



FACILITIES INFRASTRUCTURE NEEDS ASSESSMENT

APPENDICES

MAY 2019



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FACILITIES INFRASTRUCTURE NEEDS ASSESSMENT

APPENDIX A

May 13, 2019



Dimondale Elementary School

Appendix A

330 Walnut Street
Dimondale, MI 48821

43,393 Square Feet
Building Area

1 Floor
Number of Floors

1951
Year Built

Field Observations

West side of building:

Parking lot asphalt in overall poor condition.



An asphalt valley runs north/south through the center of the parking lot. Drains to a catch basin in island on north end of lot.



Catch basin is higher than asphalt causing ponding.



Landscape islands and perimeter of parking lot lack curb and gutter with evidence of traffic rutting.



Landscape islands and perimeter of parking lot lack curb and gutter with evidence of traffic rutting.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Light poles are installed in parking lot without protection.



ADA ramp in thick edge walk likely does not meet current standards.



Detention pond is overgrown with wetland vegetation (currently maintained by Delhi Township).



Stormwater sheet flows from asphalt valley to pond.



Recent concrete sidewalk replacement near door 9 traps water on asphalt to the east. Catch basin within the sidewalk appears to be very shallow with no observed outlet. Rebar protruding from bottom of structure. Existing beehive casting that did fall within the greenbelt was reused when sidewalk was replaced and expanded creating a trip hazard.



Dumpsters are in the open rather than within an enclosure.



Porta john is located near playground area.



There is no sidewalk on Oak Street to Washington Ave. Traffic cones have been placed to create a makeshift sidewalk.



South side of building:

Asphalt is installed between building and playground. Slope tips towards building causing ponding water.



Playground area is tired looking.



Chain link fence separating playground from building is fair condition. Gates and gateposts in poor condition. Asphalt access drive and walk to playground area likely exceeds ADA requirements.



Catch basins connect to 6-inch diameter storm sewer which is likely undersized for design flow. Storm water is not routed through the detention pond.



East side of building:

Drop-off Area

Landscape island in front of door 5 lacks curb and gutter with evidence of traffic rutting. Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Asphalt in overall poor condition.



Storm water is not routed through the detention pond.



Courtyard

Asphalt in overall poor condition.



Concrete sidewalk cracked and in poor condition.



Courtyard does not have sufficient slope creating standing water within both pavement and greenbelt areas.



Door stoops on north side of courtyard lower than asphalt creating ponding issues and flooding into building.



Storm water is not routed through the detention pond and discharges undetained into Walnut Street.



North side of building:

Lawn area riddled with moles.



Storm water flows northward to adjacent property.





Elliott Elementary School

Appendix A

4200 Bond Street
Holt, MI 48842

44,291 Square Feet
Building Area

1 Floor
Number of Floors

1942
Year Built

Field Observations

West side of building:

Lawn area near play structures in overall poor condition.



Perimeter fence near play structures is in poor condition.



Play area asphalt is in poor condition.



South side of building:

Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Public roadway/bus drop off area is in poor condition with standing water.



Public roadway/bus drop off area is in poor condition with standing water.



Sidewalk is in poor condition.



Children must currently walk through water from bus drop off.



East side of building:

Parking lot asphalt in overall poor condition.



Pot holes and standing water.



Pots holes and standing water.



Perimeter fence is rusted and aged.



North side of building:

Standing water in lawn.



Fence in poor condition.



Insufficient parking forces parents to park on lawn when dropping off kids.



Lawn areas in fair/poor condition.



Courtyard Area:

Lawn in poor condition. Swale cut for drainage.



Manhole covered with plywood.





Horizon Elementary School

Appendix A

5776 West Holt Road
Holt, MI 48842

54,000 Square Feet
Building Area

1 Floor
Number of Floors

1993
Year Built

Field Observations

South side of building:

Visitor entrance drive asphalt in overall poor condition.



Visitor entrance drive asphalt in overall poor condition. Concrete sidewalk is beginning to fail.



East side of building:

Dumpster area concrete in overall poor condition.



North side of building:

Asphalt sidewalk in overall poor condition.



Asphalt play area in overall poor condition.





Midway Early Learning Center Appendix A

4552 Spahr Avenue
Holt, MI 48842

43,392 Square Feet
Building Area

1 Floor
Number of Floors

1949
Year Built

Field Observations

West side of building:

Asphalt play area in poor condition.



Asphalt play area in poor condition.



Concrete sidewalk in poor condition.



Asphalt pathway in poor condition.



South side of building:

Parking lot asphalt in overall poor condition.



Parking lot asphalt in overall poor condition.



Asphalt pathway in poor condition.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



East side of building:

Asphalt in poor condition.



Asphalt pathway in poor condition.



North side of building:

Asphalt play area in poor condition.



Play equipment needs new mulch.



Vacant building:

Parking lot asphalt in fair/poor condition.





Sycamore Elementary School

Appendix A

4429 Sycamore Street
Holt, MI 48842

50, 213 Square Feet
Building Area

1 Floor
Number of Floors

1952
Year Built

Field Observations

West side of building:

Landscape bed in courtyard could use some attention.



South side of building:

Play area asphalt is in poor condition.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Asphalt around catch basin is beginning to deteriorate.



East side of building:

Parking lot asphalt in overall poor condition.



Perimeter of parking lot lacks curb and gutter with evidence of traffic rutting.



North side of building:

Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Ramp and stairway do not meet ADA requirements.





Wilcox Elementary School

Appendix A

1650 Laurelwood Road
Holt, MI 48842

46,465 Square Feet
Building Area

1 Floor
Number of Floors

1968
Year Built

Field Observations

West side of building:

Swale needs maintenance.



Gravel should be installed along edge of asphalt to help support it.



Gravel should be installed along edge of asphalt to help support it.



South side of building:

Backstop in poor/unsafe condition.



Standing water on lawn and pathway.



Pathway in poor condition.



East side of building:

Standing water in lawn and play area.



Standing water in lawn and play area.



Standing water near and on neighbor's property.



Standing water near and on neighbor's property.



North side of building:

Storm sewer issues near entrance.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Play area asphalt in poor condition.





Hope Middle School Appendix A

2020 Park Lane
Holt, MI 48842

130,300 Square Feet
Building Area

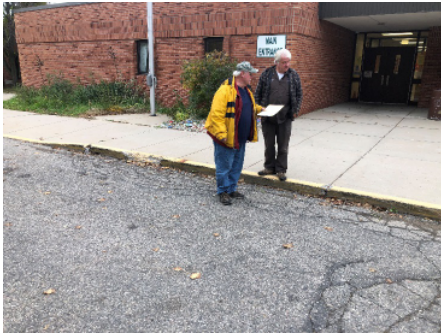
1 Floor
Number of Floors

1926
Year Built

Field Observations

West side of building:

Parking lot asphalt beginning to deteriorate.



Portions of sidewalk failing (some with exposed rebar).



South side of building:

Fence is in poor condition.



Standing water in parking lot.



Parking lot asphalt beginning to deteriorate.



East side of building:

Public roadway/school parking in poor condition.



Public roadway/school parking in poor condition.



Parking lot asphalt in overall poor condition.



Hope playground.



Hope playground.



Areas of soil erosion.



Vacant parcel owned by HPS.



Courtyard asphalt and concrete stairs in poor condition.



Courtyard asphalt and concrete stairs in poor condition.



Access to outdoor lunchroom not ADA compliant.



North side of building:

Public roadway/school parking in poor condition.



Portions of sidewalk failing (some with exposed rebar).



Ramp may exceed ADA requirements.



Steps failing with exposed rebar.





Washington Woods Middle School

Appendix A

2055 Washington Road
Holt, MI 48842

73,000 Square Feet
Building Area

1 Floor
Number of Floors

1993
Year Built

Field Observations

West side of building:

Minor lawn defects.



South side of building:

Minor lawn defects.



Standing water on new pavement. Additional storm sewer and/or regrading required.



East side of building:

Swale in front walk is a result of storm sewer trench settlement.



Makeshift sump pump in front entrance.



Minor lawn defects.



Minor lawn defects.



Parking lot asphalt in poor condition.



Parking lot asphalt in poor condition.



Parking lot asphalt in poor condition.



North side of building:

Water is trapped in low spots near edge of pavement accelerating pavement deterioration.





Holt Junior High School

Appendix A

1784 North Aurelius Road
Holt, MI 48842

160,285 Square Feet
Building Area

2 Floors
Number of Floors

1958
Year Built

Field Observations

West side of building:

Aurelius Road drains towards building.



Courtyard drains towards Auditorium.



South side of building:

Standing water in parking lot. Additional storm sewer and/or parking lot regrading required.



Standing water in parking lot. Additional storm sewer and/or parking lot regrading required.



Sidewalk failing creating trip hazard.



Parking lot asphalt in poor condition.



Soil migration from bleacher area to track at retaining wall joints.



Soil migration from bleacher area to track at retaining wall joints.



Sinkhole caused by failing storm structure.



Pathway asphalt in poor condition.



Pathway asphalt in poor condition.



East side of building:

Standing water on new pavement. Additional storm sewer required.



Asphalt drive/path in poor condition.



North side of building:

Bus loop asphalt and concrete sidewalk in poor condition.



Bus loop asphalt and concrete sidewalk in poor condition.



Water is trapped in low spots near edge of pavement accelerating pavement deterioration.



Sidewalk failing exposing rebar.



Parking lot asphalt in overall poor condition.



Courtyards:

Asphalt overlay on concrete sidewalk.



Storm system in courtyard is undersized and in poor condition (typical of all courtyards at this facility).



Landscaping upgrades are overdue.



Sidewalk in poor condition.





Grade 12 - North Campus Appendix A

5780 West Holt Road
Holt, MI 48842

111,285 Square Feet
Building Area

1 Floor
Number of Floors

1975
Year Built

Field Observations

East side of building:

Salt and freeze/thaw cycles beginning to deteriorate sidewalk control joints.



Salt and freeze/thaw cycles beginning to deteriorate sidewalk control joints.



Sinkhole caused by failing storm structure.



Old buried roadway limiting turf establishment.



South side of building:

Bus loop road in poor condition.



Bus loop road in poor condition.



Asphalt curb in poor condition.



Sidewalk failing with exposed rebar.



Standing water in parking lot. Additional storm sewer and/or loop road regrading required.



East side of building:

Sidewalk failing creating trip hazard.



Sidewalk in fair condition.



Minor drainage issues near soccer fields.



North side of building:

Narrow drive causes circulation issues for deliveries.





Holt High School

Appendix A

5885 West Holt Road
Holt, MI 48842

340,000 Square Feet
Building Area

3 Floors
Number of Floors

2003
Year Built

Field Observations

West side of building:

Asphalt beginning to show its age.



Control joints in curb beginning to deteriorate.



South side of building:

Driveway curb deterioration.



Consider addition of curb and gutter to protect asphalt.



Minor drainage issues at softball field.



Minor drainage issues at softball field.



East side of building:

Asphalt beginning to show its age.



North side of building:

Asphalt beginning to show its age.



Asphalt cracks larger than can be effectively corrected with crack sealer.



Salt and freeze/thaw cycles beginning to deteriorate sidewalk control joints.





Transportation Building Appendix A

2125 Delhi Stree
Holt, MI 48842

10,000 Square Feet
Building Area

1 Floor
Number of Floors

1984
Year Built

Field Observations

West side of building:

Makeshift curbed outdoor bus wash area.



Trench drain to capture wash water and direct into the building.



South side of building:

Pavement in fair condition. Some standing water.



East side of building:

Pavement in fair/poor condition. Some standing water.



North side of building:

Parking lot asphalt in overall poor condition.



Standing water accelerates deterioration.



Failing pavement around catch basin.





