
SECTION ONE EXECUTIVE SUMMARY

In 2009, the Town of Grafton engaged *Symmes, Maini & McKee Associates, Inc.* (SMMA) as Architect and Engineer, and *Joslin Lesser and Associates, Inc. (JLA)* as the Owner's Project Manager, to undertake a Feasibility Study and Schematic Design for Grafton Memorial High School.

CHARGE & GOALS OF THE GRAFTON SECONDARY SCHOOL BUILDING COMMITTEE

COMMITTEE

Develop a high school design to address the long term needs of the schools' curriculum and growing enrollment. Report to the Selectmen and School Committee with recommendations on facility design, and upon these Boards' approval, present to the Town Meeting for funding.

PROCESS

- Follow a well organized, comprehensive, and iterative process
- Clearly communicate the process, findings, and recommendations
- Engage key stakeholders
- Develop a design solution capable of obtaining the support of the community and the MSBA

EDUCATIONAL

- Propose a high school design which:
 - promotes and enhances educational excellence
 - fosters a positive learning environment
 - accommodates projected student enrollment and educational needs
 - recognizes possible future expansion needs
 - provides flexibility to accommodate future educational requirements
 - accommodates the athletic program needs of the school

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BUILDINGS

- Propose a high school in which the building:
 - maximizes community use potential
 - reflects the character of the community
 - minimizes adverse effects on abutters
 - is easy and cost effective to maintain
 - is cost effective design
 - is cost effective to construct
 - addresses long term health, safety and security needs
 - provide a technological infrastructure to accommodate future enhancements
 - creates a sense of community within the facility
 - creates clear and logical building circulation for vehicles and pedestrians
 - use green technology

SITE

- Select a site that:
 - emphasizes efficiency of land use to meet the Town's needs
 - allows for future expansion potential (vertical and or horizontal)
 - creates clear and logical site circulation
 - provides operational efficiency
 - encourages teachers and students to walk or bike to school

CONSTRUCTION

- Develop a high school design that:
 - minimizes disruption to teaching and learning
 - recognizes and address neighborhood disruption

REPORT FORMAT

It is the intent of this Feasibility Study to provide the Massachusetts School Building Authority (MSBA) and the Grafton Secondary School Building Committee with a complete catalogue and reference of all analyses, investigations, alternatives development, and community participation. Further, it will outline the processes, priorities, and rationale for decisions made to reach the preferred alternative. The study has been structured to follow the order of information outlined in the Feasibility Study Requirements for MSBA Funded Projects.

This Executive Summary provides an overview of the information contained in detail in the following sections.

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STATEMENT OF INTEREST

A Statement of Interest was filed with the MSBA in May of 2006. The priorities outlined in the Statement of Interest (SOI) cite severe overcrowding; prevention of severe overcrowding expected to result from increased enrollments; short term growth and undersized and insufficient quantity of classrooms and other teaching spaces.

ENROLLMENT PROJECTIONS

On April 28, 2009, the MSBA and the District met and reviewed the enrollment projections for the Grafton High School. The projections indicate a continuous rising of the high school population through 2017.

The design capacity of the Grafton High School, using MSBA's square footage standards, is 509 students. The current enrollment is 681, thus the school is 34% overpopulated.

The MSBA's letter of June 11, 2009 indicates that the MSBA's projection model sets the 10-year population projection at 900 students. This enrollment increase will would constitute a 116% increase over the existing school capacity.

At the time of discussions between the community and the MSBA, the district felt the student population could reach as high as 1,100 students or greater within the next ten years or shortly thereafter, a 93% increase over existing school capacity. For that reason, the District has requested, and included in the Summary of Spaces, increased areas for "core" spaces to accommodate anticipated growth. The concept design assumes these increased spaces as well as the ability to add classrooms at the third floor level over certain portions of the building. This approach will allow for a future building addition with minimal disruption to the site.

EDUCATIONAL SPECIFICATION

The educational vision was developed through extensive interviews with the Grafton Memorial High School administration, teachers, and staff. A group discussion took place between SMMA and approximately twenty Grafton High School students. The vision was translated into the Final Design Program. The building size will be 194,240 square feet. The listing of program spaces is included in Section Two in the Proposed Space Summary.

