Facility Audit Report

2017 Facility Audit Report of the School District of Union Grove

Conducted by: John Berget
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INTRODUCTION

To continue providing a quality school environment, the School District of Union Grove continually evaluates the financial status and facilities conditions of the District. School administration uses three priorities in their ongoing evaluation process:

- Meet students academic needs
- Ensure students continued safety
- Be fiscally responsible to the taxpayers

With these priorities in mind, the administration recently conducted a comprehensive facility study and financial review. The facility study identified immediate improvement needs, additional improvement needs for the next 1-2 years, and additional improvement needs for the next 2-3 years.

The purpose of this audit is a facilities report and is not meant to address all of the facets of educational needs. In this report the current condition of the facilities, systems, and structures are reviewed, and recommendations are given regarding the costs of moving forward in a variety of different ways, providing objective third party information to the District, the Board, and the community. The purpose of the report is to assist all parties in utilizing limited District funds as effectively as possible.
The School District of Union Grove is comprised of one main educational facility. The facility is slightly different from other Wisconsin K-12 schools in that it is a 4K-8 only building, with students attending a different district for their high school years. The current building site is made up of approximately 250,000 square feet constructed over the last 40-50 years in various phases on slightly more than 22 acres of land. The original school was built in 1964, with an additional section constructed in 1973, and a major addition in 2002.

The school has approximately 796 students and also houses the District’s administration staff. Based on data obtained from the Wisconsin Department of Public Instruction, enrollment numbers have been increasing for the past 10 years and are predicted to increase in the future. This is unusual for a rural school district, but shows students and parents are willing to open enroll to have access to an exceptional school.

The original building is made of brick/block masonry which is assumed not insulated along with metal joists to support the roof decking. The roof system is an ethylene propylene diene monomer (EPDM) rubber roof with insulation underneath the membrane. CESA FM recommends taking a core sample to have a better understanding of the insulation type as well as thickness of the roof’s R-value.

The new portion of the school is also brick/block wall with 2” insulation. The steel joists in the building are what hold up the 1-1/2” steel deck. The newer portions of the facility are heated using a variable air volume system (VAVs) while the older portions utilize unit ventilators and air handling units. Both portions utilize boilers heating water that flows throughout. The boilers were updated in 2002 and are 1.9M BTU PK Machs. At the time of the audit all units appeared functional and are a typical installation for Wisconsin schools.

The gyms and computer rooms are heated with air handling units. The air handling units that control the libraries and computer rooms have air conditioning as well.
IMMEDIATE IMPROVEMENT NEEDS

In August, CESA FM provided the District with a comprehensive facility study identifying various facility improvement measures. After careful review, the District either removed items they felt could be addressed in the current budget, or put the identified projects on one of three lists - immediate improvements needed; need repair, but can wait a year or so; and need repair in the next two to three years. All items in these three lists need to be addressed in the next three years before major failure will occur.

The first list includes projects in need of immediate repair to keep the facility running smoothly and without interruption. This set of facility improvements consists of repairs and replacements for exterior building, HVAC and plumbing repairs and replacements, and conversion of space into a storage room. The exterior replacements and repairs are to replace the failing roofs on the small gym and Round Building; replace and repair failed drains and edge flashing on the Round Building; improve drainage around the Round Building, and make exterior brick repairs. The HVAC and plumbing repairs and replacements are to replace existing obsolete HVAC proprietary software with new, efficient non-proprietary software, rebalance air and water distribution systems, reschedule and sequence HVAC equipment operations, and replace failed and end of usable life water heaters.

Estimated costs for immediate improvement needs are $1,265,000.

