

DRAFT #5
NRHS Space Study Task Force
Interim Report

SECTION ONE: INTRODUCTION

1.1 Overview

This is an interim report by the NRHS Space Study Task Force. The intent of this initiative is to raise our communities' awareness of the conditions of the high school learning environment and educational facilities and to make recommendations that we consider critical to improve student performance and become college and career ready in the twenty-first century. This report will identify the data we have collected that informs our public as to how well the current building's physical condition aligns with our academic expectations and with space limitations using state national standards for square footage per student and standards for accreditation. The desired outcome is to the next steps. This may include working with the Massachusetts School Building Authority (MSBA), hiring a consultant for further investigatory work, and/or looking at how to move forward in house.

1.2 History

NASHOBA Regional High School is an existing fifty-one (51) year old building located at 12 Green Road, Bolton, MA. The original building opened in September 1961 when the towns of Bolton, Lancaster and Stow regionalized for high school education. An academic wing was built in 1970 that also added a gymnasium and library area. In 1999 the "upper" gym space was reconfigured and an auditorium was added, along with administrative offices for guidance and school administration, giving the school a new façade. The HVAC system, including boilers, hot water system and air handling equipment, was also updated. Minor renovations and repairs were made to the academic wings for technology advances and energy savings.

It was during this renovation that the cafeteria space was altered, resulting in an overall usable square footage of 4,400 SqFt. Interior spaces were reconfigured to create classroom space (former auditorium became two classrooms) and a small media presentation room became a classroom. With the additional need for technology, two (2) classrooms were turned into computer labs, eliminating their use as conventional classroom spaces.

Since the completed renovation in 2002, additional reconfigurations have been done to continuously address student needs. Two classrooms (Art: 158a, 158b and Freshman Study Skills, 403b) have been subdivided to make two additional classroom spaces. The media center offices have been taken over for use as instructional spaces, computer labs, technology offices or special education spaces.

In the last eleven (11) years we have added two special education programs requiring bathroom and kitchen equipment within the class. The need for additional special education space has meant a reconfiguration of four (4) rooms that had been used for general education classrooms. Finally, while the building is accessible for the physically handicapped, no main entrance exterior doors have automatic entry.

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Five (5) of the science labs were built in 1970. The remaining labs are original to the 1961 wing. The inconsistent configuration of the lab spaces means that some courses, such as Chemistry, must be taught in specific classrooms.

1.2 Physical Layout

The building is set on a forty-two (42) acre site, formerly used for a Women's Correctional Center. It has two main parking areas: one with one hundred thirteen (113) spaces in the front and one on the academic side with two hundred eighteen (218) spaces. A smaller lot is located near the front of the auditorium with a total of thirty-two (32) spots, four (4) of which are handicapped accessible. There are an additional six (6) spots in the rear of the building.

The main entrance has a low interior ceiling, making it dark. It is also narrow due to the traffic pattern connecting the academic wings to the left, the cafeteria directly ahead and the gymnasiums to the right. The media center is located at the rear of the second academic wing with no main entrance from the outside. The auditorium is located on the opposite side of the building from the main entrance and can be difficult for newcomers to locate due to the indirect access path through the gymnasium or cafeteria.

There are two (2) courtyards, one that is used seasonally for additional seating for the cafeteria (weather permitting.) The other is designed for instructional purposes and access to a greenhouse. This one is used infrequently, although it does have a cement amphitheater.

The 1970 academic wing has six (6) interior classrooms that have no access to natural light. The rooms in this wing are smaller than the 1960 classrooms, except the science labs. They do have connecting doors between their neighbor classrooms. Each classroom has a moveable closet (wardrobe). Each wing has access to the front parking lot and the rear fields. The 1970's wing has access to the student parking lot.

SECTION TWO: CURRENT EDUCATIONAL PROGRAM

Nashoba Regional High School (NRHS) is a high achieving school that serves approximately 1087 students in grades 9-12 for the towns of Bolton, Lancaster, and Stow.

Mission Statement

We at Nashoba believe INTEGRITY is our foundation. We strive to make it a visible part of everything we do when we:

- COMMUNICATE: with honesty and respect, clarity and effective purpose, guided by acceptance and open-mindedness
- ACHIEVE: through consistent hard work and motivation, striving to realize high standards, to persevere over adversity by fostering the ability to innovate and adapt to change

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- RELATE: as a local and global citizen, practicing empathy and compassion, growing as an individual by finding common ground and appreciating differences
- ENGAGE: by taking initiative, participating with passion and enthusiasm, collaborating to create something bigger than each of us

We expect our students to aspire to these values. We expect our staff to live these values. We expect our larger community to support these values. We ask all to CARE, make the most of our time at Nashoba, and OWN IT!

