

# School District No. 8 (Kootenay Lake)

## 2012/2013 Capital Plan

October 22, 2012

CP-2 Five Year Capital Plan Summary	(Page 2)
CP-1 Proposed Projects with a High Ranking	
1. New Trafalgar Elementary/Middle School	(Pages 3-6)
2. Boiler Upgrades at 5 Sites: ARES, WEG, LVR, MSSS, Central	(Pages 7-15)
3. Hume Elementary Mechanical System Upgrade	(Pages 16-25)
4. JV Humphries Mechanical System Upgrade	(Pages 26-35)
5. Replacement of 4-72 Passenger Buses	(Pages 36-45)
CP-3 Summary of Capacities & Projected Enrolment	(Pages 46-53)
Project Identification Report – Trafalgar Middle School (note: Updated Appendix C and Appendix L)	(Page 54)



## CP2 - Five Year Capital Plan Summary

School District: 08 Kootenay Lake

Capital Plan Year: 2012/2013

Capital Plan Submission Date: 22- OCT- 2012

Existing Project Priority	Project No.	School District Reference No.	Project Title	Year One	Year Two	Year Three	Year Four	Year Five	Total Funding
1	116036	100	REPLACE - TRAFALGAR MIDDLE SCHOOL REPLACE EXISTING TRAFALGAR ELEMENTARY/MIDDLE SCHOOL	\$0	\$0	\$26,552,231	\$0	\$0	\$26,552,231
2	116419	153	MECHUP - VARIOUS FACILITIES BOILER UPGRADE PROGRAM - VARIOUS SITES	\$1,525,000	\$0	\$0	\$0	\$0	\$1,525,000
3	116072	150	MECHUP - HUME ELEMENTARY SCHOOL HUME MECHANICAL SYSTEM UPGRADE	\$0	\$1,425,000	\$0	\$0	\$0	\$1,425,000
4	116418	152	MECHUP - J V HUMPHRIES ELEM-SECONDARY JV HUMPHRIES ELEM-SECONDARY MECHANICAL UPGRADE	\$0	\$500,000	\$0	\$0	\$0	\$500,000
5	116417	207	BUSREP - REPLACEMENT SCHOOL BUS REPLACE 4-72 PASSENGER BUSES (2089, 2080, 1082, 1083)	\$434,520	\$0	\$0	\$0	\$0	\$434,520
Total:				\$1,959,520	\$1,925,000	\$26,552,231	\$0	\$0	\$30,436,751



## Capital Project Request Form

RDER0310 V.4.06

09 OCT 2012 12:10:35

Hidden: No  
 District Priority: High  
 District Ranking: 1  
 Ministry Priority: HIGH

'kim morris' (PRD01)

Project No: 116036

Request Type: Update

## Part A - Project Identification

1. Capital Plan Year: 2012/2013	2. SD Ref. No.: 100	3. Last Modified: Oct. 9, 2012	4. Submitted On: unsubmitted
5. SD No.: 08	6. SD Name: Kootenay Lake	7. Municipality: NELSON	8. Asset No.: 100246
9. Facility No.: 07005	10. Facility Name: TRAFALGAR MIDDLE SCHOOL	Facility Type:	
13. Proj. Cd. REPLACE	14. Project Description: REPLACE EXISTING TRAFALGAR ELEMENTARY/MIDDLE SCHOOL	11. Current: Junior Middle School	
15. Proj. Type: MAJOR		12. Proposed: Elementary-Secondary School	