<table>
<thead>
<tr>
<th>System or Improvement Type</th>
<th>Reason for Replacement/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Gym roof, Round Building roof, and repair of drainage on</td>
<td>- Roofs on both buildings are starting to fail.</td>
</tr>
<tr>
<td>Round Building</td>
<td>- Drainage is causing concrete failure around the building.</td>
</tr>
<tr>
<td></td>
<td>- Drains and flashing are starting to fail.</td>
</tr>
<tr>
<td>HVAC upgrade</td>
<td>- All software is obsolete.</td>
</tr>
<tr>
<td></td>
<td>- System parts are not longer manufactured.</td>
</tr>
<tr>
<td></td>
<td>- New system will not be proprietary and will be a lot more energy efficient.</td>
</tr>
<tr>
<td>Water heaters</td>
<td>- Two of four water heaters are currently out of order.</td>
</tr>
<tr>
<td></td>
<td>- Hoping to get one year out of the current water heaters.</td>
</tr>
<tr>
<td>Exterior brick repair</td>
<td>- Current brick is in disrepair and needs attention.</td>
</tr>
<tr>
<td></td>
<td>- The longer the District waits, the more expensive it will be to repair.</td>
</tr>
<tr>
<td>Conversion of Entrance 1 to a storage room</td>
<td>- The windows are rotted out and need to be replaced.</td>
</tr>
<tr>
<td></td>
<td>- Added storage is at a premium.</td>
</tr>
<tr>
<td>Rebalance HVAC system</td>
<td>- This project goes hand-in-hand with HVAC upgrades.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,265,000</strong></td>
</tr>
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</table>
IMPROVEMENT NEEDS IN 1-2 YEARS

The second list is for projects in need of repair, but those repairs can wait one to two years. This set of facility improvements consists of grounds repairs and replacements, HVAC and plumbing repairs and replacements, electrical panel replacements, small gym and kitchen upgrades, and conversion of internal building lighting to LED. The grounds replacements and repairs are to clean out waterways, re-mat and rock fill around drainage ditches, repair concrete around waterways, repair failed flashings around building, and replace near end of useable life lights on the big baseball diamond. The HVAC and plumbing repairs and replacements are to replace end of usable life chiller, replace failing hot water heating and chilled water cooling pumps with more efficient pumps, and replace original obsolete gym air handlers and duct work with new efficient air handlers. The electrical panel replacements are those at the end of usable life in the old building. The small gym upgrade includes floor, basketball hoops, divider curtain, and accessories to improve use of area. The kitchen upgrade on the 5-8 end of the building includes replacing worn floor tile, upgrading the inefficient lighting, and replacing outdated food service equipment. The internal building lighting upgrade is to re-lamp all adaptable lighting with LED to reduce electrical utility costs, improve lighting levels, and buy down with available energy conservation incentives.

Estimated costs for improvement needs in 1 - 2 years are $1,832,000.

<table>
<thead>
<tr>
<th>System or Improvement Type</th>
<th>Reason for Replacement/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watersheds issues</td>
<td>- Clean waterways out back. Fix rock and put new matting down around drainage ditches.</td>
</tr>
<tr>
<td></td>
<td>- Fix concrete issues around waterways.</td>
</tr>
<tr>
<td></td>
<td>- Fix flashing issues around building.</td>
</tr>
<tr>
<td>Hot water and chiller pump replacement</td>
<td>- Put bearings in chiller pump.</td>
</tr>
<tr>
<td></td>
<td>- Should be okay for one to two years.</td>
</tr>
<tr>
<td>Electrical panel upgrades</td>
<td>- All panels and breakers need replacements in the old end of the building.</td>
</tr>
<tr>
<td>Gym air handlers</td>
<td>- These are the only air handlers in the building that have original piping and ductwork.</td>
</tr>
<tr>
<td>Food service upgrade</td>
<td>- Remodel kitchen in grades 5-8 end.</td>
</tr>
<tr>
<td></td>
<td>- Replace tile, upgrade lighting, and upgrade all equipment.</td>
</tr>
<tr>
<td>Lighting upgrade</td>
<td>- Relamp building to LED.</td>
</tr>
<tr>
<td></td>
<td>- This will save money through reduced energy usage as well as through incentives from state and local utility programs.</td>
</tr>
<tr>
<td>Baseball lighting</td>
<td>- Replace lighting on the big diamond.</td>
</tr>
<tr>
<td>Chiller replacement</td>
<td>- Replace chiller with a more energy efficient model.</td>
</tr>
<tr>
<td>Small gym upgrade</td>
<td>- Group together floor, hoops, curtain, and accessories.</td>
</tr>
<tr>
<td>Playground equipment upgrade</td>
<td>- Replace the current playground equipment at the north end of the school grounds.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,832,000</strong></td>
</tr>
</tbody>
</table>
IMPROVEMENT NEEDS IN 2-3 YEARS

The final list is of projects that are in need of repair in the next two to three years. This set of facility improvements consists of grounds repairs and replacements, exterior building repairs and replacements, plumbing replacement, emergency lighting upgrade, and interior building upgrades. The grounds replacements and repairs are to replace the near end of life plow truck and repair and replace parking lot surfaces as needed. The exterior replacements and repairs are to replace Round Building inefficient exterior windows and chalk roof and building shell joints. The plumbing replacement is to replace the existing water supply line. The emergency lighting upgrade is to retrofit the existing emergency lighting to conserve energy and prevent end of life failure. The interior building upgrades are to increase storage space in locker room areas, replace rusted lockers in the K-4 area, replace the outdated clock and bell system, and replace worn carpeted areas.

