

Eileen Donoghue
City Manager

February 28, 2019

Ms. Hilary Hackbart
Massachusetts Department of Labor Standards
Wall Experiment Station
37 Shattuck Street
Lawrence, MA 01843

Re: Written Warning and Order to Correct/City of Lowell

Dear Ms. Hackbart:

We write in response to your "Written Warning and Order to Correct" (Order) prepared on behalf of the Department of Labor Standards (DLS) on January 28, 2019. The written warning references M.G.L. c. 149, 6, 6 ½, and 113.

On January 7, 2019 for approximately two hours, you visited with City staff to discuss allegations of insufficient heat within Lowell School buildings between September and December 2018. It is our understanding that these complaints were submitted to the Department of Labor by the United Teachers of Lowell (UTL) and were recently addressed at a Lowell Board of Health meeting. Following our meeting, you conducted a site visit of a few areas within Lowell High School and the Greenhalge School. This site visit was approximately an hour long and sufficient heat was found at these schools during the visit.

At the time of the Lowell High School site visit, the only known location within the 170 classroom school where insufficient heat had recently been an issue was within isolated areas of the 1980 Lowell High School Building. During your visit, although no specific temperatures were recorded, appropriate room temperatures and sufficient levels of heat were observed at both the Greenhalge and LHS. Based on the information presented from the site inspection and the information included in the responses noted below, the City does have sufficient heat throughout all 27 schools. Isolated and unoccupied cold spots may exist from time to time. When such areas are identified, they are immediately evaluated and timely addressed.

It should be noted that whether at Lowell High School or the 26 other schools throughout the City, in the event that the room temperatures are insufficient, there is a contingency plan to relocate students and faculty until the issue is resolved.

Considering the scope of your Order, as well as concerns with both your factual conclusions and proposed remedies, the **City formally requests an Extension to your Order**. Further, the City requests a meeting with you and your superiors to address the scope and appropriateness of your proposed Corrective Actions pursuant to the general laws cited herein. It is the City's position

Eileen Donoghue
City Manager

that the provisions of MGL c.149 are not intended to result in the nature and scope of the required actions as set forth in your Order.

Notwithstanding our request for an extension, we are providing our preliminary responses and reserve the right to amend after our meeting during the extension period. Attached are responses to each of your noted corrective actions. The City has reviewed your recommendations and will continue to further evaluate them.

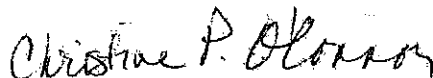
While there will be occasional heating failures within our schools, as with every district, the City is obviously committed to a working environment that is in full compliance with the laws of the Commonwealth. We believe that our schools, despite isolated and temporary failures, do fully comply with the laws of the Commonwealth and the Department of Labor.

We look forward to working with you in addressing the issues raised in your Order.

Very truly yours,



Eileen M. Donoghue
City Manager



Christine P. O'Connor
City Solicitor

L:deptoflabor

Encl.

cc: Mary Dozois, CIH, Supervisor, Workplace Safety & Health Program, Dept of Labor Standards

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CITY OF LOWELL
PRELIMINARY RESPONSES

Item No. 1 Corrective Action:

Heating systems and ~~heating~~ systems components in the Lowell Schools are not being maintained and operated as designed, resulting in frequent incidents of insufficient heat in portions of various schools in the Lowell Public Schools. This condition has been on-going for several years.

City of Lowell Response:

The average age of HVAC systems throughout the 27 schools is approximately 25 years. The useful life expectancy for HVAC systems is approximately 15- 20 years. Frequent maintenance and repairs are required as a result of the aged infrastructure. The City has undergone new leadership in the recent year and cannot specifically report on conditions several years ago. Regardless, in the past year and moving forward, City officials, Department of Public Works (DPW) and the School Department prioritize heat related concerns. When issues arise, custodians and the school department first respond to the need. DPW – Lands and Building HVAC technicians are notified as needed. Depending on the scope of the repair, outside consultants and/or contractors are brought in as necessary. If a repair cannot be made in the required time, the School Department has a plan in place to relocate students as necessary.

Further detail on the condition that the heating systems and heating system components are not being maintained.

- It was reported to DLS that 10 Lowell Schools buildings are designed to have two boilers operational boilers to provide heat, but currently only have one functional boiler.

- **City of Lowell Response:**

The second boilers are redundant boilers. Only one boiler is needed to provide heat to a school. The City is contracting with an outside contractor to service redundant boilers that require maintenance.

- It was reported to DLS that in the High School 1980s building, of the 19 rooftop HVAC units, only 15 were operating recently. Two non-operational units were repaired within the past few weeks, and two are still non-operational, but are scheduled for repair.

- **City of Lowell Response:**

Eileen Donoghue
City Manager

Three of the 19 rooftop units on the 1980s building at Lowell High School require repair by an outside contractor given the scope of repair work needed. The rooftop units that remain to be repaired service the Lowell High School library, TV Studio, and computer labs. The City is currently putting together the scope of work to procure/bid these necessary repairs. During the DLS inspection, the Lowell High School library was in use by students, as it appeared that the room temperatures that day were within the standard requirements. Although specific temperatures were not recorded during the site visit, the computer lab, which was unoccupied, was the only room out of 170 classrooms observed to be cold.