## Part B - Capacity, Area Factors and Allowances

Nominal Capacity:		Kindergarten	Grades 1 - 7	Grades 8 - 12	7. Grade Configuration
1. Actual Existing:		0	375	200	6-8
2. Capacity Adjustments:		0	125	-50	
3. Proposed Higher Priority Additions:		0	0	0	
4. Total Existing:		0	500	150	
5. Proposed Addition:		0	0	0	
6. Proposed Total Capacity:		0	500	150	8. K-8
Site Area (ha):		Allowable Building Area (sq.m.)			Allowable Renovation Area (sq.m.)
9. Required Size:	0.0	12. Total Allowable Area:	6942.0		16. Renovations Associated With Additions (%): 5.5
10. Existing Area:	0.0	13. Existing Area:	0.0		17. Renovation Area: 0.00
11. Total New Area:	0.0	14. Area to be demolished:	0.0		18. Renovation Unit Rate: 0
		15. Area of New Space:	6942.0		
Construction Cost Factors:		Equipment Allowance (%):			
19. Base Unit Rate:	1785.00	20. Air Conditioning:	0	LFA: 0.00	MF: 1.00
21. Project Size Factor:	0.981	22. Location Factor:	1.15	23. Ground Factor:	1.00
				24. New Space:	17.3
				25. Freight Allowance:	8.609

## Part C - Estimated Budget

Site Acquisition:		1. Purchase:	0	2. Other Cost:	186,701	3. Subtotal:	186,701	
Site Development:		4. Development Cost Charges:	0					
		5. Offsite Costs:	0					
		6. Adjusted Site Development:	1,171,058	466,000	New Building on Existing Site	8.	1,171,058	
		7. Supplementary Site:	0					
New Construction:		9. New Area:	6,942.0	Renovations:	13. Renovation Area:	0.00		
		10. Adjusted Unit Rate:	2,588.5157		14. Renovation Unit Rate:	0		
		11. Subtotal:	17,969,476		15. Subtotal:	0		
		12. Supplementary Building:	0		16. Supplementary Costs:	0		
					17. Other Costs:	0		
Building Costs:		18. Build Total:	17,969,476		19. Reno Cost:	0	20. 17,969,476	
				Area	Allowance			
Equipment Allowance:		Effective Equip. Allow. %	10.176	21. New Area:	1,372.00	249,224		
		22. Area Entitled to Equipment Replacement	0.00			0		
New Fee	Reno Fee			23. Equipment Freight Allowance:	21,456	24.	270,680	
0.0927	0.1600			27. Renovation:	0	28.	1,774,327	
Fees:	25. Site Dev.:	108,557	26. New:	1,665,770	30. Renovation:	0	31.	574,216
Contingency:	29. New:	574,216					33.	4,605,773
Other:	32. Supplementary Building							
Phases:	34. Site:	186,701	35. Plan:	765,621	36. Completion:	25,599,909		
	37. Planning Costs in Planning Phase:	765,621			38. In Completion Phase:	0		
Total Estimated Budget:					39.	26,552,231		

Project No.	Project Title	Capital Plan Year	SD No.	SD Ref. No.
116036	REPLACE - TRAFALGAR MIDDLE SCHOOL	2012/2013	08	100

#### Part D - Schedule and Funding

Project Cost Schedule:		Site	Planning	Completion
	1. Year:	2014/2015	2014/2015	2014/2015
	2. Cost:	186,701	765,621	25,599,909
Funding Source:	3. Bylaw Capital:	186,701	765,621	25,599,909
	4. Capital Reserve:	0	0	0
	5. Land Reserve:	0	0	0
	6. Local Capital:	0	0	0

#### Part E - Approved Funding

Phase Status:	1. Status:	Requested	Requested	Requested
Approved:	2. Bylaw Capital:	0	0	0
	3. Capital Reserve:	0	0	0
	4. Land Reserve:	0		0
	5. Local Capital:	0	0	0
Variance:	6. Variance	186,701	765,621	25,599,909
Net Request:	7. Bylaw Capital:	186,701	765,621	25,599,909
	8. Capital Reserve:	0	0	0
	9. Land Reserve:	0	0	0
	10. Local Capital:	0	0	0

#### Part F - Comments



# Design Aid Sheet For Middle/Secondary Schools

Capital Plan Year: 2012/2013

Project No.: 116036

Project Title: REPLACE - TRAFALGAR MIDDLE SCHOOL

SD Ref. No.: 100  
SD No.: 08  
SD Name: Kootenay Lake  
Facility No.: 07005  
Facility Name: TRAFALGAR MIDDLE SCHOOL

'kim morris' (PRD01)

