondents who suggest each makes them "more likely" to support passage of the Groton 2020 Plan in a referendum. "Don't know" respondents were removed from the data.**

  - ✓ **The Groton 2020 Pan addresses buildings over 60 years old – 56.7%**
  - ✓ **Helps eliminate the State mandated redistricting for racial imbalance – 50.7%**
  - ✓ **Plan includes in-Town Magnet Schools – 46.5%**
  - ✓ **$2.5 million dollars are sent to surrounding Town Magnet schools for attending Groton students – 41.4%**
  - ✓ **Plan includes new construction over renovation – 38.5%**
  - ✓ **The Plan includes a combined middle school and high school campus – 35.4%**
  - ✓ **The Plan increases the amount of playing fields in town – 33.5%**

ON TAX IMPLICATION: THE BALLOT II…

- **Following the deliberation allowed by the survey, respondents were asked again to report their own support or opposition to the Groton 2020 Plan if a referendum was to be held "today". In this question, the average increased annual property tax was named by researchers.**

  - ✓ **At an average annual property tax increase of $250.00, 51.8% would support the Plan.**

  - ✓ **At an average annual property tax increase of $200.00, 53.6% would support the Plan.**

  - ✓ **At an average annual property tax increase of $150.00, 58.3% would support the Plan.**

ON COMMUNICATION…

- **Primary sources for information about the Groton Public Schools included local print newspapers, friends/family/neighbors/co-workers, directly from the schools, TV and the internet / websites.**

- **Over one-half of all respondents, 54.9%, indicated they use Facebook while 8.3% use Twitter and 4.4% are using Instagram. Two-fifths, 41.5%, suggested they don't use social media.**

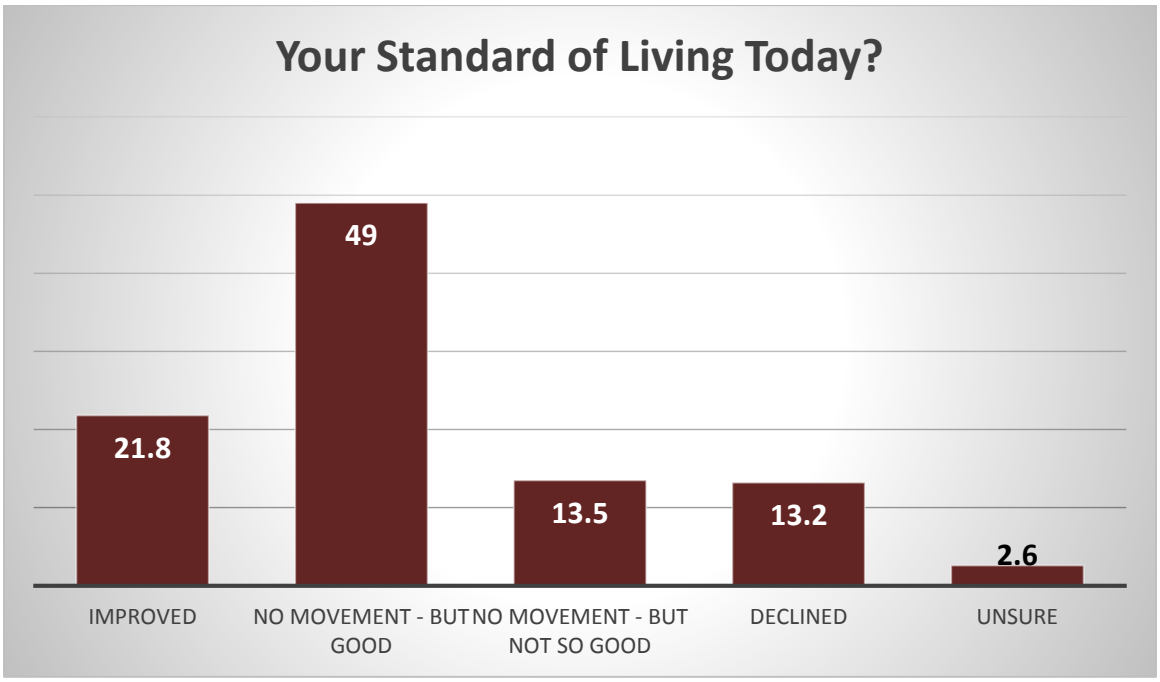
4 SUMMARY OF FINDINGS

Readers are reminded that the following section summarizes statistics collected from surveys among 386 Groton residents.

QUALITY OF LIFE…

A large majority of all Groton residents surveyed, 80.6%, suggested they were very or somewhat satisfied with Groton, Connecticut as "a place to live". Some, 17.6%, suggested they were somewhat or very dissatisfied. A few, 1.8%, were unsure. Results are presented in the following graph.

All residents were asked to describe their own standard of living today compared to two years ago. Nearly three-quarters, 70.7%, suggested their standard of living was either improved (21.8%) or no movement but good (49.0%). Just over one quarter, 26.7% offered their standard of living saw no movement and is not so good (13.5%) or had declined (13.2%). Some, 2.6% were unsure. Results are presented here.



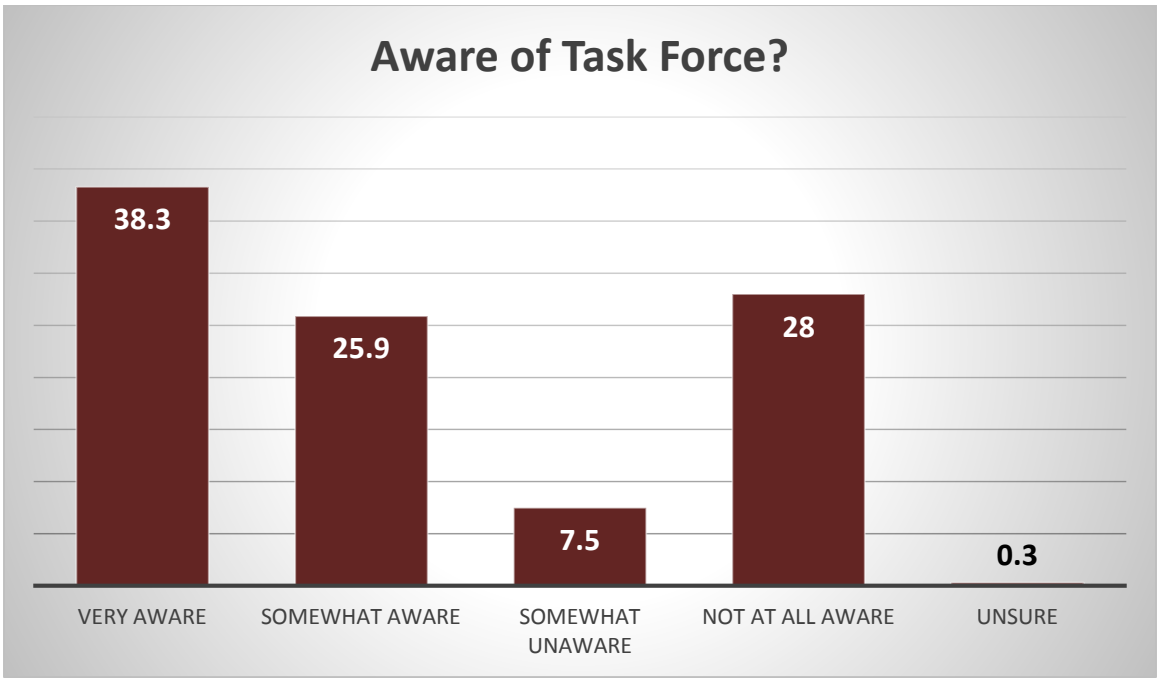
Respondents were asked, based on all they know or have heard, to rate the Groton Public Schools overall using a scale of one to ten where one was very good and ten was very poor. Just over two-fifths, 42.2%, provided positive cumulative ratings of one through four while one-quarter, 25.9%, provided negative cumulative ratings of seven through ten. Results are also depicted with "don't know" respondents removed from the data.

