

# Requirement Detail

by Asset Name and Category

**NETTLETON**

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

**Asset Name:** Nettleton - Parking  
**Asset Number:** 540a

<b>Requirement Name</b>	Vehicular Paving: Asphalt Lots		
<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>	2,360
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Asphalt Lots	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Several areas of damaged pavement present in parking lots and drives.

**PHOTOS**

**ACTION DESCRIPTION**

Repair damaged pavement areas at site.

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

**Asset Name:** Nettleton - Parking  
**Asset Number:** 540a

<b>Requirement Name</b>	Vehicular Paving: Bus Drive Loop		
<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>	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>	82,600
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Bus Drive Loop	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Bus Drive Loop contains areas of severe cracking, settlement, and spalling curbs and gutter.

**PHOTOS**

**ACTION DESCRIPTION**

Completely reconstruct bus drive loop including new curb and gutter.

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

**Asset Name:** Nettleton - Parking  
**Asset Number:** 540a

<b>Requirement Name</b>	Vehicular Paving: East Parking Lot		
<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>	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>	23,600
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	East Parking Lot	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Pavement surface is weathered, will need overlay in 3-5 years.

**PHOTOS**

**ACTION DESCRIPTION**

Overlay East Parking Lot in 3-5 years.

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

**Asset Name:** Nettleton - Sidewalks  
**Asset Number:** 540b

<b>Requirement Name</b>	Pedestrian Paving: Concrete Sidewalk		
<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>	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>	59,000
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1st Avenue and 2nd Avenue	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Concrete sidewalks along 1st Avenue and 2nd Avenue are very old and will need to be replaced in 6-10 years.

**PHOTOS**

**ACTION DESCRIPTION**

Replace concrete sidewalks along 1st and 2nd Avenues.

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

**Asset Name:** Nettleton - Sidewalks  
**Asset Number:** 540b

<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>	14,160
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement</b>	Sidewalks	<b>Annual Energy/Ops</b>	-
<b>Location</b>		<b>Savings \$</b>	
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Several areas of damaged or settled concrete sidewalks are present around site.

**PHOTOS**

**ACTION DESCRIPTION**

Repair/replace damaged and settled sidewalk areas at site.

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

**Asset Name:** Nettleton - Site  
**Asset Number:** 540c

<b>Requirement Name</b>	Site: Fencing	<b>Inspection Date</b>	08/01/2006
<b>Linked System</b>	Site Improvements	<b>Finish Date</b>	-
<b>Prime System</b>	Fences and Gates	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Inspec	<b>Total Estimated Cost:</b>	7,080
<b>Action Date</b>	08/01/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Fence Between Bus Drive Loop and North Playground		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Chain link fence between Bus Drive Loop and north playgrounds is leaning. Major erosion occurring under fence.

**PHOTOS**

**ACTION DESCRIPTION**

Replace the chain link fencing between Bus Drive Loop and north playgrounds. Take measures to prevent erosion under fence.

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

**Asset Name:** Nettleton - Site  
**Asset Number:** 540c

<b>Requirement Name</b>	Site: North Playground	<b>Inspection Date</b>	08/01/2006
<b>Linked System</b>	Site Improvements	<b>Finish Date</b>	-
<b>Prime System</b>	Playing Fields	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Inspec	<b>Total Estimated Cost:</b>	14,160
<b>Action Date</b>	08/01/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	North Playground		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Asphalt play area/basketball court is in poor condition. Basketball pole heaved, poor condition.

**PHOTOS**

**ACTION DESCRIPTION**

Reconstruct asphalt play area/basketball court and install new basketball pole.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Interior Construction: Accessibility		
<b>Linked System</b>	Interior Construction	<b>Inspection Date</b>	11/12/2006
<b>Prime System</b>	Interior Construction	<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>	10,890
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Interior	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

This requirement includes accessibility issues encountered while you move through the school. Items include: providing elevator or ramp, adding/modifying handrails (only if the level is not served by an elevator or other accessible route), widening doors, replacing door hardware, eliminating protruding hazards and all permanent room identification signage as well as directional signage (adding signs, replacing signs and relocating signs).

