

Educational background and rationale for the proposal for a building project at Newburyport High School

Our future vision for Newburyport High School is that it will provide learning spaces that promote innovation, creation, and student-driven learning; which includes learning environments that are technology rich, provide opportunities for students to pursue their passions, and enhance teacher and student capacity to imagine. Over the last couple of years, teachers have engaged in skills-based instruction and assessing while developing a vision for the Newburyport High School Graduate. Additionally, across the district teachers and programs are aligning practices with the commitments outlined in the 5-year strategic plan.

The efforts towards this vision conflicts with the high school's current learning spaces that were designed for more traditional methods of instruction. Since the high school was renovated, the greatest changes in education and the world have been in the area of STEM and as a result, we are preparing students for jobs that currently do not exist. By making the investment in STEM spaces and instruction we are providing every Newburyport High School student with the skills and tools that will allow them to develop collaboration, problem-solving, and innovation skills that are transferable across content areas. In the end, our students will be globally competitive.

Recognizing the ever changing work environment and global competition, the Newburyport Education Foundation (NEF) has collaborated with Newburyport Public School's vision to enhance STEM opportunities K-12 by building a multi-year campaign to help fund STEM education. This great community support began in 2016, the NEF built this effort from the ground up by starting with our youngest students at the Bresnahan School. They helped create one of the first elementary STEM lab learning spaces in this state. The NEF then continued their efforts by supporting renovation of the STEM learning environments at both the Molin Upper Elementary and the Nock Middle Schools. Through the renovation, NEF funding supported the tools, technology, and equipment needed for state of the art STEM instruction. Our students are now arriving at the high school with more accelerated STEM learning backgrounds and experiences. The MSBA Statement of Interest supports the continuation of those learning endeavors, by re-imagining teaching and learning within the STEM areas and beyond at Newburyport High School.

Flexible Space Possibilities:

Technology Innovation Space - designed to integrate technology into all curriculum and increase technology literacy for all NHS students.

Passive Solar wet lab - designed as an innovation space for real-world problem solving including global environmental issues, food stability, sailbot (instead of going off campus) and much more.

High Energy lab -innovation space that would have the capability of running high level experimentation such as spectroscopy of elements and gases

Math innovation lab - innovation space where ongoing hands-on projects could be constructed, built and stored temporarily

The building of STEM spaces through the renovation will provide us with the space requirements to apply for the state's Innovation Pathways Grants

- **Innovation Pathways are designed to give students coursework and experience in a specific high-demand industry, such as information technology, engineering, healthcare, life sciences and advanced manufacturing.**

Current Course Offerings	Possible Course Offerings
Science Courses:	
General Science Offerings <ul style="list-style-type: none"> • Biology CP, Honors, AP • Chemistry CP, Honors, AP • Physics CP, Honors, AP Current Electives <ul style="list-style-type: none"> • Organic Chemistry • Environmental Science • Astronomy • Aquaponics • Bioethics • Anatomy and Physiology 	Introduction to Electronics Modern Physics (Honors) Biomedical Pathway Marine Science Medical Assisting Pathway
<u>Recently added due to partnership with NEF and as a result of STEM Proposal 2016*</u> Organic chemistry* Environmental Field Studies* DE (20/21) Biotechnology* Survival Science* (new 20/21) DE - Dual enrollment through SNHU in 20/21	
Technology/Engineering Courses:	
Robotics Sailbot Programing for Game Design <u>Recently added due to partnership with</u> <u>NEF Engineering in the 21st Century co-</u> <u>taught* DE Introduction Industrial Design</u>	Multi-levels of Computer Science Second level Game Design Class Intro to Making (co-taught with Art Wearable Electronics Increase engineering course options Increased availability of higher level courses (currently most upper level classes only run once every 2-3 years)
Mathematics courses:	
General math offerings <ul style="list-style-type: none"> • Algebra • Geometry • Algebra II • Pre-Calculus • Calculus • Statistics 	Data Analysis/Introduction to Statistics to prepare underclassmen for the data analysis needed in a variety of Advanced science, history, and math courses Math Lab or other format for remediation purposes and tutoring Mathematical Modeling Applied mathematics
Cross Curricular courses:	
Engineering in the 21 st Century* (Honors) - <i>Tech/Engineering and Science</i>	Programming for Game Design - <i>Tech/Engineering and Math</i> Intro to Making - <i>Tech/Engineering and Art</i> Biostatistics - <i>Science and Math</i> The Art of Mathematics - <i>Math and Art</i>

Statement of Interest Overview

The Statement of Interest is the tool that districts use to identify deficiencies and/or programmatic issues that exist within their schools. It is a signal to the Massachusetts School Building Authority that the district has identified a need or needs within its buildings and is interested in partnering with the MSBA on a school building project. The MSBA process is a competitive grant program in which SOIs submitted by districts across the commonwealth are compared with one another to determine which are the most urgent and needy.

There are two main programs available through the MSBA process. The Core Program is for full scale renovation and/or addition projects as well as new school construction. The Accelerated Repair Program (ARP) assists districts with the replacement of aging boilers, windows/doors and roofs. As its name indicates, the ARP is a more streamlined process aimed at correcting those issues more quickly.

Consideration has been given to submitting an SOI for the ARP to address the current roof issues at the high school, and thereby separating it from the lengthier process of the Core Program for the Science Wing Project. However, the MSBA only allows districts to submit one SOI per building per year and guidance for submission of an SOI for the ARP includes the following:

...a district should not submit an SOI for consideration in the ARP if:

- *the district plans a future construction project for MSBA participation going beyond roofs, doors/windows, and boilers for the school, or*
- *the district is reviewing facilities deficiencies to further identify its needs and priorities*

The issues with the high school roof are currently under control and funding still exists from an appropriation approved for maintenance and repairs of the roof a couple of years ago by the City Council. We should be able to manage through the next few years with those funds.

According to the MSBA website, they receive between 100 and 125 SOIs each year for inclusion in their Core Program. The number of districts that get invited into the program each year varies based on a number of factors including the MSBA's funding cap for that particular year, the nature and size of the projects that are deemed neediest, and the reimbursement rates of those districts invited into the program. Taking that into consideration along with the current state of the economy it is likely that acceptance into the Core Program will be a multi-year process.

MSBA Core Program Approximate Timeline of SOI Process

- **Early January**-SOI submission period opens
- **January to April** (May this year)-Districts prepare and submit their SOIs
- **May to August**-MSBA staff evaluates SOIs for completeness and content
- **September & October**-MSBA staff and consulting engineers perform "Senior Study" visits as they deem necessary to gather more information about proposed projects. These visits are conducted on the site of the proposed project and typically take approximately two hours.
- **November**-Further evaluation of SOIs conducted
- **December**
 - MSBA staff make recommendations to MSBA Board of Directors regarding which districts to invite into the program
 - MSBA Board of Directors meets to discuss and approve recommendations
 - Districts receive invitation into the program