



SCHOOL FACILITIES STRATEGIC PLANNING STUDY: Green Meadow/ High School

Credits

The information contained in this document represents continued steps in enriching the educational programs and facilities for the Maynard Public Schools. The revitalization of the Green Meadow Elementary School (grades PK-3) and the Maynard High School (Grades 9-12) school facilities will allow the Town of Maynard to maintain its high quality of education in the best possible environment for the entire K-12 student population. The completion of the Fowler Middle School in 2001 was part of the first step in the completion of the Master Plan developed for the Town of Maynard.

We would like to thank the following people for the time and effort they invested to contribute to this document.

Maynard School Committee

William Kohlman, Chairperson  
Mary Brannelly, Assistant Chairperson  
Paul Howes  
Brian Smith  
Ann Pratt

Colleen Moore  
Superintendent's Secretary

School Facilities Strategic Planning Study Committee

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Kathy Hahn  
Susan Kohlman  
Terry Herring  
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Dr. Mark Masterson (*ex officio*), Superintendent, Maynard Public Schools  
Pete DiCicco (*ex officio*), Business Advisor Maynard Public Schools  
Eugene Redner, Finance Committee Liaison  
Sally Bubier, BOS Liaison



## Project Team

The participation of the School Facilities Strategic Plan project team was essential for the completion of this document. The team includes the following offices:

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### Structural Consultant:

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## Project Summary

The Town of Maynard educates their school age children in three school facilities on one contiguous campus. The Fowler Middle School located between the Green Meadow Elementary School and the Maynard High School is the newest facility which opened in 2001. Of the three facilities two are included as a part of this study, the Green Meadow Elementary School and the High School both require significant improvements. The New England Association of Schools & Colleges (NEASC) probation letter, which was reaffirmed during a recent presentation by NEASC representatives on February 1, 2007 to the Maynard School Committee, the need to address both the educational and facility deficiencies of the High School. It should be noted that of the 259 accredited Public Secondary School by NEASC only 7 (including Maynard High School) are listed on the probation list. The determination of Maynard's grade/building configuration (PK-3, 4-8, 9-12) was a result of the work by the School Facility Study Committee which was formed in 1995 and presented their final report in May of 1996. The School Facilities Strategic Planning Study did not reevaluate the adopted solution.

The goal of this Study is to develop a School Facilities Strategic Plan while ensuring that the Town benefits from all possible reimbursements from Massachusetts School Building Authority (MSBA), addresses the NEASC probation letter, develops a comprehensive facilities strategic plan, and ensures the best educational environment for the students of Maynard. The infrastructure of both the Elementary and High School are in need of upgrades and have in many instances reached the end of their useful life.

MSBA is on a track to reinstate the program to support the Massachusetts Communities in funding their school construction projects. The moratorium on the funding program will be lifted on July 1, 2007. It has been requested by MSBA that communities who wish to request consideration for funding submit a Statement of Interest by July 31, 2007. The Statement of Interest asks Communities to indicate whether they believe they meet one or more of the 8 statutory requirements (ranked in priority) and to specifically identify the deficiencies for each facility to be considered. The Town of Maynard completed this requirement in January of 2007 (see appendix). The next step of the MSBA would be to invite the community to participate in a Facility Assessment conducted by an independent authority contracted by the MSBA. If the Facility Assessment determines there is a need to move forward a Feasibility Study would be conducted. It is important to note that the submission of the Statement of Interest or the ability to move forward to the next step does not guarantee any funding. If a community is denied funding the year their request is submitted they must put in a new request the following year- there is NO WAIT LIST for MSBA funding. Therefore, it can not be determined when any funding may be received by the Town of Maynard. It is understood that the Town of Maynard must address the facility deficiencies of the High School in order to not lose Accrediation before MSBA funding may be received.

In recognition of these inadequacies, the Facility Advisory Council (FAC) was established by a vote at the Maynard School Committee in the Summer of 2006 to develop a Strategic Plan for the Green Meadow and High School. This School Facilities Strategic plan is the culmination of a deliberate process which included the review of previously assembled materials, a facility assessment report, demographic and enrollment review, space utilization analysis, educational specification/programming, strategic/capital plan options, and costing. The information assembled here-within is intended as a record of the work performed between August 2006 and February 2007.