**PHOTOS**



Interior Construction: Accessibility

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**ACTION DESCRIPTION**

Make necessary modifications to correct accessibility issues as needed.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	20,151
<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

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**ACTION DESCRIPTION**

Upgrades as needed to meet plumbing accessibility requirements.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	7,074
<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

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**ACTION DESCRIPTION**

Correct exterior accessibility issues as required.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	377,128
<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**

Lowell Elementary School 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:** Nettleton Elementary School  
**Category:** Air and Water Quality

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Add Dehumidification to 1st,2nd, 3rd Grade Classrooms		
<b>Linked System</b>	Cooling Generating Systems	<b>Inspection Date</b>	07/12/2006
<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>	182,900
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1st/2nd/3rd Grade Classrooms 1987 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	In addition, each classroom occupancy controls will reduce ventilation rates and control the lighting to save energy when rooms are not in use. Variable speed drives and CO2 controls on large single zone units to reduce the fan cfm and OA ventilation during part load operation. Additional energy will be consumed to provide dehumidification during the cooling months.		

**REQUIREMENT DESCRIPTION**

The two air handling unit serving the first/second/third grade classrooms (AHU-5) have no means of dehumidification. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

**PHOTOS**

**ACTION DESCRIPTION**

Addition of a dehumidification coils to the 1987 1st/2nd/3rd grade classrooms unit (AHU-5) via modification and internal closed cell AHU liner. The supply duct is already externally insulated in mechanical rooms and above ceilings. Upgrade the controls system. Test and Balance and Commissioning of the air handling unit.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Provide Negative Pressure in Crawlspace/Tunnels		
<b>Linked System</b>	Exhaust Ventilation Systems	<b>Inspection Date</b>	07/15/2006
<b>Prime System</b>	Exhaust Ventilation 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>	07/15/2007	<b>Total Estimated Cost:</b>	41,300
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1905 and 1987 Crawlspace/Tunnel	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The crawlspace/tunnels have dirt floors and if not under negative pressure can transfer odors to the floors above due to the pipe and duct penetrations. The tunnels are also present opportunity for mold growth.

**PHOTOS**



HVAC: Provide Negative Pressure in Crawlspace/Tunnels

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**ACTION DESCRIPTION**

Install exhaust fans and outdoor air intakes as required to ventilate tunnels, as well as maintain negative pressure.

Two Locations 1987 and one location in 1905 Building.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Add Dehumidification All Floors 1987 Classrooms		
<b>Linked System</b>	Cooling Generating Systems	<b>Inspection Date</b>	06/28/2006
<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>	657,142
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Floors - 1987 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The three (3) air handling systems (AHU-3,4,6) serving the 1987 addition have no means of dehumidification. Without de-humidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

**PHOTOS**



HVAC: Add Dehumidification All Floors 1987 Classrooms

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**ACTION DESCRIPTION**

Addition of dehumidification coils to the existing units (AHU 3,4,6) via modification and internal closed cell AHU liner. External duct insulation is already installed. Add new acoustical ceiling tile, lighting removal and re-installation or new lights where required. Install Variable Air Volume box with reheat coils. Upgrade Controls System to DDC. Test and Balance and Commissioning of entire system.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Plumbing: Replace Galvanized Domestic Water Piping		
<b>Linked System</b>	Domestic Water Distribution	<b>Inspection Date</b>	06/28/2006
<b>Prime System</b>	Domestic 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>	06/28/2007	<b>Total Estimated Cost:</b>	147,382
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Floors 1905 and 1945 Additions	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The 101 and 61 year old domestic water distribution piping consists of galvanized piping which is connected together via lead based solder. Current flushing procedures have maintained lead levels at an acceptable level. As the piping continues to age, this may not be possible. Some fixtures have been replaced.

**PHOTOS**



Plumbing: Replace Galvanized Domestic Water Piping

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**ACTION DESCRIPTION**

Remove all galvanized domestic water distribution piping as well as faucets and fixtures containing lead solder. Install insulated copper piping and fixtures/faucets where required. Wall cutting and patching would be required.