2.1 DEMOGRAPHICS

Nashoba Regional High School (NRHS) serves approximately 1087 students in grades 9-12 for the towns of Bolton, Lancaster and Stow.

Nashoba students are well prepared for college and the workplace after graduation; for example, 80.2% of the students in the class of 2012 planned to attend a four-year college and 9.5% planned to attend a two-year college.

2.2 BUILDING UTILIZATION

Recommendations for class size at Nashoba are 24 students per class, and we consistently have sections range from 15 to 25 students with an average of 20. In the Fall of 2014 we are running an average of 49 classes per period. Actual class sizes result from student requests, meeting student educational needs and teacher availability. Our high school has 33 conventional classrooms, 2 gymnasiums, 10 science labs, 2 music spaces, 3 art spaces, 3 computer labs and 3 vocational classrooms. There are 6 teacher workrooms. Currently the academic classrooms are scheduled for 93% of the time and the MSBA recommends 85% utilization; this need for high level of utilization leads to scheduling restrictions and teachers having to share classrooms throughout the building. In addition, the high level of building utilization leaves few classrooms available for study halls, which are held in the Media Center and auditorium foyer, which presents challenges for supervision.

2.3 SCHEDULING METHODOLOGY

Nashoba runs a two-semester schedule, with some year-long courses and some semester-long courses. Students are scheduled into seven periods, over an eight day cycle, with an expectation that they enroll in 25 credits yearly. The periods rotate fully, with the first period of the day becoming the last period of the following day. Classes are 46 minutes long. The daily rotation schedule includes a “long” block of 90 minutes, which each class funnels into throughout the eight-day cycle. The long-block serves as our lunch block with four 22-minute periods. The high school days starts at 7:40 AM and ends at 2:20 PM.

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Teacher assignments, per the agreement of the Nashoba Regional School Committee and the Nashoba Regional Education Association, indicate that “High School teachers shall be assigned a maximum of 25 teaching periods per week and shall be provided with at least 25% unassigned time in the course of a defined rotation of the schedule”.

Because of scheduling restrictions related to the already high utilization of the building, approximately one hundred (100) students per class period do not have a scheduled class (Not meeting the 990 hours of instructional hours). An additional four (4) classrooms and six (6) FTE would be required to address this.

Graduation Requirements:

There are certain required courses as well as required overall credit total that must be earned.

<u>Courses Required</u>	
English	4yrs.
Foreign Language	2 yrs.
Math	3yrs.
Social Studies	3yrs. (U.S. History required)
Science	3yrs.
Wellness	Required each year
Fine & Performing Arts	1 yr.
Applied Computer Technology	1 yr.

Minimum Credits
Required for Graduation

90 Credits

2.4 PROFESSIONAL ENVIRONMENT

Nashoba teachers make concerted efforts to vary their instructional practices to support achievement of the school’s 21st century learning expectations. The variety of practices employed includes personalizing instruction, engaging students in cross-disciplinary learning, engaging students as active and self-directed learners, emphasizing inquiry, problem-solving, and higher order thinking, applying knowledge and skills to authentic tasks, engaging students in self-assessment and reflection, and integrating technology. Classrooms often get rearranged with each period to mirror the teacher’s desire for grouping size, position, and interaction among other groups.

Interaction and collaboration are the two main qualities of an enriched learning environment. Students and teachers need to be moving around the classroom without interrupting student groups. The building organization lacks classroom spaces that foster collaboration using technology, manipulatives, and interactive instruction that accommodates different sized groups.

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Classrooms are being taught by two, sometimes three, adults at time to ensure that each student is engaged, on target and gets the personalized instruction needed so that growth can occur. Space in each classroom to accommodate two laptops, teacher personal belongings and confidential materials is required.

Educators use personal/professional space to maintain their library, organize and prepare for instruction and have quiet, reflective space to think. They talk with their colleagues about student data, plan lessons and units, and attend webinars. The collaborative space configuration limits the possibilities for conducting confidential meetings with students and parents in person, on video chat and on the telephone. There are meeting areas for six departments' educators, while there are eleven departments in all. Further, teaching spaces are not centralized around department offices. Ideally, the space would be configured such that teachers could easily transition from classroom to collaborative space to enable full utilization of resources in planning and collaboration. In addition, related department offices are not near one another, limiting interdisciplinary collaborations

The layout of the building restricts collaboration among teachers, students and administrators. There are no break out rooms or office spaces for confidential meetings with students, parents or staff.