FACILITIES INFRASTRUCTURE NEEDS ASSESSMENT

APPENDIX B

May 13, 2019

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Top Recommendations for Energy Efficiency Impact

(An Energy Star Programs offering)



PREPARED FOR:
Holt Public Schools
5885 West Holt Road
Holt, MI

PREPARED BY:
CONSUMERS ENERGY
BUSINESS ENERGY EFFICIENCY PROGRAM
3965 Okemos Road, Suite A1
Okemos, MI 48864

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Please feel free to contact Consumers Energy Business Energy Efficiency Programs if there are any questions or comments related to this report. Consumers Energy Business Energy Efficiency Programs personnel may be contacted by the following:

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Executive Summary

Consumers Energy provided this Report for Holt Public Schools in Holt, MI as a service within the Strategic Energy Management pilot. The program's intent is to help your school district understand your current energy usage and provide specific recommendations to help with reducing usage and costs.

Holt Public School District's building annually consumes approximately 9,900,000 kWh of electricity and 52,000 MCF of natural gas totaling greater than \$1,250,000 in utility costs. This report includes recommendations worth more than \$100,000 worth of annual savings which are paired with approximately \$58,000 of cash rebates from Consumers Energy.

The list below prioritizes the energy saving opportunities available to Holt Public School District. It includes items completed recently to highlight the positive actions already being taken.

Top Energy Efficiency Recommendations					
	Description	Annual Energy Cost Savings (\$/yr)	Estimated Measure Cost (\$)	Consumers Energy Incentive* (\$)	Simple Payback Period** (yrs)
1	Energy Policy	39,600	0	0	0.0
2	High School LEDs	24,300	113,100	28,200	3.5
3	Junior High LEDs	8,300	51,900	10,700	5.0
4	ECM RTU Fan Motors	7,300	27,100	4,800	3.1
5	VFD Pool Pump	7,000	18,400	1,500	2.4
6	District Exterior LEDs	6,100	44,900	4,500	6.6
7	Dimondale LEDs	5,900	34,500	8,000	4.5
8	Junior High Occupancy Sensors	2,300	6,450	750	2.5
Total		100,800	296,350	58,450	2.4

*Incentives are estimated based on Consumers Energy Business Energy Efficiency Program 2018 Incentive Catalog

**Simple Payback Period = (Measured Installation Cost - Utility Rebate) / (Annual Energy Savings)

Background –ENERGY STAR Program Overview

ENERGY STAR Programs (ESP) for K-12 schools is one of several specialty/pilot programs within Consumers Energy Business Energy Efficiency Program (CEBEEP). The general purpose is to help their energy customers realize energy use reductions, and even provides rebates to incentivize these changes. It provides (free of charge) assessments of district facilities and recommends specific improvement measures.

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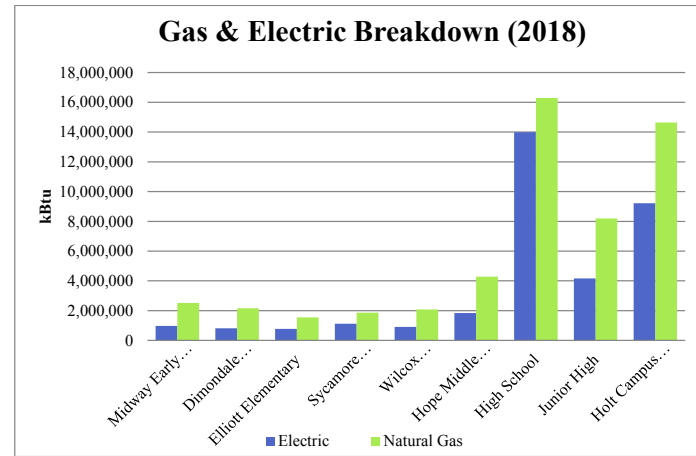


Current Energy Profile

The first step to managing a facility's utility consumption is to study the recent history and current trends. Understanding how energy is being consumed is an essential tool in diagnosing potential energy related problems.

Utility Usage History

Understanding district energy use is an important step towards lowering energy bills. The graph below shows energy use in a common set of units.

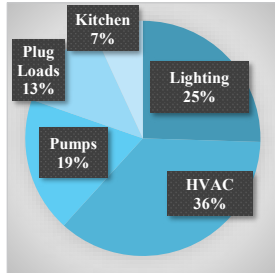


The graph above summarizes the energy usage for the District's buildings. Typically for K-12 schools, one would see a kBTU usage split of 1/3 electric and 2/3 natural gas. Most of the Holt Public School District follows this pattern, but the High School and the Campus have higher electric usage than the typical split for a school. Focusing on these buildings would benefit the district moving forward with energy efficiency projects.

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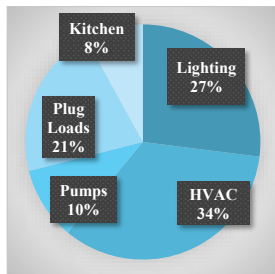
Electric Use Breakdown
High School



Utility distribution is based on national averages and on-site observation of building system; no explicit sub-metering was performed.

As the graphs to the left show lighting makes up more than 25% of the buildings electrical usage in each of the buildings assessed. This usage can easily be reduced significantly by switching to LED lighting; typically school's see a lighting wattage reduction of half when switching from T8 lighting fixture to LED lighting fixtures.

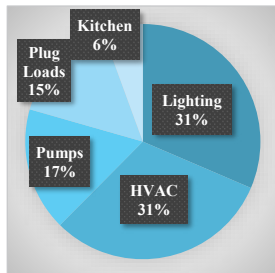
Electric Use Breakdown
Junior High School



The high HVAC load is a common problem in K-12 schools due to the use of VAVs and Unit Ventilators in each classroom. Making sure that the vents in each room are unobstructed can help reduce the HVAC load of the building.

The unusually high pump load in the High School can be attributed to the pool pumps. The pool's mechanical room has two 20 hp pumps that are operating without a VFD causing the pump to operate at maximum capacity energy time when it is in use. Adding a VFD to these pumps can help reduce the pump's load on the building.

Electric Use Breakdown
Dimondale Elementary



Plug loads of K-12 school buildings can be hard to reduce as many students need electrical devices for learning. One thing the district can do to help is reduce the amount of ghost loads in the building. A ghost load is an electrical load that is drawn from a device plugged into the wall, but isn't in use. An example of a ghost load would be a desk fan or lamp that is plugged in but not on.

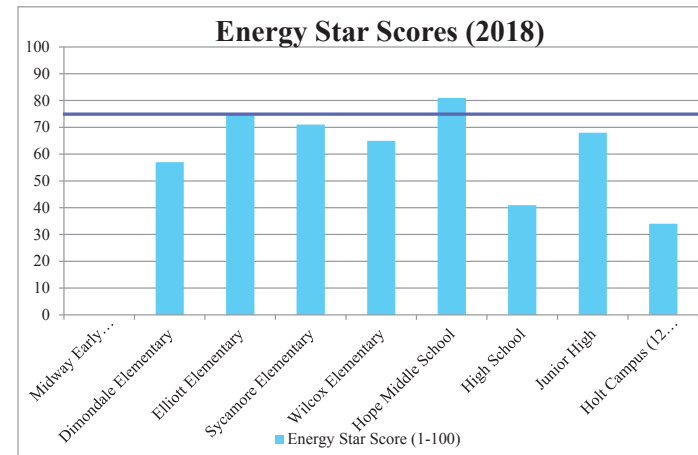
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Energy Star Portfolio Manager Benchmark

Energy Star benchmarking provides a rating for a building's energy performance. This score, ranks the buildings on a 0 – 100 scale. According to the statistical analysis performed by EPA, an operating building which scores above 75 is operating optimally (and is eligible to receive an Energy Star® plaque).

CEBEEP performed a benchmark on each building using the EPA's Portfolio Manager tool. The district's scores are graphically shown below.



As the figure shows, only two of the districts buildings currently have the ENERGY STAR Score needed for ENERGY STAR Certification. Holt Public School District had six buildings ENERGY STAR Certified through the ENERGY STAR Program here at CEBEEP in the summer of 2018. To maintain this number of certified buildings the ENERGY STAR Scores will need to rise. Your ENERGY STAR Score can be raised by lowering the energy usage associated with the building.

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Energy Team

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Energy Efficiency Recommendations

Savings and costs noted below are based on industry standards and project experience. More accurate cost estimates may be obtained from a CEBEEP Trade Alley.

#1 – Energy Policy

Beyond capital projects, the district may realize additional energy cost avoidance with behavioral changes. According to U.S. Environmental Protection Agency, nearly 30% of the energy used by American businesses is either used inefficiently or is unnecessary; in addition, the typical office can reduce energy use by 10% with little or no cost.

Formally making energy saving a community effort by turning off unused equipment (lights, computers, tv's, coffee pots, ...) and setting back thermostats during unoccupied periods can have a major impact on your district's utility bills. If everybody chips in, the savings can add up considerably. Consumers Energy has a sample energy policy that Holt Public Schools may use. Involving staff and/or students in the development process encourages buy-in from stakeholders.

Savings: It may be helpful to consider the policy insurance against cost associated with staff behavior. Much of the benefit will come when the current focus on efficiency is drawn elsewhere. As new staff and/or new distractions arise, having a written policy to fall back on will help keep savings in place. Without a formal procedure, humans naturally default to convenience and energy costs will creep back up.

Costs: No capital costs associated with this measure.

Incentive: No incentive available.

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#2 – High School Interior LEDs

The High School's typical lighting fixture is a recessed ceiling troffer each with three T8 lamps inside. Swapping those fluorescent lamps out for LED tubes will reduce the wattage by half. The number of T8 lamps was provided by Holt Public School staff via a Meddler cost estimation of the school. The existing and proposed fixtures were used in the calculations for this estimation.

Savings: Savings are based on the assumed runtime of 2,230 hours for the lights. Converting T8 to LEDs would save 209,500 kWh annually. This represents \$24,300 of cost avoidance at Holt High School's electric rate.

Costs: Based on a licensed contractor (removing the ballast and direct wiring the replacement tubes) the estimated cost is \$113,100. Performing the lamp replacement labor with district staff may cut the installed cost in half.

Incentive: "Lighting New/Retrofit Fixtures" \$0.30 Per Low Bay Watt Reduced Catalog Page 15 / App Page 10. The combined input power reduction results in a \$28,200 rebate.

#3 – Junior High Interior LEDs

Holt Junior High's typical lighting fixture is a ceiling troffer each with two T8 lamps inside. Swapping those fluorescent lamps out for LED tubes will reduce the wattage by half. The combined count for classroom fixtures is approximately 385. The data for Holt Junior High was collected by CEBEEP staff while conducting an energy assessment.



Savings: Savings are based on the assumed runtime of 1820 hours for the classroom lights. Converting T8 to LEDs would save an estimated 71,700 kWh annually. This represents \$8,300 of cost avoidance at Holt Junior High School's electric rate.

Costs: Based on a licensed contractor (removing the ballast and direct wiring the replacement tubes) the estimated cost is \$51,900. Performing the lamp replacement labor with district staff may cut the installed cost in half.

Incentive: "Lighting New/Retrofit Fixtures" \$0.30 Per Low Bay Watt Reduced Catalog Page 15 / App Page 10. The combined input power reduction results in a \$10,700 rebate

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#4 – High School and Junior High RTU ECM Motors

The High School's and Junior High's building Roof Top Units (RTU) have 10 horsepower fans, operating at constant speed. Install an electronically commutated motor (ECM) on each of the fans and provide digital "Single Zone VAV" sequence, which defaults fan operation to 40% speed, until space temperature (or CO2 levels) call for higher speed.



Savings: Savings are based on the expected fan operation 9 hours per school day, with only 2 hours requiring full 100% speed. Dropping most of the hours of operation to 40% reduces input power by 73% during that reduction in energy use, saving Holt Public Schools 63,200 kWh annually. This represents \$7,300 of cost avoidance at Holt Public School's electric rate.