Small water closets would also be replaced with standard size water closets.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Service Tunnels: Floor Vapor Barrier	<b>Inspection Date</b>	08/01/2006
<b>Linked System</b>	Other Site Construction	<b>Finish Date</b>	-
<b>Prime System</b>	Service and Pedestrian Tunnels	<b>Status</b>	Open
<b>Priority</b>	5- Recommendations/ Improvements	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Inspec	<b>Total Estimated Cost:</b>	2,124
<b>Action Date</b>	-	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	1945 Addition		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Exposed dirt areas contributing to air quality issues.

**PHOTOS**



Service Tunnels: Floor Vapor Barrier

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**ACTION DESCRIPTION**

Install poly vapor barrier over exposed earth areas.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Site Improvements: General Landscaping		
<b>Linked System</b>	Site Improvements	<b>Inspection Date</b>	10/03/2006
<b>Prime System</b>	Site Improvements	<b>Finish Date</b>	-
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Northern Lights Landscaping	<b>Actual Cost</b>	0
<b>Action Date</b>	10/03/2007	<b>Total Estimated Cost:</b>	1,834
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Property around facility	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

There are areas around the facility (lawn, trees, shrubs and perennials) that require care to improve appearance.

**PHOTOS**

**ACTION DESCRIPTION**

Pruning, cultivating and mulching of existing trees, shrubs and perennials.

**District:** Duluth Public Schools  
**Facility:** Nettleton Elementary School  
**Category:** Asbestos

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Hazardous Components: Abatement	<b>Inspection Date</b>	07/01/2006
<b>Linked System</b>	Hazardous Components Abatement	<b>Finish Date</b>	-
<b>Prime System</b>	Hazardous Components Abatement	<b>Status</b>	Open
<b>Priority</b>	1- Currently Critical (Immediately)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Wormuth, Kevin	<b>Total Estimated Cost:</b>	1,558
<b>Action Date</b>	07/01/2006	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Entire Facility		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

This facility was built when asbestos was a common component of many building materials. The majority of asbestos in this facility was part of the insulating materials. Some has been abated, but in some areas it is still present.

**PHOTOS**

**ACTION DESCRIPTION**

Abatement of asbestos containing materials throughout facility.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Heating System Conversion - Steam to Hot Water		
<b>Linked System</b>	Steam Distribution Systems	<b>Inspection Date</b>	06/28/2006
<b>Prime System</b>	Steam Distribution Systems	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	06/28/2009	<b>Total Estimated Cost:</b>	422,440
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Floors - Entire Building	<b>Annual Energy/Ops Savings \$</b>	12,614
<b>Savings Description</b>	Energy savings generated from converting from a steam system with old boilers to a how water system that includes condensing style boiler(s).		

**REQUIREMENT DESCRIPTION**

The steam system has exceeded the recommended useful life. 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

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**ACTION DESCRIPTION**

Install new high efficiency hot water condensing boilers and hot water piping system. Replace all steam terminal heating devices and coils with hot water devices and coils.

Replace current gas and electric boilers

*All Costs in USD.*

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Replace Ventilation All Floors 1905 and 1945 Building		
<b>Linked System</b>	Air Distribution Systems	<b>Inspection Date</b>	06/28/2006
<b>Prime System</b>	Air Distribution Systems	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Schumacher, Russ	<b>Actual Cost</b>	0
<b>Action Date</b>	06/28/2009	<b>Total Estimated Cost:</b>	1,998,330
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Floors - 1905 and 1945 Additions	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The 101 and 61 year old ventilation systems have exceeded the recommended useful life expectancy and currently poorly distribute ventilation air.

**PHOTOS**



HVAC: Replace Ventilation All Floors 1905 and 1945 Building

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**ACTION DESCRIPTION**

Replacement of the Existing Ventilation System with a Modern Ventilation System consisting of Air Handling Units with Energy Recovery, Duct Distribution System, and Variable Air Volume Boxes with Hot Water Reheat Coils and Hot Water Finned Tube Radiation.

This applies to AHU's 1, 2 and 8. The outdoor air would be independently re-ducted to the air handlers to avoid bus fumes and the sprinkler riser would be relocated or the outdoor air shaft would be abandoned.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	12,976
<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:** Nettleton Elementary School  
**Category:** Beyond Rated Life

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Plumbing: Replace Underground Sanitary Sewer Lines		
<b>Linked System</b>	Plumbing	<b>Inspection Date</b>	11/29/2006
<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>	70,800
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	All Building Areas 35 Years or Older	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Underground sanitary sewer lines require replacement due to tree roots, pipe degradation, and pipe damage due to ground shifting over time.