Estimated costs for improvement needs in 2 - 3 years are $1,155,000.

<table>
<thead>
<tr>
<th>System or Improvement Type</th>
<th>Reason for Replacement/Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency lighting</td>
<td>- May be able to retrofit all fixtures through current budget.</td>
</tr>
<tr>
<td>Locker room storage upgrade</td>
<td>- This will be a benefit to the District as enrollment climbs and storage options shrink.</td>
</tr>
<tr>
<td>Caulking and roofing joints</td>
<td>- This will extend the useful life of the roof.</td>
</tr>
<tr>
<td>Lockers in K-4 end</td>
<td>- These need to be replaced in 2-4 years.</td>
</tr>
<tr>
<td>Exterior windows in Round Building</td>
<td>- These are losing a lot of energy through thin panels.</td>
</tr>
<tr>
<td>Parking lot</td>
<td>- This will need attention in 2-4 years depending on weather conditions and extended use.</td>
</tr>
<tr>
<td>Clock and bell system</td>
<td>- This system is outdated and unreliable.</td>
</tr>
<tr>
<td>Water line replacement</td>
<td>- This needs to be replaced in the next 2-4 years.</td>
</tr>
<tr>
<td>Carpet</td>
<td>- Carpet needs to be replaced in a few years.</td>
</tr>
<tr>
<td></td>
<td>- Currently cleaning it monthly for aesthetics.</td>
</tr>
<tr>
<td>Plow truck</td>
<td>- This needs to be replaced in the next 2-4 years due to age.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,155,000</strong></td>
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## UNION GROVE ELEMENTARY

<table>
<thead>
<tr>
<th>Union Grove 4K - 8 School</th>
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<tbody>
<tr>
<td><strong>Year Constructed</strong></td>
<td>1964, 1973, 2002</td>
</tr>
<tr>
<td><strong>Enrollment</strong></td>
<td>796</td>
</tr>
<tr>
<td><strong>Site Area</strong></td>
<td>20+ acres</td>
</tr>
<tr>
<td><strong>Facility Size</strong></td>
<td>250,000 square feet</td>
</tr>
</tbody>
</table>
The School District of Union Grove Elementary was originally built in 1964 and is currently serving grades 4K-8. The original school, constructed 45+ years ago, has undergone numerous smaller updates throughout the years along with a major addition in 2002.

There are existing systems and equipment with long useful lives, such as piping and power service components; however, many of the pieces of equipment are nearing or are over their expected useful life. For this reason, the school does have some high priority needs and will have an increasing need for capital projects to maintain the facility over the next 10-20 years as equipment and materials start failing with higher frequencies.

Much of the original HVAC equipment is reaching the point where it is a better long-term cost decision to replace components rather than repair them. When equipment like this is being replaced, high efficiency equipment should be considered for its long-term savings potential and for the considerable financial incentives available.

Many building materials and fixtures are still original and vary in the need for repair or replacement. Several projects identified had a pressing need for capital funding. These projects, known as facility improvement measures (FIMs), are outlined in the three lists on the previous pages, and are further detailed on the following pages.
FACILITY IMPROVEMENT MEASURES

ROOFING

ISSUE:

The District has an array of roofing products in use on the campus buildings. The thermoplastic polyolefin (TPO) roof appears to have been installed in the last 5-10 years and is in good shape. However, the ethylene propylene diene monomer (EPDM) roof from the 2002 addition, the built up roof at the old gym, and the roof on the original round building do have some issues that need to be addressed.

PROPOSAL:

The EPDM roof from the 2002 addition is the most popular and is in decent shape. However, CESA FM did identify the following issues during our walk-through:

• At the corner of the building by the boiler stack, high wind has pushed the ballast away from the roof edge resulting in air now entering under the membrane. A roofer should be hired to install standard concrete walkway pavers in an 8x8 area surrounding this spot. A protection sheet is required under the pavers. Reinstalling the ballast will only cause this issue to reoccur again in the future.
PROPOSAL:

- The elevated portion of the roof's flashing is moving due to the sheet metal shrinking and expanding with the weather. From the odd colored mortar and additional caulking CESA FM noticed on the roof, it appears this has been an issue before resulting in an interior water flow issue. CESA FM recommends removing the existing flashing, moving the brick flashing up two courses of brick, reinstalling and redoing the metal flashing and counter-flashing. Stainless steel brick flashing may be reused, however the roof flashing should be new as the old has been bent from years of movement.

