

The following narrative has been prepared by HMFH Architects to accompany the Draft Proposed Educational Program for the Wayland High School.

Major Academic Space Requirements

The proposed educational program for Wayland High School has been prepared to serve a maximum anticipated enrollment of 1100 students. The methodology used to determine the number of classrooms and laboratories for the five major academic disciplines (English, Social Studies, World Languages, Mathematics and Science) is described in a document entitled Educational Specification Tables and Academic Area Matrices for Wayland High School that was presented to the High School Building Committee on April 15, 2004. In that document, we recommended that the HSBC authorize the preparation of a final educational program document based upon an enrollment of 1100 students, with an average class size of 20 and a classroom utilization factor of 85%. See the attached Table 6A: Basic Educational Space for Planned Program Worksheet for a Projected Enrollment of 1100 Students @ 85% CR Utilization for the calculation of all required classrooms and laboratories.

As noted, our recommendation is consistent with planning an appropriate school for an enrollment of 1,000 students with an average class size of 20 and an overall classroom utilization factor of 80%. It would also suffice, if student growth exceeds current predictions, to accommodate an enrollment of 1200 students with an average class size of 23 and an overall classroom utilization factor of 85%. The number of required science laboratory/classrooms was originally determined on the basis of an 83% utilization factor that included an allowance for a one-period set-up time before each scheduled double-laboratory period. The resulting 12 science lab/classrooms would have accommodated an enrollment of 1100 students using an average class size of 20 and an enrollment of 1200 students using an average class size of 23. Upon further review with the Administration we reduced the number of lab/classrooms to 10 which allows every lab to have a set-up period prior to double labs with a school population of 1,000 students but would significantly reduce available set-up periods with 1,100 students but otherwise still fit all regular science classes at approximately 83% utilization.

In the document referenced above, we also noted that our program is based upon an average classroom size of 900 square feet for all eight (8) English and eight (8) Social Studies classrooms. This number was based upon the maximum comfortable class size of 25 students @ 30 square feet per student, plus 30 square feet per computer for an anticipated 5 computers per classroom. Note that with average current classroom size of 20 some classes have up to 29 children so most classrooms will need to fit at least 29 chairs and tables or desks. If additional computers are not used in the classroom this will also allow space for more flexible furniture layout to provide for horseshoe shape discussion or several break-out small discussion groups. In order to reduce overall program space this typical generic classroom has been reduced to 800 square feet (compare to a School Building Assistance recommended 750 s.f. minimum to 900 s.f. maximum for high school classrooms). In

addition, the Business classroom is envisioned as a tiered classroom with multiple computer stations containing a total of 1050 square feet.

Originally, we argued that the Mathematics, Languages, Health and Theater Arts classrooms could all be sized at 750 square feet because these rooms would not need dedicated computer space, our assumption being that both the Mathematics and Language departments would have dedicated computer laboratories in addition to their scheduled classrooms. Further discussion with the faculties and staffs of these two departments revealed that the eight dedicated Language classrooms could, indeed, be sized at 750 square feet, but that both a Language Laboratory and a dedicated Language Technology Center (enhanced computer lab) would be required as well. Both the Language Laboratory and the Language Technology Center would have at least 30 computer stations, plus printers and other accessories, giving rise to a suggested size of 1050 square feet for each.

The Mathematics department, on the other hand, asked for six (6) regular classrooms @ 900 square feet, which has been reduced to 800 square feet as per other generic classrooms, as well as two (2) laboratory/classrooms @ 1050 square feet, with no dedicated Math computer lab. Computer lab access is provided through a shared computer lab with Science for up to 30 students. Similar reasoning led us to recommend that the English and Social Studies departments would share a dedicated computer laboratory. Each of these dedicated computer laboratories has been sized at 1050 square feet, identical to the Language Laboratory and Technology Center.

We originally programmed ten (10) Science lab/classrooms at 1440 square feet and 2 science classrooms at 1000 square feet for the non-laboratory Science courses. This recommendation was based upon the way science is currently taught at Wayland High School. Further discussion with the science faculty and with the school administration has convinced us that, for future flexibility: (1) all science classrooms should be combination lab/classrooms and, (2) that these lab/classrooms should be a minimum of 1350 square feet each to allow a maximum of 24 students to move comfortably and safely around the lab benches and equipment and to accommodate at least one computer at each 4-person lab station. This is consistent with current laboratory planning standards: i.e. 24 students @ 50 square feet per student plus 6 computers @ 25 square feet per computer station. The total number of lab/classrooms has been reduced to 10. As is the general practice in most high schools, each pair of science lab/classrooms will share a 200 square foot prep and storage room. Finally, we have programmed a single 600 square foot lab/classroom for student projects and independent study that has become an essential component of every high school Science department that encourages its students to enter the various local, regional and national Science competitions.