**Nominal Capacity:**

Actual Existing:  
Capacity Adjustments:  
Prop. Higher Priority Addn.:  
Total Existing:  
Proposed Addition:  
Proposed Total Capacity:

Kindergarten	Grades 1-7	Grades 8-12	Grade Config
0	375	200	6-8
0	125	-50	
0	0	0	
0	500	150	
0	0	0	
0	500	150	K-8

**Allowance:**

Elective Modules:  
Total Modules:  
Instr. Space:

Existing	Proposed	Differences
1.00	1.00	0.00
27.00	27.00	0.00
2500.00	2500.00	0.00

## Part One - Academic/Vocational

Space Function	A-EXISTING						B-MODULES		C-NEW CORE					D-NEW ELECTIVE				
	Description	Room	No. of Rooms	Std. Area	Actual Area	Mods.	Core	Surplus/(Deficit)	Description	No. of Rooms	Std. Area	Actual Area	Mods.	Description	No. of Rooms	Std. Area	Actual Area	Mods.
Business Education							1	(1.00)	Business Education	1	100	100	1.00					
Fine Arts							1	(1.00)	Music	1	160	160	1.00	Drama and Theatre	1	120	120	1.00
Home Economics							1	(1.00)	Combined Clothing/F	1	140	140	1.00					
Industrial Education							1	(1.00)	General Shop	1	155	155	1.00					
Science							1	(1.00)	Science	1	100	100	1.00					
Other																		
General Instruction	Other Rooms			80	0	0.00	E 20 S 1	(21.00)	General Instruction	21	80	1680	21.00					
Subtotal					0.00	0.00		(26.00)				2335.00	26.00				120.00	1.00

Existing Surp./(Def.) Instr. Space: (2500.00) Modules: (27.00) Allowable New Instr. Space: 2500.00 Modules: 27.00 New Space Variance From Allowance: (2455.00) Modules: (27.00)

5

Project No.: 116036

Project Title: REPLACE - TRAFALGAR MIDDLE SCHOOL

Capital Plan Year: 2012/2013

SD No.: 08

SD Ref. No.: 100

## Part Two - Service/Activity

SPACE FUNCTION	E-EXISTING	F-ALLOWABLE	G-DEFICIT	H-NEW
Admin/Health	0.00	190.00	190.00	190.00
Counselling	0.00	50.00	50.00	50.00
General Storage	0.00	90.00	90.00	90.00
Gym Activity	0.00	600.00	600.00	600.00
Gym Ancillary	0.00	150.00	150.00	150.00
Media/Tech Centre	0.00	320.00	320.00	320.00
Multi-Purpose	0.00	160.00	160.00	160.00
Special Education	0.00	320.00	320.00	320.00
Mechanical	0.00	170.00	170.00	170.00
Design Space	0.00	1225.00	1225.00	1225.00
Industrial Ed. Mezz./Stor.	0.00	0.00	0.00	0.00
Strong Start Centre	0.00	90.00	90.00	0.00
Other	0.00	0.00	0.00	1212.00
<b>SUBTOTAL</b>	<b>0</b>	<b>3365.00</b>	<b>3365.00</b>	<b>4487.00</b>

## Part Three - Total Areas

	N-EXISTING	P-NEW
Existing A/V	0.00	
Core A/V Additions		2335.00
Elective A/V Additions		120.00
Service / Activity	0.00	4487.00
Subtotal	0.00	6942.00
Total Gross Allowable Area		6942.00

## Part Four - Comments

Other - DAS

Part Two - Other of 1,212 is

2 x Kindergarten @ (90 s.m. + 20 s.m. design space)  
 Strong Start @ (90 s.m. + 20 s.m. design space)  
 Neighbourhood Learning Centre at 15% of 5880 x.m. = 882 s.m.