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### School Facilities Strategic Planning Study

The scope of the School Facilities Strategic Plan was established by the Maynard Public School's RFQ for School Facilities Strategic Planning Study issued in June of 2006. The RFQ can be found in the Appendix of this report.



## Facility Condition Assessment Report

The assessment team surveyed the Green Meadow Elementary School and the Maynard High School. The purpose of the assessment was to provide an evaluation and rating of the conditions of each of the facilities. The team included the following consultants: Civil, Landscape, Mechanical, Electrical, Fire Protection, Plumbing, Structural, and Architectural (interior and exterior envelope). This assessment only considered maintenance and operational issues and at this evaluation stage did not address any of the educational requirements. A renovation/addition or new construction project would fully address the curriculum which would directly reflect/enhance the teaching methodologies of the Town of Maynard.

A physical plant analysis was undertaken for the Green Meadow Elementary and Maynard High School facilities which included the assessment of the mechanical, plumbing, electrical, structural and overall architectural elements including but not limited to floors, walls, ceilings, windows, and toilets. A data base of deficiencies was developed which catalogued each deficiency and ranked, prioritized and priced each building deficiency. A non proprietary data base was used to contain and sort the information contained in each report.

The criteria used was as follows:

### Priorities:

#### Priority One: Currently Critical

Should be undertaken immediately including violations of life safety, building and electric codes.

#### Priority Two: Potentially Critical (1-2 Years)

Should be corrected in the near future to maintain the integrity of the building, including systems which are not functioning properly and without addressing would cause further deterioration.

#### Priority Three: Necessary Not Yet Critical (3- 5 Years)

Should be corrected in the more distant future to maintain the integrity of the building, including systems that have exceeded their expected useful life, but are still functioning.

#### Priority Four: Functional Need

Required or desirable to bring the facility to perform as it should, including system upgrades and aesthetic issues.



**Priority Five: Does not meet Current Code**

Does not conform to codes instituted since the construction of the building and as a result grand fathered in their existing condition. These should be addressed in any major renovation effort.

**Deficiency Categories**

**Code Compliance: General Building or Life Safety**

Violations of building codes.

**Code Compliance Accessibility**

Violations of barrier free codes.

**Building Integrity**

Components which are broken or in poor condition.

**Functionality**

Inhibit use of space but does not affect the integrity of systems.

**Appearance**

Not functional in nature.

**Energy**

Adversely impact energy usage.

**Air/Water Quality**

Conditions which affect the environmental quality of the water or air.

When undertaking Capital Projects it is important to note that there are two significant trigger points with respect to 521 CMR: Architectural Access Board as defined in Section 3.3 EXISTING BUILDINGS:

3.3.1, b if the work costs \$100,000 or more, than the work being performed is required to comply with 521 CMR. In addition, an accessible public entrance, toilet room, telephone and drinking fountain shall be in compliance.

3.3.2 If the work performed amounts to 30% or more of the full and fair cash value the entire building is to comply with 521 CMR.

Each deficiency or "Requirement Description" are individually catalogued in this report. Each requirement contains not only (as defined above) the Category, Prime System and Priority but a detailed Requirement Description, Action Description, and Detailed Costing. It should be noted that a 10% contingency, appropriate escalation relative to the projected construction start date (which is speculative), and 30% Soft Costs are carried for each individual Requirement.



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**SCHOOL FACILITIES STRATEGIC PLANNING STUDY: Green Meadow/ High School****Maynard High School Facility + Green Meadow Assessment Summary:**

A detailed description of both school facilities can be found in the Asset Summary Reports contained herein. In the summary report each major system along with the assessed value and total requirement costs are defined. It should be clearly noted that the High School requirements do not address any of the specific NEASC deficiencies or general programmatic requirements necessary to run an educational facility which meets the current and future needs of the Maynard Students. The requirements outlined in this report for both facilities will extend the useful life of the facility but do not in all instances consider a full gut replacement of all of the systems. If some of the systems are not addressed failure could occur which would be a detriment to (ongoing educational practices) teaching and learning. The mechanical system for example, if failed, during the winter season could impact the ability to utilize either school when undergoing potential repairs. Overall it can be stated that most of the systems in the High School and many in the Elementary School have reached the end of their useful life. It is important to note that ongoing capital repairs must be maintained during this time of strategic planning development.