**PHOTOS**

**ACTION DESCRIPTION**

Replace the underground sanitary sewer lines with new.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Roof System: Replace Roof	<b>Inspection Date</b>	08/01/2006
<b>Linked System</b>	Roofing	<b>Finish Date</b>	-
<b>Prime System</b>	Roofing	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Inspec	<b>Total Estimated Cost:</b>	479,684
<b>Action Date</b>	08/01/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	754
<b>Requirement Location</b>	Entire Building		
<b>Savings Description</b>	Energy savings generated from improved roof insulation.		

**REQUIREMENT DESCRIPTION**

Roof system beyond rated service life. Includes roof Areas 1-9.

**PHOTOS**



Roof System: Replace Roof

-

**ACTION DESCRIPTION**

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

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Earl F. Anderson	<b>Actual Cost</b>	0
<b>Action Date</b>	10/03/2007	<b>Total Estimated Cost:</b>	76,535
<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**

Playground equipment was built in 1986. The playground equipment does not meet current safety and ADA requirements. The swings are non-conforming to safety standards (not enough room). They need more area in general.

**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:** Nettleton Elementary School  
**Category:** Building Code

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Elevators and Lifts: Elevator Repair	<b>Inspection Date</b>	08/28/2006
<b>Linked System</b>	Elevators and Lifts	<b>Finish Date</b>	-
<b>Prime System</b>	Elevators and Lifts	<b>Status</b>	Open
<b>Priority</b>	2- Potentially Critical (1-2 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Schindler Elevator Corp.	<b>Total Estimated Cost:</b>	16,614
<b>Action Date</b>	08/28/2007	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	1945 Addition		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Work required falls into three categories: Code Compliance A17.3, Life Safety Issues and Product Upgrades.

**PHOTOS**

**ACTION DESCRIPTION**

Upgrade elevators for code compliance, life safety issues and product upgrades.

**District:** Duluth Public Schools  
**Facility:** Nettleton Elementary School  
**Category:** Building Code

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Elevators and Lifts: Elevator Repair	<b>Inspection Date</b>	08/28/2006
<b>Linked System</b>	Elevators and Lifts	<b>Finish Date</b>	-
<b>Prime System</b>	Elevators and Lifts	<b>Status</b>	Open
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Actual Cost</b>	0
<b>Inspector Name</b>	Schindler Elevator Corp.	<b>Total Estimated Cost:</b>	34,008
<b>Action Date</b>	08/28/2009	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	1987 Addition		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Work required falls into three categories: Code Compliance A17.3, Life Safety Issues and Product Upgrades.

**PHOTOS**

**ACTION DESCRIPTION**

Upgrade elevators for code compliance, life safety issues and product upgrades.

**District:** Duluth Public Schools  
**Facility:** Nettleton Elementary School  
**Category:** Building Code

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Replace Dishwasher Exhaust Hood		
<b>Linked System</b>	Exhaust Ventilation Systems	<b>Inspection Date</b>	06/28/2006
<b>Prime System</b>	Exhaust Ventilation Systems	<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>	17,700
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Kitchen 1987 Building Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The existing dishwasher has an existing exhaust hood but is not effective. It does not have an exhaust hood as required by the 2000 International Mechanical Code. Exhausting the dishwasher steam is critical in maintaining proper indoor air quality in the kitchen.

**PHOTOS**



HVAC: Replace Dishwasher Exhaust Hood

-

**ACTION DESCRIPTION**

Demolish the existing dishwasher hood and fan system.

Add a Type II hood and dishwasher exhaust fan with the required externally insulated aluminum ductwork. Installation to comply with the 2000 International Mechanical Code.

**District:** Duluth Public Schools  
**Facility:** Nettleton Elementary School  
**Category:** Building Code

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC: Replace Kitchen Grease Exhaust Hood		
<b>Linked System</b>	Exhaust Ventilation Systems	<b>Inspection Date</b>	07/12/2006
<b>Prime System</b>	Exhaust Ventilation Systems	<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>	43,188
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Kitchen - 1987 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The existing grease exhaust hood has been written up as a non compliant hood by the Code Inspector. This hood needs to be replaced with a code compliant grease exhaust hood and fan.

