WOLD ARCHITECTS AND ENGINEERS

332 MINNESOTA STREET, SUITE w2000
SAINT PAUL, MINNESOTA 55101
FAX: 651-233-5646 TEL: 651-227-7773

Facility Analysis For

White Bear Lake Area Schools

White Bear Lake, Minnesota

Independent School District #624

October 4, 2018

Project No. 182153

Facility Analysis Categories
Independent School District #624

The following report investigates current physical and programmatic conditions and deficiencies evident in Independent School District #624 buildings. The information documented in this report was gathered primarily through field observation and supplemented by evaluation of existing information and discussion with County personnel.

The facility analysis report explores conditions and deficiencies in eleven important areas, which are outlined as follows:

- **SITE**
  This section describes the site and its surroundings.
- **EXTERIOR**
  This section describes the exterior envelope including roofing information supplied by the District.
- **INTERIOR**
  This section describes the physical condition of the interior spaces and finishes within the facility.
- **ACCESSIBILITY**
  This section addresses the conformance of the facility to the intentions of accessibility requirements with focus on the following issues: accessible parking, an accessible route to the main entrance, ability to attain all levels of the facility, and access to each teaching space.
- **MECHANICAL SYSTEMS**
  This section documents the existing mechanical systems and components, and their known deficiencies.
- **ELECTRICAL SYSTEMS**
  This section documents the existing electrical systems and components, and their known deficiencies.

Each category noted above includes a list of "analysis" statements which describes conditions or deficiencies. Following the "analysis" portion of each category is a list of "issues" which describe the action necessary to resolve mentioned conditions or deficiencies. Accompanying the "issue" is a cost, based on projected year 2018 project costs.

Facility Analysis Prioritization

Independent School District #624

PRIORITIZATION CATEGORIES

Priority 1 (immediate need)

Deterioration Item	Items not functioning or broken
Accessibility Issue	Modifications required to provide access to the building, the curriculum within the building, and to student restrooms
Life Safety Issue	As typically noted by fire Marshall/Life Safety officials.
Health Issue	Rooms with no ventilation or items that do not meet state health code requirements

Priority 2 (0-2 years)

Deterioration Item	Items well past useful life or for which further deterioration will create higher future repair costs or damage to other areas in the building
Accessibility Issue	Modifications required to provide access to staff or private restrooms, to obtain a drink of water, and to resolve any other ADA issues in the facility
Hazardous materials	Item posing a significant impact on building occupants
Health Issue	Inadequate exhaust and ventilation lab environments and other areas lacking adequate ventilation

Priority 3 (3-5 years)

Deterioration Item	Material or system that currently functions but will require replacement or repair within 5 years.
Hazardous Materials	Removal of items affected by other changes occurring in this phase
Security Issue	Correction of items that pose a security risk to building occupants
Energy Issue	Item replaced/installed results in payback in 5 years or less
Modernization	Modifications required to support future modernizations

Priority 4 (6-10 years)

Deterioration Item	Material or system that currently functions but will require replacement or repair in 6-10 years
Hazardous Materials	Removal of items affected by other changes occurring in this phase
Energy Issue	Item replaced results in payback in 6-10 years
Aesthetics	Item which is elective/aesthetic or programmatic

Priority N (Non-Prioritized)

Items that are covered under LTFM (Long Term Facility Maintenance) funding

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Independent School District #624

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Birch Lake Elementary
Independent School District #624

Address:	1616 Birch Lake Ave White Bear Lake, Minnesota 55110	**Year(s) Built:**	1966. 1994, 2007
		Gross Area:	56,860 S.F.
Contact:		**Site Area:**	10 acres
		Parking:	69
Phone:			

Birch Lake Elementary
Independent School District #624

Analysis

- The site area totals 10 acres and is bordered to the north by birch lake avenue, the east by Christ the King Lutheran church, and to the south and west by private residences.

- The north parking lot has 51 stalls and 2 handicap stalls. The south parking lot has 15 stalls. 1 additional handicap stall is required. Handicap stalls have appropriate signage and pavement markings, with exception of missing “no parking” language on access aisle.

- The playground is in good condition.

- The asphalt play area between the original building and addition has significant cracks and potholes and needs to be resurfaced

- Splash blocks below downspouts need to be replaced

- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Provide (1) additional ADA parking stall (signage, striping, access aisle)
Priority: 2 **Cost:** **$1,400**

2 Resurface asphalt play area.
Priority: N **Cost:** **$124,100**

3 Replace splashblocks.
Priority: N **Cost:** **$3,400**

4 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,200**

Birch Lake Elementary
Independent School District #624

Analysis

- Building was built in 1966 and has 2 additions.
- The existing windows are the original operable windows, aluminum on the outside and wood on the inside. Sealant joints are starting to come apart and there are signs of moisture intrusion.
- The entrances have vestibules, doors and frames are in good condition.
- The exterior is brick, burnished block, and precast. All appear to be in good condition.
- Paint is peeling on storage building at southwest area of site.
- Numbers on doors H-K are peeling off.
- Several sealant joints are missing at brick.
- Door to gym near playground needs to be repainted.
- Some mortar joints, especially under downspouts, could use tuckpointing.
- Roof is 20+ years old.

Issues

1 Repaint storage building on southwest part of site.
Priority: N **Cost: $1,400**

2 Replace all windows.
Priority: 1 **Cost: $162,300**

3 Repaint numbers at doors H-K.
Priority: N **Cost: $2,100**

Birch Lake Elementary
Independent School District #624

Issues

4 Tuckpoint original building.
Priority: 3 **Cost:** **$451,300**

5 Replace roof area G (installed 2002) per District roof report.
Priority: 4 **Cost:** **$208,500**

Birch Lake Elementary
Independent School District #624

Analysis

- Corridor floors are terrazzo.
- Classroom and office areas have carpet in good condition.
- The gym has VCT flooring, VCT tiles are starting to spread apart. Flooring needs to be replaced and moisture mitigation installed.
- Ducts in gymnasium need repainting.
- Doors are wood, inner ring doors are in good condition, outer ring doors need to be replaced. All hollow metal frames need to be repainted.
- Corridor walls are concrete block with a glazed block wainscot. Glazed block is chipping at corners.
- Ceilings are ACT, inner circle rooms have tiles that are warping and should be replaced.
- Student toilets have glazed block wainscot with block above. All toilets are not handicap accessible, see Accessibility Section for more information.
- The kitchen has quarry tile floor, glazed block walls, and _____ ceiling.
- The casework on the outer ring is in good condition, the wood casework on the inner wing is in poor condition.
- Kitchen needs new equipment.

Issues

1 Replace resilient flooring in gymnasium and install moisture mitigation.
Priority: 3 **Cost: $97,300**

Birch Lake Elementary
Independent School District #624

Issues

2 Replace outer ring wood doors.
Priority: 3 **Cost:** **$50,600**

3 Repaint all hollow metal frames.
Priority: 3 **Cost:** **$20,250**

4 Replace ACT tile in inner circle.
Priority: 4 **Cost:** **$61,100**

5 Replace casework in the inner ring.
Priority: 3 **Cost:** **$332,700**

6 Remove existing chalkboards.
Priority: N **Cost:** **$125**

7 Provide security hardware at all classroom doors.
Priority: 3 **Cost:** **$66,800**

8 Provide (1) new double stack convection oven.
Priority: 3 **Cost:** **$60,200**

9 Rebuild walk-in freezer and cooler.
Priority: 2 **Cost:** **$165,600**

10 Provide (2) 4-well electric hot food serving counter and (1) 6-well cold food serving counter.
Priority: 3 **Cost:** **$60,000**

Birch Lake Elementary
Independent School District #624

Analysis

- There are 2 handicapped parking stalls with direct access to building entrance.
- The main entrances have power door operation.
- The building is on one level and is accessible.
- The student and staff toilets in the building do not meet current accessibility codes, including the sink areas.
- The nurse's area has a toilet with a shower that does not meet current accessibility code.
- The kindergarten rooms (2) have toilets that are not accessible.
- The drinking fountains are not accessible per current accessibility codes.

Issues

1 Minor remodel of student gang toilets (4).
Priority: 1 **Cost: $66,900**

2 Major remodel of student gang toilets (2).
Priority: 1 **Cost: $334,300**

3 Major remodel of private toilets (5).
Priority: 2 **Cost: $292,500**

4 Replace drinking fountains with accessible type and add wing walls.
Priority: 2 **Cost: $20,300**

Birch Lake Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1966. A gymnasium addition was executed in 1994. A Multi-purpose and special education addition were built in 2007. A renovation project in 2010 replaced air handling systems in the 1966 building on the interior of the circle. A renovation project in 2009 updated the classroom and adjacent spaces on the exterior of the circle.

- The building is heated by a steam plant installed in the original 1966 building construction. Each of two boilers are 3,063 MBH Kawanee fire tube boilers capable of burning natural gas. The original fuel oil tanks serving these boilers has been removed. Both boilers are necessary to run during peak heating needs about 10% of the time.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- Classrooms around the perimeter of the building are heated, cooled, and ventilated by vertical style unit ventilators (VUV) installed in the 2009 renovation project. Each unit ventilator has a direct expansion (DX) cooling coil with the condensing unit located on the roof directly above. Steam and condensate return are routed in a tunnel below. Air is distributed overhead through diffusers in the lay-in ceiling.

- The main office area is heated, ventilated and cooled by VUV. The unit ventilators are loud and provide poor temperature zone control.

- The media center and adjacent spaces were converted to variable air volume (VAV) in 1994. The renovation project in 2010 replaced the main air handling system and provided direct digital controls though pneumatic controls remain on associated VAV boxes. The unit has a steam heating coil and DX cooling coil. The condensing unit is on the adjacent roof.

- The cafeteria, lounge, and music room were converted to VAV in 1994. The renovation project in 2010 replaced the main air handling system and provided direct digital controls though pneumatic controls remain on associated VAV boxes. The unit has a steam heating coil and DX cooling coil. The condensing unit is on the adjacent roof.

Birch Lake Elementary
Independent School District #624

Analysis
Heating and Ventilation

- The remaining interior areas, including the kitchen and adjacent classrooms, were converted to VAV in 1994. The renovation project in 2010 replaced the main air handling system and provided direct digital controls though pneumatic controls remain on associated VAV boxes. The unit has a steam heating coil and DX cooling coil. The condensing unit is on the adjacent roof.

- The kitchen is also served by a single zone air handling system. The renovation project in 2010 replaced the main air handling system and provided direct digital controls. The unit has a steam heating coil and DX cooling coil. The condensing unit is on the adjacent roof.

- The gymnasium constructed in 1994 is ventilated and heated by a central air handling system located on the adjacent roof. The unit is constant volume, has a steam heating coil, and near the end of its useful life. The gymnasium is not cooled. The gymnasium does not have de-stratification fans.

- The 2007 addition is served by a rooftop constant volume air handling system with steam heating coils above the ceiling. The unit has DX cooling. The area has poor temperature zone control, especially when the boiler plant is off in the summer. There is no perimeter radiation in the area and the perimeter rooms get cold complaints in the winter.

- The kitchen has a Type II exhaust hood. There is not a dedicated make-up air unit. Makeup air is transferred from the adjacent cafeteria area.

- Exhaust fans were replaced in the 2010 project and are in good condition.

- There have been on-going maintenance issues with cotton wood seeds clogging the condensing units on the roof. The coils had to be cleaned 4 times this last spring.

- Corridors, storage rooms, and interior spaces in the main office do not have a direct source of ventilation.

Temperature Control

- The control system installed in the 2009 and 2010 renovation projects is as manufactured by Allerton. The District has remote access to the systems through a webbased front-end system.

Birch Lake Elementary
Independent School District #624

Analysis

Temperature Control

- Pneumatic controls remain on many systems throughout the building including:
  - Fire smoke dampers
  - Steam heating terminals including cabinet unit heaters, convectors, and fin tube radiation.
  - Variable air volume boxes installed in 1994 typically in the interior of the circle.
  - Relief hood damper controls in the gymnasium.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system installed in the original building construction is galvanized piping and is near the end of its useful life.

- A large hot water storage tank with a steam tube bundle provide hot water in the winter. An atmospheric gas fired mater heater circulates through the storage tank for summer use. The summer water heater has an induced draft fan to maintain draft through the water heater. The hot water heating system is near the end of its useful life.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4” water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

- Classrooms typically have a sink and bubbler which were replaced in the 2009 and 2010 projects. Sinks and bubblers are in good condition.

- The classroom sink in the music room is original to the 1966 construction and has cold water only.

- Wash fountains installed at each of two toilet room groups in the 1966 building were replaced in 1994 and do not comply with ADA standards. These units also have had on-going issues with the infrared actuators.

- The urinals in each of two main toilet room groups in the 1966 building were installed with timed flush. The timed flush control has since been retrofit with an occupancy sensor.

Birch Lake Elementary
Independent School District #624

Issues

1 Replace the steam plant with a new high efficiency hot water plant. Distribute hot water throughout the building with a variable primary distribution system. Replace all steam heating coils with new hot water coils including each unit ventilator and central air handling system. Replace all steam cabinet unit heaters, convectors and perimeter finned tube radiation.

Priority: 2 **Cost: $3,710,000**

2 Replace the variable air volume (VAV) boxes serving the interior of the 1966 building with new VAV boxes with hot water reheat and direct digital controls.

Priority: 2 **Cost: $280,000**

3 Retrofit the air handling system serving the 2007 addition with variable air volume boxes and hot water reheat to provide improved temperature zone control. Provide perimeter finned tube radiation along the exterior wall.

Priority: 2 **Cost: $790,000**

4 Retrofit all roof mounted condensing units with cottonwood screens.

Priority: N **Cost: $60,000**

5 Replace the two vertical style unit ventilators in the office area with a new roof mounted variable air volume (VAV) DX unit with VAV boxes with hot water reheats for improved temperature zone control. Provide additional space for option of future installation of chilled water cooling coil.

Priority: 2 **Cost: $365,000**

6 Replace the air handling unit serving the gymnasium with a new constant air volume unit. The new unit will be connected to the new hot water system and have space for future installation of cooling coil to be connected condenser for DX cooling. All new controls will be direct digital as an extension of the existing direct digital control system.

Priority: 3 **Cost: $340,000**

7 Install cooling coil for new air handling unit serving the gymnasium and install condenser for DX cooling for connection.

Priority: 4 **Cost: $70,000**

Birch Lake Elementary
Independent School District #624

Issues

8 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 2 **Cost: $85,000**

9 Provide de-stratification fans in the gymnasium and connect to the building automation system for time of day control.

Priority: 3 **Cost: $20,000**

10 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Allerton system. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $25,000**

11 Replace galvanized domestic hot and cold water distribution systems with new copper piping.

Priority: 1 **Cost: $1,060,000**

12 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

13 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

Birch Lake Elementary
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 208-volt 3-phase 1200A Siemens SB-1 switchboard. The main switchboard was replaced in 1994. A portion of the bus melted in 2015 but damaged components were replaced and the equipment is reportedly in good condition. It has limited minimal spares and the capacity. Any significant additions or HVAC upgrades to the building will likely necessitate a new service with this equipment being backfed or eliminated.

- The building is enrolled in a utility curtailment program.

- Roughly 2/3rds of the distribution equipment is original to the building (1966, Walker ITE NPA), is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Classrooms contain 10-year old fluorescent lensed fixtures with occupancy sensor control. If ceilings are replaced then it is recommended fixtures are simultaneously upgraded, otherwise maintain in place.

- All other areas typically consist of aged fluorescent fixtures with no sensors. Recommend replacing with LED fixtures and robust controls.

- Exit signs and interior egress lighting are battery-powered, in poor condition, and should be replaced.

- The facility does not have exterior egress lighting. Battery egress should be provided, or existing LED fixtures should be added to a new generator.

- Exterior wall packs and walkway poles have been recently upgraded to LED.

Birch Lake Elementary
Independent School District #624

Analysis

Lighting

- Parking lot pole fixtures and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures. Additional poles should be added in the poorly-lit back lot.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system is in poor condition and should be replaced – sound is frequently unintelligible or intermittent in many areas.
- Fire alarm panel has recently been replaced with a Notifier NFW2-100 addressable panel. Existing wiring and devices may need upgraded in some locations.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost: $288,700**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $139,800**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $30,800**

4 Replace aged fluorescent lighting with LED and controls.
Priority: 2 **Cost: $57,000**

5 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $19,000**

6 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $106,700**

7 Provide wireless clock system.
Priority: 3 **Cost: $18,000**

Birch Lake Elementary
Independent School District #624

Issues

8 Provide new paging system.
Priority: 1 **Cost:** **$59,200**

9 Replace fire alarm devices and wiring.
Priority: 2 **Cost:** **$64,800**

Birch Lake Elementary

SITE

1	Provide (1) additional ADA parking stall (signage, striping, access aisle)	Priority: 2	**$1,400**
2	Resurface asphalt play area.	Priority: N	**$124,100**
3	Replace splashblocks.	Priority: N	**$3,400**
4	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Repaint storage building on southwest part of site.	Priority: N	**$1,400**
2	Replace all windows.	Priority: 1	**$162,300**
3	Repaint numbers at doors H-K.	Priority: N	**$2,100**
4	Tuckpoint original building.	Priority: 3	**$451,300**
5	Replace roof area G (installed 2002) per District roof report.	Priority: 4	**$208,500**

INTERIOR

1	Replace resilient flooring in gymnasium and install moisture mitigation.	Priority: 3	**$97,300**
2	Replace outer ring wood doors.	Priority: 3	**$50,600**
3	Repaint all hollow metal frames.	Priority: 3	**$20,250**
4	Replace ACT tile in inner circle.	Priority: 4	**$61,100**
5	Replace casework in the inner ring.	Priority: 3	**$332,700**
6	Remove existing chalkboards.	Priority: N	**$125**
7	Provide security hardware at all classroom doors.	Priority: 3	**$66,800**
8	Provide (1) new double stack convection oven.	Priority: 3	**$60,200**
9	Rebuild walk-in freezer and cooler.	Priority: 2	**$165,600**
10	Provide (2) 4-well electric hot food serving counter and (1) 6-well cold food serving counter.	Priority: 3	**$60,000**

ACCESSIBILITY

1	Minor remodel of student gang toilets (4).	Priority: 1	**$66,900**
2	Major remodel of student gang toilets (2).	Priority: 1	**$334,300**
3	Major remodel of private toilets (5).	Priority: 2	**$292,500**
4	Replace drinking fountains with accessible type and add wing walls.	Priority: 2	**$20,300**

MECHANICAL SYSTEMS

1	Replace the steam plant with a new high efficiency hot water plant. Distribute hot water throughout	Priority: 2	**$3,710,000**
2	Replace the variable air volume (VAV) boxes serving the interior of the 1966 building with new VAV	Priority: 2	**$280,000**
3	Retrofit the air handling system serving the 2007 addition with variable air volume boxes and hot water	Priority: 2	**$790,000**
4	Retrofit all roof mounted condensing units with cottonwood screens.	Priority: N	**$60,000**
5	Replace the two vertical style unit ventilators in the office area with a new roof mounted variable air	Priority: 2	**$365,000**
6	Replace the air handling unit serving the gymnasium with a new constant air volume unit. The new	Priority: 3	**$340,000**
7	Install cooling coil for new air handling unit serving the gymnasium and install condenser for DX	Priority: 4	**$70,000**
8	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$85,000**
9	Provide de-stratification fans in the gymnasium and connect to the building automation system for time	Priority: 3	**$20,000**

10	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$25,000**
11	Replace galvanized domestic hot and cold water distribution systems with new copper piping.	Priority: 1	**$1,060,000**
12	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
13	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$288,700**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$139,800**
3	Provide additional power outlets in classrooms.	Priority: 3	**$30,800**
4	Replace aged fluorescent lighting with LED and controls.	Priority: 2	**$57,000**
5	Provide exterior egress lighting at each exit.	Priority: 1	**$19,000**
6	Replace metal halide exterior lighting with LED.	Priority: 2	**$106,700**
7	Provide wireless clock system.	Priority: 3	**$18,000**
8	Provide new paging system.	Priority: 1	**$59,200**
9	Replace fire alarm devices and wiring.	Priority: 2	**$64,800**

Birch Lake Elementary
Independent School District #624

SITE	**$204,100.00**
EXTERIOR	**$825,600.00**
INTERIOR	**$914,675.00**
ACCESSIBILITY	**$714,000.00**
MECHANICAL SYSTEMS	**$6,885,000.00**
ELECTRICAL SYSTEMS	**$784,000.00**
Total Cost	**$10,327,375.00**

Birch Lake Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$1,400	$0	$75,200	$127,500	**$204,100**
EXTERIOR	$162,300	$0	$451,300	$208,500	$3,500	**$825,600**
INTERIOR	$0	$165,600	$687,850	$61,100	$125	**$914,675**
ACCESSIBILITY	$401,200	$312,800	$0	$0	$0	**$714,000**
MECHANICAL SYSTEMS	$1,070,000	$5,255,000	$430,000	$70,000	$60,000	**$6,885,000**
ELECTRICAL SYSTEMS	$78,200	$517,200	$188,600	$0	$0	**$784,000**
Totals:	**$1,711,700**	**$6,252,000**	**$1,757,750**	**$414,800**	**$191,125**	**$10,327,375**

Hugo Elementary
Independent School District #624

Address: 14895 Francesco Avenue
Hugo, Minnesota 55038

Contact:

Phone:

Year(s) Built: 1960, 1967, 1987, 2006

Gross Area: 60,980 S.F.

Site Area: 9.7 acres

Parking: 96

Hugo Elementary
Independent School District #624

Analysis

- The site are totals 9.7 acres. It is bordered to the north, west and south by public streets and to the East by a church.
- The main entrance and parent drop off are in the east parking lot (59 stalls, 4 accessible) asphalt is in fair condition.
- The bus loop and staff parking are in the west parking lot (33 std stalls, 15 bus stalls) asphalt is in fair condition.
- Baseball field is in fair condition, with minor turf encroachment into the diamond.
- Ice rink is in fair condition.
- Storage shed is in fair condition.
- There is chipping and spalling at several joints in the concrete sidewalk to the main entry.
- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,200**

2 Repair / replace concrete sidewalk at main entry.
Priority: N **Cost:** **$45,500**

Hugo Elementary
Independent School District #624

Analysis

- The original building was built in 1960 and has 3 additions: 1967 south classroom wing, 1987 Gymnasium and East classroom wing, and 2006 Media Center and Northeast Classroom Wing.

- The Structure in the 1960, 67 and 87 buildings is column and beam joist. The Gymnasium is Precast concrete walls with steel web joist roof structure. 2006 Addition roof structure is unknown (wood trusses?)

- Brick is cracking and spalling on north face of gymnasium, west face of kitchen.

- Brick on entire building except 2006 addition should be considered for tuckpointing, especially the north face.

- The exterior soffit has peeling paint at the northeast corner of the 2006 classroom addition.

- The louver at the boiler room has peeling paint and rust.

- All windows except for 2006 addition are 31 years old (1987) and due for replacement.

- Roof to be replaced.

Issues

1 Tuckpoint all brick walls built before 2006, and provide an allowance for brick replacement.
Priority: 3 **Cost: $473,000**

2 Repaint exterior soffit where paint is peeling (northeast corner).
Priority: 4 **Cost: $2,100**

3 Repaint boiler room exterior louver.
Priority: 4 **Cost: $1,200**

Hugo Elementary
Independent School District #624

Issues

4 Replace all windows installed before 2006.
Priority: 1 **Cost:** **$115,900**

5 Replace roof areas A, B, C, D, E, F (installed 1998) per District roof report.
Priority: 3 **Cost:** **$558,200**

6 Replace shingle roofs (installed 2008) per District roof report.
Priority: N **Cost:** **$761,000**

Hugo Elementary
Independent School District #624

Analysis

- Carpet in 1097 Reception is fraying at seams
- Media Center carpet has minor ripples in some areas.
- Approx. 50% of door frames need repainting
- Kitchen needs new equipment.

Issues

1 Replace carpet in Reception (1097)
Priority: 3 **Cost: $7,500**

2 Repair carpet in media center where rippling.
Priority: 3 **Cost: $33,000**

3 Provide an allowance for repainting 50% of HM door frames.
Priority: 3 **Cost: $4,900**

4 Provide (1) new double stack convection oven.
Priority: 3 **Cost: $36,000**

5 Provide new security hardware at all classroom doors.
Priority: 4 **Cost: $41,800**

Hugo Elementary
Independent School District #624

Analysis

- There are 4 handicap stalls in the East parking lot with direct access to the main entrance.
- There is no accessible route to the baseball diamond.
- Coat hooks and cubbies in hallways protrude into the accessible path of travel.
- Shower head on wall in nurse toilet room does not meet accessibility standards.
- Drinking fountain outside of gymnasium protrudes into the accessible path of travel.
- Kindergarten Classroom 1204 has a non-accessible toilet room.
- Tiered seating in reading room in Media Center is not accessible.
- Light switch in 1234 ELL room is mounted too high for accessibility.

Issues

1 Install step at protruding coat racks.
Priority: 2 **Cost:** **$34,100**

2 Provide shower seat at nurse shower/toilet room.
Priority: 2 **Cost:** **$80**

3 Provide wing walls at drinking fountain near gym.
Priority: 2 **Cost:** **$1,400**

4 Major remodel of private toilet room (1).
Priority: 1 **Cost:** **$58,500**

5 Modify light switch in room 1234 to be within ADA reach range requirements.
Priority: 1 **Cost:** **$500**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Hugo Elementary
Independent School District #624

Hugo Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1960. An addition in 1967 attached classrooms to the south of the building. In 1987 a classroom addition was attached to the east of the building as well as a gymnasium to the north. In a 2006 project a media center was added to the southeast and a major classroom expansion to the east. The 2006 project included mechanical system upgrades in the 1960 and 1967 constructed areas of the building but excluded the areas constructed in 1987.

- The building is heated by two gas fired 1,853 MBH Kewanee fire tube steam boilers. The boilers were installed in the original 1960 building construction. The boiler burners have been replaced and are in good condition. The boiler feed pump has been recently replaced and is in good condition.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- A small steam to hot water convertor was installed in the 1987 addition project to serve perimeter fin tube radiation. Two redundant 1 HP in-line pumps circulates hot water. The convertor and pumps are located in attic space adjacent to the gym.

- A steam to hot water convertor was added in the 2006 additions project to serve hot water fined tube radiation and variable air volume (VAV) reheats. Two redundant 10 HP base mounted pumps circulate hot water. The convertor and pumps are located in attic space adjacent to the gym. The convertor does not provide hot water to air handling units installed in the 2006 project as these are served directly with steam.

- A small sealed combustion wall mounted boiler provides hot for the 2006 hot water heating loop when the steam plant is off. A primary circulating loop is pumped by a single 5 HP in-line pump. The boiler is in good condition.

- The building is cooled by direct expansion (DX) condensing units installed in the 2006 project. Areas not cooled include the gymnasium, cafeteria, and classrooms constructed in 1987.

Hugo Elementary
Independent School District #624

Analysis
Heating and Ventilation

- A constant volume single zone air-handling unit serves the 1987 classroom addition (6 classrooms). The unit has a steam coil for heating and does not provide mechanical cooling. The unit is located in attic space adjacent to the gymnasium. A single supply grille typically provides supply air to each classroom and circulation is extremely poor. Perimeter hot water finned tube radiation provides heating zone control. Staff noted frequent temperature control and ventilation complaints.

- A single zone constant volume air-handling unit serves the 1987 gymnasium addition. The unit has a steam coil for heating and does not provide mechanical cooling. The unit is located in attic space adjacent to the gymnasium. The gymnasium does not have de-stratification fans.

- A single zone constant volume air-handling unit installed in the original 1960 building construction serves the cafeteria. The unit has a steam coil for heating and does not provide mechanical cooling. The unit is located in the cafeteria and is difficult to access for maintenance. The unit was noted to be very loud. The cafeteria does not have de-stratification fans.

- The 1960, 1967, and 2006 constructed classrooms are served by new ventilation systems installed in the 2006 renovation project. Air-handling systems AHU-2 and AHU-3 are dual duct systems with dedicated outside air units to provide ventilation air to the dual duct boxes. Air handling units 4, 5, and 6 are single zone VAV system with hot water reheat coils for temperature zone control. The air-handling units have steam coils for heating and DX coils for cooing. The air handling systems are located in attic space above the classrooms.

- The data room is cooled by a Data-Aire system installed in 2006 but does not have a back-up cooling system. The system is in good condition.

- Maintenance staff noted the hot water piping installed in the 2006 project has mechanical couplings that have had multiple issues with leaking.

- The kitchen refrigerator and cooler compressors are located on the roof.

- There is a Type I grease hood in the kitchen in good condition.

- The custodial area and adjacent storage rooms are exhausted only and do not have a direct source of ventilation air.

Hugo Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The building exhaust systems are typically installed as in-line fans located in attic space and are in good condition.

Temperature Control

- The 2017 mechanical project was installed with direct digital controls as manufactured by Johnson Controls. The District has remote access to the systems through a webbased front-end system.

- Pneumatic controls remain on many systems through out the building including:
  - Fire smoke dampers.
  - Cafeteria air handling unit.
  - Steam heating terminals including cabinet unit heaters, convectors, and fin tube radiation. Many of these are controlled by self-contained valves.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system installed in the 1960 and 1967 building constructions is galvanized piping and near the end of its useful life.

- The original domestic water storage tank and steam tube bundle were replaced in approximately 2012. Hot water is provided year around by an atmospheric 199 MBH hot water boiler. The water heater and storage tank are in good condition.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4” water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

- Classrooms typically have a 2006 replaced sink consisting of hot and cold water as well as a bubbler.

Issues

Hugo Elementary
Independent School District #624

Issues

1 Convert building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace existing steam coils in air handling units with new hot water coils. Replace all remaining steam unit heaters with new hot water heaters.

Priority: 2 **Cost: $3,480,000**

2 Replace air handling unit serving cafeteria with a new constant air volume unit. The new unit will be connected to the new hot water system and have space for future installation of cooling coil. Consider utilizing the new cafeteria unit to provide pre-conditioned make-up air for the kitchen hood exhaust systems. All new controls will be direct digital as an extension of the existing Johnson control system.

Priority: 2 **Cost: $340,000**

3 Install cooling coil for new air handling unit serving the cafeteria and provide a roof mounted condensing unit.

Priority: 3 **Cost: $70,000**

4 Replace the air handling unit serving the 1987 gymnasium addition with a new constant air volume unit. The new unit will be connected to the new hot water system and have space for future installation of cooling coil. All new controls will be direct digital as an extension of the existing Johnson control system.

Priority: 2 **Cost: $340,000**

5 Install cooling coil for new air handling unit serving the gymnasium and provide a roof mounted condensing unit for cooling.

Priority: 4 **Cost: $70,000**

6 Provide with de-stratification fans in the gymnasium and cafeteria to improve heating efficiency.

Priority: 2 **Cost: $20,000**

7 Provide a variable speed air-handling unit to serve the 1987 classrooms (6 total). Provide variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the new hot water system. Provide a roof mounted condensing unit for cooling. All new controls will be direct digital as an extension of the existing Johnson control system.

Priority: 1 **Cost: $940,000**

Hugo Elementary
Independent School District #624

Issues

8 Replace all existing mechanical couplings installed on the hot water heating system.
Priority: 2 **Cost: $210,000**

9 Provide a spilt AC system in the data room to provide redundant cooling.
Priority: 3 **Cost: $25,000**

10 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Johnson control system. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.
Priority: 2 **Cost: $10,000**

11 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.
Priority: 2 **Cost: $110,000**

12 Retrofit all of the existing condensing units with cottonwood screens (approximately 8 total).
Priority: N **Cost: $25,000**

13 Replace galvanized domestic hot and cold water distribution systems with new copper piping.
Priority: 2 **Cost: $375,000**

14 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.
Priority: 1 **Cost: $10,000**

Hugo Elementary
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 208-volt 3-phase GE AV-Line switchboard with 800A main bolted pressure switch and QMR fusible switch distribution. The main switchboard is original to the building (~1960). It is at or nearing the end of its expected useful life and should be replaced soon. Any significant additions or HVAC upgrades to the building will likely necessitate a service replacement.

- The building is enrolled in a utility curtailment program.

- Service equipment does not include surge protection and should be added.

- Roughly 75% of the distribution equipment is original to the building (1960), is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Interior lighting consists of fluorescent fixtures with occupancy sensor control, in good condition. The 1989 addition does not include sensors. If ceilings are replaced then it is recommended fixtures are simultaneously upgraded, otherwise maintain in place.

- Gymnasium includes fluorescent fixtures and should be upgraded to LED. Recommend replacing with LED fixtures and sensors.

- Exit signs and interior egress lighting are battery-powered and should be replaced as part of a generator upgrade.

- The facility does not have exterior egress lighting. Egress fixtures should be provided.

Hugo Elementary
Independent School District #624

Analysis
Lighting

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system is in good working condition.
- Fire alarm system is a Siemens FireFinder (2005) in good condition. Coverage is adequate.

Issues

1 New service for HVAC upgrade?
Priority: 2 **Cost: $76,000**

2 Replace aging distribution equipment.
Priority: 2 **Cost: $303,900**

3 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $140,000**

4 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $27,300**

5 Replace gym lighting with LED.
Priority: 3 **Cost: $76,000**

6 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $19,000**

7 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $102,600**

Hugo Elementary
Independent School District #624

Issues

8 Provide wireless clock system.
Priority: 3 **Cost:** **$15,500**

Hugo Elementary

SITE

1	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**
2	Repair / replace concrete sidewalk at main entry.	Priority: N	**$45,500**

EXTERIOR

1	Tuckpoint all brick walls built before 2006, and provide an allowance for brick replacement.	Priority: 3	**$473,000**
2	Repaint exterior soffit where paint is peeling (northeast corner).	Priority: 4	**$2,100**
3	Repaint boiler room exterior louver.	Priority: 4	**$1,200**
4	Replace all windows installed before 2006.	Priority: 1	**$115,900**
5	Replace roof areas A, B, C, D, E, F (installed 1998) per District roof report.	Priority: 3	**$558,200**
6	Replace shingle roofs (installed 2008) per District roof report.	Priority: N	**$761,000**

INTERIOR

1	Replace carpet in Reception (1097)	Priority: 3	**$7,500**
2	Repair carpet in media center where rippling.	Priority: 3	**$33,000**
3	Provide an allowance for repainting 50% of HM door frames.	Priority: 3	**$4,900**
4	Provide (1) new double stack convection oven.	Priority: 3	**$36,000**
5	Provide new security hardware at all classroom doors.	Priority: 4	**$41,800**

ACCESSIBILITY

1	Install step at protruding coat racks.	Priority: 2	**$34,100**
2	Provide shower seat at nurse shower/toilet room.	Priority: 2	**$80**
3	Provide wing walls at drinking fountain near gym.	Priority: 2	**$1,400**
4	Major remodel of private toilet room (1).	Priority: 1	**$58,500**
5	Modify light switch in room 1234 to be within ADA reach range requirements.	Priority: 1	**$500**

MECHANICAL SYSTEMS

1	Convert building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 2	**$3,480,000**
2	Replace air handling unit serving cafeteria with a new constant air volume unit. The new unit will be	Priority: 2	**$340,000**
3	Install cooling coil for new air handling unit serving the cafeteria and provide a roof mounted	Priority: 3	**$70,000**
4	Replace the air handling unit serving the 1987 gymnasium addition with a new constant air volume	Priority: 2	**$340,000**
5	Install cooling coil for new air handling unit serving the gymnasium and provide a roof mounted	Priority: 4	**$70,000**
6	Provide with de-stratification fans in the gymnasium and cafeteria to improve heating efficiency.	Priority: 2	**$20,000**
7	Provide a variable speed air-handling unit to serve the 1987 classrooms (6 total). Provide variable air	Priority: 1	**$940,000**
8	Replace all existing mechanical couplings installed on the hot water heating system.	Priority: 2	**$210,000**
9	Provide a spilt AC system in the data room to provide redundant cooling.	Priority: 3	**$25,000**
10	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$10,000**
11	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$110,000**
12	Retrofit all of the existing condensing units with cottonwood screens (approximately 8 total).	Priority: N	**$25,000**
13	Replace galvanized domestic hot and cold water distribution systems with new copper piping.	Priority: 2	**$375,000**
14	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	New service for HVAC upgrade?	Priority: 2	**$76,000**
2	Replace aging distribution equipment.	Priority: 2	**$303,900**
3	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$140,000**
4	Provide additional power outlets in classrooms.	Priority: 3	**$27,300**
5	Replace gym lighting with LED.	Priority: 3	**$76,000**
6	Provide exterior egress lighting at each exit.	Priority: 1	**$19,000**
7	Replace metal halide exterior lighting with LED.	Priority: 2	**$102,600**
8	Provide wireless clock system.	Priority: 3	**$15,500**

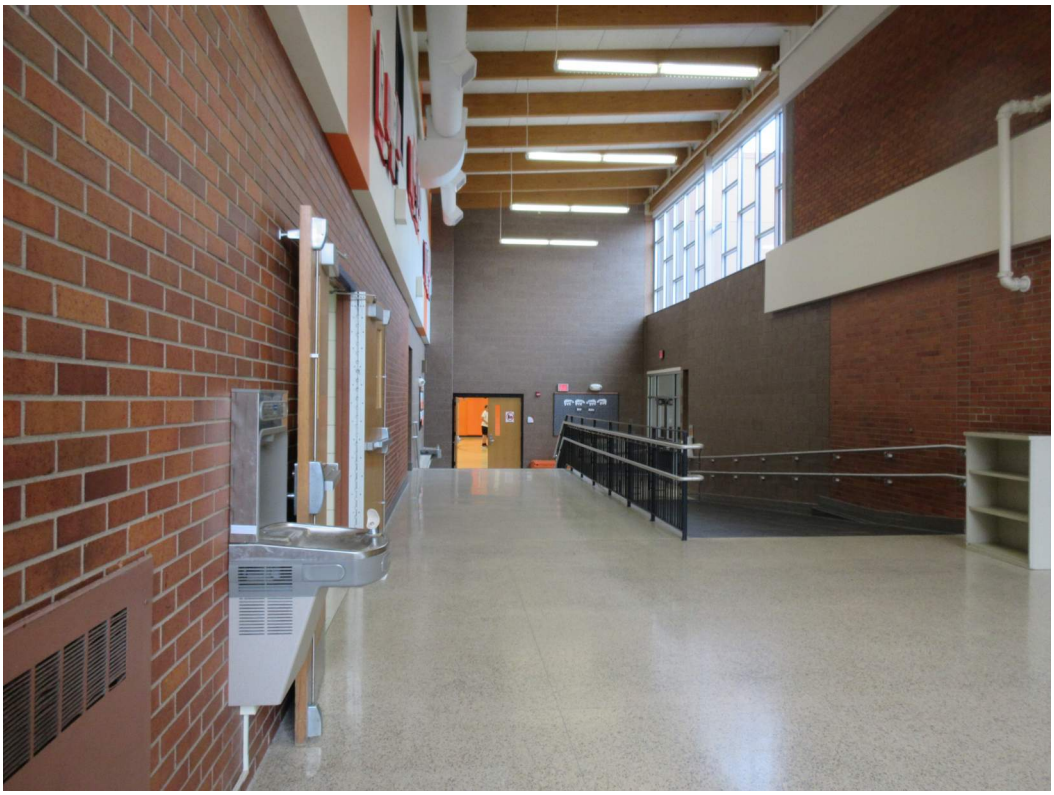
Hugo Elementary
Independent School District #624

SITE	**$120,700.00**
EXTERIOR	**$1,911,400.00**
INTERIOR	**$123,200.00**
ACCESSIBILITY	**$94,580.00**
MECHANICAL SYSTEMS	**$6,025,000.00**
ELECTRICAL SYSTEMS	**$760,300.00**
Total Cost	**$9,035,180.00**

Hugo Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$0	$75,200	$45,500	**$120,700**
EXTERIOR	$115,900	$0	$1,031,200	$3,300	$761,000	**$1,911,400**
INTERIOR	$0	$0	$81,400	$41,800	$0	**$123,200**
ACCESSIBILITY	$59,000	$35,580	$0	$0	$0	**$94,580**
MECHANICAL SYSTEMS	$950,000	$4,885,000	$95,000	$70,000	$25,000	**$6,025,000**
ELECTRICAL SYSTEMS	$19,000	$482,500	$258,800	$0	$0	**$760,300**
Totals:	**$1,143,900**	**$5,403,080**	**$1,466,400**	**$190,300**	**$831,500**	**$9,035,180**

Lakeaires Elementary
Independent School District #624



Address:	3963 Van Dyke Street White Bear Lake, Minnesota 55110	**Year(s) Built:**	1960, 1967, 1994, 2015
		Gross Area:	58,185 S.F.
Contact:		**Site Area:**	8.5 acres
		Parking:	69
Phone:			

Lakeaires Elementary
Independent School District #624

Analysis

- The site area totals 8 1/2 acres and is bordered to the North by private residences and Dotte Drive, the east by Hazel Street N, the south by private residences and Van Dyke Street, and the west by White Bear Avenue.
- Loading dock concrete is cracking and spalling.
- Stair at northwest side near mechanical equipment is pulling away from the wall and requires a handrail.
- There is a louver below grade that causes issues with water.
- Concrete at the sidewalk on east side of site is in poor condition.
- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Patch concrete at loading dock.
Priority: 3 **Cost:** **$13,400**

2 Add handrail to stair on northwest part of site.
Priority: 1 **Cost:** **$12,600**

3 Fix stair pulling away from wall.
Priority: 3 **Cost:** **$12,100**

4 Fix drainage issues at below grade louver
Priority: 2 **Cost:** **$33,400**

5 Replace sidewalk east of building.
Priority: N **Cost:** **$108,600**

Lakeaires Elementary
Independent School District #624

Issues

6 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,200**

Lakeaires Elementary
Independent School District #624

Analysis

- Concrete structure is exposed to the exterior, this does not meet current energy code.
- Brick requires tuckpointing in some areas.
- Windows not part fo the 2015 addition. Installed in 1992 and should be replaced.
- Roof replacement.

Issues

1 Tuckpointing at 1960 and 1967 portions of building.
Priority: 3 **Cost:** **$794,900**

2 Replace (35) 1992 windows.
Priority: 1 **Cost:** **$251,500**

3 Replace roof areas A, B, C, D, E, F (installed 1996) per District roof report.
Priority: 3 **Cost:** **$917,100**

Lakeaires Elementary
Independent School District #624

Analysis

- Carpet in all classrooms is in the process of being replaced.
- Door to exit from receiving area has a bar to lock it that does not meet current building code for egress.
- Doors and frames in multi-purpose gym and kitchen area are in poor condition.
- Wood finish has chipped at operable wall in multi-purpose gym.
- Handrails and guardrails at stairs do not meet current accessibility code.
- The casework is original and should be replaced in all rooms except rooms 100 and 212.
- Kitchen needs new equipment.

Issues

1 Replace locking bar at receiving door with locking hardware and panic bars.
Priority: 2 **Cost:** **$2,200**

2 Replace wood doors in kitchen/multi-purpose gym area.
Priority: 3 **Cost:** **$29,900**

3 Repaint hollow metal frames in kitchen/gym area.
Priority: 4 **Cost:** **$2,800**

4 Re-stain and seal wood finish at operable wall in multi-purpose gym.
Priority: 4 **Cost:** **$100**

5 Provide new security hardware at all classroom doors.
Priority: 4 **Cost:** **$61,800**

Lakeaires Elementary
Independent School District #624

Issues

6 Provide (1) new double stack convection oven and (1) combie oven (and stand)
Priority: 3 **Cost: $124,000**

7 Provide larger walk-in freezer.
Priority: 2 **Cost: $102,000**

8 Replace the kitchen exhaust hood with a new three sided exhaust hood sized appropriately for the kitchen equipment served. Provide a transfer air path for exhaust hood make-up air. Not including the hood itself.
Priority: 2 **Cost: $30,000**

9 Relocate refrigerator freezer and cooler to the roof.
Priority: N **Cost: $40,000**

10 Replace the existing dishwasher with a new dishwasher with integral booster heater.
Priority: 2 **Cost: $120,000**

Lakeaires Elementary
Independent School District #624

Analysis

- Drinking fountains near both gymnasiums and at east part of building near the elevator require wing walls per current accessibility code.

- The staff and student bathrooms, including kindergarten rooms, in the east wing of the building do not meet current accessibility code. The bathrooms in the kitchen and custodian areas do not meet current accessibility code. The bathroom and shower in the nurse's area does not meet current accessibility code.