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EXISTING BUILDING CONDITIONS

The Grafton Memorial High School building is approximately 100,400 square feet comprised of the original 1962 structure and a 1993 addition. The addition infilled areas between the original pavilion type buildings. The classroom wing is a two-story square donut (courtyard) building. Most academic spaces are located in this building. The building addition is a two-story building elevated a half story above the academic building. The gymnasium building is a one story, high bay building. The undersized gymnasium is bound by structural columns and is not expandable. The auditorium is steeply raked with a 1:9.25 slope. This steep slope and configuration does not conform to current accessibility requirements. The zone of circulation between the academic wing and the community and public space wing is narrow and includes the stair. This area experiences significant bottlenecks during typical class changes.

EXISTING SITE CONDITIONS

The 46-acre High School site is primarily occupied by the school and the accompanying ball fields and parking. The southeast corner of the site is occupied by the new Grafton Police Department, the Municipal Building, the old and unoccupied police department building, and the School Department Building. The site is predominately flat, with steep slopes down to Lake Ripple along the north and west sides of the site. The Municipal and School Department buildings are on a ten-foot rise. The east and south sides of the site are bounded by Providence Road and Brigham Hill Road, respectively.

The existing vehicular and pedestrian circulation areas are inadequate for a school of the current and projected populations. The bus and parent pick-up/drop-off locations are small, without sidewalks, and are not formalized, which causes conflicts between buses, automobiles, and pedestrians. Handicap access at the main entrance is sufficient, but there is no accessible route to either Providence Road or the nearby Municipal complex. In addition, many secondary entrances are not accessible.

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Figure 1A: Existing High School Site

SUSTAINABLE DESIGN

The current project specification details the goals for a sustainable design. The project will strive to meet the threshold 34 points defined by the Massachusetts Collaborative for High Performance Schools (MA-CHPS) and maximize the Energy Efficiency incentive points established by the MSBA. See Section 5.7 for a detailed description of the Sustainable Design Goals.

ALTERNATIVES DEVELOPMENT

The charge of this Feasibility Study is to determine the scope and nature of the high school project. The options are to make additions and renovations to the existing high school, or to design a new high school and if the latter, options include site selection. The Town of Grafton has and continues to experience significant growth. This is likely due to a number of reasons including easy access to routes 90 and 495; commuter rail access to Boston and Worcester; and an abundance of developable land.

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This growth has caused a significant increase in the student population across the entire school system. The System-Wide Master Plan, conducted by Symmes Maini & McKee Associates in 2006, concludes with a selection by the Town to construct a new high school, convert the existing high school to an upper middle school, and realign the other schools and grade structure. That approach resolves the capacity issues across the school system.

HIGH SCHOOL SITES

SMMA's 2006 *System-Wide Master Plan Study* for Grafton Public Schools assessed fifteen town-owned parcels as potential high school sites. Of these, five were selected for further consideration. Since 2006, two town-owned parcels remain viable high school sites.

Based on these two parcels, SMMA studied three site alternatives:

1. 30 Providence Road, Addition and Renovation to Existing High School
2. 30 Providence Road, New High School
3. 48 Old Westboro Road, New High School

ALTERNATIVES

Alternative 1 Series – Additions and Renovations to the existing High School, 24 Providence Road

4.8.1A Alternative 1A:
Addition and Renovation to the existing High School. This alternative assumes retention of the entire existing building with additions to satisfy (to the extent possible) educational program needs.

4.8.1B Alternative 1B:
Addition and Renovation to the existing High School. This option assumes demolition of the public wing including: the gymnasium, auditorium, cafeteria, library, boiler plant, and academic and support spaces. It calls for the retention of the two-story academic block (square donut).

Alternative 2 Series – Construction of a new High School on the 30 Providence Road Site

4.8.2A Alternative 2A:
New High School at the northwest corner of the site; site development of much of the site.

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- 4.8.2B Alternative 2B:
New High School on the site, nearest Providence Road; site development of much of the site.
- 4.8.2C Alternative 2C:
New High School at the center of the site; site development of much of the site.