Rating Groton Public Schools	Very Good & Good	Very Poor & Poor	Unsure
With "Don't knows"	42.2	25.9	11.1
Without "Don't knows"	47.5	29.2	---

AWARENESS…

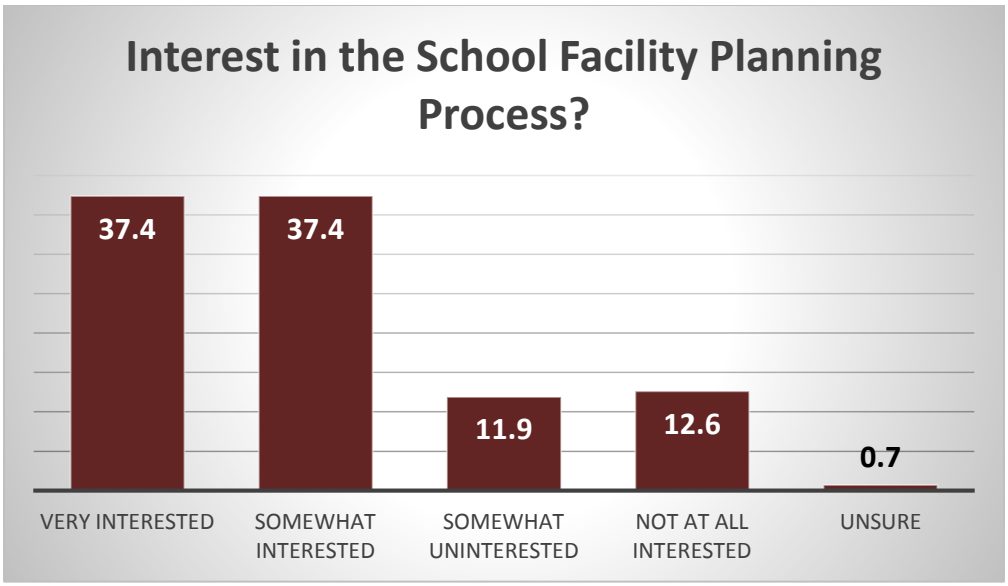
Survey respondents were asked how aware they were that a group of appointed Groton residents called the School Facilities Initiative Task Force has been working for three years on a plan to upgrade and modernize school facilities in town. Nearly two-thirds, 64.2%, suggested they were either very (38.3%) or somewhat aware (25.9%). Another one-third, 35.5% suggested they were somewhat unaware (7.5%) or not at all aware (28.0%).

The following graph presents the results as collected.

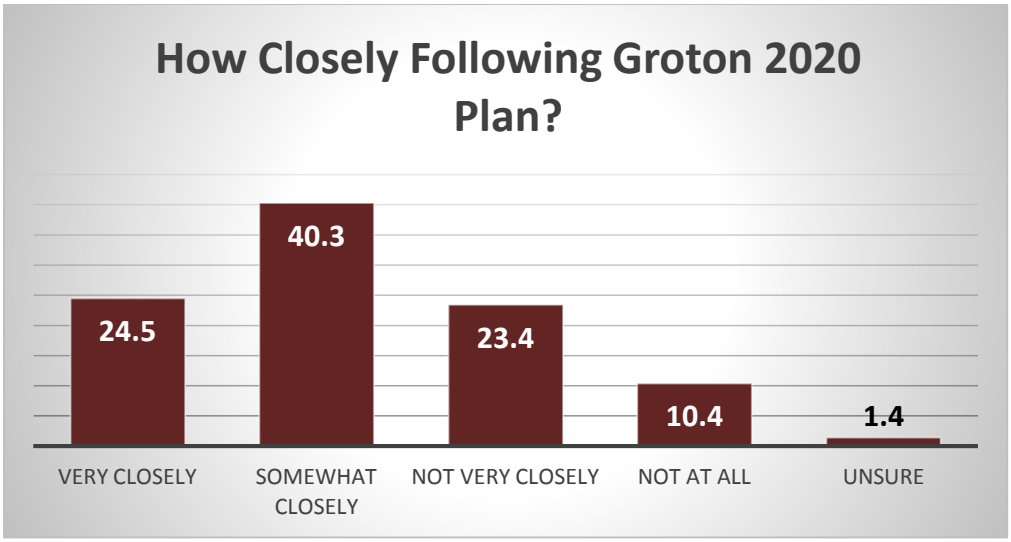


INTEREST…

Nearly three-quarters, 74.8%, suggested they were very (37.4%) or somewhat (37.4%) interested in the planning process for the School Facility Initiative's Groton 2020 Plan. Just under one-quarter, 24.5%, suggested they were somewhat uninterested (11.9%) or not at all interested (12.6%). The following graph presents the results as collected.



Nearly two-thirds of respondents, 64.7%, noted they are following the planning process for the School Facility Initiative's Groton 2020 Plan very (24.5%) or somewhat (40.3%) closely. Another 33.8% offered they were following the process "not very closely" (23.4%) or "not at all" (10.4%).



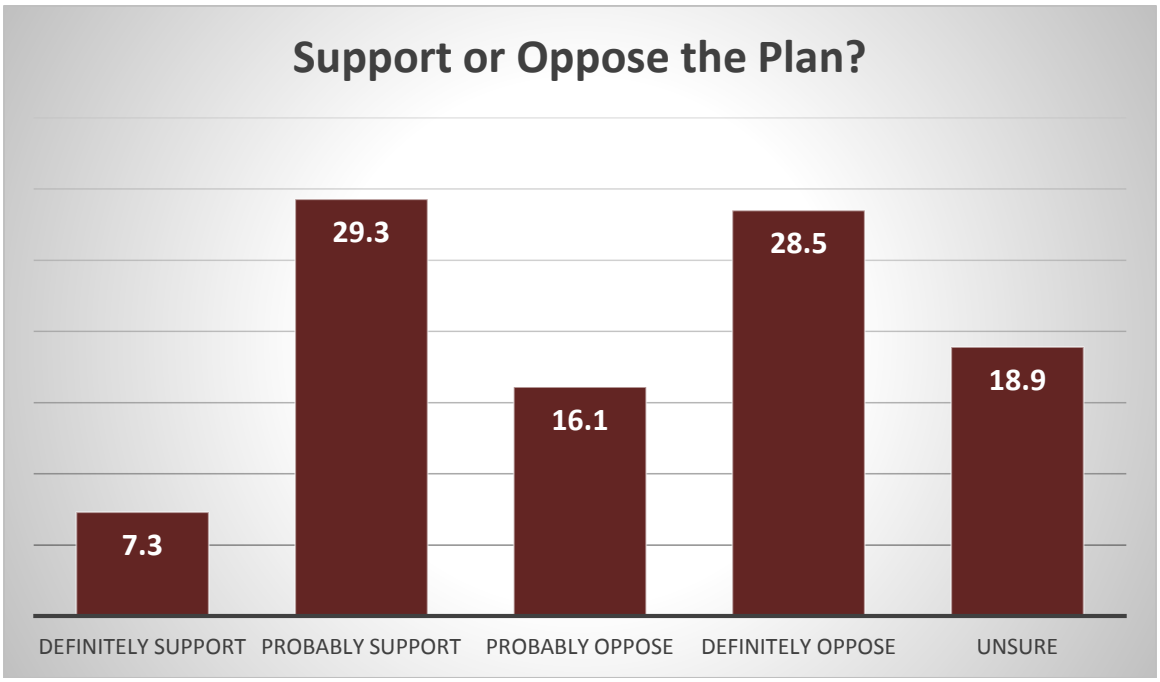
THE PLAN: THE BALLOT I…

In an initial "ballot test", researchers presented the following information to respondents and then asked each how they might vote in a referendum held today.

