

# Requirement Detail

by Asset Name and Category

**STOWE**

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe - Parking  
**Asset Number:** 565b

<b>Requirement Name</b>	Vehicular Paving: All Asphalt Pavement Areas		
<b>Linked System</b>	Parking Lots	<b>Inspection Date</b>	08/01/2006
<b>Prime System</b>	Paving and Surfacing	<b>Finish Date</b>	-
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Inspec	<b>Actual Cost</b>	0
<b>Action Date</b>	08/01/2012	<b>Total Estimated Cost:</b>	94,400
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Asphalt Pavement at Site	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

All asphalt pavement areas will need new overlay in about 8-10 years.

**PHOTOS**

**ACTION DESCRIPTION**

Overlay all asphalt pavement areas at site in 8-10 years.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe - Parking  
**Asset Number:** 565b

<b>Requirement Name</b>	Vehicular Paving: Asphalt Pavement Areas		
<b>Linked System</b>	Parking Lots	<b>Inspection Date</b>	08/01/2006
<b>Prime System</b>	Paving and Surfacing	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Inspec	<b>Actual Cost</b>	0
<b>Action Date</b>	08/01/2007	<b>Total Estimated Cost:</b>	23,600
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Asphalt Pavements at Site	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

All asphalt pavements at site should be crack-sealed and seal coated in 1-2 years.

**PHOTOS**

**ACTION DESCRIPTION**

Crack seal and seal coat all asphalt pavement areas at site.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Life Safety

**Asset Name:** Stowe - Sidewalks  
**Asset Number:** 565c

<b>Requirement Name</b>	Pedestrian Paving: Concrete Sidewalks		
<b>Linked System</b>	Pedestrian Paving	<b>Inspection Date</b>	08/01/2006
<b>Prime System</b>	Paving and Surfacing	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Inspec	<b>Actual Cost</b>	0
<b>Action Date</b>	08/01/2007	<b>Total Estimated Cost:</b>	118,000
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	City Sidewalks	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

City sidewalks in poor condition at site.

**PHOTOS**

**ACTION DESCRIPTION**

Replace and widen sidewalks along city streets.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Accessibility

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Plumbing: Accessibility	<b>Inspection Date</b>	11/12/2006
<b>Linked System</b>	Plumbing	<b>Finish Date</b>	-
<b>Prime System</b>	Plumbing	<b>Status</b>	Open
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	JQP Inc.	<b>Total Estimated Cost:</b>	12,168
<b>Action Date</b>	11/12/2009	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Plumbing throughout		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

This requirement includes accessibility issues in toilet rooms, locker/shower rooms and drinking fountains. All requirements for upgrading a toilet or locker/shower room are included in this category, even if they are not plumbing (i.e. relocating stall partitions to provide 60 in. wide stall, relocating toilet paper dispenser or grab bars, etc.). Items include: replacing drinking fountains, raising/lowering toilets, installing grab bars, relocating toilet paper or towel dispensers, adding handheld shower wands, and providing 60 in. wide fully compliant toilet stalls.

Note: the actual cost to complete work in toilet rooms may be increased by a decision to do work beyond what is required for accessibility, such as re-tiling, replacing all fixtures, replacing all stall partitions, etc.

**PHOTOS**



Plumbing: Accessibility

-

**ACTION DESCRIPTION**

Upgrades as needed to meet plumbing accessibility requirements.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Accessibility

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Site Improvements: Accessibility		
<b>Linked System</b>	Site Improvements	<b>Inspection Date</b>	11/12/2006
<b>Prime System</b>	Site Improvements	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	JQP Inc.	<b>Actual Cost</b>	0
<b>Action Date</b>	11/12/2009	<b>Total Estimated Cost:</b>	4,413
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Exterior	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

This requirement includes accessibility issues from the moment you are on school grounds until you get to the front door. Items include: adding and identifying accessible parking and adding or modifying accessible routes (sidewalks).

**PHOTOS**



Site Improvements: Accessibility

-

**ACTION DESCRIPTION**

Correct exterior accessibility issues as required.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Air and Water Quality

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Add Dehumidification for South Classrooms		
<b>Linked System</b>	Cooling Generating Systems	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Cooling Generating Systems	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	141,364
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	South Classrooms	<b>Annual Energy/Ops Savings \$</b>	757
<b>Savings Description</b>	Energy savings will be generated by using heat exchangers to recover exhaust air energy in order to pre-condition make-up air. In addition, each classroom occupancy controls will reduce ventilation rates and control the lighting to save energy when rooms are not in use. Additional energy will be consumed to provide dehumidification during the cooling months.		

