

May 2024 Special Town Meeting

Article 5: Appropriate for Auditorium Upgrades and Improvements

1. What does this article accomplish?

This article requests funding to complete code-related repairs to the existing theatrical lighting, sound and rigging systems of the Newman, Pollard and NHS auditoriums. These repairs include: reinforcement of the rigging connections, repairs to the loudspeaker rigging, and replacement of non-functioning lamps in the stage work lights. (Rigging is a system of equipment that is utilized to secure lights, curtains, scenery, and audio equipment above the ground in a theater.)

In addition, detailed design funds are requested to plan for future-year upgrades to these systems in the Newman Auditorium.

2. How did we get here?

In November 2022, the Needham Public Schools, working in collaboration with the Permanent Public Building Committee (PPBC), hired Hewshott International to conduct a feasibility study of upgrading the theatrical lighting and sound equipment in the Town's three performance auditoriums at Newman, Pollard and NHS. Hewshott, a global firm specializing in audio visual, acoustical and theatrical design solutions, completed its work in April, 2023. During the course of the study, Hewshott surveyed the theaters, observed performances, and met with staff, students and community members to learn about their experiences, challenges and needs.

The study concluded that Pollard and NHS require significant work to replace their decades-old systems, and that the newer Newman system requires updating, to conform with fundamental technology shifts in the industry. The identified upgrades broadly include converting audio systems from analog to digital, replacing wireless equipment with newer systems that conform to FCC-assigned operating frequencies, upgrading video equipment to “high definition” and widescreen aspect ratios, replacing obsolete lamp-based fixtures with LED lighting, and repairing/replacing rigging equipment to conform with current safety standards and codes.

3. How does the proposed work fit into the Hewshott report recommendations?

The Hewshott report prioritized the recommended system upgrades into several groupings, all of which would be needed to bring Needham’s lighting and sound equipment to industry benchmark in the three auditoriums:

- SAC1 – immediate repairs to correct deficiencies relating to safety and code/standard compliance;
- SAC2 – repairs recommended within one year to correct code compliance issues;
- TSU1 – upgrades to make existing systems operational;
- TSU2 – minor construction, focused on equipment that can be re-used/incorporated into future phases;
- AL1 – non-theatrical lighting upgrades, including LED installation;
- TSU3 – major construction, requiring general/electrical/theatrical contractors; and

- TSU4 – optional enhancements above benchmark (i.e., scenic projection).

The "SAC 1" code compliance repairs at all schools were made during the Spring and Summer of 2023 from the school operating budget. The remaining "SAC 2" repairs are proposed to be completed in the summer of 2024 (FY25), upon approval of the required funding by May Special Town Meeting.

The May Special Town Meeting request also includes detailed design funds to accomplish the aforementioned TSU and AL upgrades at the Newman School in FY26. The planned upgrades to the Pollard Auditorium would take place in conjunction with the Pollard School addition/renovation project. The upgrades to the NHS Auditorium are planned for FY27 (design) and FY28 (construction.)

4. What amount is being requested at the May 2024 Special Town Meeting?

The total amount requested is \$344,558. Of that amount, \$97,355 is for the SAC1 repairs at all schools and \$247,203 is requested for design of the Newman School sound and lighting upgrades.

5. Why is an emergency preamble requested?

An emergency preamble is needed to complete the repairs during the summer months, when school is not in session.

6. What is the proposed schedule for completing all of the Hewshott recommendations?

The code compliance repairs would be accomplished as a first priority. The first phase of these repairs, SAC 1, were completed in the Spring and Summer of 2023. The second and final phase of these repairs, SAC 2, would be completed in the summer of 2024 (FY25), upon approval of the proposed Special Town Meeting article.

Upon completion of the code-compliance repairs, the School Department proposes a multi-year plan to upgrade the theatrical sound and lighting systems in all three auditoriums. This multi-year plan would begin with the Newman School (FY25 design, FY26 construction). The Pollard project would be undertaken next, in conjunction with the larger renovation/addition project at that school (design FY26, construction FY27). The High School project would be completed last (design FY27, construction FY28.)