**Demographic Analysis:**

Grades PK-12 enrollment in Maynard has been essentially “flat” since the 2003 and is projected to be steady through 2011. Although enrollment has not increased, the existing elementary and High School facilities “feel” overcrowded. Virtually every space available is used for educational purposes. If core spaces were increased to satisfy the space requirements than classroom spaces would be inadequate.

In order to evaluate future enrollment levels, enrollment projections (developed by NESDEC) were reviewed for appropriateness. These projections indicate that enrollments will remain fairly steady for the foreseeable future. Based on the enrollment projections and prudent planning, the School Facility Strategic Study Committee has agreed that any proposed master plan should provide for a total educational capacity of approximately 1284 students. (500 students in grades PK-3, 480 students in grades 4-8, and 350 students in grades 9-12).

In addition to the NESDEC projections the Superintendent as part of this study met with the Town planner, Carolyn Britt. Ms. Britt reviewed with the Superintendent a series of probable and potential condo and housing developments. At this point in time those in the active planning stages will have a small positive, but not significant impact on enrollment. While some larger units were being considered, e.g. Clock Tower apartment/condos, none are now in the active planning stages. If however, such a significant number of condos were added, demographers suggest that many would be purchased by senior citizens, thus adding a number of single family homes to the market and potentially increasing school enrollments.



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### Educational Program:

Based on the direction of Superintendents Office with regards to the required enrollment capacity, room use requirements were developed for each educational facility in conjunction with the user group which was comprised of the Superintendent, Principal of both Green Meadow and High School and faculty representatives. The goal of the Programming Sub-Committee was to develop a program which met the constraints of potential reimbursement funds, provided for the space needs of the curricula for the foreseeable future, and took into consideration the maximum utilization of space within existing town owned facilities and sites.

The overall educational program adheres to the guidelines established by the Massachusetts School Building Authority (MSBA) <http://www.massschoolbuildings.org/Documents/PDF/edprogramspacestandards.pdf>. These guidelines describe the current sizes of spaces which are required for each educational facility. The goal of the Programming Sub-Committee was to develop a program which met the constraints of potential reimbursement funds, provided for the space needs of the curricula for the foreseeable future, and took into consideration the maximum utilization of space within existing town owned facilities and sites. A line by line Educational Program was written which satisfied the space deficiencies as well as the programmatic requirements to meet the current and future needs of the Elementary and High School. The newly established educational program was a conservative estimate of the necessary need. The existing High School as noted in the NEASC report lacks many of the necessary elements to run a 21st century High School. Many spaces such as the science rooms, library, administrative, guidance, private meeting spaces, athletic facilities, locker rooms, computer labs, music areas and storage fail to meet the minimum necessary requirements. It is important to reiterate that the facility assessment (contained in this report) with associated costs did not satisfy any of these programmatic requirements but only considered infrastructure upgrades. The Green Meadow Elementary School lacks appropriate sized Kindergarten classrooms, dedicated Excel/Star classrooms, therapy/testing rooms, art storage, computer classrooms, parent room, multi purpose rooms, kitchen and general storage spaces.