Issues

1 Install wing walls at (3) drinking fountains.
Priority: 2 **Cost: $4,000**

2 Major remodel of student gang toilets (4).
Priority: 3 **Cost: $668,600**

3 Major remodel of private toilets (7).
Priority: 1 **Cost: $409,500**

4 Replace handrails and guardrails at both stairs.
Priority: 1 **Cost: $28,100**

Lakeaires Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1960. An addition in 1967 attached four classrooms on the west end of the building. Major additions in 2015 included a gymnasium, music room, and front office. Fire protection, smoke dampers, and corridor relief were added, classroom sinks were replaced, and an elevator was added on the west end of the building in 1994. Mechanical systems in the classrooms were upgraded in 2008.

- The building is heated by two gas fired 3,089 MBH Cleaver Brooks fire tube steam boilers. The boilers were installed in the original 1960 building construction. Steam is distributed throughout the building in the crawl space below the building. The boiler burners were replaced in 1991 and 2004. The boiler feed pump has been recently replaced and is in good condition.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- A steam to hot water convertor was installed in the 2015 additions project to provide hot water to areas added and renovated. The convertor is located adjacent to the boiler room. Hot water is circulated by two in-line constant volume circulating pumps.

- The building is cooled by a 110 ton air cooled chiller with four stages of cooling. The chiller was installed in 2008 and is located on grade to the north of the building in a chiller enclosure. A constant volume 5 HP pump circulates a primary pump through the chiller. A 10 HP variable speed pump circulates chilled water throughout the building.

- The exterior chilled water piping is insulated with fiberglass insulation and wrapped in an aluminum jacket. The jacketing has deteriorated and the fiberglass insulation is getting wet.

- Classrooms are typically heated, cooled, and ventilated by vertical style unit ventilators (VUV) installed in the 2008 renovation. The unit ventilators have steam heating coils for heating and chilled water coils for cooling. Piping to the 1st floor units is routed in the crawl space below. Piping to the 2nd floor units is routed through soffits on the 1st floor. Air is typically distributed through sidewall grilles located in a soffit along the outside perimeter of the classrooms. Classrooms do not have perimeter finned tube radiation.

Lakeaires Elementary
Independent School District #624

Analysis
Heating and Ventilation

- The cafeteria is served by a single zone constant volume air handling unit installed in the original 1960 building construction. The unit has a steam coil for heating and does not provide cooling. The cafeteria does not have de-stratification fans.

- The front office in heated, cooled, and ventilated by a variable air volume (VAV) unit located in the 2015 addition that serves VAV boxes with hot water reheat coils. The unit has hot water for heating and a direct expansion (DX) coil for cooling. The condensing unit was installed on the roof above. The offices typically have perimeter hot water finned tube radiation.

- The music area is heated, cooled and ventilated by a constant volume air handling unit installed in the 2015 addition. The unit has hot water for heating and chilled water for cooling.

- The gymnasium is heated and ventilated by a constant volume air handling unit installed in the 2015 addition. The unit has hot water for heating and does not provide cooling. The gymnasium has de-stratification fans.

- The entry lobby area is heated and ventilated by a constant volume air handling unit installed in the 2015 addition. The unit has hot water for heating and does not provide cooling. The entry lobby area does not have de-stratification fans.

- A through wall PTAC unit provides cooling for the head end room adjacent to the media center. The unit is in poor condition.

- A through wall PTAC unit serves ventilation and cooling to an office constructed in the 1994 addition project. Outside air for ventilation is provided through a manual volume damper integral to the unit.

- The kitchen hood is very old and in poor condition. The hood is an island configuration and oversized for the kitchen equipment it serves. The original kitchen design transferred exhaust hood make-up air from the adjacent cafeteria area. Transfer louvers in the doors were removed in the 1994 project such that there is no longer a transfer air path.

- The custodial area and adjacent storage room are exhausted only and do not have a direct source of ventilation air.

Lakeaires Elementary
Independent School District #624

Analysis
Heating and Ventilation

- Two large roof mounted relief air fans are installed in each of the two stair wells. The relief fans are controlled by variable speed drives to manage the building air pressure. The classrooms typically transfer air into the corridor path of egress through pneumatically controlled fire smoke dampers. The VFDs for one of the relief fans is no longer functional.

- Approximately four small power roof ventilators appear to be original to the building and are in poor condition. The ventilators are reported to be replaced as needed.

- The kitchen cooler and freezer compressors are located in a closet adjacent to the kitchen. The space reportedly overheats.

- The dishwasher and associated booster heater are at the end of their useful life and in need of replacement.

Temperature Control

- The 2015 mechanical project was installed with direct digital controls as manufactured by Alerton. The District has remote access to the systems through a web-based front-end system.

- Pneumatic controls remain on many systems throughout the building including:
  - Fire smoke dampers.
  - Cafeteria air handling unit.
  - Steam heating terminals including cabinet unit heaters, convectors, and fin tube radiation.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system installed in the original building construction is galvanized piping and near the end of its useful life.

- The original domestic water storage tank and steam tube bundle were replaced in approximately 1990. Hot water is provide year around by an atmospheric Raypak boiler. The water heater is near the end of its useful life.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

Lakeaires Elementary
Independent School District #624

Analysis
Plumbing

- A 4" water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

- Classrooms typically have a 1994 replaced sink consisting of cold water and a bubbler.

- Urinals in each of two main toilet room groups in the 1960 building were installed with timed flush. The timed flush control has since been retrofit with an occupancy sensor.

- The wash fountains installed at each of two toilet room groups in the 1960 building were replaced in 1994. These wash fountains do not comply with current ADA standards and have had on-going issues with infrared actuators.

Issues

1 Convert the building from steam to hot water heat. Replace the existing boilers with new gas fired high efficiency condensing boilers. Remove the existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace the existing steam coils in classroom unit ventilators with new hot water coils. Replace all remaining steam unit heaters with new hot water heaters.

Priority: 2 **Cost: $2,870,000**

2 Replace the air handling unit serving the cafeteria with a new constant air volume unit. The new unit will be connected to the existing hot water and have space for future installation of cooling coil. All new controls will be direct digital as an extension of the existing Alerton system.

Priority: 2 **Cost: $340,000**

3 Provide de-stratification fans in the cafeteria and connect to the building automation system for time of day control.

Priority: 2 **Cost: $40,000**

4 Install cooling coil for new air handling unit serving the cafeteria and connect to existing chilled water system.

Priority: 3 **Cost: $70,000**

Lakeaires Elementary
Independent School District #624

Issues

5 Provide a variable speed air handling unit to provide a direct source of ventilation air to the custodial room and adjacent areas. Provide variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the existing hot water and chilled water plant for cooling. All new controls will be direct digital as an extension of the existing Alerton system.

Priority: 2 **Cost: $330,000**

6 Provide cooling to the gymnasium. Retrofit the existing air handling systems with new chilled water coils and connect to the existing chilled water plant. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 4 **Cost: $70,000**

7 Provide cooling to the entry commons area. Retrofit the existing air handling systems with new chilled water coils and connect to the existing chilled water plant. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 4 **Cost: $40,000**

8 Provide de-stratification fans in the entry commons and gymnasium areas. Connect to the building automation system for time of day control.

Priority: 2 **Cost: $45,000**

9 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.

Priority: 1 **Cost: $25,000**

10 Provide a new secondary split AC system to cool head end room and provide redundancy.

Priority: 3 **Cost: $25,000**

11 Replace the existing PTAC unit serving the office area installed in the 1994 addition with a new ventilation system with heating and cooling connected to the central plant.

Priority: 3 **Cost: $55,000**

12 Replace the exterior chilled water pipe insulation with new flexible elastomeric insulation and an aluminum jacket.

Priority: 1 **Cost: $25,000**

Lakeaires Elementary
Independent School District #624

Issues

13 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Allerton system. Replace and upgrade the controls for each of the two building relief fans. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $25,000**

14 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 2 **Cost: $100,000**

15 Retrofit existing chiller and office condensing unit with cottonwood screens.

Priority: 3 **Cost: $15,000**

16 Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-circulating within the chiller enclosure.

Priority: 3 **Cost: $10,000**

17 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure classroom are served both hot and cold domestic water.

Priority: 2 **Cost: $660,000**

18 Replace domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

19 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

Lakeaires Elementary
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Analysis

Service and Distribution

- Service equipment consists of three service entrance rated 208-volt three-phase circuit breakers. All are located in the boiler room and are in good condition. The first (800A, installed in 1994) feeds switchboard MSB-1. The remaining two were installed in 2008 – 800A for the chiller and 400A for MSB-2. There is limited physical space for expansion. Any significant additions or HVAC upgrades to the building will likely necessitate a new service with this equipment being backfed or eliminated.

- The building is enrolled in a utility curtailment program.

- Roughly 80% of the distribution equipment is original to the building (1960) or to the 1967 addition, is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Facility consists of fluorescent fixtures throughout with minimal sensor controls. Fixtures are in fair condition. Recommend replacing with LED fixtures and robust controls.

- Exit signs and interior egress lighting are battery-powered and should be replaced as part of a generator upgrade.

- The facility does not have exterior egress lighting. Egress fixtures should be provided.

- Exterior pole fixtures have been recently upgraded to LED.

- Exterior wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

Lakeaires Elementary
Independent School District #624

Analysis
Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system is in good working condition.
- Fire alarm system is aged (1993) Simplex 4020 panel in poor condition. Replace panel, devices and wiring.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost: $334,300**

2 Provide emergency generator, transfer switches, panels and lighting relays.
Priority: 3 **Cost: $140,000**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $28,500**

4 Replace aged T8 lighting with energy efficient LED fixtures.
Priority: 3 **Cost: $144,000**

5 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $9,500**

6 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $68,400**

7 Provide complete wireless clock system.
Priority: 3 **Cost: $16,700**

8 Replace fire alarm system.
Priority: 1 **Cost: $65,500**

Lakeaires Elementary

SITE

1	Patch concrete at loading dock.	Priority: 3	**$13,400**
2	Add handrail to stair on northwest part of site.	Priority: 1	**$12,600**
3	Fix stair pulling away from wall.	Priority: 3	**$12,100**
4	Fix drainage issues at below grade louver	Priority: 2	**$33,400**
5	Replace sidewalk east of building.	Priority: N	**$108,600**
6	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Tuckpointing at 1960 and 1967 portions of building.	Priority: 3	**$794,900**
2	Replace (35) 1992 windows.	Priority: 1	**$251,500**
3	Replace roof areas A, B, C, D, E, F (installed 1996) per District roof report.	Priority: 3	**$917,100**

INTERIOR

1	Replace locking bar at receiving door with locking hardware and panic bars.	Priority: 2	**$2,200**
2	Replace wood doors in kitchen/multi-purpose gym area.	Priority: 3	**$29,900**
3	Repaint hollow metal frames in kitchen/gym area.	Priority: 4	**$2,800**
4	Re-stain and seal wood finish at operable wall in multi-purpose gym.	Priority: 4	**$100**
5	Provide new security hardware at all classroom doors.	Priority: 4	**$61,800**
6	Provide (1) new double stack convection oven and (1) combie oven (and stand)	Priority: 3	**$124,000**
7	Provide larger walk-in freezer.	Priority: 2	**$102,000**
8	Replace the kitchen exhaust hood with a new three sided exhaust hood sized appropriately for the	Priority: 2	**$30,000**
9	Relocate refrigerator freezer and cooler to the roof.	Priority: N	**$40,000**
10	Replace the existing dishwasher with a new dishwasher with integral booster heater.	Priority: 2	**$120,000**

ACCESSIBILITY

1	Install wing walls at (3) drinking fountains.	Priority: 2	**$4,000**
2	Major remodel of student gang toilets (4).	Priority: 3	**$668,600**
3	Major remodel of private toilets (7).	Priority: 1	**$409,500**
4	Replace handrails and guardrails at both stairs.	Priority: 1	**$28,100**

MECHANICAL SYSTEMS

1	Convert the building from steam to hot water heat. Replace the existing boilers with new gas fired	Priority: 2	**$2,870,000**
2	Replace the air handling unit serving the cafeteria with a new constant air volume unit. The new unit	Priority: 2	**$340,000**
3	Provide de-stratification fans in the cafeteria and connect to the building automation system for time of	Priority: 2	**$40,000**
4	Install cooling coil for new air handling unit serving the cafeteria and connect to existing chilled water	Priority: 3	**$70,000**
5	Provide a variable speed air handling unit to provide a direct source of ventilation air to the custodial	Priority: 2	**$330,000**
6	Provide cooling to the gymnasium. Retrofit the existing air handling systems with new chilled water	Priority: 4	**$70,000**
7	Provide cooling to the entry commons area. Retrofit the existing air handling systems with new chilled	Priority: 4	**$40,000**
8	Provide de-stratification fans in the entry commons and gymnasium areas. Connect to the building	Priority: 2	**$45,000**
9	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**

10	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**
11	Replace the existing PTAC unit serving the office area installed in the 1994 addition with a new	Priority: 3	**$55,000**
12	Replace the exterior chilled water pipe insulation with new flexible elastomeric insulation and an	Priority: 1	**$25,000**
13	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$25,000**
14	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$100,000**
15	Retrofit existing chiller and office condensing unit with cottonwood screens.	Priority: 3	**$15,000**
16	Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-	Priority: 3	**$10,000**
17	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$660,000**
18	Replace domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
19	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$334,300**
2	Provide emergency generator, transfer switches, panels and lighting relays.	Priority: 3	**$140,000**
3	Provide additional power outlets in classrooms.	Priority: 3	**$28,500**
4	Replace aged T8 lighting with energy efficient LED fixtures.	Priority: 3	**$144,000**
5	Provide exterior egress lighting at each exit.	Priority: 1	**$9,500**
6	Replace metal halide exterior lighting with LED.	Priority: 2	**$68,400**
7	Provide complete wireless clock system.	Priority: 3	**$16,700**
8	Replace fire alarm system.	Priority: 1	**$65,500**

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SITE	**$255,300.00**
EXTERIOR	**$1,963,500.00**
INTERIOR	**$512,800.00**
ACCESSIBILITY	**$1,110,200.00**
MECHANICAL SYSTEMS	**$4,825,000.00**
ELECTRICAL SYSTEMS	**$806,900.00**
Total Cost	**$9,473,700.00**

Lakeaires Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$12,600	$33,400	$25,500	$75,200	$108,600	**$255,300**
EXTERIOR	$251,500	$0	$1,712,000	$0	$0	**$1,963,500**
INTERIOR	$0	$254,200	$153,900	$64,700	$40,000	**$512,800**
ACCESSIBILITY	$437,600	$4,000	$668,600	$0	$0	**$1,110,200**
MECHANICAL SYSTEMS	$60,000	$4,410,000	$245,000	$110,000	$0	**$4,825,000**
ELECTRICAL SYSTEMS	$75,000	$402,700	$329,200	$0	$0	**$806,900**
Totals:	**$836,700**	**$5,104,300**	**$3,134,200**	**$249,900**	**$148,600**	**$9,473,700**

Lincoln Elementary
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Address:	1961 Sixth Street White Bear Lake, Minnesota 55110	**Year(s) Built:**	1952, 1962, 1994
		Gross Area:	42,365 S.F.
Contact:		**Site Area:**	11 acres
		Parking:	39
Phone:			

Lincoln Elementary
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Analysis

- The site area totals 11 acres and is bordered to the north by 9th street, the south by 6th street, and to the east and west by private residences.
- The north parking lot has 22 stalls. The south parking lot has 15 stalls and 2 handicap stalls. Handicap stalls have appropriate signage and pavement markings, with exception of missing "no parking" language on access aisle.
- The playground is in good condition.
- North parking lot asphalt is in poor condition and needs to be replaced.
- Sidewalk along west side of the north wing is in poor condition and needs to be replaced.
- There are minor cracks in the concrete sidewalk at the main entry and near door K.
- Asphalt at basketball courts is starting to crack and needs to be replaced.
- Steps at gymnasium exit court are missing railing and stair does not meet code for egress requirements.
- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Resurface asphalt on north parking lot.
Priority: 3 **Cost: $143,300**

2 Resurface asphalt on sidewalk along west side of north wing. Resurface asphalt on sidewalk at northeast part of site at basketball courts.
Priority: N **Cost: $141,400**

3 Concrete repairs at main entry and door K.
Priority: 1 **Cost: $10,100**

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Issues

4 Reconstruct concrete steps at gymnasium exit door and add handrail.
Priority: 1 **Cost:** **$22,200**

5 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,200**

Lincoln Elementary
Independent School District #624

Analysis

- The site area totals 11 acres and is bordered to the North by private residences and 9th street, the east and west by private residences, the south by private residences and 6th Street.

- Building was built in 1952 and has _____ additions. The building has _____ structure.

- The windows are aluminum. The windows in the east wing were replaced between 2010-2015. The window in the kitchen are from 1987 and need to be replaced. The windows in the west wing are showing signs of wear and should be replaced.

- The exterior is brick and steel, the steel structure is exposed on the exterior on the west wing, this does not meet current energy code and should be upgraded to be insulated.

- Boiler stack needs to be tuckpointed. (Add 50% of rest of building)

- Roof replacement.

Issues

1 Replace (3) kitchen windows and (26) windows in the west wing.
Priority: 1 **Cost: $209,500**

2 Tuckpoint boiler stack.
Priority: 3 **Cost: $20,900**

3 Replace roof areas A, B, C, I, D, H, G, E, F (insatlled 1992) per District roof report.
Priority: 1 **Cost: $1,597,200**

Lincoln Elementary
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Analysis

- Corridor floors are terrazzo in good condition. Minor patching is required at a few locations. Corridor walls are painted gypsum board with a tile wainscot.

- Classroom and office areas have carpet or VCT in good condition. Walls are painted gypsum board.

- The large gym/cafeteria has wood flooring that is original to the building and could be replaced. The stage has wood flooring and wood cabinets on its face that are in poor condition and should be replaced.

- The kalwall panels in the gym are 20 years old.

- The small gym has VCT flooring which is starting to crack and should be patched or replaced. Acoustic wall panels are broken and need to be replaced.

- Doors are in poor condition and should be replaced.

- Ceilings are acoustic ceiling tile in good condition in the majority of the building. The acoustic ceiling tile in the corridor of the west wing and in room 117 is warping and should be replaced.

- Toilet room walls are glazed block and floors are ceramic tile. The toilet stalls do not meet current accessibility code (see accessibility section).

- The kitchen has quarry tile floors and epoxy paint walls with acoustic ceiling tile. The windows in the kitchen are from 1987 and should be replaced, (see exterior section)

- The casework is in good condition for the majority of rooms. There is some original casework in storage rooms and in the west wing that should be replaced.

- Classroom 117 does not have casework to match all other classrooms. Casework should be installed to match adjacent classroom and a sink should be added.

Lincoln Elementary
Independent School District #624

Analysis

- Upper level corridor has VCT flooring and tiles are starting to separate.
- Kitchen needs new equipment.

Issues

1 Patch terrazzo floors in corridor in a few locations.
Priority: 3 **Cost:** **$6,300**

2 Replace wood flooring in the large gym/cafeteria, stage and stage cabinets.
Priority: 2 **Cost:** **$87,100**

3 Replace resilient flooring in gym.
Priority: 2 **Cost:** **$47,100**

4 Replace AWPs at small gym.
Priority: 3 **Cost:** **$6,700**

5 Replace ACT in west wing corridor and room 117.
Priority: 4 **Cost:** **$6,700**

6 Replace all doors.
Priority: 3 **Cost:** **$271,300**

7 Replace original casework in west wing and storage areas.
Priority: 3 **Cost:** **$68,900**

8 Install casework and sink in room 117 to match adjacent classrooms.
Priority: 3 **Cost:** **$23,900**

9 Install new VCT flooring on upper level corridor.
Priority: 2 **Cost:** **$68,500**

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Issues

10 Replace finishes (replace tile and patch and paint wall) at staircases.
Priority: 4 **Cost: $8,400**

11 Provide new security hardware at all classroom doors.
Priority: 4 **Cost: $56,800**

12 Provide (1) new double stack convection oven and (1) combi oven (and stand).
Priority: 3 **Cost: $124,000**

13 Rebuild walk in cooler.
Priority: 2 **Cost: $55,200**

14 Provide (2) 4-well electric hot food serving counters and (1) 6-well cold food serving counter.
Priority: 3 **Cost: $60,000**

15 Replace the existing dishwasher with a new dishwasher with integral booster heater. It does not appear that this unit was replaced in the 2008 kitchen remodel.
Priority: 2 **Cost: $90,000**

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Analysis

- There are 2 handicapped parking stalls with direct access to building entrance.
- The main entrance has power door operation.
- The building is on two levels and is accessible.
- Staff toilets do not meet current accessibility code.
- Student toilets do not meet current accessibility code, including all gang toilets and 1 toilet in kindergarten classroom.
- Nurse's office student toilet does not meet current accessibility code.
- Additional single stall toilets in coat room, kitchen, basic skills office, and speech room do not meet current accessibility code.
- The drinking fountain in the small gym is not accessible per current accessibility code.
- All other drinking fountains require wing walls per current accessibility code.
- Several doors in the east and south wings are not accessible per current accessibility code.
- In corridor, coat racks extend more than 4 ft into corridor which does not meet current accessibility code.
- Handrails at stairs do not meet current accessibility code and should be replaced.
- Stage is inaccessible per current accessibility code.
- Series of doors at electrical room/vestibule between exterior, boiler room and custodial office are too close together and do not meet current accessibility code.

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Issues

1 Rebuild all toilets (student, single-stall, nurse, kindergarten) to meet current accessibility code.
Priority: 1 **Cost: $1,309,900**

2 Replace drinking fountain in small gym with accessible type and add wing walls. Add wing walls at drinking fountains near student restrooms.
Priority: 2 **Cost: $16,600**

3 Install power operated actuators on all inaccessible doors in east and south wings.
Priority: 2 **Cost: $79,400**

4 Install step at protruding coat racks to match west wing.
Priority: 1 **Cost: $42,700**

5 Install new handrails at 2 staircases.
Priority: 2 **Cost: $28,100**

6 Install lift for stage access.
Priority: 1 **Cost: $66,900**

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Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1952. A second floor was added to the east end of the structure for additional classrooms in 1956. A large classroom addition was built to the north in 1962. A project in 1994 added fire protection to the building and other life safety upgrades as well as a small elevator addition on the north end of the 1952/1956 constructions. The kitchen was remodeled in 2008. Mechanical systems were upgraded in 2010.

- The building is heated by two gas fired 3,015 MBH Burnham fire tube steam boilers. The boilers were installed in 2010 and are in good condition. Steam is distributed throughout the building via tunnels below the building. The boiler feed pump is in good condition.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- The building is cooled by a 180 ton air cooled variable speed chiller. The chiller was installed in 2010 and is located on grade to the north of the 1952 building in a chiller enclosure. A constant volume pump circulates water through the chiller and a variable speed pump circulates chilled water throughout the building. The pumps are located in the boiler room above the gym air handling unit and are extremely difficult to access for maintenance.

- Exterior chilled water piping has fiberglass insulation which is wrapped in an aluminum jacket. The jacketing has deteriorated and the fiberglass insulation is absorbing moisture.

- Classrooms are typically heated, cooled, and ventilated by vertical style unit ventilators (VUV) installed in the 2010 renovation. The unit ventilators have steam heating coils for heating and chilled water coils for cooling. Air is typically distributed overhead through ceiling mounted diffusers. Classrooms typically do not have perimeter finned tube radiation with the exception of the media center and kindergarten classrooms in the 1962 addition.

- Large roof mounted relief air fans were installed in each of the two stair wells in the original 1952 building. The relief fans are controlled by variable speed drives to manage the building air pressure. Classrooms typically transfer air into the corridor path of egress through pneumatically controlled fire smoke dampers.

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Analysis
Heating and Ventilation

- The gymnasium/cafeteria is ventilated and heated by an air handling unit installed in the original 1952 construction. The unit is located in the boiler room. The unit has a steam heating coil for space heating and does not provide cooling. The unit is extremely difficult to access for maintenance and is in poor condition. The gymnasium does not have de-stratification fans.

- The kitchen exhaust hood make-up air is provided by a steam heating unit located above the storage room. The unit is very difficult to access and is in poor condition.

- A small gymnasium in the 1962 addition is heated and ventilated by an air handling unit located in the adjacent storage room. The unit has a steam coil for heating and does not provide cooling. The gymnasium does not have de-stratification fans.

- The front office is heated, cooled, and ventilated by a package rooftop gas fired direct expansion (DX) unit installed in 2012. The unit serves variable air volume (VAV) boxes with hot water reheat for temperature zone control. Office typically have perimeter finned radiation.

- A steam to hot water convertor providing heating hot water for the office area is located in the storage room adjacent to the gym. The convertor and associated pumps are very difficult to access for maintenance.

- A through wall packaged terminal air conditioning (PTAC) unit provides cooling for the head end room adjacent to the media center. The unit is in poor condition.

- The custodial area and adjacent storage room are exhausted only and do not have a direct source of ventilation air.

- The rooftop exhaust ventilators are reported to be replaced as needed.

- The kitchen cooler and freezer compressors are located in a closet adjacent to the kitchen. The space overheats.

Temperature Control

- The 2010 mechanical project was installed with direct digital controls as manufactured by UHL Company. The District has remote access to the systems through a web-based front-end system.

Lincoln Elementary
Independent School District #624

Analysis

Temperature Control

- Pneumatic controls remain on many systems throughout the building including:
  - Fire smoke dampers (typically at every classroom return to corridor)
  - Gymnasium/cafeteria and small gymnasium air handling units.
  - Steam heating terminals including cabinet unit heaters, convectors, and fin tube radiation.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system throughout the building is galvanized piping and is near the end of its useful life.

- The original domestic water storage tank and steam tube bundle have were replaced in approximately 1990. Hot water is provide year around by an atmospheric Raypak boiler. The water heater is near the end of its useful life.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4" water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

- Classrooms typically have a sink with hot/cold water and a bubbler in good condition.

- The urinals in each of three main toilet room groups in the 1952, 1956, and 1962 buildings were installed with timed flush. The timed flush control has since been retrofit with an occupancy sensor.

Issues

1 Convert the building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace existing steam coils in classroom unit ventilators with new hot water coils. Replace all remaining steam unit heaters with new hot water heaters.

Priority: 2 **Cost: $3,475,000**

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Issues

2 Replace the air handling unit serving the gymnasium/cafeteria with a new constant air volume unit. The new unit will be connected to the existing hot water and have space for future installation of cooling coil. Transfer make-up air to the kitchen from the gymnasium and remove the existing stream make-up air unit. This project would be best implemented in conjunction with the conversion to hot water such that there is space in the existing boiler room. All new controls will be direct digital as an extension of the existing Alerton system.

Priority: 2 **Cost: $340,000**

3 Install cooling coil for new air handling unit serving the cafeteria/gymnasium and connect to chilled water system.

Priority: 3 **Cost: $40,000**

4 Provide de-stratification fans in the cafeteria/gymnasium and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

5 Replace the air handling unit serving the small gymnasium with a new constant air volume unit. The new unit will be connected to the existing hot water and have space for future installation of cooling coil. All new controls will be direct digital as an extension of the existing Alerton system.

Priority: 2 **Cost: $340,000**

6 Install cooling coil for new air handling unit serving the small gymnasium and connect to chilled water system.

Priority: 4 **Cost: $40,000**

7 Provide de-stratification fans in the small gymnasium and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

8 Provide a variable speed air handling unit to provide a direct source of ventilation air to the custodial room and adjacent areas. Provide variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the existing hot water and chilled water plant for cooling. All new controls will be direct digital as an extension of the existing Alerton system.

Priority: 2 **Cost: $75,000**

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Issues

9 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.
Priority: 1 **Cost: $25,000**

10 Provide a new secondary split AC system to cool head end room and provide redundancy.
Priority: 3 **Cost: $25,000**

11 Replace the exterior chilled water pipe insulation with new flexible elastomeric insulation and an aluminum jacket.
Priority: 1 **Cost: $30,000**

12 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Allerton system. Replace upgrade the controls for each of the two building relief fans. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.
Priority: 2 **Cost: $40,000**

13 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.
Priority: 2 **Cost: $80,000**

14 Retrofit the existing chiller and the office condensing unit with cottonwood screens.
Priority: 3 **Cost: $15,000**

15 Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-circulating within the chiller enclosure.
Priority: 3 **Cost: $10,000**

16 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure classrooms are served both hot and cold domestic water.
Priority: 2 **Cost: $810,000**

Lincoln Elementary
Independent School District #624

Issues

17 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

18 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

Lincoln Elementary
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 208-volt 3-phase GE Spectra switchboard with 800A main bolted pressure switch and circuit breaker distribution. The main switchboard was replaced in 1992 and is in good condition. It contains minimal space for expanded capacity. Any significant additions or HVAC upgrades to the building may necessitate a new service with this equipment being backfed or eliminated.

- The building is enrolled in a utility curtailment program.

- Roughly 50% of the distribution equipment is original to the building (1952) or to the 1956/1962 additions, is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Classrooms contain newer-vintage fluorescent lensed fixtures with occupancy sensor control. If ceilings are replaced then it is recommended fixtures are simultaneously upgraded, otherwise maintain in place.

- All other areas typically consist of aged fluorescent fixtures with no sensors. Recommend replacing with LED fixtures and robust controls.

- Exit signs and interior egress lighting are battery-powered and should be replaced as part of a generator upgrade.

- The facility does not have exterior egress lighting. Egress fixtures should be provided.

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Lincoln Elementary
Independent School District #624

Analysis
Systems/ Technology

Systems/ Technology
- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system is new (2017) and in good working condition.
- Fire alarm system is aged (1992) Simplex 4020 panel in poor condition. Replace panel, devices and wiring.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost: $182,000**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $139,800**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $28,500**

4 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $17,100**

5 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $80,500**

6 Provide wireless clock system.
Priority: 3 **Cost: $15,500**

7 Replace fire alarm system.
Priority: 1 **Cost: $64,000**

Lincoln Elementary

SITE

1	Resurface asphalt on north parking lot.	Priority: 3	**$143,300**
2	Resurface asphalt on sidewalk along west side of north wing. Resurface asphalt on sidewalk at	Priority: N	**$141,400**
3	Concrete repairs at main entry and door K.	Priority: 1	**$10,100**
4	Reconstruct concrete steps at gymnasium exit door and add handrail.	Priority: 1	**$22,200**
5	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Replace (3) kitchen windows and (26) windows in the west wing.	Priority: 1	**$209,500**
2	Tuckpoint boiler stack.	Priority: 3	**$20,900**
3	Replace roof areas A, B, C, I, D, H, G, E, F (insatlled 1992) per District roof report.	Priority: 1	**$1,597,200**

INTERIOR

1	Patch terrazzo floors in corridor in a few locations.	Priority: 3	**$6,300**
2	Replace wood flooring in the large gym/cafeteria, stage and stage cabinets.	Priority: 2	**$87,100**
3	Replace resilient flooring in gym.	Priority: 2	**$47,100**
4	Replace AWPs at small gym.	Priority: 3	**$6,700**
5	Replace ACT in west wing corridor and room 117.	Priority: 4	**$6,700**
6	Replace all doors.	Priority: 3	**$271,300**
7	Replace original casework in west wing and storage areas.	Priority: 3	**$68,900**
8	Install casework and sink in room 117 to match adjacent classrooms.	Priority: 3	**$23,900**
9	Install new VCT flooring on upper level corridor.	Priority: 2	**$68,500**
10	Replace finishes (replace tile and patch and paint wall) at staircases.	Priority: 4	**$8,400**
11	Provide new security hardware at all classroom doors.	Priority: 4	**$56,800**
12	Provide (1) new double stack convection oven and (1) combi oven (and stand).	Priority: 3	**$124,000**
13	Rebuild walk in cooler.	Priority: 2	**$55,200**
14	Provide (2) 4-well electric hot food serving counters and (1) 6-well cold food serving counter.	Priority: 3	**$60,000**
15	Replace the existing dishwasher with a new dishwasher with integral booster heater. It does not appear	Priority: 2	**$90,000**

ACCESSIBILITY

1	Rebuild all toilets (student, single-stall, nurse, kindergarten) to meet current accessibility code.	Priority: 1	**$1,309,900**
2	Replace drinking fountain in small gym with accessible type and add wing walls. Add wing walls at	Priority: 2	**$16,600**
3	Install power operated actuators on all inaccessible doors in east and south wings.	Priority: 2	**$79,400**
4	Install step at protruding coat racks to match west wing.	Priority: 1	**$42,700**
5	Install new handrails at 2 staircases.	Priority: 2	**$28,100**
6	Install lift for stage access.	Priority: 1	**$66,900**

MECHANICAL SYSTEMS

1	Convert the building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 2	**$3,475,000**
2	Replace the air handling unit serving the gymnasium/cafeteria with a new constant air volume unit.	Priority: 2	**$340,000**
3	Install cooling coil for new air handling unit serving the cafeteria/gymnasium and connect to chilled	Priority: 3	**$40,000**

4	Provide de-stratification fans in the cafeteria/gymnasium and connect to the building automation	Priority: 2	**$20,000**
5	Replace the air handling unit serving the small gymnasium with a new constant air volume unit. The	Priority: 2	**$340,000**
6	Install cooling coil for new air handling unit serving the small gymnasium and connect to chilled water	Priority: 4	**$40,000**
7	Provide de-stratification fans in the small gymnasium and connect to the building automation system	Priority: 2	**$20,000**
8	Provide a variable speed air handling unit to provide a direct source of ventilation air to the custodial	Priority: 2	**$75,000**
9	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**
10	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**
11	Replace the exterior chilled water pipe insulation with new flexible elastomeric insulation and an	Priority: 1	**$30,000**
12	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$40,000**
13	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$80,000**
14	Retrofit the existing chiller and the office condensing unit with cottonwood screens.	Priority: 3	**$15,000**
15	Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-	Priority: 3	**$10,000**
16	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$810,000**
17	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
18	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$182,000**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$139,800**
3	Provide additional power outlets in classrooms.	Priority: 3	**$28,500**
4	Provide exterior egress lighting at each exit.	Priority: 1	**$17,100**
5	Replace metal halide exterior lighting with LED.	Priority: 2	**$80,500**
6	Provide wireless clock system.	Priority: 3	**$15,500**
7	Replace fire alarm system.	Priority: 1	**$64,000**

Lincoln Elementary
Independent School District #624

SITE	**$392,200.00**
EXTERIOR	**$1,827,600.00**
INTERIOR	**$980,900.00**
ACCESSIBILITY	**$1,543,600.00**
MECHANICAL SYSTEMS	**$5,465,000.00**
ELECTRICAL SYSTEMS	**$527,400.00**
Total Cost	**$10,736,700.00**

Lincoln Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$32,300	$0	$143,300	$75,200	$141,400	**$392,200**
EXTERIOR	$1,806,700	$0	$20,900	$0	$0	**$1,827,600**
INTERIOR	$0	$347,900	$561,100	$71,900	$0	**$980,900**
ACCESSIBILITY	$1,419,500	$124,100	$0	$0	$0	**$1,543,600**
MECHANICAL SYSTEMS	$65,000	$5,200,000	$160,000	$40,000	$0	**$5,465,000**
ELECTRICAL SYSTEMS	$81,100	$262,500	$183,800	$0	$0	**$527,400**
Totals:	**$3,404,600**	**$5,934,500**	**$1,069,100**	**$187,100**	**$141,400**	**$10,736,700**

Matoska International IB World
Independent School District #624

Address: 2530 Spruce Place
White Bear Lake, Minnesota
55110

Contact:

Phone:

Year(s) Built: 1962, 1968, 1994, 2004, 2013

Gross Area: 64,570 S.F.

Site Area: 10 acres

Parking: 96

Matoska International IB World
Independent School District #624

Analysis

- There are 12 total parking stalls in the west entrance loop, 2 of which are accessible. There are 84 total parking stalls in the south parking lot, 2 of which are accessible. The 4 existing accessible stalls are sufficient based on the total number of stalls in all parking lots.

- The asphalt at the loading area and west side of the south parking lot is in poor condition.

- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Resurface asphalt in loading dock area and entrance from Spruce place.
Priority: N **Cost:** **$75,300**

2 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,300**

Matoska International IB World
Independent School District #624

Analysis

- There is cracking at the concrete below the brick in several locations.
- Sealant joints are starting to crack.
- The northwest (1968) addition has a poorly insulated roof (Areas E, F, G, and H).
- Tuckpointing is required in several locations.
- Concrete structure is exposed to the exterior; this does not meet current energy code.
- Windows were installed in ’92 and should be replaced. Sills all slope toward the building and there are moisture problems and minor leaks, sealant is starting to fail.
- Lintels above windows are starting to rust.
- Roof is 24+ years old.

Issues

1 Tuckpointing at 30% of 1962 and 1968 building areas.
Priority: 2 **Cost:** **$306,300**

2 Replace 1992 vintage windows (In 1962 and 1968 building areas).
Priority: 2 **Cost:** **$436,300**

3 Repaint lintels.
Priority: 2 **Cost:** **$15,100**

4 Replace roof areas: E, F, G, and H (installed in 1992) per District roof report.
Priority: 1 **Cost:** **$220,500**

Matoska International IB World
Independent School District #624

Issues

5 Replace roof areas: A, B, C and D (installed in 1994) per District roof report.
Priority: 2 **Cost:** **$436,200**

6 Replace roof areas I, J, and K (circ. 2005) per District roof report.
Priority: N **Cost:** **$97,900**

Matoska International IB World
Independent School District #624

Analysis

- Carpet is starting to fray at edges and show signs of wear in the classrooms.
- Casework in classrooms (except 97-101) is original and should be replaced.
- None of the classroom doors have security hardware.
- Some doors are showing signs of wear.
- Kitchen needs new equipment.

Issues

1 Replace carpet in classrooms.
Priority: 3 **Cost: $55,600**

2 Replace casework in classrooms (all except 97-101).
Priority: 3 **Cost: $817,900**

3 Provide an allowance for door replacement.
Priority: 3 **Cost: $29,900**

4 Provide new security hardware at all classroom doors.
Priority: 3 **Cost: $70,200**

5 Provide (1) new double stack convection oven and (1) new combi oven in kitchen.
Priority: 3 **Cost: $124,000**

6 Provide walk-in freezer at kitchen (none existing).
Priority: 2 **Cost: $102,000**

Matoska International IB World
Independent School District #624

Issues

7 Provide (1) 4-well hot food serving counter and (1) 6-well cold food serving counter at kitchen.
Priority: 3 **Cost: $60,000**

8 Replace the kitchen exhaust hood with a new exhaust hood that is three sided and sized appropriately for the kitchen equipment served. Provide a transfer air path for exhaust hood make-up air.
Priority: 2 **Cost: $30,000**

9 Relocate the refrigerator/freezer condensing units to the roof.
Priority: N **Cost: $40,000**

10 Replace the existing dishwasher with a new dishwasher with integral booster heater.
Priority: 3 **Cost: $90,000**

Matoska International IB World
Independent School District #624

Analysis

- Sink in workroom is not accessible, counter is too high.
- Transaction window/counter in room 96A is not accessible because the counter is too high.
- (5) doors are not accessible due to the depth of the wall.
- (2) drinking fountains require wing walls, 1 drinking fountain should be replaced with accessible type.
- The following restrooms are not accessible: Nurse toilet, toilet in kitchen, student multi-stall bathrooms in east wing, kindergarten bathrooms in 3 rooms, staff toilets in east wing (3).
- Handrails and guardrails at stairs do not meet current building code.

Issues

1 Replace sink and counter in workroom with ADA height equivalent.
Priority: 2 **Cost:** **$7,600**

2 Rebuild transaction window/counter at room 96A to meet ADA requirements.
Priority: 2 **Cost:** **$6,200**

3 Provide power operators at (5) doors with deep jambs.
Priority: 2 **Cost:** **$20,900**

4 Provide wing walls at (2) drinking fountains.
Priority: 2 **Cost:** **$2,700**

5 Replace (1) Drinking fountain with an accessible electric water cooler.
Priority: 2 **Cost:** **$5,500**

Matoska International IB World
Independent School District #624

Issues

6 Provide new code compliant handrails and guardrails at stairs.
Priority: 2 **Cost: $28,100**

7 Major remodel of student gang toilets (4).
Priority: 1 **Cost: $668,600**

8 Minor remodel of private toilet rooms (2).
Priority: 2 **Cost: $16,800**

9 Major remodel of private toilet rooms (6).
Priority: 2 **Cost: $351,000**

Matoska International IB World
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1962. In 1968 classrooms were added on the east end of the building. An addition in 2004 included a media center on the south side of the building. A 2013 addition consisting of an office area, music room, and gymnasium on the northwest corner of the structure. Fire protection and corridor fire/smoke dampers to relieve air to the corridor relief were added in 1994. Mechanical systems in the classrooms were replaced in 2008.

- The building is heated by two gas fired 4,000 MBH Fitzgibbons fire tube steam boilers. The boilers were installed in the original 1962 building construction. Steam is distributed throughout the building via a crawl space below the building. The boiler burners were replaced in the early 1990's and 2000's. The boiler feed pump has been recently replaced and is in good condition.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- A steam to hot water convertor was installed in the 2013 additions project to provide hot water to areas added to the building. The convertor is located in the boiler room. Hot water is circulated by two in-line variable volume circulating pumps.

- The building is cooled by a Carrier air-cooled chiller. The chiller was installed in 2008 and is located on grade to the west of the building in a chiller enclosure. A constant volume 5 HP pump circulates a primary pump through the chiller. A 10 HP variable speed pump circulates chilled water throughout the building. The pumps are located in the tunnel adjacent to the boiler room.

- The classrooms including the 1962 original construction and the 1968 addition are typically heated, cooled, and ventilated by vertical style unit ventilators (VUV) installed in the 2008 renovation. The unit ventilators have steam heating coils for heating and chilled water coils for cooling. Piping to the 1st floor units is routed in the crawl space below. Piping to the 2nd floor units is routed through soffits on the 1st floor. Air is typically distributed through sidewall grilles located in a soffit along the outside perimeter of the classrooms. The classrooms do not have perimeter finned tube radiation.

- The cafeteria is heated and ventilated by a single zone constant volume air handling unit installed in the original 1962 building construction. The unit has a steam coil for heating and does not provide cooling. The cafeteria does not have de-stratification fans.

Matoska International IB World
Independent School District #624

Analysis
Heating and Ventilation

- The media center is heated, cooled and ventilated by a three zone multi-zone unit installed on the mezzanine adjacent to the cafeteria. The unit was installed in 2004, has a steam coil for heating and a direct expansion (DX) coil for cooling. The computer room adjacent to the media center is cooled by a fan coil unit above the ceiling.

- The front office in heated, cooled, and ventilated by a packaged variable air volume (VAV) DX cooling only rooftop unit. The unit was installed in 2013 and servesVAV boxes with hot water reheat coils. The offices typically have perimeter hot water finned tube radiation with the exception of the reception area.

- The gymnasium is heated and ventilated by two constant volume air handling unit installed in the 2013 addition. The unit has hot water for heating and does not provide cooling. The gymnasium has de-stratification fans.

- A through wall PTAC unit serves provides cooling for the head end room adjacent to the media center. The unit is in poor condition.

- Two large roof mounted relief air fans are installed in each of the two stair wells. The relief fans are controlled by variable speed drives to manage the building air pressure. The classrooms typically transfer air into the corridor path of egress through pneumatically controlled fire smoke dampers. The VFDs for one of the relief fans is no longer functional.

- The roof exhaust fans are reported to be replaced as needed by the maintenance staff and generally are in good condition.

- The kitchen hood is very old and in poor condition. The hood is an island configuration and is oversized for the kitchen equipment it serves. The original kitchen design transferred exhaust hood make-up air from the adjacent cafeteria area. The transfer louvers in the doors were removed in a renovation project such that there is no longer a transfer air path.

- The kitchen cooler and freezer compressors are located in a closet adjacent to the kitchen. The space overheats.

- The dishwasher and associated booster heater are at the end of their useful life and in need of replacement.

Temperature Control

Matoska International IB World
Independent School District #624

Analysis

Temperature Control

- The direct digital controls in the building are as manufactured by Alteron. The District has remote access to the systems through a webbased front-end system.

- Pneumatic controls remain on many systems through out the building including:
  - Fire smoke dampers.
  - Cafeteria air handling unit.
  - Steam heating terminals including cabinet unit heaters, convectors, and fin tube radiation.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system installed in the original building construction is galvanized piping and is near the end of its useful life.

- Hot water is provided to the building by a large storage tank and steam tube bundle. The tank was installed in the original building construction. An atmospheric gas fired Raypak boiler circulates water through the tank to provide hot water during the summer. The water heater was installed approximately 10 years ago and is near the end of its useful life.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4” water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

- The classrooms typically have a sink, replaced in the 2008 renovation project, consisting of hot/cold water and a bubbler.

- The urinals in each of two main toilet room groups in the 1962 building were installed with timed flush. The timed flush control has since been retrofit with an occupancy sensor.

- The wash fountains installed at each of two toilet room groups in the 1962 building were replaced in 1994 and do not comply with ADA standards and have had on-going issues with the infrared actuators.