**PHOTOS**



HVAC: Replace Kitchen Grease Exhaust Hood

**ACTION DESCRIPTION**

Replace the existing grease exhaust hood and fan and grease duct with 2000 International Mechanical Code compliant kitchen grease hood exhaust system.

Add independent hood to center oven as well.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Electrical Distribution: Insufficient Capacity		
<b>Linked System</b>	Electrical Service and Distribution	<b>Inspection Date</b>	09/12/2006
<b>Prime System</b>	Electrical Service and Distribution	<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>	09/12/2009	<b>Total Estimated Cost:</b>	13,216
<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:** Nettleton Elementary School  
**Category:** Capacity

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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:** Nettleton Elementary School  
**Category:** Capacity

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Wiring Devices: Insufficient Receptacles		
<b>Linked System</b>	Branch Wiring Devices	<b>Inspection Date</b>	09/12/2006
<b>Prime System</b>	Branch Wiring Devices	<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>	09/12/2009	<b>Total Estimated Cost:</b>	37,760
<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**

In general, classrooms have an insufficient number of receptacles. Computers and other electronics are plugged into power strips due to the lack of receptacles. This limits future addition of electronic devices and presents a fire hazard.

**PHOTOS**



Wiring Devices: Insufficient Receptacles

-

**ACTION DESCRIPTION**

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

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Exterior Doors: Paint Doors		
<b>Linked System</b>	Exterior Doors	<b>Inspection Date</b>	08/17/2006
<b>Prime System</b>	Exterior Doors	<b>Finish Date</b>	-
<b>Priority</b>	3- Necessary - Not Yet Critical (3-5 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Siddens, Lance	<b>Actual Cost</b>	0
<b>Action Date</b>	08/17/2009	<b>Total Estimated Cost:</b>	2,596
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Exterior entry and sidelights, interior vestibule doors 1987 addition and gymnasium doors	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Hollow metal doors and frames are exhibiting rusting, chipped paint and are unsightly.

**PHOTOS**



Exterior Doors: Paint Doors

-

**ACTION DESCRIPTION**

Strip and refinish exterior entry and vestibule hollow metal doors, frames and sidelights.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Exterior Walls: Grade-Level 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>	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>	236,000
<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**

Deteriorated grade-level walls. Efflorescence present at spot locations.

**PHOTOS**



Exterior Walls: Grade-Level Wall Restoration

-

**ACTION DESCRIPTION**

Tuck pointing, spot brick replacement, replace and flash window lintels, stone repair, joint sealant replacement, painting, and misc. items.

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

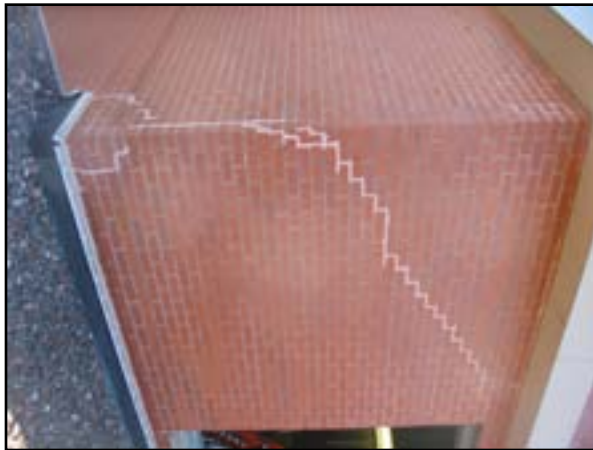
**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Exterior Walls: Roof-Level 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>	118,000
<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**

Deteriorated roof-level walls and chimney at roof Areas 1,4,6,8, and 9. Efflorescence present at spot locations.

