



## TOWN OF WAYLAND

41 COCHITUATE ROAD  
WAYLAND, MASSACHUSETTS 01778

### MEMORANDUM

To: School Committee  
From: Louise Miller, Town Administrator  
Ben Keefe, Public Buildings Director  
Cc: Arthur Unobskey, Superintendent of Schools  
Susan Bottan, School Department Director of Finance and Operations  
Board of Selectmen  
Date: July 15, 2020  
Re: Assessment of Ventilation Systems in School Buildings

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Ben Keefe, Public Facilities Director, and Louise Miller, Town Administrator, met with Matt Bean, of Norian/Siani Engineering, Inc., and Brian Donovan, of American Test and Balance, on July 14, 2020. We reviewed briefly a scope of work for ventilation testing in the school buildings. Ben Keefe then toured all the school buildings - with the exception of the Children's Way - with Matt Bean and Brian Donovan, during which time they addressed initial questions regarding the ventilation systems and discussed further the scope of work.

At the outset, we would like to explain the difference between room temperature vs ventilation. While HVAC systems include Heating, Ventilation, and Air Conditioning, temperature and ventilation are two separate components of space comfort. Ventilation is the amount of air movement as well as the amount of fresh air intake. Increasing the amount of fresh air is actually counterproductive to space comfort during the cooling and heating seasons. During cooling season the increase in fresh air will bring in hot and humid air and during the heating season cold dry air. The systems are designed to bring in an amount of fresh air that can be adequately heated or cooled to maintain space comfort. During the shoulder seasons (spring and fall) the control system takes advantage of the comfortable outside air by locking out the heating or cooling equipment.

American Test and Balance will measure the amount of ventilation coming into the building by classroom and space. This does not include most offices. The measurement will be of the amount of outside air brought into the spaces. The engineer will then calculate whether the amount of outside air is code compliant by individual space. We estimate the cost of the data gathering to be \$70,000 and the cost estimate for the engineering work to be an additional \$50,000. This cost estimate does not include the High School. The High School was built to code nine years ago, as an MSBA project, and confirmed by a Commissioning Agent. Ben Keefe has submitted a grant request to Green Communities to re-commission the High School. We expect to hear from Green Communities in August regarding the grant. The re-commissioning will include the ventilation system in the building. Matt Bean, the engineer, confirmed that, if the High School was built to code, there should be no ventilation issues in the building.

As part of the testing and measuring of the amount of outside air being brought into each building, whether Air Handling Units are working will be evaluated. At this time, we believe that all Air Handling Units in all buildings are working. This will be confirmed. Two capital projects are on the 2020 Annual Town Meeting Warrant that include replacement of the Air Handling Units. The Loker School Roof project includes

replacement of all the AHUs for Loker. The Claypit Hill School AHU replacement includes replacement of only some of the AHUs.

We were able to confirm with the engineer that there is no advantage to running ventilation systems 24 hours per day. He did state that there may be an advantage to starting the systems earlier in the morning. Ben Keefe will review the schedule on which the ventilation systems currently operates and make appropriate modifications, if necessary.

We discussed the grade of filter that should be used in the school buildings. The higher the number, the smaller the particle being filtered. Currently the Town uses MERV 8 filters. We discussed whether the Town should consider MERV 11 or MERV 13 filters. In light of COVID-19, ASHRAE recommends using the highest MERV value that our equipment will allow. There should be no issue installing MERV 13 at the High School, Middle School, and Town Building. The older equipment at the elementary schools may not be able to handle the higher value. The engineer will calculate which filter is appropriate for the elementary schools.

The engineer will investigate whether stand-alone medical grade air filtration systems would be effective for isolation rooms and for rooms that do not have ventilation. He was also asked about UV-C, Plasma, and Ozone cleaners. His initial response was that he was not aware of any scientific data regarding their effectiveness for the coronavirus, but will investigate that further.

Until the reports are completed, we will not know what repairs may be necessary. With respect to rooms that have no ventilation, we recommend that they not be used as instructional space unless an alternate method of air circulation and cleaning is determined.

Next steps:

1. enter into a contract both the engineer and the test and balance company.
2. determine how long it will take to complete the data gathering.
3. determine which buildings to include.
4. determine the source of funding for this work.