

Requirement Detail

by Asset Name and Category

**TRANSPORTATION
CENTER**

District: Duluth Public Schools
Facility: Transportation Center
Category: Upgrades

Asset Name: Transportation Center - Parking
Asset Number: 13c

Requirement Name	Vehicular Paving: Gravel Parking Lots		
Linked System	Parking Lots	Inspection Date	08/01/2006
Prime System	Paving and Surfacing	Finish Date	-
Priority	5- Recommendations/ Improvements	Status	Open
Inspector Name	Inspec	Actual Cost	0
Action Date	-	Total Estimated Cost:	295,000
Funding Year	-	Funding Type	-
Requirement Location	Gravel Lot and Drive	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

All parking and drive areas at site are gravel, should pave in the future and new curbing.

PHOTOS

ACTION DESCRIPTION

Install new concrete curbing and pave gravel areas with asphalt pavement.

District: Duluth Public Schools
Facility: Transportation Center
Category: Accessibility

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Interior Doors: Replace Knob Hardware with Lever Hardware		
Linked System	Interior Doors	Inspection Date	09/14/2006
Prime System	Interior Doors	Finish Date	-
Priority	6- Does Not Meet Current Codes/Standards	Status	Open
Inspector Name	Siddens, Lance	Actual Cost	0
Action Date	-	Total Estimated Cost:	7,859
Funding Year	-	Funding Type	-
Requirement Location	Administrative Spaces	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Interior door hardware is cylindrical design and does not meet current ADA Accessibility Standards.

PHOTOS



Interior Doors: Replace Knob Hardware with Lever Hardware

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ACTION DESCRIPTION

Replace cylindrical design door hardware with lever type. All doors without panic hardware.

District: Duluth Public Schools
Facility: Transportation Center
Category: Air and Water Quality

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	HVAC: Upgrade Office Ventilation and Add Dehumidification		
Linked System	Air Distribution Systems	Inspection Date	07/11/2006
Prime System	Air Distribution Systems	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	07/11/2007	Total Estimated Cost:	331,344
Funding Year	-	Funding Type	-
Requirement Location	Office and Storage Rooms	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The air handling system serving the Office has exceeded it's recommended service life and has no means of dehumidification due to failed components. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

In addition the storage room does not have means of ventilation nor heating.

PHOTOS



HVAC: Upgrade Office Ventilation and Add Dehumidification

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ACTION DESCRIPTION

Installation of new air handling unit with dehumidification capabilities (DX Coil and Condensing Unit). Installation of supply duct with external insulation. Upgrade Controls System. Test and Balance and Commissioning of air handling units.

Installation of unit heaters in storage area and ventilation via the office unit.

This unit would serve the locker rooms as well.

All Costs in USD.

District: Duluth Public Schools
Facility: Transportation Center
Category: Air and Water Quality

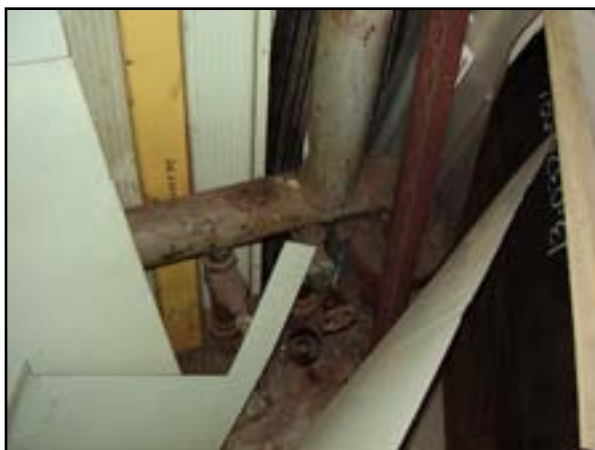
Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Plumbing: Replace Galvanized Domestic Water Piping		
Linked System	Domestic Water Distribution	Inspection Date	06/28/2006
Prime System	Domestic Water Distribution	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	06/28/2007	Total Estimated Cost:	43,778
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The 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.

PHOTOS



Plumbing: Replace Galvanized Domestic Water Piping

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ACTION DESCRIPTION

Remove all the remaining 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.

This would include directly connecting the drinking fountain sumps.

This includes the bradley shower stations in the locker rooms.