**PHOTOS**



Exterior Walls: Roof-Level Wall Restoration  
-

**ACTION DESCRIPTION**

Tuck pointing, spot brick replacement, through-wall flashing replacement, joint sealant replacement, new chimney cap, and misc. items. Sequence work with reroofing.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Floor Finishes: Refinish Hardwood Floors	<b>Inspection Date</b>	08/17/2006
<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>	41,300
<b>Action Date</b>	08/17/2009	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Rooms G1, G2, 302, 306, 208, 212, Gymnasium, 1945 addition corridor		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Existing hardwood floors need sanding and refinishing.

**PHOTOS**



Floor Finishes: Refinish Hardwood Floors

-

**ACTION DESCRIPTION**

Sand and refinish hardwood flooring. 6300 S.F.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Floor Finishes: Replace Carpet	<b>Inspection Date</b>	08/17/2006
<b>Linked System</b>	Floor Finishes	<b>Finish Date</b>	-
<b>Prime System</b>	Floor 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>	222,246
<b>Action Date</b>	08/17/2012	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	-
<b>Requirement Location</b>	Rooms G1, G2, 300, 301, 305, 306, 310, 309, 316, 317, 318, 319, 323, 329, 328, 228, 227, Media/Library, 200, 201, 205, Main Office/Principal, 215, 216, 217, 218, 223, 105, 107, 109, 106, 110, 111, 118, 120, 121,		
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Replace carpet. Rooms noted in comments have carpet noticeably deteriorated condition.

**PHOTOS**



Floor Finishes: Replace Carpet

-

**ACTION DESCRIPTION**

Replace carpet. 30,300 S.F.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Floor Finishes: Replace Rubber Flooring		
<b>Linked System</b>	Floor Finishes	<b>Inspection Date</b>	08/17/2006
<b>Prime System</b>	Floor Finishes	<b>Finish Date</b>	-
<b>Priority</b>	4- Mid Term Needs (6-10 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	Siddens, Lance	<b>Actual Cost</b>	0
<b>Action Date</b>	08/17/2012	<b>Total Estimated Cost:</b>	51,094
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1945 Addition: Ramp in corridor first floor, 1905 Building: 1st Floor Stairs and Vestibules, Ramp, 2nd Floor Stairs and Stair Corridors, 3rd Floor Stairs and Landings, 1987 Addition: 1st Floor Vestibules and Corridor Ramps, 1st Floor Stair and Stair Corridor, 2nd Floor Stairs and Landings	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Rubber flooring is worn, and generally in poor condition.

**PHOTOS**



Floor Finishes: Replace Rubber Flooring

-

**ACTION DESCRIPTION**

Replace existing embossed rubber flooring on stairs, ramps, vestibule and corridor areas with new. 2500 S.F.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	70,800
<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:** Nettleton Elementary School  
**Category:** Deferred Maintenance

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	17,700
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1987 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The three lavatory wash fountains are in need of constant maintenance and most leak water.

These wash fountains are in good shape, but need to be retrofitted with infrared sensor operation.

In addition, the two drinking fountain/spitters in the gymnasium get plugged by students and overflow. This is damaging to the wood floor.

**PHOTOS**



Plumbing: Replace Lavatory Wash Fountains

-

**ACTION DESCRIPTION**

Retrofit the three manual wash stations with infrared sensor operation.

Replace the two gym fountains/spitters with two dual height drinking fountains outside the gym in the gym hallway.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Wall finishes: Paint Interior	<b>Inspection Date</b>	08/17/2006
<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>	113,332
<b>Action Date</b>	08/17/2012	<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**

Periodic maintenance painting

**PHOTOS**



Wall finishes: Paint Interior

-

**ACTION DESCRIPTION**

Paint classroom walls and woodwork.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Controls: VendingMiser Vending Machine Controls		
<b>Linked System</b>	Controls and Instrumentation	<b>Inspection Date</b>	10/03/2006
<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>	10/03/2006	<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>	84
<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:** Nettleton Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	HVAC - Kitchen Equipment: Remote Condenser Heat Removal		
<b>Linked System</b>	Exhaust Ventilation Systems	<b>Inspection Date</b>	07/12/2006
<b>Prime System</b>	Exhaust Ventilation 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>	07/12/2007	<b>Total Estimated Cost:</b>	4,484
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Kitchen - 1987 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The cooler and freezer condensers are located on top of cooler and freezer. This overheats the kitchen area.