Issues

Matoska International IB World
Independent School District #624

Issues

1 Convert the building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace existing steam coils in classroom unit ventilators with new hot water coils. Replace all remaining steam unit heaters with new hot water heaters.

Priority: 2 **Cost: $3,360,000**

2 Replace the air handling unit serving the cafeteria with a new constant air volume unit. The new unit will be connected to the existing hot water and have space for future installation of cooling coil. All new controls will be direct digital as an extension of the existing Alerton system.

Priority: 2 **Cost: $340,000**

3 Install cooling coil for new air handling unit serving the cafeteria and connect to existing chilled water system.

Priority: 3 **Cost: $40,000**

4 Provide de-stratification fans in the cafeteria and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

5 Provide cooling to the gymnasium. Retrofit the existing air handling systems with new chilled water coils and connect to the existing chilled water plant. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 4 **Cost: $40,000**

6 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.

Priority: 1 **Cost: $25,000**

7 Provide a new secondary split AC system to cool head end room and provide redundancy.

Priority: 3 **Cost: $25,000**

Matoska International IB World
Independent School District #624

Issues

8 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Alerton system. Replace and upgrade the controls for each of the two building relief fans. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $35,000**

9 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 2 **Cost: $115,000**

10 Retrofit the existing chiller and the office condensing unit with cottonwood screens.

Priority: 3 **Cost: $15,000**

11 Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-circulating within the chiller enclosure.

Priority: 3 **Cost: $10,000**

12 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure classroom are served both hot and cold domestic water.

Priority: 2 **Cost: $680,000**

13 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

14 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

Matoska International IB World
Independent School District #624

Analysis

Service and Distribution

- ervice equipment consists of three service-entrance-rated 208-volt three-phase circuit breakers, and also a fused switch. All are located in the boiler room and are in good condition. The first breaker (800A, installed in 1994) feeds MSB-1. The second and third breakers were installed in 2008 – 600A for the chiller and 400A for MSB-2. The fusible switch was installed in 2013 and feeds distribution panel LD1-1 (location unknown). There is limited physical space for expansion. Any significant additions or HVAC upgrades to the building will likely necessitate a new service with this equipment being backfed or eliminated.

- The building is enrolled in a utility curtailment program.

- Service equipment does not include surge protection and should be added.

- Roughly 80% of the distribution equipment is original to the building or the 1968 addition, is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- 2013 addition consists of fluorescent fixtures with occupancy sensors, lighting this area is generally in good condition. Lighting in remainder of facility was installed in either 1993 or 2007 and does not utilize occupancy sensors. The 1993 fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures. Sensors should be provided in 2007 areas.

- Exit signs and interior egress lighting are battery-powered, in good condition, and appear to be sufficiently located.

- Exterior poles, wall packs and canopy fixtures are predominantly LED. Remaining metal halide wall packs will likely be replaced as they fail.

Matoska International IB World
Independent School District #624

Analysis
Systems/ Technology

Systems/ Technology

- Clock system appears to be hard-wired and should be replaced with a wireless system.
- Paging system is in good condition.
- Fire alarm panel has recently been replaced with a Silent Knight IntelliKnight 5808 addresable panel. Devices appear to be newer and provide good coverage.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost:** **$258,300**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost:** **$139,800**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost:** **$31,900**

4 Replace older T8 lighting with energy efficient LED fixtures and controls.
Priority: 3 **Cost:** **$130,200**

5 Provide wireless clock system.
Priority: 3 **Cost:** **$16,700**

Matoska International IB World

SITE

1	Resurface asphalt in loading dock area and entrance from Spruce place.	Priority: N	**$75,300**
2	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**

EXTERIOR

1	Tuckpointing at 30% of 1962 and 1968 building areas.	Priority: 2	**$306,300**
2	Replace 1992 vintage windows (In 1962 and 1968 building areas).	Priority: 2	**$436,300**
3	Repaint lintels.	Priority: 2	**$15,100**
4	Replace roof areas: E, F, G, and H (installed in 1992) per District roof report.	Priority: 1	**$220,500**
5	Replace roof areas: A, B, C and D (installed in 1994) per District roof report.	Priority: 2	**$436,200**
6	Replace roof areas I, J, and K (circ. 2005) per District roof report.	Priority: N	**$97,900**

INTERIOR

1	Replace carpet in classrooms.	Priority: 3	**$55,600**
2	Replace casework in classrooms (all except 97-101).	Priority: 3	**$817,900**
3	Provide an allowance for door replacement.	Priority: 3	**$29,900**
4	Provide new security hardware at all classroom doors.	Priority: 3	**$70,200**
5	Provide (1) new double stack convection oven and (1) new combi oven in kitchen.	Priority: 3	**$124,000**
6	Provide walk-in freezer at kitchen (none existing).	Priority: 2	**$102,000**
7	Provide (1) 4-well hot food serving counter and (1) 6-well cold food serving counter at kitchen.	Priority: 3	**$60,000**
8	Replace the kitchen exhaust hood with a new exhaust hood that is three sided and sized appropriately	Priority: 2	**$30,000**
9	Relocate the refrigerator/freezer condensing units to the roof.	Priority: N	**$40,000**
10	Replace the existing dishwasher with a new dishwasher with integral booster heater.	Priority: 3	**$90,000**

ACCESSIBILITY

1	Replace sink and counter in workroom with ADA height equivalent.	Priority: 2	**$7,600**
2	Rebuild transaction window/counter at room 96A to meet ADA requirements.	Priority: 2	**$6,200**
3	Provide power operators at (5) doors with deep jambs.	Priority: 2	**$20,900**
4	Provide wing walls at (2) drinking fountains.	Priority: 2	**$2,700**
5	Replace (1) Drinking fountain with an accessible electric water cooler.	Priority: 2	**$5,500**
6	Provide new code compliant handrails and guardrails at stairs.	Priority: 2	**$28,100**
7	Major remodel of student gang toilets (4).	Priority: 1	**$668,600**
8	Minor remodel of private toilet rooms (2).	Priority: 2	**$16,800**
9	Major remodel of private toilet rooms (6).	Priority: 2	**$351,000**

MECHANICAL SYSTEMS

1	Convert the building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 2	**$3,360,000**
2	Replace the air handling unit serving the cafeteria with a new constant air volume unit. The new unit	Priority: 2	**$340,000**
3	Install cooling coil for new air handling unit serving the cafeteria and connect to existing chilled water	Priority: 3	**$40,000**
4	Provide de-stratification fans in the cafeteria and connect to the building automation system for time of	Priority: 2	**$20,000**
5	Provide cooling to the gymnasium. Retrofit the existing air handling systems with new chilled water	Priority: 4	**$40,000**

6	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**
7	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**
8	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$35,000**
9	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$115,000**
10	Retrofit the existing chiller and the office condensing unit with cottonwood screens.	Priority: 3	**$15,000**
11	Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-	Priority: 3	**$10,000**
12	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$680,000**
13	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
14	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$258,300**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$139,800**
3	Provide additional power outlets in classrooms.	Priority: 3	**$31,900**
4	Replace older T8 lighting with energy efficient LED fixtures and controls.	Priority: 3	**$130,200**
5	Provide wireless clock system.	Priority: 3	**$16,700**

Matoska International IB World
Independent School District #624

SITE	**$150,600.00**
EXTERIOR	**$1,512,300.00**
INTERIOR	**$1,419,600.00**
ACCESSIBILITY	**$1,107,400.00**
MECHANICAL SYSTEMS	**$4,785,000.00**
ELECTRICAL SYSTEMS	**$576,900.00**
Total Cost	**$9,551,800.00**

Matoska International IB World
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$0	$75,300	$75,300	**$150,600**
EXTERIOR	$220,500	$1,193,900	$0	$0	$97,900	**$1,512,300**
INTERIOR	$0	$132,000	$1,247,600	$0	$40,000	**$1,419,600**
ACCESSIBILITY	$668,600	$438,800	$0	$0	$0	**$1,107,400**
MECHANICAL SYSTEMS	$35,000	$4,550,000	$160,000	$40,000	$0	**$4,785,000**
ELECTRICAL SYSTEMS	$0	$258,300	$318,600	$0	$0	**$576,900**
Totals:	**$924,100**	**$6,573,000**	**$1,726,200**	**$115,300**	**$213,200**	**$9,551,800**

Oneka Elementary
Independent School District #624

Address:	4888 Heritage Pkwy North Hugo, Minnesota 55038	**Year(s) Built:**	2005
		Gross Area:	114,260 S.F.
Contact:		**Site Area:**	44 acres
		Parking:	142
Phone:			

Oneka Elementary
Independent School District #624

Analysis

- Driveways and Parking Lots are in good condition.
- The South parking lot has 124 stalls including 5 handicap accessible stalls. The accessible stalls have appropriate signage and pavement markings.
- The North parking lot has 18 stalls including 1 handicap accessible stall. The accessible stall has appropriate signage and pavement markings.
- Pink concrete at D exit and north loop has significant cracking and spalling.
- Playground equipment is in good condition.
- Outdoor hard surface play area and basketball court asphalt is uneven with significant heaving and cracking.
- There are no splash blocks at overflow drains (approx. 5)
- Wood monument sign requires ongoing maintenance and painting.

Issues

1 Patch concrete sidewalks near Exit D and north parking loop.
Priority: N **Cost: $46,200**

2 Resurface asphalt play area.
Priority: N **Cost: $120,400**

3 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,300**

4 Provide splash blocks at (5) overflow drain locations.
Priority: N **Cost: $3,400**

Oneka Elementary
Independent School District #624

Analysis

- The building was originally constructed in 2005, and has had no additions or major renovations since.

- The existing windows are fixed aluminum storefronts. Classrooms have 1-2 operable awning windows with interior screens at the top of the storefront system. Classroom windows are also equipped with roller shades. The aluminum sills on most windows have negative slope resulting in leaks.

- The entrances are aluminum storefront in good condition. All entrances have interior vestibule doors.

- The exterior is made up of brick on the first story with painted wood siding on the second story. Gymnasium and Administration wings are precast. There is minor cracking in the siding in a few select palaces.

- The roof is original to the building and is therefore 13 years old. Primary flat roof system is built up roof with gravel ballast. Gable roofs are asphalt shingles.

Issues

1 Repair / Replace Aluminum window sills to provide positive drainage.
Priority: 1 **Cost:** **$689,500**

2 Selective repair of cracked / damaged siding.
Priority: 2 **Cost:** **$1,000**

Oneka Elementary
Independent School District #624

Analysis

- Corridors have burnished block walls, glazed block base and terrazzo floors.
- Ceilings are 2’ x 2’ acoustic ceiling tile (original) and are in good condition.
- Classrooms have painted concrete block walls, carpet and linoleum floors, and ACT ceilings. Carpet in most classrooms is rippling and fraying. HM door frames need painting. Other finishes in good condition.
- None of the classroom doors have security hardware.
- Office has painted gyp walls, carpet floors, and ACT ceilings. Finishes are in good condition.
- Media Center carpet is rippling in select areas near the entrance. Other finishes in good condition.
- Gymnasium has precast walls with exposed steel web truss roof structure and wood floor.
- Operable wall between gym and stage has peeling wall covering on one panel on gym side.
- Cafeteria and server have burnished block walls with glazed block base. Floors are terrazzo.
- Wood stage is in good condition.
- Student toilets have burnished block walls with ceramic tile accent walls and terrazzo flooring.
- The Kitchen has quarry tile floors, vinyl ACT ceiling and painted concrete block walls.
- Kitchen needs some additional equipment.

Issues

Oneka Elementary
Independent School District #624

Issues

1 Replace carpet in classrooms throughout building and Media Center entry.
Priority: 3 **Cost:** **$293,700**

2 Paint HM door frames at all classrooms.
Priority: 3 **Cost:** **$5,300**

3 Repair / Replace wall covering on operable wall panel in gym.
Priority: 3 **Cost:** **$600**

4 Provide new security hardware at all classroom doors.
Priority: 3 **Cost:** **$70,200**

5 Provide (1) new double stack convection oven and (1) new combi oven at kitchen.
Priority: 3 **Cost:** **$124,000**

6 Relocate existing freezer and cooler compressors to the roof.
Priority: N **Cost:** **$40,000**

Oneka Elementary
Independent School District #624

Analysis

- The main entrance has power door operators.
- The building is two levels with an accessible elevator located centrally in the classroom wing.
- Staff lounge and kindergarten toilet rooms (4) are missing grab bars.
- Drinking fountains in group learning areas and main hallway protrude into the path of travel.

Issues

1 Provide 5 grab bars as required in private toilet rooms.
Priority: 2 **Cost:** **$1,300**

2 Provide wing walls at approximately 5 drinking fountain locations.
Priority: 2 **Cost:** **$6,700**

Oneka Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 2005.

- The building is heated by two dual fired 6,280 MBH Cleaver Brooks fire tube hot water boilers. The boilers were installed in the original 2005 building construction and are in good condition.

- Each boiler has a 5 HP constant volume primary circulation pump. A pair of redundant variable volume 20 HP pumps circulate hot water throughout the building.

- The butterfly isolation valves installed at the boilers are not effective at fully closing and are in need of replacement. Isolation valves should also be added to each of the two hot water circulating pumps and each of the two chilled water circulation pumps.

- A 10,000 gallon direct buried fuel oil tank is located adjacent to the boiler room. Fuel oil is pumped by two redundant 2 HP circulating pumps.

- The building is cooled by a 250 ton and a 290 ton air-cooled chiller as manufactured by Dunham Bush. The chillers are located on grade to the west of the boiler room. There have been many issues with the chillers, including the compressors needing replacement multiple times. The chillers are installed with refrigerant de-superheaters to provide hot water for summer reheat.

- All areas of the building are cooled by the chiller plant.

- Each chiller has a constant volume 15 HP circulating pump. A pair of redundant variable volume base mounted pumps (25 HP and 30 HP) circulate water to the building.

- Exterior chiller pipe insulation is fiberglass and the outer jacketing is in poor condition.

- The concrete floor in the chiller enclosure has significantly depressed in several locations and should be mud jacked or replaced.

Oneka Elementary
Independent School District #624

Analysis
Heating and Ventilation

- Classroom pods are typically heated, ventilated and cooled by dual duct variable air volume (VAV) systems. A dedicated heat recovery unit associated with each system provides conditioned 100% outside air to one of the VAV inlets for ventilation. The air-handling units have hot water and chilled water coils. The associated dual duct boxes typically have hot water reheat coils for space temperature control.

- The gymnasiums are heated, cooled, and ventilated by two constant volume single zone system air-handling units. Each unit has hot water coils for heating and chilled water coils for cooling.

- Remaining areas of the building (not the classroom pods or gymnasiums) are typically heated, cooled, and ventilated by single duct VAV systems. Each unit has hot water coils for heating and chilled water coils for cooling. VAV systems serve VAV boxes with hot water reheat coils for space temperature zone control.

- Each of the North and South Gymnasiums do not have de-stratification fans.

- Perimeter finned tube radiation is not consistently applied to classroom spaces. Approximately 20 to 30% of classroom spaces have perimeter finned tube for heating control. Rooms without perimeter-finned tube have many complaints regarding temperature zone control. Maintenance staff reported that at outside air temperature below 0 Deg. F they need to run systems 24/7 to maintain building heat.

- The main data room is served by a single computer room cooling unit. There is no redundant means for cooling this area.

- The kitchen freezer and cooler compressors are located in the receiving area. The area is hot in the summer and the compressors should be moved to the roof.

- There is a Type I grease hood in the kitchen that is in good condition.

- The building exhaust systems are replaced or maintained as needed and are in good condition.

Temperature Control

Oneka Elementary
Independent School District #624

Analysis

Temperature Control

- The building direct digital controls were originally installed as manufactured by Trane. The Trane controllers are no longer available. As they become nonfunctional the District has been replacing them with controls as manufactured by Allerton. The District has remote access to the systems through a web-based front-end system.

Plumbing

- The hot and cold water distribution piping is copper and in good condition.
- The original domestic water heating system was replaced with a 500 MBH instantaneous gas fired high efficiency sealed combustion water heater. The system was installed in 2015.
- Domestic hot water is circulated throughout the building by a circulating pump.
- All domestic hot water is softened by a duplex water softening system.
- A 4" water service enters the building in the boiler room.

Issues

1 Provide a high efficiency gas fired condensing boiler sized to handle light load spring and fall conditions to improve overall efficiency of hot water plant. The boiler will work in conjunction with the existing dual fuel fire-tube boilers.
Priority: 2 **Cost: $310,000**

2 Replace existing boiler isolation valves with new ball valves. Provide isolation valves on each of the two chilled water and hot water pumps.
Priority: 1 **Cost: $45,000**

3 Replace existing air-cooled chiller plant with new chillers of the same capacity. Provide with de-super heaters for heat recovery and consider converting the system to a variable primary system. New chillers are to have cottonwood screens and extension cones on reject heat.
Priority: 2 **Cost: $595,000**

4 Replace exterior chilled water pipe insulation with new flexible elastomeric insulation and an aluminum jacket.
Priority: 1 **Cost: $30,000**

Oneka Elementary
Independent School District #624

Issues

5 Repair concrete floor in chiller enclosure by either mud jacking or replacement.
Priority: 2 **Cost: $15,000**

6 Provide a spilt AC system in the data room to provide redundant cooling.
Priority: 3 **Cost: $25,000**

7 Replace all Trane direct digital controls with new direct digital controls as manufactured by Allerton as an extension of the existing web-based system.
Priority: 2 **Cost: $440,000**

8 Provide de-stratification fans in the gymnasiums and connect to the building automation system for time of day control.
Priority: 2 **Cost: $40,000**

9 Provide fin tube radiation on remaining perimeter rooms.
Priority: 2 **Cost: $380,000**

Oneka Elementary
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 480-volt 3-phase 2000A Siemens Sentron SB REV-A switchboard. The main switchboard is original to the building (2005). It utilizes a main circuit breaker and fusible distribution. It contains adequate spare capacity to accommodate minor building expansions, and is in good condition.

- The building is enrolled in a utility curtailment program.

- Service equipment includes surge protection and power factor correction capacitors.

- Distribution equipment is predominantly of the same vintage as the service equipment and is in good condition.

- The facility is partially backed up by a 100kW/125kVA Cummins natural gas generator located within the building. The generator is original to the building and feeds (1) 150A automatic transfer switch with a manual transfer switch backup. Loads served include emergency lighting, boilers, pumps, and kitchen freezer/coolers. The generator is in good condition.

Lighting

- Lighting consists of recessed and suspended linear T8 fluorescent fixtures with occupancy sensors, and is generally in good condition.

- Gymnasium lighting consists of 4-lamp T5 fluorescent high bays and should be upgraded to LED. Recommend replacing with LED fixtures and sensors.

- Exit signs and interior egress lighting are fed from the generator, in good condition, and appear to be sufficiently located.

- Exterior lighting consists of metal halide fixtures in good to fair condition and should be upgraded to LED.

Systems/ Technology

- Wireless clock system is in good working condition.

Oneka Elementary
Independent School District #624

Analysis

Systems/ Technology

- The facility contains a “Big Ben” style clock that is in working condition.
- Paging system is in good working condition.
- Fire alarm panel is an addressable Siemens Fire Finder XLS that is original to the building. It is in good condition but is nearing the end of its expected life. Devices appear to meet code. Replacement of the system should be considered as a lower priority.

Issues

Systems/ Technology

1 Replace gymnasium fluorescent lighting with energy efficient LED fixtures and controls.
Priority: 2 **Cost: $75,900**

2 Replace metal halide exterior lighting with LED.
Priority: 3 **Cost: $190,000**

Oneka Elementary

SITE

1	Patch concrete sidewalks near Exit D and north parking loop.	Priority: N	**$46,200**
2	Resurface asphalt play area.	Priority: N	**$120,400**
3	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**
4	Provide splash blocks at (5) overflow drain locations.	Priority: N	**$3,400**

EXTERIOR

1	Repair / Replace Aluminum window sills to provide positive drainage.	Priority: 1	**$689,500**
2	Selective repair of cracked / damaged siding.	Priority: 2	**$1,000**

INTERIOR

1	Replace carpet in classrooms throughout building and Media Center entry.	Priority: 3	**$293,700**
2	Paint HM door frames at all classrooms.	Priority: 3	**$5,300**
3	Repair / Replace wall covering on operable wall panel in gym.	Priority: 3	**$600**
4	Provide new security hardware at all classroom doors.	Priority: 3	**$70,200**
5	Provide (1) new double stack convection oven and (1) new combi oven at kitchen.	Priority: 3	**$124,000**
6	Relocate existing freezer and cooler compressors to the roof.	Priority: N	**$40,000**

ACCESSIBILITY

1	Provide 5 grab bars as required in private toilet rooms.	Priority: 2	**$1,300**
2	Provide wing walls at approximately 5 drinking fountain locations.	Priority: 2	**$6,700**

MECHANICAL SYSTEMS

1	Provide a high efficiency gas fired condensing boiler sized to handle light load spring and fall	Priority: 2	**$310,000**
2	Replace existing boiler isolation valves with new ball valves. Provide isolation valves on each of the	Priority: 1	**$45,000**
3	Replace existing air-cooled chiller plant with new chillers of the same capacity. Provide with de-super	Priority: 2	**$595,000**
4	Replace exterior chilled water pipe insulation with new flexible elastomeric insulation and an	Priority: 1	**$30,000**
5	Repair concrete floor in chiller enclosure by either mud jacking or replacement.	Priority: 2	**$15,000**
6	Provide a spilt AC system in the data room to provide redundant cooling.	Priority: 3	**$25,000**
7	Replace all Trane direct digital controls with new direct digital controls as manufactured by Allerton as	Priority: 2	**$440,000**
8	Provide de-stratification fans in the gymnasiums and connect to the building automation system for	Priority: 2	**$40,000**
9	Provide fin tube radiation on remaining perimeter rooms.	Priority: 2	**$380,000**

ELECTRICAL SYSTEMS

1	Replace gymnasium fluorescent lighting with energy efficient LED fixtures and controls.	Priority: 2	**$75,900**
2	Replace metal halide exterior lighting with LED.	Priority: 3	**$190,000**

Oneka Elementary
Independent School District #624

SITE	**$245,300.00**
EXTERIOR	**$690,500.00**
INTERIOR	**$533,800.00**
ACCESSIBILITY	**$8,000.00**
MECHANICAL SYSTEMS	**$1,880,000.00**
ELECTRICAL SYSTEMS	**$265,900.00**
Total Cost	**$3,623,500.00**

Oneka Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$0	$75,300	$170,000	**$245,300**
EXTERIOR	$689,500	$1,000	$0	$0	$0	**$690,500**
INTERIOR	$0	$0	$493,800	$0	$40,000	**$533,800**
ACCESSIBILITY	$0	$8,000	$0	$0	$0	**$8,000**
MECHANICAL SYSTEMS	$75,000	$1,780,000	$25,000	$0	$0	**$1,880,000**
ELECTRICAL SYSTEMS	$0	$75,900	$190,000	$0	$0	**$265,900**
Totals:	**$764,500**	**$1,864,900**	**$708,800**	**$75,300**	**$210,000**	**$3,623,500**

Otter Lake Elementary
Independent School District #624

Address:	1401 County Road H2 White Bear Lake, Minnesota 55110	**Year(s) Built:**	1987, 1994
		Gross Area:	103,490 S.F.
Contact:		**Site Area:**	
		Parking:	90
Phone:			

Otter Lake Elementary
Independent School District #624

Analysis

- The site is bordered to the south by CR H2 E, the East by Otter Lake Road, and by residences to the north and west.

- The West Lot has 90 total parking stalls, 2 of which are accessible. The South Lot has 31 total parking stalls, 3 of which are accessible. The East Lot has 45 total parking stalls, 2 of which are accessible. This makes for 166 total stalls, with 7 accessible stalls. This meets the ADA requirement for quanitty of accessible stalls.

- Asphalt Condition is acceptable in the main parking lots and driveways.

- The asphalt in the north hard surface play area and walking path connecting from there to the playground is in poor condition (wide cracks with vegetation growing out of them).

- Concrete Sidewalk condition is good.

- Playground Condition is good.

- Athletic Facilities: No visible problems.

- Wood monument sign is old and requires ongoing maintenance and painting.

- There is a downspout draining water onto the concrete sidewalk at exit G. A drain is provided in the concrete, but this still constitutes a hazard in a path of egress.

Issues

1 Resurface asphalt play area and walking path.
Priority: 2 **Cost: $22,600**

2 Provide continuous piping connection from roof drain directly into underground storm sewer at (1) downspout and (1) overflow drain near door G.
Priority: 3 **Cost: $15,000**

Otter Lake Elementary
Independent School District #624

Issues

3 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,200**

Otter Lake Elementary
Independent School District #624

Analysis

- The original building was constructed in 1993 and has no additions.
- Windows are 25 years old (original construction) and are recommended for replacement. Windows are 6’-0" x 6’-0" metal clad wood frames subdivided into four panes (center vertical mullion, bottom third operable). The bottom portion is an awning style operable window with a screen on the interior.
- Aluminum Entrances are in good condition despite being original. Likely worth replacing with windows however, as they are old.
- Exterior walls are brick with 2’8" Glazed Block base and (2) 16" glazed block accent bands.
- The exterior glazed block has significant mortar deterioration, chipping and delamination of glazing.
- Roof is 19 years old and in fair condition.
- There is water damage at each of the entrances in the peak of the exterior vestibule soffit.
- There is exposed rigid insulation at the foundation near the secondary entrance (B)

Issues

1 Replace all exterior glazed block with brick.
Priority: 3 **Cost: $2,087,500**

2 Replace all windows and replace aluminum entrance storefronts.
Priority: 2 **Cost: $245,700**

3 Patch and repaint exterior plaster soffits at building entrances.
Priority: 3 **Cost: $1,500**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Otter Lake Elementary
Independent School District #624

Issues

4 Replace roof areas A, B, C, D, D1, D2, E (installed 1999) per District roof report.
Priority: 4 **Cost: $3,541,500**

Otter Lake Elementary
Independent School District #624

Analysis

- Cafeteria 2x4 ceilings, terrazzo floor and brick and burnished block walls are in good condition.
- A wall pad in the gymnasium is damaged.
- The vinyl base in the gym is in need of replacing.
- The media center carpet is fraying at seams and shows significant wear and fading in some areas.
- The media center 2x4 ACT ceiling is warped.
- The media center checkout desks are built in casework with missing end panels and scratched and worn surfaces.
- None of the classroom doors have security hardware.
- Classroom ceilings throughout the building have warped ceiling tiles (corridor ceiling is good).
- Classroom carpets throughout the facility are showing their age (corridor carpet is newer).
- Casework in classrooms is a low priority, but soon due for replacement.
- 518 Storage room doors and frames are scratched and beat up.
- Vinyl wall covering on operable wall between stage and cafeteria is peeling.
- Paint on guardrail at accessible ramp to stage is peeling/chipping door at top of ramp is in poor condition.

Otter Lake Elementary
Independent School District #624

Analysis

- Kitchen needs new equipment.

Issues

1 Replace wall pad in gymnasium.
Priority: 3 **Cost: $700**

2 Replace vinyl base in gymnasium.
Priority: 3 **Cost: $2,000**

3 Replace carpet in media center, classrooms.
Priority: 3 **Cost: $60,500**

4 Replace ACT ceiling in media center, classrooms.
Priority: 4 **Cost: $388,900**

5 Replace Casework in media center, classrooms.
Priority: 3 **Cost: $266,400**

6 Provide painting allowance for hollow metal door frames and handrails and some c blk wall touch ups.
Priority: 4 **Cost: $16,700**

7 Replace 10% of wood doors throughout facility.
Priority: 4 **Cost: $48,500**

8 Replace vinyl wall covering on operable wall in gym.
Priority: 3 **Cost: $13,400**

9 Provide new security hardware at all classroom doors.
Priority: 4 **Cost: $105,300**

10 Provide (1) new double stack convection oven and (1) combi oven (and stand).
Priority: 3 **Cost: $124,000**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Otter Lake Elementary
Independent School District #624

Issues

11 Rebuild walk in freezer.
Priority: 2 **Cost: $55,200**

12 Provide (2) 4-well electric hot food serving counters and (1) cold food serving counter.
Priority: 3 **Cost: $60,000**

Otter Lake Elementary
Independent School District #624

Analysis

- Reading steps are not accessible and serve as a potential fall hazard. They occur in the media center, and kindergarten rooms 203 & 205.
- The door into the Music room 110 is not accessible due to wing walls. Provide power operator.
- Doors to 110a and 110b are not accessible due to jamb depth.
- Drinking fountains protrudes into the path of travel between kindergarten rooms 203 & 201, near cafeteria restrooms.
- Drinking fountain in gym is not accessible.
- Kindergarten toilet rooms are 5’ x 6’ and do not meet accessibility standards.
- Toilet stall in Boys’ restroom in 200 wing is not wide enough for ADA accessibility.
- Toilet stall in Boys’ restroom in cafeteria is not deep enough for ADA accessibility.
- Private toilet in Health office is not accessible (6’0” x 6’4”)
- Private toilet in Main office is not accessible (5’4” x 6’4”)
- Boys' and Girls' restrooms in 300-wing are missing grab bars.

Issues

1 Fill in reading stair in Media center, kindergarten room 203 & 205.
Priority: 2 **Cost:** **$20,900**

2 Provide power door operator at (3) doors.
Priority: 2 **Cost:** **$12,600**

Otter Lake Elementary
Independent School District #624

Issues

3 Provide wing walls at (3) drinking fountain locations.
Priority: 2 **Cost:** **$4,000**

4 Replace drinking fountain in gym with accessible electric water cooler.
Priority: 2 **Cost:** **$5,500**

5 Provide rear grab bars at (2) accessible toilet stalls in 300-wing.
Priority: 1 **Cost:** **$1,600**

6 Minor remodel of student gang toilets (1).
Priority: 1 **Cost:** **$66,900**

7 Major remodel of private toilets (7).
Priority: 1 **Cost:** **$409,500**

Otter Lake Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1987. A renovation project in 2015 replaced several air handling units.

- The building is heated by two gas fire 2,092 MBH Cleaver Brooks fire tube hot water boilers. The boilers were installed in the original 1987 construction. The piping is arranged as primary/secondary. Two 10 HP variable speed pumps circulate water throughout the building.

- The building is cooled by a 210 air cooled variable speed chiller installed in 2015. The chiller is located on the roof of the boiler room. The chiller has a de-super heater to provide hot water for summer reheat. Chiller water is circulated throughout the building by three 10HP variable speed pumps. Maintenance staff noted that condenser fan discharge air recirculates within the chiller enclosure.

- Air handling units serving northeast and northwest classroom pods were replaced in 2015. The units are variable air volume (VAV) with hot water heat and chilled water cooling. The units serve VAV boxes with hot water reheat for temperature zone control. In the 2015 project, where possible, VAV boxes were moved to the corridor to improve access. Classrooms typically have perimeter hot water fin tube for improved heating control.

- The air handling unit serving the media center was replaced in 2015. The unit is VAV with hot water heat and chilled water cooling. The unit serves VAV boxes with hot water reheat for temperature zone control.

- The unit serving the cafeteria, kitchen, and adjacent areas was replaced in 2015. The unit is VAV with hot water heat and chilled water cooling. The unit serves VAV boxes with hot water reheat for temperature zone control. There is not a separate make-up air unit serving the kitchen hood exhaust. Make-up air is transferred from the adjacent cafeteria area.

- The unit serving the main office was replaced in 2015. The unit is VAV with hot water reheat for temperature zone control and direct expansion (DX) for cooling. The unit serves VAV boxes with hot water reheat for temperature zone control.

Otter Lake Elementary
Independent School District #624

Analysis
Heating and Ventilation

- The unit serving the gymnasium was installed during original construction in 1987 and is constant volume with hot water heat. The gymnasium is not cooled. The gymnasium does not have de-stratification fans.

- The data room is cooled by a central air handling unit with VAV and does not have a redundant system. The VAV box's control/sensor supplying the space is located in an adjacent room.

- The southeast classroom pod is served by the original air handling unit installed in 1987. The unit is constant volume with hot water heat and is not cooled. Classrooms have perimeter hot water fin tube radiation but temperature control has been reported as poor. In addition to this air handling unit, the lounge is cooled by a rooftop DX unit installed in 1987. The rooftop unit is in poor condition and near the end of its useful life.

- A separate air handling system with direct expansion cooling coil with VAV boxes containing hot water reheats serves the far end of the southeast classroom pod for the District #916 tenant space. There has been reported issues with temperature control in this space.

- The roof mounted exhaust fans were replaced in the 2015 project and are in good condition.

Temperature Control

- The 2015 mechanical project was installed with direct digital controls as manufactured by Alerton. The District has remote access to the systems through a web-based front-end system.

- Pneumatic controls remain on many systems throughout the building, including:
  - Fire smoke dampers.
  - Steam heating terminals including cabinet unit heaters, convectors, and fin tube radiation.
  - Air handling systems that were not upgrade in the 2015 project.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The copper domestic hot water distribution piping is in good condition.

Otter Lake Elementary
Independent School District #624

Analysis
Plumbing

- Drinking fountains throughout the building are typically installed with remote water coolers located in adjacent mechanical spaces or above adjacent ceilings.

- Building domestic hot water is softened by a Simplex water softener. The water softener is in good condition.

- Building hot water is provided by a sealed combustion hot water heating system connected to a hot water storage tank.

Issues

1 Full replacement of existing hot water boiler plant with new high efficiency condensing boiler plant sized to handle all building heating needs. The plant will be piped into existing hot water distribution system with variable speed pumps.
Priority: 2 **Cost: $1,350,000**

2 Remove rooftop DX unit serving the lounge and replace air handling unit serving the southeast classroom pod with a new variable air volume unit serving variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the existing hot water for heat and chilled water plant for cooling. All new controls will be direct digital as an extension of existing Alerton system.
Priority: 1 **Cost: $2,100,000**

3 Replace air handling unit serving the District #916 tenant space in the southeast classroom pod with a new variable air volume unit serving variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the existing hot water for heat and chilled water plant for cooling. All new controls will be direct digital as an extension of existing Alerton system.
Priority: 2 **Cost: $340,000**

4 Replace air handling unit serving the gymnasium with a new constant volume unit. The new unit will be connected to the existing hot water system for heat. The unit will have space allocated for future installation of cooling coil. All new controls will be direct digital as an extension of the existing Alerton system.
Priority: 2 **Cost: $340,000**

Otter Lake Elementary
Independent School District #624

Issues

5 Install cooling coil for new air handling unit serving the gymnasium and connect to chilled water plant.
Priority: 4 **Cost: $40,000**

6 Provide a split DX system for redundant cooling of the data room. Also locate a control for the VAV box serving the data room within the room.
Priority: 3 **Cost: $25,000**

7 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.
Priority: 2 **Cost: $180,000**

8 Provide de-stratification fans in the gymnasium and connect to the building automation system for time of day control.
Priority: 2 **Cost: $40,000**

9 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Allerton system. Re-evaluate building code requirements to remove as many fire/smoke dampers as possible.
Priority: 2 **Cost: $10,000**

10 Retrofit the existing chiller with cottonwood screens.
Priority: 3 **Cost: $10,000**

11 Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-circulating within the chiller enclosure.
Priority: 3 **Cost: $10,000**

Otter Lake Elementary
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Analysis

Service and Distribution

- Service equipment consists of (1) 480-volt 3-phase GE Spectra switchboard with 1200A main bolted pressure switch. The main switchboard is original to the building (1987) and is in good condition. It contains minimal space for expanded capacity. Any significant additions or HVAC upgrades to the building may necessitate a new service with this equipment being backfed or eliminated.
  The building is enrolled in a utility curtailment program.

- The facility service equipment does include surge protection. It is recommended surge protection be added to protect from outside transients.

- The distribution equipment is predominantly original to the building (1987) and in good condition.

- The facility is partially backed up by a diesel generator located within the building. The generator is original to the building and feeds (1) 100A automatic transfer switch. Loads served include emergency lighting, boilers, pumps, and kitchen freezer/coolers. Due to age and maintenance concerns it is recommended the generator set be replaced with a natural gas unit, and the life safety and discretionary loads be separated to meet modern codes.

- Provide additional power outlets in classrooms.

Lighting

- Facility interior lighting consists of fluorescent fixtures with occupancy sensors primarily in corridors. Recommend replacing with LED fixtures and robust controls.

- Exit signs and interior egress lighting are fed from the generator, in fair condition, and appear to be sufficiently located.

- The facility does not have exterior egress lighting. Egress fixtures should be provided.

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

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Analysis
Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system is in good working condition.
- Fire alarm panel has recently been replaced with a Notifier NFW2-100 addressable panel. Existing wiring and devices may need upgraded in some locations.

Issues

1 Provide surge suppression at main electrical service.
Priority: 3 **Cost:** **$6,000**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost:** **$243,000**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost:** **$53,600**

4 Replace aged T8 lighting with energy efficient LED fixtures.
Priority: 3 **Cost:** **$259,500**

5 Provide exterior egress lighting at each exit.
Priority: 1 **Cost:** **$20,900**

6 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost:** **$180,000**

7 Provide wireless clock system.
Priority: 3 **Cost:** **$26,700**

8 Replace fire alarm system.
Priority: 1 **Cost:** **$117,900**

Otter Lake Elementary

SITE

1	Resurface asphalt play area and walking path.	Priority: 2	**$22,600**
2	Provide continuous piping connection from roof drain directly into underground storm sewer at (1)	Priority: 3	**$15,000**
3	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Replace all exterior glazed block with brick.	Priority: 3	**$2,087,500**
2	Replace all windows and replace aluminum entrance storefronts.	Priority: 2	**$245,700**
3	Patch and repaint exterior plaster soffits at building entrances.	Priority: 3	**$1,500**
4	Replace roof areas A, B, C, D, D1, D2, E (installed 1999) per District roof report.	Priority: 4	**$3,541,500**

INTERIOR

1	Replace wall pad in gymnasium.	Priority: 3	**$700**
2	Replace vinyl base in gymnasium.	Priority: 3	**$2,000**
3	Replace carpet in media center, classrooms.	Priority: 3	**$60,500**
4	Replace ACT ceiling in media center, classrooms.	Priority: 4	**$388,900**
5	Replace Casework in media center, classrooms.	Priority: 3	**$266,400**
6	Provide painting allowance for hollow metal door frames and handrails and some c blk wall touch ups.	Priority: 4	**$16,700**
7	Replace 10% of wood doors throughout facility.	Priority: 4	**$48,500**
8	Replace vinyl wall covering on operable wall in gym.	Priority: 3	**$13,400**
9	Provide new security hardware at all classroom doors.	Priority: 4	**$105,300**
10	Provide (1) new double stack convection oven and (1) combi oven (and stand).	Priority: 3	**$124,000**
11	Rebuild walk in freezer.	Priority: 2	**$55,200**
12	Provide (2) 4-well electric hot food serving counters and (1) cold food serving counter.	Priority: 3	**$60,000**

ACCESSIBILITY

1	Fill in reading stair in Media center, kindergarten room 203 & 205.	Priority: 2	**$20,900**
2	Provide power door operator at (3) doors.	Priority: 2	**$12,600**
3	Provide wing walls at (3) drinking fountain locations.	Priority: 2	**$4,000**
4	Replace drinking fountain in gym with accessible electric water cooler.	Priority: 2	**$5,500**
5	Provide rear grab bars at (2) accessible toilet stalls in 300-wing.	Priority: 1	**$1,600**
6	Minor remodel of student gang toilets (1).	Priority: 1	**$66,900**
7	Major remodel of private toilets (7).	Priority: 1	**$409,500**

MECHANICAL SYSTEMS

1	Full replacement of existing hot water boiler plant with new high efficiency condensing boiler plant	Priority: 2	**$1,350,000**
2	Remove rooftop DX unit serving the lounge and replace air handling unit serving the southeast	Priority: 1	**$2,100,000**
3	Replace air handling unit serving the District #916 tenant space in the southeast classroom pod with a	Priority: 2	**$340,000**
4	Replace air handling unit serving the gymnasium with a new constant volume unit. The new unit will	Priority: 2	**$340,000**
5	Install cooling coil for new air handling unit serving the gymnasium and connect to chilled water plant.	Priority: 4	**$40,000**
6	Provide a split DX system for redundant cooling of the data room. Also locate a control for the VAV	Priority: 3	**$25,000**

7	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$180,000**
8	Provide de-stratification fans in the gymnasium and connect to the building automation system for time	Priority: 2	**$40,000**
9	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$10,000**
10	Retrofit the existing chiller with cottonwood screens.	Priority: 3	**$10,000**
11	Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-	Priority: 3	**$10,000**

ELECTRICAL SYSTEMS

1	Provide surge suppression at main electrical service.	Priority: 3	**$6,000**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$243,000**
3	Provide additional power outlets in classrooms.	Priority: 3	**$53,600**
4	Replace aged T8 lighting with energy efficient LED fixtures.	Priority: 3	**$259,500**
5	Provide exterior egress lighting at each exit.	Priority: 1	**$20,900**
6	Replace metal halide exterior lighting with LED.	Priority: 2	**$180,000**
7	Provide wireless clock system.	Priority: 3	**$26,700**
8	Replace fire alarm system.	Priority: 1	**$117,900**

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SITE	**$112,800.00**
EXTERIOR	**$5,876,200.00**
INTERIOR	**$1,141,600.00**
ACCESSIBILITY	**$521,000.00**
MECHANICAL SYSTEMS	**$4,445,000.00**
ELECTRICAL SYSTEMS	**$907,600.00**
Total Cost	**$13,004,200.00**

Otter Lake Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$22,600	$15,000	$75,200	$0	**$112,800**
EXTERIOR	$0	$245,700	$2,089,000	$3,541,500	$0	**$5,876,200**
INTERIOR	$0	$55,200	$527,000	$559,400	$0	**$1,141,600**
ACCESSIBILITY	$478,000	$43,000	$0	$0	$0	**$521,000**
MECHANICAL SYSTEMS	$2,100,000	$2,260,000	$45,000	$40,000	$0	**$4,445,000**
ELECTRICAL SYSTEMS	$138,800	$180,000	$588,800	$0	$0	**$907,600**
Totals:	**$2,716,800**	**$2,806,500**	**$3,264,800**	**$4,216,100**	**$0**	**$13,004,200**

Vadnais Heights Elementary
Independent School District #624

Address:	3645 Centerville Road Vadnais Heights, Minnesota 55127	**Year(s) Built:**	1950, 1955, 1668, 1987, 2012
		Gross Area:	60,775 S.F.
Contact:		**Site Area:**	16 acres
		Parking:	89
Phone:			

Vadnais Heights Elementary
Independent School District #624

Analysis

- The site area totals 16 acres and is bordered the southwest by Koehler Rd, the southeast by Centerville Road, and residential or undeveloped land on the rest of its borders.
- The building has 3 parking lots: The main staff lot to the north, the visitor lot to the east, and the gym/playground lot to the south.
- The asphalt is in poor condition in the northwest corner of the north lot, at the asphalt ramp to the north emergency exit form the media center, and the entire south lot.
- Playground equipment is painted steel tube structure with plastic components. Paint is scratched or peeling on most of the steel structure, with rust developing in some areas.
- Wood monument sign is old and requires ongoing maintenance and painting.
- There is a rusted and broken guardrail near door L that could serve as a potential hazard.
- Between the three parking lots, there are a total of 89 parking stalls available. Of these, 4 are designated as Accessible parking stalls. This meets the ADA ratio requirement of 1:25 for the first 100 stalls.
- The concrete sidewalk leading to door C is several inches below the threshold. This is an accessibility barrier, and should be resolved.
- The sidewalk leading to door K is steeper than 1:12 and terminates with several stairs. This does not conform to accessibility standards, and should be resolved.

Issues

1 Resurface asphalt in south lot, northwest corner of north lot, and ramp to media center emergency exit.
Priority: N **Cost: $103,100**

2 Expand the south parking lot to twice its current size.
Priority: 4 **Cost: $231,700**

Vadnais Heights Elementary
Independent School District #624

Issues

3 Replace steel guardrail at door L, patch concrete retaining wall.
Priority: 2 **Cost: $5,100**

4 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,300**

5 Replace the concrete sidewalk at door C with a concrete stoop that is level with the threshold. Replace enough concrete sidewalk to provide a max 1:12 slope to the rest of the accessible pathway.
Priority: 2 **Cost: $3,900**

6 Replace the sidewalk and stairs leading from door K to the playground with a concrete ramp conforming to ADA standards (likely will require switchbacks and landings)
Priority: 2 **Cost: $37,800**

Vadnais Heights Elementary
Independent School District #624

Analysis

- The original building dates to 1950. There was a classroom addition to the north in 1955, A media center addition in 1968, and another classroom and gym addition in 1987.
- Windows on original 1950 building and 1955 & 1968 addition are horizontal sliders. 1987 addition windows are insulated double pane manual-open casements with screens and horizontal mini blinds. All windows appear to be original - Replacement is recommended.
- Half of the entrance doors are FRP in aluminum frames, with the other half being aluminum doors.
- The brick mortar on the 1950 portion of the building has receded significantly. Tuckpointing is recommended.
- There is significant mortar deterioration and brick spalling at the outside corner of the Extended Day room near door D.
- Roof is 20+ years old. Area I is 27 years old and needs replacement soon.