Costs: Based on licensed contractor installation the estimated cost is \$ 27,100. This cost includes two speed drives and integration of the control points into the BAS.

Incentive: "VFD on HVAC Supply Fan" \$60 Per Motor Horsepower Catalog Page 23 / App Page 14. At 10 HP and 8 fans, the resulting rebate would be \$4,800.

#5 – VFD Pumps

The High School's pool heating system has 20 horsepower pumps, operating at constant speed. Install a Variable Frequency Drive on each of the pumps and connect to the existing variable speed control mechanism.

Savings: Savings are based on the expected pump speed profile shown in the table to the right (based on outdoor air temperature). Due to the relationship between motor speed and input power, this operation profile produces a 73% reduction in energy use, saving Holt High School 60,600 kWh annually. This represents \$7,000 of cost avoidance at Holt High School's electric rate.

Pump Speed	Portion of Total Runtime
100%	11%
75%	28%
50%	30%
25%	31%

Costs: Based on licensed contractor installation the estimated cost is \$18,400. This cost includes two speed drives, a differential pressure sensor installed into the piping and integration of the control points into the BAS.

Incentive: "VFD on Hydronic Heating Water Pump" \$75 Per Motor Horsepower Catalog Page 23 / App Page 14. At 20 HP, the resulting rebate would be \$1,500.

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#6 – District Exterior LEDs

Holt Public School's exterior lighting typically is performed by High Intensity Discharge fixtures. This metal halide technology is far less efficient than modern Light Emitting Diode lighting. Swapping those metal halide fixtures for native LED fixtures will reduce the wattage by more than half. The combined count of exterior fixtures is approximately 80.



Savings: Savings are based on the assumed runtime of 2920 for the exterior lights. Converting metal halides to LEDs would save 53,000 kWh annually. This represents \$6,100 of cost avoidance at Holt Public School's electric rate.

Costs: Based on a licensed contractor (removing the ballast and direct wiring the replacement tubes) the estimated cost is \$44,900. Performing the lamp replacement labor with district staff may cut the installed cost in half.

Incentive: "Lighting New/Retrofit Fixtures" \$0.25 Per Exterior Lighting Watt Reduced Catalog Page 14 / App Page 10. The combined input power reduction results in a \$4,500 rebate

#7 – Dimondale Interior LEDs



Dimondale Elementary's typical classroom is lit with recessed ceiling troffers each with three T8 lamps inside. Swapping those fluorescent lamps out for LED tubes will reduce the wattage by half. The combined count for building fixtures is approximately 450.

Savings: Savings are based on the assumed runtime of 1820 hours for the classroom lights. Converting T8 to LEDs would save 50,900 kWh annually. This represents \$5,900 of cost avoidance at Dimondale's electric rate.

Costs: Based on a licensed contractor (removing the ballast and direct wiring the replacement tubes) the estimated cost is \$34,500. Performing the lamp replacement labor with district staff may cut the installed cost in half.

Incentive: "Lighting New/Retrofit Fixtures" \$0.30 Per Low Bay Watt Reduced Catalog Page 15 / App Page 10. The combined input power reduction results in a \$8,000 rebate.

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#8 – Junior High Occupancy Sensors

Install occupancy sensor controls for lighting in classrooms. Rather than the lights in these spaces remaining on all day, the sensors will cut the operation hours by an estimated 1/3.

Savings: Savings assume a baseline runtime of 1830 hours for the existing T8 fixtures. Sensor operation would drop that runtime down by 736 hours per year. The reduction in usage would be 22,100 kWh, resulting in \$2,300 savings per year.

Costs: Based on a contractor preforming the labor and the cost of the sensor equipment, this consists of a ceiling mounted sensor, replacement switch, and “power-pack” which are estimated to be approximately \$125 each. The parts and labor for a quantity of 30 units the total cost would be \$6,450.

Incentive: “Interior Lighting Occupancy Sensors” \$25 Per Sensor Catalog Page 21 / App Page 13. The combined quantity sensors installed in toilet rooms would be 30, resulting in a \$750 rebate.

Additional Recommendations

Boiler Tune-Ups

Holt Public School District uses multiple boilers to accommodate occupant comfort. Over time boilers can lose efficiency, which is associated with an increased operating cost to achieve the same result previously achieved. Consumers Energy offers boiler tune-ups once per boiler in a 24-month period. The incentive amount varies based on the use of the boiler, Space Heating, Pool and Spa, Domestic Hot Water, etc.

Incentive: “Boiler Tune-Up” \$ amount varies by boiler type and size - Catalog Page 57 / App Page 31.

LED Exits Signs

The Holt Public School District’s exit signs are required to be lit 24/7 by code and can have an impact of energy efficiency. LED lighting will minimize the operating cost of the exits signs and require less maintenance over time.

Pool Cover

Holt High School’s pool currently is left uncovered at all times. Covering the pool when it is not in use will have many benefits to the facility. The pool cover would prolong the life of the air handling system by reducing the amount of chemicals filtered through the system, reducing the amount of water and chemical lost through evaporation, and help maintain the humidity in the room.

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Next Steps

Commercial/Industrial Incentives

Check Project and Equipment Eligibility

All installed equipment must meet or exceed specifications described in the Program Catalog

Submit an Application

A Pre-notification application is required for most measures, including all custom projects, new construction projects, and projects whose requested incentive is greater than \$10,000. Wait until your application is approved, and you have received a reservation letter before starting your project. Be sure to include manufacturer's specification sheets for all qualifying measures included on your application.

Submit application by one of the following methods:

Mail: Consumers Energy Business Energy Efficiency Program, P.O. Box 1040 Okemos, MI 48805

Email: ConsumersEnergyBusinessSolutions@CMSEnergy.com

Fax: 877-607-0738

Install Equipment or Perform Project Work

Once your application has been reviewed/approved, you will receive a reservation letter. Your reservation letter allows you 90 days to complete your project. New construction projects must complete within 18 months of an incentive reservation.

Submit a Final Application

Submit a final application as soon as your project is completed (page 7 of the Application). Be sure to include itemized invoices for all qualifying materials listed on your application. W-9 must be provided along with your application.

Receive Incentive Payment

When your final application is approved, an incentive check will be mailed. Checks are typically mailed within 6 to 8 weeks.

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Pilots & Specialties

Consumers Energy Business Solutions Specialty and Pilot programs are designed to offer energy efficiency solutions to select market segments and specific customer needs. These specialty programs offer solutions for business like cash incentives, training, and energy information services to help commercial customers to improve energy efficiency and reduce demand.

New Construction **Smart Buildings** **Compressed Air** **Buy Michigan**
Energy Star Programs



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Energy Star Programs Supplemental Appendices

Appendix A: Online References

Appendix B: ENERGY STAR No Cost/Low Cost Tips

Appendix C: Standby Power Summary Table

Appendix D: Sample Energy Policy

Appendix E: Energy Unit Conversions

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BUSINESS ENERGY EFFICIENCY PROGRAM
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Appendix A. Online References

Listed below are links to locations on the Consumers Energy web site that will help you become more familiar with our programs and help you save money and reduce energy use when you decide to renovate a facility or implement an energy efficiency program. For each link listed a brief description is included and below each description is the link.

- a. **Instant Discount Program** - The link below will connect you to our Instant Discount Program which is located on the Consumers Energy Business Energy Efficiency web site. This is where you will find program information and a list distributors (near you) who participate in the program and sell natural gas equipment at a discounted price - <https://www.consumersenergy.com/business/energy-efficiency/special-programs/instant-discount-program>
- b. **Marketplace** - Marketplace is a pilot program with Consumers Energy Business Energy Efficiency Programs. It is designed to allow Consumers Energy Small Business Customers to purchase, through an online store, limited quantities of easy-to-install energy efficiency products for their businesses at already rebated prices in a "one stop shopping" style marketplace. The site has a Smart Thermostat available. Website address: <https://consumersenergy.com/marketplace>
- c. **Business Matters eNewsletter** - This free newsletter contains useful information on energy saving strategies, tools you can use, and more. Select the link below to access the newsletter registration page - <http://members.questline.com/login.aspx?accountId=4480&ReturnURL=Newsletter.aspx%3faccountID%3d4480>
- d. **Buy Michigan Rebate Program** - When you upgrade with energy efficient equipment manufactured in Michigan you may be eligible for a bonus rebate. For more details go to the Buy Michigan Rebate Program link below and to locate participating Michigan manufacturers click on "Michigan-based companies than click on "Find Michigan Manufacturers" - <https://www.consumersenergy.com/business/energy-efficiency/special-programs/buy-michigan>
- e. **Consumers Energy Business Energy Efficiency home page** - (select the **Business** tab on the web page to access all the energy efficiency resources) - <https://new.consumersenergy.com/business/energy-efficiency>
- f. **Consumers Energy Business Energy Efficiency Incentive Guide** - This document contains detailed information specific to available incentives and programs. Click on (you may have to control/click or cut and paste the URL below) the link below and scroll down to the "Save with Lighting Upgrades" section of the web page. On the right side of the web page look for a small box titled, "Energy Efficiency Rebates". Select "Download Catalog" in the "Energy Efficiency Rebates" box to view and/or save the Incentive Guide - <https://new.consumersenergy.com/business/energy-efficiency/rebates-and-programs/lighting>

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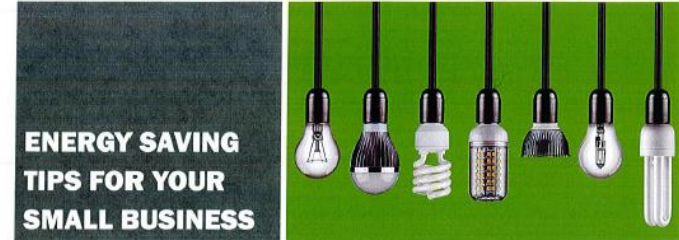


- g. **Consumers Energy Business Energy Efficiency Business Application** – This document contains detailed information specific to the available incentives and programs. Click on (you may have to control/click or cut and paste the URL below) the link below and scroll down to the “Save with Lighting Upgrades” section of the web page. Directly below the “Lighting Your Way to Savings” graphic you will see the “Pre-Notification Application” (under the number 2). Select the green “Download Application” button to view and/or save the application - <https://new.consumersenergy.com/business/energy-efficiency/rebates-and-programs/lighting>
- h. **Consumers Energy Building Operator Training** - Building Operator Training (BOT) is a training program for operations and maintenance staff working in commercial buildings. Your business can save energy by providing this training to your employees who are directly responsible for the maintenance of building equipment and day-to-day building operations. - <https://www.consumersenergy.com/business/energy-efficiency/special-programs/building-operator-training>

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Appendix B. ENERGY STAR No Cost/Low Cost Tips



Energy use is a major expense for small businesses. Fortunately, there are several simple steps you can take to improve the energy efficiency of your facility and increase your company's bottom line. Below is a list of no-cost and low-cost tips to help your small business save energy and money.

NO-COST TIPS:

- Turn off lights and equipment that aren't in use, especially overnight and on weekends. Use the energy saving feature on printers, monitors, copiers and computers, if the option is available.
- Make sure outdoor lighting is turned off during the day.
- Adjust lighting to your facility's actual needs. Use free daylight as much as possible during the daytime hours.
- Make sure bulbs, fixtures, lenses and reflective surfaces are cleaned regularly to increase the output of your lights. Also, clean windows and skylights regularly to let in more natural daylight.
- Unplug battery chargers when the batteries are fully charged or the chargers are not in use.
- During cooling season, keep your thermostat set at 78-80°F when people are in the building and 85°F at night and on weekends. During heating season, set the thermostat at 68°F when people are in the building and 55-60°F at night and on weekends.
- Check vents and registers to ensure furniture and equipment do not block airflow.
- Keep exterior windows and doors closed when HVAC is in use. When heating, close curtains, shades, or blinds at night to retain heat.
- Turn the water heater down to 120°F (if codes allow).