**REQUIREMENT DESCRIPTION**

The air handling system serving the north classrooms has no means of dehumidification. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions. As part of this upgrade, the new mechanical system will incorporate heat recovery and classroom occupancy / CO2 controls to save energy.

**PHOTOS**



HVAC: Add Dehumidification to Classrooms

**ACTION DESCRIPTION**

Addition of dehumidification coil to the existing unit via modification and internal closed cell AHU liner. The supply duct for AHU-D is already externally insulated. Upgrade Controls System. Test and Balance and Commissioning of air handling  
*All Costs in USD.*

units.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Air and Water Quality

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Add Dehumidification to North Classrooms		
<b>Linked System</b>	Cooling Generating Systems	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Cooling Generating Systems	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	235,764
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	North Classrooms	<b>Annual Energy/Ops Savings \$</b>	757
<b>Savings Description</b>	Energy savings will be generated by using heat exchangers to recover exhaust air energy in order to pre-condition make-up air. In addition, each classroom occupancy controls will reduce ventilation rates and control the lighting to save energy when rooms are not in use. Additional energy will be consumed to provide dehumidification during the cooling months.		

**REQUIREMENT DESCRIPTION**

The air handling system serving the north classrooms has no means of dehumidification. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions. As part of this upgrade, the new mechanical system will incorporate heat recovery and classroom occupancy / CO2 controls to save energy.

**PHOTOS**



HVAC: Add Dehumidification to Classrooms

-

**ACTION DESCRIPTION**

Addition of dehumidification coil to the existing unit via modification and internal closed cell AHU liner. Installation of external supply duct insulation in mechanical room and duct mains for AHU-C, The supply duct downstream of the VAV  
*All Costs in USD.*

boxes are already externally insulated. Upgrade Controls System. Test and Balance and Commissioning of air handling unit systems.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Air and Water Quality

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Dehumidification Chiller and Piping Mains		
<b>Linked System</b>	Chilled Water Distribution	<b>Inspection Date</b>	07/12/2006
<b>Prime System</b>	Chilled Water Distribution	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	252,166
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Floors - Entire Building	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Stowe Elementary School (with the exception of the School Offices and the East Section Classrooms) has no means of dehumidification. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

**PHOTOS**



HVAC: Dehumidification Chiller and Piping Mains

**ACTION DESCRIPTION**

Addition of an air cooled chiller, pumps, and insulated chilled water pipe distribution system. Chiller to be screened for appearance purposes.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Appearance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Floor Finishes: Replace Carpet	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Floor Finishes	<b>Finish Date</b>	-
<b>Prime System</b>	Floor Finishes	<b>Status</b>	Open
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	85,810
<b>Action Date</b>	07/25/2009	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Classrooms, offices, library		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Replace existing carpet all general building areas not identified under priority 2 and 5 requirement information.

**PHOTOS**



Floor Finishes: Replace Carpet

-

**ACTION DESCRIPTION**

Replace approximately 11700 SQFT of existing carpet with new carpet in all general building areas not identified under priority 2 and 5 requirement information.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Appearance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Floor Finishes: Replace Corridor Carpet	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Floor Finishes	<b>Finish Date</b>	-
<b>Prime System</b>	Floor Finishes	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	43,904
<b>Action Date</b>	07/25/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	corridors		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Replace existing corridor carpet with vinyl composition tile (VCT).

**PHOTOS**



Floor Finishes: Replace Corridor Carpet  
 -

**ACTION DESCRIPTION**

Replace 6570 SQFT. of existing carpet with Vinyl Composition Tile (VCT) in corridors.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Appearance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Site Improvements: General Landscaping	<b>Inspection Date</b>	10/03/2006
<b>Linked System</b>	Site Improvements	<b>Finish Date</b>	-
<b>Prime System</b>	Site Improvements	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Northern Lights Landscaping	<b>Total Estimated Cost:</b>	16,330
<b>Action Date</b>	10/03/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Property around facility		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

There are areas around the facility (lawn, trees, shrubs and perennials) that require care to improve appearance. There are negative slope areas around the facility bringing drainage towards the facility instead of away from the facility. There are lawn areas around the immediate building requiring restoration. There are retaining walls in need of repair.