- In the steamplant, which houses two large boilers and provides heat to the High School 1922 building and the Freshman building, the DLS inspector observed one of the boilers as non-functional and currently under repair. It was reported to DLS that the one condensing unit that feeds both boilers needs replacements.

- **City of Lowell Response:**

Repairs by an outside contractor have been completed. Both boilers are operational. Only one boiler is required to provide heat to the 1922 building and Freshman Academy. The second boiler is a redundant boiler. The condensation tank that feeds both the boilers requires replacement. The City is preparing a scope of work in order to procure/bid this replacement work. In the meantime, the City does have a contingency plan should the condensation tank fail. If the tank fails, a manual bypass of the condensation tank will be completed by DPW- Lands and Building staff.

- In the Greenhalge School, the DLS inspector observed the following: only one of the two boilers was operational. Of the two circulating pumps, only one was operational and this pump sounded to be in mechanical distress. There was an audible and significant air leak in the compressor which runs the pneumatic portion of the heating system, such as thermostats.

- **City of Lowell Response:**

Both boilers have been serviced by an outside contractor. A plate on the second circulating pump requires replacement. This will be repaired shortly by a City HVAC technician.

Eileen Donoghue
City Manager

- On the day of the DLS inspection, the Greenhalge School was closed due to a major flood within the school. It appears that a fresh air intake damper in a unit ventilator (univent) in an upper floor classroom remained open during cold temperatures, and a water-containing coil in the unit froze and broke during the night, resulting in major flooding within the school. The malfunction of the univent damper indicates a lack of maintenance.

- **City of Lowell Response:**

Custodians replace filters in the univents three times a year and DPW-Lands and Buildings replace filters on rooftop units two times a year. If there is a noticeable visual malfunction of a damper during the filter change, the custodian reports the condition to DPW – Lands and Building for maintenance by an HVAC technician. The City would have to seek additional funding or add internal staff to conduct preventative maintenance inspections of all the dampers throughout all the 27 schools.

- DLS was provided with a copy of the City-commissioned July 2018 report “Organizational Study of Facilities Maintenance Lowell, MA” prepared by Edward J. Collins, JR. Center for Public Management, which identifies long-standing challenges relative to maintenance of school facilities. A similar report from 2012 is referenced in the 2018 report.

- **City of Lowell Response:**

The report referenced above will be used as a guideline as the City prioritizes annual maintenance and capital projects for the schools. The City has already utilized this report to prepare a 10 year plan to apply through the MSBA accelerated replacement program for the replacement of qualified aged infrastructure. This includes boiler replacements. 8 schools are proposed for boiler replacement in 2019 and 11 additional schools over the next 10 years.

Corrective Action Required: Return all components of heating systems and heating system controls in the Lowell Schools to full operational status in accordance with the system design.

Prepare a heating system status report for each school.

Eileen Donoghue
City Manager

- Make a listing of all the components of the heating system, including but not limited to rooftop HVAC units, boilers, pumps, piping, baseboard heating units, radiators, valves, compressors, condensers, thermostats, univents, manual system controls, and computerized system controls.
- Identify whether each component is operational.
- If a component is currently operational, identify if immediate maintenance or repair is needed to keep the component operational.
- Outline a plan, priority and a timeframe for repair or replacement of each component
- Record when the repair or replacement for each component is completed.
- Provide DLS with updates to these reports until completion of repairs as follows:
 - October 15th through May 15th biweekly
 - May 16th through October 15th monthly
 - Highlight progress made since last report

City of Lowell Response:

The City utilizes a program with the School Department called Maintenance Direct to track and prioritize work order requests through the 27 schools. Custodians generate the requests which are then forwarded to the appropriate internal staff for review and consideration for repair. The City has recently initiated biweekly school maintenance facility meetings between DPW staff and the School Department to review and prioritize repairs required throughout the 27 schools. The purpose of this meeting is to maintain frequent discussions between DPW staff and the School Department to plan and prioritize repairs.

The City does not currently have a detailed heating status system inventory, assessment and prioritization list as requested. It is estimated that a detailed heating system inventory, assessment, and replacement program would take about 4-6 months to complete and cost approximately \$250,000, and would need to be completed by an outside contractor.

It was reported to DLS that multiple HVAC contractors have been brought into the Lowell High School in the past few weeks and that multiple repairs have occurred. It was also reported to DLS that a contract has been set up will begin shortly for maintenance on the non-functional boilers in the elementary and middle schools to determine if they can be returned to operation. These completions can be recorded in the requested heating system status reports outlined above.