LOW-COST TIPS:

- When making purchases, buy energy efficient equipment whenever possible. Look for the ENERGY STAR® label to ensure energy savings.
- Replace any light bulb that burns more than one hour per day with a compact fluorescent bulb (CFL) or LED bulb equivalent.
- Install and/or use existing programmable thermostats or energy management systems.
- Keep your HVAC system well maintained, following the manufacturer's guidelines. Clean or replace the air filter regularly, and for best results, tune up your system with an annual maintenance contract.
- Seal and pressure test all duct work.
- Use ceiling fans to keep the air moving. They use very little energy and can make your facility feel at least four degrees cooler.
- Repair any leaky faucets or pipes promptly.
- Inspect and repair worn or cracked caulking and weather stripping on all doors, windows and any areas where leakage could occur.
- Install drapes, shutters, or window film to prevent heat loss and heat gain.
- Plant evergreen trees on the north and east sides of the building to provide wind protection in the winter. Plant deciduous trees on the south and west sides of the building to provide shade and cool air in the summer.



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Appendix C. Standby Power Summary Table

The Lawrence Berkley National Laboratory measured the standby power of many, many, products. The table below summarizes those measurements, with the average, minimum, and maximum power levels observed while in standby. Power consumption is listed in "watts" (W). See the FAQs for [a detailed explanation](#). The "Count" refers to the number of products that were measured.

Product/Mode	Average (W)	Min (W)	Max (W)	Count
Air Conditioner, room/wall				
Off	0.9	0.9	0.9	1
Charger, mobile phone				
On, charged	2.24	0.75	4.11	4
On, charging	3.68	0.27	7.5	23
Power supply only	0.26	0.02	1	32
Clock, radio				
On	2.01	0.97	7.6	23
Computer Display, CRT				
Off	0.8	0	2.99	21
On	65.1	34.54	124.78	21
Sleep	12.14	1.6	74.5	14
Computer Display, LCD				
Off	1.13	0.31	3.5	32
On	27.61	1.9	55.48	31
Sleep	1.38	0.37	7.8	30
Computer, desktop				
On, idle	73.97	27.5	180.83	63
Off	2.84	0	9.21	64
Sleep	21.13	1.1	83.3	52

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Computer, notebook				
Fully on, charged	29.48	14.95	73.1	13
Fully on, charging	44.28	27.38	66.9	8
Off	8.9	0.47	50	19
Power supply only	4.42	0.15	26.4	19
Sleep	15.77	0.82	54.8	16
Fax, inkjet				
Off	5.31	0	8.72	3
On	6.22	2.89	14	8
Fax, laser				
Off	0	0	0	1
On	6.1	6.1	6.1	1
Ready	6.42	6.42	6.42	1
Heating, furnace central				
Off	4.21	0	9.8	16
On	339.71	70.5	796	14
Hub, USB				
Off	1.44	0.95	1.81	5
On	2.06	1.06	3.55	7
Modem, DSL				
Off	1.37	0.33	2.02	16
On	5.37	3.38	8.22	20
Modem, cable				
Off	3.84	1.57	6.62	8
On	6.25	3.64	8.62	16
Standby	3.85	3.59	4.11	2
Multi-function Device, inkjet				

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Off	5.26	0	10.03	23
On	9.16	3.9	17.7	24
Multi-function Device, laser				
Off	3.12	0	4.7	3
On	49.68	5	175	4
Night Light, interior				
Off	0.05	0	0.34	10
On	4.47	0	27.97	19
Ready	0.22	0	1.2	8
Phone, cordless				
Ready, handset	2.81	1.05	4.89	35
Ready, no handset	1.58	0.59	3.09	35
Active (talking)	1.9	0.59	3.38	33
Off	0.98	0.54	1.8	10
Phone, cordless with answering machine				
Ready, handset	4	2.15	7.4	20
Ready, no handset	2.82	1.72	4.7	20
Active (talking)	3.53	2.2	6.5	21
Off	2.92	0.9	7.4	11
Power Tool, cordless				
Ready, charged	8.34	1.82	14	5
Active	29.53	1.39	66	16
Ready	1.74	0	4.7	23
Printer, inkjet				
Off	1.26	0	4	25
On	4.93	1.81	22	25
Printer, laser				

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Off	1.58	0	4.5	7
On	131.07	1.7	481.9	5
Range, gas				
Ready	1.13	0.7	1.7	4
Scanner, flatbed				
Off	2.48	0.27	8.2	6
On	9.6	1.71	15.6	10
Security Systems, home				
Ready	2.7	2.7	2.7	1
Set-top Box, DVR				
On, no recording	37.64	25.95	49.2	4
On, recording	29.29	27.27	31.3	2
Off	36.68	23.3	48.6	4
Set-top Box, digital cable with DVR				
Not recording, TV off	44.63	44.38	44.87	2
Not recording, TV on	44.4	44.2	44.6	2
Off by remote	43.46	43.3	43.61	2
Set-top Box, digital cable				
On, TV off	24.65	14.2	74.74	18
On, TV on	29.64	14.1	102.23	18
Off by remote	17.83	13.24	30.6	14
Off by switch	17.5	13.7	26.3	16
Set-top Box, satellite with DVR				
Not recording, TV off	28.35	25.8	30.9	2
Not recording, TV on	31.37	24.2	36.3	3
Off by remote	27.8	22	33.6	2
Set-top Box, satellite				

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On, TV off	15.95	7.69	33.2	33
On, TV on	16.15	7.69	33.2	33
Off by remote	15.66	6.58	33.05	25
Off by switch	15.47	6.58	32.7	31
Speakers, computer				
On, no sound	4.12	0.69	9.84	21
Off	1.79	0	5.6	19
Stereo, portable				
CD, not playing	4.11	1.29	6.83	15
Cassette, not playing	2.42	1.16	5.92	13
CD playing	6.8	3.96	9.2	15
Off	1.66	0.7	5.44	19
Radio playing	3.3	1.36	8.25	20
Television, CRT				
Off by remote	3.06	0.3	10.34	38
Off by switch	2.88	0	16.1	58
Television, rear projection				
On	186.09	186.09	186.09	1
Off by remote	6.97	0.2	48.5	16
Off by switch	6.6	0.2	48.5	15
Timer, irrigation				
Off	2.75	1.5	5.9	14
Ready	2.84	1.5	5.9	16
Tuner, AM/FM				
On, not playing	9.48	5.08	16.4	3
On, playing	9.92	5.07	17.7	3
Off	1.12	0	3.37	3

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Amplifier				
On, not playing	33.99	21.4	70.93	6
On, playing	39.16	21.11	69.3	6
Off	0.27	0	1.8	7
Audio Minisystem				
CD, not playing	13.99	1.67	36.95	28
Cassette, not playing	13.85	1.67	33.14	24
CD playing	19.09	5.2	41.2	24
Off	8.32	0.3	24.58	27
Radio playing	14.41	2.98	38	28
CD Player				
On, not playing	8.62	4	25.7	7
On, playing	9.91	5.8	25.6	7
Off	5.04	2	18.4	7
Caller ID Unit				
Ready	1.27	1.27	1.27	1
Cassette Deck				
On, not playing	4.53	4.36	4.7	2
On, playing	5.72	5.2	6.25	2
Off	0.54	0	1.08	2
Clock				
On	1.74	0.99	3.61	21
Radio playing	2.95	1.7	4.2	2
Coffee Maker				
Off	1.14	0	2.7	12
Copier				
Off	1.49	0	2.97	2

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On	9.63	3.6	14	3
DVD Recorder				
Off	0.75	0	1.5	2
DVD Player				
On, not playing	7.54	0.24	12.7	33
On, playing	9.91	5.28	17.17	33
Off	1.55	0	10.58	33
DVD/VCR				
On, not playing	13.51	8.48	20.5	21
On, playing	15.33	9.43	22.37	19
Off	5.04	0.09	12.7	21
Game Console				
Active	26.98	5.4	67.68	24
Off	1.01	0	2.13	26
Ready	23.34	2.12	63.74	24
Garage Door Opener				
Ready	4.48	1.8	7.3	34
Low-voltage Landscape				
Ready	1.13	1.1	1.17	2
Microwave Ovens				
Ready, door closed	3.08	1.4	4.9	18
Ready, door open	25.79	1.6	39	17
Cooking	1433.	966.2	1723.	18
Musical Instruments				
Off	2.82	1.2	4.2	9
Receiver (audio)				
On, not playing	37.61	17.1	65.2	18

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Off	2.92	0	19.7	18
Subwoofer				
On, not playing	10.7	5.8	20.6	7
On, playing	12.42	5.9	20.6	6
Surge Protector				
Off	1.05	0	6.3	6
On	0.8	0	6.92	43
Telephone Answering Device				
Off	2.01	1.31	2.55	7
Ready	2.25	1.42	2.83	7
Television/VCR				
Off by remote	5.15	2.15	13.3	6
Off by switch	5.99	2.15	13.11	7
Turntable (audio)				
On, not playing	6.01	1.72	12.8	3
Off	0.2	0	0.6	3
VCR				
On, not playing	7.77	3.8	11.62	14
Off	4.68071	1.2	9.9	14

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Appendix D. Sample Energy Policy

EXAMPLE XXXXXX Public Schools Energy Policy

Purpose

XXXXXXXXXXXX Public Schools is responsible for the efficient use of its natural resources and shall provide leadership in developing a realistic energy use ethic. It is the goal of the district to increase the awareness of energy use and the associated costs in the operation of its facilities and to conserve on energy while maintaining indoor air quality and a comfortable learning, working environment for students and staff. The district is committed to the ongoing effort of improving the energy efficiency of all buildings as well as reducing the use of our natural resources.

Every employee, student, school volunteer and XXXXXXXXXX Public Schools contractor is expected to contribute to energy efficiency. Implementation of this policy shall be the joint responsibility of the School Board, superintendent, administration, teachers, students, staff, contractors and volunteers. Each employee, student, volunteer and contractor shall actively participate in the districts energy conservation and efficiency program. The district administration shall assist the facilities department in implementing, directing, monitoring, evaluating and reporting district energy conservation and efficiency. The facilities department shall maintain accurate records of energy consumption, associated costs, and shall provide information on the goals and progress of the district's energy conservation program.

The district shall setup an energy committee consisting of several employee groups, contractors and student organization representatives. This group will help with coming up with suggestions on energy savings throughout the district and passing on information on energy conservation efforts. They will be the eyes and ears of the districts energy program and will have access to all district energy usage information. The facilities department will report this information to the energy committee during regular scheduled meetings.

General Guidelines

Lighting Standards

- Lights will be on only when a room or space is occupied.
- Whenever possible and available only the banks of lights needed should be utilized
- Custodians should only light their immediate work area and turn off all other lighting in the building that is not needed for activities as soon as the building is vacated.
- Daylight should be used whenever possible. If day lighting is adequate for a specific task, then artificial light for the task should be eliminated
- Spaces will be lit in accordance with generally accepted industry lighting standards using the Illuminating Engineering Society lighting handbook as a guide.
- All individuals are responsible for turning off lights in a space when they are the last to exit.
- All buildings and areas will be minimally lit by required emergency lighting or safety lighting when not occupied.