The built up roof at the old gym is quite possibly original to the 1973 building. During the walk-through, CESA FM noticed present seams and evident ponding of water on the roof. Schedule for replacement should be immediately considered as the wood floor below will not tolerate much standing water before causing floor failure.

The original round building has an adhered EPDM installed, but the roof is in rather rough shape. Punctures were present, along with glass from items tossed on the roof. It appears the EPDM membrane was placed on top of the old built up system, making the insulation value minimal. An investigation of age and insulation levels should be done to determine the District’s next steps. In the future, a roof should be installed with more insulation and a greater pitch to allow for faster water runoff.

A larger issue surrounds the roof drainage system at the round building. CESA FM recommends a complete redesign as the water is washing out the subgrade surrounding the concrete slab next to the building and there is limestone deterioration on the window mullions.
HVAC UPGRADE

ISSUE:

The District has a Johnson Controls direct digital control (DDC) system installed. Some upgrades of this system have been completed in the older portions of the building. However, the system as a whole is experiencing ongoing issues.

PROPOSAL:

Due to the age of the DDC system, most of the parts are now obsolete. Therefore, CESA FM recommends upgrading the DDC in the new gym area by adding CO² sensors, replacing the existing Johnson Controls system in the old gym area with a new tridium-based open system, and removing the pneumatics and performing an integration with the entire building.
WATER HEATER REPLACEMENT

ISSUE:

The District has replaced some of the water heaters in the building, however, there are still a few that can be replaced to a higher efficiency.

PROPOSAL:

CESA FM also recommends reviewing the dishwasher boosters for their life cycle. Since they are heating to such a high temperature (180° F), they will use a lot of gas. It is best to keep on eye on this.
EXTERIOR BRICK

ISSUE:

Overall, the existing brick is in good shape. However, there are a couple areas in need of attention. Mainly those surrounding the entrance and those that have experienced damage from years of snow removal.

PROPOSAL:

CESA FM recommends fixing any bricks that are currently showing wear and tear.
ENTRY CONVERSION

ISSUE:

The existing entry to the older portion of the school is rarely used anymore. The steel framing has rusted away due to salt. An adjacent area has been marked for conversion to IT equipment storage due to its location, however some work will have to be done to properly convert this space.

PROPOSAL:

To properly convert the space, the District will need to replace the rusted out existing storefront glass system. As an environmental company, CESA FM urges the District to keep in mind the budget and timeline for this project may be affected if caulking needs to be abated due to asbestos.

Closing off the inside can be accomplished quickly and efficiently with some wall panels and a door, and air will be pushed into the space via a new fan to keep a tempered environment.
REBALANCE SYSTEM

ISSUE:

The District has indicated some rooms experience a wide temperature range. A number of years and revisions by numerous people, may indicate that the air balance in the VAV system may be off.

PROPOSAL:

CESA FM recommends hiring a balancer to run through the areas that are affected. Typically this would include all the areas served by the air handler in question. Balancer will check the air flow and revise balancing dampers in the system.
WATERSHED

ISSUE:

The District has brick masonry construction throughout the campus buildings. A property of brick wall construction is a void within the wall that allows water to shed to the exterior before it can begin to enter the interior CMU block. The use of brick vents and metal flashing allows the water to get channeled away from the wall and back to the exterior. Some of the District’s brick walls have incorrect drainage, which can potentially lead to microbial growth and future air quality issues.

PROPOSAL:

Soil should be moved away from the wall to allow for correct drainage. This may require a substantial regrade. Additionally, the District’s site catch basin has a concrete apron that has deteriorated and is adversely affecting site drainage. It would benefit the District to upgrade the catch basin and surrounding retaining rock to remove built up sediment from past storms, and to best handle storm water outflow and drainage in the future.
HOT WATER/CHILLER PUMP REPLACEMENT

ISSUE:

The District has indicated they are having issues with the chilled and hot water pumps in the building. Specifically, the chilled water building pump is a 25 horsepower (HP) B&G unit with its own variable frequency drive (VFD), while the hot water building pump contains a primary and a backup that share a VFD and have to be manually switched. Pump sizes for the hot water building pumps are 15 HP and 10 HP.