The teacher's lounge, which fits about 20 out of the total 104 staff, is located in the front of the building near the gymnasium, the farthest point away from the majority of the classrooms where teachers are located. It is not located near a restroom facility, its current configuration means that the same spaces are used for eating, photocopying and preparing for classes.

2.5 SCHOOL LUNCH PROGRAM

The cafeteria's small capacity requires that the schedule provided four (4) twenty-two (22) minute lunch periods each day. A student's lunch period is determined by what departments have lunch together. The cafeteria seats approximately three hundred (300) students. Seating selections are by groups of eight (8) per table. Smaller groups of students, who don't want to sit with larger groups, make a choice to sit on the floor to allow the full group to sit together. This leaves seats open.

The cafeteria seating is not large enough for the size of the student population. Our cafeteria is 6,000 square feet (including the corridors, which are a high-traffic areas and serve as main thoroughfares to the different sections of the high school building.) The configuration is awkward and inhibits supervision. Recent tests showed that it is difficult to hear public address announcements in emergencies.

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The kitchen was not updated in either renovation and still has 1960's era equipment. The server area creates a bottleneck because everyone has to come through two cashiers.

2.6 DIGITAL LEARNING

The school has three (3) technology labs that are scheduled for classes. Additionally, there are two desktop labs for teachers to schedule for their use on a daily basis and one mobile lab that can be checked out for use in the classroom. Wireless technology is available throughout the building; however, it has a stronger signal in some parts due to access points located in the ceilings. Each lab is outfitted with twenty-four (24) desk top computers. The media center has an additional twenty (20) desktops scattered throughout the space. Two (2) of the labs are dedicated to the engineering program. One of the labs is dedicated to the business department.

All academic classrooms have a ceiling mounted LCD projector. Teachers use district issued laptops for curriculum use. Each laptop can be connected to the LCD projector and wireless network, when available. Student interaction with technology in the classroom is limited.

The school has a "bring your own device" option allowing students to register their own devices. The technology team continues to support the bandwidth and wireless access requirements for this effort. Educators are expected to integrate technology into each course through their own web sites. The expectation for technology use varies by course and educator.

2.8 SPECIAL EDUCATION

The school offers a full continuum of programs for its special needs populations. Special education instructional space is limited and not designed properly for the current population of students. They occupy eight (8) classrooms that were purposed for some other use when originally constructed. The majority of our special education students are integrated into the general education classes. The building has eight (8) rooms dedicated to special education services. Five (5) special educators share teaching space over three (3) classrooms. Five (5) out of the eight (8) rooms are undersized for the population they serve and lack bathroom facilities for handicapped students. The kitchen units in two (2) of these rooms are not handicapped accessible. The eight rooms have a total of two bathrooms, far less than the required one per room. The building also lacks spaces dedicated to small group instruction for non-special education students who would benefit from some one on one or small group instruction from a teacher. In addition, the resource rooms are shared, one for two grades, instead of the typical one per grade.

2.9 ADMINISTRATION

The main office is off the main entry, but lacks space for private conversations with staff, parents and students. The teacher mail receiving area is right in front of the door and blocks entry. Deliveries are to the main office lobby area until they can be managed by the secretarial or custodial staff.

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Security to the building is compromised after access because a person has unfiltered ability to travel anywhere until addressed by a random staff person in the hallway. While there is a buzzer system, the person is no longer visible to the front office staff after they are allowed entry.

Meeting space is limited, with the presence of only one conference room in the entire building. This room can fit 6-8 people and is often reserved for meetings regarding students with Individual Education Plans, guidance, parents and administration. As a result, meetings are scheduled in the offices of the assistant principals and principals, restricting their use of the space for their own work.

2.10 GUIDANCE AND OTHER STUDENT SUPPORT SERVICES

The Guidance Department does not have enough office space for the number of counselors they have available. There is no designated conference room for guidance staff, causing them to meet in the open reception area of the main guidance office. In addition, meetings with students regarding academics or college preparation are conducted in this same open space, located around the secretary's desk. Students who visit the guidance office must visit this same secretary to make appointments and discuss possibly confidential reasons for the visit. Space restrictions have also removed the possibility for a career guidance center.

There is no dedicated office space for related services (social workers, school psychologists, speech and language providers, ELL educators). Occupational Therapists and Physical Therapists do not have a dedicated space to work with students. There is currently no dedicated space for use by these personnel., it is understood that they use a corner of the classroom, or find an empty space to work with the students. Behavior Consultants do not have any dedicated space to consult with educators, students, or parents. These personnel currently utilize one (1) 120 square foot space.

There are no unassigned small group instructional and support spaces, where two to three students could be tutored, work on a project or receive counselling.