"Currently, the Task Force is recommending the Groton 2020 Plan. The plan would address aging facilities requiring significant capital investments and expanding educational opportunities for all Groton residents. Groton 2020 Plan calls for the construction of a new middle school adjacent to the Fitch High School. Upon completion of the middle school construction, two new elementary schools will be built at Cutler and West Side. Once completed, Pleasant Valley, Claude Chester and S.B. Butler will be closed.

Based on this information regarding the Plan, if a referendum was held today, how would you vote? Would you say…"

Just over one third, 36.5%, indicated they would definitely support (7.3%) or probably support (29.3%) the plan. Another 44.6% anticipated they would probably oppose (16.1%) or definitely oppose (28.5%) the plan. Nearly one-fifth, 18.9%, were unsure. When "don't know" respondents are removed from the data, 45.0% would likely support the Plan while 55.0% would be opposed. Results are presented here.



In an open-end format question, all respondents – those in favor of the Plan and those opposed – were asked for their reasons. Results are presented in the following tables in declining order by frequency of mention.

Reasons for Opposition	Percent
Taxes already too high / the cost	21.7
Don't need it / a waste	18.0
Renovate / Don't build – Maintain the current buildings / not needed	11.8
Fix administration problems first	6.8
Schools already were upgraded / they closed schools	6.2
No details / not necessarily opposed but need more information	5.6
Plan will funnel too many kids in to too few schools	3.0
Plan calls for closing schools / merging schools	3.0
Buildings don't educate – teachers do	2.4
Don't like the sites proposed	2.4
Believe in smaller schools	2.4
Not in the best interest of the kids	1.8
Believe in neighborhood schools	1.8
They don't upkeep current schools	1.8
Oppose to more busing	1.8
Proposed land use	1.8
There's no racial imbalance	1.0
Will create hostile environment	1.0
School system doing a poor job now	1.0
Planning group is fiscally irresponsible	0.6
Unclear how money will be spent	0.6
Want own kids to remain where they are currently	0.6
Facilities are fine	0.6
Kids get too much already	0.6

Reasons for Support	Percent
Outdated facilities are in bad shape / need upgrade / modernize / aging	39.1
Well thought out Plan / right thing to do / trust them	22.7
Quality education is important	13.6
Improves education system	7.3
Consolidating is good / centralizing is good	7.3
Must reinvest in schools and move forward	2.7
Current racial imbalance	1.8
I work in the system and know	1.8
Because other towns have magnet schools	0.9
Better than separate schools	0.9
Low interest rates today	0.9
Population increases	0.9

PERCEPTIONS…

The following are a number of statements related to school facilities in Groton presented to all survey respondents. Respondents were asked to report if they strongly agreed, somewhat agreed, somewhat disagreed, or strongly disagreed with each statement. The following table presents the cumulative totals for those suggesting they strongly or somewhat agreed. The third column holds results after removing "don't know" respondents from the data. Results are presented in declining order by agreement.

Statements	Strongly & Somewhat Agree	Strongly & Somewhat Agree (Without DK's)
Pre-K education in Groton is important	83.2	85.6
In general, I'm a supporter of modernizing Groton public school facilities	75.1	79.7
The land at any closed or consolidated schools should become playing fields and open space for Groton residents	64.0	69.0
Education quality is impacted by the quality of school facilities	62.2	64.5
Improved school facilities will impact economic development in Groton in a positive way	61.1	66.9
The Groton 2020 Plan, as a long term fix supported by taxpayers through a limited term bond, makes more sense than spending $55 million in immediate short term repairs needed	54.1	68.8
Groton school facilities were never properly maintained or re-invested in	53.9	63.0
Groton school facility planning should include in-town Magnet Schools	53.4	63.2
Surrounding towns are surpassing Groton in quality of education programming and facilities	46.9	58.2
Groton needs more playing fields	40.2	47.3

VOTE IMPACT…

Researchers read the following to each respondent…

"Earlier, I asked you if you would support or oppose the School Facility Initiative Groton 2020 Plan described. The following are a number of details or characteristics of the Groton Public Schools. For each, please tell me if the characteristic makes you more likely or less likely to support the Initiative Plan or would it not make a difference."

Results are presented here in declining order by "More likely".

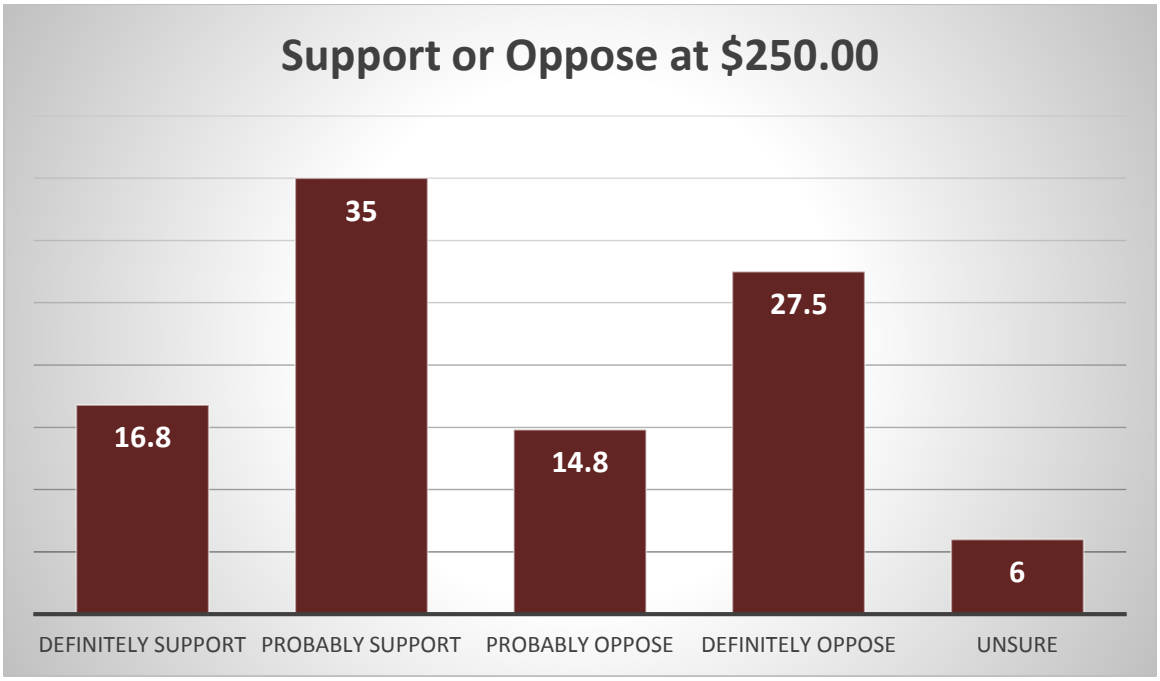
Characteristics of Groton School Systems	More Likely	Less Likely	No Difference	Unsure	More Likely (w/o DK's)
The Groton 2020 Plan addresses five schools that are, on average, 60 years old	51.3	18.4	20.7	9.6	56.7
It helps eliminate State mandated redistricting to address racial imbalance	45.6	25.1	19.2	10.1	50.7
If the plan included in-town magnet schools	43.5	27.7	22.3	6.5	46.5
If the plan includes new construction instead of renovation	36.0	36.3	21.2	6.5	38.5
If you knew that $2.5 million dollars annually is sent from Groton to surrounding town Magnet schools where Groton students are attending	36.0	28.0	23.1	13.0	41.4
If the plan included a combined middle school and high school campus	33.4	40.7	20.2	5.7	35.4
If the plan increased the amount of playing fields in Groton for public use	32.1	29.0	34.7	4.1	33.5