Other - DAS

Kindergarten Nominal Capacity for the new school = 40



## Capital Project Request Form

RDER0310 V.4.06

09 OCT 2012 12:10:39

Hidden: No  
 District Priority: High  
 District Ranking: 2  
 Ministry Priority:

'kim morris' (PRD01)

Project No: N/A

Request Type: New

## Part A - Project Identification

1. Capital Plan Year: 2012/2013	2. SD Ref. No.: 153	3. Last Modified: Oct. 9, 2012	4. Submitted On: unsubmitted
5. SD No.: 08	6. SD Name: Kootenay Lake	7. Municipality: NELSON	8. Asset No.:
9. Facility No.:	10. Facility Name: N/A	Facility Type:	
13. Proj. Cd. MECHUP	14. Project Description: BOILER UPGRADE PROGRAM - VARIOUS SITES	11. Current:	
15. Proj. Type: MAJOR		12. Proposed:	

## Part B - Capacity, Area Factors and Allowances

Nominal Capacity:		Kindergarten	Grades 1 - 7	Grades 8 - 12	7. Grade Configuration
1. Actual Existing:		0	0	0	U
2. Capacity Adjustments:		0	0	0	
3. Proposed Higher Priority Additions:		0	0	0	
4. Total Existing:		0	0	0	
5. Proposed Addition:		0	0	0	
6. Proposed Total Capacity:		0	0	0	8. U
Site Area (ha):		Allowable Building Area (sq.m.)		Allowable Renovation Area (sq.m.)	
9. Required Size:	0.0	12. Total Allowable Area:	0.0		16. Renovations Associated With Additions (%):
10. Existing Area:	0.0	13. Existing Area:	0.0		17. Renovation Area:
11. Total New Area:	0.0	14. Area to be demolished:	0.0		0.00
		15. Area of New Space:	0.0		18. Renovation Unit Rate:
					0
Construction Cost Factors:		Equipment Allowance (%):			
19. Base Unit Rate:	0	20. Air Conditioning:	0	LFA: 0.00	MF: 1.00
21. Project Size Factor:	1.000	22. Location Factor:	1.15	23. Ground Factor:	1.00
				24. New Space:	0.0
				25. Freight Allowance:	8.609

## Part C - Estimated Budget

Site Acquisition:		1. Purchase:	0	2. Other Cost:	0	3. Subtotal:	0
Site Development:		4. Development Cost Charges:	0	5. Offsite Costs:	0	6. Adjusted Site Development:	0
		7. Supplementary Site:	0	8. None:	0		0
New Construction:		9. New Area:	0.0	Renovations:	13. Renovation Area:	0.00	
		10. Adjusted Unit Rate:		14. Renovation Unit Rate:	0		
		11. Subtotal:	0	15. Subtotal:	0		
		12. Supplementary Building:	0	16. Supplementary Costs:	0		
				17. Other Costs:	0		
Building Costs:		18. Build Total:	0	19. Reno Cost:	0	20. Subtotal:	0
				Area	21. New Area:	0.00	
				Allowance	22. Area Entitled to Equipment Replacement:	0.00	
Equipment Allowance:		New Fee	0.0000	Reno Fee	0.1600	23. Equipment Freight Allowance:	0
		Fees:	25. Site Dev.:	0	26. New:	0	27. Renovation:
		Contingency:	29. New:	0	30. Renovation:	0	31. Subtotal:
		Other:	32. Boiler Upgrades at LV Rogers Sec, Mt Sentinel Sec, Adam Robertson, Central, WE Graham				33. 1,525,000
Phases:		34. Site:	0	35. Plan:	0	36. Completion:	1,525,000
		37. Planning Costs in Planning Phase:	0	38. In Completion Phase:	0		
Total Estimated Budget:						39. Subtotal:	1,525,000

Project No.	Project Title	Capital Plan Year	SD No.	SD Ref. No.
N/A		2012/2013	08	153

#### Part D - Schedule and Funding

Project Cost Schedule:	Site	Planning	Completion
1. Year:	2012/2013	2014/2015	2012/2013
2. Cost:	0	0	1,525,000
Funding Source:			
3. Bylaw Capital:	0	0	1,525,000
4. Capital Reserve:	0	0	0
5. Land Reserve:	0		0
6. Local Capital:	0	0	0