In addition to the scheduled academic classrooms and laboratories, we have included teacher workrooms and other faculty support facilities as follows:

Due to sharing each classroom between two to three teachers, separate office space is required for teachers to work in during non-teaching periods. Each of the five (5) departmental centers will have a faculty workroom with individual work stations for each anticipated faculty member, including a kitchenette area and space for hats and

coats. Adjacent to each faculty workroom will be a 250 square foot conference room to sit up to 10 staff, a 250 square foot departmental storage room, a 100 square foot copy room and a 50 square foot "focus room" for one-on-one conversations and private telephone calls.

The English and Social Studies departments will share a 1050 square foot Reference Center and a 1050 square foot dedicated computer lab. Science and Mathematics will also share similarly sized facilities. The Languages department, as noted above, will have its own dedicated Language Lab at 1050 square feet and a Language Technology Center of the same size, as well as a reduced size reference center at 525 square feet since it does not share it with another department.

Facilities for Art, Music and Theater Arts

The Fine Arts Dept. requested dedicated separate rooms for both band and orchestra to fit an ensemble of up to 120 students and their instruments. These spaces need to be at least 2400 square feet in addition to instrument storage. Chorus would also use one of these rooms in a different period. This allows sharing of various players across the concert band and symphony orchestra. This also allows chairs, music stands, large instruments, and electronic amplification equipment to remain set up without having to take them down as is the current practice with orchestra rehearsal on the Little Theater stage. Both of these spaces require an 18-20 foot high space for proper acoustics, similar to the current Little Theater.

For performing arts the department also requested a drama classroom, maintaining the Little Theater that sits 300 for smaller performances as well as providing an auditorium that will seat 850 for large music and drama performances. Additionally, other departments would like a forum space that can hold at least 100 with a small stage area (not necessarily raised) to provide facilities similar to L1 but in a more comfortable and accessible manner. If the Little Theater were kept this could be used for this purpose. Upon further review with the drama teacher, given the addition of the large auditorium, they would prefer a more flexible multi-purpose black box theater space with a flat floor and completely flexible layout with moveable furniture rather than the current fixed Little Theater layout.

In order to reduce program space but still provide as robust and flexible a facility as possible we have combined all the drama classroom, black box theater, and large meeting requests into one multi-functioning large auditorium that can seat 850 in approximately 8,800 square feet and a 1,700 square foot stage. The space will have operable acoustic partitions to allow the front half of the Auditorium to act as a flat floor black box theater when its telescoping seating which can seat up to 500 is folded away. The back half will provide a Media Forum that will provide L-1-like meeting facilities but in a more comfortable setting for up to 300. The space will also have a small flat performance space. The stage may also be closed off from the main auditorium with an operable acoustic partition for drama class use.

The Auditorium has been sized to meet the requested seating capacity of 850. This will not be large enough for the entire school, although for speeches and other activities that take up a small amount of stage space, up to 168 loose chairs could be added to the stage for total capacity of up to approximately 1018. The school can use this facility during the school day

for single grade monthly class meetings, multi-grade assemblies, concerts, speakers, etc. The greatest use will occur after school for musical performances, plays, and community use. See the attached memo from Jane Ezbicki describing estimated future use of the auditorium.

We have been asked why assemblies of this size cannot occur in the new gym that has bleacher seating for 840. The gym will not have the quality sound system, sound mixing, acoustic quality, lighting control, or comfortable seating for longer musical or drama performances. It also will not have a stage. It will also be heavily used for athletic practices and games, especially throughout the winter, at the same time that many drama or music rehearsals or performances would be occurring.

Facilities for Physical Education and Athletics

Demand for physical education space has been reduced with the new health and wellness programs as well as reductions in PE staff so most of the need for athletic facilities is driven by the after school athletics. Wayland has very high participation in athletics for its size with an average of over 350 athletes every season and 20 sports, many of which have girls and boys freshman, JV, and Varsity teams. These numbers will only increase as the current student population increases from 881 to 1,100. Many teams currently make cuts and there is not any additional indoor practice space for other teams. Many of these cut students would like to play on a club or intramural team if there was available court or field space. School Building Assistance, under its latest regulations that are currently in limbo, does not fund field houses. This makes the existing 22,726 square foot field house with the 1/11th mile track very attractive to maintain in the new program. It provides excellent practice space for the 84 members of the indoor winter track teams as well as the other 180 winter athletes that use only this facility for running as well as fall and spring athletes on rainy days. The current track in-field is only large enough to hold one 84' basketball court which is the minimum length for High School regulation basketball courts, as well as one smaller practice court on the non-wood portion of the infield.

