



**To:** Dr. Mike Riggle  
Board of Education

**From:** Dr. Kimberly Ptak

**Date:** Monday, October 22, 2018

**Re:** Recommended Summer 2019 Life Safety Projects

**Recommendation**

It is recommended that the Board of Education authorize District administration to work with ARCON and Associates, the District architect, to develop bid specifications for the recommended Summer 2019 Life Safety projects.

**Background**

Every ten years, public school districts in the State of Illinois, are required to complete and submit a life safety survey to the Illinois State Board of Education by a licensed architect; the District's most recent survey was approved by the Board at the June 25, 2016 regular meeting and submitted to the State. The survey identified safety related items, such as aging fire detection devices, and items considered to be critical components of the building infrastructure such as roofing, mechanical systems and carpeting. Following approval of submitted life safety survey items to the Illinois State Board of Education, the Board authorized the issuance of Life Safety Bonds to fund the projects.

Based on bonding requirements, proceeds from the bond issuance must be spent within a three year period. As a result of the approval, the work was scheduled for the summers of 2017, 2018 and 2019. At the Monday, November 13, 2017 Board meeting, the Board approved submitting two additional Life Safety projects to the State (GBN tennis court replacement and GBS pool boilers) totalling \$720,000. All projects have been completed to date with the exception of the remaining five projects that are now being recommended for the summer of 2019. The GBS mass notification system initiated in June, 2018 is still in progress with an anticipated completion date of April, 2019.

## Summary of Revenues and Expenditures

<b>Revenue</b>	
<b>Description</b>	<b>Actual (10/01/2018)</b>
Life Safety Bond Proceeds	\$15,166,109
Interest Earned as of September 1, 2018	\$180,939
<b>Revenue Totals</b>	<b>\$15,347,048</b>

<b>Expenditures</b>	
<b>Description</b>	<b>Actual or Updated Estimate (10/01/2018)</b>
Summer 2017 Life Safety Projects	
Cost of Projects (bids awarded)	\$5,459,313
Architect Fee (7.5%)	\$409,448
Construction Mgmt Fee (7.5%)	\$409,448
Contingency (2%)	\$0
Total Cost	<b>\$6,278,209</b>
Summer 2018 Life Safety Projects	
Cost of Projects (bids awarded)	\$5,288,348
Architect Fee (7.5%)	\$396,626
Construction Mgmt Fee (7.5%)	\$396,626
Contingency (2%)	\$0
Total Cost	<b>\$6,081,600</b>
Summer 2019 Life Safety Projects	
Cost of Projects (estimate)	\$2,585,000
Architect Fee (7.5%)	\$193,875
Construction Mgmt Fee (7.5%)	\$193,875
Contingency (.6%)	\$14,489
Total Cost	<b>\$2,987,239</b>
<b>Expenditure Totals</b>	<b>\$15,347,048</b>
<b>Excess Reserve</b>	<b>\$0</b>

## Summer 2019 Recommended Life Safety Projects

The projects listed below were approved by the Board of Education and submitted on the Life Safety amendment filed with the State. In order to use the remaining Life Safety Bond proceeds, the projects must be completed the summer of 2019.

<b>Project Descriptions</b>	
<b>Project and Description</b>	<b>Estimate</b>
<p><b><u>GBN Fieldhouse Roof System Replacement</u></b>                      The Fieldhouse roof system at GBN is 42,000 sq.ft. and was constructed when the Fieldhouse was originally built in 1989. The roof will be 30 years old this summer. The existing roof membrane is at the end of its serviceable life and is experiencing a number of deficiencies typical for the age of this type of roof membrane. An infrared roof survey was conducted showing the existing roof insulation to be dry. The existing roof insulation, with an R-Value of R-14.0, will be saved and incorporated into the new roof system. Two (2) new layers of roof insulation will be added to increase the system R-Value to R-30. The new roof will be a multi-ply modified bitumen built-up roof membrane with gravel surfacing. The life expectancy of the new roof is 30+ years. Reusing the base layer of insulation has an estimated savings of \$140,000 and is factored into the cost estimate.</p>	<p><b>\$810,000</b></p>
<p><b><u>GBN Intercom Repair Work</u></b>                      The current GBN intercom system is a two-way communication system used to send and receive voice messages. The system also generates time signals used to indicate passing periods and can accept various inputs to broadcast such as music, microphone and tones which sound through speakers throughout the building.</p> <p>The current system is deficient in that various areas of the building do not have sufficient coverage, existing call buttons in the majority of classrooms do not work consistently, and the time tone scheduling (i.e. passing period bells) is operating off of two systems, a wired Simplex system and wireless National Time. Approximately 80% of the clocks have been converted to the newer, wireless National Time. The system has a Rauland Telecenter head-end unit which was installed in 2001. The system is a combination of original components (i.e. wiring, clocks, speakers) and newer components which were added as the system has expanded over the years and building renovations/additions have been completed.</p> <p>A comprehensive survey and test of the existing intercom/master clock system was recently conducted throughout the school to assist in identifying the following scope of the recommended intercom repair work.</p> <p><b>Replace head-end unit with new Rauland TCU intercom system</b></p> <ul style="list-style-type: none"> <li>● One-way paging to programmable zones</li> <li>● Web-based master clock and time tone calendar scheduling</li> <li>● Interface with phone system to allow pages from any phone</li> <li>● Capabilities similar to a Mass Notification System - emergency event management (including pre-recorded messages and time-tone disabling on lockdown), telephone access with pass code protection to the intercom system, emergency police dialing capabilities</li> <li>● New speaker amplifiers</li> <li>● New administrative console and paging microphone for communication with the new intercom head-end and all speaker zones.</li> </ul>	<p><b>\$190,000</b></p>