TAX IMPLICATION: THE BALLOT II…

Researchers, for the second time and after deliberation allowed by the survey, asked respondents how they would likely vote in a Plan referendum in Groton. The question posed is included here…

"We have had a moment to discuss many of the issues surrounding the School Facility Initiative Groton 2020 Plan. I would like to ask you again about your own support or opposition to investment in Groton's school facilities if the cost to the average property owner in **increased annual property tax would average $250.00**. How would you vote on the plan? Would you say you would …"

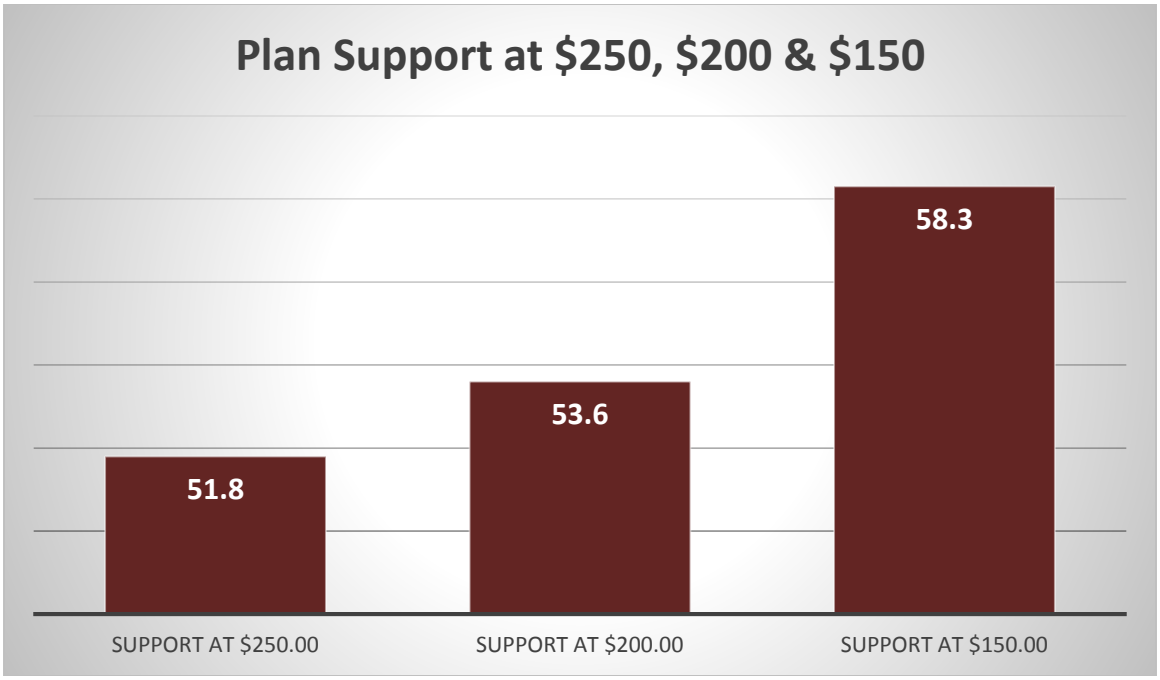
In this second ballot question, 51.8% indicated they would definitely support (16.8%) or probably support (35.0%) the proposed Plan while 42.3% suggested they would probably oppose (14.8%) or definitely oppose (27.5%) the Plan. Results are presented here.



All respondents who indicated they were inclined to oppose the Plan (probably or definitely) at a $250 average annual property tax increase or were unsure were asked a follow-up question **at $200.00 instead**. In this question, another 1.8% moved to support.

Following this question, all those who were inclined to oppose the Plan (probably or definitely) at a $200 average annual property tax increase or were unsure were asked a follow-up question **at $150.00 instead**. In this question, another 4.7% moved to support.

Results are presented in the following graph.



COMMUNICATION…

Researchers asked survey respondents to report where they usually get information about Groton Schools. Results are presented in the following table in declining order. Multiple responses were allowed.

Sources for Communication	Percent
Local newspapers: print	50.8
Friends/Family/Neighbors/ Co-workers	28.8
Directly from the schools	27.7
TV	17.6
Internet / websites	12.2
Radio	6.7
Local newspapers: online	4.7
Unsure	4.7
Other	3.9
State news outlets	3.6
Social media such as Facebook	2.8
Employer	2.6
Direct mail	0.8
Blogs	0.5

Additionally, respondents were asked to report social media they used. Results are presented in the following table in declining order. Multiple responses were allowed.

Social Media Used	**Percent**
Facebook	54.9
Don't Use Social Media	41.5
Twitter	8.3
Instagram	4.4
Google+	3.9
LinkedIn	2.1
YouTube	1.8
Pinterest	1.6
MySpace	0.5
Unsure	0.3
Yelp	---
Foursquare	---
Neighborhood Porch or similar	---

DEMOGRAPHICS

Years Living in Groton	Percent
Mean	45.21

Age	Percent
18-24	4.1
25-34	11.4
35-44	17.1
45-54	25.9
55-64	19.9
65 or older	18.1
Refused	3.4

Income	Percent
Under $9,999	1.3
$10,000 to less than $40,000	9.6
$40,000 to less than $70,000	14.2
$70,000 to less than $100,000	22.0
$100,000 to less than $130,000	8.8
$130,000 to less than $160,000	4.1
$160,000 or more	9.6
Unsure	3.4
Refused	26.9

Children	Percent
Pre-school or younger	6.0
Currently attending Groton schools	32.9
Currently attending non-Groton schools	5.2
Attended Groton schools in the past	42.0
Attended non-Groton schools in the past	11.7
No children	19.7
Unsure/DK/Refused	4.9

Have Voted in Groton Referendum in Past	Percent
Yes	76.4
No	19.4
Unsure	3.6

Likely to Vote in Referendum in 2016?	Percent
Very likely	74.6
Somewhat likely	17.6
Somewhat unlikely	1.3
Not at all likely	1.6
Unsure	4.9

Gender	Percent
Male	44.6
Female	55.4

5 APPENDIX

INTERPRETATION OF AGGREGATE RESULTS

The computer processed data for this survey are presented in the following frequency distributions. It is important to note that the wordings of the variable labels and value labels in the computer-processed data are largely abbreviated descriptions of the Questionnaire items and available response categories.

The frequency distributions include the category or response for the question items. Responses deemed not appropriate for classification have been grouped together under the "Other" code.

The "NA" category label refers to "No Answer" or "Not Applicable." This code is also used to classify ambiguous responses. In addition, the "DK/RF" category includes those respondents who did not know their answer to a question or declined to answer it. In many of the tables, a group of responses may be tagged as "Missing" – occasionally, certain individual's responses may not be required to specific questions and thus are excluded. Although when this category of response is used, the computations of percentages are presented in two (2) ways in the frequency distributions: 1) with their inclusion (as a proportion of the total sample), and 2) their exclusion (as a proportion of a sample sub-group).

Each frequency distribution includes the absolute observed occurrence of each response (i.e. the total number of cases in each category). Immediately adjacent to the right of the column of absolute frequencies is the column of relative frequencies. These are the percentages of cases falling in each category response, including those cases designated as missing data. To the right of the relative frequency column is the adjusted frequency distribution column that contains the relative frequencies based on the legitimate (i.e. non-missing) cases. That is, the total base for the adjusted frequency distribution excludes the missing data. For many Questionnaire items, the relative frequencies and the adjusted frequencies will be nearly the same. However, some items that elicit a sizable number of missing data will produce quite substantial percentage differences between the two columns of frequencies. The careful analyst will cautiously consider both distributions.