Issues

1 Replace all exterior windows except main entry storefront (installed 2012).
Priority: 2 **Cost:** **$328,500**

2 Tuckpoint brick walls built before 1987.
Priority: 3 **Cost:** **$321,900**

3 Replace roof area I (installed 1991) per District roof report.
Priority: 1 **Cost:** **$298,900**

4 Replace roof areas A, C, D, E and F (installed 1995) per District roof report.
Priority: 2 **Cost:** **$526,700**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Vadnais Heights Elementary
Independent School District #624

Issues

5 Replace roof areas B, G, J, K, L, M, and O (installed 1998) per District roof report.
Priority: 3 **Cost: $807,700**

Vadnais Heights Elementary
Independent School District #624

Analysis

- A majority of the wood doors in the building are scratched and gouged.
- Media Center Casework and checkout desk appear to be original. Finishes are beginning to show wear, corners and edges are chipped.
- Classroom carpet was replaced in 2012, and is in good condition.
- Classroom ceilings are 2x2 ACT, and are in good condition.
- The ceiling grid in 217B is sagging in one small area - most likely due to broken wire hanger(s).
- Ceiling in kitchen office is warped.
- Some ceiling tile in cafeteria is starting to come down.
- Some classroom casework was installed in 1987 (blue) and some in 2007 (maple). Both are in good condition.
- Ceiling tile in extended day room is starting to warp, carpet in extended day room is showing wear.
- VCT at cafeteria and gym is starting to show signs of moisture and spread apart in some areas.
- Gymnasium office has original casework.
- Gymnasium wall pads are in poor condition.
- Kitchen needs new equipment.

Vadnais Heights Elementary
Independent School District #624

Analysis

- None of the classroom doors have security hardware.

Issues

1 Replace all wood doors in the building (provide security hardware at classroom doors).
Priority: 3 **Cost: $278,100**

2 Replace casework in media center, extended day room and gymnasium office.
Priority: 3 **Cost: $26,700**

3 Repair/replace damaged ACT ceilings.
Priority: N **Cost: $9,700**

4 Replace carpet in extended day room.
Priority: 3 **Cost: $2,900**

5 Replace VCT in gymnasium and cafeteria. Provide moisture mitigation.
Priority: 3 **Cost: $139,900**

6 Replace gymnasium wall pads.
Priority: 3 **Cost: $12,200**

7 Provide (1) new double stack convection oven and (1) new combi oven in kitchen.
Priority: 3 **Cost: $124,000**

8 Provide walk-in freezer at kitchen (none existing).
Priority: 2 **Cost: $102,000**

9 Provide (1) 4-well hot food serving counter and (1) 6-well cold food serving counter at kitchen.
Priority: 3 **Cost: $60,000**

Vadnais Heights Elementary
Independent School District #624

Analysis

- The sink and countertop in the media center is 36” high, which does not meet ADA standards
- The emergency exit at the north end of the media center does not have the minimum required push clearance due to adjacent classroom wall.
- The door from room 217B to the corridor exceeds maximum jamb depth (11” from face of wall to face of door)
- Toilet stalls in Both boys and girls restrooms in media center hallway do not meet ADA clear floor space requirements.
- Electric water cooler (drinking fountain) at restrooms in media center hallway protrudes into the accessible path of travel.
- Handrails at stairways have a diameter exceeding the maximum 2” and do not extend the required 12” past the top riser.
- Hallway coat hooks and shelves protrude more than the max. 4” into the accessible path of travel in classroom wing on both floors.
- Toilet stall in boys restroom across from main office does not meet ADA clear floor space requirement for depth.
- Toilet stall in girls restroom across from main office does not meet ADA clear floor space requirements.
- The (2) drinking fountains in the hallway near the main office protrude more than the max. 4” into the accessible path of travel.
- Private staff toilet near main office does not meet ADA clear floor space requirements. The overall clear dimensions of the toilet room are 5’4” x 5’5”.

Vadnais Heights Elementary
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Analysis

- The private toilet in the health office does not meet ADA clear floor space requirements. The overall clear dimensions of the toilet room are 5’0” x 9’0”.
- The handheld shower head in the health office toilet room does not meet ADA requirements.
- The drinking fountain on the lower level near room 101 protrudes into the accessible path of travel.
- Toilet stall in girls restroom in lower level classroom corridor does not meet ADA clear floor space requirements.
- Toilet stall in boys restroom in lower level classroom corridor does not meet ADA clear floor space requirements.
- Men’s and women’s individual staff toilets in lower level classroom corridor do not meet ADA clear floor space requirements.
- Private toilet room near main office does not meet current accessibility code.
- (2) toilets in kindergarten rooms do not meet ADA clear floor space requirements.
- Private staff toilet on west side of building does not meet ADA clear floor space requirements and door only provides 24” clear.
- Student restrooms on west side of building do not meet ADA clear floor space requirements.
- Floor at extended day room is uneven and does not meet current accessibility code.
- Sink in casework in extended day room is 36” A.F.F. and does not meet current accessibility code.
- Drinking fountain in west wing corridor requires wing walls per current accessibility code.

Vadnais Heights Elementary
Independent School District #624

Analysis

- Door D vestibule, sets of doors are too close together per current accessibility code for doors in a series.
- Lift from cafeteria to classroom tower has a lot of maintenance issues.
- Private toilet in kitchen does not meet current accessibility code.
- Door between kitchen and cafeteria does not meet current accessibility code due to depth of door.
- Toilet stalls in boys and girls restrooms near gymnasium do not meet ADA clear floor space requirements.
- At stair from cafeteria level to classroom corridor, handrail does not meet current accessibility code.

Issues

1 Provide power operator at five doors.
Priority: 2 **Cost: $20,900**

2 Replace handrails at stairwells throughout the building with handrails that meet code requirements.
Priority: 2 **Cost: $42,200**

3 Install permanent boot ledge on floor below coat hooks and shelves at same depth as maximum protrusion of shelf above in classroom wing corridor on both levels.
Priority: 2 **Cost: $44,400**

4 Provide wing walls at (5) drinking fountains in hallways to meet ADA clear floor space and accessible path of travel requirements.
Priority: 2 **Cost: $6,700**

5 Level out floor at extended day room.
Priority: 2 **Cost: $2,600**

Vadnais Heights Elementary
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Issues

6 Replace lift between classroom tower and cafeteria.
Priority: 1 **Cost:** **$41,800**

7 Minor remodel of student gang toilets (5).
Priority: 1 **Cost:** **$83,600**

8 Major remodel of student gang toilets (5).
Priority: 1 **Cost:** **$835,700**

9 Major remodel of private toilets (9).
Priority: 2 **Cost:** **$526,500**

Vadnais Heights Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1950. Major additions were completed in 1955, 1968, and 1987. Major mechanical system renovations were executed in 2012 and 2013. A small addition to the front of the office was included in the 2012 work. Fire protection and fire/smoke dampers were added in 1994.

- The building is heated by two gas fired 3,430 MBH LES fire box steam boilers. The boilers were installed 2003 and are in good condition. Steam is distributed throughout the building via a crawl space below the building. The boiler feed pump has been recently replaced and is in good condition.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- A steam to hot water convertor was installed in the boiler room to serve hot water to areas renovated in 2012. Hot water is circulated by two 10 HP in-line variable volume circulating pumps. The majority of the building has been converted to hot water heat with the exception of cafeteria and some terminal heating units.

- The building is cooled by a 130 ton air cooled chiller. The chiller was installed in 2008 and is located on grade to the west of the building in a chiller enclosure. A constant volume 5 HP pump circulates a primary pump through the chiller. A 15 HP variable speed pump circulates chilled water throughout the building. The chiller has a de-super heater to provide hot water for reheat in the summer.

- Classrooms in the 1950 area and the southeast exposure of the 1955 area of the building are heated, cooled, and ventilated by vertical style unit ventilators (VUV) installed in the 2012 and 2013 renovation. The unit ventilators typically have hot water coils for heating and chilled water coils for cooling. The two unit ventilators serving the kindergarten rooms have direct expansion (DX) coils with roof mounted condensing units for cooling. Air is typically distributed through overhead diffusers. The classrooms do not have perimeter finned tube radiation.

- Classrooms in the center of the building and the two floors on the west side are heated, cooled, and ventilated by a central variable air volume (VAV) system. The systems was installed in 2013 and serves VAV boxes with hot water reheat for temperature zone control. Classrooms typically do not have perimeter fin tube radiation.

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Analysis
Heating and Ventilation

- The front office in heated, cooled, and ventilated by a VAV unit located on the mechanical mezzanine. The system was installed in 2013 and serves VAV boxes with hot water reheat coils. The unit has hot water for heating and a DX coil for cooling. The condensing unit is installed on the roof above. Offices typically have perimeter hot water finned tube radiation.

- The cafeteria is heated and ventilated by two single zone constant volume air handling units installed in the original 1950 building construction. The units have a steam coil for heating and no cooling. The cafeteria is a high volume space and does not have de-stratification fans.

- The gymnasium is heated and ventilated by a constant volume air handling unit installed in the 1987 addition. The unit has hot water for heating and does not provide cooling. The gymnasium does not have de-stratification fans.

- A VUV that also serves the adjacent classroom cools the data room adjacent to the media center.

- A fan coil unit with DX cooling, located above the ceiling, provides additional cooling to the former computer lab. The room has since been converted to a special education room and the fan coil unit is no longer used.

- The outdoor storage area is not ventilated or exhausted.

- The kitchen hood is a Type 1 island hood that is very oversized for the kitchen equipment it serves. The original kitchen design transferred exhaust hood make-up air from the adjacent cafeteria area.

- The maintenance staff repairs or replaces the roof exhaust fans as needed and they are reported to be in good condition.

- The kitchen cooler and freezer compressors were relocated to the roof in 2017.

Temperature Control

- The building direct digital controls are as manufactured by Alerton. The District has remote access to the systems through a web based front-end system.

Vadnais Heights Elementary
Independent School District #624

Analysis

Temperature Control

- Pneumatic controls remain on many systems through out the building including:
  - Fire smoke dampers.
  - The cafeteria and gym air handling systems.
  - Some steam heating terminals including cabinet unit heaters and convectors.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system installed in the original 1950 and 1955 building construction is galvanized piping and is near the end of its useful life.

- Hot water is provided to the building by a large storage tank and steam tube bundle. The tank was installed in the original building construction. An atmospheric gas fired Raypak boiler circulates water through the tank to provide hot water during the summer. The water heater was installed approximately 10 years ago and is near the end of its useful life.

- The building has a simplex water softener for the building hot water that has been valved off and is no longer used.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4” water service enters the building in a storage room on the southeast side of the building. The shut-off valves at the meter are original (1950) and in need of replacement to provide a reliable means for shut-off.

- Classrooms typically have a sink, replaced in the 2012 and 2013 projects, with hot/cold water and bubbler.

- A duplex sewage ejector is located in the 1987 addition to discharge sanitary waste. The pumps were replaced in 2013 and are in good condition.

Issues

Vadnais Heights Elementary
Independent School District #624

Issues

1 Convert building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace existing steam coils in cafeteria air handling units and remaining steam unit heaters with new hot water heaters.

Priority: 2 **Cost: $1,200,000**

2 Provide a new constant volume air handling system to heat and ventilate the cafeteria. The unit to be located on the roof and be connected to the existing hot water system and have space for future installation of cooling coil. The unit to be controlled to provide make-up air for the adjacent kitchen area. All new controls to be an extension of the existing Alerton system.

Priority: 2 **Cost: $340,000**

3 Install cooling coil for new air handling unit serving the cafeteria and connect to chilled water system. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 3 **Cost: $40,000**

4 Provide de-stratification fans in the cafeteria and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

5 Replace air handling unit serving gymnasium with a new heating and ventilating unit. The unit to be connected to the existing hot water system and have space for future installation of cooling coil. All new controls to be an extension of the existing Alerton system.

Priority: 2 **Cost: $340,000**

6 Install cooling coil for new air handling unit serving the gymnasium and connect to existing chilled water system. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 4 **Cost: $40,000**

7 Provide de-stratification fans in the gymnasium and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

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Issues

8 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.
Priority: 1 **Cost: $25,000**

9 Provide a new secondary split AC system to cool head end room and provide redundancy.
Priority: 3 **Cost: $25,000**

10 Provide an exhaust system to ventilate the outdoor storage area. Transfer air from the outside through a new wall louver or roof hood.
Priority: 1 **Cost: $20,000**

11 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Alerton system. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.
Priority: 2 **Cost: $10,000**

12 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.
Priority: 2 **Cost: $110,000**

13 Retrofit the existing chiller and the three roof mounted condensing units with cottonwood screens.
Priority: 3 **Cost: $10,000**

14 Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-circulating within the chiller enclosure.
Priority: 3 **Cost: $10,000**

15 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure classrooms are served both hot and cold domestic water.
Priority: 2 **Cost: $340,000**

Vadnais Heights Elementary
Independent School District #624

Issues

16 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

17 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

18 Replace the existing water softener with a new water softening system to serve the building hot water.

Priority: 3 **Cost: $55,000**

Vadnais Heights Elementary
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 208-volt 3-phase 1200A GE AV-Line switchboard. The main switchboard was replaced in 1998 and is in good condition. It contains minimal space for expanded capacity. Any significant additions or HVAC upgrades to the building may necessitate a new service with this equipment being backfed or eliminated.

- The building is enrolled in a utility curtailment program.

- Roughly 25% of the distribution equipment is original to the building (1950), is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Classrooms contain newer-vintage fluorescent lensed fixtures with occupancy sensor control. If ceilings are replaced then it is recommended fixtures are simultaneously upgraded, otherwise maintain in place.

- All other areas typically consist of aged fluorescent fixtures with no sensors. Recommend replacing with LED fixtures and robust controls.

- Exit signs and interior egress lighting are battery-powered and should be replaced as part of a generator upgrade.

- The facility does not have exterior egress lighting. Egress fixtures should be provided.

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures. Front drop off area is poorly lit, add fixtures in this location.

Vadnais Heights Elementary
Independent School District #624

Analysis
Systems/ Technology

Systems/ Technology
- Clock system is wireless Bogen system, installed in 2008. Clocks are failing and replacement components are expensive. Recommend replacing with a new wireless system.

- Paging system is in good working condition.

- Fire alarm panel has recently been replaced with a Notifier NFS-320 addressable panel. Existing wiring and devices may need upgraded in some locations.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost:** **$106,400**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost:** **$139,800**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost:** **$30,800**

4 Provide exterior egress lighting at each exit.
Priority: 1 **Cost:** **$24,700**

5 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost:** **$84,300**

6 Provide wireless clock system.
Priority: 3 **Cost:** **$16,700**

7 Replace fire alarm devices and wiring.
Priority: 2 **Cost:** **$69,300**

Vadnais Heights Elementary

SITE

1	Resurface asphalt in south lot, northwest corner of north lot, and ramp to media center emergency exit.	Priority: N	**$103,100**
2	Expand the south parking lot to twice its current size.	Priority: 4	**$231,700**
3	Replace steel guardrail at door L, patch concrete retaining wall.	Priority: 2	**$5,100**
4	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**
5	Replace the concrete sidewalk at door C with a concrete stoop that is level with the threshold. Replace	Priority: 2	**$3,900**
6	Replace the sidewalk and stairs leading from door K to the playground with a concrete ramp	Priority: 2	**$37,800**

EXTERIOR

1	Replace all exterior windows except main entry storefront (installed 2012).	Priority: 2	**$328,500**
2	Tuckpoint brick walls built before 1987.	Priority: 3	**$321,900**
3	Replace roof area I (installed 1991) per District roof report.	Priority: 1	**$298,900**
4	Replace roof areas A, C, D, E and F (installed 1995) per District roof report.	Priority: 2	**$526,700**
5	Replace roof areas B, G, J, K, L, M, and O (installed 1998) per District roof report.	Priority: 3	**$807,700**

INTERIOR

1	Replace all wood doors in the building (provide security hardware at classroom doors).	Priority: 3	**$278,100**
2	Replace casework in media center, extended day room and gymnasium office.	Priority: 3	**$26,700**
3	Repair/replace damaged ACT ceilings.	Priority: N	**$9,700**
4	Replace carpet in extended day room.	Priority: 3	**$2,900**
5	Replace VCT in gymnasium and cafeteria. Provide moisture mitigation.	Priority: 3	**$139,900**
6	Replace gymnasium wall pads.	Priority: 3	**$12,200**
7	Provide (1) new double stack convection oven and (1) new combi oven in kitchen.	Priority: 3	**$124,000**
8	Provide walk-in freezer at kitchen (none existing).	Priority: 2	**$102,000**
9	Provide (1) 4-well hot food serving counter and (1) 6-well cold food serving counter at kitchen.	Priority: 3	**$60,000**

ACCESSIBILITY

1	Provide power operator at five doors.	Priority: 2	**$20,900**
2	Replace handrails at stairwells throughout the building with handrails that meet code requirements.	Priority: 2	**$42,200**
3	Install permanent boot ledge on floor below coat hooks and shelves at same depth as maximum	Priority: 2	**$44,400**
4	Provide wing walls at (5) drinking fountains in hallways to meet ADA clear floor space and accessible	Priority: 2	**$6,700**
5	Level out floor at extended day room.	Priority: 2	**$2,600**
6	Replace lift between classroom tower and cafeteria.	Priority: 1	**$41,800**
7	Minor remodel of student gang toilets (5).	Priority: 1	**$83,600**
8	Major remodel of student gang toilets (5).	Priority: 1	**$835,700**
9	Major remodel of private toilets (9).	Priority: 2	**$526,500**

MECHANICAL SYSTEMS

1	Convert building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 2	**$1,200,000**
2	Provide a new constant volume air handling system to heat and ventilate the cafeteria. The unit to be	Priority: 2	**$340,000**
3	Install cooling coil for new air handling unit serving the cafeteria and connect to chilled water system.	Priority: 3	**$40,000**

4	Provide de-stratification fans in the cafeteria and connect to the building automation system for time of	Priority: 2	**$20,000**
5	Replace air handling unit serving gymnasium with a new heating and ventilating unit. The unit to be	Priority: 2	**$340,000**
6	Install cooling coil for new air handling unit serving the gymnasium and connect to existing chilled	Priority: 4	**$40,000**
7	Provide de-stratification fans in the gymnasium and connect to the building automation system for time	Priority: 2	**$20,000**
8	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**
9	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**
10	Provide an exhaust system to ventilate the outdoor storage area. Transfer air from the outside through	Priority: 1	**$20,000**
11	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$10,000**
12	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$110,000**
13	Retrofit the existing chiller and the three roof mounted condensing units with cottonwood screens.	Priority: 3	**$10,000**
14	Provide extension cones on existing chiller condenser fan discharge to eliminate discharge air re-	Priority: 3	**$10,000**
15	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$340,000**
16	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
17	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**
18	Replace the existing water softener with a new water softening system to serve the building hot water.	Priority: 3	**$55,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$106,400**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$139,800**
3	Provide additional power outlets in classrooms.	Priority: 3	**$30,800**
4	Provide exterior egress lighting at each exit.	Priority: 1	**$24,700**
5	Replace metal halide exterior lighting with LED.	Priority: 2	**$84,300**
6	Provide wireless clock system.	Priority: 3	**$16,700**
7	Replace fire alarm devices and wiring.	Priority: 2	**$69,300**

Vadnais Heights Elementary
Independent School District #624

SITE	**$456,900.00**
EXTERIOR	**$2,283,700.00**
INTERIOR	**$755,500.00**
ACCESSIBILITY	**$1,604,400.00**
MECHANICAL SYSTEMS	**$2,685,000.00**
ELECTRICAL SYSTEMS	**$472,000.00**
Total Cost	**$8,257,500.00**

Vadnais Heights Elementary
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$46,800	$0	$307,000	$103,100	**$456,900**
EXTERIOR	$298,900	$855,200	$1,129,600	$0	$0	**$2,283,700**
INTERIOR	$0	$102,000	$643,800	$0	$9,700	**$755,500**
ACCESSIBILITY	$961,100	$643,300	$0	$0	$0	**$1,604,400**
MECHANICAL SYSTEMS	$55,000	$2,380,000	$210,000	$40,000	$0	**$2,685,000**
ELECTRICAL SYSTEMS	$24,700	$260,000	$187,300	$0	$0	**$472,000**
Totals:	**$1,339,700**	**$4,287,300**	**$2,170,700**	**$347,000**	**$112,800**	**$8,257,500**

Willow Lane Elementary
Independent School District #624

Address:	3375 Willow Avenue White Bear Lake, Minnesota 55110	**Year(s) Built:**	1965, 1994, 2013
		Gross Area:	59,125 S.F.
Contact:		**Site Area:**	14 acres
		Parking:	76
Phone:			

Willow Lane Elementary
Independent School District #624

Analysis

- The site area totals 14 acres. It is bordered to the East by Willow Ave, the north by apartments and private residences, and to the west and south by Willow Marsh Reserve.
- The north parking lot has 47 total parking stalls, 4 of which are accessible. The south lot has 29 total parking stalls, with none designated as accessible. The ratio of standard stalls to accessible stalls meets ADA requirements.
- There is significant cracking in the asphalt sidewalk at the north end of the school leading to the playground.
- The landscape block curb surrounding the flower bed at the north entry is deteriorating / missing.
- The paint is peeling on the bollards at the south end of the building.
- There are some bare patches in the turf near the playground and hard surface play areas.
- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Resurface asphalt at north sidewalk.
Priority: N **Cost:** **$5,400**

2 Replace deteriorated / missing landscape blocks at flower bed near north entry.
Priority: N **Cost:** **$700**

3 Repaint bollards.
Priority: N **Cost:** **$1,100**

4 Reseeding allowance.
Priority: N **Cost:** **$900**

Willow Lane Elementary
Independent School District #624

Issues

5 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,300**

Willow Lane Elementary
Independent School District #624

Analysis

- The original building was constructed in 1965, with a gymnasium and administration addition completed in 2013.
- The Exterior wall assembly is exposed concrete post and beam with brick infill between.
- Windows are aluminum sliders with screens. They appear to be original.
- There is a can light loose at the canopy over the Main Entry (A).
- There is concrete spalling at the loading dock.
- Roof is 26+ years old.

Issues

1 Replace windows on original building (not 2013 additions).
Priority: 2 **Cost:** **$293,900**

2 Repair / replace loose can light at main entry canopy.
Priority: N **Cost:** **$800**

3 Patch / repair concrete at loading dock.
Priority: 2 **Cost:** **$5,600**

4 Replace roof areas A, B, C, D, E, and F (installed 1990-1995) per District roof report.
Priority: 1 **Cost:** **$963,300**

Willow Lane Elementary
Independent School District #624

Analysis

- Terrazzo flooring in corridors is in good condition.
- Ceilings in classroom wing are glue-up acoustical tiles, most of which are in good condition.
- There is a significant amount of original casework in the classroom wing. The condition of the casework varies, but it is all over 50 years old.
- The VCT in the kindergarten classrooms has some scuff marks and discoloring.
- The broadloom carpet is from the early 2000's, but is still in fair condition. Carpet tile was installed in 2008 and is in good condition.
- None of the classroom doors have security hardware.
- Many of the doorframes have scratched or chipping paint.
- Cafeteria doors are scratched and gouged.
- There is paint peeling at sealant joints in the gym precast walls.
- Kitchen needs new equipment.

Issues

1 Replace all original casework.
Priority: 3 **Cost: $427,100**

2 Replace VCT in kindergarten classrooms (106 & 108).
Priority: 3 **Cost: $15,100**

3 Replace broadloom carpet with carpet tile (low priority).
Priority: 4 **Cost: $198,900**

Willow Lane Elementary
Independent School District #624

Issues

4 Painting allowance for door frames.
Priority: 3 **Cost: $2,600**

5 Replace wood doors in cafeteria.
Priority: 3 **Cost: $27,600**

6 Recaulk sealant joints in gym precast walls, provide new color-coordinated sealant.
Priority: 4 **Cost: $40,200**

7 Provide new security hardware at all classroom doors.
Priority: 3 **Cost: $53,500**

8 Provide (1) new double stack convection oven in kitchen.
Priority: 3 **Cost: $60,200**

9 Provide walk-in freezer at kitchen (none existing).
Priority: 2 **Cost: $102,000**

10 Provide (1) 4-well hot food serving counter and (1) 6-well cold food serving counter at kitchen.
Priority: 3 **Cost: $60,000**

Willow Lane Elementary
Independent School District #624

Analysis

- Power operators are provided at main entry vestibule.
- Health office toilet is not accessible due to proximity of sink to toilet (4'-7").
- There is a shower head on the wall in the health office toilet without an accessible seat or a separate compartment.
- Drinking fountains protrude more than 4" into the accessible path of travel (2 in main entry corridor, 1 in the elevator lobby on each level of the classroom wing).
- Handrails and guardrails at stairways in classroom wing do not meet code requirements.
- Coat hooks and shelves in classroom corridors protrude more than 4" into the accessible path of travel.
- Doors into Multi-Use room 100 exceed the max jamb depth per ADA.
- Toilet room in Multi-Use room 100 does not meet minimum clear floor space requirements for the toilet.
- The media center requires a second exit for emergency egress requirements.
- The sink and countertop in the media center are 36" tall, which exceeds ADA height standards.
- Private staff toilets in classroom wing do not meet ADA clear floor space requirements.
- Student toilets in classroom wing do not have ADA accessible stalls in them.
- Private toilets in kindergarten classrooms do not meet ADA clear floor space requirements.

Willow Lane Elementary
Independent School District #624

Analysis

- Private unisex toilet in second floor elevator lobby does not meet ADA clear floor space requirements due to sink location.

- Private toilet room in kitchen does not meet ADA clear floor space requirements (sink is 4'-0" from toilet wall, room is only 5'-11" deep).

- Toilet stall in unisex restroom in receiving does not meet ADA clear floor space requirements.

- Private student toilets near gym and music room do not meet ADA clear floor space requirements (sinks in both boys and girls toilet room are 4'-10" from toilet wall, girls toilet room is only 6'-1" deep).

Issues

1 Provide wing walls at (4) drinking fountains as required per ADA.
Priority: 2 **Cost: $5,300**

2 Replace handrails and guardrails at stairways in classroom wing to meet current codes.
Priority: 2 **Cost: $28,100**

3 Provide permanent boot ledge at the floor below coat hooks and shelves in classroom corridors.
Priority: 2 **Cost: $2,300**

4 Provide power operators at (2) doors into room 100.
Priority: 2 **Cost: $8,400**

5 Remove fixtures from toilet room in multi-use room 100 and patch walls and floors as required to convert to storage closet.
Priority: 2 **Cost: $9,200**

6 Major remodel of student gang toilets (4).
Priority: 1 **Cost: $668,600**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Willow Lane Elementary
Independent School District #624

Issues

7 Minor remodel of private toilets (4).
Priority: 2 **Cost: $33,500**

8 Major remodel of private toilets (6).
Priority: 2 **Cost: $351,000**

Willow Lane Elementary
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1965. In 1994 an elevator was added to the west end of the building. A major addition in 2013 included a gymnasium, music room, and front office. Fire protection, smoke dampers, corridor relief were added to the building in the early 1990's. Mechanical systems in the classrooms were upgraded in 2008.

- The building is heated by two gas fired 3,601 MBH Pacific National fire tube steam boilers. The boilers were installed in the original 1965 building construction. Steam is distributed throughout the building in the crawl space below the building. The boiler burners were replaced in 2000 and 2004. The boiler feed pump has been recently replaced and is in good condition.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- A steam to hot water convertor was installed in the 2013 additions project to provide hot water to areas added and renovated in 2013. The convertor is located adjacent to the boiler room. Hot water is circulated by two 3 HP in-line constant volume circulating pumps.

- The building is cooled by a 110 ton air cooled chiller. The chiller was installed in 2005 and is located on grade to the west of the building in a chiller enclosure. A constant volume 5 HP pump circulates a primary pump through the chiller. A 10 HP variable speed pump circulates chilled water throughout the building.

- The chilled water piping outside the building is insulated with fiberglass insulation and wrapped in an aluminum jacket. The jacketing has deteriorated and the fiberglass insulation is getting wet.

- The classrooms are typically heated, cooled, and ventilated by vertical style unit ventilators (VUV) installed in the 2008 renovation. The unit ventilators have steam heating coils for heating and chilled water coils for cooling. Piping to the 1st floor units is routed in the crawl space below. Piping to the 2nd floor units is routed through soffits on the 1st floor. Air is typically distributed through sidewall grilles located in a soffit along the outside perimeter of the classrooms. The classrooms do not have perimeter finned tube radiation.

Willow Lane Elementary
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Analysis
Heating and Ventilation

- The cafeteria is heated, cooled, and ventilated by a single zone constant volume air handling unit installed in the 2005. The unit has a steam coil for heating and a chilled water coil for cooling. Return air for the cafeteria is transferred through the mechanical room space. The cafeteria does not have de-stratification fans.

- The front office is heated, cooled, and ventilated by a variable air volume (VAV) unit located in the 2013 addition that serves VAV boxes with hot water reheat coils. The unit has hot water for heating and a direct expansion (DX) coil for cooling. The condensing unit is installed on the roof above. The offices typically have perimeter hot water finned tube radiation.

- The music area is heated, cooled and ventilated by a constant volume air handling unit installed in the 2013 addition. The unit has hot water for heating and chilled water for cooling.

- The gymnasium is heated and ventilated by a constant volume air handling unit installed in the 2013 addition. The unit has hot water for heating and does not provide cooling. The gymnasium has de-stratification fans.

- The entry lobby area is heated and ventilated by a constant volume air handling unit installed in the 2013 addition. The unit has hot water for heating and does not provide cooling.

- A through wall PTAC unit provides cooling for the head end room adjacent to the media center. The unit is in poor condition.

- The kitchen exhaust hood is Type I with fire suppression and appears appropriately sized for the equipment it serves. A gas fired make-up air unit provides make-up air for the kitchen exhaust. The original kitchen design transferred exhaust hood make-up air from the adjacent cafeteria area.

- The custodial area and adjacent storage room are exhausted only and do not have a direct source of ventilation air.

- Two large roof mounted relief air fans are installed in each of the two stair wells. The relief fans are controlled by variable speed drives to manage the building air pressure. The classrooms typically transfer air into the corridor path of egress through pneumatically controlled fire smoke dampers. The VFDs for one of the relief fans is no longer functional.

Willow Lane Elementary
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Analysis
Heating and Ventilation

- Approximately four small power roof ventilators appear to be original to the building and are in poor condition. The ventilators are reported to be replaced as needed.

- The kitchen cooler and freezer compressors were relocated to the roof in 2017.

Temperature Control

- The 2008 mechanical project was installed with direct digital controls as manufactured by Schneider Electric. The District has remote access to the systems through a webbased front-end system.

- Pneumatic controls remain on many systems through out the building including:
  - Fire smoke dampers.
  - Some steam heating terminals including cabinet unit heaters and convectors.

- An air compressor and air dryer located in the boiler room serve pneumatic main air.

Plumbing

- The hot and cold water distribution system installed in the original 1965 building construction is galvanized piping and is near the end of its useful life.

- Hot water is provided to the building by a large storage tank and steam tube bundle. The tank was installed in the original building construction. An atmospheric gas fired Raypak boiler circulates water through the tank to provide hot water during the summer. The water heater was installed approximately 10 years ago and is near the end of its useful life.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4” water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

- The classrooms typically have a sink, replaced in the 2008 project, with cold water and bubbler.

Willow Lane Elementary
Independent School District #624

Analysis
Plumbing

- The urinals in each of two main toilet room groups in the 1965 building were installed with timed flush. The timed flush control has since been retrofit with an occupancy sensor.

- The wash fountains installed at each of two toilet room groups in the 1965 building were replaced in 1994 and do not comply with ADA standards and have had on-going issues with the infrared actuators.

- The toilet room on the second floor of the 1994 addition has a small electric tank type water heater for hot water.

Issues

1 Convert the building from steam to hot water heat. Replace the existing boilers with new gas fired high efficiency condensing boilers. Remove the existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace the existing steam coils in the classroom unit ventilators and cafeteria air handling unit with new hot water coils. Replace all remaining steam unit heaters with new hot water heaters.

Priority: 2 **Cost: $3,170,000**

2 Provide a variable speed air handling unit to provide a direct source of ventilation air to the custodial room and adjacent areas. Provide variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the existing hot water and chilled water plant for cooling. All new controls will be direct digital as an extension of the existing Schneider Electric system.

Priority: 2 **Cost: $335,000**

3 Remove the kitchen make-up air unit and provide a transfer air path from the adjacent cafeteria.

Priority: 2 **Cost: $20,000**

4 Provide cooling to the gymnasium. Retrofit the existing air handling system with new chilled water coils and connect to the existing chilled water plant. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 4 **Cost: $40,000**

Willow Lane Elementary
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Issues

5 Provide cooling to the entry commons area. Retrofit the existing air handling system with new chilled water coils and connect to the existing chilled water plant. The chiller capacity likely is not large enough to handle the entire building during peak cooling needs and will need to be managed through the cooling season.

Priority: 4 **Cost: $40,000**

6 Provide de-stratification fans in the cafeteria and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

7 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.

Priority: 1 **Cost: $25,000**

8 Provide a new secondary split AC system to cool head end room and provide redundancy.

Priority: 3 **Cost: $25,000**

9 Replace the exterior chilled water pipe insulation with new flexible elastomeric insulation and an aluminum jacket.

Priority: 1 **Cost: $30,000**

10 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Allerton system. Replace and upgrade the controls for each of the two building relief fans. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $30,000**

11 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 2 **Cost: $110,000**

12 Retrofit the existing chiller and the office condensing unit with cottonwood screens.

Priority: 3 **Cost: $7,500**

Willow Lane Elementary
Independent School District #624

Issues

13 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure classroom are served both hot and cold domestic water.

Priority: 2 **Cost: $660,000**

14 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

15 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

Willow Lane Elementary
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of three service entrance rated 208-volt three-phase circuit breakers. All are located in the boiler room and are in good condition. The first (800A, installed in 1994) feeds switchboard MSB-1. The remaining two were installed in 2007 – 600A for the chiller and 400A for MSB-2. There is limited physical space for expansion. Any significant additions or HVAC upgrades to the building will likely necessitate a new service with this equipment being backfed or eliminated.

- The building is enrolled in a utility curtailment program.

- Roughly 50% of the distribution equipment is original to the building (1962), is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Facility consists of fluorescent fixtures throughout with minimal sensor controls. Fixtures are in fair condition. Recommend replacing with LED fixtures and robust controls.

- Exit signs and interior egress lighting are battery-powered and should be replaced as part of a generator upgrade.

- The facility does not have exterior egress lighting. Egress fixtures should be provided.

- Exterior pole fixtures, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures. Pole fixtures are currently owned by Xcel.

Systems/ Technology

Willow Lane Elementary
Independent School District #624

Analysis
Systems/ Technology

- Clock system is wireless (Simplex 14155-S, installed 2008) and in good working condition.
- Paging system is in good working condition.
- Fire alarm system is aged (1992) Simplex 4020 panel in poor condition. Replace panel, devices and wiring.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost: $182,300**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $139,800**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $28,500**

4 Replace aged T8 lighting with energy efficient LED fixtures.
Priority: 3 **Cost: $148,000**

5 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $9,500**

6 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $106,800**

7 Replace fire alarm system.
Priority: 1 **Cost: $67,400**

Willow Lane Elementary

SITE

1	Resurface asphalt at north sidewalk.	Priority: N	**$5,400**
2	Replace deteriorated / missing landscape blocks at flower bed near north entry.	Priority: N	**$700**
3	Repaint bollards.	Priority: N	**$1,100**
4	Reseeding allowance.	Priority: N	**$900**
5	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**

EXTERIOR

1	Replace windows on original building (not 2013 additions).	Priority: 2	**$293,900**
2	Repair / replace loose can light at main entry canopy.	Priority: N	**$800**
3	Patch / repair concrete at loading dock.	Priority: 2	**$5,600**
4	Replace roof areas A, B, C, D, E, and F (installed 1990-1995) per District roof report.	Priority: 1	**$963,300**

INTERIOR

1	Replace all original casework.	Priority: 3	**$427,100**
2	Replace VCT in kindergarten classrooms (106 & 108).	Priority: 3	**$15,100**
3	Replace broadloom carpet with carpet tile (low priority).	Priority: 4	**$198,900**
4	Painting allowance for door frames.	Priority: 3	**$2,600**
5	Replace wood doors in cafeteria.	Priority: 3	**$27,600**
6	Recaulk sealant joints in gym precast walls, provide new color-coordinated sealant.	Priority: 4	**$40,200**
7	Provide new security hardware at all classroom doors.	Priority: 3	**$53,500**
8	Provide (1) new double stack convection oven in kitchen.	Priority: 3	**$60,200**
9	Provide walk-in freezer at kitchen (none existing).	Priority: 2	**$102,000**
10	Provide (1) 4-well hot food serving counter and (1) 6-well cold food serving counter at kitchen.	Priority: 3	**$60,000**

ACCESSIBILITY

1	Provide wing walls at (4) drinking fountains as required per ADA.	Priority: 2	**$5,300**
2	Replace handrails and guardrails at stairways in classroom wing to meet current codes.	Priority: 2	**$28,100**
3	Provide permanent boot ledge at the floor below coat hooks and shelves in classroom corridors.	Priority: 2	**$2,300**
4	Provide power operators at (2) doors into room 100.	Priority: 2	**$8,400**
5	Remove fixtures from toilet room in multi-use room 100 and patch walls and floors as required to	Priority: 2	**$9,200**
6	Major remodel of student gang toilets (4).	Priority: 1	**$668,600**
7	Minor remodel of private toilets (4).	Priority: 2	**$33,500**
8	Major remodel of private toilets (6).	Priority: 2	**$351,000**

MECHANICAL SYSTEMS

1	Convert the building from steam to hot water heat. Replace the existing boilers with new gas fired	Priority: 2	**$3,170,000**
2	Provide a variable speed air handling unit to provide a direct source of ventilation air to the custodial	Priority: 2	**$335,000**
3	Remove the kitchen make-up air unit and provide a transfer air path from the adjacent cafeteria.	Priority: 2	**$20,000**
4	Provide cooling to the gymnasium. Retrofit the existing air handling system with new chilled water	Priority: 4	**$40,000**
5	Provide cooling to the entry commons area. Retrofit the existing air handling system with new chilled	Priority: 4	**$40,000**

6	Provide de-stratification fans in the cafeteria and connect to the building automation system for time of	Priority: 2	**$20,000**
7	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**
8	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**
9	Replace the exterior chilled water pipe insulation with new flexible elastomeric insulation and an	Priority: 1	**$30,000**
10	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$30,000**
11	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$110,000**
12	Retrofit the existing chiller and the office condensing unit with cottonwood screens.	Priority: 3	**$7,500**
13	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$660,000**
14	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
15	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$182,300**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$139,800**
3	Provide additional power outlets in classrooms.	Priority: 3	**$28,500**
4	Replace aged T8 lighting with energy efficient LED fixtures.	Priority: 3	**$148,000**
5	Provide exterior egress lighting at each exit.	Priority: 1	**$9,500**
6	Replace metal halide exterior lighting with LED.	Priority: 2	**$106,800**
7	Replace fire alarm system.	Priority: 1	**$67,400**

Willow Lane Elementary
Independent School District #624

SITE	**$83,400.00**
EXTERIOR	**$1,263,600.00**
INTERIOR	**$987,200.00**
ACCESSIBILITY	**$1,106,400.00**
MECHANICAL SYSTEMS	**$4,592,500.00**
ELECTRICAL SYSTEMS	**$682,300.00**
Total Cost	**$8,715,400.00**

Willow Lane Elementary
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$0	$75,300	$8,100	**$83,400**
EXTERIOR	$963,300	$299,500	$0	$0	$800	**$1,263,600**
INTERIOR	$0	$102,000	$646,100	$239,100	$0	**$987,200**
ACCESSIBILITY	$668,600	$437,800	$0	$0	$0	**$1,106,400**
MECHANICAL SYSTEMS	$65,000	$4,345,000	$102,500	$80,000	$0	**$4,592,500**
ELECTRICAL SYSTEMS	$76,900	$289,100	$316,300	$0	$0	**$682,300**
Totals:	**$1,773,800**	**$5,473,400**	**$1,064,900**	**$394,400**	**$8,900**	**$8,715,400**

WBL Area Learning Center
Independent School District #624

Address:	2449 Orchard Lane White Bear Lake, Minnesota 55110	**Year(s) Built:**	1964, 1994
		Gross Area:	41,640 S.F.
Contact:		**Site Area:**	10 acres
		Parking:	134
Phone:			

WBL Area Learning Center
Independent School District #624

Analysis

- The site area totals 10 acres and is bordered by public streets to the south and east, residential properties to the north and municipal services to the west.
- The building has one parking lot to the west with 134 stalls. The asphalt is in good condition.
- The curbs around the planting beds near the front entry are cracking and heaving.
- The asphalt in the receiving area at the north end of the building is cracking and spalling.
- The asphalt sidewalk in front of the building (West) is uneven and cracking (accessibility issue).
- The Concrete sidewalk at the south entrance (D) is heaving, creating a tripping hazard (accessibility issue).
- The playground and playing fields to the east of the building are in overall good condition.
- The wood curb surrounding the volleyball court is deteriorating.
- Wood monument sign is old and requires ongoing maintenance and painting.
- There are 2 accessible stalls in the parking lot, but the accessible route passes through traffic before reaching the curb ramp to the sidewalk.

Issues

1 Repair / replace curbs around planting beds.
Priority: N **Cost: $4,100**

2 Resurface asphalt at receiving.
Priority: N **Cost: $30,100**

WBL Area Learning Center
Independent School District #624

Issues

3 Replace the asphalt sidewalk in front of the building with a concrete sidewalk.
Priority: 2 **Cost:** **$94,300**

4 Use mud jacking to level the sidewalk at the south entrance.
Priority: 2 **Cost:** **$6,100**

5 Replace the wood curb surrounding the volleyball court.
Priority: N **Cost:** **$8,700**

6 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,300**

7 Provide new accessible sidewalk and curb ramp for accessible parking stalls.
Priority: 2 **Cost:** **$10,100**

WBL Area Learning Center
Independent School District #624

Analysis

- The original building was built in 1964. Renovations took place in 1972 and 1974. In 1994, an elevator tower was added at the south end of the building and entrance doors and windows were replaced. The parking lot was repaved in 1998.

- During heavy rain conditions, water leaks into the interior at the top of the window openings. Although the source of the problem is unclear, it is likely due to problems with the wall assembly, lintels, or window installation. Building maintenance has attempted to resolve the problem by adding wicks above individual windows. Window sills and sealant are also showing their age. It is recommended that all windows be replaced and that the wall assembly and openings be inspected for the source of the leaks during window replacement.

- Building entrances have vestibules with two sets of FRP doors in aluminum frames, and are in good condition.

- The building is brick with exposed precast column and beam structure. The second story of the gym/cafeteria is metal panel.

- There is minor denting in the roof coping on the east side of the building.

- Tuckpointing is recommended for the brick on the east side of the building.

- Roof is 24+ years old.

Issues

1 Replace all windows, and make necessary modifications to wall assembly to prevent future leaks.
Priority: 1 **Cost: $305,900**

2 Tuckpointing on 50% of the building.
Priority: 3 **Cost: $529,800**

3 Replace roof areas A and B (installed 1991) per District roof report.
Priority: 1 **Cost: $282,500**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

WBL Area Learning Center
Independent School District #624

Issues

4 Replace roof areas C, D, E, and F (installed 1994) per District roof report.
Priority: 1 **Cost:** **$574,500**

WBL Area Learning Center
Independent School District #624

Analysis

- Corridors have terrazzo flooring, painted concrete block walls with glazed block wainscot, and glued ACT ceiling. Glazed block pilasters require repointing / new sealant.
- Classrooms have carpet, painted concrete block walls, glued ACT ceiling and original casework.
- None of the classroom doors have security hardware.
- Casework at exterior walls is integral with finned tube, and will need to be removed and replaced if finned tube is replaced.
- Classroom 103 has new carpet tile.
- Classrooms 106 & 108 have terrazzo floors.
- Classroom 104 has suspended 2x2 ACT ceiling.
- Student gang toilets have Terrazzo flooring, painted concrete block walls with glazed block wainscot, and painted gyp ceilings.
- Staff lounge has VCT flooring.
- Gym/Cafeteria has VCT floor, painted concrete block wall with glazed block wainscot, and exposed ceiling. Operable wall is functional, but finishes are peeling.
- Kitchen has quarry tile floors, glazed block walls and painted gyp ceiling. Quarry tile grout is deteriorating. Stove, dishwasher & walk-in cooler are past life expectancy.
- Admin Offices have carpet, painted gyp walls, glued ACT ceiling and original casework (some was painted).
- Elevator tower has terrazzo floors, glazed block walls and suspended 2x2 ACT ceiling.