NURSING

The high school employs two full time medical professionals. The medical suite has two examining areas with close proximity to the intake area and reception. Confidentiality is compromised due to the lack of doors exam areas (only curtains.)

2.12 ACADEMICS

Several issues impede the collaboration and continuity of instruction. Many teachers travel, not having a home base classroom, or space in a designated teachers' workroom that is solely their

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own. Most of the classrooms are at or less than seven hundred fifty (750) square feet which discourages additional pieces of furniture for storage. The state builds new classrooms at 850 sq. ft.

HUMANITIES

The foreign language classrooms have no access to dedicated technology, limiting audio and video learning opportunities on a continued basis.

The English department has a workroom, but it is small (500 sq. ft.); four other workrooms are interior rooms and larger at 700 to 750 square feet.

FINE AND PERFORMING ARTS

The auditorium is a modern facility, seating 650 students. While it has excellent sound and a sizeable stage, it lacks set, wardrobe, and stock storage for the number of productions NRHS is routinely performing. The space is not flexible and cannot be utilized well by smaller groups. The location discourages teachers from using it on a more regular basis. It is difficult to get to and has no direct route from the academic wings or main entrance. There is limited television ready material out of the auditorium because it was not set up to handle it.

New courses in video journalism and media have required a reconfiguration of a department office as a media studio. It is located in the academic wing instead of near the auditorium or music area.

The music program is adjacent to the auditorium, but choral students have to walk through the band room to get there. There are only two small practice rooms. There is no instructional classroom dedicated to music. A music storage area has been reclaimed to be a music computer lab. The band room is limited to a fifty (50) student capacity due to fire code regulations.

Art rooms are significantly undersized for their purpose, despite the fact that close to 500 students enroll in various art classes over the course of the year. One 1100 square foot space was recently divided into two spaces to provide more classrooms for art. Class sizes are limited by space, and even so there is not enough workspace to allow a full class to sit and use easels. The art classrooms are not ventilated, preventing the use of oils and other volatile items. Not all rooms have sinks available for cleanup and some lack sufficient numbers of sinks for cleanup. Only one supply closet exists for three classrooms and only one of these classrooms has a ceiling projector. There is neither enough space to store student work nor enough wall space to display student work for critiquing. Only one kiln exists for seven ceramics classes, resulting in inadequate turnover of student work, and the school has no pugmill to efficiently recycle the large amount of clay used by students, resulting in waste of supplies and class working time.

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The lack of adequate quality and quantity of fine arts space contributes to our students challenge of meeting the fine arts requirement before graduation.

STEM (Science, Technology, Engineering and Mathematics)

Nashoba currently has ten (10) science lab classrooms, with only one room meeting the national standards for square footage, and none using the national recommendations for resource layout. Because of our heavy emphasis on science education, and the number of additional credits associated with most of our science courses, lab space availability is particularly tight, with four science teachers needing to “travel” this year from room to room.

In addition to the conventional Biology, Chemistry, Physics and Earth Science curriculum, the school also has curriculum offerings in Biotechnology, Advanced Chemistry and Engineering Design that need to be supported by the science labs. The current ten (10) labs do not provide the quantity and flexibility to support these offerings.

Within our science classes, we incorporate experiential, hands-on learning with a heavy emphasis on labs. Most of our science courses carry additional credits and face-time to allow students the opportunity to participate in labs, ensuring that students are able to connect conceptual knowledge to practical application. Several issues impede the flexibility of the science learning spaces. First, many of the science laboratories lack the following mainstream equipment; dishwasher, UV-goggle sanitizers, fume hoods, proper ventilation, and fire blanket storage. Including this equipment in science labs would expand experimental offerings, save time, and ease preparation and clean up.

Secondly, the current science laboratory does not provide a constructive learning environment. The current space configuration and the location of the casework make it difficult for students and the teacher to move within and around the lab area. In some rooms, lighting is not sufficient to illuminate the work space. Much of our laboratory furniture is old and falling apart. It requires periodic and frequent maintenance. Moreover, the inconsistency of the heating/cooling system causes issues when dealing with live specimens, as many specimens are temperature specific. Overall, improving the layout and condition of classrooms would enable teachers to focus solely on student outcomes.

Science labs do not currently meet national standards in terms of ventilation, drainage for safety showers, electrical capacity, and the number of hoods (there is currently only one hood in the building). Nine out of ten science labs have window mounted exhaust fans that are noisy to run and inefficient.