District: Duluth Public Schools
Facility: Transportation Center
Category: Asbestos

Asset Name: Transportation Center
Asset Number: 13

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

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: Transportation Center
Category: Beyond Rated Life

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Plumbing - Sump Pump Replacement		
Linked System	Plumbing	Inspection Date	07/18/2006
Prime System	Plumbing	Finish Date	-
Priority	4- Mid Term Needs (6-10 Yrs)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	07/18/2012	Total Estimated Cost:	11,800
Funding Year	-	Funding Type	-
Requirement Location	Boiler Room	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The sump pump in the pump room is 8beyond it's recommended service life.

PHOTOS



Plumbing - Sump Pump Replacement

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ACTION DESCRIPTION

Replace the existing submersible sump pump with a new vertical duplex set of sump pumps with new duplex control panel.

Sump pit may require replacement at this site.

District: Duluth Public Schools
Facility: Transportation Center
Category: Beyond Rated Life

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Plumbing: Replace Underground Sanitary Sewer Lines		
Linked System	Plumbing	Inspection Date	11/29/2006
Prime System	Plumbing	Finish Date	-
Priority	5- Recommendations/ Improvements	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	-	Total Estimated Cost:	29,500
Funding Year	-	Funding Type	-
Requirement Location	All Building Areas 35 Years or Older	Annual Energy/Ops Savings \$	-
Savings Description	-		

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: Transportation Center
Category: Beyond Rated Life

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Roof System: Replace Roof	Inspection Date	08/01/2006
Linked System	Roofing	Finish Date	-
Prime System	Roofing	Status	Open
Priority	2- Potentially Critical (1-2 Yrs)	Actual Cost	0
Inspector Name	Inspec	Total Estimated Cost:	47,578
Action Date	08/01/2007	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	80
Requirement Location	Offices		
Savings Description	Energy savings generated from improved roof insulation.		

REQUIREMENT DESCRIPTION

Roof system beyond rated service life. Leakage persists. Includes roof Area 1.

PHOTOS



Roof System: Replace Roof

ACTION DESCRIPTION

Replace the adhered EPDM roof in this area. Sequence work with roof-level wall restoration.

District: Duluth Public Schools
Facility: Transportation Center
Category: Building Code

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	HVAC: Ventilation Improvements - Shop		
Linked System	Exhaust Ventilation Systems	Inspection Date	08/18/2006
Prime System	Exhaust Ventilation Systems	Finish Date	-
Priority	6- Does Not Meet Current Codes/Standards	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	-	Total Estimated Cost:	144,432
Funding Year	-	Funding Type	-
Requirement Location	Shop	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The shop does not have adequate exhaust, nor does it have a CO, CO2, NO2 detection and make up air system as required by 2000 Mechanical Code.

PHOTOS



HVAC: Ventilation Improvements - Shop

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ACTION DESCRIPTION

Install new vehicle exhaust system, gas fume detection system, and make up air system.

District: Duluth Public Schools
Facility: Transportation Center
Category: Capacity

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	HVAC: Add Cooling Capability to IT Data Rooms		
Linked System	Cooling Generating Systems	Inspection Date	07/11/2006
Prime System	Cooling Generating Systems	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	07/11/2007	Total Estimated Cost:	35,636
Funding Year	-	Funding Type	-
Requirement Location	IT Data Room - Conference Room	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The IT Data room gets hot, which could cause technology equipment failure.

PHOTOS



HVAC: Add Cooling Capability to IT Data Rooms

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ACTION DESCRIPTION

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

District: Duluth Public Schools
Facility: Transportation Center
Category: Capacity

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Plumbing: Upsize Service Air Lines	Inspection Date	08/18/2006
Linked System	Plumbing	Finish Date	-
Prime System	Plumbing	Status	Open
Priority	4- Mid Term Needs (6-10 Yrs)	Actual Cost	0
Inspector Name	Schumacher, Russ	Total Estimated Cost:	2,360
Action Date	08/18/2012	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	-
Requirement Location	Shop		
Savings Description	-		

REQUIREMENT DESCRIPTION

The existing shop air lines do not allow for multiple tool operation. This is especially true for when the sand blaster is in use.

PHOTOS



Plumbing: Upsize Service Air Lines

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ACTION DESCRIPTION

Upsize the air lines on both sides of the shop to allow for multiple tool operation.