**PHOTOS**

**ACTION DESCRIPTION**

Pruning, cultivating and mulching of existing trees, shrubs and perennials. Correct negative slope around foundations by installing soil and sod. Restore lawn at stressed and/or non existing lawn areas around immediate building by installing soil and sod. Reconstruct retaining walls that are either collapsed or include wall material degradation.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Appearance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Wall Finishes: Paint Interior	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Wall Finishes	<b>Finish Date</b>	-
<b>Prime System</b>	Wall Finishes	<b>Status</b>	Open
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	69,419
<b>Action Date</b>	07/25/2012	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	General Building		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Repaint existing interior wall area in entire building.

**PHOTOS**



Wall Finishes: Paint Interior

-

**ACTION DESCRIPTION**

Re-paint entire interior existing painted walls and ceilings 106,000 S.F in area.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Beyond Rated Life

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Lighting Equipment: Occupancy Sensors		
<b>Linked System</b>	Lighting Equipment	<b>Inspection Date</b>	09/19/2006
<b>Prime System</b>	Lighting Equipment	<b>Finish Date</b>	-
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Ruud, Mark	<b>Actual Cost</b>	0
<b>Action Date</b>	09/19/2012	<b>Total Estimated Cost:</b>	10,321
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement</b>	Classrooms	<b>Annual Energy/Ops</b>	-
<b>Location</b>		<b>Savings \$</b>	
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The existing classroom occupancy sensors are single technology sensors and will need replacement in the mid term future. Dual technology sensors offer improved performance.

**PHOTOS**

**ACTION DESCRIPTION**

Remove and replace existing classroom occupancy sensors with dual technology occupancy sensors.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Beyond Rated Life

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Other Equipment - Walk-In Freezer		
<b>Linked System</b>	Equipment and Furnishings	<b>Inspection Date</b>	09/08/2006
<b>Prime System</b>	Equipment and Furnishings	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Stout Mechanical	<b>Actual Cost</b>	0
<b>Action Date</b>	09/08/2009	<b>Total Estimated Cost:</b>	21,417
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Kitchen	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Cabinet walls are bowed out, seams are leaky and door seal is bad.

**PHOTOS**



Other Equipment - Walk-In Freezer

-

**ACTION DESCRIPTION**

Replace cabinet with new unit in 3 years.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Beyond Rated Life

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Roof System: Replace Roof		
<b>Linked System</b>	Roofing	<b>Inspection Date</b>	08/01/2006
<b>Prime System</b>	Roofing	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Inspec	<b>Actual Cost</b>	0
<b>Action Date</b>	08/01/2009	<b>Total Estimated Cost:</b>	974,789
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Building	<b>Annual Energy/Ops Savings \$</b>	1503
<b>Savings Description</b>	Energy savings generated from improved roof insulation.		

**REQUIREMENT DESCRIPTION**

Roof system beyond rated service life. Includes roof Areas 1-2.

**PHOTOS**



Roof System: Replace Roof

-

**ACTION DESCRIPTION**

Replace EPDM roof system. Sequence work with roof-level wall restoration.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Beyond Rated Life

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Site Furnishings: Playground Upgrade / Replacement		
<b>Linked System</b>	Site Furnishings	<b>Inspection Date</b>	10/03/2006
<b>Prime System</b>	Site Furnishings	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Earl F. Anderson	<b>Actual Cost</b>	0
<b>Action Date</b>	10/03/2009	<b>Total Estimated Cost:</b>	103,238
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Facility Grounds	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

A portion of the Playground equipment (built in 1988) was relocated onto the site in 1994 along with new equipment installed at the same time. The majority of the playground equipment (except the newer equipment) does not meet current safety and ADA requirements. Equipment is adequate for current population.

**PHOTOS**



Site Furnishings: Playground Upgrade / Replacement

-

**ACTION DESCRIPTION**

Replace existing playground with new equipment to meet needs of enrollment. Replace surface material with district standard and replace edging as needed.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Capacity

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Electrical Distribution: Insufficient Capacity		
<b>Linked System</b>	Electrical Service and Distribution	<b>Inspection Date</b>	08/16/2006
<b>Prime System</b>	Electrical Service and Distribution	<b>Finish Date</b>	-
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	08/16/2012	<b>Total Estimated Cost:</b>	17,464
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Existing Branch Panels are lacking capacity for additional circuits. Panels must be added to accommodate circuits needed for additional receptacles in classrooms.