The Athletic Department originally requested a new competition basketball court of 50' x 94' which is regulation High School and NCAA size with two 50'x94' cross-court practice courts for when the bleachers are folded against the wall. They originally requested bleacher seating for 1,000 spectators to surround the competition court, making the entire space 13,650 square feet. Clear space of 4' to 5' is provided on both sides of the practice courts as well as 8' at the ends. The athletic department originally requested that these two practice courts be the same size as the game court so that teams are allowed to practice on similar size courts to the one their games are played on. Upon further review of benchmarking data from a few other schools the Athletic Director accepted 84' long practice courts. The competition court will also serve for wrestling competitions. This space would also be the largest meeting space at the High School and in Wayland and could seat the entire student body and staff or up to 1,640 at Town Meeting with 800 sitting in loose chairs on the court.

The bleachers and the existing wood court will be removed from the infield of the field house track and this can then be used for two 50 x 84 practice basketball courts. There are 6 basketball teams that will use these four courts for practice at the same time that winter track uses the infield for high jump, shot put, etc., as well as the track. A curtain will be provided

that will hang between the track and the infield to allow sports to occur within the infield without safety hazards of balls or people running onto the track as runners pass by.

There are a number of other smaller athletic spaces for use by Athletics and PE as well as after school student and community use including spaces ranging from 1,200 to 1,600 square feet for Fitness with weights, Fitness with aerobic machines, multi-purpose / yoga that has been combined with dance, and wrestling practice. It is presumed that all of these smaller athletic spaces may be located in the current field house in the wrestling and fitness rooms on the west side and the girls locker area on the east side.

Girls and Boys locker rooms are provided that have a locker for every student in the school as well as space for up to 200 girl or boy athletes to change during any one season. They are provided with a small number of individual showers. Athletic storage similar to current requirements are provided with the addition of 500 square feet of community athletic storage so that individual sheds may be disposed of. Offices are provided in the locker rooms for PE teachers and a separate 300 s.f. coaches office is provided for after school sports for both men and women.

Three Health classrooms were requested but one at 800 square feet has been provided based on scheduling with 85% utilization at 1,100 students. An adjoining 200 square feet storage room has been provided to store CPR dummies and other course-specific materials that inspired the original request for 3 separate rooms. Since multiple classes of different health specialties will be taught during any one semester, materials may have to be stored and then reset up each day due to the small size of the classroom.

Facilities for Guidance and Special Education

New guidance facilities will include 9 offices for counselors, and adjustment officer and the school psychiatrist typically at 120 square feet to allow a counselor to meet in their office with up to three other people (a student and two parents for example). One 250 square foot Conference Room is provided for meetings with up to 10 people. The Guidance Dept requested both a Career Center and a Guidance Classroom which have been combined into one 900 square foot space. Guidance Record Storage is required for 7 years so a dedicated 250 square foot space has been provided. A 200 s.f. Copy/Workroom/Supply Room space as well as a small kitchenette has been provided since Guidance often prepares refreshments for various speakers and gatherings. An Academic Tutoring Center of 1,000 square feet has been provided as a space where any student can go to get help with academic work or time management. This will help reduce pressure to increase the number of children with education plans that will enlarge special education requirements. This space and program does not currently exist but is being requested for the 2004-2005 school year since many students are requesting Ed Plans and SPED help even though their needs are minimal.

Special Education maintains the 8 LRTs and ALRT spaces they have now but they have been enlarged from an average of 337 square feet to 500 square feet. The slightly larger rooms will allow the 6 – 10 students that might meet in an LRT to be able to spread out more, work in small groups better, with more acoustic isolation. Six additional 120 square foot small group tutoring spaces have been added attached to one of the Learning Resource

Team (LRT) main spaces (LRT West). This will allow the current 15 – 20 tutors more quiet space to work one on one or with small groups of students who would otherwise be disturbed by the noise of lots of other small group sessions occurring in the same space.

Facilities for Library and Media/Computer Use

The existing Media Center is a significant space of 8,256 square feet, larger than many surrounding schools of similar size. This much space is used at this school because the students are less programmed into study halls and more independence is provided, giving them more time for independent study during the school day. The new plan for the Media Center is to reduce square footage used for circulation and book storage by providing minimum spaces between stacks and having 7'-0" high stacks in lieu of existing 3' stacks. This will allow the facility to be reduced in size to approximately 6,060 (including collaboration rooms) while still providing for the same number of volumes, 50 computer work stations, and the same number of study spaces at tables as currently exist.

The Media Center is a space for quiet work but many student projects require collaborative team work. For this reason we have added 3 Collaboration Rooms of 220 square feet each which can provide acoustically isolated work space for up to 6 students each while being visually observable by the Librarian through glass walls. A 4th larger Collaboration Room has been provided at 300 square feet and this doubles as the Media Center Conference Room. The space for these rooms will be taken out of current open table and chair space where students find it difficult to work in groups without the Librarian telling them to be quiet. The current carol space for quiet individual study is more than adequate and may be reduced, partially by quiet spaces for individual computer use.