City of Lowell Response:

Boston Mechanical recently completed an assessment of the HVAC system in the 1922 building at Lowell High School and the Freshman Academy. The City is reviewing the

Eileen Donoghue
City Manager

assessment and will be preparing a scope to procure/bid the recommended repairs. The City has contracted with Combustion Services, Inc. to complete maintenance on redundant boilers.

It was reported to DLS that a Facilities Audit report conducted by EMG was presented in December 2018, therefore much of the requested information for the school heating system status reports may be currently available.

City of Lowell Response:

The Facilities Audit report conducted by EMG provides information that is helpful for the City to plan for future maintenance programs and capital projects. The information included in the EMG report is a preliminary inventory. The EMG report does not provide a detailed HVAC system inventory as requested in this corrective action request.

Proof of Corrective Action: Provide DLS with copies of heating system status reports. When completed provide DLS with a written statement that all components of all heating systems and heating system controls in the Lowell Schools have been returned to full operational status in accordance with the system design. Provide supporting documentation for this statement such as completed work orders, purchase orders, photographs, or other documentation.

City of Lowell Response:

The City cannot provide this information requested within the requested timeline.

Item No. 2 Corrective Action:

Condition: There are 10 school buildings in the Lowell Public School systems that are designed for two boilers, but that only have one operational boiler. There have been several instances during the 2017 and 2018 winters when the one functional boiler shuts down during the night, the boiler is not turned back on until the morning when the custodian arrives. Occupants report that it can take most of the day for the school to return to an adequate temperature.

There is an automated emergency notification system for all school buildings that alerts selected individuals when a school boiler shuts off in the night. This emergency notification system has not been operational for some time. It was reported to DLS that this system was repaired the week prior to the DLS inspection. This system notifies two individuals, the Schools Facilities Director, who is currently taking the lead on responding to these notifications, and the Deputy Commission of Lands and Buildings Division.

Eileen Donoghue
City Manager

Corrective Action Required: Develop an effective means of monitoring and provide sufficient staffing to promptly identify when a boiler has shut down during the night and to turn it back on in a timely manner to ensure that the school has adequate heating at the start of the school day. Increase the level of monitoring during periods of extremely cold temperatures.

Feasible means of correction include: adding additional staff to the emergency notification system for when a boiler is shut down; or having an overnight staff person(s) conduct rounds to physically check the boilers.

Proof of Corrective Action: Provide DLS with a written operating procedure for how overnight monitoring and restarting will occur to ensure adequate heat at the start of the school day in all schools.

City of Lowell Response:

The remote alarm notification system as noted in this DLS report is a critical component of the City's HVAC systems throughout the 27 schools. This program, provided by Stellar, was upgraded in early January 2019 with the necessary software updates so that the appropriate personnel receive a notification when an alarm is triggered. It is connected to a City cell phone that sends out a notification should a boiler fail. Prior to January 2019, boiler failures were physically observed by school staff and in some cases by custodians. This remote alarm notification allows the appropriate personnel to promptly address boiler failures. Since it's re-implementation in early January 2019, there have not been school-wide scenarios where adequate heat is not within buildings. Heating concerns are typically isolated conditions and are not due to boiler failure.

As an addition to the notification system, City and school officials provide 24/7 coverage of City buildings including schools during extreme cold weather events to minimize any heating issues or related leaks. Since early January 2019, this has been effective in conjunction with the re-implementation of the remote alarm notification system.

Item No. 3 Corrective Action:

Condition: Long-term lack of a regular inspection, maintenance, and repair program of school heating systems has led to widespread equipment, breakdown of heating systems components throughout Lowell Schools. Currently inspections, maintenance, and repairs are not tracked, so it is not known which equipment needs inspection, maintenance, and repair, and when this is needed.

Corrective Action Required: Implement an inspection, maintenance, and repair program in accordance with manufacturer's guidelines to ensure that school heating systems are maintained and operated as designed. Computerized heating system controls at the central level and local

Eileen Donoghue
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school level must be kept upgraded in synchronicity so that they can communicate with each other and operate as designed.

Proof of Corrective Action: Provide DLS with a written statement that an inspection, maintenance, and repair program has been implemented. Provide supporting documentation such as maintenance schedules and maintenance software system reports.

City of Lowell Response:

The City conducts an annual maintenance of boilers and pumps throughout the 27 schools. Filters within the rooftop units are replaced two times a year by DPW – Lands and Building, and filters within univents are replaced three times a year by custodians. Maintenance and needed repairs are tracked and prioritized through Maintenance Direct. Requests are initiated by the School Department and DPW – Lands and Buildings reviews, prioritizes, and responds to the requests based on available resources and funds. Similar to the HVAC systems, the HVAC software systems are also aged and require upgrades.

Many of the HVAC systems and related components have exceeded their useful life. As a result of the volume of this aged infrastructure, frequent maintenance or replacement is required and has been prioritized over preventative maintenance given the City's available funds and resources. The City acknowledges that a proactive inspection, maintenance, and repair program is important and the City is committed to implementing this on new or replaced HVAC systems. The City, however, cannot provide the requested documentation within the requested timeframe (February 28, 2019).