PROPOSAL:

CESA FM recommends replacing the chilled water pump with new, replacing each of the hot water pumps, and adding a dedicated VFD to each pump. We also recommend revising controls to allow the DDC system to switch pumps weekly as scheduled. This would eliminate the need for staff to have to manually change pumps, making the building more reliable. Re-piping of the connection would be required, as this model of pumps is no longer being manufactured.
**ELECTRICAL PANELBOARDS**

**ISSUE:**

The District has multiple types of circuit breaker panels due to numerous building additions and renovations over the years. The latest addition installed GE Spectra panels which should last for many years.

Original portions of the building have old GE panelboard with breakers that are no longer produced, making replacement parts hard to find. These should be replaced with new circuit breaker panels to reduce the issues associated with the old breakers, such as being easily tripped.

**PROPOSAL:**

Issues with old panels are not new to school districts around the state. Some districts have utilized used breakers as a quick fix, however these fixes are short-term solutions and not recommended. It is in the best interest of the District to have these panels replaced with new ones.

**DID YOU KNOW?**

The Consumer Product Safety Commission (CPSC) estimates a circuit breaker’s life expectancy is **30 to 40 years**.

With age and use the busbar begins to heat up from friction, which expands the metal in the breaker over time. When the circuit does not have a load, it cools down and shrinks. After years of expanding and shrinking the busbar changes shape, spreads the breaker attachment apart, and creates a gap. This gap starts arcing over time and worsens until failure occurs. This is why panels should be replaced with new breakers.

Breakers 30 years ago were relatively slow in operating times. Molded case circuit breakers of today are two to three times quicker within their short-circuit areas.
**REPLACE GYM AIR HANDLING UNITS**

**ISSUE:**

The District currently has a Johnson Controls direct digital control (DDC) system with some upgrades completed in the older portions of the building. At the mezzanine area, the two original air handling units (AHUs) feeding the gym and surrounding rooms need to be scheduled for an upgrade. The condition at this location is lacking in both safety and efficiency.

**PROPOSAL:**

In addition to upgrading the aforementioned gym AHUs, the District also needs to address ongoing temperature complaints in the round portion of the building. Although unit ventilators are often to blame for temperature variances, the District had them replaced during the 2002 renovation. CESA FM believes the existing controls may have been damaged by the air flow actuator continuously over stroking the valve. Due to this, the outside air actuator may no longer be operating as designed. A review of the unit would confirm this issue. The result would lead to either a new actuator or upgrading the entire unit along with the possibility of replacing several unit ventilators.
FOOD SERVICE EQUIPMENT

ISSUE:

The District provides food service with their own employees rather than contracting the work out. This allows for a more personal service to the community. However, the majority of the equipment is out of warranty and many pieces can’t receive replacement parts or are no longer manufactured.

As food preparation has changed from a full meal prep to a heat and hold type operation, more specialized equipment is required to retain food quality.

PROPOSAL:

Existing equipment needs to be upgraded or replaced so conditions can continue to meet expectations. CESA FM recommends replacing the existing Hobart and Vulcan ovens with new Unox ovens.

The District's countertop hot wells also no longer have replacement parts available. As they stop working, the District will no longer be able to hold adequate temperatures with hot foods. CESA FM recommends either purchasing single units and capping the old well space with stainless steel or purchasing mobile units to take the place of the counter-installed wells.
ISSUE:

The District currently has several types of lighting, from old T-12 to T-8 ballasted fixtures, to new exterior light emitting diode (LED) lighting and even a few interior LED lights. During the walk-through, the District noted they tend to go through approximately 400-600 bulbs annually. CESA FM noticed during the walk-through the ballasts from the new addition have reached their 15 year lifespan. This is when large amounts of ballasts start to fail.

PROPOSAL:

CESA FM recommends the District replace the ballasts in the new addition and upgrade to LED retrofit fixtures. Change outs of 15-year-old fixtures to LED bulbs within the existing fixture, based on conditions, is a possibility. New ballasts are installed and the LED lamp contains the driver as required for the new lighting. Oftentimes the standard change out goes from an existing three or four lamp fixture to a two lamp and staff is unaware of the change, even when asked. Lab classrooms with black epoxy lab tops are one area where lighting cannot be reduced.