We propose to maintain the highly space-efficient mechanized book storage system. This allows significantly more volumes in a reduced space but does require the current level of staffing to retrieve materials that could otherwise be shelved and available to students without staff assistance.

There is a significant lack of computers at the High School for individual student use outside of class scheduled computer lab time. The current single Library Computer Lab which is the only space on campus open to all students for individual student computer use is often scheduled by classes. Most of the other labs in which students are only allowed to work as a class, are booked a majority of the time. We have proposed to add 50 student computers to the Library in open work areas in addition to 20 computers spread between the 3 proposed Reference Centers. These computers that are open for student use also replace the 10 PCs in the current Honors Computer Lab needed for AP testing/studying software. In order to reduce program space we have cut some of the computer lab space out of various departments leaving only a total of 3 general Computer Labs with 30 computers each and the English Writing Lab with 10 computers, the same as current number of labs with only 881 students. This means that given current teaching styles the lab space will be inadequate unless teachers accept the inconvenience of 10 minutes of lost class time required for setting up and putting away lap tops from a cart. Alternatively, other major cultural changes can be made such as providing every student with a laptop. This however, would have a major equipment cost every several years. We will review this issue further as a detailed Technology Plan is developed.

Facilities for Food Preparation and Food Services

The current Commons cafeteria seats 340 students in 7,470 square feet or 22 square feet per student. The annex adds seats for an additional 92 students in 1,245 s.f. for a total of 8,715 square feet. The current student population of 881 eats lunch over 3 periods in these spaces. The 2nd HMFH program included an 11,000 square foot commons to sit up to 600 students at 18 square feet per student, feeding the entire campus, up to the 1,200 student core capacity, in two lunch sittings. The Administration originally requested a space large enough to allow a single seating of the student body to allow for a meeting of all staff or student group as well as a reasonable eating time and ease of scheduling classes. The Commons has been further reduced to 9,000 square feet to sit the near-term expected 1,000 student capacity at 2 lunches. If the population does increase to over 1,000 then 3 lunch periods will have to be reinstated.

Depending on the plan of the new campus we expect the Commons to double as circulation space, student study and club space during and after school, intermission space during large athletic events and drama or music performances, art gallery space, and a space to hang out during free periods. The current size requires a reduction below the current 6' – 7' clear between tables (or 3'-4' between stools attached to tables) but should still allow for adequate space for a comfortable feeling campus-wide community living space. The space may be broken down by different volumes or other architectural features to make it contiguous but smaller in scale, allowing for a smaller school feel, and multiple simultaneous uses. Various Administration, Guidance, and other departmental spaces should also be adjacent to this space to encourage cross-departmental communication and curriculum integration. A “food court” type food delivery system may be proposed that would allow more efficient delivery of a large number of meals over a shorter period of time. This would eliminate the traditional two-line kitchen servery model.

Facilities for Overall School Administration

The School Administration would like to be centrally located near the commons, the expected hub of student activity. The General office area provides space for reception, as well as three secretaries and an in-house suspension in 800 square feet. Four individual offices ring this space ranging from 175 to 250 square feet in order to provide each administrator room to meet in their office with a student, counselor and 2 parents. Larger conferences are held in the Administration Conference Room that holds up to 10. The larger school –wide conference room is also adjacent to the Administration main office and should hold up to 20, 14 around a table. The area also includes staff and student mail areas, copy and central academic supplies storage space. A separate server room is provided that serves the administrative computer system. This last request will be further analyzed as the campus-wide Technology Plan is developed. The administration system server may simply be located in the main head end room but with other software security.

Facilities for School Maintenance Operations

Neil Westgate currently performs all School District-wide maintenance of the buildings under Joe Madden's direction. His office is located at the Town Offices and he primarily

works out of his station wagon. He has a small 467 square foot shop located at the High School since this is the largest facility he maintains. We are proposing to add a separate School District-wide Maintenance Building with a total of 2,250 square foot program space at the High School. This would include two truck bays for a maintenance truck and a truck with a snowplow as well as outdoor equipment storage space for snow blowers, leaf blowers, etc. It also includes a more adequate but still small 600 s.f. maintenance shop, as well as a maintenance office/central Automatic Temperature Control (ATC) office of 150 s.f. This space could be used to control all of the schools ATC systems as they become direct digital control (DDC) systems similar to the Middle School and the renovated High School. The building should be provided with a bathroom that has not been included in the net program space.

Custodial storage space has been increased to include a 50 square foot custodial storage/slop sink room in each floor of each building. The number of these rooms will vary with the ultimate design and number of buildings and floors of the facility. Centralized building custodial storage of 2,000 square feet is being provided and is requested to be adjacent to a loading dock and receiving area, preferably on the same level as most of the campus rather than in a difficult ramped area such as the current Media Center cage area.