### Anticipated Reimbursement

Total reimbursement for the projects will be established by the Massachusetts School Building Authority (MSBA) based on their review of anticipated enrollment and the proposed renovations/expansion of each existing facility. As the current status of state reimbursement programs are currently under review it is impossible to define the exact projected reimbursement for the Town of Maynard. The MSBA has submitted guidelines for space standards based on gross square feet per student. Unfortunately, at the High School level the Town of Maynard does not benefit from any economy of scale. The Maynard High School falls under the smallest student population standard which is any High School with a student population fewer than 400 students. These small High



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Schools are projected at 190 Gross Square Feet per student. After our program was written it was determined that the Maynard High School should be approximately 114,000 square feet the MSBA formula suggests that a 350 students @ 190 GSF per students would allow for a High School to be sized at 66,500. While the new formulas developed by MSBA have tried to compensate for smaller schools (by increasing the allowable square footage for lower capacities) they have not tested the formulas under all scenarios. Tappe Associates, Inc. has brought this issue to the attention of the MSBA for review and consideration suggesting that the allowable square footages should be increased for a school with a smaller population.

### Proposed Schematic Options: Maynard High School

Multiple preliminary options were considered by the Strategic Planning Study Committee and the Architect.

The three Options which were explored in detail are:

- I. Construction of a New High School
- II. Renovation/Addition to the existing High School
- III. Repairs Only Option

I. The Construction of a New High School fully integrates the 21century program while maintaining accreditation, allowing for possible MSBA reimbursement, minimizes disruption to the building occupants while developing a building with a 40 year life span and allows for a design without the constraints any existing walls, envelope, volumes, structure, and corridors.

II. The Renovation/Addition Project would satisfy the accreditation issues and would meet the needs of the 21 century program while increasing the life of the systems to 40 years. The new High School requirements/program would be infused into a building which did not have the same vision/requirements as the current and future needs, therefore, the building program elements would need to fit within the existing framework. Even if the proposed design could work within the existing plan (see diagram with new plan overlaid on the existing plan) it may be technically infeasible due to necessary seismic upgrades. It would be necessary to remove and modify a large number of interior partition walls. In the existing High School structure many of the interior partitions are shear walls, which means that they are essential, as they provide lateral bracing for the structure for both wind and seismic loading. When a major renovation is undertaken, and removal of the existing lateral load resisting system is necessary, a structural system upgrade is required in order to meet the requirements of Mass. Code Section 3408. This seismic upgrade would require a complete lateral analysis of the structure, for a lateral bracing system that must meet all of the requirement of the present code. This would require new braces/frames with strengthened columns and base connections, new foundations, and either strengthened or new beams at the frames/braces. The code requires that once a non-conforming lateral system is modified, that the new system be in compliance with present codes. The



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structural upgrades to install a code compliant system in an existing building of this type are extremely expensive and very disruptive. Generally, such an upgrade is not recommended, given this scenario new construction is more cost effective. Due to the necessity to enhance program evenly throughout the facility it is difficult to suggest that a single isolated addition which solve the space/educational needs. While a proposal to construct an isolated addition to the facility would reduce the construction impact to the occupants and allow for greater utilization of the existing facility it does not eliminate the need to extensively renovate the existing facility to satisfy the educational, programmatic and infrastructure upgrades.

III. The Repairs Only Option maintains the use of the existing facility while extending the useful life of the facility. This Option does not have any educational upgrades, it risks the loss of accreditation because it does not address those programming deficiencies and has a high cost without enough educational gains.

#### Proposed Schematic Options: Green Meadow Elementary School

Multiple preliminary options were considered by the Strategic Planning Study Committee and the Architect. The three Options which were explored in detail are:

- I. Repairs/ Renovations to the Green Meadow Elementary
- II. Repairs Only
- III. Status Quo

I. The Repairs/Renovation Option fully integrates the developed Educational program while upgrading the building's antiquated systems. The proposed option assumes a fully occupied Elementary School. Since the proposed addition is placed outside the existing footprint there would be a ease of construction due to the segregated construction area. Other more invasive projects would be undertaken after the completion of the addition when students could move into the new segment of the building. Other projects which impact the infrastructure could be undertaken after hours and during long term vacations. This Option I would both integrate the educational program while significantly increasing the building life span and could be phased over time to reduce costs to the Town.

II. The Repairs Only Option extends the life of the facility, creates a more comfortable and safe environment but does not address the educational needs of Maynard's Elementary School age students.

III. The Status Quo Option does not address the short/long term facility needs nor does it address the educational requirements.