While the quality of our science programs is excellent, our science facilities do not adequately support continued rigorous teaching and learning. Nashoba currently offers ten (10) science lab classrooms, with only one (1) room meeting the national standards for square footage and none using the national recommendations for resource layout. Due to a steady increase in enrollment, more teachers will likely be required to travel among rooms, which creates

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additional safety concerns. Consequently, instructional time is wasted to ensure the preparation and safe transportation of lab materials.

Finally, another concern that impedes instruction is access to technology. As of this writing, STEM educators can access technology in one of two ways: reserve computer lab space or utilize the mobile lab. Several issues arise with both options. The computer labs are often booked for other content areas and guidance seminars. Currently none of the classrooms have interactive technology that is seen as a staple for modern classrooms.

With the demand for STEM courses, including computer programming and graphic design increasing, the high school finds itself having difficulty meeting the demand with the current lab space and technology. Although wireless technology is available in the entire building, the mobile lab computers are not up-to-date for STEM related software. Today's computer-based design and programming course require specific softwares that must be run on designated equipment. As the number of specialized course offerings grows, the labs that will support them will need to grow as well.

Pre - Vocational Opportunities

The high school offers several pre-vocational opportunities and courses of study as electives: Foods and Cuisine, Architecture, Woods, Metals, and Graphics.

The foods classroom lacks sufficient space for both instruction and for food preparation. For a full class (seven kitchens), there is only one dishwasher. The hot water piped to the room is not dependable and runs out. Water pressure to Kitchen #2 drops, stopping the flow of water there while water leaks into the adjacent classroom. The room has no overhead projector. The refrigerator space and kitchen space are inadequate to support the number of students enrolled in consumer education: 80 students per semester take Foods classes, with class size capped at 16 students because of limited classroom space. Within the consumer education lab, there is no actual classroom space in which to conduct instructional activities. Students and teachers using an adjacent classroom must pass through the current consumer education instructional space in order to enter and exit the other classroom, resulting in recurring interruptions.

The woods shop and metal shop have not been updated since 1961, limiting opportunities to more fully explore the desired range of course offerings in engineering and fabrication. There are no classrooms for instruction in the vocational section of the building. The limited space and layout as well as outdated equipment restrict the high school's capacity to meet 21st century learning expectations with respect to engineering design.

The high school does not offer any early childhood and care programs which has been mentioned routinely as an area for some of our students who might be interested in exploring this field of work directly from high school.

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LIBRARY MEDIA

The current media center configuration is interrupted by non-library uses. For example, office space for the School Psychologist, Speech and Language Pathologist, and IT Support Staff are located in the media center. In addition, the ELL classroom and Student Academic Support Center are located in the Media Center, along with two computer lab spaces (one of which does not have enclosing walls).

ATHLETICS

The Nashoba athletics department utilizes both interior and exterior spaces for physical education as well as intramural/club and organized sports.

The school district installed a new multi-sport, synthetic turf field, with running track, and 5-tennis courts in the summer of 2012. This improvement to the exterior facilities have allowed additional teams to be formed as well as created a more sustainable exterior athletics facility.

Currently the interior athletic facilities at the high school are lacking.

The locker rooms are located in the lower level of the building and have no outside air supply. The HVAC units that feed the locker rooms pull air from the upper gym and distribute it to the locker rooms. This creates a stale environment where bacteria, mildew, and odors are prevalent. Further, the space is not set-up to allow for coaching, teaching, and training staff to equally service both locker rooms. The athletic trainer is located across the building in a small room set between the custodial office and the custodial storage room. There is poor ventilation in the space and the area is crowded and usually spills into the hallway to properly perform the physical therapy and training services for the students. Further, due to the remote location of the room, the student and trainer are required to enter and exit the building via the loading dock doors into a busy area where the dumpsters, receiving, and shipping are located.

The upper gym is a newer gym, but the quality of the ventilation is lacking and the bleachers are beginning to break due to the large amount of use. The lower gym is a secondary gym for the building, but sees substantial use of the basketball courts, volleyball nets, wrestling mats, and indoor baseball cage. The weight-lifting room is located in a cage within the upper gym. The cage is approximately 15' x 60'. The small size limits the equipment that can be housed and any meaningful group athletic training. Additional equipment, cardio, cross-training, and aerobic mats are used and stored in a corner of the upper gym and auditorium hallway where they are a safety hazard due to collisions, fire lane blocking, and storage needs.

Currently the scope of the winter athletics program has out-grown the indoor athletics facility. Gyms are booked to capacity, but groups still utilize the other interior spaces of the building as supplemental training areas. Teams utilize the auditorium hallway as a supplemental weight training and aerobic area. This activity has caused damage to the tiles, and interfered with the other programs (drama, music, etc.) that concurrently utilize those spaces. The winter track team sets-up the hurdles in the academic hallways and utilizes those hallways to train for

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hurdle, relay, and distance events. The constant traffic and disruptions are distracting to the after-school academic programs as well as detrimental to the facilities condition.