**PHOTOS**



Electrical Distribution: Insufficient Capacity

-

**ACTION DESCRIPTION**

Provide two new 100 amp feeders and panels to help carry the extra load of additional receptacles throughout the building.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Capacity

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Add Cooling Capability to Computer Lab and IT Data Room		
<b>Linked System</b>	Cooling Generating Systems	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Cooling Generating Systems	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	07/11/2007	<b>Total Estimated Cost:</b>	133,930
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	IT Data Room	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The Computer Lab and IT Data rooms get hot, which could cause technology equipment failure.

**PHOTOS**



HVAC: Add Cooling Capability to IT Data Room

-

**ACTION DESCRIPTION**

Provide a fan coil with a DX cooling coil and full economizer capability to utilize free cooling when outdoor conditional allow.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Capacity

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Wiring Devices: Insufficient Receptacles		
<b>Linked System</b>	Branch Wiring Devices	<b>Inspection Date</b>	07/25/2006
<b>Prime System</b>	Branch Wiring Devices	<b>Finish Date</b>	-
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	07/25/2012	<b>Total Estimated Cost:</b>	53,218
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

With rapid advances in technology, additional receptacles may be required in 6-10 years. The Addition of receptacles will require additional electrical panels.

**PHOTOS**



Wiring Devices: Insufficient Receptacles

-

**ACTION DESCRIPTION**

Provide two additional 20 amp receptacle per classroom and associated branch wiring. Upgrade will first require additional branch panel boards.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Exterior Walls: Wall Restoration		
<b>Linked System</b>	Exterior Walls	<b>Inspection Date</b>	08/01/2006
<b>Prime System</b>	Exterior Walls	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Inspec	<b>Actual Cost</b>	0
<b>Action Date</b>	08/01/2007	<b>Total Estimated Cost:</b>	177,000
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Building	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Deterioration of roof-level and grade-level walls around entire perimeter of building.

**PHOTOS**



Exterior Walls: Wall Restoration

-

**ACTION DESCRIPTION**

Tuck pointing, glazed tile replacement, joint sealant replacement, and painting. Sequence work with reroofing.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Floor Finishes: Recessed Entry Mats	
<b>Linked System</b>	Floor Finishes	<b>Inspection Date</b> 07/25/2006
<b>Prime System</b>	Floor Finishes	<b>Finish Date</b> -
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b> Open
<b>Inspector Name</b>	Siddens, Lance	<b>Actual Cost</b> 0
<b>Action Date</b>	07/25/2007	<b>Total Estimated Cost:</b> 9,954
<b>Funding Year</b>	-	<b>Funding Type</b> -
<b>Requirement Location</b>	2 Front Entry Vestibules	<b>Annual Energy/Ops Savings \$</b> -
<b>Savings Description</b>	-	

**REQUIREMENT DESCRIPTION**

Replace 2 main front enteries recessed floor mats in poor condition.

**PHOTOS**



Floor Finishes: Recessed Entry Mats

-

**ACTION DESCRIPTION**

Replace 2 main front enteries recessed floor mats.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Floor Finishes: Replace Carpet	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Floor Finishes	<b>Finish Date</b>	-
<b>Prime System</b>	Floor Finishes	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	37,628
<b>Action Date</b>	07/25/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Rooms 2, 6, 19, 27, 29, 44, 55		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Replace existing carpet in very poor condition (torn, bubbled, worn) with new carpet.

**PHOTOS**



Floor Finishes: Replace Carpet

-

**ACTION DESCRIPTION**

Replace 5130 SQFT of existing carpet with new carpet in rooms 2, 6, 19, 27, 29, 44, and 55.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Floor Finishes: Replace VCT	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Floor Finishes	<b>Finish Date</b>	-
<b>Prime System</b>	Floor Finishes	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	10,478
<b>Action Date</b>	07/25/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Rooms 1, 6 and miscellaneous building areas		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Replace chipped, damaged VCT in miscellaneous areas of building.

**PHOTOS**



Floor Finishes: Replace VCT

-

**ACTION DESCRIPTION**

Remove damaged VCT and replace.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Ductwork Cleaning	<b>Inspection Date</b>	11/29/2006
<b>Linked System</b>	Air Distribution Systems	<b>Finish Date</b>	-
<b>Prime System</b>	Air Distribution Systems	<b>Status</b>	Open
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Schumacher, Russ	<b>Total Estimated Cost:</b>	106,200
<b>Action Date</b>	11/29/2012	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Building Wide		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Clean the duct systems that are not replaced by the indoor air quality upgrade.