WBL Area Learning Center
Independent School District #624

Analysis

- There is no secure vestibule. A wireless paging system is used currently.
- Casework in classrooms is original and should be replaced.
- Carpet is rippling in 107.
- Door to 210 is damaged, and does not close securely.
- Sealant joints in corridor walls at pilasters are deteriorating.
- Some ceiling tiles are damaged.
- Windows throughout building have horizontal mini blinds.
- None of the classroom doors have security hardware.
- Kitchen needs new equipment.

Issues

1 Provide new finish for operable wall in gym/cafeteria.
Priority: 3 **Cost: $11,700**

2 Replace quarry tile in kitchen.
Priority: 3 **Cost: $37,100**

3 Reconfigure office suite and add door from main entry vestibule to create new secure entry sequence.
Priority: 3 **Cost: $305,900**

4 Replace casework in classrooms.
Priority: 3 **Cost: $241,700**

WBL Area Learning Center
Independent School District #624

Issues

5 Replace carpet in classrooms.
Priority: 3 **Cost: $147,500**

6 Replace wood door to room #210.
Priority: 3 **Cost: $2,300**

7 Recaulk sealant joints in corridor walls at pilasters.
Priority: 3 **Cost: $14,100**

8 Provide new security hardware at all classroom doors.
Priority: 3 **Cost: $45,200**

9 Provide (1) new combi oven in kitchen.
Priority: 3 **Cost: $63,900**

10 Provide walk-in freezer at kitchen (none existing).
Priority: 2 **Cost: $10,200**

11 Provide (1) 4-well electric hot food serving counter and (1) 6-well electric cold food serving counter in kitchen.
Priority: 3 **Cost: $60,000**

12 Relocate the freezer and cooler compressors to the roof.
Priority: N **Cost: $40,000**

13 Replace the existing dishwasher with a new dishwasher with inetgral booster heater.
Priority: 3 **Cost: $90,000**

WBL Area Learning Center
Independent School District #624

Analysis

- Non accessible toilets in Kitchen (remove partition), Custodial (move walls), Admin (move walls), Classroom wing (both private staff toilets and student gang toilets require reconfiguration), Science room 108 (remove toilet), 2nd floor south stairwell (move sink)
- Drinking fountain in main entry and second floor stairwell protrude into accessible path of travel.
- Non-accessible drinking fountains in 106 and 108 (semi-recessed porcelain fixture)
- Non-accessible sink in 108 Science (mounted at child height)
- Handrails at stairways not accessible (505.6 & 505.7)

Issues

1 Remove toilet from science classroom 108. Patch wall and floor as required.
Priority: 2 **Cost: $4,600**

2 Provide wing walls at (2) drinking fountains to meet accessibility codes.
Priority: 2 **Cost: $2,700**

3 Remove non-accessible drinking fountains and wall-mounted lavatories from rooms 106 & 108 and patch concrete block wall as required.
Priority: 2 **Cost: $13,800**

4 Replace handrails at north and south stairways with new ADA accessible handrails.
Priority: 2 **Cost: $28,100**

5 Major remodel of student gang toilets (4).
Priority: 1 **Cost: $668,600**

6 Minor remodel of private toilets (2).
Priority: 2 **Cost: $16,800**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

WBL Area Learning Center
Independent School District #624

Issues

7 Major remodel of private toilets (4).
Priority: 2 **Cost: $234,000**

WBL Area Learning Center
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1964. A small addition attached an elevator to the south end of the building in 1994. The 1994 project also added fire protection and other life safety upgrades.

- The building is heated by two gas fired 2,700 MBH Pacific fire tube steam boilers. The boilers were installed in the original 1964 building construction. The burners have been replaced and are in good condition. The boiler feed system has been maintained and is in good condition. Steam is distributed throughout the building in tunnels around the perimeter of the building.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- Classrooms are typically heated and ventilated by horizontal style unit ventilators (UV) installed in the original 1964 building construction. The UVs have steam heating coils for heating. Supply air for the UVs is typically provided along the outside wall where perimeter casework is present. Classrooms typically do not have perimeter finned tube radiation.

- The front office in heated, cooled, and ventilated by through the wall packaged air conditioning (PTAC) units located in each perimeter room. The units have manual volume dampers. Ventilation and comfort control has been reported as poor. The condensing unit is installed on the roof above. The offices typically do not have perimeter hot water finned tube radiation. The PTAC units are in poor condition.

- The cafeteria/gymnasium is served by a single zone constant volume air handling unit installed in the original 1964 building construction. The unit has a steam coil for heating and does not provide cooling. The gymnasium does not have de-stratification fans.

- The computer lab is heated, cooled and ventilated by a packaged unit ventilator on the outside wall. The unit has steam coil for heating.

- Kitchen equipment is served by a Type I exhaust hood. There is no dedicated source of make-up air. Make-up air is transferred from the adjacent gymnasium.

WBL Area Learning Center
Independent School District #624

Analysis
Heating and Ventilation

- The custodial area and adjacent storage room are exhausted only and do not have a direct source of ventilation air.

- Two large roof mounted relief air fans are installed in each of the two stair wells. The relief fans are controlled by variable speed drives to manage the building air pressure. The classrooms typically transfer air into the corridor path of egress through pneumatically controlled fire smoke dampers.

- The kitchen cooler and freezer compressors are located in a closet adjacent to the kitchen. The space overheats.

- The dishwasher and associated booster heater are at the end of their useful life and in need of replacement.

Temperature Control
- All controls in the building are pneumatic. The air compressor and air dryer located in the boiler room serve pneumatic main air.

- Classrooms typically are installed with fire smoke dampers with pneumatic actuators.

Plumbing
- The hot and cold water distribution system installed in the original building construction is galvanized piping and is near the end of its useful life.

- The original domestic water storage tank and steam tube bundle were replaced in approximately 2003. Hot water is provided year around by an atmospheric Raypak boiler. The water heater is near the end of its useful life.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- A 4” water service enters the building in the boiler room. The shut-off valves at the meter are original and in need of replacement to provide a reliable means for shut-off.

WBL Area Learning Center
Independent School District #624

Analysis
Plumbing

- Classrooms typically have a sink replaced in the 1994 project and consists of hot/cold water and a bubbler.

- Flush valves for the water closets and urinals are typically infrared sensor controlled.

- Wash fountains installed at each of two toilet room groups do not comply with ADA standards and have had on-going issues with the infrared actuators.

- The kitchen dishwasher and booster heater are in poor condition and near the end of their useful life.

Issues

1 Convert the building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace all remaining steam unit heaters with new hot water heaters. Replace existing air handling systems with centralized system. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $2,900,000**

2 Provide a new air cooled chilled water plant for cooling. The plant will be sized to handle all of the building cooling needs. Chilled water to be circulated throughout the building with a redundant variable speed pump system. Project cost for distribution system included in ventilation cost. Chiller to be equipped with cottonwood screens and extension cones on reject heat exhaust. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $430,000**

3 Classroom Option 1 - ($3,245,000.00) Replace the existing ventilation systems serving the classrooms with a new vertical unit ventilation system including ducting with diffusers distributed throughout the room to allow for uniform air distribution. The system will be connected to the new hot water plant for heating and chilled water plant for cooling. All controls will be direct digital as an extension of the new building control system. Cost includes new ceiling, lighting, and fire protection for area.

Priority: 2 **Cost: $0**

WBL Area Learning Center
Independent School District #624

Issues

4 Classroom Option 2 - ($3,515,000.00) Replace the existing ventilation systems serving the classrooms with a new 4-pipe displacement and chilled beam system for individual heating and cooling zone control. The system will be connected to the new hot water plant for heating and chilled water plant for cooling. All controls will be direct digital as an extension of the new building control system. Cost includes new ceiling, lighting, and fire protection for area.

Priority: 2 **Cost: $3,515,000**

5 Replace the existing ventilation systems serving the front office with a new roof mounted variable air volume system. System will included variable air volume boxes with hot water reheats for improved temperature zone control. The system will be connected to the new hot water plant for heating and chilled water plant for cooling. Space will also be provided for the future installation of a direct expansion cooling coil. All controls will be direct digital as an extension of the new building control system. Cost includes new ceiling, lighting, and fire protection for area.

Priority: 2 **Cost: $260,000**

6 Install direct expansion cooling coil for new air handling unit serving the office area and install condenser for DX cooling for connection.

Priority: 4 **Cost: $40,000**

7 Replace the air-handling unit serving the cafeteria/gymnasium with a new constant air volume unit. The new unit will be connected to the new hot water and have space for future installation of cooling coil. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $340,000**

8 Install cooling coil for new air handling unit serving the cafeteria/gymnasium and connect to new chilled water system.

Priority: 3 **Cost: $40,000**

9 Provide de-stratification fans in the cafeteria/gymnasium and connect to the building automation system for time of day control.

Priority: 2 **Cost: $20,000**

WBL Area Learning Center
Independent School District #624

Issues

10 Provide a variable speed air-handling unit to provide a direct source of ventilation air to the custodial room and adjacent areas. Provide variable air volume boxes with hot water reheat for temperature zone control. The new unit will be connected to the new hot water and chilled water plant for cooling. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $260,000**

11 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.

Priority: 1 **Cost: $25,000**

12 Provide a new secondary split AC system to cool head end room and provide redundancy.

Priority: 3 **Cost: $25,000**

13 Replace all remaining pneumatic controls with new direct digital controls as an extension of the existing Allerton system. Replace and upgrade the controls for each of the two building relief fans. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $15,000**

14 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 2 **Cost: $80,000**

15 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure classrooms are served both hot and cold domestic water.

Priority: 2 **Cost: $600,000**

16 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 3 **Cost: $70,000**

WBL Area Learning Center
Independent School District #624

Issues

17 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $10,000**

WBL Area Learning Center
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 208-volt 3-phase 800A switchboard. The main switchboard is original to the building (~1964) with main circuit breaker and breaker distribution. It is at or nearing the end of its expected useful life and should be replaced soon. Any significant additions or HVAC upgrades to the building will likely necessitate a service replacement.

- The building is enrolled in a utility curtailment program.

- Roughly 90% of the distribution equipment is original to the building or the 1968 addition, is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Lighting consists of linear fluorescent T8 fixtures. The fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures.

- There are few occupancy sensors in the building. Adding sensors would provide energy savings on a short payback schedule.

- Exit signs and interior egress lighting are battery-powered, in good condition, and appear to be sufficiently located.

- The facility does not have exterior egress lighting. Fixtures should be located on the exterior of the building at each exit. This is a life safety violation.

- Exterior lighting consists of metal halide fixtures nearing the end of their expected useful life. Replace with energy-efficient LED fixtures.

Systems/ Technology

WBL Area Learning Center
Independent School District #624

Analysis
Systems/ Technology

- Wireless clock system is Bogen, installed in 2010. It has some ongoing maintenance issues but is generally in good working condition.

- Paging system is Bogen, installed in 2010, and is in good working condition.

- Fire alarm panel has recently been replaced with a Notifier NFW2 addressable panel. Existing wiring and devices may need upgraded in some locations.

Issues

1 Replace aging service entrance switchboard.
Priority: 2 **Cost: $76,000**

2 Replace aging distribution equipment.
Priority: 2 **Cost: $303,900**

3 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $109,400**

4 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $22,800**

5 Replace T8 lighting with energy efficient LED fixtures.
Priority: 3 **Cost: $104,400**

6 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $9,500**

7 Replace metal halide exterior lighting with LED.
Priority: 3 **Cost: $60,800**

8 Replace fire alarm devices and wiring.
Priority: 1 **Cost: $47,500**

WBL Area Learning Center

SITE

1	Repair / replace curbs around planting beds.	Priority: N	**$4,100**
2	Resurface asphalt at receiving.	Priority: N	**$30,100**
3	Replace the asphalt sidewalk in front of the building with a concrete sidewalk.	Priority: 2	**$94,300**
4	Use mud jacking to level the sidewalk at the south entrance.	Priority: 2	**$6,100**
5	Replace the wood curb surrounding the volleyball court.	Priority: N	**$8,700**
6	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**
7	Provide new accessible sidewalk and curb ramp for accessible parking stalls.	Priority: 2	**$10,100**

EXTERIOR

1	Replace all windows, and make necessary modifications to wall assembly to prevent future leaks.	Priority: 1	**$305,900**
2	Tuckpointing on 50% of the building.	Priority: 3	**$529,800**
3	Replace roof areas A and B (installed 1991) per District roof report.	Priority: 1	**$282,500**
4	Replace roof areas C, D, E, and F (installed 1994) per District roof report.	Priority: 1	**$574,500**

INTERIOR

1	Provide new finish for operable wall in gym/cafeteria.	Priority: 3	**$11,700**
2	Replace quarry tile in kitchen.	Priority: 3	**$37,100**
3	Reconfigure office suite and add door from main entry vestibule to create new secure entry sequence.	Priority: 3	**$305,900**
4	Replace casework in classrooms.	Priority: 3	**$241,700**
5	Replace carpet in classrooms.	Priority: 3	**$147,500**
6	Replace wood door to room #210.	Priority: 3	**$2,300**
7	Recaulk sealant joints in corridor walls at pilasters.	Priority: 3	**$14,100**
8	Provide new security hardware at all classroom doors.	Priority: 3	**$45,200**
9	Provide (1) new combi oven in kitchen.	Priority: 3	**$63,900**
10	Provide walk-in freezer at kitchen (none existing).	Priority: 2	**$10,200**
11	Provide (1) 4-well electric hot food serving counter and (1) 6-well electric cold food serving counter in	Priority: 3	**$60,000**
12	Relocate the freezer and cooler compressors to the roof.	Priority: N	**$40,000**
13	Replace the existing dishwasher with a new dishwasher with inetgral booster heater.	Priority: 3	**$90,000**

ACCESSIBILITY

1	Remove toilet from science classroom 108. Patch wall and floor as required.	Priority: 2	**$4,600**
2	Provide wing walls at (2) drinking fountains to meet accessibility codes.	Priority: 2	**$2,700**
3	Remove non-accessible drinking fountains and wall-mounted lavatories from rooms 106 & 108 and	Priority: 2	**$13,800**
4	Replace handrails at north and south stairways with new ADA accessible handrails.	Priority: 2	**$28,100**
5	Major remodel of student gang toilets (4).	Priority: 1	**$668,600**
6	Minor remodel of private toilets (2).	Priority: 2	**$16,800**
7	Major remodel of private toilets (4).	Priority: 2	**$234,000**

MECHANICAL SYSTEMS

1	Convert the building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 2	**$2,900,000**

2	Provide a new air cooled chilled water plant for cooling. The plant will be sized to handle all of the	Priority: 2	**$430,000**
3	Classroom Option 1 - ($3,245,000.00) Replace the existing ventilation systems serving the classrooms	Priority: 2	**$0**
4	Classroom Option 2 - ($3,515,000.00) Replace the existing ventilation systems serving the classrooms	Priority: 2	**$3,515,000**
5	Replace the existing ventilation systems serving the front office with a new roof mounted variable air	Priority: 2	**$260,000**
6	Install direct expansion cooling coil for new air handling unit serving the office area and install	Priority: 4	**$40,000**
7	Replace the air-handling unit serving the cafeteria/gymnasium with a new constant air volume unit.	Priority: 2	**$340,000**
8	Install cooling coil for new air handling unit serving the cafeteria/gymnasium and connect to new	Priority: 3	**$40,000**
9	Provide de-stratification fans in the cafeteria/gymnasium and connect to the building automation	Priority: 2	**$20,000**
10	Provide a variable speed air-handling unit to provide a direct source of ventilation air to the custodial	Priority: 2	**$260,000**
11	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**
12	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**
13	Replace all remaining pneumatic controls with new direct digital controls as an extension of the	Priority: 2	**$15,000**
14	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$80,000**
15	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$600,000**
16	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$70,000**
17	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace aging service entrance switchboard.	Priority: 2	**$76,000**
2	Replace aging distribution equipment.	Priority: 2	**$303,900**
3	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$109,400**
4	Provide additional power outlets in classrooms.	Priority: 3	**$22,800**
5	Replace T8 lighting with energy efficient LED fixtures.	Priority: 3	**$104,400**
6	Provide exterior egress lighting at each exit.	Priority: 1	**$9,500**
7	Replace metal halide exterior lighting with LED.	Priority: 3	**$60,800**
8	Replace fire alarm devices and wiring.	Priority: 1	**$47,500**

WBL Area Learning Center
Independent School District #624

SITE	**$228,700.00**
EXTERIOR	**$1,692,700.00**
INTERIOR	**$1,069,600.00**
ACCESSIBILITY	**$968,600.00**
MECHANICAL SYSTEMS	**$8,630,000.00**
ELECTRICAL SYSTEMS	**$734,300.00**
Total Cost	**$13,323,900.00**

WBL Area Learning Center
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$110,500	$0	$75,300	$42,900	**$228,700**
EXTERIOR	$1,162,900	$0	$529,800	$0	$0	**$1,692,700**
INTERIOR	$0	$10,200	$1,019,400	$0	$40,000	**$1,069,600**
ACCESSIBILITY	$668,600	$300,000	$0	$0	$0	**$968,600**
MECHANICAL SYSTEMS	$35,000	$8,420,000	$135,000	$40,000	$0	**$8,630,000**
ELECTRICAL SYSTEMS	$57,000	$379,900	$297,400	$0	$0	**$734,300**
Totals:	**$1,923,500**	**$9,220,600**	**$1,981,600**	**$115,300**	**$82,900**	**$13,323,900**

Sunrise Park Middle School
Independent School District #624

Address:	1399 Cedar Avenue White Bear Lake, Minnesota 55110	**Year(s) Built:**	1958, 1995
		Gross Area:	122,410 S.F.
Contact:		**Site Area:**	23 acres
		Parking:	187
Phone:			

Sunrise Park Middle School
Independent School District #624

Analysis

- The site area totals 23 acres and is bordered on all sides by public streets.
- There are parking lots to the north and west of the building, and a bus loop to the south.
- There are 187 total parking stalls, 9 of which are accessible stalls (4 at entrance B, 4 at entrance C, and 1 in the north lot, nearest entrance T).
- The fence at the northwest ball field is damaged.
- The running track is very worn, with little gravel left.
- The long jump asphalt is in fair condition, but the sand pit is low.
- The grass is patchy in the southeast portion of the playing fields, to the east of the ice rink.
- Grass is encroaching on the baseball diamonds.
- The tennis courts are in good condition.
- There is uneven sidewalk at the northwest corner of the building near doors D-G.
- The asphalt in the west parking lot and the south bus loop is rough, with cracks and worn patches.
- The south sidewalk under the canopy is cracking around the columns due to a lack of control joints.
- The bike rack to the east of the building is rusted and bent, and no longer secured to the pavement.
- The storage shed near the ice arena has peeling paint and cracking mortar joints.

Sunrise Park Middle School
Independent School District #624

Analysis

- The grass in both courtyards has areas that are unlevel, as well as edging left over from abandoned flower beds, tree trimming debris, a broken birdhouse, and other misc. debris.
- Two splash blocks are damaged in the west courtyard.
- The concrete sidewalk on the north end of the east courtyard is cracked.
- Wood monument sign is old and requires ongoing maintenance and painting.
- The stoop is cracked at door M.

Issues

1 Repair / replace fence at northwest ballfield.
Priority: N **Cost:** **$3,800**

2 Provide new track surface for running track.
Priority: 3 **Cost:** **$558,700**

3 Provide new sand for long jump pit.
Priority: N **Cost:** **$500**

4 Re-seed southeast playing field (east of hockey rink).
Priority: N **Cost:** **$28,500**

5 Remove grass from edges of baseball diamond(s), provide additional ball diamond mix as required.
Priority: N **Cost:** **$5,100**

6 Replace uneven sidewalk panels at northwest corner of building.
Priority: N **Cost:** **$14,800**

7 Resurface asphalt in west parking lot and south bus loop.
Priority: N **Cost:** **$383,600**

Sunrise Park Middle School
Independent School District #624

Issues

8 Replace concrete sidewalk at entry canopy columns, provide control joints as required.
Priority: 3 **Cost: $10,400**

9 Repaint concrete block walls of storage shed.
Priority: N **Cost: $2,900**

10 Clean up debris, remove old borders, level ground and reseed in both courtyards.
Priority: N **Cost: $15,100**

11 Provide (2) concrete splash blocks at downspouts in west courtyard.
Priority: N **Cost: $1,400**

12 Replace concrete sidewalk at north end of east courtyard.
Priority: N **Cost: $21,800**

13 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,300**

14 Provide new concrete stoop at door M.
Priority: N **Cost: $600**

15 Provide new signage at (3) accessible parking stalls.
Priority: 2 **Cost: $4,100**

16 Provide accessible curb ramp at door I and T stoops.
Priority: 2 **Cost: $2,200**

Sunrise Park Middle School
Independent School District #624

Analysis

- The original building was constructed in 1958. There was a major renovation to the entire building in 1992, followed by an addition in 1994 that incorporated the east and west wings.
- The steel structure is exposed to the outside, resulting in thermal bridging through the building envelope.
- The columns and beams of the canopy at the south bus entry, as well as those in the courtyards have rust and peeling paint.
- Windows are operable sliders, which were replaced in the early 90s? there are approx. 15 broken screens on exterior windows throughout the building.
- The Concrete Block bump out outside the boiler room has peeling paint.
- There is spalling brick near door E.
- There are holes in the brick near doors L & K.
- There is spalling brick and a deteriorating sidewalk sealant joint at door U.
- Brick mortar is deteriorating near door V.
- The brick mortar joints are cracking at the southwest corner of classroom 216.
- Roof has areas that are 24, 25, and 29 years old.

Issues

1 Tuckpointing allowance (50%).
Priority: 3 **Cost: $716,300**

Sunrise Park Middle School
Independent School District #624

Issues

2 Repaint steel structure in courtyards and at south canopy.
Priority: 3 **Cost: $25,100**

3 Replace all windows.
Priority: 2 **Cost: $356,000**

4 Replace roof areas A, B, C, and E (installed 1989) per District roof report.
Priority: 1 **Cost: $1,321,000**

5 Replace roof areas D, F, G, H, I, J, K, M, and N (installed in 1993 and 1994) per District roof report.
Priority: 2 **Cost: $3,717,000**

Sunrise Park Middle School
Independent School District #624

Analysis

- None of the classroom doors have security hardware.
- Corridors have terrazzo flooring, glazed block wainscot with painted concrete block above, and suspended ACT ceilings.
- There is a crack in the terrazzo floor at the transition from the original building to the west addition.
- Main office has carpet, painted gyp walls and ACT ceilings.
- Workroom and Nurse office have VCT flooring.
- There is a door from the main entrance vestibule into the Nurse office, but it does not appear to function as a secure entry to the facility. There may be an opportunity to reconfigure the admin suite to improve building security.
- Classrooms in original 1958 building have VCT flooring, painted concrete block walls with high hard lid ceilings and exposed steel beams.
- Staff lounge 100 has 4' of casework that is in rough shape. The rest of the casework is in good condition.
- Most of the casework is in good shape with some minor chipping at countertop edges (Staff Lounge 100, Art 101 & 102, Special Ed 501, FACS 511).
- Casework on exterior walls may need to be removed if finned tube is replaced as part of mechanical scope. It could either be salvaged or replaced (science and art rooms).
- Each of the (6) science rooms has (1) eye wash/shower and (8) sinks.
- Solid surface countertops in science rooms are scratched and worn.

Sunrise Park Middle School
Independent School District #624

Analysis

- There are old tack boards in many of the classrooms (411 Special ED).
- The door to one of the counseling offices is scratched and chipped.
- Gym has wood floor, concrete block walls with wood cladding on steel structure above, and collapsible bleachers.
- ACT ceiling tiles in the 1994 addition (and room 502) are warped, presumably from humidity issues in these areas.
- The terrazzo inside doors B, C, L, T and V is deteriorating due to heavy salt exposure.
- Media Center has carpet, painted concrete block walls with acoustical wall panels, and ACT ceiling. The front desk and book shelves appear to be in good condition. The carpet is beginning to show some wear in high traffic areas.
- Carpet in Special Ed. rooms 506 & 513 is worn and stained.
- Student gang toilets have terrazzo floors, painted concrete block walls with glazed block base and painted gyp ceilings.
- Choir room 215 has VCT flooring, painted c blk walls and ACT ceiling. Choir risers are in good condition.
- FACS room 217 has VCT flooring.
- 216 has carpet which appears to be in good condition.
- VCT flooring in Gym 3 is spreading apart.
- Approximately 25% of VCT in Cafeteria is cracking or damaged.
- VCT flooring in storage room in east addition is worn / dirty.

Sunrise Park Middle School
Independent School District #624

Analysis

- Cafeteria operable wall is working fine.
- Cafeteria columns have chipping paint.
- The stair nosing in 510 is loose.
- Band room 508 has carpeted tiered concrete floor, painted gyp walls and exposed ceiling.
- Hallway floor and ramp in Band suite is terrazzo. Concrete curbs at ramp have peeling paint.
- Kitchen needs new equipment.

Issues

1 Repair terrazzo at building transition outside gym. Provide expansion joint in floor slab.
Priority: 4 **Cost: $2,200**

2 Reconfigure main office suite for new secure vestibule.
Priority: 3 **Cost: $501,400**

3 Replace P.lam countertops in designated areas.
Priority: 3 **Cost: $46,800**

4 Replace solid surface countertops in science rooms.
Priority: 4 **Cost: $142,900**

5 Wood door replacement allowance.
Priority: 3 **Cost: $27,200**

6 Replace terrazzo at building entries B, C, L, T and V.
Priority: 3 **Cost: $73,200**

Sunrise Park Middle School
Independent School District #624

Issues

7 Replace carpet in Media Center, rooms 506 & 513.
Priority: 3 **Cost: $35,000**

8 Replace VCT flooring in Gym 3, Cafeteria and East addition storage room. Provide moisture mitigation.
Priority: 3 **Cost: $136,400**

9 Paint columns in cafeteria and curb at band room ramp.
Priority: N **Cost: $200**

10 Provide new security hardware at all classroom doors.
Priority: 3 **Cost: $108,700**

11 Provide (2) new double stack convection ovens and (1) rotating oven in kitchen.
Priority: 3 **Cost: $191,800**

12 Provide walk-in freezer at kitchen.
Priority: 2 **Cost: $102,000**

13 Provide (2) 4-well electric hot food serving counters and (1) 6-well electric cold food serving counter in kitchen.
Priority: 3 **Cost: $95,000**

14 Remodel Ala Carte Area: Provide (1) grab-n-go hot case and (1) grab-n-go cooler.
Priority: 4 **Cost: $70,100**

15 Relocate the freezer and cooler compressors to the roof.
Priority: N **Cost: $40,000**

Sunrise Park Middle School
Independent School District #624

Analysis

- The parking lot has (9) accessible parking stalls. (2) signs are missing, and (1) sign does not meet ADA requirements.
- There is a steep slope at the stoop at door I.
- The stoop at door T is more than ½ inch above the sidewalk.
- There are many doors throughout the facility with jamb recess depths in excess of 8" (at least 17 were noted during the walkthrough, mostly to the north of the main east-west corridor).
- Student gang toilets were updated to meet current accessibility standards in 2012.
- There are (7) private toilet rooms that do not meet ADA codes: Girls Locker Room, Receiving, Kitchen/Staff Lounge, Special Ed Suite, 103 Staff Toilets near Main Office, Nurse Office.
- There are parallel approach sinks in 106A Media, Nurse Office.
- There are (9) drinking fountains that require wing walls (1) semi-recessed porcelain drinking fountains need to be replaced with new EWCs (505, Girls Locker Room)
- The stair railings in 509 industrial tech do not extend past the run of the stairs. The only accessible entrance/exit is through the adjacent room, 510 which has a ramp up to the corridor.
- Only one of the benches at one of the (3) baseball diamonds has an accessible sidewalk leading to it.

Issues

1 Provide door actuators at 17 doors throughout the facility.
Priority: 2 **Cost: $117,600**

Sunrise Park Middle School
Independent School District #624

Issues

2 Provide wing walls at (9) EWC drinking fountains.
Priority: 2 **Cost: $12,000**

3 Remove semi-recessed porcelain drinking fountain and patch concrete block wall in girls locker room.
Priority: 2 **Cost: $2,600**

4 Modify steel handrails at (4) stairs in industrial tech and computer lab rooms to extend past stair run per ADA code.
Priority: 2 **Cost: $20,100**

5 Major remodel of private toilets (7).
Priority: 2 **Cost: $409,300**

Sunrise Park Middle School
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1958. Two major additions were completed in 1995. The basic heating system is a steam plant serving horizontal unit ventilators (UV). The majority of the building is not air conditioned.

- The building is heated by two gas fired 8,857 MBH fire tube steam boilers. The boilers were installed in the original 1958 building construction. The burners were replaced in 2009. The boilers are controlled by a heat timer system or lead lag operation. The steam header pressure is monitored on the automation system.

- The steam traps are on a 5 year maintenance schedule and are in good working condition.

- The original 1958 building construction is typically heated and ventilated by the original horizontal style UV unless otherwise noted. The UVs, in most rooms, deliver a portion of the supply air to the room perimeter. The UVs have steam coils piped through tunnels below. Air is typically relieved through the corridor ceiling and transferred through fire/smoke dampers. There is typically not perimeter fin tube radiation in classrooms.

- The 1995 classroom additions are typically heated and ventilated by horizontal style UVs. The UVs have steam coils piped through tunnels below. Air is typically relieved through the corridor ceiling and transferred through fire/smoke dampers. There is typically not perimeter fin tube radiation in classrooms with the exception of corner classrooms.

- The office area is heated, cooled, and ventilated by a constant volume packaged direct expansion (DX) rooftop unit. The unit was installed in 2016. The unit has a steam coil for heating. Offices typically have perimeter fin tube radiation for space temperature control.

- The media center is heated, ventilated, and cooled by two horizontal UVs. The UVs were installed in 1992 and have a steam coil for heating with integral DX cooling. The media storage room adjacent to the media center is not ventilated.

- The band room and adjacent special education rooms are heated, ventilated, and cooled by ceiling mounted UVs. The UVs were installed in 1992 and have a steam heating coil and DX cooling.

Sunrise Park Middle School
Independent School District #624

Analysis
Heating and Ventilation

- The gymnasiums are each served by a pair of air handling units located in adjacent spaces. The units were installed in the original building construction and have steam coils for heating. The units for west gym are located above the ceiling in the special education room and are very difficult to access.

- The FACS room and industrial tech area are heated and ventilated by ceiling mounted UVs. The UVs were installed in 1992 and have a steam heating coil with no cooling. The industrial tech area has a dedicated laser cutter exhaust and a portable dust collection system.

- Locker rooms are exhausted only. Transfer air is provided from adjacent gymnasiums with no direct source of ventilation air.

- The make-up air unit for the kitchen is a direct gas fired system and is in very poor condition.

- The head end data room is cooled by two split DX systems. One of the systems is over 10 years old and in poor condition. The replacement DX system should be sized for more capacity and include removing the supply air from the adjacent roof top unit. The adjacent zone often provides heat to the data room and adds load to the cooling systems.

- The roof exhaust fans are reported to be replaced as needed and are generally in good condition.

- The kitchen cooler and freezer compressors are located in a closet adjacent to the kitchen. The space has been reported to overheat.

Temperature Control

- The majority of the building is pneumatically controlled – estimated to be 95%. The most recently renovated areas have direct digital controls as manufactured by Alerton – estimated to be 5%.

- Relief air from classrooms typically transfers to the corridors through pneumatically controlled smoke dampers. The current code requirements should be reviewed to eliminate as many fire/smoke dampers as possible.

- The air compressor is original to the building. The motor and compressor heads were replaced approximately 15 years ago.

Sunrise Park Middle School
Independent School District #624

Analysis

Temperature Control

- The original pneumatic day/night dual pressure system has been retrofit with time clock for time of day control. The building is controlled in 6 zones to allow for limiting electrical demand.

Plumbing

- The hot and cold water distribution system installed in the original 1958 building construction is typically galvanized piping and is near the end of its useful life.

- Hot water is provided to the building by a large storage tank with a steam tube bundle installed in the original 1958 building construction. A standard efficiency gas fired atmospheric gas fired water heater circulates to the tank and provides hot water during the summer months. The gas fired water heater is approximately 7 years old.

- The shut-off valve on the upstream side of the water meter is in poor condition and should be replaced. The shut-off valve downstream of the meter was recently replaced.

- Science rooms were renovated in 1992. A shut off valve for the gas service to student stations is typically located in the teacher's workstation. The installation does not comply with current requirements for emergency gas shut-off.

- The gang toilet rooms were renovated in 2012 and are in good condition. Maintenance staff have been replacing the urinal flush valves with manual handles.

Issues

1 Convert building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace existing steam coils in existing air handling systems as necessary. Replace all remaining steam unit heaters, fin tube radiation and other heating terminal devices with new hot water systems.

Priority: 1 **Cost: $6,300,000**

2 Provide a new central air cooled chilled water plant to provide capacity to cool all building areas. Chiller to be equipped with cottonwood screens and reject heat exhaust extension cones. A variable primary distribution system will provide chilled water throughout the building. Distribution cost to be included in ventilation project costs. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $600,000**

Sunrise Park Middle School
Independent School District #624

Issues

3 Provide a new independent heating and ventilation constant volume system to serve gymnasiums. The new system will be connected to new hot water system for heating and have space for future installation of cooling coil for cooling. All controls will be an extension of the existing direct digital control system.

Priority: 2 **Cost: $1,015,000**

4 Install cooling coil for new air handling units serving the gymnasium for connection to chilled water plant.

Priority: 4 **Cost: $110,000**

5 Provide a new independent heating and ventilation constant volume system to serve cafeteria. The new system will be connected to new hot water system for heating and have space for future installation of cooling coil for cooling. All controls will be an extension of the existing direct digital control system. Removal of the kitchen make up air unit will be included in this scope of work. In the new system, kitchen make up air will be provided by adjacent cafeteria.

Priority: 2 **Cost: $340,000**

6 Install cooling coils for new air handling units serving the cafeteria for connection to chilled water plant.

Priority: 3 **Cost: $40,000**

7 Provide a new independent heating and ventilation constant volume system to serve locker rooms. The new system will be connected to new hot water system for heating and have space for future installation of cooling coil for cooling. All controls will be an extension of the existing direct digital control system.

Priority: 2 **Cost: $340,000**

8 Install cooling coils for new air handling units serving the locker rooms for connection to chilled water plant.

Priority: 4 **Cost: $40,000**

9 Classroom Option 1 - ($10,660,000.00) Replace existing horizontal unit ventilators with new vertical unit ventilators with ducting into the room serving diffusers for uniform air distribution to heat, cool and ventilate classroom areas. The system will be connected to the new hot water and chilled water systems with heating and cooling control. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $0**

Sunrise Park Middle School
Independent School District #624

Issues

10 Classroom Option 2 - ($10,985,000.00) Provide a new roof mounted air handling system for heating, cooling and ventilation of classroom areas. The roof mounted air handlers will be connected to the new hot water and chilled water systems. The units will serve variable air volume boxes with hot water reheats for improved zone control. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $0**

11 Classroom Option 3 - ($11,550,000.00) Provide a new 4-pipe displacement and chilled beam system for individual heating and cooling zone control to replace existing ventilation system serving classroom areas. The system will be connected to the new hot water and chilled water systems with individual heating and cooling control. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $11,550,000**

12 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 1 **Cost: $225,000**

13 Provide de-stratification fans in the gymnasiums to improve heating efficiency.

Priority: 2 **Cost: $55,000**

14 Replace oldest DX unit serving the data room and relocate supply air to more appropriate source.

Priority: 1 **Cost: $25,000**

15 Replace secondary DX unit serving the data room and relocate supply air to more appropriate source for improved redundancy.

Priority: 3 **Cost: $25,000**

16 Replace all remaining pneumatic controls and the direct digital controls. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $25,000**

Sunrise Park Middle School
Independent School District #624

Issues

17 Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure hot water is provided to all classrooms in addition to cold water.
Priority: 2 **Cost: $1,570,000**

18 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.
Priority: 3 **Cost: $110,000**

19 Replace the main domestic water shut-off valve on the upstream side of the water meter.
Priority: 1 **Cost: $10,000**

Sunrise Park Middle School
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of medium voltage distribution equipment original to the building (~1958), is at or nearing the end of its expected useful life and should be replaced soon. The District is not equipped to safely maintain medium voltage equipment and this facility is not large enough to justify continuing with it. Replace with 480V or 208V distribution as determined by designer.

- The building is enrolled in a utility curtailment program.

- Service equipment does not include surge protection and should be added.

- Roughly 50% of the distribution equipment is original to the building, is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment (~1995) and is in good condition.

- The facility is partially backed up by a natural gas generator. The generator was installed circa 2000 and is in good condition. The genset feeds (1) 100A automatic transfer switch with a manual transfer switch override. Loads served include boiler equipment.. The District would like emergency lighting, fire alarm, kitchen freezer/coolers and IT equipment to be considered for addition to the generator. A second automatic transfer switch would likely be required to separate life safety loads from less critical loads.

- Provide additional power outlets in classrooms.

Lighting

- Lighting consists of linear fluorescent T8 fixtures. The fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures.

- There are few occupancy sensors in the building. Adding sensors would provide energy savings on a short payback schedule.

- Exit signs and interior egress lighting are battery-powered, in poor condition, insufficiently located, and should be replaced.

Sunrise Park Middle School
Independent School District #624

Analysis

Lighting

- The facility does not have exterior egress lighting. Fixtures should be located on the exterior of the building at each exit. This is a life safety violation.

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.

- Paging system is in good working condition.

- Fire alarm panel has recently been replaced with a Simplex 4100U addressable panel. Existing wiring and devices are older and need upgraded.

Issues

1 Replace medium voltage service gear with 208V distribution.
Priority: 1 **Cost: $197,500**

2 Replace aging distribution equipment.
Priority: 1 **Cost: $455,800**

3 Add life safety and other loads to emergency generator, include transfer switches, panels and lighting relays as required.
Priority: 3 **Cost: $76,000**

4 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $62,700**

5 Replace T8 lighting with energy efficient LED fixtures and controls.
Priority: 3 **Cost: $306,900**

6 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $30,400**

Sunrise Park Middle School
Independent School District #624

Issues

7 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $136,800**

8 Provide wireless clock system.
Priority: 3 **Cost: $29,300**

9 Replace fire alarm devices and wiring.
Priority: 2 **Cost: $139,500**

Sunrise Park Middle School

SITE

1	Repair / replace fence at northwest ballfield.	Priority: N	**$3,800**
2	Provide new track surface for running track.	Priority: 3	**$558,700**
3	Provide new sand for long jump pit.	Priority: N	**$500**
4	Re-seed southeast playing field (east of hockey rink).	Priority: N	**$28,500**
5	Remove grass from edges of baseball diamond(s), provide additional ball diamond mix as required.	Priority: N	**$5,100**
6	Replace uneven sidewalk panels at northwest corner of building.	Priority: N	**$14,800**
7	Resurface asphalt in west parking lot and south bus loop.	Priority: N	**$383,600**
8	Replace concrete sidewalk at entry canopy columns, provide control joints as required.	Priority: 3	**$10,400**
9	Repaint concrete block walls of storage shed.	Priority: N	**$2,900**
10	Clean up debris, remove old borders, level ground and reseed in both courtyards.	Priority: N	**$15,100**
11	Provide (2) concrete splash blocks at downspouts in west courtyard.	Priority: N	**$1,400**
12	Replace concrete sidewalk at north end of east courtyard.	Priority: N	**$21,800**
13	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**
14	Provide new concrete stoop at door M.	Priority: N	**$600**
15	Provide new signage at (3) accessible parking stalls.	Priority: 2	**$4,100**
16	Provide accessible curb ramp at door I and T stoops.	Priority: 2	**$2,200**

EXTERIOR

1	Tuckpointing allowance (50%).	Priority: 3	**$716,300**
2	Repaint steel structure in courtyards and at south canopy.	Priority: 3	**$25,100**
3	Replace all windows.	Priority: 2	**$356,000**
4	Replace roof areas A, B, C, and E (installed 1989) per District roof report.	Priority: 1	**$1,321,000**
5	Replace roof areas D, F, G, H, I, J, K, M, and N (installed in 1993 and 1994) per District roof report.	Priority: 2	**$3,717,000**

INTERIOR

1	Repair terrazzo at building transition outside gym. Provide expansion joint in floor slab.	Priority: 4	**$2,200**
2	Reconfigure main office suite for new secure vestibule.	Priority: 3	**$501,400**
3	Replace P.lam countertops in designated areas.	Priority: 3	**$46,800**
4	Replace solid surface countertops in science rooms.	Priority: 4	**$142,900**
5	Wood door replacement allowance.	Priority: 3	**$27,200**
6	Replace terrazzo at building entries B, C, L, T and V.	Priority: 3	**$73,200**
7	Replace carpet in Media Center, rooms 506 & 513.	Priority: 3	**$35,000**
8	Replace VCT flooring in Gym 3, Cafeteria and East addition storage room. Provide moisture	Priority: 3	**$136,400**
9	Paint columns in cafeteria and curb at band room ramp.	Priority: N	**$200**
10	Provide new security hardware at all classroom doors.	Priority: 3	**$108,700**
11	Provide (2) new double stack convection ovens and (1) rotating oven in kitchen.	Priority: 3	**$191,800**
12	Provide walk-in freezer at kitchen.	Priority: 2	**$102,000**
13	Provide (2) 4-well electric hot food serving counters and (1) 6-well electric cold food serving counter	Priority: 3	**$95,000**

14	Remodel Ala Carte Area: Provide (1) grab-n-go hot case and (1) grab-n-go cooler.	Priority: 4	**$70,100**
15	Relocate the freezer and cooler compressors to the roof.	Priority: N	**$40,000**

ACCESSIBILITY

1	Provide door actuators at 17 doors throughout the facility.	Priority: 2	**$117,600**
2	Provide wing walls at (9) EWC drinking fountains.	Priority: 2	**$12,000**
3	Remove semi-recessed porcelain drinking fountain and patch concrete block wall in girls locker room.	Priority: 2	**$2,600**
4	Modify steel handrails at (4) stairs in industrial tech and computer lab rooms to extend past stair run	Priority: 2	**$20,100**
5	Major remodel of private toilets (7).	Priority: 2	**$409,300**

MECHANICAL SYSTEMS

1	Convert building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 1	**$6,300,000**
2	Provide a new central air cooled chilled water plant to provide capacity to cool all building areas.	Priority: 1	**$600,000**
3	Provide a new independent heating and ventilation constant volume system to serve gymnasiums. The	Priority: 2	**$1,015,000**
4	Install cooling coil for new air handling units serving the gymnasium for connection to chilled water	Priority: 4	**$110,000**
5	Provide a new independent heating and ventilation constant volume system to serve cafeteria. The new	Priority: 2	**$340,000**
6	Install cooling coils for new air handling units serving the cafeteria for connection to chilled water	Priority: 3	**$40,000**
7	Provide a new independent heating and ventilation constant volume system to serve locker rooms. The	Priority: 2	**$340,000**
8	Install cooling coils for new air handling units serving the locker rooms for connection to chilled water	Priority: 4	**$40,000**
9	Classroom Option 1 - ($10,660,000.00) Replace existing horizontal unit ventilators with new vertical	Priority: 1	**$0**
10	Classroom Option 2 - ($10,985,000.00) Provide a new roof mounted air handling system for heating,	Priority: 1	**$0**
11	Classroom Option 3 - ($11,550,000.00) Provide a new 4-pipe displacement and chilled beam system	Priority: 1	**$11,550,000**
12	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 1	**$225,000**
13	Provide de-stratification fans in the gymnasiums to improve heating efficiency.	Priority: 2	**$55,000**
14	Replace oldest DX unit serving the data room and relocate supply air to more appropriate source.	Priority: 1	**$25,000**
15	Replace secondary DX unit serving the data room and relocate supply air to more appropriate source	Priority: 3	**$25,000**
16	Replace all remaining pneumatic controls and the direct digital controls. Re-evaluate the building code	Priority: 2	**$25,000**
17	Replace galvanized domestic hot and cold water distribution systems with new copper piping. Ensure	Priority: 2	**$1,570,000**
18	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 3	**$110,000**
19	Replace the main domestic water shut-off valve on the upstream side of the water meter.	Priority: 1	**$10,000**

ELECTRICAL SYSTEMS

1	Replace medium voltage service gear with 208V distribution.	Priority: 1	**$197,500**
2	Replace aging distribution equipment.	Priority: 1	**$455,800**
3	Add life safety and other loads to emergency generator, include transfer switches, panels and lighting	Priority: 3	**$76,000**
4	Provide additional power outlets in classrooms.	Priority: 3	**$62,700**
5	Replace T8 lighting with energy efficient LED fixtures and controls.	Priority: 3	**$306,900**
6	Provide exterior egress lighting at each exit.	Priority: 1	**$30,400**
7	Replace metal halide exterior lighting with LED.	Priority: 2	**$136,800**
8	Provide wireless clock system.	Priority: 3	**$29,300**

9	Replace fire alarm devices and wiring.	Priority: 2	**$139,500**

Sunrise Park Middle School
Independent School District #624

SITE	**$1,128,800.00**
EXTERIOR	**$6,135,400.00**
INTERIOR	**$1,572,900.00**
ACCESSIBILITY	**$561,600.00**
MECHANICAL SYSTEMS	**$22,380,000.00**
ELECTRICAL SYSTEMS	**$1,434,900.00**
Total Cost	**$33,213,600.00**

Sunrise Park Middle School
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$6,300	$569,100	$75,300	$478,100	**$1,128,800**
EXTERIOR	$1,321,000	$4,073,000	$741,400	$0	$0	**$6,135,400**
INTERIOR	$0	$102,000	$1,215,500	$215,200	$40,200	**$1,572,900**
ACCESSIBILITY	$0	$561,600	$0	$0	$0	**$561,600**
MECHANICAL SYSTEMS	$18,710,000	$3,345,000	$175,000	$150,000	$0	**$22,380,000**
ELECTRICAL SYSTEMS	$683,700	$276,300	$474,900	$0	$0	**$1,434,900**
Totals:	**$20,714,700**	**$8,364,200**	**$3,175,900**	**$440,500**	**$518,300**	**$33,213,600**

Central Middle School
Independent School District #624

Address:	4857 Bloom Avenue White Bear Lake, Minnesota 55110	**Year(s) Built:**	, 1953, 1965, 1997
		Gross Area:	140,015 S.F.
Contact:		**Site Area:**	28 acres
		Parking:	230
Phone:			

Central Middle School
Independent School District #624

Analysis

- The site area totals 28 acres and is bordered to the west by Bald Eagle Avenue, to the east by Bloom Avenue, and to the south and north by private residences.
- Parking on the north/east side of the building (Central Middle School entry) has 47 parking stalls including one handicap parking stall. Parking on the south/east side of the building (District Office entry) has 183 parking stalls and 5 handicap parking stalls.
- Handicap parking stalls in Northeast and central parking lots do not have correct striping per current accessibility code and curb cut is required at bot lots.
- Asphalt at parking lot areas is in good condition.
- Concrete at sidewalk to district office entry is in poor condition.
- Asphalt on west side of the building is in poor condition and should be replaced.
- Asphalt at loading dock is damaged and should be replaced.
- There are accessibility issues with bleachers and dugouts on site (see accessibility section)
- Retaining wall between field and receiving area on east side of site is in poor condition and requires a guardrail.
- Reseeding is required adjacent to retaining wall.
- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Replace concrete at main entry (approximately 15% of concrete panels)
Priority: N **Cost: $5,700**

Central Middle School
Independent School District #624

Issues

2 Resurface asphalt on west side of building.
Priority: N **Cost:** **$324,200**

3 Rebuild loading dock.
Priority: 3 **Cost:** **$13,400**

4 Rebuild retaining wall and add guardrail.
Priority: 3 **Cost:** **$31,800**

5 Reseed area adjacent to retaining wall.
Priority: N **Cost:** **$3,400**

6 Replace fence that runs between receiving area and field.
Priority: N **Cost:** **$8,400**

7 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,200**

Central Middle School
Independent School District #624

Analysis

- The exterior is brick with a stone base. Brick is in good condition but requires some tuckpointing in areas including the boiler stack. Stone is starting to deteriorate at the base in some locations.