District: Duluth Public Schools
Facility: Transportation Center
Category: Deferred Maintenance

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Ceiling Finishes: Suspend Acoustical Tile		
Linked System	Ceiling Finishes	Inspection Date	09/14/2006
Prime System	Ceiling Finishes	Finish Date	-
Priority	4- Mid Term Needs (6-10 Yrs)	Status	Open
Inspector Name	Siddens, Lance	Actual Cost	0
Action Date	09/14/2012	Total Estimated Cost:	2,620
Funding Year	-	Funding Type	-
Requirement Location	Tire Storage Building	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Portions of existing 2x4 suspended acoustical tile ceiling are missing and insulation is falling down.

PHOTOS



Ceiling Finishes: Suspend Acoustical Tile

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ACTION DESCRIPTION

Repair damaged and missing acoustical tile and glass fiber blanket insulation.

District: Duluth Public Schools
Facility: Transportation Center
Category: Deferred Maintenance

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Exterior Walls: Wall Restoration		
Linked System	Exterior Walls	Inspection Date	08/01/2006
Prime System	Exterior Walls	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Inspec	Actual Cost	0
Action Date	08/01/2007	Total Estimated Cost:	70,800
Funding Year	-	Funding Type	-
Requirement Location	Entire Building	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Deteriorated roof-level and grade-level walls around entire building perimeter for all three buildings on site.

PHOTOS



Exterior Walls: Wall Restoration

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ACTION DESCRIPTION

Tuck pointing, spot brick replacement, joint sealant replacement, painting, replace and flash lintels, and replace sheet metal panels. Sequence work with reroofing Area 1.

District: Duluth Public Schools
Facility: Transportation Center
Category: Deferred Maintenance

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Interior Doors: Wood & Steel Doors		
Linked System	Interior Doors	Inspection Date	09/14/2006
Prime System	Interior Doors	Finish Date	-
Priority	4- Mid Term Needs (6-10 Yrs)	Status	Open
Inspector Name	Siddens, Lance	Actual Cost	0
Action Date	09/14/2012	Total Estimated Cost:	8,378
Funding Year	-	Funding Type	-
Requirement Location	Office Interior Office to Garage	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Wood panel doors (some with untempered glass panels & sidelights) & steel doors are old, unsightly & without lever hardware.

PHOTOS



trans wood door

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ACTION DESCRIPTION

Replace wood panel and steel doors with new. 8 doors.

District: Duluth Public Schools
Facility: Transportation Center
Category: Energy and Operational Efficiency

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Controls: VendingMiser Vending Machine Controls		
Linked System	Controls and Instrumentation	Inspection Date	10/02/2006
Prime System	Controls and Instrumentation	Finish Date	-
Priority	1- Currently Critical (Immediately)	Status	Open
Inspector Name	Ruud, Mark	Actual Cost	0
Action Date	10/02/2006	Total Estimated Cost:	826
Funding Year	-	Funding Type	-
Requirement Location	Vending Machines	Annual Energy/Ops Savings \$	119
Savings Description	VeningMiser controls cycle power to the vending machine during unoccupied times to save energy.		

REQUIREMENT DESCRIPTION

Install VendingMiser controls on vending machines.

PHOTOS

ACTION DESCRIPTION

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District: Duluth Public Schools
Facility: Transportation Center
Category: Energy and Operational Efficiency

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Exterior Windows: Steel Windows		
Linked System	Exterior Windows	Inspection Date	09/14/2006
Prime System	Exterior Windows	Finish Date	-
Priority	5- Recommendations/ Improvements	Status	Open
Inspector Name	Siddens, Lance	Actual Cost	0
Action Date	-	Total Estimated Cost:	14,344
Funding Year	-	Funding Type	-
Requirement Location	Repair Garage, Storage, Men's Toilet	Annual Energy/Ops Savings \$	259
Savings Description	Energy savings generated from improved window insulation values and reduced infiltration.		

REQUIREMENT DESCRIPTION

Steel windows are single pane glass & old. Energy Inefficient

PHOTOS



Exterior Windows: Steel Windows

ACTION DESCRIPTION

Replace existing steel single pane windows with new vinyl or aluminum windows with insulating glass. (11) 4' X 3' windows.