7. Which aspects of the auditoriums are obsolete and in need of replacement?

- a. Newman:** Although elements of the Neman auditorium were updated in 2012, aspects of the system are non-functioning and/or require significant modernization. The 10-year-old analog sound system is no longer functional. As a result, a portable rental system is used during theatrical productions and school events. The loudspeakers offer a poor listening experience, and the wireless microphones are not operating on approved FCC frequencies. The video projection system is only partially operational and lacks wireless connectivity. The theatrical lighting is dated, but functional, while the lighting control system is overly complicated and not integrated with the AV or building networks. Repairs are also needed to the rigging, which does not allow for height adjustment. Finally, the curtains are not inherently flame retardant.
- b. Pollard:** The Pollard audio system consists of outdated and undersized analog equipment that does not cover the entire audience, results in unintelligible speech and lacks both audio playback and

recording capability. Rented equipment is used to supplement the existing audio equipment, as a result. The video projection system is operable, but outdated, and lacks the ability to record and stream video. The makeshift and inadequate lighting system is not code compliant or ADA accessible. The rigging system is inadequate, due to the hard ceiling on the stage, and does not permit full illumination of the stage. The curtains are in poor condition and are not inherently flame retardant.

- c. **NHS:** The audio equipment at NHS is approximately 25-30 years old and has limited functionality. A portable rental system is in place at this school, as well. There is no permanently installed video projector, and the portable projector on a cart (VGA) is obsolete. The house lighting is not energy efficient and some stage lighting does not work properly. The curtains are not inherently flame retardant and the rigging does not allow for height adjustment. Finally, the stage contains a hard ceiling, which makes adding, changing and inspecting the rigging very difficult.

8. How does the Hewshott study propose to upgrade these systems?

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The audio upgrades would result in operational systems that provide uniform coverage, result in intelligible speech and support the auditorium spaces in an intuitive, and easy-to-use manner. Similarly, the recommended video upgrades would result in user-friendly systems that offer clear video and proper brightness/contrast. The proposed lighting systems would provide adequate illumination for general stage use, and would involve minimal maintenance, limited manual manipulation/adjustment and reduced energy consumption. The rigging repairs are needed to provide safe and workable systems that support the various performance and room uses.

9. What technological advancements are incorporated into the proposed upgrades?

The system upgrades proposed by Hewshott incorporate a number of technological advancements, which have occurred over the past twenty years to improve the overall experience for theater-going audience members. These technology shifts include the following:

Audio technology has shifted from analog workflows, including cabling, signals, communications and controls, to digital. Additionally, starting in 2017, the Federal Communications Commission (FCC) restructured the wireless frequency spectrum in such a way that wireless microphones are no longer permitted to operate in certain spectrums. As a result, wireless users must replace their microphone systems with new compliant frequencies that are free from interference.

Video technology has also shifted from analog to digital, while increasing resolution and introducing widescreen aspect ratios.

Lighting technology has shifted from filament-based sources (i.e. incandescent, halogen, discharge) to energy-efficient and highly functional LED fixtures. The Department of Energy (DOE) has restricted the use of high wattage lamps, like those found in theaters. As a result, these old-style lamps are now difficult to source and to repair. In addition, modern theater lights offer improved functionality, including the ability to move (pan/tilt), change color, zoom, and focus. In addition, current theater lighting can be remotely controlled and does not require users to manually aim fixtures during a show.

Rigging equipment is now subject to numerous safety standards, which were not in place decades ago. Now, rigging must be regularly repaired and replaced to ensure that it can be safely used. In addition, fire-retardant curtains are now recommended to enhance the safety of auditorium spaces.

10. What is the estimated budget of all of the Hewshott Proposals?

The total estimated budget for all proposed repairs is \$6.7 million, including: \$0.3 million for SAC code-compliance repairs and \$6.4 million in auditorium upgrades. The \$344,558 requested at the May 2024 Special Town Meeting is included in this overall project budget. The projected budget is distributed among the schools as follows: \$2.2 million for Newman, \$2.0 million for Pollard and \$2.5 million for NHS.

11. Where can I get more information about the Hewshott report?

The Hewshott report is available on the School Department website at <https://www.needham.k12.ma.us/cms/One.aspx?portalId=64513&pageId=37970532> , and at this [link](#).