- Building was built in 1918 and has 6 additions. The building has Type II structure.

- Existing windows are operable sliding windows with screens that were installed with the 1997 addition. They are in good condition but will need to be replaced in the next 10 years, they were installed in 1997.

- The entrances have vestibules, doors are curtain walls in good condition.

- Roof is _____ years old and is in need of _____.

- The site totals 26 3/4 acres and is bordered to the north and south by private residences, the east by Bloom Avenue, and the west by Bald Eagle Avenue.

Issues

1 Replace all windows.
Priority: 1 **Cost: $466,100**

2 Tuckpointing allowance.
Priority: 3 **Cost: $357,500**

3 Replace roof areas D, F, D1, G, H, I, J, L, T, K, N, M, P1, P, and O (installed 1988) per District roof report.
Priority: 1 **Cost: $2,695,300**

4 Replace roof areas Q, R, S, U, W, V, and X (installed 1997) per District roof report.
Priority: 3 **Cost: $1,151,500**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Central Middle School
Independent School District #624

Issues

5 Replace roof areas A, A1, B, C, E, Y and Z (installed 1999) per District roof report.
Priority: 4 **Cost: $445,000**

6 Replace roof areas Y and Z (installed 2005) per District roof report.
Priority: N **Cost: $88,700**

Central Middle School
Independent School District #624

Analysis

- General: Corridor floors are VCT. VCT in some areas is cracking.
- General: Countertops in all classrooms are in poor condition.
- General: Wood lab casework doors are in poor condition.
- General: Drinking fountain in east wing needs wing walls (1st and 2nd level).
- General: Tile is cracking at all stairwells.
- General: Railings at stairwells do not meet current accessibility code.
- General: There are a few locations where glazed block is cracked.
- General: Some ceiling tiles are damaged.
- General: Some repainting is required at frames and walls
- Lower Level: Many ceiling tiles are missing or cracked in storage room. Ceiling tiles in Board room are starting to warp.
- Lower Level: Floor is uneven at stairs up from board room.
- 1st Floor: Exit from the main office requires free egress per current building code, hardware currently requires a key to get out.
- 1st Floor: VCT in commons is in poor condition, tiles are separating and damaged.
- 1st Floor: Wall pads in gyms 127A and 127C/D are in poor condition.
- 1st Floor: The finish is damaged at the operable wall in gym 127C/D.

Central Middle School
Independent School District #624

Analysis

- 1st Floor: Casework in Industrial Tech Lab 133 is in poor condition.
- 1st Floor: Industrial Tech Lab requires exits to be farther apart for egress per current accessibility code and is missing an exit sign at one exit.
- 1st Floor: Restroom in kitchen is not accessible.
- 1st Floor: Wood stage floor at Auditorium is starting to show wear.
- 1st Floor: Finish is peeling from diagonal walls on either side of stage.
- 1st Floor: At women's restroom in Auditorium lobby, floor is pulling away from the wall.
- 2nd Floor: The countertop of casework in the media center is showing wear.
- 2nd Floor: At band room 231, windows are currently being replaced.
- 2nd Floor: At band room 231, a railing is required at the stair on the wall side per current building code.
- 3rd Floor: Carpet is in poor condition in lounge, technology room and head end room.
- Kitchen needs new equipment.

Issues

1 Allowance for replacement of damaged VCT Tiles.
Priority: 3 **Cost: $20,100**

2 Replace countertops in all classrooms.
Priority: 3 **Cost: $308,900**

Central Middle School
Independent School District #624

Issues

3 Replace doors of wood lab casework in all classrooms.
Priority: 3 **Cost: $110,300**

4 Allowance to replace damaged ceiling tiles.
Priority: 4 **Cost: $83,500**

5 Allowance for repainting.
Priority: 4 **Cost: $25,100**

6 Replace ceiling tiles in Board Room.
Priority: 4 **Cost: $24,300**

7 Replace hardware at main office door to provide free egress.
Priority: 3 **Cost: $1,900**

8 Replace VCT in commons.
Priority: 4 **Cost: $66,200**

9 Replace wall pads in gyms 127A and 127C/D.
Priority: 4 **Cost: $6,500**

10 Repair finish of operable wall in gyms 127A and 127C/D.
Priority: 4 **Cost: $500**

11 Replace countertops at Media Center casework, install countertops where there are none. Replace countertop at reception desk.
Priority: 4 **Cost: $133,600**

12 Tile in band stairways and front stairways.
Priority: 3 **Cost: $19,100**

13 Provide new security hardware at all classroom doors.
Priority: 4 **Cost: $66,800**

Central Middle School
Independent School District #624

Issues

14 Provide larger walk-in freezer.
Priority: 2 **Cost: $102,000**

15 Provide (2) new double stack convection oven and (20 rotating oven in kitchen.
Priority: 3 **Cost: $195,500**

16 Provide (1) 4-well electric hot food serving counter and (1) 6-well electric cold food serving counter.
Priority: 3 **Cost: $120,100**

17 Remodel Ala Carte Area, Provide (1) grab-n-go hot case and (1) grab-n-go cold case.
Priority: 4 **Cost: $70,100**

18 Knock out kitchen walls to make on large space.
Priority: 4 **Cost: $32,200**

19 Relocate the freezer and cooler compressors to the roof.
Priority: N **Cost: $40,000**

20 Replace the existing dishwasher with new dishwasher including integral booster heater.
Priority: 3 **Cost: $90,000**

Central Middle School
Independent School District #624

Analysis

- Storage area on lower level is not accessible per current accessibility code.
- There are accessibility issues with bleachers and dugouts on site
- Locker room showers do not meet current accessibility code.
- (2) doors are not accessible per current accessibility code due to the depth of the wall.

Issues

1 Install lift for access to lower level storage area.
Priority: 3 **Cost:** **$66,800**

2 Provide seats at shower rooms.
Priority: 1 **Cost:** **$3,000**

3 Provide power operator buttons at inaccessible doors.
Priority: 1 **Cost:** **$8,400**

4 Install wing walls at drinking fountain.
Priority: 1 **Cost:** **$6,200**

5 Replace railings and guardrails at all stairwells.
Priority: 1 **Cost:** **$168,500**

6 Install railings at stair to band room.
Priority: 1 **Cost:** **$5,200**

Central Middle School
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1918. Major additions were built in 1924, 1935, 1936, 1953, 1965, and 1997. Areas constructed in 1918, 1924, 1935, and 1936 are further discussed as part of the "WBL District Office" analysis of this report. Areas constructed in 1953, 1965, and 1997 are included in this portion of the text. Mechanical systems have been renovated and replaced many times over the years. The basic heating system is a steam plant. Steam is converted to hot water for distribution to the 1997 additions and subsequent renovation projects. Most of the building is not air-conditioned.

- The building is heated by two gas fired 9,560 MBH fire tube steam boilers. The boilers were installed in 1953 and the burners look to be original. The original system, when installed, was dual fuel. Both boilers are required to run when outside air temperatures are below 0 Deg. F. The system is in very poor condition.

- The boilers are located in the basement of the 1924 building. A large freestanding brick chimney vents the boilers to above the roofline of the building. The chimney is in poor condition and requires major tuck-pointing.

- The 10,000 gallon fuel oil storage tank and associated pumps have been abandoned in place and the system burns firm gas.

- Steam traps are on a 5 year maintenance schedule and are in good working condition.

- A steam to hot water convertor located in the boiler room provides hot water to the 1997 additions. Two in-line constant circulating pumps circulate hot water.

- The majority of the building is not air-conditioned. Air conditioning has been added to select areas as they have been remodeled. The Middle school main office is cooled by a package rooftop unit installed in the original 1997 construction project. The Band, Choir, Orchestra, and special education rooms as well as the Media Center are cooled by central variable air volume (VAV) systems installed in the 1997 construction project.

Central Middle School
Independent School District #624

Analysis
Heating and Ventilation

- The media center and special education classrooms located in the 1953 building are heated, cooled, and ventilated by two VAV packaged rooftop units. The units were installed in the 1997 renovation project. The units are cooling only and serve VAV boxes with hot water reheat coils. The spaces, generally, also have perimeter finned tube radiation for temperature zone control. It was reported by maintenance staff that the systems have difficulty heating the spaces and the rooftop units should have a heating coil.

- The cafeteria is heated and ventilated by a constant volume unit located in the boiler room. The unit is original to the 1953 construction and is in very poor condition. Maintenance staff reported many complaints regarding temperature and ventilation in the cafeteria.

- A roof mounted gas fired make-up air unit provides make-up air for the kitchen exhaust systems. The unit was replaced in the 1997 renovation project and is in poor condition.

- Classrooms in the 1953 building are typically heated and ventilated by horizontal style unit ventilators (UV) installed in the 1997 renovation project. The UVs have steam heating coils for heating. Most areas also have perimeter finned tube radiation for heating zone control. The UVs transfer relief air through the corridors below the ceilings.

- The music area including the band, choir, and orchestra areas are heated, cooled, and ventilated by a VAV air-handling unit located adjacent to the band room. The unit was installed in the 1997 renovation project. The unit has a steam heating coil and direct expansion (DX) coil for cooling. The condensing unit is located on the roof. The unit serves VAV boxes with hot water reheat for temperature zone control.

- Science rooms in the 1953 area of the building are heated and ventilated by constant volume rooftop units. The units were installed in the 1997 renovation and have a steam coil for heating.

- The industrial technology area is heated and ventilated by horizontal UVs. The UVs are original to the 1965 building construction and are in very poor condition. The units have steam coils for heating. The computer lab has a dedicated packaged rooftop unit for cooling only. The wood shop has a dust collection system and paint spray booth located adjacent to the wood shop.

Central Middle School
Independent School District #624

Analysis
Heating and Ventilation

- Gymnasiums A and B are heated and ventilated by a single roof mounted constant volume air handling unit. Gymnasiums C and D are heated and ventilated by dedicated roof mounted constant volume air handling units. The units were installed in the 1997 renovation project. The units have steam heating coils and no cooling capability. The gyms do not have de-stratification fans.

- Locker rooms transfer air from the adjacent gyms as make-up for exhaust. The locker rooms do not have a direct source of ventilation air.

- The electrical room adjacent to the gymnasiums does not have a means for cooling and gets extremely hot.

- The 1997 classrooms are typically heated and ventilated by horizontal UVs installed in the original construction. The UVs have hot water coils for heating and exterior rooms typically have perimeter finned tube for heating zone control. Maintenance staff noted the outside air louvers for the UVs are too small and spaces have ventilation issues.

- The office areas in the 1997 addition are heated, cooled, and ventilated by packaged rooftop DX units. The units were installed in the 1997 construction project and serve VAV boxes with hot water reheat coils. The unit serving the main office is adjacent to a brick wall that acts as a large thermal mass. The system often is forced to mechanical cooling due to the large solar load.

- The roof exhaust fans are reported to be replaced as needed and are generally in good condition.

- The kitchen cooler and freezer compressors are located in a closet adjacent to the kitchen. The space overheats.

- The dishwasher and associated booster heater are at the end of their useful lives and in need of replacement.

Temperature Control

- The majority of the building is pneumatically controlled. Some renovated areas were installed with direct digital controls.

Plumbing

Central Middle School
Independent School District #624

Analysis
Plumbing

- The hot and cold water distribution system installed in the 1953 and 1965 building areas are typically galvanized piping and is near the end of its useful life.

- Hot water is provided to the building by a standard efficiency 600 MBH atmospheric gas fired water heater and storage tank located in the boiler room. The water heater was installed approximately 8 years ago and is in fair condition.

- High temperature water to the kitchen is provided by a 199 MBH standard efficiency tank style atmospheric water heater located in the boiler room. The hot water system for the kitchen has a dedicated water softener.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- The science rooms in the 1953 building were renovated in 1997. A shut off valve for the gas service to the student stations is typically located in a lockable access box near the teacher workstation. The installation does not comply with current requirements for emergency gas shut-off.

Issues

1 Convert building from steam to hot water heat. Replace existing boilers with new gas fired high efficiency condensing boilers sized to serve both Central Middle School and District Office. Remove existing steam and condensate piping and provide new hot water distribution piping with variable speed pumps. Replace existing steam coils in existing air handling systems as necessary. Replace all remaining steam unit heaters, fin tube radiation and other heating terminal devices with new hot water systems.

Priority: 1 **Cost: $11,075,000**

2 Provide a new central air cooled chilled water plant to provide capacity to cool all areas of the building, including the District Office. A variable primary distribution system will provide chilled water throughout the building. Distribution costs to be included in ventilation project cost. The existing chilled water distribution system to the auditorium will be incorporated on the new system. All controls will be an extension of the existing direct digital control system. The new chiller is to have cottonwood screens and reject air extensions.

Priority: 1 **Cost: $1,270,000**

Central Middle School
Independent School District #624

Issues

3 Classroom Option 1 - ($11,400,000.00) Provide a new vertical unit ventilation system with ducting through room to provide heating, cooling and ventilation to serve all classroom areas. Areas to be served with hot water heating coil and chilled water cooling coil. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $0**

4 Classroom Option 2 - ($12,345,000.00) Provide a new 4-pipe displacement and chilled beam system for individual heating and cooling zone control to serve classrooms. The system will be connected to the new hot water plant for heating and chilled water plant for cooling. All controls will be direct digital as an extension of the new building control system. Cost includes new ceiling, lighting, and fire protection for area.

Priority: 1 **Cost: $12,345,000**

5 Replace the air-handling unit serving the cafeteria with a new constant air volume unit. The new unit will be connected to the new hot water and have space for future installation of cooling coil. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $340,000**

6 Install cooling coil for new air handling unit serving the cafeteria and connect to building new chilled water system for cooling.

Priority: 3 **Cost: $40,000**

7 Replace the air-handling unit serving the gymnasiums with a new constant air volume unit. The new unit will be connected to the new hot water and have space for future installation of cooling coil. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $1,350,000**

8 Install cooling coil for new air handling unit serving the gymnasiums and connect to building new chilled water system for cooling.

Priority: 4 **Cost: $140,000**

9 Provide with de-stratification fans in all gymnasiums to improve heating efficiency.

Priority: 2 **Cost: $70,000**

Central Middle School
Independent School District #624

Issues

10 Replace the air-handling unit serving the locker rooms with a new constant air volume unit. The new unit will be connected to the new hot water and have space for future installation of cooling coil. All controls will be direct digital as an extension of the new building control system.

Priority: 2 **Cost: $340,000**

11 Install cooling coil for new air handling unit serving the locker rooms and connect to building new chilled water system for cooling.

Priority: 4 **Cost: $40,000**

12 Replace the ventilation system and make-up air systems serving the industrial tech area. Replace existing dust collector. Provide a constant volume system with hot water heating and chilled water cooling for times of normal classroom instruction. Provide a gas fired make-up air unit to provide make-up air for the dust collector and paint spray booth. All controls will be an extension of the existing direct digital control system.

Priority: 2 **Cost: $310,000**

13 Replace all remaining pneumatic controls as an extension of the existing building control system. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $45,000**

14 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 2 **Cost: $250,000**

15 Replace galvanized domestic hot and cold water distribution systems in the 1953 and 1965 building areas with new copper piping. Ensure classrooms are served with both cold and hot domestic water.

Priority: 2 **Cost: $1,130,000**

16 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater. Size appropriately to serve Central Middle School as well as the District Office.

Priority: 2 **Cost: $110,000**

Central Middle School
Independent School District #624

Issues

17 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.
Priority: 1 **Cost: $10,000**

18 Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.
Priority: 1 **Cost: $25,000**

19 Provide a new secondary split AC system to cool head end room and provide redundancy.
Priority: 3 **Cost: $25,000**

Central Middle School
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 480-volt 3-phase 1200A switchboard. The main switchboard is of newer vintage and is in good condition. It contains adequate spare capacity to accommodate minor building expansions, and is generally in good condition.

- The building is enrolled in a utility curtailment program.

- Service equipment includes surge protection.

- Roughly 50% of the distribution equipment is of older vintage (1953 or 1965), is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility contains a central inverter system (~2007). Inverter is 480V with 16A output and 90 minutes of battery backup. The District would like to move emergency lighting to a generator.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- The lighting consists of linear T8 fluorescent fixtures. The fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures and controls.

- Exit signs and interior egress lighting are fed from the central inverter, and are in fair condition. Replace when central inverter is replaced with generator.

- The facility does not have exterior egress lighting. Fixtures should be added on the exterior of the building at each exit.

Central Middle School
Independent School District #624

Analysis

Lighting

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Staff were not able to comment on condition of paging system.
- Fire alarm system is aged Simplex 4010 panel in poor condition. Replace panel, devices and wiring.

Issues

1 Replace aging distribution equipment.
Priority: 2 **Cost: $288,700**

2 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $258,300**

3 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $63,800**

4 Replace T8 lighting with energy efficient LED fixtures and controls.
Priority: 3 **Cost: $561,300**

5 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $22,800**

6 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $110,900**

7 Provide wireless clock system.
Priority: 3 **Cost: $30,800**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Central Middle School
Independent School District #624

Issues

8 Provide new fire alarm system.
Priority: 1 **Cost: $159,600**

Central Middle School

SITE

1	Replace concrete at main entry (approximately 15% of concrete panels)	Priority: N	**$5,700**
2	Resurface asphalt on west side of building.	Priority: N	**$324,200**
3	Rebuild loading dock.	Priority: 3	**$13,400**
4	Rebuild retaining wall and add guardrail.	Priority: 3	**$31,800**
5	Reseed area adjacent to retaining wall.	Priority: N	**$3,400**
6	Replace fence that runs between receiving area and field.	Priority: N	**$8,400**
7	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Replace all windows.	Priority: 1	**$466,100**
2	Tuckpointing allowance.	Priority: 3	**$357,500**
3	Replace roof areas D, F, D1, G, H, I, J, L, T, K, N, M, P1, P, and O (installed 1988) per District roof	Priority: 1	**$2,695,300**
4	Replace roof areas Q, R, S, U, W, V, and X (installed 1997) per District roof report.	Priority: 3	**$1,151,500**
5	Replace roof areas A, A1, B, C, E, Y and Z (installed 1999) per District roof report.	Priority: 4	**$445,000**
6	Replace roof areas Y and Z (installed 2005) per District roof report.	Priority: N	**$88,700**

INTERIOR

1	Allowance for replacement of damaged VCT Tiles.	Priority: 3	**$20,100**
2	Replace countertops in all classrooms.	Priority: 3	**$308,900**
3	Replace doors of wood lab casework in all classrooms.	Priority: 3	**$110,300**
4	Allowance to replace damaged ceiling tiles.	Priority: 4	**$83,500**
5	Allowance for repainting.	Priority: 4	**$25,100**
6	Replace ceiling tiles in Board Room.	Priority: 4	**$24,300**
7	Replace hardware at main office door to provide free egress.	Priority: 3	**$1,900**
8	Replace VCT in commons.	Priority: 4	**$66,200**
9	Replace wall pads in gyms 127A and 127C/D.	Priority: 4	**$6,500**
10	Repair finish of operable wall in gyms 127A and 127C/D.	Priority: 4	**$500**
11	Replace countertops at Media Center casework, install countertops where there are none. Replace	Priority: 4	**$133,600**
12	Tile in band stairways and front stairways.	Priority: 3	**$19,100**
13	Provide new security hardware at all classroom doors.	Priority: 4	**$66,800**
14	Provide larger walk-in freezer.	Priority: 2	**$102,000**
15	Provide (2) new double stack convection oven and (20 rotating oven in kitchen.	Priority: 3	**$195,500**
16	Provide (1) 4-well electric hot food serving counter and (1) 6-well electric cold food serving counter.	Priority: 3	**$120,100**
17	Remodel Ala Carte Area, Provide (1) grab-n-go hot case and (1) grab-n-go cold case.	Priority: 4	**$70,100**
18	Knock out kitchen walls to make on large space.	Priority: 4	**$32,200**
19	Relocate the freezer and cooler compressors to the roof.	Priority: N	**$40,000**
20	Replace the existing dishwasher with new dishwasher including integral booster heater.	Priority: 3	**$90,000**

Independent School District #624
Executive Summary

Central Middle School

ACCESSIBILITY

1	Install lift for access to lower level storage area.	Priority: 3	**$66,800**
2	Provide seats at shower rooms.	Priority: 1	**$3,000**
3	Provide power operator buttons at inaccessible doors.	Priority: 1	**$8,400**
4	Install wing walls at drinking fountain.	Priority: 1	**$6,200**
5	Replace railings and guardrails at all stairwells.	Priority: 1	**$168,500**
6	Install railings at stair to band room.	Priority: 1	**$5,200**

MECHANICAL SYSTEMS

1	Convert building from steam to hot water heat. Replace existing boilers with new gas fired high	Priority: 1	**$11,075,000**
2	Provide a new central air cooled chilled water plant to provide capacity to cool all areas of the	Priority: 1	**$1,270,000**
3	Classroom Option 1 - ($11,400,000.00) Provide a new vertical unit ventilation system with ducting	Priority: 1	**$0**
4	Classroom Option 2 - ($12,345,000.00) Provide a new 4-pipe displacement and chilled beam system	Priority: 1	**$12,345,000**
5	Replace the air-handling unit serving the cafeteria with a new constant air volume unit. The new unit	Priority: 2	**$340,000**
6	Install cooling coil for new air handling unit serving the cafeteria and connect to building new chilled	Priority: 3	**$40,000**
7	Replace the air-handling unit serving the gymnasiums with a new constant air volume unit. The new	Priority: 2	**$1,350,000**
8	Install cooling coil for new air handling unit serving the gymnasiums and connect to building new	Priority: 4	**$140,000**
9	Provide with de-stratification fans in all gymnasiums to improve heating efficiency.	Priority: 2	**$70,000**
10	Replace the air-handling unit serving the locker rooms with a new constant air volume unit. The new	Priority: 2	**$340,000**
11	Install cooling coil for new air handling unit serving the locker rooms and connect to building new	Priority: 4	**$40,000**
12	Replace the ventilation system and make-up air systems serving the industrial tech area. Replace	Priority: 2	**$310,000**
13	Replace all remaining pneumatic controls as an extension of the existing building control system. Re-	Priority: 2	**$45,000**
14	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 2	**$250,000**
15	Replace galvanized domestic hot and cold water distribution systems in the 1953 and 1965 building	Priority: 2	**$1,130,000**
16	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 2	**$110,000**
17	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$10,000**
18	Provide a new primary split AC system to cool head end room, replacing the existing PTAC unit.	Priority: 1	**$25,000**
19	Provide a new secondary split AC system to cool head end room and provide redundancy.	Priority: 3	**$25,000**

ELECTRICAL SYSTEMS

1	Replace aging distribution equipment.	Priority: 2	**$288,700**
2	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$258,300**
3	Provide additional power outlets in classrooms.	Priority: 3	**$63,800**
4	Replace T8 lighting with energy efficient LED fixtures and controls.	Priority: 3	**$561,300**
5	Provide exterior egress lighting at each exit.	Priority: 1	**$22,800**
6	Replace metal halide exterior lighting with LED.	Priority: 2	**$110,900**
7	Provide wireless clock system.	Priority: 3	**$30,800**
8	Provide new fire alarm system.	Priority: 1	**$159,600**

Central Middle School
Independent School District #624

SITE	**$462,100.00**
EXTERIOR	**$5,204,100.00**
INTERIOR	**$1,516,700.00**
ACCESSIBILITY	**$258,100.00**
MECHANICAL SYSTEMS	**$28,915,000.00**
ELECTRICAL SYSTEMS	**$1,496,200.00**
Total Cost	**$37,852,200.00**

Central Middle School
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$45,200	$75,200	$341,700	**$462,100**
EXTERIOR	$3,161,400	$0	$1,509,000	$445,000	$88,700	**$5,204,100**
INTERIOR	$0	$102,000	$865,900	$508,800	$40,000	**$1,516,700**
ACCESSIBILITY	$191,300	$0	$66,800	$0	$0	**$258,100**
MECHANICAL SYSTEMS	$24,725,000	$3,945,000	$65,000	$180,000	$0	**$28,915,000**
ELECTRICAL SYSTEMS	$182,400	$399,600	$914,200	$0	$0	**$1,496,200**
Totals:	**$28,260,100**	**$4,446,600**	**$3,466,100**	**$1,209,000**	**$470,400**	**$37,852,200**

White Bear Lake District Office
Independent School District #624

Address: 4855 Bloom Avenue
White Bear Lake, Minnesota
55110

Contact:

Phone:

Year(s) Built:

Gross Area: 000 S.F.

Site Area:

Parking: 0

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

White Bear Lake District Office
Independent School District #624

Issues

1 Replace floor in women's restroom near auditorium.
Priority: 4 **Cost:** **$15,800**

2 Replace carpet in the following third level rooms: Lounge, Head End, Technology.
Priority: 4 **Cost:** **$23,400**

White Bear Lake District Office
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1918. Major additions were built in 1924, 1935, 1936, 1953, 1965, and 1997. Areas constructed in 1918, 1924, 1935, and 1936 are included in this portion of the text. Areas constructed in 1953, 1965, and 1997 are further discussed as part of the "WBL Central Middle School" analysis of this report. Mechanical systems have been renovated and replaced many times over the years. The basic heating system is a steam plant. Steam is converted to hot water for distribution to the 1997 additions and subsequent renovation projects. Most of the building is air-conditioned.

- The building is heated by two gas fired 9,560 MBH fire tube steam boilers. The boilers were installed in 1953 and the burners look to be original. The original system, when installed, was dual fuel. Both boilers are required to run when outside air temperatures are below 0 Deg. F. The system is in very poor condition.

- The boilers are located in the basement of the 1924 building. A large freestanding brick chimney vents the boilers to above the roofline of the building. The chimney is in poor condition and requires major tuck-pointing.

- The 10,000 gallon fuel oil storage tank and associated pumps have been abandoned in place and the system burns firm gas.

- Steam traps are on a 5 year maintenance schedule and are in good working condition.

- A steam to hot water convertor located in the tunnel of the 1918 building provides hot water to the mechanical systems variable air volume (VAV) boxes installed in the 1997 renovation. Hot water is circulated by two base mounted variable volume circulating pumps.

- The majority of the building is air-conditioned. Air conditioning has been added to select areas as they have been remodeled. The auditorium is cooled by a 65 ton air cooled chiller installed in 2005. The district office is cooled by two packaged rooftop units installed in 1997.

- The auditorium and adjacent lobby area are each heated, ventilated, and cooled by constant volume air-handling units. The units were installed in the 2005 renovation with steam heating coils and chilled water cooling coils.

White Bear Lake District Office
Independent School District #624

Analysis

Heating and Ventilation

- The District Office is heated, cooled, and ventilated by two VAV packaged rooftop units. The units were installed in the 1997 renovation project. The units are cooling only and serve VAV boxes with hot water reheat coils. The spaces, generally, also have perimeter finned tube radiation for temperature zone control.

- The head end data room is cooled by two split direct expansion (DX) systems. One of the systems is over 10 years old and in poor condition. The replacement DX system should be sized for more capacity and should include relocating supply air from adjacent roof top unit. The adjacent zone often provides heat to the data room and adds load to the cooling systems.

Temperature Control

- The majority of the building is pneumatically controlled. Some renovated areas were installed with direct digital controls.

- The systems serving the Auditorium area have direct digital controls as manufactured by Johnson Controls. The District has remote access to the systems through a web-based front-end system.

- The systems serving the District office have direct digital controls as manufactured by Alerton. The District has remote access to the systems through a web-based front-end system.

Plumbing

- The hot and cold water distribution system installed in the 1918, 1924, 1935, and 1936 building areas are typically galvanized piping and is near the end of its useful life.

- Hot water is provided to the building by a standard efficiency 600 MBH atmospheric gas fired water heater and storage tank located in the boiler room. The water heater was installed approximately 8 years ago and is in fair condition.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- The shut-off valves at the water meter should be replaced to ensure reliable operation.

Issues

White Bear Lake District Office
Independent School District #624

Issues

1 Replace each of the two rooftop units serving the District Office area in the 1918, 1924, and 1936 areas of the building. The new air handling systems are to have hot water heating and chilled water for cooling. Replace the existing variable air volume box controls to be an extension of the existing building control system. All controls will be an extension of the existing direct digital control system.

Priority: 2 **Cost: $3,620,000**

2 Replace oldest DX unit serving the data room. Remove the diffuser that is providing air from the adjacent air handling system.

Priority: 1 **Cost: $25,000**

3 Replace secondary DX unit serving the data room for improved redundancy.

Priority: 3 **Cost: $25,000**

4 Replace all remaining pneumatic controls and the direct digital controls in the auditorium with new direct digital controls as an extension of the existing building control system. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $55,000**

5 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 1 **Cost: $150,000**

6 Retrofit the existing chiller and condensing units with cottonwood screens.

Priority: 4 **Cost: $20,000**

7 Replace galvanized domestic hot and cold water distribution systems in the 1918, 1924, 1935, and 1936 building areas with new copper piping.

Priority: 2 **Cost: $1,200,000**

White Bear Lake District Office
Independent School District #624

Analysis

Service and Distribution

- In terms of electrical distribution the District Office is considered an extension of Central Middle School. No service entrance equipment appears to be located in the District Office. Distribution equipment appears to all be newer vintage 480V and 208V, and in good condition. Spare capacity may be limited. Any significant additions or HVAC upgrades to the building will likely necessitate new equipment fed from the middle school.

- The building is enrolled in a utility curtailment program.

- A natural gas generator was installed on the roof in 2016 to feed the District IT Head End equipment. Generator is 208V 3-phase, MTU 50kW and is in good condition.

- If a generator is added to Central Middle School then emergency power should be extended to the District Office for life safety and other loads.

Lighting

- Lighting in the auditorium consists primarily of LED fixtures and is in good condition.

- Lighting throughout the rest of the District Office consists of linear T8 fixtures. The fixtures are in fair condition and should be considered for replacement with LED fixtures and new controls.

- Exit signs and interior egress lighting are fed from the Central Middle School central inverter, and are in fair condition. Replace when central inverter is replaced with generator.

- The facility does not have exterior egress lighting. Fixtures should be added on the exterior of the building at each exit.

- Exterior poles, wall packs and canopy fixtures are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.

White Bear Lake District Office
Independent School District #624

Analysis
Systems/ Technology

- Staff were not able to comment on condition of paging system.

- Fire alarm system is aged Simplex 4010 panel in poor condition. Replace panel, devices and wiring.

Issues

1 Replace T8 lighting with energy efficient LED fixtures and controls.
Priority: 3 **Cost: $118,900**

2 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $17,100**

3 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $110,900**

4 Provide wireless clock system.
Priority: 3 **Cost: $22,200**

5 Provide new fire alarm system.
Priority: 1 **Cost: $95,600**

Independent School District #624
Executive Summary

White Bear Lake District Office

White Bear Lake District Office

INTERIOR

1	Replace floor in women's restroom near auditorium.	Priority: 4	**$15,800**
2	Replace carpet in the following third level rooms: Lounge, Head End, Technology.	Priority: 4	**$23,400**

MECHANICAL SYSTEMS

1	Replace each of the two rooftop units serving the District Office area in the 1918, 1924, and 1936 areas	Priority: 2	**$3,620,000**
2	Replace oldest DX unit serving the data room. Remove the diffuser that is providing air from the	Priority: 1	**$25,000**
3	Replace secondary DX unit serving the data room for improved redundancy.	Priority: 3	**$25,000**
4	Replace all remaining pneumatic controls and the direct digital controls in the auditorium with new	Priority: 2	**$55,000**
5	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 1	**$150,000**
6	Retrofit the existing chiller and condensing units with cottonwood screens.	Priority: 4	**$20,000**
7	Replace galvanized domestic hot and cold water distribution systems in the 1918, 1924, 1935, and	Priority: 2	**$1,200,000**

ELECTRICAL SYSTEMS

1	Replace T8 lighting with energy efficient LED fixtures and controls.	Priority: 3	**$118,900**
2	Provide exterior egress lighting at each exit.	Priority: 1	**$17,100**
3	Replace metal halide exterior lighting with LED.	Priority: 2	**$110,900**
4	Provide wireless clock system.	Priority: 3	**$22,200**
5	Provide new fire alarm system.	Priority: 1	**$95,600**

White Bear Lake District Office
Independent School District #624

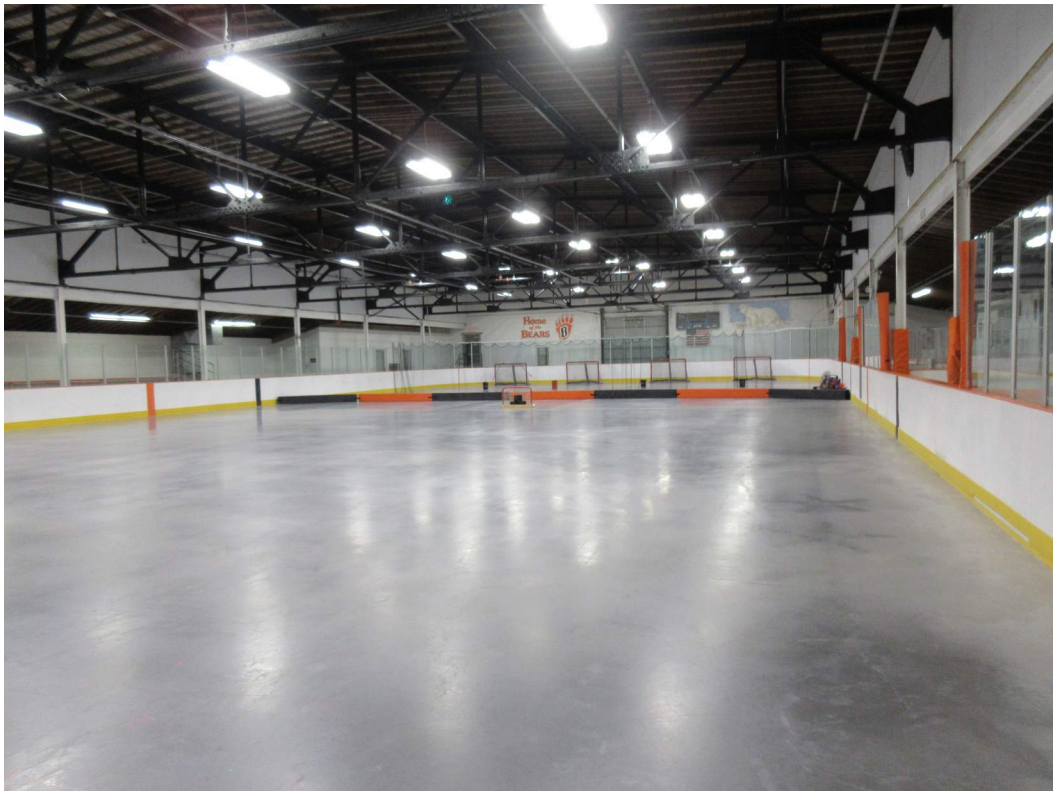
INTERIOR	**$39,200.00**
MECHANICAL SYSTEMS	**$5,095,000.00**
ELECTRICAL SYSTEMS	**$364,700.00**
Total Cost	**$5,498,900.00**

White Bear Lake District Office
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
INTERIOR	$0	$0	$0	$39,200	$0	**$39,200**
MECHANICAL SYSTEMS	$175,000	$4,875,000	$25,000	$20,000	$0	**$5,095,000**
ELECTRICAL SYSTEMS	$112,700	$110,900	$141,100	$0	$0	**$364,700**
Totals:	**$287,700**	**$4,985,900**	**$166,100**	**$59,200**	**$0**	**$5,498,900**

Hippodrome Ice Arena
Independent School District #624



Address: 4855 Bloom Avenue
White Bear Lake, Minnesota
55110

Contact:

Phone:

Year(s) Built: , 1935, 1953, 1965, 1989, 1990

Gross Area: 000 S.F.

Site Area:

Parking: 0

Window Replacement - 1972
Elevator Remodel - 1990

Hippodrome Ice Arena
Independent School District #624

Analysis

- See Central Middle School and District Office for site.

- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,200**

Hippodrome Ice Arena
Independent School District #624

Analysis

- Stucco is cracking at several locations around the exterior of the building.

- Roof is _____ years old and is need of _____.

Issues

1 Repair exterior stucco.
Priority: 3 **Cost: $52,605**

2 Replace roof areas D, F, D1, G, H, I, J, L, T, K, N, M, P1, P, and O.
Priority: 1 **Cost: $2,695,300**

Hippodrome Ice Arena
Independent School District #624

Analysis

- Rubber flooring is showing wear in lobby area.
- Structure is wood type 5.
- Door from lobby to spectator side is in poor condition.
- Roof was last replaced in 2000.
- Per note d on Table 601, an approved sprinkler system can be substituted for 1-hr fire resistance rated construction.
- The maximum allowable area of a Type VA building with an A-4 occupancy is 11,500 SF per Table 503.
- With the maximum increase due to frontage, the allowable area is 20,155 SF.
- The actual area of the building (per the Revit Model on file) is 19,815 SF.

Issues

1 Replace rubber flooring.
Priority: 3 **Cost: $83,300**

2 Replace door from lobby to spectator area.
Priority: 4 **Cost: $4,900**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Hippodrome Ice Arena
Independent School District #624

Analysis

- Bathroom stalls do not meet current accessibility code.
- Transaction counter at concessions is not at the correct height per current accessibility code (at 41").
- Accessibility upgrades are needed at seating area and player box area.
- Accessible seating is in lobby, separated from rest of spectator area.
- Replace door on visitor side from lobby.

Issues

1 Renovate bathrooms to meet accessibility code.
Priority: 1 **Cost: $75,200**

2 Lower transaction counter and coiling door.
Priority: 3 **Cost: $12,400**

3 Install ramps on player side of arena: to player boxes and center box, and at entrance from lobby.
Priority: 1 **Cost: $127,000**

4 Install ramp on spectator side: from lobby door. Add a handrail to the existing ramp.
Priority: 1 **Cost: $127,000**

Hippodrome Ice Arena
Independent School District #624

Analysis

Heating and Ventilation

- The ice rink refrigeration system was replaced in 1991 to include replacement of ice sheet circulating tubes and refrigeration equipment. Subsequently the refrigeration equipment condensing unit was replaced in 2014 and each of the two refrigeration compressors were replaced in 2013 and 2015. The refrigeration system is in good condition.

- The two 7.5 HP refrigeration system glycol circulating pumps were not replaced in the 2000 remodel and are in very poor condition. The pump replacement should include new service valves to ensure reliable operation.

- The ventilation system in the rink area consists of two large wall louvers and two large powered roof ventilators. The system was installed to ventilate the area when the propane powered Zamboni was in use. The Zamboni is now electric and the ventilation system is typically not used in the winter because the incoming air is not tempered.

- Electric radiant panels heat some areas around the ice sheet and are in poor condition.

- Two gas fired 112 MBH sealed combustion furnaces serve the lobby and team areas. The furnaces were installed 5 and 6 years ago and are in excellent condition.

Temperature Control

- All building controls are direct digital as manufactured by Alerton.

Plumbing

- The hot and cold water distribution piping is copper and the maintenance staff did not report any known issues.

- A 390 MBH gas fired tank style atmospheric water heater located in the Zamboni storage area provides hot water. The water heater was installed 7 years ago and is in good condition.

- A small electric tank water heater provides hot water for the concessions area. The water heater is in good condition.

Hippodrome Ice Arena
Independent School District #624

Analysis
Plumbing

- The plumbing fixtures were replaced in the 2000 renovation project and are typically in good condition.

Issues

1 Replace each of the two 7.5 HP glycol system circulating pumps and associated isolation valves.
Priority: 2 **Cost:** **$20,000**

2 Replace the electric radiant heating systems with new gas fired systems to improve occupant comfort.
Priority: 2 **Cost:** **$30,000**

3 Replace ceiling gas fired unit heater in Zamboni room.
Priority: 2 **Cost:** **$10,000**

Hippodrome Ice Arena
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 480-volt 3-phase 400A service with multiple disconnects. The disconnects are not properly labeled as “service”. Some are of older vintage. Recommend replacement and consolidation of all disconnects into one properly listed and labeled service.

- Service equipment does not include surge protection and should be added.

- Distribution equipment is predominantly of newer vintage and is in good condition.

- The facility does not utilize a generator.

Lighting

- Lighting consists of LED high bays above rink and fluorescent lights around perimeter. Upgrading fluorescent lighting to efficient LED fixtures is recommended.

- Lighting contactors and controls appear to be beyond their expected useful life and should be replaced.

- Exit signs are battery-powered, in good condition, and appear to be sufficiently located.

- Interior egress lighting is battery-powered, in poor condition, insufficiently located in rink and spectator areas, and should be upgraded.

- The facility does not have exterior egress lighting. Fixtures should be located on the exterior of the building at each exit.

- Exterior wall packs are LED.

Systems/ Technology

- No systems of note.