The last column of data within the frequency distribution is the cumulative frequency distribution (Cum Freq.). This column is simply an adjusted frequency distribution of the sum of all previous categories of response and the current category of response. Its primary usefulness is to gauge some ordered or ranked meaning.

Groton School Facility Initiative Task Force – Cross Tabulations

Core Questions	Composite	Residency <20	Residency >20	18-44 Years	45-54 Years	55+ Years
4. Aware of Task Force – VA & SA	**64.2**	**67.8**	**59.6**	**65.1**	**72.0**	**58.5**
5. Interest in Plan – VI & SI	**74.8**	**83.0**	**72.4**	**71.4**	**77.6**	**73.3**
6. Following Plan – VC & SC	**64.7**	**58.0**	**72.4**	**57.1**	**68.4**	**68.3**
7. Support Plan	**36.5**	**39.7**	**30.0**	**45.2**	**35.0**	**32.0**
9. Agree Educ. Impacted by Facilities	**62.2**	**66.4**	**60.9**	**69.0**	**61.5**	**63.8**
11. Agree Support Modern Facilities	**75.1**	**83.8**	**78.9**	**86.3**	**78.5**	**75.6**
12. Agree Improved School Facilities Impact Economics	**61.1**	**66.1**	**65.1**	**71.1**	**61.8**	**68.4**
19. More Likely to Support if addresses Racial	**45.6**	**57.5**	**47.7**	**48.8**	**48.9**	**55.2**
21. More Likely to Support if addresses school aging	**51.3**	**66.4**	**48.3**	**65.5**	**51.6**	**55.2**
26. Ballot II Support	**51.8**	**63.0**	**42.4**	**59.5**	**49.0**	**50.3**

Core Questions	Composite	Have Pre-School / Children in Groton Schools	Have Children in non-Groton Schools or Attended in Past	Attended non-Groton in Past and No Children	Likely to Vote in Referendum	Males	Females
4. Aware of Task Force – VA & SA	**64.2**	**77.0**	**61.5**	**49.5**	**67.7**	**50.5**	**66.8**
5. Interest in Plan – VI & SI	**74.8**	**83.6**	**80.2**	**47.6**	**74.8**	**74.2**	**76.0**
6. Following Plan – VC & SC	**64.7**	**67.3**	**75.8**	**41.3**	**65.2**	**57.6**	**74.4**
7. Support Plan	**36.5**	**35.6**	**38.5**	**37.1**	**37.9**	**35.1**	**39.5**
9. Agree Educ. Impacted by Facilities	**62.2**	**57.1**	**68.0**	**67.7**	**63.8**	**61.7**	**66.5**
11. Agree Support Modern Facilities	**75.1**	**86.2**	**76.6**	**73.6**	**78.8**	**85.4**	**81.7**
12. Agree Improved School Facilities Impact Economics	**61.1**	**58.8**	**73.8**	**67.9**	**66.9**	**67.7**	**67.3**
19. More Likely to Support if addresses Racial	**45.6**	**47.3**	**58.0**	**42.9**	**51.9**	**47.8**	**54.6**
21. More Likely to Support if addresses school aging	**51.3**	**62.4**	**58.7**	**47.0**	**59.5**	**53.9**	**64.8**
26. Ballot II Support	**51.8**	**51.1**	**57.8**	**46.4**	**53.7**	**55.7**	**51.7**

Core Questions	Composite	City	Town	Groton LP	Mystic	Naval
7. Support Plan	**36.5**	**46.2**	**25.9**	**20.0**	**35.6**	**48.8**
26. Ballot II Support	**51.8**	**51.9**	**46.3**	**36.0**	**56.7**	**60.5**

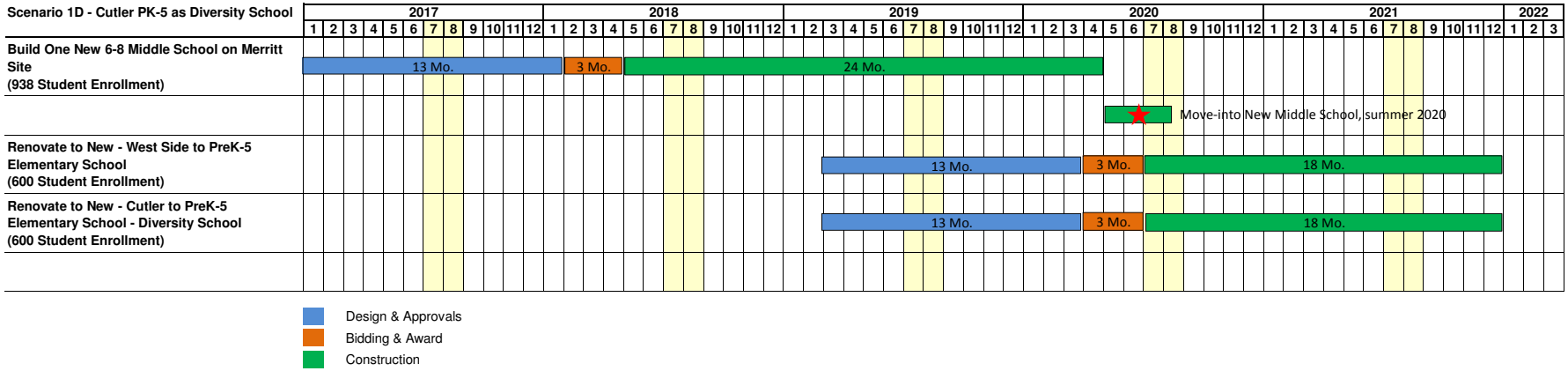
Core Questions	Composite	Residency <20	Residency >20	18-44 Years	45-54 Years	55+ Years	Low	High
4. Aware of Task Force – VA & SA	64.2	67.8	59.6	65.1	72	58.5	59.2	69.2
5. Interest in Plan – VI & SI	74.8	83	72.4	71.4	77.6	73.3	69.8	79.8
6. Following Plan – VC & SC	64.7	58	72.4	57.1	68.4	68.3	59.7	69.7
7. Support Plan	**36.5**	**39.7**	**30**	**45.2**	**35**	**32**	31.5	41.5
9. Agree Educ. Impacted by Facilities	62.2	66.4	60.9	69	61.5	63.8	57.2	67.2
11. Agree Support Modern Facilities	75.1	83.8	78.9	86.3	78.5	75.6	70.1	80.1
12. Agree Improved School Facilities Impact Economics	61.1	66.1	65.1	71.1	61.8	68.4	56.1	66.1
19. More Likely to Support if addresses Racial	45.6	57.5	47.7	48.8	48.9	55.2	40.6	50.6
21. More Likely to Support if addresses school aging	51.3	66.4	48.3	65.5	51.6	55.2	46.3	56.3
26. Ballot II Support	**51.8**	**63**	**42.4**	**59.5**	**49**	**50.3**	46.8	56.8
Conversion (percentage points)	**15.3**	**23.3**	**12.4**	**14.3**	**14**	**18.3**	10.3	20.3

Core Questions	Composite	City	Town	Groton LP	Mystic	Naval	Low	High
7. Support Plan	**36.5**	**46.2**	**25.9**	**20**	**35.6**	**48.8**	31.5	41.5
26. Ballot II Support	**51.8**	**51.9**	**46.3**	**36**	**56.7**	**60.5**	46.8	56.8
Conversion (percentage points)	**15.3**	**5.7**	**20.4**	**16**	**21.1**	**11.7**	10.3	20.3

Notes: "Low" (orange) indicates a group response rate that is 5 percentage points below the Composite response for that question. "High" (green) indicates a group response rate that is 5 percentage points higher than the Composite response for that question. "Conversion" is the difference in responses from question 7 ("Support Plan") and question 26 ("Ballot II Support").