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- Exterior lights are to remain off during daylight hours, if on, report through the maintenance work order system. In addition, they are to remain off at night except during periods when egress lighting is required for occupied spaces. Any additional lighting needed should be requested through the maintenance work order system to the building manager with dates and times.
- Lighting schedules will be set in accordance with the following table as a guide for start-up and shutdown of buildings:

Area	Time On	Time Off
Elementary Buildings	8:00 a.m.	4:00 p.m.
Middle Schools	7:00 a.m.	4:00 p.m.
High Schools	6:45 a.m.	5:00 p.m.
Administration	7:30 a.m.	5:30 p.m.

Heating, Ventilation, Cooling Guide

- Windows and doors are to remain closed while mechanical heating or cooling equipment is in operation
- Heating, cooling and ventilation systems will be set to occupied mode no sooner than 15 minutes prior to required staff reporting time. If this does not allow for required heating levels due to extreme low outdoor temperatures, these times may need to be adjusted slightly.
- Heating, cooling and ventilation systems will be in unoccupied mode no later than 15 minutes after student dismissal times, this may be adjusted during teaching staff required times in severe outdoor weather conditions.
- Exhaust should be turned on as close as possible to the time school starts and shutdown at dismissal time. This may be adjusted for kitchen and locker room areas to when the first group arrives and last group exits the area.
- Vents should be run in conjunction with the exhaust times to ensure proper air exchange.
- Unless otherwise stipulated, after hours use of buildings will be set in unoccupied mode. Any request to override an area or building should be made by a building administrator.
- Occupied hours are considered those where a majority of building staff is required to be in the building or when groups of students or staff are in attendance in portions of the building.
- Building rentals will be in unoccupied mode unless requested. Addition rental fees will be required for occupied heating and cooling request.
- Space heaters may only be used when a building's heating system cannot deliver space temperatures within district ranges. Temperature data-loggers will be used to verify the need for a space heater. The maintenance work order system should be used for this request.
- Variations in temperatures should be reported to the maintenance department through the work order system.
- Heating and cooling systems will be set to the unoccupied mode during breaks. Individual buildings or areas may be required to run HVAC systems during cleaning or high humidity times to ensure indoor air quality.

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- Adjustments and calibrations of thermostats shall be done by School Facilities staff or contracted HVAC personnel. If a staff member feels adjustments need to be made a work order must be filled out and routed through the proper channels.
- Space temperatures will be set in accordance with the following table:

Area	Occupied Set Point		Unoccupied Set Points	
	Heating	Cooling	Heating	Cooling
Classrooms, offices, work rooms, libraries, conference rooms, staff lounges, locker rooms	68-70°	74-76°	55°	90°
Cafeterias, multi-purpose rooms, shops, industrial arts, gyms, kitchens, restrooms, hallways	68°	76-80°	55°	90°
Storage rooms	62°	80°	55°	90°
Computer labs	68-70°	74-76°	55°	85°

Vehicles

Recognizing that vehicle exhaust emissions may be potentially harmful to the health and safety of adults and school children, all vehicles are to limit engine idling time to the minimum possible. Further, when school buses are at a school site and waiting to load or unload students, the engine is to be immediately turned off and restarted only when ready to leave the site. Exceptions may be necessary for some special education buses operating lifts and other specialized equipment and in conditions when insufficient warmth for students cannot be achieved without the vehicle engine operating or when engine operation is necessary to prevent the buildup of humidity inside the bus. These exceptions apply only to school buses and not to other district vehicles.

Plug Loads

- No personal appliances will be allowed in classrooms or office areas without prior approval. Request should be sent through the maintenance work order system which will be routed through the proper chain. Actual energy cost for the device may be charged to the individual requesting to use the equipment. A watts-up energy monitor will be used to determine energy use and cost. A report will be given to the individual.
- Electrical equipment should be turned off at the end of the day by the person responsible for the equipment.
- During winter and spring break all unnecessary plug loads (projectors, document cameras, TVs, DVD players, etc.) should be unplugged from the outlet.
- During summer break all plug loads should be unplugged by the staff member responsible for the room or area. A reminder will be sent out in June for more guidance.
- Food service will consolidate frozen foods as much as possible over summer break.

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- Vending machines will be equipped with vendor misers or other energy saving equipment. These devices will be purchased with proceeds from vending machine profits. If this is not practical, actual energy cost of the vending machine will be compensated out of proceeds from vending machines.
- All message boards will be shut down at the end of the school day with the exception of large school events such as parent, teacher conferences.

Technology

- Network switches, access points, and other networking devices will be monitored with available network energy management software to provide information about current energy usage and potential energy savings. Network equipment will be shutdown automatically when it is possible to do so without causing a negative impact on network usage.
- Phones across the District are set to go into an energy saver (sleep) state and automatically wake up on a schedule that will provide energy savings without negatively impacting communications. The schedule is currently set for the phones to go to sleep on Monday through Friday at 6:00 PM and will wake automatically at 7:30 AM. On Saturday and Sunday the phones will not wake automatically but stay in sleep mode. Phone equipment will also be monitored with network energy management software to provide information about current energy usage and potential energy savings.
- As the District purchases power strips for use in the district, preference should be given to power strips that have a dedicated computer port which senses when the computer is turned off and then automatically turns off power to the other ports in order to reduce the consumption of power by “vampire” devices.
- Wherever possible networked general use computers will be automatically shut down after hours. General use computers are those client use computers that are not assigned on a 1:1 basis. These computers include, but are not limited to, lab computers, mobile cart computers, library patron computers, and classroom computers.
- Computers not listed as general use should be turned off at the end of the day when applicable. Staff should shutdown laptops/desktops at the end of the work day. For computers where this isn't possible/practical, monitors and peripherals should be turned off at the end of the day.
- Single function printers should be turned off at the end of the day by the last person to use them. Multi-function printers/copiers need to be left on but will go into sleep mode.
- Digital projectors must be shut off at the end of the day. During the day, when not in use, they may be left on but should be AV Muted so that it isn't consuming as much energy. The District will look at the ability to remotely turn off projectors and energy star compliance whenever purchasing them.
- When cooling rooms in the District that need to be cooled year round, e.g. server rooms, using outside air to cool the room utilizing air economizer technology should be considered. If possible pumping displaced heat into the rest of the building to offset heating costs during the winter months would help as well.

HELPING MICHIGAN BUSINESSES SAVE ENERGY. THAT'S OUR PROMISE.



Water Conservation

- All water leaks should be reported through the maintenance work order system, no matter how small.
- Water aerators should be used and in working order on all faucets.
- Timers and automatic shut-off devices should be used on all showers and faucets. Report any timer that runs an excessive amount.
- When purchasing replacement plumbing fixtures purchase low flow fixtures only.
- Time irrigation for the early morning or evening when evaporation is lowest.
- Make sure irrigation equipment applies water uniformly.

A mini refrigerator can max out your utility bill

Consumer Reports News: March 21, 2013 12:08 PM

Refrigerators



Compact refrigerators are designed to use space efficiently—they fit in a home office, master bedroom, bar or dorm room. But they aren't as efficient at using energy. In [our latest refrigerator tests](#), some mini refrigerators used as much energy as a full-sized refrigerator, and one used more energy than several of the largest refrigerators we've tested. Stricter federal energy standards, slated to go into effect in September 2014, should help. But if you don't want to wait that long, our tests found some more efficient models as well as ways to keep energy costs of current models down.

Unlike full-sized refrigerators, which have an external condenser and fan, compact refrigerators typically use their exterior walls to dissipate heat. As a result, they tend to be much more sensitive to room temperature than full size models. The warmer the room, the more energy they use.

Some mini models are more sensitive than others. The [Magic Chef MCBR445W](#), for example, has a claimed capacity of 4.4 cubic feet, along with glass shelves, a can dispenser, and other useful features. It costs \$180 but could cost you \$80 per year to run if the refrigerator temperature is set to the recommended 37 degrees (based on a national average of 11.8 cents per kilowatt hour). That's more than some 31 cubic foot models. The two-door [Avanti RA3100WT](#), \$200, with 3.1 claimed cubic feet could cost you about \$50 per year to run. A better option is our top-rated compact, the [Frigidaire FFPH44M4L\[M\]](#), \$220. This 4.4 claimed-cubic-foot fridge costs about \$27 a year to operate, [according to our tests](#).

These annual costs are different from what you'll see on the models' yellow EnergyGuide label because the Department of Energy's efficiency tests are run under different conditions than the [refrigerator tests at Consumer Reports](#). Based on our limited tests, your energy use could be higher or lower than what the label says depending on how you use the unit. A mini refrigerator will use more energy if placed inside a cabinet or other enclosure, or if squeezed into a corner and surrounded by other things. This could trap

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heat and drive up energy costs. Try to keep any compact refrigerator in a cooler spot away from heating registers or radiators.

By way of comparison, our top-rated French-door refrigerator, the [LG LFX28991\[ST\]](#), \$2,700, has a claimed capacity of 27.6 cubic feet and costs \$54 per year to operate. A top-freezer model that we named a CR Best Buy, the [Frigidaire Gallery FGUI2149L\[P\]](#), \$850, has a claimed capacity of 20.6 cubic feet and costs \$47 per year to run. If you need a second refrigerator and have the space, you might want to consider a larger energy miser over a small energy hog.

—*Daniel DiClerico*

HELPING MICHIGAN BUSINESSES SAVE ENERGY.
 THAT'S OUR PROMISE.



Appendix E. Energy Unit Conversions

A common measurement of energy is the British Thermal Unit or Btu, defined as the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit, and its multiples, the KBtu and the MMBtu.

Some of the conversion factors are as follows:

<u>Energy Unit</u>	<u>Energy Equivalent</u>
1-kWh	3,413-Btu
1-Watt	3.413-Btu/hr
1-cu. ft. (cf, ft ³) natural gas	1,028-Btu*
1-therm natural gas	97.3 cu ft.*
1-therm natural gas	100,000-Btu
1-Mcf natural gas	1,028,000-Btu*
1-Mcf natural gas	10-ccf
1-MBH	1,000-Btu/hr
1-MMBtu	1,000,000-Btu
1-MBtu	1,000,000-Btu**
1-gallon No. 2 oil (diesel)	140,000-Btu*
1-gallon No. 6 oil	150,000-Btu*
1-gallon gasoline	130,000-Btu*
1-gallon propane	92,000-Btu*
1-ton coal	20,000,000-Btu*
1-hp hour (electric)	2,545-Btu
1-hp hour (boiler)	33,500-Btu

Note:

* Varies with supplier, Consumer Energy uses 1,028-Btu/cf for natural gas

** Less commonly used conversion (metric), example: LEED® definition



FACILITIES INFRASTRUCTURE NEEDS ASSESSMENT

APPENDIX C

May 13, 2019



Ed Trek Supporting Detail

4610 Spahr Avenue
Holt, MI 48842

14,000 Square Feet
Building Area

1944
Year Built

Surveying: Quantifying and Grading

The Physical Assessment looks at the condition of the building and its components and evaluates where a component is in its anticipated life-cycle. The team anticipated the cost of similar, in-kind replacements for the various building systems. The results describe what it would cost to bring the building back an ideal condition with ideal maintenance over the years. Building additions or other improvements to anticipate changes in building program are part of a future study.

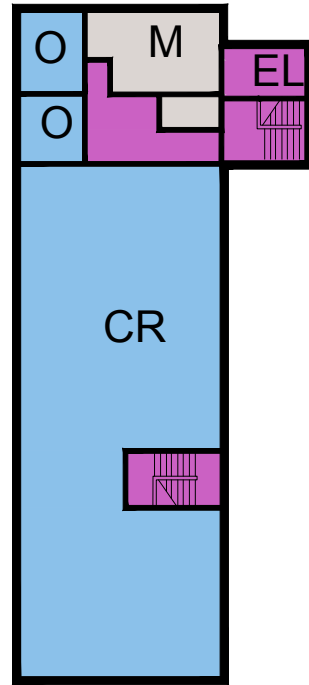
The team of architects and engineers surveyed the Ed Trek according to the following rating system:

Immediate	Immediate need. Prioritize this item in a 1-3 year replacement plan.
1-3 Years	Include this item in a 1-3 year replacement plan.
4-6 Years	Include this item within a 4-6 year replacement plan.
7-9 Years	Include this item within a 7-9 year replacement plan.