<p><b>Speaker coverage, Clock System, Other</b></p> <ul style="list-style-type: none"> <li>● Provide (20) new outdoor paging horns which can broadcast approximately 100’.</li> <li>● Provide approximately (50) speakers to provide sufficient coverage throughout the building</li> <li>● Provide (75) battery clocks with wireless correction to replace one outmoded clock system in the corridors (and share same master clock as classrooms). This will allow all clocks to operate off of one master clock system.</li> <li>● Blank off (141) call switches, eliminating the trouble of the partially-functional call system.</li> <li>● Add intercom connection to (8) local sound systems to interrupt the local source and reinforce the intercom broadcast (areas include main gym, fitness center, band, choir, library, wrestling).</li> </ul>	
<p><b><u>GBN Pressure Switch Replacement</u></b></p> <p>The electrical switchboard serving the main gym, locker rooms, kitchen, staff cafeteria, north maintenance area, art, family consumer science, the shop wing, student activity center and main office area is fed via a 30-year-old 2000-amp main bolted-pressure switch of a type known to fail. The scope of this project will replace the bolted pressure switch with a new main circuit breaker, clean the interior of the switchboard and distribution circuit breakers, service all breakers and re-torque connections. Additionally, the switchboard will be field modified to accept future distribution circuits.</p>	<p>\$35,000</p>
<p><b><u>GBN Dehumidification System Replacement and Supply/Exhaust Modification</u></b></p> <p>The current Dectronics system, which provides the dehumidification and temperature control in the natatorium, was installed at the time the second pool was constructed in 2001 and is at the end of it’s useful life. Since the system currently runs 24/7, its life expectancy is typically half that of other large building mechanical systems. The system is made up of two dehumidification units; one serving the larger pool and one serving the smaller pool.</p> <p>The current units will be replaced with two new dehumidification units. The new units will be fabricated in pieces and installed within the existing space in order to avoid the need to remove ceilings and structure for construction access. The units will be brought through louvers on the north wall. Additionally, the units will optimize the use of fresh air intake during the winter months to aid in dehumidification and overall energy efficiencies. The new units will use fluid coolers rather than refrigerant condensers to reduce the amount of refrigerant required in the system. Lower refrigerant volumes in the systems improves the system reliability and reduces the cost of refrigerant replacement if there is a refrigerant leak.</p> <p>Air quality has been a concern over the last few years as the pool’s use has increased significantly with school programs including Glenbrook Aquatics. When pool use is maximized, the air quality after large events/swim meets creates an increased chloramine levels. Chloramines are strong eye and respiratory irritants and impacts air quality for our swimmers. Additional air circulation across the pool level lessens the effect of the chloramines. Air testing was completed showing the existing units are providing 92% and 97% of the original design air flows. Smoke testing was also conducted to visualize the air flow patterns. As a result there will be slight modifications to both the supply and exhaust duct work to deliver more air between the two pools in order to improve the air circulation in this area as well as increase the exhaust ductwork at the pool deck level to improve the capture of chloramines</p>	<p>\$1,250,000</p>

<p>generated during swimming. New rooftop exhaust fans will be installed to replace the current fans and ductwork will be extended from each fan. Half of the exhaust will be drawn at deck level and half at the top of the space to best circulate the air.</p> <p>Additionally, five High Volume Low Speed (HVLS) fans are being added above the seating areas to improve spectator comfort.</p>	
<p><b><u>GBN Filtration System Replacement</u></b>  The filtration system on the “old pool” at GBN is over 40 years old and in need of replacement due to corrosion and age. The scope of the project is to replace the system with the same system installed at GBS this past summer. The filtration system will include a UV sterilization system that will help reduce the amount of chemicals required and will also include new control valves and programmable controller to improve the filtration system operation.</p>	<p>\$300,000</p>

<b>Subtotal</b>	\$2,585,000
Architect and Construction Management Fee	\$387,750
Contingency	\$14,489
<b>Estimate Total</b>	<b><u>\$2,987,239</u></b>