#### Part E - Approved Funding

Phase Status:	1. Status:	Requested	Requested	Requested
Approved:	2. Bylaw Capital:	0	0	0
	3. Capital Reserve:	0	0	0
	4. Land Reserve:	0		0
	5. Local Capital:	0	0	0
Variance:	6. Variance	0	0	1,525,000
Net Request:	7. Bylaw Capital:	0	0	1,525,000
	8. Capital Reserve:	0	0	0
	9. Land Reserve:	0	0	0
	10. Local Capital:	0	0	0

#### Part F - Comments

Category: General

MUNICIPALITIES ALSO INCLUDE SLOCAN, CRESTON & CRESCENT VALLEY IN ADDITION TO NELSON  
FACILITY NUMBERS = 86004, 07013, 07025,



# Boiler Upgrade Program

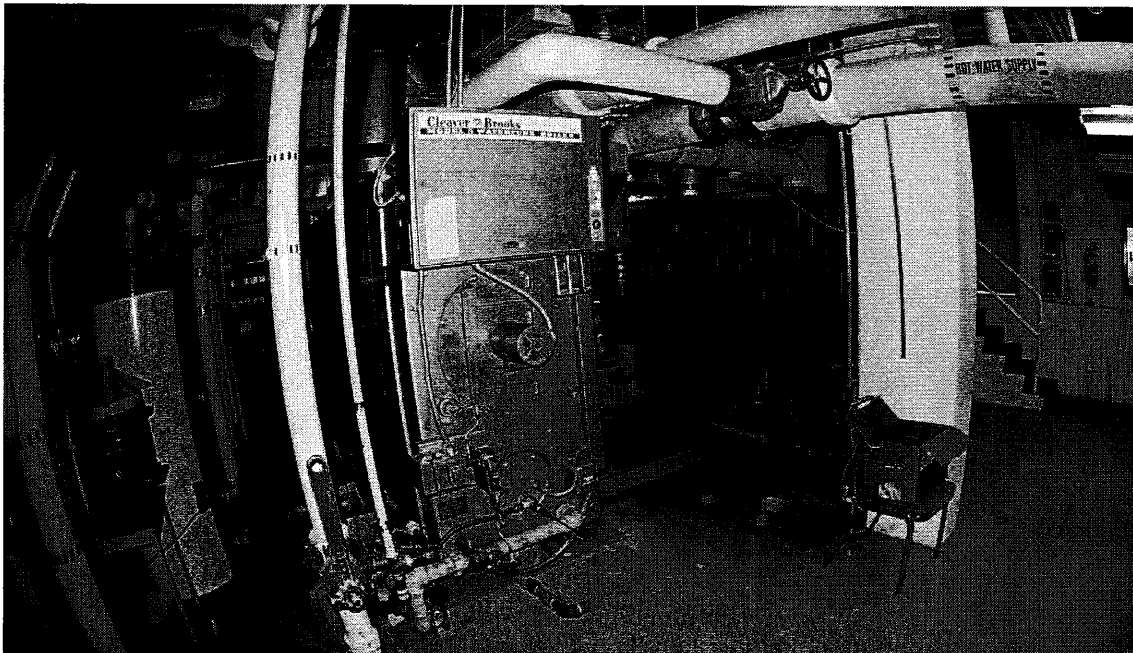
Nelson, B.C.

## School District No. 8 (Kootenay Lake)

### Boiler Systems Assessment Report

LV Rogers Secondary School  
Mt. Sentinel Secondary School  
Adam Roberson Elementary School  
Central Elementary School  
WE Graham Elementary School

25 September 2012



Vintage Boilers at LV Rogers that is oversized

## 1.0 Executive Summary

- The schools appear to be well utilized and are well populated.
- The existing mechanical systems are in **FAIR to POOR** condition. Many systems are nearing the end of the service life.
- The existing mechanical systems use a disproportionate amount of **ENERGY**.
- Significant upgrades to boiler systems are required to bring systems to good design practices, guidelines and standards.
- A boiler upgrade is estimated at ..... \$1,525,000.
- A GSHP will save **178 tonnes** of CO2 Per Year

## 2.0 Description of Existing Building

Area of building:

- LV Rogers Secondary School 10,080 m<sup>2</sup>
- Mt. Sentinel Secondary School 6,415 m<sup>2</sup>
- Adam Robertson Elementary School 4,155 m<sup>2</sup>
- Central Elementary School 4,052 m<sup>2</sup>
- WE Graham Elementary School 2,799 m<sup>2</sup>

## 3.0 Discussion of Existing Mechanical Systems

### Primary Energy Systems

LV Rogers Secondary School. The hydronic heating system is power draft Cleaver Brooks boiler. These boilers are oversized. This system was installed in 1986. This system is near the end of the service life. This system is inefficient and has significant standby losses.	The boilers will need to be upgraded to a sealed combustion condensing style boiler.
Mt Sentinel Secondary School. The hydronic heating system is natural draft Hydrotherm boiler. This system was installed in 2001. This system is inefficient and has significant standby losses.	The boilers will need to be upgraded to a sealed combustion condensing style boiler.
Adam Robertson Elementary School. The hydronic heating system is natural draft Super Hot boiler. This system was recently installed. This system is inefficient and has significant standby losses.	The boilers will need to be upgraded to a sealed combustion condensing style boiler.
Central Elementary School. The hydronic heating system is natural draft Hydrotherm boiler. This system was installed in 1988. This system is near the end of the service life. This system is inefficient and has significant standby losses.	The boilers will need to be upgraded to a sealed combustion condensing style boiler.
WE Graham School. The hydronic heating system is natural draft Hydrotherm boiler. This system was installed in 1990. This system is near the end of the service life. This system is inefficient and has significant standby losses.	The boilers will need to be upgraded to a sealed combustion condensing style boiler.

## Controls

WE Graham. The building is serviced by first generation or unsupported digital control systems. These systems are very difficult to service or renovate. These systems are difficult to program for energy savings.	Control system will need to be upgraded to DDC.
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### 4.0 Considerations for Mechanical System Upgrade

Caveat. This review is intended to provide a quick review of the conditions and configuration of the existing mechanical systems where they are apparent. The main purpose of this report is to identify and then develop budgets for upgrades to mechanical systems. If a condition exist but is not apparent, then it may not be addressed in this report. This report must be review by staff familiar with the building to indicate and address any conditions not presented here.

A boiler upgrade to the existing mechanical system will improve the operation, comfort, energy consumption and maintenance of the facility.

We recommend sealed combustion condensing boiler that can operate at higher temperatures for now and lower temperatures when the building are converted to Geothermal. To eliminate the combustion air louver, we recommend replacing any natural gas fired hot water heating systems with electric. Where the controls systems are not up to date, we recommend upgrading the control system as much as needed, to allow the hot water heating systems operating in an optimal manner.

Don Poole P.Eng.