**PHOTOS**

**ACTION DESCRIPTION**

Clean ductwork that is not replaced due to indoor air quality upgrades.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Replace Leaking Underfloor Finned Tube Piping		
<b>Linked System</b>	Hot Water Distribution	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Hot Water Distribution	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	07/11/2007	<b>Total Estimated Cost:</b>	16,048
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Several pieces of finned tube radiation have underfloor supply or return piping, which have leaked due to the expansion/contraction of the piping buried in the concrete. This results in heating water leaks and floor damage.

**PHOTOS**



HVAC: Replace Leaking Underfloor Finned Tube Piping

-

**ACTION DESCRIPTION**

Remove underfloor piping where possible (or abandon the underfloor piping if removal is not possible) and re-pipe above ground.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Plumbing: Replace Lavatory Wash Fountains		
<b>Linked System</b>	Plumbing Fixtures	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Plumbing Fixtures	<b>Finish Date</b>	-
<b>Priority</b>	6- Does Not Meet Current Codes/Standards	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	35,400
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Center Section	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The four lavatory wash fountains cannot provide warm water, while the surrounding sinks can. In addition if one of the fountain stations is being utilized, the remaining wash stations cannot provide adequate water flow. This situation does not allow for proper hand washing.

**PHOTOS**



Plumbing: Replace Lavatory Wash Fountains

-

**ACTION DESCRIPTION**

Replace four wash fountains with new wash fountains with infrared mixing stations.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Wall Finishes: Repair Water Damage	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Exterior Walls	<b>Finish Date</b>	-
<b>Prime System</b>	Exterior Walls	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	13,098
<b>Action Date</b>	07/25/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Rooms 9 and 11		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Water penetrating exterior concrete block at window locations due to berming earth or penetration at windows.

**PHOTOS**



Wall Finishes: Repair Water Damage

-

**ACTION DESCRIPTION**

Water damage spalling concrete block infill under windows. Seal exterior and verify source of problem. Patch block. Paint., Approximately 116 SQFT

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Controls: VendingMiser Vending Machine Controls		
<b>Linked System</b>	Controls and Instrumentation	<b>Inspection Date</b>	10/02/2006
<b>Prime System</b>	Controls and Instrumentation	<b>Finish Date</b>	-
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Status</b>	Open
<b>Inspector Name</b>	Ruud, Mark	<b>Actual Cost</b>	0
<b>Action Date</b>	10/02/2006	<b>Total Estimated Cost:</b>	826
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Vending Machines	<b>Annual Energy/Ops Savings \$</b>	96
<b>Savings Description</b>	VendingMiser controls cycle power to the vending machine during unoccupied times to save energy.		

**REQUIREMENT DESCRIPTION**

Install VendingMiser controls on vending machines.

**PHOTOS**

**ACTION DESCRIPTION**

-

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Steam System Steam Trap Upgrades		
<b>Linked System</b>	Steam Distribution Systems	<b>Inspection Date</b>	09/07/2006
<b>Prime System</b>	Steam Distribution Systems	<b>Finish Date</b>	-
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Status</b>	Open
<b>Inspector Name</b>	Ruud, Mark	<b>Actual Cost</b>	0
<b>Action Date</b>	09/07/2006	<b>Total Estimated Cost:</b>	2,230
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Facility Wide	<b>Annual Energy/Ops Savings \$</b>	553
<b>Savings Description</b>	Heating savings attributed to leaking steam traps that result in the overheating of tunnel areas or steam venting in condensate receiver tanks.		

**REQUIREMENT DESCRIPTION**

- 1) Complete survey all steam traps system wide to locate failed traps.
- 2) Replace or repair of failed traps depending on trap age, condition, and availability of replacement part kits.

**PHOTOS**

**ACTION DESCRIPTION**

-

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Lighting: Lighting Retrofit	<b>Inspection Date</b>	09/20/2006
<b>Linked System</b>	Lighting Equipment	<b>Finish Date</b>	-
<b>Prime System</b>	Lighting Equipment	<b>Status</b>	Open
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Ruud, Mark	<b>Total Estimated Cost:</b>	50,021
<b>Action Date</b>	09/20/2006	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	3,457
<b>Requirement Location</b>	Entire Facility		
<b>Savings Description</b>	Energy savings generated through more efficient lighting technology.		