Core Questions	Composite	Have Pre-School / Children in Groton Schools	Have Children in non-Groton Schools or Attended in Past	Attended non-Groton in Past and No Children	Likely to Vote in Referendum	Males	Females	Low	High
4. Aware of Task Force – VA & SA	64.2	77	61.5	49.5	67.7	50.5	66.8	59.2	69.2
5. Interest in Plan – VI & SI	74.8	83.6	80.2	47.6	74.8	74.2	76	69.8	79.8
6. Following Plan – VC & SC	64.7	67.3	75.8	41.3	65.2	57.6	74.4	59.7	69.7
7. Support Plan	**36.5**	**35.6**	**38.5**	**37.1**	**37.9**	**35.1**	**39.5**	31.5	41.5
9. Agree Educ. Impacted by Facilities	62.2	57.1	68	67.7	63.8	61.7	66.5	57.2	67.2
11. Agree Support Modern Facilities	75.1	86.2	76.6	73.6	78.8	85.4	81.7	70.1	80.1
12. Agree Improved School Facilities Impact Economics	61.1	58.8	73.8	67.9	66.9	67.7	67.3	56.1	66.1
19. More Likely to Support if addresses Racial	45.6	47.3	58	42.9	51.9	47.8	54.6	40.6	50.6
21. More Likely to Support if addresses school aging	51.3	62.4	58.7	47	59.5	53.9	64.8	46.3	56.3
26. Ballot II Support	**51.8**	**51.1**	**57.8**	**46.4**	**53.7**	**55.7**	**51.7**	46.8	56.8
Conversion (percentage points)	**15.3**	**15.5**	**19.3**	**9.3**	**15.8**	**20.6**	**12.2**	10.3	20.3

Notes: "Low" (orange) indicates a group response rate that is 5 percentage points below the Composite response for that question. "High" (green) indicates a group response rate that is 5 percentage points higher than the Composite response for that question. "Conversion" is the difference in responses from question 7 ("Support Plan") and question 26 ("Ballot II Support").


Scenario 1D - Cutler PK-5 as Diversity School
2017
2018
2019
2020
2021
2022
Build One New 6-8 Middle School on Merritt Site
(938 Student Enrollment)
13 Mo.
3 Mo.
24 Mo.
Move-into New Middle School, summer 2020
Renovate to New - West Side to PreK-5 Elementary School
(600 Student Enrollment)
13 Mo.
3 Mo.
18 Mo.
Renovate to New - Cutler to PreK-5 Elementary School - Diversity School
(600 Student Enrollment)
13 Mo.
3 Mo.
18 Mo.
Design & Approvals
Bidding & Award
Construction

A Scenario 1D - Cutler PK-5 as Diversity School

1 Build One New 6-8 Middle School on Merritt Site (938 Student Enrollment)
2 Renovate to New - West Side to PreK-5 Elementary School(600 Student Enrollment)
3 Renovate to New - Cutler to PreK-5 Elementary School - Diversity School(600 Student Enrollment)
4 Close Claude Chester, Pleasant Valley and S.B. Butler

B	Scenario 1D Cost Breakdown	Gross Building Area	Total Project Cost	Net Cost to Groton	Remarks
1	Build One New 6-8 Middle School on Merritt Site (938 Student Enrollment)	169,000	$ 90,082,157	$ 49,832,254	*Building area based on GPS Ed. Spec, with 7,500 NSF reduction to space program as discussed at 11/13/2014 meeting*
2	Renovate to New - West Side to PreK-5 Elementary School (600 Student Enrollment)	83,400	$ 48,476,106	$ 22,583,754	*Assumes 11,700 GSF addition; See note 1 below.*
3	Renovate to New - Cutler to PreK-5 Elementary School - Diversity School (600 Student Enrollment)	83,400	$ 45,847,045	$ 11,776,643	*Assumes 11,000 GSF addition; See note 1 below.*
	TOTAL:		**$ 184,405,308**	**$ 84,192,651**	

Notes:

1 Assumes renovation status granted by CT DAS, SCG
2 Net Cost to Groton figures are not guaranteed
3 Based on 2016/17 Connecticut Department of Administrationve Services reimbursement rate for all schools
4 MS Design Starts January 2017 ES Design Starts Q1/ 2019, 16 mo. Duration for: Design, Approvals and Bidding
5 MS escalated to midpoint of construction: through Q1 2019, 3.5% per year
6 ES escalated to midpoint of construction through Q1/2021, use Q3 2020, 3.5% per year
7 MS includes $4M allowance for DEEP land conversion process for Merritt property

Groton School Facilities Initiative Task Force
Schenario 1 - Opinion of Probable Project Costs - New 6-8 Middle School for 938 Students

		Value		Units	Remarks
A.	***Groton Public Schools - Proposed Project Data:***				
1	Projected Enrollment:	938		*Students*	
2	Projected Gross Building Area:	169,000		*SF*	*Based on Ed. Spec with SLAM recommended adjustments*
3	Projected "Net-Gross" Building Area (SCG Area):	162,240		*SF*	*Subtract 4% from line A2 for exterior wall. SCG Area measured to interior face of exterior wall*
B.	***Construction Cost***				
1	Trade Costs - School Building	$ 45,630,000	$ 270.00	/ SF	
2	Trade Costs - Site Improvements	$ 8,000,000			*Allowance*
3	Preconstruction Contingency	$ 5,363,000	10.0%		*of Sum of Lines B1 through B2*
4	Escalation	$ 6,710,454			*Assumes 3/2018 Construction start, 24 Mo. duration, escalated to approx. midpoint of construction; through Q1/2019, 3.5% per year simple*
5	General Conditions/ Requirements	$ 2,160,000			*24 Mo. at $90,000*
6	Bonds, Insurance, Permit (local waived)	$ 1,314,069	2.0%		*of Sum of Lines B1 through B4*
7	Construction Management Fee (assumed CMaR)	$ 1,902,382	2.75%		*of Sum of Lines B1 through B6*
8	Owner Soft Costs	$ 19,002,252	$ 112.44	/ SF	*Refer to Soft Cost Summary - New 6-8 Middle School for 938 Students*
9	**TOTAL ESTIMATED PROJECT BUDGET**	**$ 90,082,157**	$ 533.03	/ SF	
C.	***CT Department of Construction Services, SCG Information***				
1	State Reimbursable Area Per Student	162.70		*SF/ Student*	*CGS 10-287c and 10-286 10 c.2*
2	Allowable Building Area	152,613		SF	*(Line A1 x Line C1)*
3	Reimbursement Eligibility Factor	**0.9407**	94.07%		*(Line C2 / Line A3)*
4	Eligible Costs	$ 84,736,638	$ 501.40	/ SF	*(Line B10 x Line C3)*
5	Reimbursement Rate	**0.4750**	47.50%		*2016-2017 Groton rate for new const.*
6	State Reimbursement	$ 40,249,903	$ 238.17	/ SF	*(Line C4 x Line C5)*
D.	***Net Cost to City/ Town:***				
1	Net Cost to Groton:	**$ 49,832,254**	$ 294.87	/ SF	*(Line B9 - Line C6)*

Groton School Facilities Initiative Task Force

Project # 13047.20

Scenario 1 - Opinion of Probable Owner Soft Costs - New 6-8 Middle School for 938 Students