District: Duluth Public Schools
Facility: Transportation Center
Category: Energy and Operational Efficiency

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	HVAC: Boiler Room Upgrades	Inspection Date	07/12/2006
Linked System	Heat Generating Systems	Finish Date	-
Prime System	Heat Generating Systems	Status	Open
Priority	3- Necessary - Not Yet Critical (3-5 Yrs)	Actual Cost	0
Inspector Name	Schumacher, Russ	Total Estimated Cost:	92,984
Action Date	07/12/2009	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	716
Requirement Location	Boiler Room		
Savings Description	Energy savings generated from using a condensing style boiler as well as improved insulation.		

REQUIREMENT DESCRIPTION

The existing boiler does not have backup capabilities.

In addition, the heating piping is not insulated which consumes more energy than an insulated piping system.

PHOTOS



HVAC: Boiler Room Upgrades

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ACTION DESCRIPTION

Install one new high efficiency backup boiler and insulate heating piping.

District: Duluth Public Schools
Facility: Transportation Center
Category: Energy and Operational Efficiency

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Lighting: Lighting Retrofit	Inspection Date	09/20/2006
Linked System	Lighting Equipment	Finish Date	-
Prime System	Lighting Equipment	Status	Open
Priority	1- Currently Critical (Immediately)	Actual Cost	12,162
Inspector Name	Ruud, Mark	Total Estimated Cost:	14,351
Action Date	09/20/2006	Funding Year	-
Funding Year	-	Funding Type	-
Requirement Location	Entire Facility	Annual Energy/Ops Savings \$	1,532
Savings Description	Energy savings generated through more efficient lighting technology.		

REQUIREMENT DESCRIPTION

Lighting project consists of the following:

- 1) Relamp 32w T8 lamps with 25w T8 lamps
- 2) Replace HID lighting with T8 lighting fixtures
- 3) Replace Incand. lighting with Fluorescent
- 4) Upgrade exit signs with LED technology
- 5) High bay occupancy sensors

PHOTOS

ACTION DESCRIPTION

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District: Duluth Public Schools
Facility: Transportation Center
Category: Energy and Operational Efficiency

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Plumbing: Water Conservation Upgrades		
Linked System	Plumbing Fixtures	Inspection Date	09/21/2006
Prime System	Plumbing Fixtures	Finish Date	-
Priority	1- Currently Critical (Immediately)	Status	Open
Inspector Name	Ruud, Mark	Actual Cost	0
Action Date	09/21/2006	Total Estimated Cost:	2,541
Funding Year	-	Funding Type	-
Requirement Location	Entire Facility	Annual Energy/Ops Savings \$	284
Savings Description	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

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District: Duluth Public Schools
Facility: Transportation Center
Category: Life Safety

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Lighting Equipment: Exterior Lighting	Inspection Date	09/19/2006
Linked System	Lighting Equipment	Finish Date	-
Prime System	Lighting Equipment	Status	Open
Priority	1- Currently Critical (Immediately)	Actual Cost	0
Inspector Name	Ruud, Mark	Total Estimated Cost:	8,924
Action Date	09/19/2006	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	-
Requirement Location	Building Perimeter Parking		
Savings Description	-		

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: Transportation Center
Category: Occupant Security

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Communication and Security: Access Control		
Linked System	Communications and Security	Inspection Date	09/20/2006
Prime System	Security and Detection Systems	Finish Date	-
Priority	4- Mid Term Needs (6-10 Yrs)	Status	Open
Inspector Name	Crotteau, Paul	Actual Cost	0
Action Date	09/20/2012	Total Estimated Cost:	12,980
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

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

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ACTION DESCRIPTION

INSTALL CARD READERS AT 2-3 DOORS AS NEEDED, INSTALL MAGNETIC CONTACTS ON ALL OTHER DOORS INCLUDING GARAGE DOOR

District: Duluth Public Schools
Facility: Transportation Center
Category: Occupant Security

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Communications and Security: CCTV		
Linked System	Communications and Security	Inspection Date	11/30/2006
Prime System	Communications and Security	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Crotteau, Paul	Actual Cost	0
Action Date	11/30/2007	Total Estimated Cost:	15,930
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

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: Transportation Center
Category: Occupant Security

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Fire Alarm Systems: No System		
Linked System	Fire Alarm Systems	Inspection Date	09/20/2006
Prime System	Fire Alarm Systems	Finish Date	-
Priority	4- Mid Term Needs (6-10 Yrs)	Status	Open
Inspector Name	Crotteau, Paul	Actual Cost	0
Action Date	09/20/2012	Total Estimated Cost:	33,040
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Building has no existing fire alarm system.