Issues

Hippodrome Ice Arena
Independent School District #624

Issues

1 Replace unlisted disconnects with new service.
Priority: 2 **Cost: $25,800**

2 Replace fluorescent T8 lighting with LED fixtures and controls.
Priority: 3 **Cost: $27,300**

3 Replace aging rink lighting controls.
Priority: 2 **Cost: $7,600**

4 Provide interior emergency egress lighting in rink and spectator areas.
Priority: 1 **Cost: $12,200**

5 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $11,400**

Hippodrome Ice Arena

SITE

1	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Repair exterior stucco.	Priority: 3	**$52,605**
2	Replace roof areas D, F, D1, G, H, I, J, L, T, K, N, M, P1, P, and O.	Priority: 1	**$2,695,300**

INTERIOR

1	Replace rubber flooring.	Priority: 3	**$83,300**
2	Replace door from lobby to spectator area.	Priority: 4	**$4,900**

ACCESSIBILITY

1	Renovate bathrooms to meet accessibility code.	Priority: 1	**$75,200**
2	Lower transaction counter and coiling door.	Priority: 3	**$12,400**
3	Install ramps on player side of arena: to player boxes and center box, and at entrance from lobby.	Priority: 1	**$127,000**
4	Install ramp on spectator side: from lobby door. Add a handrail to the existing ramp.	Priority: 1	**$127,000**

MECHANICAL SYSTEMS

1	Replace each of the two 7.5 HP glycol system circulating pumps and associated isolation valves.	Priority: 2	**$20,000**
2	Replace the electric radiant heating systems with new gas fired systems to improve occupant comfort.	Priority: 2	**$30,000**
3	Replace ceiling gas fired unit heater in Zamboni room.	Priority: 2	**$10,000**

ELECTRICAL SYSTEMS

1	Replace unlisted disconnects with new service.	Priority: 2	**$25,800**
2	Replace fluorescent T8 lighting with LED fixtures and controls.	Priority: 3	**$27,300**
3	Replace aging rink lighting controls.	Priority: 2	**$7,600**
4	Provide interior emergency egress lighting in rink and spectator areas.	Priority: 1	**$12,200**
5	Provide exterior egress lighting at each exit.	Priority: 1	**$11,400**

Hippodrome Ice Arena
Independent School District #624

SITE	**$75,200.00**
EXTERIOR	**$2,747,905.00**
INTERIOR	**$88,200.00**
ACCESSIBILITY	**$341,600.00**
MECHANICAL SYSTEMS	**$60,000.00**
ELECTRICAL SYSTEMS	**$84,300.00**
Total Cost	**$3,397,205.00**

Hippodrome Ice Arena
Independent School District #624
Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$0	$75,200	$0	**$75,200**
EXTERIOR	$2,695,300	$0	$52,605	$0	$0	**$2,747,905**
INTERIOR	$0	$0	$83,300	$4,900	$0	**$88,200**
ACCESSIBILITY	$329,200	$0	$12,400	$0	$0	**$341,600**
MECHANICAL SYSTEMS	$0	$60,000	$0	$0	$0	**$60,000**
ELECTRICAL SYSTEMS	$23,600	$33,400	$27,300	$0	$0	**$84,300**
Totals:	**$3,048,100**	**$93,400**	**$175,605**	**$80,100**	**$0**	**$3,397,205**

White Bear Lake Area High School - North Campus
Independent School District #624

Address:	5045 Division Avenue White Bear Lake, Minnesota 55110	**Year(s) Built:**	1963, 1965, 1994
		Gross Area:	244,190 S.F.
Contact:		**Site Area:**	37 acres
		Parking:	301
Phone:			

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

- The site area totals 37 acres. It is bordered to the east by Division Avenue to the north by a railroad, to the west by private residences, and to the south by Central Middle School and the district office.

- The northwest parking lot has 87 total parking stalls, 4 of which are accessible. The southeast parking lot has 177 total parking stalls, 3 of which are accessible. The receiving/staff parking lot has 37 total parking stalls, none of which appear to be accessible. To meet the overall ratio of standard parking stalls to accessible stalls, one additional accessible stall should be added.

- The athletic facilities include a football field, running track, (3) ice rinks, (3) baseball diamonds, and (5) tennis courts

- The asphalt lot near receiving is in poor condition.

- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Restripe parking stalls and install signage as required to provide 1 additional handicap accessible parking stall.
Priority: N **Cost: $1,400**

2 Resurface asphalt in receiving area parking lot
Priority: N **Cost: $173,000**

3 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,300**

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

- The original building was constructed in 1963. Another classroom wing was added in 1965, and a new cafeteria and Main entry were added in 1994.
- Windows in the original building are casement style, and were replaced in 1992. They are due for replacement based on their age, though no leaks have been reported.
- Cafeteria and main entry windows are also due for replacement, though no leaks have been reported.
- Roof has areas that are 29, 28, 11 and 10 years old.
- Main entry canopy drains directly onto sidewalks, cuases snow build-up issues in winter.

Issues

1 Replace all windows in original building.
Priority: 1 **Cost: $284,300**

2 Replace all windows in cafeteria and main entry.
Priority: 2 **Cost: $166,300**

3 Modify main entry canopy to fill gap between it and rest of building, to enclose the underside with a soffit, and to provide downspouts to control drainage onto the site.
Priority: 3 **Cost: $97,800**

4 Replace roof areas A1, A3, B1 and E1 (installed 1989) per District roof report.
Priority: 1 **Cost: $1,282,800**

5 Replace roof areas C2, C1, C3, A2, B2, G3, G1 and G2 (installed 1988-1990) per District roof report.
Priority: 1 **Cost: $1,569,700**

White Bear Lake Area High School - North Campus
Independent School District #624

Issues

6 Replace roof areas D1, D2, F1, F2, F, D3, E2, C and E3 (installed 2007-2013) per District roof report.

Priority: N **Cost: $2,573,900**

7 Provide tuckpointing allowance.

Priority: 3 **Cost: $1,015,400**

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

- The Locker rooms, kitchen and science rooms were renovated in 2005.
- Cafeteria linoleum flooring is chipped and dented from cafeteria tables. Terrazzo would be better for this space.
- None if the classroom doors have security hardware.
- There is original casework in varying condition throughout the facility, many with non-accessible sinks.
- Concrete block wall in architecture room 421 is cracking in the rear corners of the room.
- The floor tile in the locker room showers is in poor condition.
- Epoxy flooring in locker rooms is chipping at transitions.
- The locker room walls are glazed block. Some blocks and grout are damaged.
- Carpet in main office suite is in need of replacement.
- The break room/kitchenette in the main office suite has all original casework, and no ADA counter or sink.
- Carpet is old and worn in 514A, 514, 513, 108A, 108C.
- Kitchen needs new equipment.
- VCT is spreading apart (likely due to moisture) in 513, 513A, 513B.
- Computer Lab 112 should be remodeled to match typical classroom layout and finishes.

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

- The Special Ed and Art wing has spline ACT throughout. There are warped tiles in the corridor.
- Art room 606 has 88’ of original casework in very poor condition with (4) sinks.
- Classrooms in second floor classroom wing need carpet and ceiling replacement (ceilings are mostly textured gyp). Most classrooms also have 4’ of original casework.
- The media center has a textured ceiling and soffit, which should be replaced with 2x2 ACT and a standard gyp soffit.
- The bookshelves in the media center are original, but in good condition.
- Media Center carpet was replaced 2-3 years ago.
- Toilet partition doors in women’s restroom in second floor classroom wing swing into one another.
- Copy room 211 has marks from adhesive left when casework was removed.
- Storage room 214A has holes in the walls and exposed plumbing left behind from previously removed plumbing fixtures.

Issues

1 Replace linoleum in cafeteria with epoxy terrazzo.
Priority: 3 **Cost: $474,100**

2 Replace all original casework with new, including replacement of classroom sinks.
Priority: 3 **Cost: $498,900**

3 Patch / repair concrete block walls in architecture room 421 where cracking in corners and provide control joint and sealant.
Priority: 2 **Cost: $3,000**

White Bear Lake Area High School - North Campus
Independent School District #624

Issues

4 Replace floor tile in (5) locker room showers.
Priority: 3 **Cost: $34,500**

5 Patch / repair epoxy floor in locker rooms.
Priority: 3 **Cost: $3,700**

6 Patch / repair glazed block in locker rooms and shower areas.
Priority: 3 **Cost: $11,700**

7 Replace old, worn carpet in classrooms indicated.
Priority: 3 **Cost: $202,000**

8 Replace VCT flooring where indicated. Treat slab for moisture mitigation.
Priority: 3 **Cost: $22,100**

9 Remodel computer Lab 112 into standard classroom (remove partial height block walls, remove floor boxes, replace carpet with LVT)
Priority: 4 **Cost: $167,200**

10 Remove any remaining adhesive from the walls in copy room 211 skim coat and repaint.
Priority: 4 **Cost: $1,900**

11 Remove remaining plumbing at previously removed plumbing fixture(s), patch gyp walls, repaint (Room 214A - Storage).
Priority: 3 **Cost: $5,100**

12 Provide new security hardware at all classroom doors.
Priority: 3 **Cost: $58,500**

13 Provide (1) new combi oven, (3) new double stack convection ovens and (1) new rotating oven in kitchen.
Priority: 3 **Cost: $315,800**

White Bear Lake Area High School - North Campus
Independent School District #624

Issues

14 Provide (2) new walk-in freezer/cooler doors with windows in kitchen.
Priority: 2 **Cost: $23,900**

15 Provide (2) 4-well electric hot food serving counters and (1) 6-well electric cold food serving counter in kitchen.
Priority: 3 **Cost: $95,000**

16 Remodel Ala Carte Area. Provide (1) grab-n-go hot case and (1) grab-n-go cooler in kitchen.
Priority: 4 **Cost: $82,600**

17 Relocate freezer and cooler condensers to the roof.
Priority: N **Cost: $40,000**

18 Have VAT flooring removed by licensed abatement contractor. Replace with VCT.
Priority: 2 **Cost: $129,000**

19 Have asbestos acoustic spray gypsum ceilings removed by licensed abatement contractor. Replace with 2x2.
Priority: 2 **Cost: $325,600**

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

- Doors throughout the facility have louvers in them allowing air to flow into corridors. This is in violation of current code.
- Doors do not meet ADA door push/pull clearance requirements: 207, 406, Men's and Women's Restroom outside Auditorium, Boys Locker room Equipment Room, Band practice room.
- Accessible toilet stalls do not meet minimum clear floor space requirements in cafeteria restrooms, Boys Team Locker Room.
- Urinals in men's restroom in 400 wing are spaced too closely for ADA accessibility.
- Private toilet rooms do not meet ADA clear floor space requirements in: main office (2), kitchen, custodial, health office, stage dressing rooms (2), math and science wing (2), second floor classroom wing (2).
- Sink and counter exceeds maximum ADA height (34 ½") in room 429, 421.
- No accessible workstations are present in computer lab 422B.
- Quantity of doors does not meet exiting requirements in room 419/419A, 418A, 320.
- Semi-recessed or fully recessed Drinking fountains throughout the facility are not accessible (no knee/toe clearance for front approach).
- Drinking fountains protrude into the path of travel throughout the facility.
- The gates at the back of the bleachers in the gym do not meet egress hardware requirements.
- Wall separating Auxiliary gyms A & B is exposed wood studs with chicken wire on the second level. The building type dictates non-combustible construction materials.

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

- There is an old drinking fountain without a spout or a handle in the boys team locker room.
- The wrestling room and fitness room exits should have panic hardware for egress.
- Electrical Service Room 319A has a wood door, which does not meet rated wall assembly requirements.
- Weight room 321 has a chain link opening to the corridor. This is against code.
- Electrical room in custodial area in basement has wood door, which does not meet code.
- The only lift to access the choir room is in the Band suite, and would require passing through the band room.
- Special Ed room 607 has an old porcelain wash sink that does not meet ADA standards.

Issues

1 Replace 2 sink and counter combinations to meet ADA height requirement of 34" max.
Priority: 2 **Cost: $17,800**

2 Replace 12 drinking fountains with new ones that meet forward approach ADA requirements.
Priority: 2 **Cost: $65,200**

3 Provide wing walls at 12 drinking fountain locations per ADA requirements.
Priority: 2 **Cost: $15,900**

4 Install power door operator at 8 doors that do not meet ADA clearance requirements.
Priority: 2 **Cost: $33,500**

5 Install lift for access to choir room.
Priority: 2 **Cost: $66,900**

White Bear Lake Area High School - North Campus
Independent School District #624

Issues

6 Replace old wash sink in Special Ed room 607 with ADA accessible wall mounted Lavatory.
Priority: 2 **Cost: $5,100**

7 Replace louvered wood doors with solid wood doors (inlcludes hardware).
Priority: 2 **Cost: $250,500**

8 Provide 3 new egress doors at existing classrooms into the corridor that meet the 1/3 diagonal distance rule. Provide panic hardware on new and existing egress doors as required.
Priority: 2 **Cost: $10,500**

9 Provide new gates/hardware at (6) locations in the gym at the top/back of the bleachers.
Priority: 2 **Cost: $17,600**

10 Replace wood studs in auxiliary gyms with steel studs per building code.
Priority: 2 **Cost: $15,600**

11 Provide panic hardware at 3 doors out of wrestling and fitness room (315 and 319)
Priority: 2 **Cost: $6,100**

12 Replace 2 wood doors with hollow metal door to meet fire rating.
Priority: 2 **Cost: $6,400**

13 Replace chain link in weight room 321 with glass borrowed lights.
Priority: 2 **Cost: $10,100**

14 Major remodel of student gang toilets (4).
Priority: 1 **Cost: $668,600**

15 Major remodel of private toilets (11).
Priority: 2 **Cost: $643,500**

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1963. A classroom addition was completed to the North in 1965. The cafeteria was expanded and kitchen remodeled in 1994. The basic heating system is a steam plant. Steam is converted to hot water for distribution to the building. Only the make-up air unit for the kitchen is served by steam. The building is not air conditioned with the exception of the office, main data room, and select classrooms.

- The building is heated by two dual fuel 10,461 MBH steam boilers. The boilers were installed in the original 1963 construction. There is a 10,000 gallon underground fuel oil storage system installed approximately 15 years ago. Both boilers are required to run when outside air temperatures are below 0 Deg F.

- A large steam to hot water convertor installed in the original 1963 building construction serves hot water to the entire building (except for the kitchen make-up air unit). There are two redundant 10 HP primary circulating pumps located in the boiler room. One of the circulating pumps was replaced in 2017. The primary loop is circulated throughout the building and serves 21 secondary loops (installed in 1963). Additional secondary loops may have been added with addition and renovation projects.

- The hydronic loop was flushed and cleaned approximately 5 years ago and a 30% glycol solution was added. Some air handling systems have pumps intended for freeze protection could be removed.

- The majority of the building is not air-conditioned. A two stage 20 ton water cooled chiller installed in 1989 building construction serves chilled water to the office air handling unit and main data room. The system uses R-22 refrigerant and is in very poor condition. A single 1 ½ HP primary pump circulates chilled water.

- The companion water tower is located on grade to the building's south. Chemical treatment systems are located in the south corner of the boiler room. A single pump circulates condenser water through the system.

- Classrooms in the original 1963 construction are typically heated and ventilated by horizontal unit ventilators (UV) along the perimeter. The UVs were installed in 1963 and are in poor condition. Classrooms typically do not have fin tube radiation. Some original classroom areas have subsequently been remodeled as noted.

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis
Heating and Ventilation

- Classrooms in the 1965 addition are typically heated and ventilated by horizontal UVs along the perimeter. The UVs were installed in 1965 and are in poor condition. Classrooms typically do not have perimeter fin tube radiation.

- Classrooms and other support areas not served by UVs are typically served by single zone constant volume heating and ventilation units. The majority of these were installed in the original 1963 building construction with some exceptions where units where replaced for minor area renovations. Air volume dampers were added to the duct reheat coils in 1992 for many of the systems to improve temperature zone control.

- Science rooms located in the south circle's interior were renovated in 2005 and a new air handling system was provided at that time. The air handling system is variable air volume (VAV) with hot water reheat. The system does not have cooling.

- The office area is heated, ventilated, and cooled by a constant volume air handling unit with hot water reheat coils for heating zone control. The air-handling unit is original to the 1963 building construction and is in very poor condition. A return fan was added in 1992 to improve air circulation. Several gaps in the insulation were noted and insulation was getting wet from condensate on the ductwork.

- The gymnasium is heated and ventilated by two air-handling units located in adjacent mechanical rooms. The air-handling units have hot water coils for heating and no cooling. There are no de-stratification fans in the gymnasium.

- The air-handling systems serving the auxiliary gyms and the fitness room were replace in 2005. The air handling system are single zone constant volume with a hot water coil for heating. The systems do not provide cooling.

- The auditorium and stage areas are each heated and ventilated by constant volume air-handling units located adjacent to each space. The units were installed in the original 1963 construction and are in poor condition.

- The cafeteria was expanded in 1994 and the air handling system was replaced at that time. The air handler is constant volume with a hot water coil for heating. The system does not provide cooling. The cafeteria does have perimeter fin tube for heating zone control.

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

Heating and Ventilation

- The head end data room is cooled by a horizontal UV located above the adjacent room's ceiling. The UV has a chilled water coil for cooling. The unit is in poor condition and difficult to service.

- The Media center and adjacent rooms are heated and ventilated by two constant volume air-handling units located in the tunnels below. Units were installed during the original 1963 construction do not provide cooling. Each unit serves heat via hot water heating coils.

- Shop areas have a dedicated dust collection system, welding station exhaust hood, and paint spray booth. The specialty exhaust systems, with the exception of the paint spray booth, have been replaced within the last 10 years and are in good condition.

- A few spaces throughout the building do not meet current code requirements for ventilation.

- The roof exhaust fans are reported to be replaced as needed and are generally in good condition.

- The kitchen has a Type I island exhaust hood with fire suppression over the cooking equipment.

- The kitchen freezer compressors are located in an adjacent storage room and the two cooler compressors are located in the lower level. The spaces overheat and the compressors should be moved to the roof.

Temperature Control

- The majority of the building is pneumatically controlled. Pneumatic controls were overhauled in 2017 for systems serving the cafeteria and shops.

- Approximately 10% of the building has been converted to direct digital controls as manufactured by Johnson controls.

- The kitchen make-up air unit has a standalone controller as manufactured by Honeywell.

Plumbing

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis
Plumbing

- The hot and cold water distribution system installed in 1963 and 1965 is typically galvanized piping and is near the end of its useful life. Maintenance staff noted they have recently experienced 3 to 4 pipping leaks per year.

- Hot water is provided to the building through a large hot water storage tank located in the boiler room. Hot water is generated through two steam convertors when steam is available. The tank and steam convertors are original to the building and are in poor condition. Hot water to the building is not softened.

- An atmospheric gas fired Raypak water heater is circulated to the storage tank to provide hot water when steam is not available. The water heater was installed approximately 8 years ago and is in fair condition.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

- Some of the toilet rooms were remodeled in the mid 2000's. The fixtures, faucets, and flush valves in these areas are in good condition. Some fixtures throughout the building are very old and in poor condition.

- Classrooms typically have original sink consisting of cold water and a bubbler.

- The shut-off valves at the water meter should be replaced to ensure reliable operation.

- There are approximately 5 sump pumps located throughout the building that are near the end of their useful life and in poor condition.

- The science rooms in the 1963 building were renovated in 2005. A shut off valve for the gas service to the student stations is typically located in a lockable access box near the teacher workstation. The installation does not comply with current requirements for emergency gas shut-off.

Issues

White Bear Lake Area High School - North Campus
Independent School District #624

Issues

1 Replace existing steam plant with a new dual fuel high efficiency condensing hot water condensing boilers. Provide a new constant volume primary hot water loop to connect to the existing hot water distribution system. Remove the remaining steam and condensate piping and retrofit the kitchen make-up air unit steam coil.

Priority: 1 **Cost: $2,370,000**

2 Replace the secondary hot water distribution system with new piping and variable volume variable primary system. Remove the approximately 25 secondary loop pump systems and remove all remaining air-handling unit coil freeze protection pumps. All controls will be an extension of the existing direct digital control system.

Priority: 2 **Cost: $4,260,000**

3 Provide two new air cooled plants to serve chilled water to all areas of the building for cooling. One will serve the athletic and auditorium wing as well as the cafeteria. The other will serve the education wing as well as the office and adjacent corridor. Each will serve variable primary distribution systems to circulate chilled water throughout the building for cooling. Distribution piping cost to be included in ventilation items. Chillers will be equipped with cottonwood screens and reject heat exhaust extension cones. All controls will be an extension of the building wide direct digital control system.

Priority: 1 **Cost: $1,180,000**

4 Classroom Option 1 - ($14,730,000.00) Replace existing unit ventilators with new units to provide heating, cooling and ventilation to all classroom areas of the building. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the building wide direct digital control system.

Priority: 1 **Cost: $0**

5 Classroom Option 2 - ($16,070,000.00) Provide a new heating, cooling and ventilation system to serve all classroom areas of the building via a 4-pipe displacement and chilled beam system for individual heating and cooling zone control to replace existing ventilation system serving classroom areas. The system will be connected to the hot water and chilled water systems with individual heating and cooling control. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $16,070,000**

White Bear Lake Area High School - North Campus
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Issues

6 Retrofit existing 2005 air handling unit serving science rooms with cooling coil to be connected to new chilled water system.
Priority: 1 **Cost: $40,000**

7 Retrofit return air path for existing 2005 air handling system serving science rooms with to meet current code.
Priority: 2 **Cost: $70,000**

8 Provide a new heating, cooling and ventilation system to serve media center and adjacent rooms, excluding the head end room, via variable air volume air handling system with individual heating and cooling control. The system will have hot water heating coils and chilled water cooling coils. All controls will be an extension of the building wide direct digital control system.
Priority: 1 **Cost: $1,810,000**

9 Provide a new heating, cooling and ventilation system to serve office area via variable air volume air handling system with individual heating and cooling control. The system will have hot water heating coils, direct expansion cooling coils, and space for future installation of chilled water cooling coil. All controls will be an extension of the building wide direct digital control system.
Priority: 1 **Cost: $670,000**

10 Install chilled water cooling coil for new air handling unit serving the office area.
Priority: 3 **Cost: $40,000**

11 Provide a new heating and ventilation system to serve the gymnasium by means of a constant volume single zone system. Air handling units are to have a hot water coil for heating and space for the future installation of a cooling coil. All controls will be an extension of the building wide direct digital control system.
Priority: 1 **Cost: $430,000**

12 Install cooling coil for new air handling unit serving the gymnasium and connect to building new chilled water system for cooling.
Priority: 3 **Cost: $55,000**

13 Provide with de-stratification fans in gymnasium to improve heating efficiency.
Priority: 1 **Cost: $40,000**

White Bear Lake Area High School - North Campus
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Issues

14 Provide a new heating and ventilation system to serve the auditorium by means of a constant volume single zone system. Air handling units are to have a hot water coil for heating and chilled water coil for cooling. All controls will be an extension of the building wide direct digital control system.

Priority: 1 **Cost: $430,000**

15 Provide with de-stratification fans in auditorium to improve heating efficiency.

Priority: 1 **Cost: $40,000**

16 Provide a new heating and ventilation system to serve the cafeteria by means of a constant volume single zone system. Air handling units are to have a hot water coil for heating and space for the future installation of a cooling coil. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the building wide direct digital control system. As part of work, remove existing make up air unit serving kitchen and provide transfer path for cafeteria to serve as make up air for kitchen.

Priority: 1 **Cost: $430,000**

17 Install cooling coil for new air handling unit serving the cafeteria and connect to building new chilled water system for cooling.

Priority: 2 **Cost: $55,000**

18 Provide a new heating and ventilation system to serve the locker rooms by means of a variable air volume air handling system with individual heating and cooling control. The system will have hot water heating coils and have space for a chilled water cooling coil. All controls will be an extension of the building wide direct digital control system.

Priority: 2 **Cost: $1,060,000**

19 Install cooling coil for new air handling unit serving the locker rooms and connect to building new chilled water system for cooling.

Priority: 4 **Cost: $55,000**

20 Provide a new heating, cooling, and ventilation system to serve the custodial area means of a variable air volume air handling system with individual heating and cooling control. The system will have hot water heating coil and chilled water cooling coil. All controls will be an extension of the building wide direct digital control system.

Priority: 1 **Cost: $500,000**

White Bear Lake Area High School - North Campus
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Issues

21 Provide a new heating, cooling, and ventilation system to serve the industrial classroom areas by means of a constant volume single zone system. Air handling units are to have a hot water heating and chilled water cooling for times of normal classroom instruction. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the building wide direct digital control system.

Priority: 1 **Cost: $310,000**

22 Replace the horizontal unit ventilator serving the headend room with a new primary split DX systems to provide a reliable method for cooling. As part of work cap off supply from unit ventilator.

Priority: 1 **Cost: $25,000**

23 Provide a new secondary split DX system to assist in cooling headend room and provide redundancy.

Priority: 3 **Cost: $25,000**

24 Replace all remaining pneumatic or direct digital controls with new direct digital controls. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.

Priority: 2 **Cost: $60,000**

25 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 1 **Cost: $415,000**

26 Replace galvanized domestic hot and cold water distribution systems in the 1963 and 1965 buildings new copper piping. Install domestic hot water supply to all classrooms.

Priority: 2 **Cost: $4,285,000**

27 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 2 **Cost: $110,000**

White Bear Lake Area High School - North Campus
Independent School District #624

Issues

28 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $15,000**

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

Service and Distribution

- The facility utilizes a medium voltage distribution system original to building (~1963). A medium voltage distribution lineup feeds open transformer vaults at four locations. All medium voltage equipment is at or nearing the end of its expected useful life and should be replaced soon. The open vaults are a hazard that the district is not equipped to safely maintain and replacement should be prioritized.

- The medium voltage equipment typically transforms down to 208V 3-phase 1600A (or similar) distribution panels that are original to the building. This distribution equipment is at or nearing the end of its expected useful life and should be replaced soon.

- The building is enrolled in a utility curtailment program.

- Distribution equipment does not include surge protection and should be added.

- Roughly 75% circuit breaker panels are original to the building or the 1965 addition, are at or nearing the end of its expected useful life, and should be replaced soon.

- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.

- Provide additional power outlets in classrooms.

Lighting

- Cafeteria has exclusively up-lighting, which does not provide sufficient light for some activities.

- Lighting systems in gyms, media center, stairwells, and most corridors have been recently retrofit with LED. Media center fixtures are controlled by breakers, controls should be added this area.

White Bear Lake Area High School - North Campus
Independent School District #624

Analysis

Lighting

- 1965 addition area utilize older wraparound fluorescents. Additional classrooms and corridors are of less-recent vintage. These fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures and lighting controls.
- Tunnel compact fluorescent lighting is being upgraded to LED lamps as they fail.
- Exit signs and interior egress lighting are battery-powered, in poor condition, insufficiently located, and should be replaced.
- The facility does not have exterior egress lighting. Fixtures should be located on the exterior of the building at each exit. This is a life safety violation.
- Exterior wall packs and canopy fixtures are LED.
- Exterior poles are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system has experienced recent issues that maintenance has not yet resolved. Budget for new paging system head end.
- Fire alarm system is a Simplex 4100U panel circa 1992. Panel is beyond its expected useful life. Replace panel, devices and wiring.

Issues

1 Replace medium voltage distribution and open vault equipment.
Priority: 1 **Cost: $790,000**

2 Replace aging 208V distribution and circuit breaker panel equipment.
Priority: 2 **Cost: $1,352,000**

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Issues

3 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost: $296,300**

4 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $96,900**

5 Provide lighting controls in media center.
Priority: 1 **Cost: $6,000**

6 Replace 1965 addition lighting and other older fluorescent fixtures with LED and controls.
Priority: 3 **Cost: $459,000**

7 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $34,200**

8 Replace metal halide pole lights with LED.
Priority: 2 **Cost: $243,100**

9 Provide wireless clock system.
Priority: 3 **Cost: $47,000**

10 Provide new paging head end system.
Priority: 3 **Cost: $30,900**

11 Provide new fire alarm system.
Priority: 1 **Cost: $278,300**

12 Replace cafeteria lighting fixtures with downlight versions (30 @ 12' ea).
Priority: 1 **Cost: $141,282**

White Bear Lake Area High School - North Campus

SITE

1	Restripe parking stalls and install signage as required to provide 1 additional handicap accessible	Priority: N	**$1,400**
2	Resurface asphalt in receiving area parking lot	Priority: N	**$173,000**
3	Replace wood monument sign with LED sign.	Priority: 4	**$75,300**

EXTERIOR

1	Replace all windows in original building.	Priority: 1	**$284,300**
2	Replace all windows in cafeteria and main entry.	Priority: 2	**$166,300**
3	Modify main entry canopy to fill gap between it and rest of building, to enclose the underside with a	Priority: 3	**$97,800**
4	Replace roof areas A1, A3, B1 and E1 (installed 1989) per District roof report.	Priority: 1	**$1,282,800**
5	Replace roof areas C2, C1, C3, A2, B2, G3, G1 and G2 (installed 1988-1990) per District roof report.	Priority: 1	**$1,569,700**
6	Replace roof areas D1, D2, F1, F2, F, D3, E2, C and E3 (installed 2007-2013) per District roof report.	Priority: N	**$2,573,900**
7	Provide tuckpointing allowance.	Priority: 3	**$1,015,400**

INTERIOR

1	Replace linoleum in cafeteria with epoxy terrazzo.	Priority: 3	**$474,100**
2	Replace all original casework with new, including replacement of classroom sinks.	Priority: 3	**$498,900**
3	Patch / repair concrete block walls in architecture room 421 where cracking in corners and provide	Priority: 2	**$3,000**
4	Replace floor tile in (5) locker room showers.	Priority: 3	**$34,500**
5	Patch / repair epoxy floor in locker rooms.	Priority: 3	**$3,700**
6	Patch / repair glazed block in locker rooms and shower areas.	Priority: 3	**$11,700**
7	Replace old, worn carpet in classrooms indicated.	Priority: 3	**$202,000**
8	Replace VCT flooring where indicated. Treat slab for moisture mitigation.	Priority: 3	**$22,100**
9	Remodel computer Lab 112 into standard classroom (remove partial height block walls, remove floor	Priority: 4	**$167,200**
10	Remove any remaining adhesive from the walls in copy room 211 skim coat and repaint.	Priority: 4	**$1,900**
11	Remove remaining plumbing at previously removed plumbing fixture(s), patch gyp walls, repaint	Priority: 3	**$5,100**
12	Provide new security hardware at all classroom doors.	Priority: 3	**$58,500**
13	Provide (1) new combi oven, (3) new double stack convection ovens and (1) new rotating oven in	Priority: 3	**$315,800**
14	Provide (2) new walk-in freezer/cooler doors with windows in kitchen.	Priority: 2	**$23,900**
15	Provide (2) 4-well electric hot food serving counters and (1) 6-well electric cold food serving counter	Priority: 3	**$95,000**
16	Remodel Ala Carte Area. Provide (1) grab-n-go hot case and (1) grab-n-go cooler in kitchen.	Priority: 4	**$82,600**
17	Relocate freezer and cooler condensers to the roof.	Priority: N	**$40,000**
18	Have VAT flooring removed by licensed abatement contractor. Replace with VCT.	Priority: 2	**$129,000**
19	Have asbestos acoustic spray gypsum ceilings removed by licensed abatement contractor. Replace with	Priority: 2	**$325,600**

ACCESSIBILITY

1	Replace 2 sink and counter combinations to meet ADA height requirement of 34” max.	Priority: 2	**$17,800**
2	Replace 12 drinking fountains with new ones that meet forward approach ADA requirements.	Priority: 2	**$65,200**
3	Provide wing walls at 12 drinking fountain locations per ADA requirements.	Priority: 2	**$15,900**
4	Install power door operator at 8 doors that do not meet ADA clearance requirements.	Priority: 2	**$33,500**

5	Install lift for access to choir room.	Priority: 2	**$66,900**
6	Replace old wash sink in Special Ed room 607 with ADA accessible wall mounted Lavatory.	Priority: 2	**$5,100**
7	Replace louvered wood doors with solid wood doors (inlcludes hardware).	Priority: 2	**$250,500**
8	Provide 3 new egress doors at existing classrooms into the corridor that meet the 1/3 diagonal distance	Priority: 2	**$10,500**
9	Provide new gates/hardware at (6) locations in the gym at the top/back of the bleachers.	Priority: 2	**$17,600**
10	Replace wood studs in auxiliary gyms with steel studs per building code.	Priority: 2	**$15,600**
11	Provide panic hardware at 3 doors out of wrestling and fitness room (315 and 319)	Priority: 2	**$6,100**
12	Replace 2 wood doors with hollow metal door to meet fire rating.	Priority: 2	**$6,400**
13	Replace chain link in weight room 321 with glass borrowed lights.	Priority: 2	**$10,100**
14	Major remodel of student gang toilets (4).	Priority: 1	**$668,600**
15	Major remodel of private toilets (11).	Priority: 2	**$643,500**

MECHANICAL SYSTEMS

1	Replace existing steam plant with a new dual fuel high efficiency condensing hot water condensing	Priority: 1	**$2,370,000**
2	Replace the secondary hot water distribution system with new piping and variable volume variable	Priority: 2	**$4,260,000**
3	Provide two new air cooled plants to serve chilled water to all areas of the building for cooling. One	Priority: 1	**$1,180,000**
4	Classroom Option 1 - ($14,730,000.00) Replace existing unit ventilators with new units to provide	Priority: 1	**$0**
5	Classroom Option 2 - ($16,070,000.00) Provide a new heating, cooling and ventilation system to serve	Priority: 1	**$16,070,000**
6	Retrofit existing 2005 air handling unit serving science rooms with cooling coil to be connected to new	Priority: 1	**$40,000**
7	Retrofit return air path for existing 2005 air handling system serving science rooms with to meet	Priority: 2	**$70,000**
8	Provide a new heating, cooling and ventilation system to serve media center and adjacent rooms,	Priority: 1	**$1,810,000**
9	Provide a new heating, cooling and ventilation system to serve office area via variable air volume air	Priority: 1	**$670,000**
10	Install chilled water cooling coil for new air handling unit serving the office area.	Priority: 3	**$40,000**
11	Provide a new heating and ventilation system to serve the gymnasium by means of a constant volume	Priority: 1	**$430,000**
12	Install cooling coil for new air handling unit serving the gymnasium and connect to building new	Priority: 3	**$55,000**
13	Provide with de-stratification fans in gymnasium to improve heating efficiency.	Priority: 1	**$40,000**
14	Provide a new heating and ventilation system to serve the auditorium by means of a constant volume	Priority: 1	**$430,000**
15	Provide with de-stratification fans in auditorium to improve heating efficiency.	Priority: 1	**$40,000**
16	Provide a new heating and ventilation system to serve the cafeteria by means of a constant volume	Priority: 1	**$430,000**
17	Install cooling coil for new air handling unit serving the cafeteria and connect to building new chilled	Priority: 2	**$55,000**
18	Provide a new heating and ventilation system to serve the locker rooms by means of a variable air	Priority: 2	**$1,060,000**
19	Install cooling coil for new air handling unit serving the locker rooms and connect to building new	Priority: 4	**$55,000**
20	Provide a new heating, cooling, and ventilation system to serve the custodial area means of a variable	Priority: 1	**$500,000**
21	Provide a new heating, cooling, and ventilation system to serve the industrial classroom areas by means	Priority: 1	**$310,000**
22	Replace the horizontal unit ventilator serving the headend room with a new primary split DX systems	Priority: 1	**$25,000**
23	Provide a new secondary split DX system to assist in cooling headend room and provide redundancy.	Priority: 3	**$25,000**
24	Replace all remaining pneumatic or direct digital controls with new direct digital controls. Re-evaluate	Priority: 2	**$60,000**

25	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 1	**$415,000**
26	Replace galvanized domestic hot and cold water distribution systems in the 1963 and 1965 buildings	Priority: 2	**$4,285,000**
27	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 2	**$110,000**
28	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$15,000**

ELECTRICAL SYSTEMS

1	Replace medium voltage distribution and open vault equipment.	Priority: 1	**$790,000**
2	Replace aging 208V distribution and circuit breaker panel equipment.	Priority: 2	**$1,352,000**
3	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$296,300**
4	Provide additional power outlets in classrooms.	Priority: 3	**$96,900**
5	Provide lighting controls in media center.	Priority: 1	**$6,000**
6	Replace 1965 addition lighting and other older fluorescent fixtures with LED and controls.	Priority: 3	**$459,000**
7	Provide exterior egress lighting at each exit.	Priority: 1	**$34,200**
8	Replace metal halide pole lights with LED.	Priority: 2	**$243,100**
9	Provide wireless clock system.	Priority: 3	**$47,000**
10	Provide new paging head end system.	Priority: 3	**$30,900**
11	Provide new fire alarm system.	Priority: 1	**$278,300**
12	Replace cafeteria lighting fixtures with downlight versions (30 @ 12' ea).	Priority: 1	**$141,282**

White Bear Lake Area High School - North Campus
Independent School District #624

SITE	**$249,700.00**
EXTERIOR	**$6,990,200.00**
INTERIOR	**$2,494,600.00**
ACCESSIBILITY	**$1,833,300.00**
MECHANICAL SYSTEMS	**$34,850,000.00**
ELECTRICAL SYSTEMS	**$3,774,982.00**
Total Cost	**$50,192,782.00**

White Bear Lake Area High School - North Campus
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$0	$0	$0	$75,300	$174,400	**$249,700**
EXTERIOR	$3,136,800	$166,300	$1,113,200	$0	$2,573,900	**$6,990,200**
INTERIOR	$0	$481,500	$1,721,400	$251,700	$40,000	**$2,494,600**
ACCESSIBILITY	$668,600	$1,164,700	$0	$0	$0	**$1,833,300**
MECHANICAL SYSTEMS	$24,775,000	$9,900,000	$120,000	$55,000	$0	**$34,850,000**
ELECTRICAL SYSTEMS	$1,249,782	$1,595,100	$930,100	$0	$0	**$3,774,982**
Totals:	**$29,830,182**	**$13,307,600**	**$3,884,700**	**$382,000**	**$2,788,300**	**$50,192,782**

White Bear Lake Area High School - South Campus
Independent School District #624

Address:	3551 McKnight Rd White Bear Lake, Minnesota 55110	**Year(s) Built:**	1970, 1987, 1995, 2005
		Gross Area:	000 S.F.
Contact:		**Site Area:**	50 acres
		Parking:	627
Phone:			

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

- The site area is approximately 50 acres and is bordered by McKnight road to the East, Elm Drive, Varney Lake Park and residences to the South, residences and businesses to the West, and residences to the North.

- The south parking lot has 510 stalls, (9) of which are accessible. The East lot has 42 stalls, (4) of which are accessible. The north lot has 47 stalls, (1) of which is accessible. The West lot has 70 stalls, none of which are accessible.

- The logo pavers at the main (south) entry are spalling.

- Parking lots, Sidewalks, Athletic Fields, Running Tracks, fencing, turf and landscaping are all in good condition.

- The concrete sidewalk at the south-east entry is spalling in a few spots.

- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Replace pavers at main entry sidewalk logo.
Priority: N **Cost: $17,600**

2 Repair concrete sidewalk at south-east entry.
Priority: N **Cost: $12,200**

3 Replace wood monument sign with LED sign.
Priority: 4 **Cost: $75,200**

4 Restripe parking stalls to provide (1) additional accessible stall in the north and south lots.
Priority: 1 **Cost: $2,700**

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

- The building was originally built in 1970, and has had additions in 1987, 1995 and 2005.
- A portion of the building to the south of the locker rooms is rented to another school district and is not maintained by White Bear Lake Area Schools.
- All windows are past due for replacement except in the 2005 addition (Weight room and Aux Gym 3).
- The metal panel soffit finish is deteriorating / rusting on approx. 80% of the perimeter of the building.
- The original aluminum entry doors are old and should be replaced.
- The brick on the upper half of the gymnasium requires tuckpointing.
- There are selective areas near the main entry where the bottom course of brick has been damaged.
- The sealant at a number of control joints in the exterior brick is deteriorating.
- The main entry canopy plaster soffit is cracking near the control joint.
- Roof has areas that are 27, 25, 24, 22 and 4 years old.

Issues

1 Replace all windows installed before 2005 (entire building except auxiliary gym/weight room addition).
Priority: 1 **Cost: $451,300**

2 Replace and reinsulate the metal panel soffit on 80% of the building perimeter.
Priority: 3 **Cost: $292,300**

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

3 Provide new aluminum entrance doors and storefronts at original building.
Priority: 2 **Cost: $6,700**

4 Tuckpoint brick walls at gymnasium (upper story).
Priority: 3 **Cost: $173,000**

5 Replace damaged bricks at bottom course near main entry.
Priority: 3 **Cost: $6,700**

6 Provide new sealant at control joints in exterior brick wall.
Priority: 1 **Cost: $10,500**

7 Replace roof area J, K, L, N, O and A1 (installed 1991) per District roof report.
Priority: 1 **Cost: $1,583,300**

8 Replace roof areas T, U, X, Y, A2, A3, A4 and A5 (installed 1993) per District roof report.
Priority: 2 **Cost: $1,335,800**

9 Replace roof areas A, B, C, D, E, F, G, H, P, Q, and R (installed 1994) per District roof report.
Priority: 2 **Cost: $3,447,800**

10 Replace roof areas S, Z and Z1 (installed 2000) per District roof report.
Priority: 4 **Cost: $1,349,600**

11 Replace roof areas M and Z2 (installed 2003) per District roof report.
Priority: 4 **Cost: $420,700**

12 Replace roof areas V and I (installed 2004) per District roof report.
Priority: N **Cost: $566,500**

13 Replace roof areas A6 and A7 (installed 2004) per District roof report.
Priority: N **Cost: $228,600**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

14 Replace roof areas W (installed 2013) per District roof report.
Priority: N **Cost: $283,500**

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

- Approximately 50% of wood doors throughout the facility are damaged and recommended for replacement.
- ACT Ceiling is warped and sagging in the Administrative offices, Atrium and Cafeteria, 400 wing classrooms, Theater Foyer, Staff Lounge, 200 wing corridors, SPED suite classrooms and offices, metal shop, wood shop, consumer econ, graphic arts, band room & hallway, and the locker room hallway.
- There is no secure entry sequence, as the main office is remote from the main entry.
- Textured gyp ceilings in the Cafeteria and Media Center render maintenance and access to above ceiling mechanical virtually impossible.
- Carpet is old, worn and/or fraying in the following areas: SPED suite, Band & Choir suites & associated hallway, Consumer Economics, Media Center, Health and Special Ed rooms in 300 wing, 400 wing corridors and classrooms, 500 wing corridors and classrooms.
- Carpet that was just recently installed in 600 wing shows evidence of moisture problems
- None of the classroom doors have security hardware.
- P.Lam countertops in home economics room are delaminating (approx. 175 lf)
- Original casework is in poor condition and is recommended for replacement in the following areas: Art Lab 112, Band room 215, choir office 220A, Consumer Econ 213, Main office, staff lounge, coach office off boys phy ed lockers, Science Rooms 306 & 310, Audio Visual Production, World Language, Media Center checkout counter (~36'), theater foyer display case.
- Kitchen needs new equipment.
- Rubber floor in athletic hallway is delaminating from the floor.

Issues

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

1 Remodel or add on to building to provide a secure entry vestibule with adjacent main office.
Priority: 3 **Cost: $300,600**

2 Replace textured gyp ceilings in Cafeteria and Media Center with acoustical tile and grid ceilings.
Priority: 3 **Cost: $282,600**

3 Provide allowance for replacement of 50% of wood doors.
Priority: 3 **Cost: $1,264,100**

4 Replace carpet in areas noted above.
Priority: 3 **Cost: $869,900**

5 Remove carpet and treat concrete with moisture mitigation in 600 wing. Provide new carpet.
Priority: 3 **Cost: $355,300**

6 Replace 175 LF of P Lam countertops in home economics classroom.
Priority: 3 **Cost: $107,800**

7 Replace original casework in the areas noted above
Priority: 3 **Cost: $793,900**

8 Remove rubber flooring in athletic hallway, provide moisture mitigation, install new rubber flooring.
Priority: 3 **Cost: $185,600**

9 Provide new security hardware at all classroom doors.
Priority: 4 **Cost: $208,800**

10 Provide (2) new double stack convection ovens and (1) rotating oven in kitchen.
Priority: 3 **Cost: $436,100**

11 Walk-in freezer/cooler doors need windows.
Priority: 2 **Cost: $55,200**

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

12 Provide (2) 4-well electric hot food serving counters and (1) 6-well electric cold food serving counter.
Priority: 3 **Cost: $120,100**

13 Knock out kitchen walls to make one large space.
Priority: 4 **Cost: $32,200**

14 Remodel Ala Carte Area, Provide (1) grab-n-go hot case and (1) grab-n-go cold case.
Priority: 4 **Cost: $70,100**

15 Relocate the freezer and cooler compressors to the roof.
Priority: N **Cost: $35,000**

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

- The south parking lot has 510 stalls, (9) of which are accessible. One additional stall is required to be accessible.
- The north lot has 47 stalls, (1) of which is accessible. One additional accessible stall is required.
- The West lot has 70 stalls, none of which are accessible. Three stalls should be made accessible (This lot may not be owned by White Bear Lake Schools)
- Doors do not have required push/pull clearance at the following locations: (3) Locker Room rear exits, (10) Science room doors, Home Econ 206, band Office 215A, (6) restrooms to either side of the theater, (2) Restrooms off cafeteria.
- The following rooms require an additional door to the corridor or building exterior for emergency egress: 300, 302, 303, 304, 305, 307, 309.
- Wing walls required at (3) drinking fountains.
- The handrails on the media center stairs do not conform to ADA standards.
- There is no wheelchair accessible route to the study space in the media center balcony
- Staff restrooms (2) do not meet ADA.
- Accessible stalls in men's and women's restrooms across from ASL room 611 do not meet clear depth dimension ADA requirements.
- Health office private toilets (2) do not meet ADA.
- There is a non accessible sink in SPED room 216.
- Kitchen restroom does not meet ADA.