**REQUIREMENT DESCRIPTION**

Lighting project consists of the following:

- 1) Retrofit/Replace 34w T12 fixtures with 25w T8 lighting
- 2) Relamp 32w T8 lamps with 25w T8 lamps
- 3) Replace HID lighting with T8 lighting fixtures
- 4) Replace Incand. lighting with Fluorescent
- 5) Upgrade exit signs with LED technology
- 6) Gym Occupancy Sensors

**PHOTOS**

**ACTION DESCRIPTION**

-

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Plumbing: Add Domestic Water Heat Exchanger		
<b>Linked System</b>	Plumbing	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Plumbing	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	35,046
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Boiler Room - Gymnasium/Cafeteria	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Provide a domestic hot water heat exchanger. This will allow for an interruptible natural gas rate.

**PHOTOS**



Plumbing: Add Domestic Water Heat Exchanger

-

**ACTION DESCRIPTION**

Provide a new domestic hot water heat exchanger and all required piping and controls.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Plumbing: Water Conservation Upgrades		
<b>Linked System</b>	Plumbing Fixtures	<b>Inspection Date</b>	09/21/2006
<b>Prime System</b>	Plumbing Fixtures	<b>Finish Date</b>	-
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Status</b>	Open
<b>Inspector Name</b>	Ruud, Mark	<b>Actual Cost</b>	0
<b>Action Date</b>	09/21/2006	<b>Total Estimated Cost:</b>	20,753
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	1,263
<b>Savings Description</b>	Reduce water and sewer usage using new low flow devices.		

**REQUIREMENT DESCRIPTION**

Replace / Retrofit standard flow flush valves and faucets with low flow devices.

**PHOTOS**

**ACTION DESCRIPTION**

-

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Life Safety

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Lighting Equipment: Exterior Lighting	<b>Inspection Date</b>	09/19/2006
<b>Linked System</b>	Lighting Equipment	<b>Finish Date</b>	-
<b>Prime System</b>	Lighting Equipment	<b>Status</b>	Open
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Ruud, Mark	<b>Total Estimated Cost:</b>	17,447
<b>Action Date</b>	09/19/2006	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Building Perimeter Parking		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The existing exterior lighting for this facility is getting old and the light levels and coverage for adequate safety is a concern.

**PHOTOS**

**ACTION DESCRIPTION**

Replace and add exterior fixtures as needed to improve light levels and coverage. To discourage vandalism and increase occupant safety.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Occupant Security

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communication and Security: Access Control		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	09/20/2006
<b>Prime System</b>	Security and Detection Systems	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	09/20/2009	<b>Total Estimated Cost:</b>	23,600
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Doors need ability to be locked down with access allowed only to authorized people. Also doors without card readers should be monitored for unauthorized access.

**PHOTOS**



Communication and Security: Access Control

-

**ACTION DESCRIPTION**

Install 6 proximity card readers at main entry doors for both public and personal  
 And add magnetic door contacts to all other exterior doors on a alarm system

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Occupant Security

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communications and Security: CCTV		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	11/30/2006
<b>Prime System</b>	Communications and Security	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	11/30/2007	<b>Total Estimated Cost:</b>	93,598
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

There are currently no cameras located in the school. Cameras would add an increased security throughout the school which is becoming more critical.

**PHOTOS**

**ACTION DESCRIPTION**

Provide cameras throughout school. Camera locations provided by ISD 709.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Occupant Security

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Fire Alarm Systems: Outdated System		
<b>Linked System</b>	Fire Alarm Systems	<b>Inspection Date</b>	09/20/2006
<b>Prime System</b>	Fire Alarm Systems	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	09/20/2009	<b>Total Estimated Cost:</b>	80,240
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Fire alarm systems are old analog system. System is prone to malfunctions and is very hard to identify exact area of alarm. It is also difficult to troubleshoot and find malfunctions.

**PHOTOS**



Fire Alarm Systems: Outdated System

-

**ACTION DESCRIPTION**

Replace fire system with a fully addressable fire system.  
 This will allow for quick response to exact alarm device  
 And allow for better maintenance and safety

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communication and Security: Cabling Upgrade		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/16/2006
<b>Prime System</b>	Local Area Networks	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	The Westlund Group	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	107,734
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Existing building has older categories of cabling.