No:	NAME: 5 School		HVAC Type: Natural Draft Boilers									
ID	Item	Comment	Qty	Location	Qty	Location	Qty	Location	Qty	Location	Qty	Req'd
<b>PRIMARY HVAC SYSTEMS</b>												
	Boiler	LV Rogers Secondary School	10	Mech								10 Unit
		Mt. Sentinel Secondary School	7	Mech								7 Unit
		Adam Roberson Elementary School	4	Mech								4 Unit
		Central Elementary School	4	Mech								4 Unit
		WE Graham Elementary School	3	Mech								3 Unit
	Major Circ Pumps		10	Mech								10 Unit
	Main Circulation Piping		100	Mech								100 Metre
	Outside Air Unit			Mech		Roof						0 Unit
	Multi-Zone			Roof								0 Unit
	Relief Air Gooseneck			Roof								0 Unit
	Other											0 Unit
<b>TERMINAL HVAC SYSTEMS</b>												
	Roof Top Unit - Large - Heat/Cool			Gym		Shop		Theater				0 Unit
	Roof Top Unit - Large - Heat Only			Gym		Shop		Theater				0 Unit
	Roof Top Unit - Small			Class								0 Unit
	Heat Pump			Class								0 Unit
	Vertical Unit Ventilator			Class								0 Unit
	Fan Coil - 4 Pipe			Class								0 Unit
	Furnace			Class								0 Unit
	Reheat Coil - Hydronic			Class								0 Unit
	Minor Circ Pumps			Mech								0 Unit
	Reheat Coil - Electric			Class								0 Unit
	Split System AC			Class		Server						0 Unit
	Electric Heat - Force Flow, Unit Heat			Entry/Stair		Storage						0 Unit
	Baseboard			Office								0 Unit
	Low Level Return			All								0 Unit
	Transfer Door Grille			All								0 Unit
	Other											0 Unit
<b>DEDICATED EXHAUST PICKUP</b>												
A	Small Ceiling Grille			Elect Rm		Server		Storage - Sm.		WR - Single		0 Unit
B	Large Ceiling Grille			Gang WR		photocopy		general				0 Unit
C	Range Hood - Residential			Home Ec		Staff						0 Unit
D	Range Hood - Commercial			Kitchen		Servery						0 Unit
E	Hood - Forge & Melting Crucible			Metal								0 Unit
D	Slotted Back - Pick Up			Welding		Paint		Varsol				0 Unit
D	Articulating Arm			Welding		Solder						0 Unit
D	CO - Overhead Flexible			Auto								0 Unit
D	Science Fume Hood (ASHRAE 110)			Science		Prep						0 Unit
E	Wood Shop - Equipment Pick-Up			Woodshop		Tech						0 Unit
	Other											0 Unit
<b>EXHAUST SYSTEMS</b>												
A	In-Line Fan c/w Gooseneck			In Room								0 Unit
B	Square Panel - Roof Mount			Roof								0 Unit
C	Grease Extraction - Roof Mount			Roof								0 Unit
D	Industrial Vent Set - Roof Mount			Roof								0 Unit
E	Sawdust Collector			Outside								0 Unit
	Sawdust Collector Recirculation Systems			Inside								0 Unit
	Sawdust Collector - Vent If Enclosed			Inside								0 Unit
	Other											0 Unit
<b>ADDITIONAL CONTROL SYSTEMS</b>												
	WE Graham		1									1 allow
	CO2 Sensors											0 Unit
	Motion Detectors											0 Unit
	Variable Speed Drive											0 Unit
	Other											0 Unit
<b>GENERAL PLUMBING SYSTEMS</b>												
	DHW Tank - Residential Electric (60 gal)			Mech								5 Unit
	DHW Tank - Storage (120 gal)			Mech								0 Unit
	DHW Recirc Pump			Mech								0 Unit
	Custodian Sink - Floor Mount - Trim			Custodian		Art						0 Unit
	Laundry Tub			Mech		Home Ec						0 Unit
	Drinking Fountain - Bubbler			Class								0 Unit
	Drinking Fountain - Wall Mount - Bot Fill (no frig.)			Corridor		Change		Weights				0 Unit
	Hand Wash (54")			Shops								0 Unit
	New Hand Lav - New IR Trim			Gang WIR		Change Rm		Staff				0 Unit
	Hand Lav OK - New IR Trim			Gang WIR		Change Rm		Staff				0 Unit
	New Wall Mount Urinal - New IR Trim			Gang WIR		Change Rm		Staff				0 Unit
	Urinal OK - New IR Trim			Gang WIR		Change Rm		Staff				0 Unit
	WC - Fixture OK - New IR Trim			Gang WIR		Change Rm		Staff				0 Unit
	Acid Waste Piping			Science								0 Fixture
	Replace Galvanized with Copper											0 Metre
	Drain Pipe In-Slab (Sawcutting Required)											0 Metre
	Other											0 Unit
<b>EMERGENCY PLUMBING FIXTURES</b>												
	Eyewash - New, TMV - New			Woodshop		Tech Ed		Electricity		Physics		0 Unit
	Eyewash - OK, TMV - New			Woodshop		Tech Ed		Electricity		Physics		0 Unit
	Eyewash/Shower - New, TMV - New			Metalshop		Autoshop		Science		Chem Prep		0 Unit
	Eyewash/Shower - OK, TMV - New			Metalshop		Autoshop		Science		Chem Prep		0 Unit
	Other											0 Unit
<b>NATURAL GAS ISOLATION</b>												
	Emergency Shut Down - Valve			Science		Forge						0 Unit
	Emergency Shut Down - Electronic			Science								0 Unit
	Other											0 Unit
<b>CROSS CONTAMINATION</b>												
	Large DCVA - Fire Protection Systems			Sprinkler		Premise		Irrigation				0 Unit
	Small RBPB			Boiler		Tower						0 Unit
	Standard Vacuum Breaker			Custodian		Hose Bibb		Darkroom		Hair Wash		0 Unit
	Lab Fixture Vacuum Breaker			Science		Science Prep						0 Unit
	Other											0 Unit
<b>INTERCEPTOR AND ACID NEUTRALIZER</b>												
	Acid Neutralizer			Science		Boiler		Darkroom				0 Unit
	Grease Interceptor			Teaching Kitchen								0 Unit
	Oil Interceptor			Autoshop								0 Unit
	Used Oil Storage Tank			Autoshop								0 Unit
	Plaster Interceptor			Pottery								0 Unit
	Other											0 Unit
<b>FLAMMABLE STORAGE CABINET</b>												
	New Cabinet - New 2" Sched 40 Steel Vent Thru Roof			Chem Storage		Autoshop		Finishing		Art		0 Unit
	Cabinet OK - New 2" Sched 40 Steel Vent Thru Roof			Chem Storage		Autoshop		Finishing		Art		0 Unit
	Other											0 Unit
<b>FIRE PROTECTION SYSTEMS</b>												
	Replace Glycol System With Dry System			Sprinkler Station								0 Unit
	Replace Wet Valve with Flow Switch			Sprinkler Station								0 Unit
	Sprinkler Remainder of Building			All								0 Sq.m.
	Remove Sprinkler Near Aluminum Melting Crucible			Forge								0 Unit
	Other											0 Unit
<b>BUILDING ENVELOPE</b>												
	Re and Re T-Bar											0 Sq.m.
	New T-Bar											0 Sq.m.
	Single Glazing											0 Unit
	Chronic Hot / Cold Spots											0 Unit
	Potential for Extreme Infiltration											0 Unit
	asbestos		1									1 allow
<b>MISC</b>												
	Permits & Inspection Fees											28 Unit
	Demolition											10% % of is
	Bonding											1% % of is
<b>GRAND TOTAL</b>												
Area:		Sq.m.										
Zones:												