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

- There is no wheelchair access to the pit in the band room 215 or the tiered levels in the choir room 220.

Issues

1 Provide power door operators at (23) non accessible doors.
Priority: 1 **Cost: $96,200**

2 Add additional door for egress at (7) rooms indicated above.
Priority: 2 **Cost: $35,700**

3 Provide wing walls at (3) drinking fountains.
Priority: 2 **Cost: $6,200**

4 Replace stair handrails in media center with ADA compliant handrails.
Priority: 2 **Cost: $10,400**

5 Replace sink and counter in room 216 with ADA height sink and counter.
Priority: 2 **Cost: $10,500**

6 Provide ADA lift in choir and band rooms.
Priority: 1 **Cost: $108,700**

7 Minor remodel of student gang toilets (2).
Priority: 2 **Cost: $33,500**

8 Major remodel at private toilets (5).
Priority: 1 **Cost: $292,500**

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

Heating and Ventilation

- The original building was constructed in 1970. Major additions were added in 1987, 1995, and 2005. An addition owned and operated by ISD #916 was completed in 2007 on the southwest corner of the building. Major mechanical renovations were completed in 2015 and 2016. The boiler plant is hot water. The majority of the building is not air conditioned with the exception of the 1995 classroom wing, auditorium, choir area, FACS area, main office, and audio visual area.

- The building is heated by three dual fuel 8,369 MBH hot water boilers. The boilers were installed in the original 1970 construction. Two of the three boilers handle the building load under all conditions. Two of the burners have been replaced within the last 10 years. The boilers operate through an independent controller for lead/lag control based upon temperature.

- There is a 10,000 gallon underground fuel oil storage system. The age of the tank is unknown but the fuel oil pumps have recently been replaced and there is a modern fuel oil monitoring systems.

- Hot water is circulated throughout the building by two constant volume 20 HP base mounted pumps. The original building was constructed with a total of 25 secondary pumped zones with independent temperature control. Some of the zones have been eliminated in subsequent remodel projects.

- Maintenance staff noted that the mechanical couplings on the hydronic system have started to leak and they have been performing repairs as issues are discovered. Maintenance staff noted that additional isolation valves, drain valves, and air vents would greatly reduce time required to make repairs.

- A 72 ton air cooled chiller was installed in 2009. Chilled water in circulated through the chiller by a 5 HP primary pump and is circulated to the building by a 7.5 HP secondary pump. The circulating solution 30 % propylene glycol.

- The 1995 addition is heated, cooled and ventilated by thee packaged rooftop units with direct expansion (DX) cooling. The rooftop units serve single zone variable air volume (VAV) boxes with hot water reheat for temperature zone control. The systems were installed in 2016 and the VAV boxes moved to the hallway. Classrooms in this area typically do not have perimeter fin tube radiation.

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis
Heating and Ventilation

- The media center in the southwest corner of the 1970 building is heated and ventilated by two constant volume rooftop units installed in 2015. The units have hot water coils for heating and were prepped for future addition of chilled water cooling coils.

- Classrooms in the southwest corner of the 1970 building are heated and ventilated by four central air handling systems with heat recovery. The units were prepared for future addition of a cooling coil. The units serve single zone VAV boxes for temperature zone control.

- Science rooms in the 1970 building and 1987 addition are served by two constant volume units serving hot water duct reheat coils for temperature zone control. The units were not planned for the addition of cooling. One of the units was installed in 1987 and the other was installed in 2005. The science rooms on the west exposure have great difficulty heating.

- The audio visual area is heated, ventilated, and cooled by a constant volume unit. The unit has hot water for heating and a DX cooling coil. The unit was installed in the original 1970 construction and is in poor condition.

- The headend room is cooled by a single split DX cooling system. The unit is near the end of its useful life. A second split DX would provide some redundancy.

- The auditorium is heated, cooled, and ventilated by a single zone constant volume unit. The unit is original to the 1970 construction. A chilled water coil was added to the unit in 2008. A return fan was added to the unit in the mid 1990's. The original parts of the system that have not been replaced are in poor condition.

- The FACS room and adjacent areas are heated, cooled, and ventilated by the original constant volume unit installed in 1970. The system has been modified by adding a return fan in the mid 1990's, adding volume dampers to existing reheat coils, and by splitting the unit to install a chilled water coil. The original parts of the system that have not been replaced are in poor condition.

- Maintenance staff reported that the ventilation in the FACS room is very poor and the exhaust system needs to be upgraded.

- The main office is heated, cooled, and ventilated by a multi-zone unit with 5 control zones. The unit has a DX coil for cooling. The associated condensing unit was replaced 7 years ago. The unit was installed during original 1970 construction and is in poor condition.

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis
Heating and Ventilation

- The auditorium entry lobby is heated and ventilated by a single zone constant volume unit installed in the original 1970 construction. The unit serves hot water reheat coils for temperature zone control. The unit is in poor condition.

- The 1987 choir room addition is heated, cooled, and ventilated by a constant volume unit installed in the original 1987 construction. The unit has a DX coil for cooling. The unit is in poor condition.

- The remaining classroom areas of the 1970 building are heated and ventilated by constant volume units installed in the original construction. Air volume dampers have been added to the reheat coils for temperature zone control. Return air to the air-handling units on each of two mechanical mezzanine's in the 1970 building return through the corridors to large return grilles on the corridor walls. The return air is open to the mechanical room.

- Shop areas are heated and ventilated by three constant volume air-handling units that hang in the space. The units also provide make-up air for exhaust. The units are original to the 1970 construction and are in poor condition.

- Shop areas have a dedicated dust collection system, welding station exhaust hood, and paint spray booth. The specialty exhaust systems, with the exception of the paint spray booth, have been replaced within the last 10 years and are in good condition.

- The 2005 weight room addition is heated and ventilated by a constant volume unit with reheat coils for temperature zone control. The unit was prepared for future addition of a cooing coil.

- Locker rooms are heated and ventilated by a 6 zone multi-zone unit installed in the 2005 renovation project. The unit has a hot water coil for heating and space for addition of a future cooling coil.

- The gymnasium, cafeteria, auxiliary gym's 1 and 2 are each heated and ventilated by single zone air handling systems installed in the original 1970 construction. The units have hot water for heating and no cooling. The units are in poor condition.

- The gymnasium does not have de-stratification fans. The addition of de-stratification fans would allow raising diffusers into joist space to protect them from being struck by objects during activities.

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis
Heating and Ventilation

- Roof exhaust fans are reported to be replaced as needed and are generally in good condition.

- The kitchen has a type I island exhaust hood with fire suppression over the cooking equipment. The very old hood is an island style and in poor condition.

- The kitchen freezer compressors are located in an adjacent storage room and the two cooler compressors are located in the lower level. The compressors should be moved to the roof due to the spaces currently overheating.

Temperature Control

- Mechanical renovation projects in 2015 and 2016 replaced the building controls with direct digital controls as manufactured by Schneider Electric. The controls project did not replace the air handling unit dampers or control valves. Maintenance staff reports they have difficulty maintaining control due to sloppy dampers and failing control valves.

- Fire/smoke dampers are pneumatically controlled. The air compressor and air dryer were replaced in 2014.

- Boilers are controlled by an independent lead/lag controller based upon temperature.

Plumbing

- The hot and cold water distribution system installed in original 1970 project is galvanized piping and near the end of its useful life. Maintenance staff report that there have been many leaks.

- Hot water is provided to the building through a large hot water storage tank located in the boiler room. Hot water is generated through a hydronic hot water tube bundle when hydronic hot water is available. The tank and hydronic hot water tube bundle are original to the building and in poor condition. Hot water to the building is not softened.

- An atmospheric gas fired Raypak water heater is circulated to the storage tank to provide hot water when hydronic hot water is not available. The water heater was installed approximately 8 years ago and is in fair condition.

- Domestic hot water is circulated throughout the building by a circulating pump located at the hot water storage tank.

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis
Plumbing

- An electric 40 gallon water heater provides hot water for the toilet rooms in the 1995 addition.

- Shut-off valves at the water meter should be replaced to ensure reliable operation.

- There is a sump pump located in the auditorium that was replace 2 years ago and is in good condition.

Issues

1 Replace existing hot water plant with a new dual fuel high efficiency condensing hot water boilers. Provide a new constant volume primary hot water loop to connect to existing hot water distribution system.

Priority: 1 **Cost: $2,380,000**

2 Replace secondary hot water distribution system with new piping and variable volume variable primary system. Remove the approximately 25 secondary loop pump systems and remove all remaining air-handling unit coil freeze protection pumps. The new loop will remove the leaking mechanical couplings and provide additional isolation valves. All controls will be an extension of the existing direct digital control system.

Priority: 1 **Cost: $3,260,000**

3 Provide two new air cooled chilled water plant to serve chilled water to all areas of the building for cooling. One chiller plant to serve athletic wing, cafeteria, office and auditorium. The second chiller plant will serve the north and south education wings as well as the 1995 addition. Each plant will have variable primary distribution system to circulate chilled water throughout the building for cooling. Distribution project costs included in ventilation items. Each chiller will be equipped with cottonwood screens and reject heat exhaust extension cones. All controls will be an extension of the building wide direct digital control system.

Priority: 1 **Cost: $1,180,000**

4 Provide cooling coils to each of the 2 units prepared for future cooling coils from the 2015 renovation project for the media center. All controls will be an extension of the building wide direct digital.

Priority: 2 **Cost: $70,000**

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

5 Provide cooling coils to each of the 7 units prepared for future cooling coils from the 2015 renovation project serving classrooms. All controls will be an extension of the building wide direct digital.

Priority: 1 **Cost: $240,000**

6 Provide a new heating, cooling, and ventilation system to serve all remaining classroom and office areas of the building. Classroom areas will be served by a central air handling system with individual heating and cooling control. Hot water will serve as heating source and chilled water as cooling source. Perimeter fin tube radiation will be provided throughout. All controls will be an extension of the building wide direct digital system.

Priority: 1 **Cost: $10,070,000**

7 Provide a new heating and ventilation system to serve gymnasium. System will be constant volume with a hot water coil for heating and space for future installation of chilled water cooling coil. All controls will be an extension of the building wide direct digital system.

Priority: 1 **Cost: $430,000**

8 Install cooling coil for new air handling unit serving the gymnasium and connect to building chilled water system for cooling.

Priority: 3 **Cost: $55,000**

9 Provide a new heating, cooling, and ventilation system to serve auditorium. System will be constant volume with a hot water heating coil and chilled water cooling coil. All controls will be an extension of the building wide direct digital system.

Priority: 1 **Cost: $430,000**

10 Provide a new heating, cooling, and ventilation system to serve cafeteria. System will be constant volume with a hot water coil for heating and space for future installation of chilled water cooling coil. All controls will be an extension of the building wide direct digital system.

Priority: 1 **Cost: $430,000**

11 Install cooling coil for new air handling unit serving the cafeteria and connect to building chilled water system for cooling.

Priority: 2 **Cost: $55,000**

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

12 Provide de-stratification fans in the gymnasium and raise the diffusers such that they are up in the joists.
Priority: 1 **Cost: $40,000**

13 Replace the split DX serving the headend room with a new primary split DX systems to provide a reliable method for cooling.
Priority: 1 **Cost: $25,000**

14 Provide a new secondary split DX system to assist in cooling headend room and provide redundancy.
Priority: 3 **Cost: $25,000**

15 Install chilled water cooling coil in existing air handling unit serving locker rooms.
Priority: 3 **Cost: $55,000**

16 Install chilled water cooling coil in existing air handling unit serving 2005 weight rooms addition.
Priority: 3 **Cost: $55,000**

17 Provide a new heating and ventilation system to serve the auxiliary gymnasiums. System will be constant volume with a hot water coil for heating and space for future installation of chilled water cooling coil. All controls will be an extension of the building wide direct digital system.
Priority: 1 **Cost: $430,000**

18 Install cooling coil for new air handling unit serving the auxiliary gymnasiums and connect to building chilled water system for cooling.
Priority: 3 **Cost: $55,000**

19 Provide de-stratification fans in the auxiliary gymnasiums.
Priority: 1 **Cost: $20,000**

20 Replace all remaining pneumatic or direct digital controls with new direct digital controls. Re-evaluate the building code requirements to remove as many fire/smoke dampers as possible.
Priority: 1 **Cost: $75,000**

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

21 Provide commissioning services to validate performance of all new and existing systems. Work scope to include rebalancing existing systems to original design airflows. An allowance is included for minor repair and maintenance of existing systems as well as sealing existing ductwork to minimize air leakage. As-built control sequences will be reviewed to identify energy performance opportunities and conformance with district standards.

Priority: 1 **Cost: $415,000**

22 Replace galvanized domestic hot and cold water distribution systems in the 1970 building new copper piping.

Priority: 1 **Cost: $2,875,000**

23 Replace the domestic water heating system and storage tank with a new concealed combustion high efficiency water heater.

Priority: 2 **Cost: $110,000**

24 Replace the main domestic water shut-off valves on each side of the water meter at the main water service.

Priority: 1 **Cost: $15,000**

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 480-volt 3-phase 3000A switchboard. The main switchboard is original to the building (~1972). It is at or nearing the end of its expected useful life and should be replaced soon. Any significant additions or HVAC upgrades to the building will likely necessitate a service replacement.

- The building is enrolled in a utility curtailment program.

- Service equipment includes power factor correction capacitors.

- Service equipment does not include surge protection and should be added.

- Roughly 80% of the distribution equipment is original to the building, is at or nearing the end of its expected useful life, and should be replaced soon. Remaining equipment consists of newer equipment in good condition.

- The facility is partially backed up by a 100kW/125kVA natural gas exterior generator. The generator was installed circa 2008. It recently experienced a blown engine requiring maintenance, but once maintenance is completed the unit is expected to be in good condition. The genset feeds one automatic transfer switch. Loads served include emergency lighting and the fire alarm panel. The District would like boilers, pumps, kitchen freezer/coolers and IT equipment to be considered for addition to the generator. A second automatic transfer switch would likely be required to separate life safety loads from less critical loads.

- Provide additional power outlets in classrooms.

Lighting

- Lighting consists of linear T8 fluorescent fixtures, and pendants within the media center. The fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures. Exceptions are LED upgrades to the theater in 2010 and the main gym more recently.

- There are occupancy sensors in corridors but few elsewhere. Adding sensors would provide energy savings on a short payback schedule.

White Bear Lake Area High School - South Campus
Independent School District #624

Analysis

Lighting

- Exit signs and interior egress lighting should be upgraded with corridor lighting.
- The facility does not have exterior egress lighting. Fixtures should be located on the exterior of the building at each exit. This is a life safety violation.
- Exterior wall packs and walkway poles are predominantly LED.
- Parking lot poles are metal halide, are nearing the end of their expected useful life, and should soon be replaced with energy-efficient LED fixtures.
- Walkway lights should be added at walkway connecting west parking area.

Systems/ Technology

- Clock system is hard-wired and should be replaced with a wireless system.
- Paging system is Bogen, in good working condition.
- Fire alarm panel was recently replaced with a Simplex 4100U addressable panel. Existing wiring and devices were not upgraded and require replacement.

Issues

1 Replace aging service entrance switchboard.
Priority: 2 **Cost: $197,500**

2 Replace aging distribution equipment.
Priority: 2 **Cost: $1,261,000**

3 Add loads to existing emergency generator, add transfer switches and panels as required.
Priority: 3 **Cost: $129,200**

4 Provide additional power outlets in classrooms.
Priority: 3 **Cost: $82,000**

White Bear Lake Area High School - South Campus
Independent School District #624

Issues

5 Replace T8 lighting with energy efficient LED fixtures.
Priority: 3 **Cost: $692,000**

6 Provide exterior egress lighting at each exit.
Priority: 1 **Cost: $47,500**

7 Replace metal halide exterior lighting with LED.
Priority: 2 **Cost: $243,100**

8 Provide walkway lighting to west parking area.
Priority: 1 **Cost: $36,500**

9 Provide wireless clock system.
Priority: 3 **Cost: $39,300**

10 Replace fire alarm devices and wiring.
Priority: 1 **Cost: $314,700**

White Bear Lake Area High School - South Campus

SITE

1	Replace pavers at main entry sidewalk logo.	Priority: N	**$17,600**
2	Repair concrete sidewalk at south-east entry.	Priority: N	**$12,200**
3	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**
4	Restripe parking stalls to provide (1) additional accessible stall in the north and south lots.	Priority: 1	**$2,700**

EXTERIOR

1	Replace all windows installed before 2005 (entire building except auxiliary gym/weight room addition).	Priority: 1	**$451,300**
2	Replace and reinsulate the metal panel soffit on 80% of the building perimeter.	Priority: 3	**$292,300**
3	Provide new aluminum entrance doors and storefronts at original building.	Priority: 2	**$6,700**
4	Tuckpoint brick walls at gymnasium (upper story).	Priority: 3	**$173,000**
5	Replace damaged bricks at bottom course near main entry.	Priority: 3	**$6,700**
6	Provide new sealant at control joints in exterior brick wall.	Priority: 1	**$10,500**
7	Replace roof area J, K, L, N, O and A1 (installed 1991) per District roof report.	Priority: 1	**$1,583,300**
8	Replace roof areas T, U, X, Y, A2, A3, A4 and A5 (installed 1993) per District roof report.	Priority: 2	**$1,335,800**
9	Replace roof areas A, B, C, D, E, F, G, H, P, Q, and R (installed 1994) per District roof report.	Priority: 2	**$3,447,800**
10	Replace roof areas S, Z and Z1 (installed 2000) per District roof report.	Priority: 4	**$1,349,600**
11	Replace roof areas M and Z2 (installed 2003) per District roof report.	Priority: 4	**$420,700**
12	Replace roof areas V and I (installed 2004) per District roof report.	Priority: N	**$566,500**
13	Replace roof areas A6 and A7 (installed 2004) per District roof report.	Priority: N	**$228,600**
14	Replace roof areas W (installed 2013) per District roof report.	Priority: N	**$283,500**

INTERIOR

1	Remodel or add on to building to provide a secure entry vestibule with adjacent main office.	Priority: 3	**$300,600**
2	Replace textured gyp ceilings in Cafeteria and Media Center with acoustical tile and grid ceilings.	Priority: 3	**$282,600**
3	Provide allowance for replacement of 50% of wood doors.	Priority: 3	**$1,264,100**
4	Replace carpet in areas noted above.	Priority: 3	**$869,900**
5	Remove carpet and treat concrete with moisture mitigation in 600 wing. Provide new carpet.	Priority: 3	**$355,300**
6	Replace 175 LF of P Lam countertops in home economics classroom.	Priority: 3	**$107,800**
7	Replace original casework in the areas noted above	Priority: 3	**$793,900**
8	Remove rubber flooring in athletic hallway, provide moisture mitigation, install new rubber flooring.	Priority: 3	**$185,600**
9	Provide new security hardware at all classroom doors.	Priority: 4	**$208,800**
10	Provide (2) new double stack convection ovens and (1) rotating oven in kitchen.	Priority: 3	**$436,100**
11	Walk-in freezer/cooler doors need windows.	Priority: 2	**$55,200**
12	Provide (2) 4-well electric hot food serving counters and (1) 6-well electric cold food serving counter.	Priority: 3	**$120,100**
13	Knock out kitchen walls to make one large space.	Priority: 4	**$32,200**
14	Remodel Ala Carte Area, Provide (1) grab-n-go hot case and (1) grab-n-go cold case.	Priority: 4	**$70,100**
15	Relocate the freezer and cooler compressors to the roof.	Priority: N	**$35,000**

Independent School District #624
Executive Summary

White Bear Lake Area High School - South Campus

ACCESSIBILITY

1	Provide power door operators at (23) non accessible doors.	Priority: 1	**$96,200**
2	Add additional door for egress at (7) rooms indicated above.	Priority: 2	**$35,700**
3	Provide wing walls at (3) drinking fountains.	Priority: 2	**$6,200**
4	Replace stair handrails in media center with ADA compliant handrails.	Priority: 2	**$10,400**
5	Replace sink and counter in room 216 with ADA height sink and counter.	Priority: 2	**$10,500**
6	Provide ADA lift in choir and band rooms.	Priority: 1	**$108,700**
7	Minor remodel of student gang toilets (2).	Priority: 2	**$33,500**
8	Major remodel at private toilets (5).	Priority: 1	**$292,500**

MECHANICAL SYSTEMS

1	Replace existing hot water plant with a new dual fuel high efficiency condensing hot water boilers.	Priority: 1	**$2,380,000**
2	Replace secondary hot water distribution system with new piping and variable volume variable primary	Priority: 1	**$3,260,000**
3	Provide two new air cooled chilled water plant to serve chilled water to all areas of the building for	Priority: 1	**$1,180,000**
4	Provide cooling coils to each of the 2 units prepared for future cooling coils from the 2015 renovation	Priority: 2	**$70,000**
5	Provide cooling coils to each of the 7 units prepared for future cooling coils from the 2015 renovation	Priority: 1	**$240,000**
6	Provide a new heating, cooling, and ventilation system to serve all remaining classroom and office	Priority: 1	**$10,070,000**
7	Provide a new heating and ventilation system to serve gymnasium. System will be constant volume	Priority: 1	**$430,000**
8	Install cooling coil for new air handling unit serving the gymnasium and connect to building chilled	Priority: 3	**$55,000**
9	Provide a new heating, cooling, and ventilation system to serve auditorium. System will be constant	Priority: 1	**$430,000**
10	Provide a new heating, cooling, and ventilation system to serve cafeteria. System will be constant	Priority: 1	**$430,000**
11	Install cooling coil for new air handling unit serving the cafeteria and connect to building chilled water	Priority: 2	**$55,000**
12	Provide de-stratification fans in the gymnasium and raise the diffusers such that they are up in the joists.	Priority: 1	**$40,000**
13	Replace the split DX serving the headend room with a new primary split DX systems to provide a	Priority: 1	**$25,000**
14	Provide a new secondary split DX system to assist in cooling headend room and provide redundancy.	Priority: 3	**$25,000**
15	Install chilled water cooling coil in existing air handling unit serving locker rooms.	Priority: 3	**$55,000**
16	Install chilled water cooling coil in existing air handling unit serving 2005 weight rooms addition.	Priority: 3	**$55,000**
17	Provide a new heating and ventilation system to serve the auxiliary gymnasiums. System will be	Priority: 1	**$430,000**
18	Install cooling coil for new air handling unit serving the auxiliary gymnasiums and connect to building	Priority: 3	**$55,000**
19	Provide de-stratification fans in the auxiliary gymnasiums.	Priority: 1	**$20,000**
20	Replace all remaining pneumatic or direct digital controls with new direct digital controls. Re-evaluate	Priority: 1	**$75,000**
21	Provide commissioning services to validate performance of all new and existing systems. Work scope	Priority: 1	**$415,000**
22	Replace galvanized domestic hot and cold water distribution systems in the 1970 building new copper	Priority: 1	**$2,875,000**
23	Replace the domestic water heating system and storage tank with a new concealed combustion high	Priority: 2	**$110,000**
24	Replace the main domestic water shut-off valves on each side of the water meter at the main water	Priority: 1	**$15,000**

ELECTRICAL SYSTEMS

1	Replace aging service entrance switchboard.	Priority: 2	**$197,500**
2	Replace aging distribution equipment.	Priority: 2	**$1,261,000**

3	Add loads to existing emergency generator, add transfer switches and panels as required.	Priority: 3	**$129,200**
4	Provide additional power outlets in classrooms.	Priority: 3	**$82,000**
5	Replace T8 lighting with energy efficient LED fixtures.	Priority: 3	**$692,000**
6	Provide exterior egress lighting at each exit.	Priority: 1	**$47,500**
7	Replace metal halide exterior lighting with LED.	Priority: 2	**$243,100**
8	Provide walkway lighting to west parking area.	Priority: 1	**$36,500**
9	Provide wireless clock system.	Priority: 3	**$39,300**
10	Replace fire alarm devices and wiring.	Priority: 1	**$314,700**

White Bear Lake Area High School - South Campus
Independent School District #624

SITE	**$107,700.00**
EXTERIOR	**$10,156,300.00**
INTERIOR	**$5,117,300.00**
ACCESSIBILITY	**$593,700.00**
MECHANICAL SYSTEMS	**$22,795,000.00**
ELECTRICAL SYSTEMS	**$3,042,800.00**
Total Cost	**$41,812,800.00**

White Bear Lake Area High School - South Campus
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$2,700	$0	$0	$75,200	$29,800	**$107,700**
EXTERIOR	$2,045,100	$4,790,300	$472,000	$1,770,300	$1,078,600	**$10,156,300**
INTERIOR	$0	$55,200	$4,716,000	$311,100	$35,000	**$5,117,300**
ACCESSIBILITY	$497,400	$96,300	$0	$0	$0	**$593,700**
MECHANICAL SYSTEMS	$22,315,000	$235,000	$245,000	$0	$0	**$22,795,000**
ELECTRICAL SYSTEMS	$398,700	$1,701,600	$942,500	$0	$0	**$3,042,800**
Totals:	**$25,258,900**	**$6,878,400**	**$6,375,500**	**$2,156,600**	**$1,143,400**	**$41,812,800**

Normandy Park - Early Childhood
Independent School District #624

Address:	2482 East Cty Rd F White Bear Lake, Minnesota 55110	**Year(s) Built:**	Unknown, 1993
		Gross Area:	31,320 S.F.
Contact:		**Site Area:**	4 acres
		Parking:	0
Phone:			

Normandy Park - Early Childhood
Independent School District #624

Analysis

- The site area totals 4 acres and is bordered to the north and east by public streets, to the south by residences and to the west by private businesses.
- There is a gas station under other ownership on the northeast corner of the site.
- There is a fenced in playground between the two parking lots to the north of the building.
- The west parking lot is shared with the businesses to the east.
- The parking lots have recently been repaved.
- There are 6 accessible stalls in the east lot and 4 in the west lot.
- Drainage issues.
- Wood monument sign is old and requires ongoing maintenance and painting.

Issues

1 Correct drainage issues at the northeast and southwest corners of the building.
Priority: 1 **Cost:** **$66,800**

2 Replace wood monument sign with LED sign.
Priority: 4 **Cost:** **$75,200**

Normandy Park - Early Childhood
Independent School District #624

Analysis

- The original Building was built in 1966. It was renovated and converted to its current use in 1993.
- The sliding windows were last replaced in 1993 and are leaking at the top and bottom.
- The Metal panel soffit at north entry is dented and warped.
- (7) Metal panel column wraps at the north entry are rusting.
- The brick soldier course at the base of the exterior walls could use some minor tuckpointing.
- There is a small hole in the screen of the window in room 112.
- Dock leveler at food service receiving dock is in need of replacement – ask Ben
- Roof to be replacement.

Issues

1 Replace all exterior windows.
Priority: 1 **Cost: $88,300**

2 Replace metal panel soffit and sled roof at north façade with parapet and flat room.
Priority: 3 **Cost: $250,000**

3 Replace (7) metal column wraps at north façade.
Priority: 4 **Cost: $6,000**

4 Provide small allowance for tuckpointing of soldier course.
Priority: 3 **Cost: $28,300**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Normandy Park - Early Childhood
Independent School District #624

Issues

5 Replace dock leveler in Food Service 142.
Priority: 2 **Cost: $15,100**

6 Replace roof areas A and B (installed 1998) per District roof report.
Priority: 1 **Cost: $1,064,700**

Normandy Park - Early Childhood
Independent School District #624

Analysis

- The classroom casework is in fair condition, but the countertops have chipped edging (room numbers: 111,112,115,116,118,121, 131, 133, 134, 136, 138, 140).
- Classroom 111 is missing vinyl base on the south wall.
- Speech Therapy 121 has water damage above the exterior window.
- The Carpeting in several offices and corridors is worn and frayed.
- Gypsum board is damaged at window sill inside entry vestibule.
- Paint is chipping on the exposed ductwork in Food Service 142.
- Ceilings warped in 158,163 and 151 Office suite (low priority).
- Toilets to be added for senior center.
- Kitchen needs new equipment.

Issues

1 Replace countertops in all classrooms.
Priority: 3 **Cost: $60,600**

2 Replace vinyl base at south wall of classroom 111.
Priority: 3 **Cost: $400**

3 Patch, repair and paint gypsum board soffit above window in 121 and sill below window in entry vestibule.
Priority: 3 **Cost: $4,300**

Normandy Park - Early Childhood
Independent School District #624

Issues

4 Replace carpet in offices and corridors.
Priority: 3 **Cost:** **$83,900**

5 Repaint exposed ductwork in Food Service 142.
Priority: 3 **Cost:** **$2,600**

6 Replace ACT ceiling tile in rooms 158, 163, and 151 series offices.
Priority: 3 **Cost:** **$17,600**

7 Add toilets for Service Center.
Priority: 2 **Cost:** **$334,300**

8 Provide new security hardware at all classrooms.
Priority: 4 **Cost:** **$53,500**

Normandy Park - Early Childhood
Independent School District #624

Analysis

- Private Restroom off Classroom 112, 131 and 134 are not accessible due to proximity of sink to toilet. Move changing table and sink as required.
- All classrooms have 28" high parallel approach sinks in casework peninsulas.
- 111, 112, 115, 116, 118, 121, B-2, 157 have exterior doors with jamb recess in excess of 8".
- Restrooms in 121 Speech Therapy Services suite are not accessible.
- Accessible stalls in Restrooms near main office do not meet depth requirements - minimal upgrade required.
- Electric Water Cooler near main office restrooms requires a wing wall on one side.
- Counter and sink in 106, 143, 144, 153 are not at accessible height.

Issues

1 Minor remodel of private toilets (3).
Priority: 2 **Cost: $25,100**

2 Install door actuators at (8) doors to meet ADA push/pull clearance requirements.
Priority: 2 **Cost: $33,500**

3 Minor remodel of gang toilets (4).
Priority: 2 **Cost: $66,900**

4 Provide wing wall at (1) Electric water cooler to meet ADA path of travel requirements.
Priority: 2 **Cost: $2,000**

Site	Exterior	Interior	Accessibility	Mechanical Systems	Electrical Systems

Normandy Park - Early Childhood
Independent School District #624

Issues

5 Replace casework, countertop and sink in (4) locations to meet ADA height and knee/toe clearance requirements.

Priority: 2 **Cost: $30,100**

Normandy Park - Early Childhood
Independent School District #624

Analysis

Heating and Ventilation

- There was a major renovation in 1993 when the District started leasing the building. Minor upgrades have been performed since as building components have failed.

- The building is typically heated, cooled, and ventilated by packaged direct expansion (DX) constant volume gas fired rooftop units. There are a total of 12 rooftop units. The original project in 1993 re-used 6 existing rooftop units and provided a total of 6 new units. Eight of the units were replaced in the early 2000's. Currently, all of the units are near the end of their useful life. The four units not replaced in the early 2000's are past their useful life and in need of immediate replacement.

- The units are constant volume such that there are a total of 12 temperature controls zones. It is typical that multiple classrooms are on the same control zone. In two instances, common spaces are served by two different units that can result in the units competing with each other. There have been many complaints about temperature control in the building.

- A large building relief fan was installed in the 1993 project with the intent of managing the building air pressure. The system has not been effective likely due to the multiple small air handling unit zones throughout the building. A replacement system should include pressure relief capabilities within each air handling unit zone.

- The condensing section of the rooftop units are in very poor condition. Any existing units to remain should be retrofit with hail guards and cottonwood screens.

- The perimeter rooms typically do not have perimeter fin tube radiation.

- The front entry is heated by electric unit heaters.

- There is a type I kitchen hood in the food preparation area for the meals on wheels program. Make-up air is provided by the adjacent rooftop units.

- The condensing units serving the freezer in the District's distribution center are located on the roof and are in good condition.

Temperature Control

Normandy Park - Early Childhood
Independent School District #624

Analysis

Temperature Control

- The building is controlled with direct digital controls as manufactured by Allerton. The District has remote access to the systems through a webbased front-end system. System is capable of time of day scheduling for the rooftop units as well as status and alarm monitoring.

Plumbing

- The domestic hot water distribution piping is copper and is in good condition.
- Domestic hot water is provided by an atmospheric gas fired 199 MBH 100 gallon water heater. The water was installed less than 5 years ago and is in good condition.
- The plumbing fixture were installed in the 1993 renovation and are in fair condition.
- The kitchen area has a grease trap for the 2-comp sink that is regularly maintained.
- There is not a water softener serving the building.

Issues

1 Option 1 - ($110,000.00) Minimal Investment: Replace the four oldest gas fired rooftop units with new similar replacement units. This option will not improve space temperature control. Provide hail guards and cottonwood screens on all existing rooftop units that remain. The units will be connected to the existing building control system.

Priority: 2 **Cost: $0**

2 Option 2 - ($310,000.00) 10 to 15 Year Investment: Replace the remaining rooftop units that were not replaced in Option 1. This option will not improve space temperature control. The units will be connected to the existing building control system.

Priority: 2 **Cost: $310,000**

Normandy Park - Early Childhood
Independent School District #624

Analysis

Service and Distribution

- Service equipment consists of (1) 208-volt 3-phase 1200A switchboard. The main switchboard was replaced circa 1993. It contains adequate spare capacity to accommodate minor building expansions, and is generally in good condition.
- The building is enrolled in a utility curtailment program.
- Service equipment includes surge protection.
- Distribution equipment is predominantly of the same vintage as the service equipment and is in good condition.
- The facility does not utilize a generator. A generator and associated transfer switches should be included as part of the next major renovation project to back up life safety loads, as well as kitchen cooler/freezers and select heating equipment.
- Provide additional power outlets in classrooms.

Lighting

- Lighting consists of linear T8 and pendant fluorescent fixtures. The fixtures are in fair condition and should be considered for replacement with energy-efficient LED fixtures.
- There are few occupancy sensors in the building. Adding sensors would provide energy savings on a short payback schedule.
- Exit signs and interior egress lighting are battery-powered, in good condition, and appear to be sufficiently located.
- The facility does not have exterior egress lighting. Fixtures should be located on the exterior of the building at each exit. This is a life safety violation.
- Exterior poles and wall packs are metal halide but scheduled to be replaced this summer with LED.

Normandy Park - Early Childhood
Independent School District #624

Analysis
Systems/ Technology

Systems/ Technology

- The facility does not contain a clock system. A wireless clock system should be added.
- The paging system is in good condition.
- Fire alarm system is aged Simplex 4020 panel circa 1993. Replace panel, devices and wiring.

Issues

1 Provide emergency generator, transfer switches, panels and lighting relays
Priority: 3 **Cost:** **$88,100**

2 Provide additional power outlets in classrooms.
Priority: 3 **Cost:** **$16,000**

3 Replace T8 lighting with energy efficient LED fixtures.
Priority: 3 **Cost:** **$78,500**

4 Provide exterior egress lighting at each exit.
Priority: 1 **Cost:** **$24,700**

5 Provide wireless clock system.
Priority: 3 **Cost:** **$13,000**

6 Replace fire alarm system.
Priority: 1 **Cost:** **$35,700**

Normandy Park - Early Childhood

SITE

1	Correct drainage issues at the northeast and southwest corners of the building.	Priority: 1	**$66,800**
2	Replace wood monument sign with LED sign.	Priority: 4	**$75,200**

EXTERIOR

1	Replace all exterior windows.	Priority: 1	**$88,300**
2	Replace metal panel soffit and sled roof at north façade with parapet and flat room.	Priority: 3	**$250,000**
3	Replace (7) metal column wraps at north façade.	Priority: 4	**$6,000**
4	Provide small allowance for tuckpointing of soldier course.	Priority: 3	**$28,300**
5	Replace dock leveler in Food Service 142.	Priority: 2	**$15,100**
6	Replace roof areas A and B (installed 1998) per District roof report.	Priority: 1	**$1,064,700**

INTERIOR

1	Replace countertops in all classrooms.	Priority: 3	**$60,600**
2	Replace vinyl base at south wall of classroom 111.	Priority: 3	**$400**
3	Patch, repair and paint gypsum board soffit above window in 121 and sill below window in entry	Priority: 3	**$4,300**
4	Replace carpet in offices and corridors.	Priority: 3	**$83,900**
5	Repaint exposed ductwork in Food Service 142.	Priority: 3	**$2,600**
6	Replace ACT ceiling tile in rooms 158, 163, and 151 series offices.	Priority: 3	**$17,600**
7	Add toilets for Service Center.	Priority: 2	**$334,300**
8	Provide new security hardware at all classrooms.	Priority: 4	**$53,500**

ACCESSIBILITY

1	Minor remodel of private toilets (3).	Priority: 2	**$25,100**
2	Install door actuators at (8) doors to meet ADA push/pull clearance requirements.	Priority: 2	**$33,500**
3	Minor remodel of gang toilets (4).	Priority: 2	**$66,900**
4	Provide wing wall at (1) Electric water cooler to meet ADA path of travel requirements.	Priority: 2	**$2,000**
5	Replace casework, countertop and sink in (4) locations to meet ADA height and knee/toe clearance	Priority: 2	**$30,100**

MECHANICAL SYSTEMS

1	Option 1 - ($110,000.00) Minimal Investment: Replace the four oldest gas fired rooftop units with new	Priority: 2	**$0**
2	Option 2 - ($310,000.00) 10 to 15 Year Investment: Replace the remaining rooftop units that were not	Priority: 2	**$310,000**

ELECTRICAL SYSTEMS

1	Provide emergency generator, transfer switches, panels and lighting relays	Priority: 3	**$88,100**
2	Provide additional power outlets in classrooms.	Priority: 3	**$16,000**
3	Replace T8 lighting with energy efficient LED fixtures.	Priority: 3	**$78,500**
4	Provide exterior egress lighting at each exit.	Priority: 1	**$24,700**
5	Provide wireless clock system.	Priority: 3	**$13,000**
6	Replace fire alarm system.	Priority: 1	**$35,700**

Normandy Park - Early Childhood
Independent School District #624

SITE	**$142,000.00**
EXTERIOR	**$1,452,400.00**
INTERIOR	**$557,200.00**
ACCESSIBILITY	**$157,600.00**
MECHANICAL SYSTEMS	**$310,000.00**
ELECTRICAL SYSTEMS	**$256,000.00**
Total Cost	**$2,875,200.00**

Normandy Park - Early Childhood
Independent School District #624

Cost Analysis By Category By Priority

CATEGORY:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
SITE	$66,800	$0	$0	$75,200	$0	**$142,000**
EXTERIOR	$1,153,000	$15,100	$278,300	$6,000	$0	**$1,452,400**
INTERIOR	$0	$334,300	$169,400	$53,500	$0	**$557,200**
ACCESSIBILITY	$0	$157,600	$0	$0	$0	**$157,600**
MECHANICAL SYSTEMS	$0	$310,000	$0	$0	$0	**$310,000**
ELECTRICAL SYSTEMS	$60,400	$0	$195,600	$0	$0	**$256,000**
Totals:	**$1,280,200**	**$817,000**	**$643,300**	**$134,700**	**$0**	**$2,875,200**

Independent School District #624
Cost Analysis By Priority-All Buildings

BUILDING:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
Birch Lake Elementary	$1,711,700	$6,252,000	$1,757,750	$414,800	$191,125	**$10,327,375**
Hugo Elementary	$1,143,900	$5,403,080	$1,466,400	$190,300	$831,500	**$9,035,180**
Lakeaires Elementary	$836,700	$5,104,300	$3,134,200	$249,900	$148,600	**$9,473,700**
Lincoln Elementary	$3,404,600	$5,934,500	$1,069,100	$187,100	$141,400	**$10,736,700**
Matoska International IB World	$924,100	$6,573,000	$1,726,200	$115,300	$213,200	**$9,551,800**
Oneka Elementary	$764,500	$1,864,900	$708,800	$75,300	$210,000	**$3,623,500**
Otter Lake Elementary	$2,716,800	$2,806,500	$3,264,800	$4,216,100	$0	**$13,004,200**
Vadnais Heights Elementary	$1,339,700	$4,287,300	$2,170,700	$347,000	$112,800	**$8,257,500**
Willow Lane Elementary	$1,773,800	$5,473,400	$1,064,900	$394,400	$8,900	**$8,715,400**
WBL Area Learning Center	$1,923,500	$9,220,600	$1,981,600	$115,300	$82,900	**$13,323,900**
Sunrise Park Middle School	$20,714,700	$8,364,200	$3,175,900	$440,500	$518,300	**$33,213,600**
Central Middle School	$28,260,100	$4,446,600	$3,466,100	$1,209,000	$470,400	**$37,852,200**

Independent School District #624
Cost Analysis By Priority-All Buildings

BUILDING:	Priority 1:	Priority 2:	Priority 3:	Priority 4:	LTFM	Total
White Bear Lake District Office	$287,700	$4,985,900	$166,100	$59,200	$0	**$5,498,900**
Hippodrome Ice Arena	$3,048,100	$93,400	$175,605	$80,100	$0	**$3,397,205**
White Bear Lake Area High School - North	$29,830,182	$13,307,600	$3,884,700	$382,000	$2,788,300	**$50,192,782**
White Bear Lake Area High School - South	$25,258,900	$6,878,400	$6,375,500	$2,156,600	$1,143,400	**$41,812,800**
Normandy Park - Early Childhood	$1,280,200	$817,000	$643,300	$134,700	$0	**$2,875,200**
Totals:	**$125,219,182**	**$91,812,680**	**$36,231,655**	**$10,767,600**	**$6,860,825**	**$270,891,942**

Totals By Facility Analysis Categories

Facility:	Site	Building Exterior	Building Interior	Accessibility	Mechanical Systems	Electrical Systems	Totals:
Birch Lake Elementary	$204,100	$825,600	$914,675	$714,000	$6,885,000	$784,000	**$10,327,375**
Hugo Elementary	$120,700	$1,911,400	$123,200	$94,580	$6,025,000	$760,300	**$9,035,180**
Lakeaires Elementary	$255,300	$1,963,500	$512,800	$1,110,200	$4,825,000	$806,900	**$9,473,700**
Lincoln Elementary	$392,200	$1,827,600	$980,900	$1,543,600	$5,465,000	$527,400	**$10,736,700**
Matoska International IB World	$150,600	$1,512,300	$1,419,600	$1,107,400	$4,785,000	$576,900	**$9,551,800**
Oneka Elementary	$245,300	$690,500	$533,800	$8,000	$1,880,000	$265,900	**$3,623,500**
Otter Lake Elementary	$112,800	$5,876,200	$1,141,600	$521,000	$4,445,000	$907,600	**$13,004,200**
Vadnais Heights Elementary	$456,900	$2,283,700	$755,500	$1,604,400	$2,685,000	$472,000	**$8,257,500**
Willow Lane Elementary	$83,400	$1,263,600	$987,200	$1,106,400	$4,592,500	$682,300	**$8,715,400**
WBL Area Learning Center	$228,700	$1,692,700	$1,069,600	$968,600	$8,630,000	$734,300	**$13,323,900**
Sunrise Park Middle School	$1,128,800	$6,135,400	$1,572,900	$561,600	$22,380,000	$1,434,900	**$33,213,600**
Central Middle School	$462,100	$5,204,100	$1,516,700	$258,100	$28,915,000	$1,496,200	**$37,852,200**
White Bear Lake District Office	$0	$0	$39,200	$0	$5,095,000	$364,700	**$5,498,900**
Hippodrome Ice Arena	$75,200	$2,747,905	$88,200	$341,600	$60,000	$84,300	**$3,397,205**
White Bear Lake Area High School - North Campus	$249,700	$6,990,200	$2,494,600	$1,833,300	$34,850,000	$3,774,982	**$50,192,782**
White Bear Lake Area High School - South Campus	$107,700	$10,156,300	$5,117,300	$593,700	$22,795,000	$3,042,800	**$41,812,800**
Normandy Park - Early Childhood	$142,000	$1,452,400	$557,200	$157,600	$310,000	$256,000	**$2,875,200**
Category Totals:	**$4,415,500**	**$52,533,405**	**$19,824,975**	**$12,524,080**	**$164,622,500**	**$16,971,482**	**$270,891,942**