**PHOTOS**



HVAC - Kitchen Equipment: Remote Condenser Heat Removal

-

**ACTION DESCRIPTION**

Add an roof exhaust fan above the condensers for summer operation. Add a side wall exhaust fan to transfer condenser heat to the kitchen area for winter operation.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	15,611
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Facility Wide	<b>Annual Energy/Ops Savings \$</b>	1,824
<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:** Nettleton Elementary School  
**Category:** Energy and Operational Efficiency

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	131,174
<b>Action Date</b>	09/20/2006	<b>Funding Type</b>	-
<b>Funding Year</b>	-	<b>Annual Energy/Ops Savings \$</b>	8,257
<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) Replace HID lighting with T8 lighting fixtures
- 3) Replace Incand. lighting with Fluorescent
- 4) Upgrade exit signs with LED technology
- 5) Gym Occupancy Controls

**PHOTOS**

**ACTION DESCRIPTION**

-

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Plumbing - Addition of Natural Gas Water Heater		
<b>Linked System</b>	Plumbing	<b>Inspection Date</b>	07/17/2006
<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>	29,500
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Boiler Room 1905 Building	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

The domestic hot water is currently generated by a steam to hot water heat exchanger, with electric coil for summer operation. A natural gas water heater is desired for summer operation.

**PHOTOS**



Plumbing - Addition of Natural Gas Water Heater

-

**ACTION DESCRIPTION**

Add Natural Gas Water Heater for summer operation.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	34,303
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire Facility	<b>Annual Energy/Ops Savings \$</b>	1,294
<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:** Nettleton Elementary School  
**Category:** Life Safety

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	9,865
<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>	Exterior		
<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.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	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**

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:** Nettleton Elementary School  
**Category:** Occupant Security

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	81,060
<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:** Nettleton Elementary School  
**Category:** Occupant Security

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	84,960
<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**

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:** Nettleton Elementary School  
**Category:** Upgrades

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Communication and Security: Cabling Upgrade		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/15/2006
<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>	124,608
<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 cabling has been installed in several stages over the years and contains different 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:** Nettleton Elementary School  
**Category:** Upgrades

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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:** Nettleton Elementary School  
**Category:** Upgrades

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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 sound

-

**ACTION DESCRIPTION**

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

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Communication and Security: Telephone System Upgrade		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/15/2006
<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>	08/15/2006	<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 upgraded to the new District standard of CISCO VOIP. The telephone system should include port for access to the Paging/Intercom system. The Paging/Intercom system should be modified to allow access from the new telephone system.

**PHOTOS**

**ACTION DESCRIPTION**

Install a new CISCO phone system. Add paging interface. Remove old system after installation of new.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Communication and Security: Video/TV Distribution Upgrade		
<b>Linked System</b>	Communications and Security	<b>Inspection Date</b>	08/15/2006
<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>	08/15/2009	<b>Total Estimated Cost:</b>	31,152
<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:** Nettleton Elementary School  
**Category:** Upgrades

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	2- Potentially Critical (1-2 Yrs)	<b>Status</b>	Open
<b>Inspector Name</b>	The Westlund Group	<b>Actual Cost</b>	0
<b>Action Date</b>	08/15/2007	<b>Total Estimated Cost:</b>	151,866
<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 1st Grade Classrooms have Audio Enhancement systems. The Gym Sound system is inadequate, un-useable, tremendous echo and no coverage.

**PHOTOS**

**ACTION DESCRIPTION**

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

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Controls and Instrumentation: BAS and Controls Upgrade		
<b>Linked System</b>	Controls and Instrumentation	<b>Inspection Date</b>	07/11/2006
<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>	07/11/2007	<b>Total Estimated Cost:</b>	194,700
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Entire building	<b>Annual Energy/Ops Savings \$</b>	3,156
<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.