Alternative 3 Series – Construction of a new High School on the 40 Old Westboro Road Site

- 4.8.3A Alternative 3A:
New High School with a wetlands crossing to the east side of the site. Building in the northeast corner of the site; site development of most of the site but preserving the farm field in the southeast portion of the site.
- 4.8.3B Alternative 3B:
New High School at the corner of Old Westboro and Estabrook Roads (southwest corner). Site development of most of the site, but preserving the farm field in the southeast portion of the site.
- 4.8.3C Alternative 3C:
Similar to Alternative 3A but includes athletic field development on the farm field in the southeast portion of the site. This alternative was put aside in favor of Alternative 3A because of the concerns for overdevelopment of this site and the extensive permitting requirements associated with the ACEC and Prime Farmlands issues.
- 4.8.3D Alternative 3D:
Similar to Alternative 3B but includes athletic field development on the farm field in the southeast portion of the site. This alternative was put aside in favor of Alternative 3B because of the concerns for overdevelopment of this site and the extensive permitting requirements associated with the ACEC and Prime Farmlands issues.

PREFERRED ALTERNATIVE – OPTION 2C

DESCRIPTION

The Secondary School Building Committee's (SSBC) preferred option, "Option 2C," is for the construction of a new High School building on the current school

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site, located at 24 Providence Road. Option 2C calls for a population for 900 students with core space for 1,100 students.

Option 2C places a new building in the middle of the Providence Road site. This specific high school building design would meet the educational program needs and maximize the use of the site for athletic fields, parking, and vehicular circulation. This option puts the majority of the parking in front of the school with the ball fields behind the school.

Site reconstruction would include a parking lot for 400 parking spaces, and bus and parent drop-off/pick-up areas to accommodate both the new High School and the Upper Middle School. The parking would be located in front of both schools in one large area. Ball fields would be reconstructed behind the two schools to include two soccer/lacrosse fields, softball and baseball fields, six tennis courts, and a basketball court. The existing track & field would be reconstructed with a new multipurpose football field; the recently installed field lighting would be reinstalled.



Figure 1B: Preferred Option – Two- & Three-Story New Construction
(Adjacent to the existing high school building)

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POTENTIAL “MODEL SCHOOL APPROACH”

Option 2C has the ability to accommodate the Hudson “Model High School.” The size of the site, location, and potential orientation of the building on the site and the relative flatness of the site all work with this model. The SSBC has discussed this possibility and is very interested in exploring this option in the schematic design phase of the project. An adaptation of the Hudson Model School is depicted in the site plan above.

SCHEDULE OVERVIEW

The current timeline for Option 2C defines construction commencing in May of 2011. This will allow for the completion of Schematic Design in collaboration with the MSBA and subsequent MSBA Board approval, and subsequent Town approvals in the winter of 2010, followed by ten months for detail plans and specifications, construction contract bidding, and permitting approvals.

The schedule anticipates the following major milestones:

- MSBA Board approval to move to Schematic Design Sept. 30, 2009
- MSBA Board approval of final scope and budget January 27, 2010
- Town Meeting appropriating total project funding February 23, 2010
- Construction commencement May 31, 2011
- School Opening August 15, 2013

Note, this schedule could be shortened significantly if the project moves forward using the “Hudson Model School” as basis for Schematic Design.

TOTAL PROPOSED PROJECT BUDGET

The detailed total project budget includes cost for administration, design, construction, and contingencies, and is shown in Section 5.10. Architecture, Engineering, and Owner’s Project Management fees are a function of the design alternative selection from this Feasibility Study. Once an option has been approved, these fees will be negotiated and inserted in the project budget.

The estimated construction costs for Option 2C is \$63,470,720. This is based on the A.M Fogarty & Associates cost estimate, dated September 2, 2009, included in Section 5.10. This cost estimate was prepared in order to evaluate the comparative costs of the different alternatives as depicted in the matrix also in Section 5.10.

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During the Schematic Design phase, both SMMA and Joslin Lesser and Associates will perform concurrent cost estimates to establish the Grant Eligible Total Project Costs for the design alternative selected based on this Feasibility Study.

Additionally, the design phase includes a cost estimating and value engineering period during the Design Development phase, and a constructability review, cost estimating, and budget validation period during the Construction Document phase, to ensure the project remains within the approved budget.

COMMUNITY OUTREACH AND INVOLVEMENT

The District has hosted a community forum to reach out to residents in an effort to gain input and feedback. The nine-member Secondary School Building Committee represents a broad constituency base, further disseminating key project information to the community. All SSBC meetings are televised and repeated numerous times between meetings.

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