	ITEM	Estimated Cost	Notes
1	CM Preconstruction Fee	120,000	
2	Land Acquisition	4,000,000	DEEP land conversion process
3	Architectural/Engineering Fees	3,942,207	6% of Construction Cost Including Contingencies + Escalation
4	FF&E Design	192,500	5% of lines 28 through 34
5	Third Party Review	15,000	
6	Tech/ AV/ Security Consultant	-	Included in A/E Fee for building infrastructure
7	Interior Design	-	Included in A/E Fee
8	Food Service Design	-	Included in A/E Fee
9	Acoustic Engineering Design	-	Included in A/E Fee; to address CT Statute
10	Planning & Zoning Sbumission	-	Included in A/E Fee
11	Abatement/ Demolition Design	-	Refer to Line 14
12	Temporary Space Design	-	N/A
13	Reimbursable Expense Budget	98,555	2.5% of A/E Fee
14	Owner's Clerk of the Works	250,000	
15	Commissioning Agent	125,000	
16	Industrial Hygeinist Consultant	-	N/A New Construction
17	Interdiciplinary Document Coordination Review (i.e. RediCheck)	40,000	
18	Attorney Fees	40,000	Allowance
19	Municipal Filing Fees	35,000	
20	Code Compliance Review	15,000	
21	Conceptual Design Professional Fees	25,000	
22	Special Inspections Administration	45,000	
23	Land Survey	25,000	
24	Geotechnical Consultant	50,000	Includes construction phase services
25	STC Traffic Study	25,000	
26	Test Borings Contractor	15,000	
27	Material Testing & Inspections	150,000	
28	Equipment:		
29	Computer / Software	1,600,000	All new
30	Security	100,000	
31	Data Network	200,000	
32	Telephone	50,000	
33	Grounds Maintenance	100,000	
34	Furniture, Fixtures & Equipment	1,800,000	All new
35	Play Equipment & Surfacing	-	No playgrounds
36	Signage	-	Included in construction cost summary
37	Bonding Costs	-	Included in construction cost summary
38	Town Bonding/ Referendum costs	50,000	Allowance
39	Builder's Risk Insurance	75,000	Allowance
40	Utility Company Charges (off site)	250,000	Allowance, needs scope definition
41	Utility Consumption	150,000	Allowance
42	Printing Costs	30,000	
43	Title Insurance	25,000	Allowance
44	Owner Administrative Costs	25,000	Allowance
45	Site Security	90,000	18 Mo. x $5,000
46	Storage Cost	10,000	
47	Moving Cost	60,000	
48	FAA Flight Path Permitting	50,000	
49	Sustainable Energy Initiatives	-	Needs scope definition
50	[Not Used]	-	
51	[Not Used]	-	
52	Demolition of Residential Dwelling	30,000	
53	Project Contingency	5,098,990	6% of $ 84,983,167
	Subtotal Other "Soft" Costs:	**$ 19,002,252**	
	Project Contingency Calculation:		
	Total CC incl. Cont., GC Escal. & Fees:	71,079,905	Sum of lines B1 through B8 from Cost Model Worksheet
	Soft Costs w/o Contingency:	13,903,262	Sum of items 1-52 above
	Sub-total before project contingency	**$ 84,983,167**	

Groton School Facilities Initiative Task Force
Scenario 1 - Opinion of Probable Project Costs - Renovate To New West Side MS to PreK-5 ES for 600 Students

		Value		Units	Remarks
A.	***Groton Public Schools - Proposed Project Data:***				
1	Projected Enrollment:	600		*Students*	
2	Existing Building Area	73500			*Existing building area*
3	Proposed Addition Area	11700			
4	Proposed Demolition Area	1800			*Remove existing portables*
5	Projected Gross Building Area:	83,400		*SF*	*Based on Ed Spec Program*
6	Projected "Net-Gross" Building Area (SCG Area):	80,481		*SF*	*Subtract 3.5% from line A2 for exterior wall. SCG Area measured to interior face of exterior wall*
B.	***Construction Cost***				
1	Trade Costs - Renovate School Building	$ 18,765,000	$ 225.00	/ SF	
2	Trade Costs - New Addition	$ 3,042,000	$ 260.00	/ SF	
3	Trade Costs - Demolition	$ 45,000	$ 25.00	/ SF	*Demolish Portables*
4	Trade Costs - Site Improvements	$ 5,000,000			*Allowance*
5	Preconstruction Contingency	$ 2,685,200	10.0%		*of Sum of Lines B1 through B4*
6	Escalation	$ 4,652,109			*Assumes 7/2020 Construction start, 18 Mo. duration, escalated to midpoint of construction; through Q1/ 2021, use Q3, 2020, 3.5% per year*
7	General Conditions/ Requirements	$ 1,620,000			*18 Mo. at $90,000*
8	Bonds, Insurance, Permit (local waived)	$ 683,786	2.0%		*of Sum of Lines B1 through B6*
9	Construction Management Fee (assumed CMaR)	$ 1,094,793	3.00%		*of Sum of Lines B1 through B8*
10	Owner Soft Costs	$ 10,888,218	$ 130.55	/ SF	*Refer to Soft Cost Summary - Renovate To New West Side MS to PK-5 - 600 Students*
11	**TOTAL ESTIMATED PROJECT BUDGET**	**$ 48,476,106**	$ 581.25	/ SF	
			$ 648.42	/ SF	SCG allowable area (>> $450)
C.	***CT Department of Construction Services, SCG Information***				
1	State Reimbursable Area Per Student	124.60		*SF/ Student*	*CGS 10-287c and 10-286 10 c.2*
2	Allowable Building Area	74,760		SF	*(Line A1 x Line C1)*
3	Reimbursement Eligibility Factor	**93%**	92.89%		*(Line C2 / Line A6)*
4	Eligible Costs	$ 45,030,177	$ 539.93	/ SF	*(Line B12 x Line C3)*
5	Reimbursement Rate	**0.5750**	57.50%		*2016/17 Groton rate for renovation*
6	State Reimbursement	$ 25,892,352	$ 310.46	/ SF	*(Line C4 x Line C5)*
D.	***Net Cost to City/ Town:***				
1	Net Cost to Groton:	**$ 22,583,754**	$ 270.79	/ SF	*(Line B11 - Line C6)*

Groton School Facilities Initiative Task Force Project # 13047.20

Scenario 1 - Opinion of Probable Owner Soft Costs - Renovate To New West Side MS to PreK-5 ES for 600 Students

	ITEM	Estimated Cost	Notes
1	CM Preconstruction Fee	90,000	
2	Land Acquisition	-	No acquisition required
3	Architectural/Engineering Fees	2,393,252	7.0% of Construction Cost Including Contingencies + Escalation
4	FF&E Design	106,250	4% of lines 28 through 34
5	Third Party Review	15,000	
6	Tech/ AV/ Security Consultant	-	Included in A/E Fee for building infrastructure
7	Interior Design	-	Included in A/E Fee
8	Food Service Design	-	Included in A/E Fee
9	Acoustic Engineering Design	-	Included in A/E Fee; to address CT Statute
10	Planning & Zoning Sbumission	-	Included in A/E Fee
11	Abatement/ Demolition Design	20,000	
12	Temporary Space Design	-	N/A building vacated
13	Reimbursable Expense Budget	71,798	3% of A/E Fee
14	Owner's Clerk of the Works	175,000	
15	Commissioning Agent	80,000	
16	Industrial Hygeinist Consultant	50,000	
17	Interdiciplinary Document Coordination Review (i.e. RediCheck)	30,000	
18	Attorney Fees	30,000	Allowance
19	Municipal Filing Fees	35,000	
20	Code Compliance Review	15,000	
21	Conceptual Design Professional Fees	25,000	
22	Special Inspections Administration	25,000	
23	Land Survey	25,000	
24	Geotechnical Consultant	25,000	Includes construction phase services
25	STC Traffic Study	15,000	
26	Test Borings Contractor	15,000	
27	Material Testing & Inspections	125,000	
28	Equipment:		
29	Computer / Software	800,000	Assumed all new
30	Security	75,000	
31	Data Network	150,000	
32	Telephone	50,000	
33	Grounds Maintenance	50,000	
34	Furniture, Fixtures & Equipment	1,000,000	Assumed mostly new, some reused
35	Play Equipment & Surfacing	300,000	Two playgrounds (PK & K and 1-5)
36	Signage	-	Included in construction cost summary
37	Bonding Costs	-	Included in construction cost summary
38	Town Bonding/ Referendum costs	50,000	Allowance
39	Builder's Risk Insurance	50,000	Allowance
40	Utility Company Charges (off site)	100,000	Allowance
41	Utility Consumption	150,000	Allowance
42	Printing Costs	30,000	
43	Title Insurance	25,000	Allowance
44	Owner Administrative Costs	25,000	Allowance
45	Site Security	90,000	18 Mo. x $5,000
46	Storage Cost	10,000	
47	Moving Cost	60,000	
48	FAA Flight Path Permitting	50,000	
49	Sustainable Energy Initiatives	-	Needs scope definition
50	City of Groton Permitting Fees	50,000	Allowance
51	[Not Used]	-	
52	[Not Used]	-	
53	Project Contingency	4,406,919	10% of $ 44,069,187
	Subtotal Other "Soft" Costs:	**$ 10,888,218**	
	Project Contingency Calculation:		
	Total CC incl. Cont., GC Escal. & Fees:	37,587,888	Sum of lines B1 through B10 from Cost Model Worksheet
	Soft Costs w/o Contingency:	6,481,299	Sum of items 1-52 above
	Sub-total before project contingency	**$ 44,069,187**	