Finally there is limited storage spaces for the necessary equipment to support the teams. Currently the equipment is stored in both closed and open areas such as hallways and corners of gymnasiums. The equipment that does have a storage room is usually located in an inconvenient area that requires additional time and effort to obtain and move, wasting both classroom, and practice time.

The lack of quality interior athletics space contributes to challenges for teachers, students, coaches, and athletes. With improved athletics facilities, the district can develop additional offerings, quality, and diversity of the PE and athletics programs.

SECTION THREE: PHYSICAL SPACE

3.1 Quantity of Space

When compared with the MSBA recommendations for a high school serving almost 1100 students, Nashoba is consistently undersized.

With an enrollment of close to 1100 students, the high school has multiple challenges in terms of quantity of space. There are some areas in which the high school has space that meets or exceeds the square footage recommendations of MSBA (for example, the school's auditorium and gym space), but many of the spaces throughout the building do not meet MSBA guidelines.

For Nashoba's current enrollment of 1087 students, the MSBA recommends a minimum of 38 academic classrooms with an average square footage 850 square feet per classroom, for a total square footage of 32,300 square feet. Nashoba currently has 33 academic classrooms averaging 775 square feet for a total square footage of 25,575 square feet. This means that the high school currently has 5 fewer academic classrooms and 6725 fewer square feet of academic classroom space than that recommended by the MSBA. Because of this deficit of instructional classrooms, many teachers have to be scheduled across multiple rooms and move from room to room between periods. While the school attempts to minimize teacher movement, teachers indicate that this lack of space challenges their ability to get to class on time, to establish daily routines and expectations for their students, and to activate and close classes effectively. As a result, their instruction is consistently and negatively impacted as many teachers are unable to prepare activities in their classrooms when the rooms are in use by other teachers' classes, creating difficulty and inconvenience in teachers'

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preparation for class. On a survey completed in Spring 2014, only 28% of NRHS teachers agreed that they have adequate space to work productively.

The MSBA recommends that science labs be a minimum of 1440 square feet. With 10 science classrooms, Nashoba should have 14,400 square feet of science instructional space; the current reality is that nine out of the ten labs do not meet the 1440 recommendation, for a total of 9,325 square feet of science instructional space, which is 5075 square feet of science instructional space less than what is recommended.

For a school of 1087 students, the MSBA recommends a minimum of three small group seminar rooms of 500 square feet each, for a total square footage of 1500 square feet. Nashoba currently does not have any designated group seminar rooms available for staff and students.

The MSBA recommends two art rooms of 1200 square feet each for a high school with Nashoba's enrollment, for a total of 2400 square feet of instructional art space, along with two art workrooms of 150 square feet, for a total of 300 square feet of workroom space. Nashoba currently has 1890 square feet of art instructional space, split into three small rooms, with 100 square feet of storage space. The building has 510 square feet of art instructional space less than what is recommended by the MSBA.

The MSBA recommends a high school cafeteria of 5435 square feet for a student population of 1087; the high school cafeteria currently has 4,400 SqFt of usable space with a configuration that limits the useful square footage. In addition, MSBA recommends a 600 square foot serving area and 2387 square foot kitchen; Nashoba currently has a 400 square foot serving area and 2000 square foot kitchen.

The space established for the technology and engineering program currently utilizes 2600 square feet in the high school. The MSBA currently recommends 9600 square feet. This is a difference of 7000 square feet. As a result, the space cannot be configured with the instructional space or more varied equipment that is typically found in a high school engineering space.

3.2 Space Layout and Quality of Space

In addition to the space layout and quality areas that relate to programmatic expectations described in previous sections, a few others were explored.

COMMUNITY AREAS

The school has several spaces that are valuable community resources. The auditorium, media center and 2 gymnasiums are the main areas that could be accessed by the

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community; however, none is easily accessible from the main entrance to the building. The media center and auditorium are on opposite ends of the building. Auditorium access by students, staff and the community is limited by code deficient by-pass from main school. Access to elevator is handicapped challenged and is difficult to locate. In addition, when we have large events at the high school the current parking configuration makes it even more difficult to access events . All of the spaces are far from the auditorium and the main gym, both venues that use parking most often. Even when a sport is played, the parking is distant from the ticket booth for the main stadium.

VEHICLE AND PEDESTRIAN TRAFFIC

The traffic patterns create safety concerns during large events as well as morning and afternoon arrival and dismissal times. Of particular concern is the pattern in which bus traffic mixes with parent traffic during arrival and dismissal. The main parking lot at its maximum capacity for teachers and staff and is undersized for parent and community events. There are Less than 500 spaces total (student and faculty) for 1000 parents.