The new gym has been converted to high-bay lighting, however, it could benefit from occupancy sensors to turn off banks of lights when the space is unoccupied. The old gym would also benefit from a conversion to high-bay lighting and the addition of occupancy sensors.
LIGHTING (CONT.)

WAYS TO UPGRADE:

Option 1: Keep current linear fixtures and replace fluorescent tubes with LED retrofit tubes.

- Less expensive than replacing the whole fixture
- Requires bypassing the fixture’s ballast (to wire the mains directly to the sockets)
- Available in standard and high lumen
- Provides 400 to 4600 lumens per 2x4 fixture (assuming two tubes per fixture)
- Uses only 36W per 2x4 fixture (assuming two tubes per fixture) compared to 60 to 80W with four fluorescent bulbs
- 50,000-hour average lamp life

Option 2: Keep current fixtures and replace fluorescent tubes with ballast-compatible LED tubes.

- More expensive than retrofit tubes
- Compatible with most electronic ballasts without rewiring
- Incompatible ballasts (some electronic, all magnetic) require rewiring
- Provides 3960 to 4500 lumens per 2x4 fixture (assuming two tubes per fixture)
- Uses 36W per 2x4 fixture (assuming two tubes per fixture)
- 50,000-hour average lamp life

Option 3: Keep current fixtures and replace fluorescent tubes with magnetic LED strips.

- Less expensive than replacing the fixture
- Strips and driver easily adhere to metal fixtures
- No need to wire power to tombstone sockets—simply connect the mains to the included driver—quick-connect wiring between strips and driver included
- Brighter than tubes
- Provides 4500 to 6400 lumens per 2x4 troffer
- Uses 40W to 50W per 2x4 troffer
- 50,000-hour average lamp life

Option 4: Replace fluorescent fixtures with LED-ready fixtures and LED tubes.

- Works with any LED tube without rewiring, however this is a more expensive option
- Clean, new fixtures update the overall look of the workplace and learning environment
- Lumens, watts, and lamp life depend on the tubes purchased

Option 5: Keep current troffer fixtures and install snap-in LED troffer upgrades.

- Clean, new look hides old fixtures
- No need to dispose of old troffer
- Quick 10-minute install
- Provides 6,250 lumens per 2x4 troffer
- Uses 50W per 2x4 troffer
- 100,000-hour average lamp life
BASEBALL/SOFTBALL FIELD LIGHTING

ISSUE:

The District has multiple well-developed baseball fields. One of the fields hosts nine wooden poles with existing lighting. These poles and lighting have reached the end of their useful lifespan.

PROPOSAL:

CESA FM recommends replacing the nine wooden poles with four new metal poles that allow for 50 foot-candle infield and 30 foot-candle outfield lighting. This new lighting would reduce electrical costs by approximately 50% and would reduce light spill, as the new lighting would be more efficient than the previous light fixtures. CESA FM also recommends installing new lighting in the softball field.
**CHILLER**

**ISSUE:**

The District’s existing chiller is 15 years old and will begin to experience maintenance costs that quickly exceed the cost of a new chiller.

**PROPOSAL:**

CESA FM recommends replacing the chiller with a newer, more efficient model that costs less to operate. The District should watch out for issues such as dead fans, and loss of cooling stage with their service contractor.

![Existing chiller](image1)

![Example chiller](image2)
CURTAIN SYSTEM AND BASKETBALL HOOPS

ISSUE:

Part of the old gym remodel would be able to replace the existing basketball backstops with new. This would reorient the way the gym is used.

PROPOSAL:

CESA FM recommends installing a divider screen in the gym to allow for two games to be played at the same time. New basketball hoops should also be installed with a tilting system.

▲ Current gym setup
GYM FLOOR

ISSUE:
The District’s gym, built in 1973, is still vital to running the school. However, the original oak wood parquet flooring is at the end of its useful life. The assumed 5/16” thickness plus many layers of polyurethane will be an issue with finding a replacement that will serve the District’s many purposes.

PROPOSAL:
The gym’s dimensions are approximately 80 x 100 feet, which is a rather large space to replace. Demolition costs for the floor alone will run $2.50 per square foot. However the biggest unknown, and the largest concern, is the mastic underneath the flooring. With the age of the facility, the chances that the mastic contains asbestos are extremely high. This makes removal much more expensive. In lieu of this, CESA FM recommends going over the top of the existing floor with a new floor.

