

Executive Summary

Introduction

The purpose of this Phase 1 Feasibility Study is to assess, at a conceptual level, the general feasibility and construction budget requirements of a new technical and agricultural high school to be located on the campus of the existing Essex Agricultural and Technical High School in the towns of Danvers and Middleton. The investigation begun here will conclude with a future Phase 2 Study meeting the criteria of a Certifiable Study as defined by the Massachusetts Division of Capital Asset Management (DCAM). The proposed new institution will be formed by the merger of three existing institutions: Essex Agricultural and Technical High School, North Shore Technical High School and the vocational program at Peabody Memorial High School. Programs from two other institutions - North Shore Community College and the North Shore Education Consortium - may also share parts of new and/or existing facilities on the Essex campus. The strategy of combining these educational programs on the Essex campus was proposed in the Merger Study contracted by the Department of Education and the Merger Study Sub-Committee Report dated January 2001. The new institution is provisionally named North Shore Technical/Agricultural High School (NSTAHS).

Design Partnership of Cambridge, Inc. has prepared this Study under contract to the Massachusetts Division of Capital Asset Management and in coordination with the Massachusetts Department of Education and the Merger Study Sub-Committee.

Work Plan and Programming

In order to adequately test the feasibility and probable cost range of the proposed NSTAHS development, Design Partnership and consultants performed several tasks. Major components of existing construction on the Essex campus were evaluated for condition, potential adaptive reuse and cost of rehabilitation. Areas of the site determined as likely locations for development were evaluated for opportunities and constraints. After meeting with administrators from all proposed user institutions, educational specifications were compiled, extrapolating existing educational programs for a projected maximum combined student population of 1400. From these specifications a program of required spaces was derived, totaling approximately 450,000 square feet. Site and building designs were then created to meet programmatic goals of adequate space and proper adjacency. Although significant modifications and refinements of the educational specifications, space program and facility design are inevitable and necessary as the project moves into more advanced stages of study and design, all stakeholders have agreed that this information is sufficiently accurate and complete to justify credible development of the conceptual design and cost options presented in the Feasibility Study Report.

Based on recommendations of the Merger Study Sub-Committee Report, the educational specifications, space program and physical design of the new institution reflect a four-year program structured to provide diverse technical, agricultural and vocational career training options. Five "Career Academies or Clusters" further delineate this framework. In addition to these, a sixth Academy serves all first-year students with a curriculum of core academic courses and an exploratory program providing exposure to all Career Academies for specialization in years two through four. The Career Academies include: Health Sciences and Human Services; Business; Commercial Design, Construction Technology and Automotive Technology; Environmental Sciences and Natural Resources and Agricultural Sciences.

Planning and Design Considerations

The Design Partnership team received input from a variety of stakeholders on issues of planning and design. Town officials provided information on traffic and utility infrastructure. Staff and administrators from the participating institutions provided their insights, as did citizens' representatives from the neighborhood. This information was the basis of the Planning Options

and subsequently of the Design Concept Options that developed from them.

The community expressed a strong desire to retain the rural ambiance, open green space, scale and character of the existing campus. The design team's response was to locate the new institution primarily on land already developed along Route 62. This general siting strategy respects wetlands and prime agricultural soils boundaries and minimizes costs for new infrastructure. However, due primarily to the outdoor athletic facilities ideally associated with the new institution, site area is at a premium in the zone between the wetlands band and Route 62. Alternative locations for some of the playing fields will be studied in the next phase, as will mitigation of the new development's effect on the surrounding neighborhoods.

Infrastructure and Utilities Considerations

Design Partnership's civil engineering and landscape architecture consultants also did preliminary evaluations of site systems and infrastructure. While the general site drainage system is archaic, other utilities are mainly available and of sufficient capacity. The major exception appears to be water supply, in the sense that the Town of Danvers is restricted in its allocation from its sole source, the Ipswich River watershed, and there are several existing and proposed users, besides NSTAHS, which will continue to make increasing demands. Our engineers note that it would be feasible, although costly, to develop an on-site well field and supply system for dedicated use by NSTAHS, if necessary.