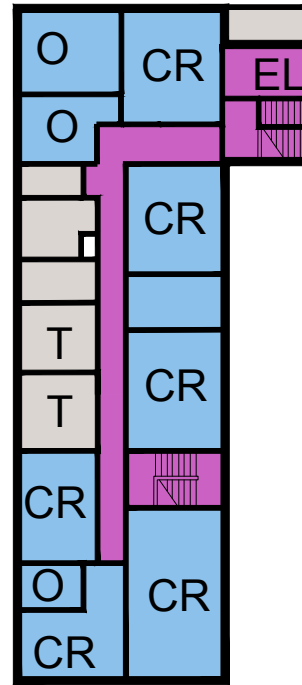
Unit prices provide a 2018 budget value for each component. Components are grouped together in each category and summed in 4 buckets by budget horizon. The above categories consider only the building's physical condition without regard to its use. Additional categories identify upgrades to meet program objectives, upgrades to comply with current codes and classroom furniture for the building specific to its use as a K-12 facility. Additional updates will be identified with the school administration during a future conceptual design stage.

Unit prices include Michigan 2018 trade costs plus allowances for General Conditions, Design and Project Contingencies, Testing, Permits, A/E and CM Fees and General Liability Coverage. Soft costs amount to a 38% mark-up on trade costs.

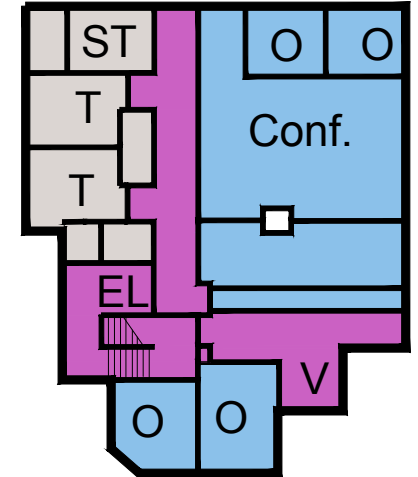
Floor Plan



Second Floor



Basement



First Floor

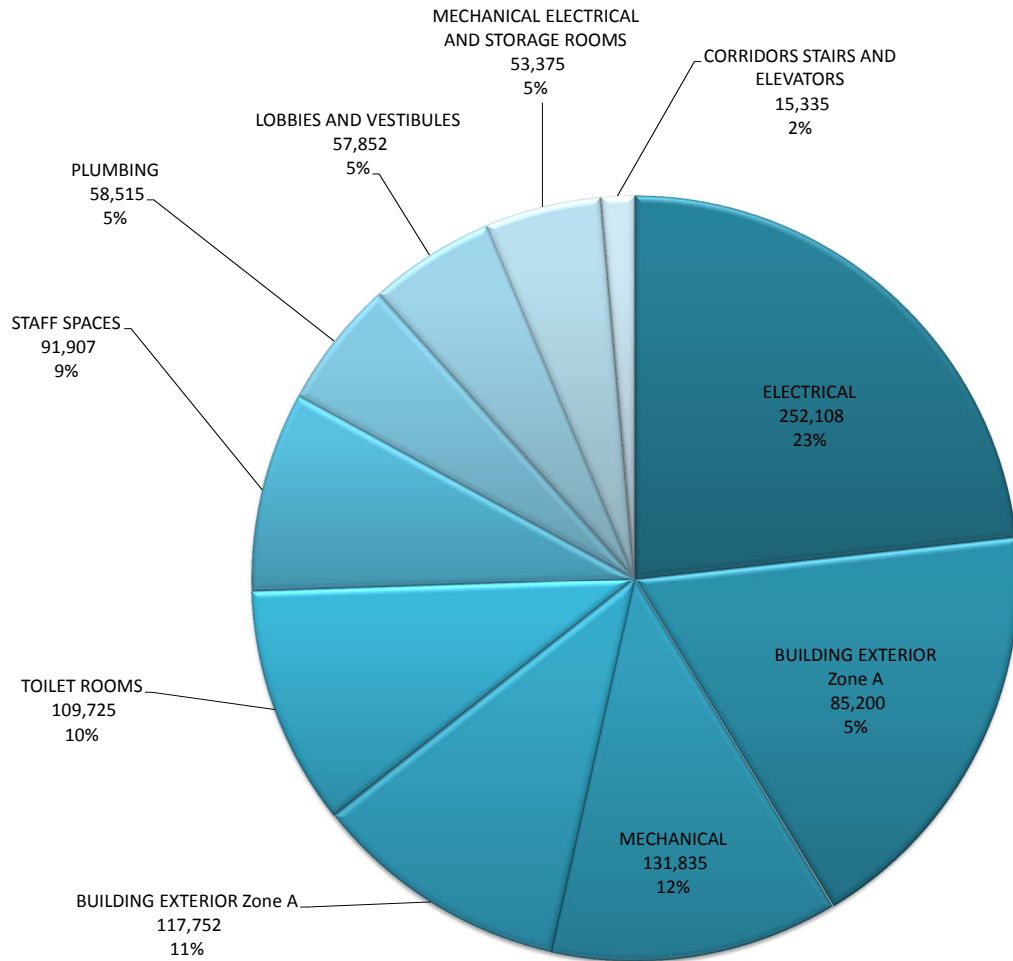
■	EXISTING
■	CIRCULATION
■	SUPPORT



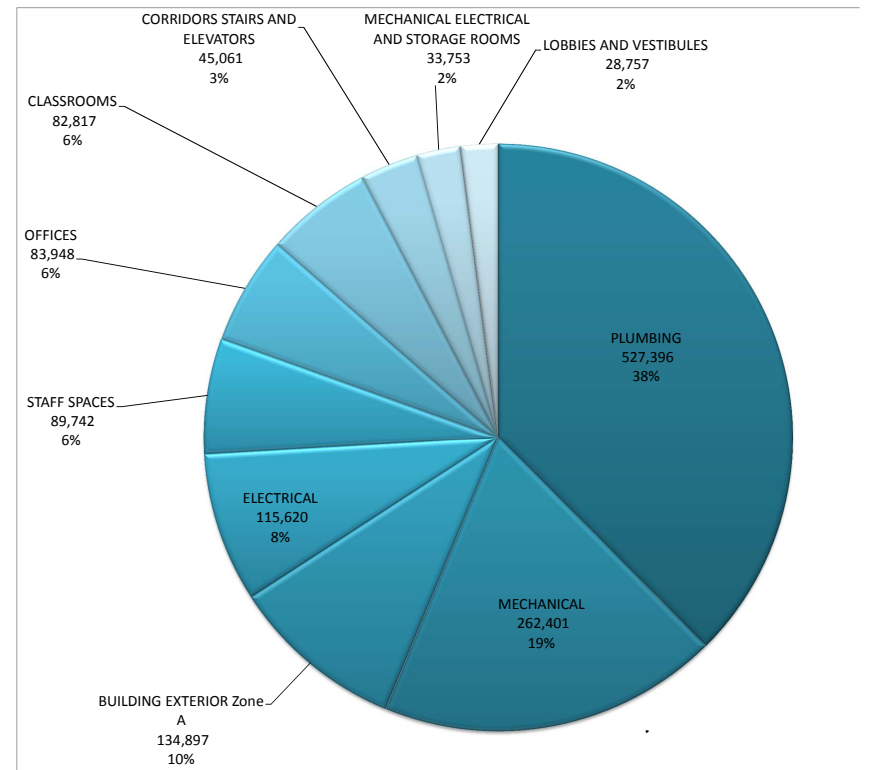
Site Plan



Dashboard Summary - Values by Category



Within 3 Years



4 - 9 Years

Dashboard Summary - Values by Category

Ed. Trek Building	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	Totals by Category
CATEGORY					
BUILDING EXTERIOR Zone A	\$ -	\$ 117,752	\$ 126,377	\$ 8,520	\$ 252,649
LOBBIES AND VESTIBULES	\$ 57,852	\$ -	\$ 8,875	\$ 19,882	\$ 86,608
CORRIDORS STAIRS AND ELEVATORS	\$ 14,128	\$ 1,207	\$ 3,621	\$ 41,440	\$ 60,396
TOILET ROOMS	\$ 73,038	\$ 36,688	\$ -	\$ -	\$ 109,725
CLASSROOMS	\$ 196,498	\$ -	\$ 14,799	\$ 68,018	\$ 279,315
OFFICES	\$ 14,456	\$ 511	\$ 17,229	\$ 66,719	\$ 98,915
STAFF SPACES	\$ 91,651	\$ 256	\$ 24,282	\$ 65,460	\$ 181,649
MECHANICAL ELECTRICAL AND STORAGE ROOMS	\$ 52,506	\$ 869	\$ 5,961	\$ 27,792	\$ 87,128
MECHANICAL	\$ -	\$ 131,835	\$ 262,401	\$ -	\$ 394,236
ELECTRICAL	\$ 212,628	\$ 39,480	\$ 7,050	\$ 108,570	\$ 367,728
PLUMBING	\$ -	\$ 58,515	\$ 519,148	\$ 8,249	\$ 585,911
ASBESTOS REMOVAL	\$ -	\$ 70,000	\$ -	\$ -	\$ 70,000
TECHNOLOGY	\$ -	\$ 17,597	\$ -	\$ 39,339	\$ 56,936
Totals by Year	\$ 712,756	\$ 474,710	\$ 989,743	\$ 453,987	\$ 2,631,196

Replace by 2020 \$ 1,187,466

TOTAL OF ALL CATEGORIES \$ 2,631,196

2019	\$ 741,266	493,698	1,029,333	472,147	\$ 2,736,444	104%
2020	\$ 769,777	512,686	1,068,922	490,306	\$ 2,841,692	108%
2021	\$ 798,287	531,675	1,108,512	508,466	\$ 2,946,940	112%
2022	\$ 826,797	550,663	1,148,102	526,625	\$ 3,052,187	116%
2023	\$ 855,307	569,651	1,187,691	544,785	\$ 3,157,435	120%
2024	\$ 883,818	588,640	1,227,281	562,944	\$ 3,262,683	124%
2025	\$ 912,328	607,628	1,266,871	581,104	\$ 3,367,931	128%
2026	\$ 940,838	626,617	1,306,461	599,263	\$ 3,473,179	132%
2027	\$ 969,348	645,605	1,346,050	617,423	\$ 3,578,427	136%
2028	\$ 997,859	664,593	1,385,640	635,582	\$ 3,683,674	140%

Immediate

Immediate need. Prioritize this item in a 1-3 year replacement plan.

1-3 Years

Include this item in a 1-3 year replacement plan.