**PHOTOS**

**ACTION DESCRIPTION**

Replace old and mixed telephone/data cabling with up to date category 6 of 6A. Add basic wireless coverage. Add high bandwidth Fiber Optic Cabling between wiring closets. Standardize quantity of phone and data in classroom and offices.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communication and Security: Clock System		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	09/20/2006
<b>Prime System</b>	Clock and Program Systems	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	09/20/2009	<b>Total Estimated Cost:</b>	25,960
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Master clock systems no longer keep clocks in time. Most are only used for running the bells. Atomic clocks may not receive a signal through the brick buildings. Many clocks do not work at all.

**PHOTOS**



Communication and Security: Clock System

**ACTION DESCRIPTION**

Install new wireless master clock system. The main clock receives the GPS signal for exact time and then sends signal to other clocks in facility. This will allow for accurate time and less tardiness between classes.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communication and Security: Public Address and Sound System		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	09/20/2006
<b>Prime System</b>	Intercommunication and Paging System	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	09/20/2009	<b>Total Estimated Cost:</b>	19,588
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

PA system is 25+ years old but is still functional.  
 There are no speakers located in hallways or commons areas.

**PHOTOS**



Communication and Security: Public Address and Sound System  
 -

**ACTION DESCRIPTION**

Update paging head end with new system and amplifier  
 And install speakers where needed.  
 Install additional speakers as required

*All Costs in USD.*

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communication and Security: Telephone System Upgrade		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/16/2006
<b>Prime System</b>	Telephone Systems	<b>Finish Date</b>	-
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Status</b>	Open
<b>Inspector Name</b>	The Westlund Group	<b>Actual Cost</b>	0
<b>Action Date</b>	08/16/2006	<b>Total Estimated Cost:</b>	5,192
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The telephone system should be updated to the new District standard of CISCO VOIP. The telephone system should include port for paging/intercom system. The Paging/Intercom system should be modified to allow access from the new telephone system.

**PHOTOS**

**ACTION DESCRIPTION**

Install new CISCO telephone system. Add paging interface. Remove old telephone system.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communication and Security: Video/TV Distribution Upgrade		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/16/2006
<b>Prime System</b>	Television Systems	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	The Westlund Group	<b>Actual Cost</b>	0
<b>Action Date</b>	08/16/2009	<b>Total Estimated Cost:</b>	29,530
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Analog Broadcast TV Signals are required by the FCC to be turned off in the Spring of 2009.

**PHOTOS**

**ACTION DESCRIPTION**

Install new TV Distribution System capable of digital signals in all classrooms and administrative areas as required.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Communications and Security: Sound System Upgrades		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/15/2006
<b>Prime System</b>	Classroom Sound Systems	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	The Westlund Group	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	159,654
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Currently there is little or no audio enhancement systems to classrooms.  
 The Gymnasium sound system is from 1994 and is inadequate.

**PHOTOS**

**ACTION DESCRIPTION**

Add audio enhancement systems to classrooms.  
 Replace Gymnasium sound system.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Controls and Instrumentation: BAS and Controls Upgrade		
<b>Linked System</b>	Controls and Instrumentation	<b>Inspection Date</b>	08/09/2006
<b>Prime System</b>	Building Automation Systems	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Schmidt, Brian	<b>Actual Cost</b>	0
<b>Action Date</b>	08/09/2007	<b>Total Estimated Cost:</b>	324,500
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire building	<b>Annual Energy/Ops Savings \$</b>	2,281
<b>Savings Description</b>	Energy saving through optimization and repairs of existing control system.		

**REQUIREMENT DESCRIPTION**

Upgrade existing, outdated BAS to new Web-based BAS and tie to new District-wide BAS network. This will allow for central monitoring and control of all buildings from the Facilities Management building.

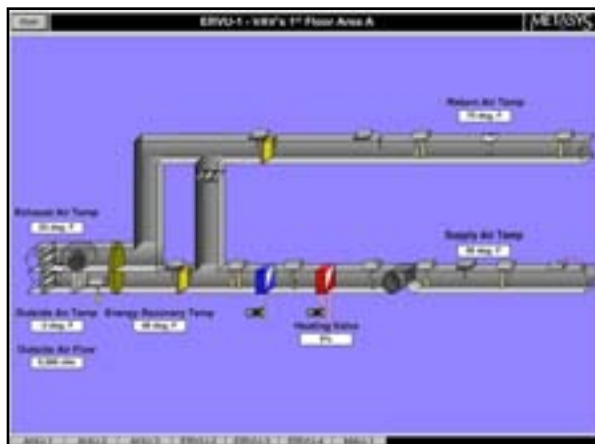
Upgrade existing pneumatic controls (old technology) to new Direct Digital controls.