PHOTOS



Fire Alarm Systems: No System

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ACTION DESCRIPTION

install new addressable fire alarm and security system

District: Duluth Public Schools
Facility: Transportation Center
Category: Upgrades

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Communication and Security: Cabling Upgrade		
Linked System	Communications and Security	Inspection Date	08/15/2006
Prime System	Local Area Networks	Finish Date	-
Priority	5- Recommendations/ Improvements	Status	Open
Inspector Name	The Westlund Group	Actual Cost	0
Action Date	-	Total Estimated Cost:	19,470
Funding Year	-	Funding Type	-
Requirement Location	Entire Facility	Annual Energy/Ops Savings \$	-
Savings Description	-		

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. Standardize quantity of phone and data in classroom and offices.

District: Duluth Public Schools
Facility: Transportation Center
Category: Upgrades

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Communication and Security: Video/TV Distribution Upgrade		
Linked System	Communications and Security	Inspection Date	08/15/2006
Prime System	Television Systems	Finish Date	-
Priority	3- Necessary - Not Yet Critical (3-5 Yrs)	Status	Open
Inspector Name	The Westlund Group	Actual Cost	0
Action Date	08/15/2009	Total Estimated Cost:	1,298
Funding Year	-	Funding Type	-
Requirement Location	Entire Facility	Annual Energy/Ops Savings \$	-
Savings Description	-		

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 administrative areas as required.

District: Duluth Public Schools
Facility: Transportation Center
Category: Upgrades

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Controls and Instrumentation: BAS and Controls Upgrade		
Linked System	Controls and Instrumentation	Inspection Date	10/09/2006
Prime System	Building Automation Systems	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Schmidt, Brian	Actual Cost	0
Action Date	10/09/2007	Total Estimated Cost:	59,000
Funding Year	-	Funding Type	-
Requirement Location	Entire building	Annual Energy/Ops Savings \$	497
Savings Description	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.

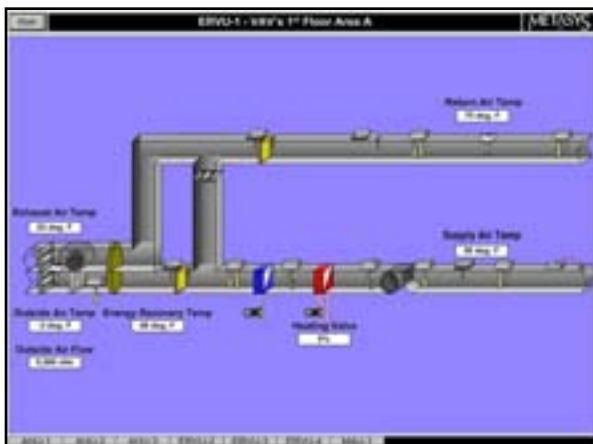
Upgrade existing electric/pneumatic controls (old technology) to new Direct Digital controls.

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: Transportation Center
Category: Upgrades

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	HVAC: Add Propylene Glycol to Heating System		
Linked System	Hot Water Distribution	Inspection Date	07/12/2006
Prime System	Hot Water Distribution	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	07/12/2007	Total Estimated Cost:	5,900
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The heating system currently serving the building does not contain glycol, which creates the opportunity for heating coil freeze up.

PHOTOS



HVAC: Add Propylene Glycol to Heating System

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ACTION DESCRIPTION

Add Propylene Glycol into the entire heating system to prevent coil freeze up.

District: Duluth Public Schools
Facility: Transportation Center
Category: Upgrades

Asset Name: Transportation Center
Asset Number: 13

Requirement Name	Superstructure: Replace Garage	Inspection Date	09/14/2006
Linked System	Superstructure	Finish Date	-
Prime System	Superstructure	Status	Open
Priority	5- Recommendations/ Improvements	Actual Cost	0
Inspector Name	Siddens, Lance	Total Estimated Cost:	687,940
Action Date	-	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	-
Requirement Location	Repair Garage		
Savings Description	-		

REQUIREMENT DESCRIPTION

Existing repair garage is in poor condition and does not function well and in hard to heat; replace building.

PHOTOS



Superstructure: Replace Garage

ACTION DESCRIPTION

Demo existing building and replace with new steel building.