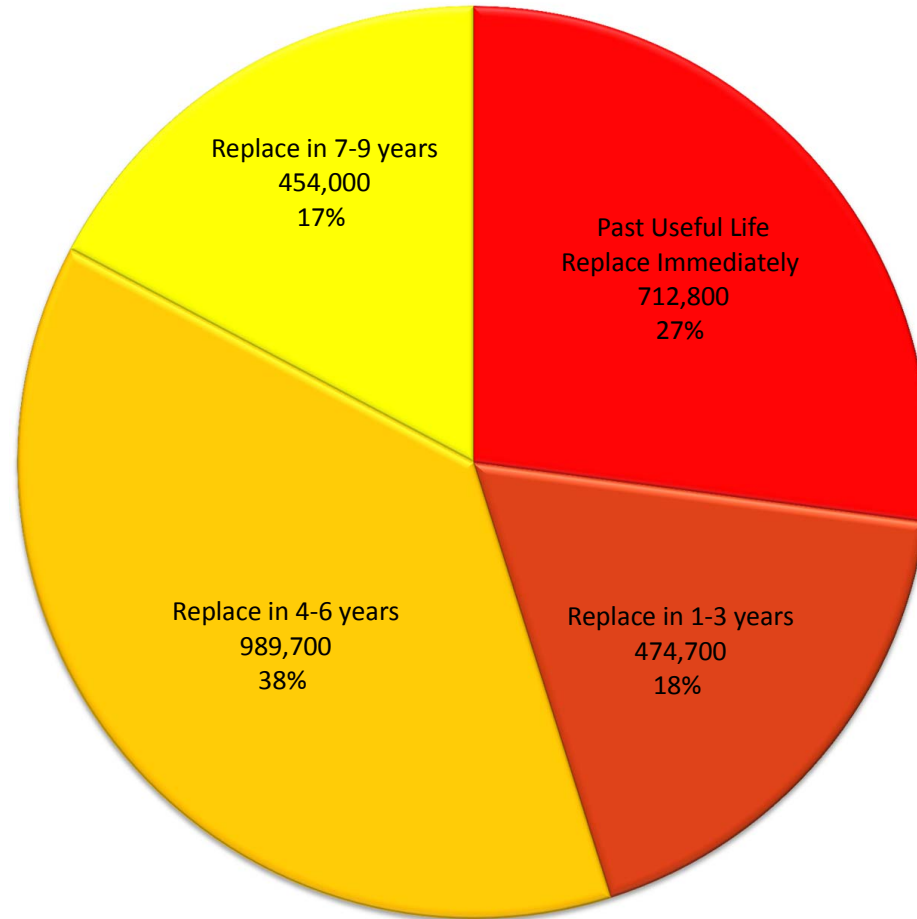
4-6 Years

Include this item within a 4-6 year replacement plan.

7-9 Years

Include this item within a 7-9 year replacement plan.

Summary Value by Years - All Buildings



Building Exterior Zone A

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 years)
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BUILDING EXTERIOR Zone A

Roof A:			0%	100%	0%	0%	Shingle	6,220	/SF	17.10	\$ 106,362	\$ -
Roof B:			0%	0%	100%	0%	EPDM	-	/SF	18.50	\$ -	\$ 31,450
Roof C:			0%	0%	0%	0%	Skylight	-	/SF	213.00	\$ -	\$ -
Roof Edge:			0%	0%	0%	0%	Metal Coping:	-	/LF	24.20	\$ -	\$ -
Window A:			0%	0%	100%	0%	Aluminum Windows	-	/SF	92.30	\$ -	\$ 37,843
Window B:			0%	0%	100%	0%	Curtain Wall	-	/SF	142.00	\$ -	\$ 44,304
Window C:			0%	0%	0%	0%	Aluminum Windows	-	/SF	92.30	\$ -	\$ -
Entry Doors:			0%	0%	60%	40%	Entry doors:	-	/EA	4,260.00	\$ -	\$ 21,300
Service Door:			0%	0%	0%	0%	Service Doors:	-	/EA	5,680.00	\$ -	\$ -
O H Door:			0%	0%	0%	0%	Overhead Doors:	-	/EA	8,520.00	\$ -	\$ -
Walls:			0%	1%	0%	0%	Wall Rebuild:	100	/SF	28.40	\$ 2,840	\$ -
Soffits:			0%	100%	0%	0%	Plaster/EIFS Soffits	500	/SF	17.10	\$ 8,550	\$ -
Canopies:			0%	0%	0%	0%	Canopies	-	/SF	49.70	\$ -	\$ -
BUILDING EXTERIOR Zone A											\$ 117,752	\$ 134,897

SUMMARY NOTES

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Lobbies and Vestibules

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 years)
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LOBBIES AND VESTIBULES

Floor/base Type A	CPT		50%	0%	50%	0%	Carpet	230	/SF	7.10	\$ 1,633	\$ 1,633
Floor/base Type B	CT		0%	0%	100%	0%	Ceramic Tile	-	/SF	21.30	\$ -	\$ 2,130
Walls / paint	GYP		33%	0%	0%	67%	Gyp. Bd.	466	/SF	12.80	\$ 5,965	\$ 11,930
CeilingType A	GB		0%	0%	0%	100%	Gyp Bd.	-	/SF	14.20	\$ -	\$ 7,952
CeilingType B	ACT		0%	0%	0%	0%	Acoust. Ceiling & Grid	-	/SF	5.70	\$ -	\$ -
Casework			0%	0%	0%	0%	Casework - Base/Wall	-	/LF	781.00	\$ -	\$ -
Display Board			0%	0%	0%	0%	Display Board	-	/LF	56.80	\$ -	\$ -
Window Treatment			100%	0%	0%	0%	Window Treatment	3	/LF	42.60	\$ 128	\$ -
Doors			33%	0%	67%	0%	Door (\$/ Leaf)	1	EA	2,556.00	\$ 2,556	\$ 5,112
Space Lacks 2nd Means of egress							2nd means of egress	1	EA	7,100.00	\$ 7,100	\$ -
Space Lacks Corridor Separations							Corridor separation	1	EA	4,970.00	\$ 4,970	\$ -
Space Lacks Barrier Free Access							Barrier free access	-	EA	4,260.00	\$ -	\$ -
Secure Entry							Create Secure Entry	1	Allow	35,500.00	\$ 35,500	\$ -
LOBBIES AND VESTIBULES											\$ 57,852	\$ 28,757

SUMMARY NOTES

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Corridors Stairs and Elevators

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 Years)
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CORRIDORS STAIRS AND ELEVATORS

Floor/base Type A	CPT	0%	25%	75%	0%	Carpet	170	/SF	7.10	\$	1,207	\$	3,621	
Floor/base Type B	VCT	0%	0%	0%	0%	Vinyl Tile	-	/SF	5.70	\$	-	\$	-	
Walls / paint	GYP	25%	0%	0%	75%	Gyp. Bd.	706	/SF	12.80	\$	9,030	\$	27,091	
CeilingType A	ACT	0%	0%	0%	100%	Acoust. Ceiling & Grid	-	/SF	5.70	\$	-	\$	1,995	
CeilingType B	GB	0%	0%	0%	100%	Gyp Bd.	-	/SF	14.20	\$	-	\$	4,686	
Casework		0%	0%	0%	0%	Casework - Base/Wall	-	/LF	781.00	\$	-	\$	-	
Display Board		0%	0%	0%	0%	Display Board	-	/LF	56.80	\$	-	\$	-	
Window Treatment		100%	0%	0%	0%	Window Treatment	3	/LF	42.60	\$	128	\$	-	
Doors		0%	0%	0%	100%	Door (\$/ Leaf)	-	EA	2,556.00	\$	-	\$	7,668	
Space Lacks 2nd Means of egress						2nd means of egress	-	EA	7,100.00	\$	-	\$	-	
Space Lacks Corridor Separations						Corridor separation	1	EA	4,970.00	\$	4,970	\$	-	
Space Lacks Barrier Free Access						Barrier free access	-	EA	4,260.00	\$	-	\$	-	
										\$	-	\$	-	
CORRIDORS STAIRS AND ELEVATORS											\$	15,335	\$	45,061

SUMMARY NOTES

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Toilet Rooms

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 years)
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TOILET ROOMS

Floor/base Type A	SV		0%	100%	0%	0%	Sheet Vinyl(Linoleum/Sheet Rubber)	380	/SF	15.70	\$ 5,966	\$ -
Floor/base Type B	CT		100%	0%	0%	0%	Ceramic Tile	320	/SF	21.30	\$ 6,816	\$ -
Walls / paint	CT		50%	50%	0%	0%	Ceramic Tile	1,938	/SF	21.30	\$ 41,279	\$ -
CeilingType A	GB		50%	50%	0%	0%	Gyp Bd.	700	/SF	14.20	\$ 9,940	\$ -
CeilingType B	ACT		0%	0%	0%	0%	Acoust. Ceiling & Grid	-	/SF	5.70	\$ -	\$ -
Casework			0%	0%	0%	0%	Casework - Base/Wall	-	/LF	781.00	\$ -	\$ -
Toilet Partitions			0%	0%	0%	0%	Toilet Partitions	-	/LF	177.50	\$ -	\$ -
Toilet Accessories			0%	0%	0%	0%	Toilet Accessories	-	EA	2,414.00	\$ -	\$ -
Doors			50%	50%	0%	0%	Door (\$/ Leaf)	4	EA	2,556.00	\$ 10,224	\$ -
Space Lacks 2nd Means of egress							2nd means of egress	2	EA	7,100.00	\$ 14,200	\$ -
Space Lacks Corridor Separations							Corridor separation	2	EA	4,970.00	\$ 9,940	\$ -
Space Lacks Barrier Free Access							Barrier free access	2	EA	4,260.00	\$ 8,520	\$ -
Corridor Doors Not Lockable from the Inside							Secure corridor doors	4	EA	710.00	\$ 2,840	\$ -
TOILET ROOMS											\$ 109,725	\$ -

SUMMARY NOTES

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Classrooms

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 Years)
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CLASSROOMS

Floor/base Type A	CPT	86%	0%	14%	0%	Carpet	2,366	/SF	7.10	\$	16,797	\$	2,799	
Floor/base Type B	VCT	0%	0%	0%	0%	Vinyl Tile	-	/SF	5.70	\$	-	\$	-	
Walls / paint	GYP	86%	0%	14%	0%	Gyp. Bd.	5,625	/SF	12.80	\$	71,995	\$	11,999	
CeilingType A	GB	0%	0%	0%	100%	Gyp Bd.	-	/SF	14.20	\$	-	\$	68,018	
CeilingType B	ACT	0%	0%	0%	0%	Acoust. Ceiling & Grid	-	/SF	5.70	\$	-	\$	-	
Casework		100%	0%	0%	0%	Casework - Base/Wall	16	/LF	781.00	\$	12,496	\$	-	
Display Board		0%	0%	0%	0%	Display Board	-	/LF	56.80	\$	-	\$	-	
Window Treatment		100%	0%	0%	0%	Window Treatment	75	/LF	42.60	\$	3,195	\$	-	
Doors		100%	0%	0%	0%	Door (\$/ Leaf)	6	EA	2,556.00	\$	15,336	\$	-	
Space Lacks 2nd Means of egress						2nd means of egress	6	EA	7,100.00	\$	42,600	\$	-	
Space Lacks Corridor Separations						Corridor separation	6	EA	4,970.00	\$	29,820	\$	-	
Space Lacks Barrier Free Access						Barrier free access	-	EA	4,260.00	\$	-	\$	-	
Corridor Doors Not Lockable from the Inside						Secure corridor doors	6	EA	710.00	\$	4,260	\$	-	
CLASSROOMS											\$	192,238	\$	82,817

SUMMARY NOTES

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Offices

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 years)
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OFFICES

Floor/base Type A	CPT		0%	0%	67%	33%	Carpet	-	/SF	7.10	\$ -	\$ 7,100	
Floor/base Type B	VCT		0%	0%	0%	0%	Vinyl Tile	-	/SF	5.70	\$ -	\$ -	
Walls / paint	GYP		0%	0%	0%	100%	Gyp. Bd.	-	/SF	12.80	\$ -	\$ 34,816	
CeilingType A	GB		0%	0%	0%	100%	Gyp Bd.	-	/SF	14.20	\$ -	\$ 14,200	
CeilingType B	ACT		0%	0%	0%	0%	Acoust. Ceiling & Grid	-	/SF	5.70	\$ -	\$ -	
Casework			0%	0%	100%	0%	Casework - Base/Wall	-	/LF	781.00	\$ -	\$ 12,496	
Display Board			0%	0%	0%	0%	Display Board	-	/LF	56.80	\$ -	\$ -	
Window Treatment			33%	67%	0%	0%	Window Treatment	18	/LF	42.60	\$ 767	\$ -	
Doors			0%	0%	0%	100%	Door (\$/ Leaf)	-	EA	2,556.00	\$ -	\$ 15,336	
Space Lacks 2nd Means of egress							2nd means of egress	-	EA	7,100.00	\$ -	\$ -	
Space Lacks Corridor Separations							Corridor separation	2	EA	4,970.00	\$ 9,940	\$ -	
Space Lacks Barrier Free Access							Barrier free access	-	EA	4,260.00	\$ -	\$ -	
Corridor Doors Not Lockable from the Inside							Secure corridor doors	6	EA	710.00	\$ 4,260	\$ -	
											OFFICES	\$ 14,967	\$ 83,948