Upgrade/replace existing temperature control valves, dampers, and actuators. The majority are beyond rated life and many are disconnected and not functioning, thus not operating as energy efficiently as possible.

Replace existing temperature control air compressor and air dryer with new and repair control air line leaks. This will improve the energy efficiency of the existing control system.

The existing controls shall be recommissioned to verify proper sequence of operation and optimize energy efficiency. Additional control and monitoring points shall also be added to the BAS system to optimize HVAC system performance.

**PHOTOS**



BAS Graphic

**ACTION DESCRIPTION**

Replace existing BAS headend to Web-based headend to tie to District wide BAS network. Replace existing DDC and pneumatic controls with new JCI DDC controls to allow integration to District wide BAS.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Emergency Power Distribution: Generator Backup		
<b>Linked System</b>	Emergency Light and Power Systems	<b>Inspection Date</b>	09/19/2006
<b>Prime System</b>	Emergency Light and Power Systems	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Crotteau, Paul	<b>Actual Cost</b>	0
<b>Action Date</b>	09/19/2007	<b>Total Estimated Cost:</b>	101,775
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Exterior near Electrical Room	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

School currently has no backup power system to be used during a power failure. To keep students in school during power outage sufficient lighting must be maintained along with necessary life safety systems.

**PHOTOS**



Emergency Power Distribution: Generator Backup

-

**ACTION DESCRIPTION**

Install transfer switch and generator to feed distribution system during a power outage. Generator will be sized to handle the full building demand.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Equipment and Furnishings: Visual Systems (Smart Boards)		
<b>Linked System</b>	Equipment and Furnishings	<b>Inspection Date</b>	08/15/2006
<b>Prime System</b>	Audio-visual Equipment	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	The Westlund Group	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	389,400
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Site has no Smart Boards installed. Two Smart Boards are on order.

**PHOTOS**

**ACTION DESCRIPTION**

Install additional Smart Boards.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	Fittings: Blackboards (Chalkboards)	<b>Inspection Date</b>	07/25/2006
<b>Linked System</b>	Fittings	<b>Finish Date</b>	-
<b>Prime System</b>	Fittings	<b>Status</b>	Open
<b>Priority</b>	5- Recommendations/ Improvements	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Siddens, Lance	<b>Total Estimated Cost:</b>	52,994
<b>Action Date</b>	-	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Classrooms		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

District desired replacement of chalkboard with marker board for standardization/modernization.

**PHOTOS**



Fittings: Blackboards (Chalkboards)

-

**ACTION DESCRIPTION**

Replace approximately 2890 S. F. of chalkboard with markerboard.

**District:** Duluth Public Schools  
**Facility:** Stowe Elementary School  
**Category:** Upgrades

**Asset Name:** Stowe Elementary School  
**Asset Number:** 565

<b>Requirement Name</b>	HVAC: Heating System Conversion - Steam to Hot Water		
<b>Linked System</b>	Steam Distribution Systems	<b>Inspection Date</b>	07/11/2006
<b>Prime System</b>	Steam Distribution Systems	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	324,854
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Building Wide - Mechanical Penthouses	<b>Annual Energy/Ops Savings \$</b>	5,429
<b>Savings Description</b>	Energy savings generated from converting from a steam system to a how water system that includes condensing style boiler(s).		

**REQUIREMENT DESCRIPTION**

The air handling units have steam heating coils, while the rest of the building utilizes hot water as a heating medium. A steam system requires substantially more maintenance than a modern hot water heating system due to steam traps, condensate pumps, and chemical treatment.

**PHOTOS**



HVAC: Heating System Conversion - Steam to Hot Water

**ACTION DESCRIPTION**

Install new high efficiency hot water condensing boilers and hot water piping system to serve as the primary heating system. A dual fuel boiler will be utilized when required by the utility. Replace all steam air handling unit heating coils with hot water coils. The entire building will then be served by hot water as a heating medium.