To: The Board of Education For The Alameda Unified School District

From: Calvin Wong

Date: May 8, 2017

Subject: Determination of the Seismic Hazards at Lum School

This letter is a follow-up to my 3-minute talk at your April 28, 2017 meeting on the possible closure of Lum School.

The key issue is that you haven't adequately completed your due diligence for determining if the building is unsafe.

A conservative decision to close the school without adequate documentation could be more detrimental and subject to school to potential liabilities.

I accept the results of the geotechnical reports, but the structural engineer's determination is not justified by documented analysis. Also there is no peer review to collaborate his determination. Peer review is a standard in the structural engineer profession and referenced in the building codes.

These are the steps you need to take for proper findings and due diligence:

1. A structural engineer with skills in seismic damage analysis needs to complete an analysis to determine if the buildings can meet the California Building Code performance standard "Essential Life Safety" aka SPC2. This standard establishes what the condition of a building is likely to be after a major earthquake. Specific area of concern is the potential for the building to collapse. Non-structural concerns such as safe exiting, fire hazards, and non-structural falling hazards can normally be mitigated by a variety of alternatives.
   Since your engineer has already taken a position via his letter, he should not perform the analysis to insure objectivity.

2. The Building Codes and industry standards normally requires that the analysis be reviewed and approved by an independent 3rd party peer reviewer with similar or greater skills and knowledge than the original engineer.
3. If the result of the analysis meets the standard or can be achieved with some minor alteration, the buildings complies with the safety standards of older schools, hospitals, and other building uses. If the analysis demonstrates that the buildings are hazardous, you have the appropriate documentation to justify closure.

In addition to the due diligent standards, these buildings are one story light-framed steel construction. They generally perform well in earthquakes so little studies have been done on the effect of liquefaction on this type of building. Also, I'm not aware of any death or

injuries from this type of building as a result of earthquakes with the amount of settlement projected by the geotechnical engineers.

In my 30 plus years dealing with numerous engineers, architects, City Councils, boards, and commissions, I've learned two lessons:

1. Structural engineers are like doctors. They both practice in fields that are not exact sciences. And they can come up with different conclusions. This is why peer review is a normal procedure in the structural engineer profession.
2. Making a conservative decision based on inadequate information can have unexpected long-term consequences.

These lessons almost mirrors your situation:

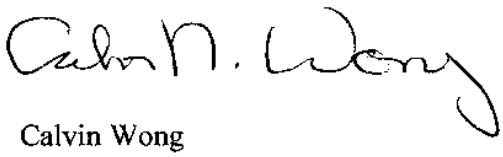
1. You are putting all your eggs in one basket by relying on only one structural engineer without substantial analysis.
2. Vacating the buildings will create an attractive nuisance, blight and high maintenance for a deemed unusable site. What will you do with the site?
3. Relocation will create additional financial burdens, logistical nightmares, and a long-term dominos effect on the other schools.
4. Is there assurance that the schools (with less potential settlement) you are proposing to relocate the students to still won't sustain life safety damages too?
5. If you close the school, you are establishing a precedent for other school districts with schools located on landfill. Your lack of documented due diligence for school closure could expose the school district to liability in lowering real estate values, unnecessary grief and hardship, and encouraging possibly wholesale school closure.

Lum School has not been declared an imminent hazard and it doesn't meet the definition of imminent hazard. Therefore immediate or even pending closure is not necessary or required. What is the likelihood that 2,500-year or 100-year earthquakes will occur within a year?

Before you consider closing the school, you should spent the time and money to hire appropriate engineers to complete the 3-step process discussed at the beginning of this letter.

I am prepared to answer any questions or concerns.

Sincerely,



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EXPERIENCE AND CREDENTIALS

Calvin Wong graduated from U.C. Berkeley with a BS in Civil Engineering.

California licensed Civil Engineer

Retired from the City of Oakland after 32 years where he held numerous positions including City Engineer, Director of Building Services, and Chief Building Official. His oversight included seismic safety, building permits, plan check, building inspection, code enforcement, street improvements and encroachments and numerous programs.

He was a lead staff to mitigate the 2,100 earthquake damage buildings from the Loma Prieta Earthquake, 1,900 unreinforced masonry buildings, landslides from the El Nino storms, and to mitigate and rebuild the 2,800 fire damaged buildings from the Fire Storm. He was directly involved in the development and implementation of over 20 new cutting edge programs including live/work building codes, creek protection, tree preservation, residential & commercial blight enforcement, food trucks and carts, historic building codes, ADA standards, seismic safety, sidewalk vending, consolidated newspaper racks, sidewalk cafes, raves permits, and medical marijuana permits. He served on various seismic safety committees.

He is a building code consultant