Options for new are slightly limited, due to the existing depth of the wood. Putting a new wood floor over the existing one is not an option. Sheet vinyl flooring with a 6.5 mm thick pad attached is available and runs around $8.00 per square foot. Additional options include doing the floor in luxury vinyl tile (LVT) with no cushion for around $5.00 per square foot or a snap court system for $8.00 per square foot.
PLAYGROUND EQUIPMENT

ISSUE:

The playground equipment has been repaired several times and is beyond its useful life. Although the equipment is currently regarded as safe, continuing to rely on repairs may compromise the integrity of the structures.

PROPOSAL:

CESA FM recommends replacing the playground equipment with new, 21st century play structures. New structures are designed to meet the diverse physical, social-emotional, sensory, and cognitive needs of all children, including students with disabilities.
EMERGENCY LIGHTING

ISSUE:

The facility currently has lighting that is tied to the emergency generator. These units run normally until a power outage. During a power outage, when all other systems are off, the lighting would turn back on per the automatic switch that provides power to certain panels in the building. CESA FM believes there are old battery units that may fail to work as intended during a power outage.

PROPOSAL:

An electrician should be employed to review the battery units and replace the bad ones. Typical useful life of a battery is five to eight years. The electrician should also review units tied to the generator to ensure they are working correctly as well.

▲ Hallway lighting
LOCKER ROOM

ISSUE:

The current locker rooms servicing the old gym are in good shape. However, with the District’s increasing enrollment, they lack the space needed for all users. An unused gang shower exists behind the lockers. The District could remove the showers and utilize the existing space to enlarge the locker/changing area by two additional rows of multi-tiered fitness lockers. However, the locker room currently only has one toilet that lacks ADA accommodations, therefore any renovations will require state approval to get the space up to ADA compliance.

PROPOSAL:

CESA FM recommends converting the unused shower space into a new ADA-compliant toilet room using the existing plumbing.

During their walk-through, CESA FM Project Managers noted limited space to house gym equipment in the locker room area. Two adjacent storage areas are housed inside the locker room with little to no use. CESA FM recommends blocking the old door entrance and adding a door in the locker storage area. This will gain space for storage on the gym side while not taking space away from the locker area.

During the renovation, it would benefit the District to redo the HVAC ventilation of the space. Existing units are past their useful life and most likely will be chosen to be replaced by the professionals working on the design of the space. A new toilet room will require new exhaust air to be added to each room.
ISSUE:

Older parts of the building house stone pebble panels installed over the concrete masonry unit (CMU) backer. Some of these stones are in need of repair. An example of a pebble stone panel in need of attention is by the shipping and receiving door. The edges have broken off and are in need of repair.

PROPOSAL:

CESA FM recommends replacing damaged panels with a material similar to the soffit cement plaster already on the building. It would benefit the District to have any caulking removed and reinstalled during maintenance of these panels, to protect the building for the next 50 years.
STUDENT LOCKERS

ISSUE:

The District has industry standard recessed lockers for students installed throughout the building. From a distance, the lockers appear to be in good condition; however, upon closer inspection rusting of the metal surfaces, especially at the bottom shelf and base, was discovered. This is almost certainly a result from the salt on students’ boots during the winter months.

PROPOSAL:

The District has several options moving forward, including:

- Replace lockers with new 16 GA galvanized steel
- Install new custom drop in bottom pans and repaint
- Install a plastic tray
- Repaint the lockers - this would be a short-term fix
- Replace the bottom steel shelf by disassembling the lockers
- Apply a layer of electrostatic paint to the lockers for a refreshed look.

▲ Rusting District lockers

▲ Rusting lockers

IMPROVEMENT NEEDS IN 2-3 YEARS
EXTERIOR WINDOWS

ISSUE:

Windows in the new addition are in great condition, and the windows in the older portion of the building appear to have been replaced. However, the panels below the windows in the round building have not been updated. After reviewing current conditions and caulk levels, it appears the renovation was done only on the top portion of the window system. This was most likely due to the HVAC unit below and the outside air duct at this location in some rooms.

PROPOSAL:

CESA FM recommends reviewing what is behind the panel and insulating this location at each window. As the existing system ages, it is prudent to start a window replacement budget for allocating money toward replacement. Issues with limestone columns are addressed in a subsequent measure.
PARKING LOT

ISSUE:

The District hosts a large parking and play surface area. The main parking area has some settlement issues from the tires of parked cars. This is mainly located over a newly installed supplemental storm drainage pipe that helps move water from the parking lot to the drains. The existing soils have settled and created bumps in the parking lot. This problem will continue to get worse with time.