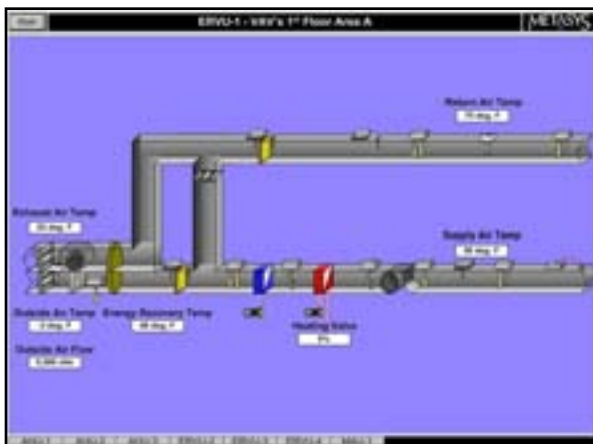
Upgrade existing pneumatic controls (old technology) to new Direct Digital controls.

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**

Upgrade existing BAS to new web based to tie to District-wide BAS network. Add additional monitoring and control points to optimize BAS system.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Elevators and Lifts: Elevator Modernization		
<b>Linked System</b>	Elevators and Lifts	<b>Inspection Date</b>	08/28/2006
<b>Prime System</b>	Elevators and Lifts	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schindler Elevator Corp.	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	88,264
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1987 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Future Modernizations - Control changes, door operator, power unit change, car station, fixtures.

**PHOTOS**

**ACTION DESCRIPTION**

Modernization

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Elevators and Lifts: Elevator Modernization		
<b>Linked System</b>	Elevators and Lifts	<b>Inspection Date</b>	08/28/2006
<b>Prime System</b>	Elevators and Lifts	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Schindler Elevator Corp.	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	84,370
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	1945 Addition	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Future Modernizations - Control changes, door operator, power unit change, car station, fixtures.

**PHOTOS**

**ACTION DESCRIPTION**

Modernization

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	105,020
<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:** Nettleton Elementary School  
**Category:** Upgrades

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Equipment and Furnishings: Construct Computer Stations		
<b>Linked System</b>	Equipment and Furnishings	<b>Inspection Date</b>	08/17/2006
<b>Prime System</b>	Equipment and Furnishings	<b>Finish Date</b>	-
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b>	Open
<b>Inspector Name</b>	Siddens, Lance	<b>Actual Cost</b>	0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b>	52,392
<b>Funding Year</b>	-	<b>Funding Type</b>	-
<b>Requirement Location</b>	Media/Library, 218 Computer Lab	<b>Annual Energy/Ops Savings \$</b>	-
<b>Savings Description</b>	-		

**REQUIREMENT DESCRIPTION**

Computer Stations need to be upgraded to new district standards

**PHOTOS**



Equipment and Furnishings: Construct Computer Stations

-

**ACTION DESCRIPTION**

Replace existing computer stations to comply with new district standards.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<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>	467,280
<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 one Smart Boards installed. Three Smart Boards are on order.

**PHOTOS**

**ACTION DESCRIPTION**

Install additional Smart Boards.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Exterior Windows: Replace Windows	
<b>Linked System</b>	Exterior Windows	<b>Inspection Date</b> 08/17/2006
<b>Prime System</b>	Exterior Windows	<b>Finish Date</b> -
<b>Priority</b>	5- Recommendations/ Improvements	<b>Status</b> Open
<b>Inspector Name</b>	Siddens, Lance	<b>Actual Cost</b> 0
<b>Action Date</b>	-	<b>Total Estimated Cost:</b> 650,323
<b>Funding Year</b>	-	<b>Funding Type</b> -
<b>Requirement Location</b>	Exterior Windows	<b>Annual Energy/Ops Savings \$</b> 4092
<b>Savings Description</b>	Energy savings generated from improved window insulation values and reduced infiltration.	

**REQUIREMENT DESCRIPTION**

Replace all exterior windows.

**PHOTOS**



Exterior Windows: Replace Windows

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**ACTION DESCRIPTION**

Replace existing vinyl windows with new.

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

**Asset Name:** Nettleton Elementary School  
**Asset Number:** 540

<b>Requirement Name</b>	Fittings: Replace Chalkboard	<b>Inspection Date</b>	08/17/2006
<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>	59,590
<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**

Existing chalkboards are beyond rated life. District future modernization / standardization goal is to convert to markerboard.

**PHOTOS**



Fittings: Replace Chalkboard

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**ACTION DESCRIPTION**

Change existing chalkboards to markerboard. 3250 S. F.