BUILDING SYSTEMS

The building's boilers are approaching the end of life expectancy and are not centrally located for maximum efficiency. The building not insulated in walls causing the rooms to run cold in the winter and hot in the summer. Recently, we have had pipes burst in the winter in the non-insulated walls, necessitating expensive repairs to damaged classrooms. Windows are single pane, further increasing the cost and demand for energy. There is air-conditioning in the classrooms, auditorium, cafeteria, and main offices. The system is deficient in many areas including control integration, ERU & AHU design, balancing, and distribution. These deficiencies lead to issues ranging from control, temperature variations, energy efficiency concerns, and preventive maintenance inefficiencies.

The fire alarm system is older and in need of an upgrade. The main panel is not currently supported, and repairs are costly and time consuming. The alarm devices throughout the building are older and in need of constant repairs or upgrades. The building's structure is sufficient, with minimal issues due to settling or deterioration. The facade is brick and in good condition. The windows in most of the building are single pane, the newer (1970's) windows are in need of replacement as their condition is deficient. The floors of the building are a mix between VCT tile, terrazzo tile, and carpet. The condition of the floors are fair and require continuous maintenance. The interior walls of the building are a mix of concrete block, and wall board. The surfaces are clean, but are in need of updating and repairs in high-traffic areas. The building's roofs are a mix of rubber, ballasted, pvc, and shingle. A majority of the roofs need substantial repairs or replacement. A section of the ballasted roof (8,000 SqFt) over the upper gym entrance was replaced over the summer of 2014 due to substantial leaks.

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The parking lots and sidewalks surrounding the building are in need of repair or replacement. Yearly repairs are ongoing to keep-up with the critical failures, but eventually these areas will need a substantial remodel. The electrical and plumbing systems are fair and require a substantial amount of maintenance to maintain consistent operations.

SECTION FOUR: CONCLUSIONS

NASHOBA Regional High School is a great school with outstanding students, faculty and communities that support and value education. It is a high achieving school with national and statewide rankings putting it in the top 25th percentile. At this point in its long history, the building is not contributing as much to the success of the students as we think it could or should. As we look at our student performance, the kind of space we need to address deficiencies in programs and academic success for our high risk students is significant. Our critical need is in the area of current and up to date science labs. We also need art classrooms that fully support the curriculum we offer and the student body interested in taking the courses. The space for collaboration among students and staff is woefully under represented for a high school our size. Additionally, to fully prepare students for the career piece of being *college and career ready* we are in need of space for a school store, to teach marketing, and to provide audio and visual instruction.

With capital resources to address these critical areas we believe we will be able to improve our academic performance in ELA, mathematics and science, improve our four year college entrance statistics, eliminate high school drop outs and reduce our in school and out of school suspension rates.

SECTION FIVE : SUMMARY of LEARNING ENVIRONMENT and EDUCATIONAL FACILITIES

When the committee first formed we set out to collect data in this first phase of our study. What we have found is prioritized below in terms of areas of concern that the space does not support our mission and vision for education for our three communities.

We collected information from our own data about student performance at the high school, review of previous studies done as part of the Science Lab Initiative in 2012 and space study completed in 2008. We also visited area high schools that have been built new or renovated to better understand what kinds of spaces are in twenty-first century high schools.

Our Findings

BUILDING AND PROGRAM STRENGTHS

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Despite the limitations on space and layout, Nashoba continues to provide quality educational experiences to its students in the following areas.

- Athletic Programs: Variety and Number
- Auditorium: Theatre offerings
- Career Counseling program
- Guidance Seminars
- Nationally recognized EMT program
- Pre-vocational offerings (architecture, business, graphics, metals, woods)
- Program of Studies: Varied course offerings
- Special Education Programs: Full continuum of offerings to meet student needs in district
- Stadium (1500 seats around a modern track and turf field with lights)
- Student Performance: Consistently top 25% of Commonwealth Schools
- Two Gymnasiums
- Wireless Technology Access

BUILDING AND PROGRAM DEFICIENCIES

A number of deficiencies were identified with respect to the ability of the existing facility to support the current educational program and curriculum, as well as our vision for future programming. These are described in detail in the previous sections and are summarized below.