PROPOSAL:

CESA FM recommends enlisting the help of paving contractors to review and fix the unleveled asphalt prior to sealcoating the entire parking lot. The contractor should also fix the destabilized soil around the storm drain piping and apply a patch over the reworked area.

CESA FM recommends sealcoating the parking lot every three years to extend the life of the base materials. Review of the parking lot is recommended to get this coating sooner than later as the coating will help limit where the water can enter (and further damage) the surface.
CLASSROOM CLOCKS

ISSUE:

The District has a current Simplex clock system that costs roughly $300 for a new clock whenever one needs to be replaced. School clock systems are in place that now have the ability to incorporate accurate synchronized time for clocks and bells throughout the facility. This would provide the benefit of improved productivity and reduced maintenance costs.

PROPOSAL:

CESA FM recommends replacing the existing clock system with one that can be a GPS receiver or a local PC with accurate web synchronized time. These systems are available in wall clocks, LED digital clocks, and LED display message boards in a variety of styles and sizes to meet all facility needs.

Additionally, these systems can use wireless PA speakers to provide indoor/outdoor voice messaging, wireless two-way intercom communications, and scheduled break bell alerts.
WATER SERVICE

ISSUE:

The District indicated the original water service piping does not run underground, but rather is in the ceiling space. Concerns about the condition of the pipe arose, as enormous amounts of water could drop if the pipe is ever breached.

PROPOSAL:

CESA FM recommends hiring a plumber to trace the pipe and review its condition, assuming the asbestos elbows on the insulation are no longer intact. Perform an ongoing yearly review of conditions to maintain the integrity of the piping for many years.

Furthermore, issues have been identified by the building and ground staff in regular plumbing fixtures. CESA FM recommends a plumber goes through all areas where plumbing fixtures exist and make a list to remedy any defects.

▲ Piping in locker room
CARPET

ISSUE:

The existing carpet in the office area is not wearing well due to the constant use of chairs. The carpet in the library also should be removed.

PROPOSAL:

CESA FM recommends removing the carpet in the office and library and installing carpet tiles which allow for easy maintenance of damaged sections by current staff.
PLOW TRUCK

ISSUE:
The District makes it a priority to have sidewalks and parking lots cleared as soon as possible after a snow event. Similar to the mowing, the District saves money by having employees do this work rather than contracting it out. Requirements to have this removal work complete prior to the start of the school day would incur premium costs vastly higher than the money currently being spent by the District through the use of their own personnel. The District’s current truck is a 2009 Ford F-350 and used for the majority of the plowing. Due to the lengthy Wisconsin winters and prolonged use, this truck needs to be replaced.

PROPOSAL:
CESA FM recommends replacing the existing plow truck with a similar model, so the conditions of the sidewalks and parking areas continue to meet District expectations. The District currently uses a Ford F550 plow truck with spreader.

▲ Ford F550 plow truck with spreader
DISTRICT OPTIONS

CESA FM Project Managers audited the School District of Union Grove Elementary in early 2017. The educational facilities are well maintained and district leadership and facilities staff should be commended on how the school is being run, maintained, and managed.

As part of this report, CESA FM analyzed the safety, security, technology, learning spaces, environmental health and safety, ADA compliance, building maintenance, and capital improvements needed at the facility. After a detailed study, CESA FM worked with the District to create three lists that address the identified issues. The first list encompasses project in need of immediate attention, the second list includes projects in need of repair in the next one to two years, and the final list incorporates projects in need of repair or replacement in the next two to three years. All of these lists should be addressed in the next three years to ensure the facility continues to run smoothly and without interruption.

<table>
<thead>
<tr>
<th>Lists</th>
<th>Cost</th>
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<tr>
<td>Immediate Improvement Needs</td>
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<tr>
<td>Improvement Needs in 1-2 Years</td>
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<tr>
<td>Improvement Needs in 2-3 Years</td>
<td>$1,155,000</td>
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</tbody>
</table>

The recommendations included in this report are meant to assist the District over the next several years in conserving energy, reducing operating and maintenance costs, and improving occupant comfort and safety where applicable.

Any questions about this report can be directed to John Berget at 715-720-2196.