Groton School Facilities Initiative Task Force
Scenario 1 - Opinion of Probable Project Costs - Renovate To New Cutler MS to PreK-5 ES for 600 Students - Diversity School

		Value		Units	Remarks
A.	***Groton Public Schools - Proposed Project Data:***				
1	Projected Enrollment:	600		*Students*	
2	Existing Building Area	76,000		*SF*	*Existing building area*
3	Proposed Addition Area	11,000			
4	Proposed Demolition Area	3,600			*Remove existing portables*
5	Projected Gross Building Area:	83,400			*Based on Ed Spec Program*
6	Projected "Net-Gross" Building Area (SCG Area):	80,481		*SF*	*Subtract 3.5% from line A2 for exterior wall. SCG Area measured to interior face of exterior wall*
B.	***Construction Cost***				
1	Trade Costs - Renovate School Building	$ 18,765,000	$ 225.00	/ SF	
2	Trade Costs - New Addition	$ 2,860,000	$ 260.00	/ SF	
3	Trade Costs - Demolition	$ 90,000	$ 25.00	/ SF	*Demolish Portables*
4	Trade Costs - Site Improvements	$ 3,500,000			*Allowance*
5	Preconstruction Contingency	$ 2,521,500	10.0%		*of Sum of Lines B1 through B4*
6	Escalation	$ 4,368,499			*Assumes 7/2020 Construction start, 18 Mo. duration, escalated to midpoint of construction; through Q1/ 2021, use Q3, 2020, 3.5% per year*
7	General Conditions/ Requirements	$ 1,620,000			*18 Mo. at $90,000*
8	Bonds, Insurance, Permit (local waived)	$ 642,100	2.0%		*of Sum of Lines B1 through B6*
9	Construction Management Fee (assumed CMaR)	$ 1,031,013	3.00%		*of Sum of Lines B1 through B8*
10	Owner Soft Costs	$ 10,448,934	$ 125.29	/ SF	*Refer to Soft Cost Summary - Renovate To New Cutler MS to PK-5 - 600 Students*
11	**TOTAL ESTIMATED PROJECT BUDGET**	**$ 45,847,045**	$ 549.72	/ SF	
			$ 613.26	/ SF	SCG allowable area (> $450)
C.	***CT Department of Construction Services, SCG Information***				
1	State Reimbursable Area Per Student	124.60		*SF/ Student*	*CGS 10-287c and 10-286 10 c.2*
2	Allowable Building Area	74,760		SF	*(Line A1 x Line C1)*
3	Reimbursement Eligibility Factor	**0.9289**	92.89%		*(Line C2 / Line A6)*
4	Eligible Costs	$ 42,588,003	$ 510.65	/ SF	*(Line B12 x Line C3)*
5	Reimbursement Rate	**0.8000**	80.00%		*Diversity school rate*
6	State Reimbursement	$ 34,070,403	$ 408.52	/ SF	*(Line C4 x Line C5)*
D.	***Net Cost to City/ Town:***				
1	Net Cost to Groton:	**$ 11,776,643**	$ 141.21	/ SF	*(Line B11 - Line C6)*

Groton School Facilities Initiative Task Force Project # 13047.20

Scenario 1 - Opinion of Probable Owner Soft Costs - Renovate To New Cutler MS to PreK-5 ES for 600 Students - Diversity School

	ITEM	Estimated Cost	Notes
1	CM Preconstruction Fee	90,000	
2	Land Acquisition	-	No acquisition required
3	Architectural/Engineering Fees	2,247,350	7.0% of Construction Cost Including Contingencies + Escalation
4	FF&E Design	106,250	5% of lines 28 through 34
5	Third Party Review	15,000	
6	Tech/ AV/ Security Consultant	-	Included in A/E Fee for building infrastructure
7	Interior Design	-	Included in A/E Fee
8	Food Service Design	-	Included in A/E Fee
9	Acoustic Engineering Design	-	Included in A/E Fee; to address CT Statute
10	Planning & Zoning Sbumission	-	Included in A/E Fee
11	Abatement/ Demolition Design	20,000	
12	Temporary Space Design	-	N/A building vacated
13	Reimbursable Expense Budget	67,420	3% of A/E Fee
14	Owner's Clerk of the Works	175,000	
15	Commissioning Agent	80,000	
16	Industrial Hygeinist Consultant	50,000	
17	Interdiciplinary Document Coordination Review (i.e. RediCheck)	30,000	
18	Attorney Fees	30,000	Allowance
19	Municipal Filing Fees	35,000	
20	Code Compliance Review	15,000	
21	Conceptual Design Professional Fees	25,000	
22	Special Inspections Administration	25,000	
23	Land Survey	25,000	
24	Geotechnical Consultant	25,000	Includes construction phase services
25	STC Traffic Study	15,000	
26	Test Borings Contractor	15,000	
27	Material Testing & Inspections	125,000	
28	Equipment:		
29	Computer / Software	800,000	Assumed all new
30	Security	75,000	
31	Data Network	150,000	
32	Telephone	50,000	
33	Grounds Maintenance	50,000	
34	Furniture, Fixtures & Equipment	1,000,000	Assumed mostly new, some reused
35	Play Equipment & Surfacing	300,000	Two playgrounds (PK & K and 1-5)
36	Signage	-	Included in construction cost summary
37	Bonding Costs	-	Included in construction cost summary
38	Town Bonding/ Referendum costs	50,000	Allowance
39	Builder's Risk Insurance	50,000	Allowance
40	Utility Company Charges (off site)	100,000	Allowance
41	Utility Consumption	150,000	Allowance
42	Printing Costs	30,000	
43	Title Insurance	25,000	Allowance
44	Owner Administrative Costs	25,000	Allowance
45	Site Security	90,000	18 Mo. x $5,000
46	Storage Cost	10,000	
47	Moving Cost	60,000	
48	FAA Flight Path Permitting	50,000	
49	Sustainable Energy Initiatives	-	Needs scope definition
50	[Not Used]	-	
51	[Not Used]	-	
52	[Not Used]	-	
53	Project Contingency	4,167,913	10% of $ 41,679,132
	Subtotal Other "Soft" Costs:	**$ 10,448,934**	
	Project Contingency Calculation:		
	Total CC incl. Cont., GC Escal. & Fees:	35,398,112	Sum of lines B1 through B10 from Cost Model Worksheet
	Soft Costs w/o Contingency:	6,281,020	Sum of items 1-52 above
	Sub-total before project contingency	**$ 41,679,132**	