Current Educational Programming

- Currently the academic classrooms are scheduled for 93% of the time and the MSBA recommends 85% utilization; this need for high level of utilization leads to scheduling restrictions and teachers having to share classrooms throughout the building.
- Because of scheduling restrictions related to the already high utilization of the building, approximately one hundred (100) students per class period do not have a scheduled class
- Flexible space needed for grouping and collaboration within classes is limited.
- The layout of the building restricts collaboration among teachers, students and administrators.
 - There are 6 workrooms for 11 departments.
 - There are no break out rooms or office spaces for confidential meetings with students, parents or staff.
- The cafeteria's small capacity requires that the schedule provided four (4) twenty-two (22) minute lunch periods each day.
- The kitchen has not been renovated since it was built in the 1960s.
- Special education instructional space is limited and not designed properly for the current population of students.

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- Security to the building is compromised after access because a person has unfiltered ability to travel anywhere until addressed by a random staff person in the hallway. Meeting space is limited, with the presence of only one conference room in the entire building.
- The Guidance Department does not have enough office space for the number of counselors they have available. There is no designated conference room for guidance staff, causing them to meet with students in the open reception area of the main guidance office.
- There is no dedicated office space for related services (social workers, school psychologists, speech and language providers, ELL educators).
- The foreign language classrooms have no access to dedicated technology, limiting audio and video learning opportunities on a continued basis.
- The lack of adequate quality and quantity of fine arts space contributes to our students challenge of meeting the fine arts requirement before graduation.
- While the quality of our science programs is excellent, our science facilities do not adequately support continued rigorous teaching and learning.
- Because of our heavy emphasis on science education, and the number of additional credits associated with most of our science courses, lab space availability is particularly tight, with some science teachers needing to “travel” this year from room to room.
- Due to a steady increase in enrollment, more teachers will likely be required to travel among rooms, which creates additional safety concerns. Consequently, instructional time is wasted to ensure the preparation and safe transportation of lab materials.
- Science labs do not currently meet national standards in terms of ventilation, drainage for safety showers, electrical capacity, and the number of hoods.
- With the demand for STEM courses, including computer programming and graphic design, increasing, the high school finds itself having difficulty meeting the demand with the current lab space and technology.
- The computer labs are often booked for other content areas and guidance seminars.
- The foods classroom lacks sufficient space for both instruction and for food preparation.
- The limited space and layout as well as outdated equipment in the technology and engineering spaces restrict the high school’s capacity to meet 21st century learning expectations with respect to engineering design.
- The current media center configuration is interrupted by non-library uses.
- The indoor athletic / PE spaces are in need of improvement in the areas of, storage, locker rooms, training spaces, and interior team areas.

Physical Space

Overall, there is significantly less space available for a schools serving our population of students when compared with current MSBA space guidelines. Specifically:

- The high school currently has 5 fewer academic classrooms and 6725 fewer square feet of academic classroom space than that recommended by the MSBA.

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- Because of the limited academic space, classrooms are scheduled at 93% utilization (i.e., at any given time, 93% of the academic classrooms are in use); the MSBA recommends 85% utilization for academic classrooms.
- The building has 5075 square feet of science instructional space less than what is recommended by the MSBA.
- The MSBA recommends that every science class have a prep room of 200 square feet. Currently, the high school only has 6 science prep rooms.
- Nashoba currently does not have any designated group seminar rooms available for staff and students.
- The building has 510 square feet of art instructional space less than what is recommended by the MSBA.
- The high school cafeteria is approximately 1,000 square feet smaller than the MSBA recommends, with a smaller serving area and kitchen space. The current cafeteria configuration further limits the useable square footage.
- The technology and engineering space is 7000 square feet smaller than that recommended by MSBA, limiting instruction and varied course offerings.

Other Space Quality and Layout Concerns

- Community spaces (auditorium, media center and 2 gymnasiums) are not easily accessible from the main entrance to the building.
- Parking areas for these spaces are inconveniently located
- The traffic patterns create safety concerns during large events as well as morning and afternoon arrival and dismissal times.
- The building systems including the boilers, windows and insulation are old or non-existing creating an increased energy and cost burden on the school and, thus, community.

Comparison to Surrounding Communities

Of the twelve bordering communities with high schools eleven have high schools built new or fully remodeled since 2005.

- Hudson – 2003

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- Algonquin – 2007
- Wachusett – 2006
- Leominster – 2013
- Fitchburg – 2000
- Marlborough – TBD
- Maynard – 2013
- Acton – Boxborough – 2003
- Concord Carlisle – 2015 (In progress now)
- Tahanto – 2013
- Assabet Valley Technical High School – 2015 (In Progress Now)
- Shrewsbury High School – 2002

SECTION SIX: RECOMMENDATIONS

The Task Force recommends the following to the NRSD school committee :

TBD

SECTION SEVEN: BIBLIOGRAPHY

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