SUMMARY NOTES

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Mechanical

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 years)
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MECHANICAL													
	Controls System			X			Replace with fully functioning DDC with BACNet/BMS capabilities	14,000	SF	\$ 2.82	\$ 39,480	\$ -	
	Temperature Controls Upgrade			X			Needs upgrading from Pnumatic to DDC	14,000	SF	\$ 2.82	\$ 39,480	\$ -	
	Classroom HVAC Systems			X			Unit vents look to be in poor condition - basement units flooded and may not work	3	EA	\$ 17,625.00	\$ 52,875	\$ -	
	Duct Furnaces w/ DX Cooling				X		Gas fired furnaces with DX cooling - look in good to fair condition - concern system is not running in vacant building	1	EA	\$ 20,163.00	\$ -	\$ 20,163	
	Cabinet Unite Heaters				X		Cabinet unit heaters look in fair to marginal condition - building heating working	2	EA	\$ 11,139.00	\$ -	\$ 22,278	
	Rooftop Units				X		Two rooftop units in fair to marginal condition - running to maintain minimum temperature- will need inspection and service since building has been vacated for some time	2	EA	\$ 100,110.00	\$ -	\$ 200,220	
	Boilers - Total Capacity						N/A		EA	\$ -	\$ -	\$ -	
	Boiler Pumps, VFDs, Tanks, Accessories						N/A		EA	\$ -	\$ -	\$ -	
	Boiler/HVAC Piping-Total						N/A		EA	\$ -	\$ -	\$ -	
	Water Treatment						N/A		EA	\$ -	\$ -	\$ -	
	Kitchen Hood/Exhaust						N/A		EA	\$ -	\$ -	\$ -	
	Restroom Exhaust				X		Equipment in fair condition - not running and will need service and maintenance due to vacant building	4	EA	\$ 4,935.00	\$ -	\$ 19,740	
											MECHANICAL	\$ 131,835	\$ 262,401

SUMMARY NOTES												

Electrical

Ed. Trek Building

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	COST (Spend within 3 yrs)	COST (Replace in 4-9 years)
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ELECTRICAL												
	Site Lighting Pole Lights/Pole Like Lighting		x				Replace with LED	4	EA	\$1,410.00	\$ 5,640	\$ -
	Exterior building Lighting		x				Replace with LED	3	EA	\$493.50	\$ 1,481	\$ -
	Exterior Lighting Controls		x				Replace with photocell	3	EA	\$70.50	\$ 212	\$ -
	Interior Lighting		x				Replace with LED	14,000	SF	\$8.46	\$ 118,440	\$ -
	Interior Lighting Controls			X			Replace with dimming & light harvesting controls	14,000	SF	\$2.82	\$ 39,480	\$ -
	Misc occupancy sensors		X				Need to be added	Cost incl. in Lighting & Control costs		\$ -	\$ -	\$ -
	Corridor Occupancy Sensors		X				Need to be added	Cost incl. in Lighting & Control costs		\$ -	\$ -	\$ -
	Gymnasium Lighting						N/A	Cost incl. in Lighting & Control costs		\$ -	\$ -	\$ -
	Emergency and Exit Lighting				X		N/A	Cost incl. in Lighting & Control costs		\$ -	\$ -	\$ -
	Public Address System					X	N/A	14,000	EA	\$3.53	\$ -	\$ 49,350
	Electrical Distribution								EA		\$ -	\$ -
	Distribution Panels and Panelboards						Replace old panels		EA		\$ -	\$ -
									EA		\$ -	\$ -
	Electrical Distribution		X					14,000	EA	\$6.20		
	Distribution Panels and Panelboards				X		Replace old panels	2	EA	\$3,525.00	\$ -	\$ 7,050
	Fire Alarm System					X		14,000	SF	\$4.23	\$ -	\$ 59,220
ELECTRICAL											\$ 165,252	\$ 115,620

SUMMARY NOTES												



FACILITIES INFRASTRUCTURE NEEDS ASSESSMENT

APPENDIX D

May 13, 2019

Department Wants and Needs

Holt HS & North Campus Athletics

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	Additional Wants	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	SUBTOTAL	COST (Spend within 3 yrs)
Priority	W=Want												
ATHLETIC DEPT.													
	Track Resurfacing		X					Polyurethane & recycled rubber	1	Ea	\$525,000.00	\$ 525,000	\$ 525,000
	Football Field Replacment to Turf				X			Synthetic Turf	1	Ea	\$430,000.00	\$ 430,000	\$ 430,000
	Gym Floor Resurfacing - North Campus		X						1	Ea	\$65,000.00	\$ 65,000	
	Pool Timing System Upgrade				X				1	Ea	\$22,000.00	\$ 22,000	
	Pole Vault Pit Replacment		X						1	Ea	\$5,000.00	\$ 5,000	
	Tennis Court Resurfacing			X					1	Ea	\$75,000.00	\$ 75,000	
	Pressbox Window Tinting		X					3M Film Tinting	250	SF	\$12.00	\$ 3,000	\$ 3,000
	Pressbox Interior Renovation			X					615	SF	\$33.00	\$ 20,295	\$ -
	New Wrestling Mats				X			New Mats	1	Ea	\$17,500.00	\$ 17,500	
	Wireless Scoreboards - Main Gym Upper	W					X		2	Ea	\$10,000.00	\$ 20,000	
	Auxillary Gym	W					X		1	Ea	\$2,500,000.00	\$ 2,500,000	
	Soccer Competition Field to Turf (1)	W					X	Synthetic Turf	1	Ea	\$400,000.00	\$ 400,000	\$ -
	Pressbox - Wifi & Electrical Outlet Add	W					X		1	Ea	\$10,000.00	\$ 10,000	
	Soccer Field Pressbox & Storage	W					X		1	Ea	\$117,000.00	\$ 117,000	\$ -
	Softball Concessions, Restrooms, Storage & Bleachers	W					X		1	Ea	\$234,000.00	\$ 234,000	\$ -
	Baseball Team Rooms, Restrooms, Storage & Bleachers	W					X		1	Ea	\$194,000.00	\$ 194,000	\$ -
	Football Field Lighting to LED	W					X	LED lighting	1	Ea		\$ -	
												\$ 4,637,795	\$ 958,000

Department Wants and Needs

Various Schools

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	Additional Wants	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	SUBTOTAL	COST (Spend within 3 yrs)
Location		W=Want											
Food Service Needs													
Holt HS - Central Kitchen													
	Increase gas pipe sizing				X				1	Ea	\$40,000.00	\$ 40,000	\$ 40,000
	Increase Electrical Panel Size (No Room Left)				X				2	Ea	\$3,500.00	\$ 7,000	\$ 7,000
	Added Office Space	W					X		1	Ea		\$ -	\$ -
	Added Storage for the District	W					X		1	Ea			
Holt HS - East & West Kitchens													
	Increase Electrical Panel Size (No Room Left)				X				4	Ea	\$3,500.00	\$ 14,000	\$ 14,000
	New MAU - East Kitchen			X					1	Ea	\$10,300.00	\$ 10,300	\$ -
	Floor Heaving Repair in walk-in		X						1	Ea	\$10,000.00	\$ 10,000	\$ -
Holt HS - North Campus													
	Redo Kitchen Layout								1	Ea		\$ -	\$ -
	New MAU								1	Ea		\$ -	\$ -
	Walk-in fridge	W					X		1	Ea	\$55,000.00	\$ 55,000	\$ -
Holt Jr. High													
	New Grease Interceptor			X					1	Ea	\$8,500.00	\$ 8,500	\$ -
	Enlarge Cafeteria Space	W					X		1	Ea		\$ -	\$ -
Hope													
	Ventilation For Snackbar		X						1	Ea	\$5,000.00	\$ 5,000	\$ 5,000
	Exterior Cooler/Freeer Combo	W			X				1	Ea	\$55,000.00	\$ 55,000	\$ 55,000
	Enlarge Kitchen Space	W					X		1	Ea		\$ -	\$ -

Department Wants and Needs

Various Schools

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	Additional Wants	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	SUBTOTAL	COST (Spend within 3 yrs)
Location		W=Want											
Food Service Needs													
Washington Woods													
	Replace flooring around new grease interceptor			X					1	Ea	\$2,500.00	\$ 2,500	\$ -
Elliot													
	Add MAU for ventilation		X						1	Ea	\$8,500.00		
	Expand Kitchen	W					X		1	Ea		\$ -	\$ -
	Exterior Cooler/Freeer Combo	W			X				1	Ea	\$55,000.00	\$ 55,000	\$ 55,000
Horizon													
	Exterior Cooler/Freeer Combo	W			X				1	Ea	\$55,000.00	\$ 55,000	\$ 55,000
Midway CC													
	New Grease Interceptor			X					1	Ea	\$8,500.00	\$ 8,500	\$ -
Sycamore													
	Add MAU for ventilation		X						1	Ea	\$8,500.00	\$ 8,500	\$ -
	Exterior Cooler/Freeer Combo	W			X				1	Ea	\$55,000.00	\$ 55,000	\$ 55,000
Wilcox													
	Needs more space	W					X		1	Ea		\$ -	\$ -
	Exterior Cooler/Freeer Combo	W			X				1	Ea	\$55,000.00	\$ 55,000	\$ 55,000
												\$ 444,300	\$ 341,000

Department Wants and Needs

Various Schools

ITEM NO.	CATEGORY / COMPONENT	ITEM NOTE	Past Useful Life Replace Immediately	Replace in 1-3 years	Replace in 4-6 years	Replace in 7-9 years	Additional Wants	MATERIAL	QUANTITY (Replace within 3 yrs)	UNIT	UNIT COST	SUBTOTAL	COST (Spend within 3 yrs)
Location		W=Want											
Theater Items													
Holt HS													
	Theater Lighting Upgrades		X						1	Ea	\$515,000.00	\$ 515,000	\$ -
	Theater Sound & System Upgrades		X						1	Ea	\$200,000.00	\$ 200,000	\$ -
	Blackbox Space Upgrades		X						1	Ea	\$50,000.00	\$ 50,000	\$ -
	Theater Dressing Room AC		X						2	Ea	\$10,000.00	\$ 20,000	\$ -
	Stage Flooring Resurfacing				X				5,500	SF	\$12.00	\$ 66,000	\$ 66,000
	Orchestra Pit Individual Decking Support	W					X		1	EA	\$5,000.00	\$ 5,000	\$ -
North Campus													
	Gym, Cafeteria & Media Center AV Upgrades		X						1	Ea	\$50,000.00	\$ 50,000	\$ -
Holt Jr. High													
	Stage Curtain & Projection Screen Upgrade		X						1	Ea	\$45,000.00	\$ 45,000	\$ 45,000
	Theater Lighting & Sound Upgrades			X					1	Ea	\$55,000.00	\$ 55,000	\$ -
	Gym PA System Upgrades				X				1	Ea	\$7,000.00	\$ 7,000	\$ 7,000
												\$ 1,013,000	\$ 118,000



HOLT

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