City of Lowell Fire Department
JFK Civic Center • 99 Moody Street • Lowell, MA 01852
P: 978.459.5553 • F: 978.459.5558
www.LowellMA.gov

Fighting Fires, Saving Lives, and Promoting Safety.

Jeffrey J. Winward
Fire Chief

Date: October 12, 2017

To: Kevin J. Murphy, City Manager

From: Chief Jeffrey Winward

Subject: 11.11 8/22/17 C. Samaras - Req. City Mgr. have LFD Chief review preliminary designs of the proposed new high school to ensure that it provides adequate public safety for the occupants of the building.

The preliminary design of the proposed new five story high school behind Cawley Stadium will provide adequate public safety for occupants of the building. Today's fire, building, and life safety codes are much more stringent than the codes that were in effect when the other public schools in the City were built. Today, schools are built with the following features:

- New schools are built with noncombustible or fire resistive construction materials, such as steel beams, concrete, and brick. The majority of today's structure fires are in older, wood frame, multi-family buildings with walls and roofs made of wood.
- New schools have modern, fully addressable fire alarm systems, with automatic notification to the Fire Department, and voice notification to building occupants. They have new electrical systems that are safer than older ones with older wiring and electric panels.
- New schools are fully sprinkled with modern fire sprinkler systems.
- New schools have fire rated doors in the hallways and classrooms that close automatically when the fire alarm system trips.
- New schools have fire standpipes, fire department connections, and hydrants located nearby to aid in rapid deployment of hose lines in case of fire.
- New schools have fire extinguishers located in hallways on each floor to assist with early extinguishment of incipient fires.
- New schools have fire rated stairways and multiple exit corridors to aid in rapid evacuation in case of fires or other emergencies.

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Because the Fire Department inspects all schools in the City for fire hazards four times a year, we conduct fire escape drills four times a year in all schools, each school in the City has a comprehensive emergency plan that gets reviewed yearly, and both the police and fire departments have emergency operations for each school, all schools in the city are prepared for any kind of emergency that might occur.

One question that has been asked is: Will the building be high rise or low rise construction, and will it have a fire pump for the sprinkler system? If the building were a high rise (defined as over 70 feet tall), in addition to the safety features listed on the previous page, several more requirements would be required. A fire command room would be required near the main lobby with fire rated walls, the fire alarm control panel, and a building intercom system inside the room. Stairwells would be pressurized to keep smoke out during a serious fire. Glow in the dark markings would be required in the stairways. There would be a separate elevator for firefighters in case of fire. There would be areas of refuge on each floor with fire rated doors and walls, and pressurized with fresh air. These features are needed in a new, very tall apartment building because fighting a fire in a very tall building is dangerous and difficult. When there are hundreds or even thousands of people sleeping in these buildings at night, the life safety danger is very high. However, these features are very expensive and, in my opinion, are not necessary in a modern school that has all of the previously listed fire and life safety features listed earlier. The University of Massachusetts Lowell has several large five story school buildings in the City that are not built to high rise codes, and these buildings are very safe. There are very few, if any high schools in the Commonwealth that are built to high rise standards.

Another question is: Will the new school have a fire pump for the fire sprinkler system? During the final design of the building, the available water volume and pressure coming into the building will be determined by a licensed design professional. A recent study on water volume and pressure in the neighborhood for another project showed that there is adequate pressure, but the volume of incoming water has diminished over time because of older water mains in the area that are not large enough to supply a new school of this size. The water mains in the Rogers Street/Douglas Road/Village Street neighborhood would probably need to be replaced to deliver enough water volume to a new high school to adequately support both the domestic and fire protection in the school. If the water pressure were inadequate, then we would require a fire pump to boost the pressure enough to supply water to the most remote sprinkler head on the top floor. It appears at this time that there is adequate pressure to supply the sprinkler system without a fire pump. The design professional will perform hydraulic calculations to verify this.

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I have reviewed the preliminary designs of this proposed school, and it will have all of these features. During the final design, a licensed design professional with present a set of stamped, official plans to our Fire Prevention Office, the Building Department, and other City departments. Our Fire Prevention Deputy Chief will review those plans and make sure that all applicable fire, building, and life safety codes are met or exceeded. We will work with the design professional, the Building Department, the Water Department, and other City Departments to ensure that the building is constructed to code. Today's fire, building, and life safety codes are very strict, and they ensure that a new school is very safe, whether it is a high rise, mid-rise, or low-rise building.

Sincerely,

Jeffrey J. Winward
Lowell Fire Chief