Sustainable Design Considerations

The discussion of scarce natural resources such as water leads logically to a discussion of "green", "sustainable" and "low-impact" design. This has been a central criterion of the project from its conception, prominently mentioned in the original DCAM Request for Qualifications for Designer Services. While the Feasibility Study Report touches upon some specific strategies to achieve sustainable design, concentrated research on applicability and feasibility of particular technical and design responses will commence in the Phase 2 Study to follow. It is the intent of the client and the design team to take every possible opportunity to qualify this project for eventual LEED certification.

Planning and Design Options

In the initial stages of the project, Design Partnership and consultants discussed three Planning Options with the Merger Study Committee. One - placing all program elements on the South side of Route 62 (the location of the existing campus) - was determined to be less desirable and feasible than the others due to the extremely overcrowded conditions it would produce in this relatively confined location. The two remaining options were taken forward to the next level of design, which also provided sufficient information for conceptual cost estimates. These are termed Design Option A and Design Option B. Option A features reuse of many of the existing Essex Agricultural Technical High School buildings south of Route 62 for the new NSTAHS program. The major advantages of this strategy are the relative cost saving involved in reusing existing construction; the positive influence such reuse has on sustainable design / LEED certification and continued use and upgrade of the original Essex Institute facility with its long and honorable educational history and tradition. Major concerns with this scheme include the need for a safe pedestrian crossing of Route 62 since the high school program will occupy both sides of the highway and the student and staff population will be three times that occupying the site presently. Option B features the consolidation of all NSTAHS program space in a single, connected series of building components on the north side of Route 62. The major advantages of this strategy are a preponderance of new and therefore ideally designed and configured space for NSTAHS use; ease of administrative control and supervision; elimination of the need for students and staff to cross the busy highway and better site security. A major concern with this solution is the eventual alternative use of existing buildings on the South Campus and their relationship to the new institution. Increases in overall utility loading and connections, access, traffic and other impacts could result from intensified use of these facilities for other purposes. Additional concerns common to both Options are noted throughout the pertinent sections of this Report.

It has been determined that either of these Options would be feasible and reasonable. Due to several factors, the cost differential between the Options is less dramatic than had been initially anticipated. Option A, comprised of 70,683 square feet of renovated space and 384,159 square feet of new space, is estimated to have a construction cost of just under \$80 million. Option B, comprised of 35,096 square feet of renovated space and 409,799 square feet of new space, is estimated to have a construction cost of slightly over \$81 million.

Conclusions

This Feasibility Study is preliminary in nature. However, it illustrates the essential feasibility of developing a new technical/agricultural high school on the present Essex campus. The potential opportunities presented by this project are far-reaching. As conceived, NSTAHS will be the only school in Massachusetts, and one of very few nationally, to offer the range and richness of programs made possible by the merger. Other benefits will include a close connection to and interaction with local, regional and national business and industry and, for those students who select the track, a seamless transition from secondary to post-secondary education via shared programs with North Shore Community College and other 2- and 4-year institutions of higher learning.

The next steps to be taken in the process of creating NSTAHS are essentially administrative and governmental. The Massachusetts State Legislature is presently considering a bill that will allow the formation of the new school district required as a first step in the realization of NSTAHS. Another component of this legislation will fund the Phase 2 Study noted above. Since this new district will replace the existing North Shore Regional Technical High School District, approval must come from the towns that are currently members of this district. The vehicle for this approval is a positive vote of town meeting or city council. To allow the new district to be formed and replace the current district, communities representing at least 75% of the students enrolled in the NSRTHS program must vote in the affirmative.

Phase 2 of this Study will reexamine and refine the organizational and academic model and resulting space program, address site planning and impact issues, develop sustainable design approaches, quantify and address utility requirements and continue forward with the design of the campus and buildings.