No:	NAME: 5 School	Itemized Unit Rate									
ID	Item	Equip Cost	Duct Install	Pipe Install	Insul.	Bal. & Comm.	Control	Elect	Cut & Patch	Roof	Overall Unit Rate
<b>PRIMARY HVAC SYSTEMS</b>											
	Boiler	\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150/Unit
		\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150/Unit
		\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150/Unit
		\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150/Unit
		\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150/Unit
	Major Circ Pumps	\$3,000		\$1,500	\$500	\$100	\$1,500	\$2,500	\$500		\$9,600/Unit
	Main Circulation Piping			\$160	\$40						\$200/Metre
	Outside Air Unit	\$0	\$0		\$2,500	\$200	\$3,000	\$5,000	\$2,500	\$2,000	\$15,200/Unit
	Multi-Zone	\$0	\$0		\$2,500	\$300	\$3,000	\$5,000	\$2,500	\$2,000	\$15,300/Unit
	Relief Air Gooseneck	\$2,000	\$2,000		\$1,000	\$200	\$500		\$500	\$500	\$6,700/Unit
	Other										\$0/Unit
<b>TERMINAL HVAC SYSTEMS</b>											
	Roof Top Unit - Large - Heat/Cool	\$0	\$0	\$1,500	\$2,500	\$200	\$5,000	\$5,000	\$2,500	\$2,000	\$18,700/Unit
	Roof Top Unit - Large - Heat Only	\$0	\$0	\$1,500	\$2,500	\$200	\$3,500	\$5,000	\$2,500	\$2,000	\$17,200/Unit
	Roof Top Unit - Small	\$5,000	\$5,000	\$1,000	\$1,500	\$200	\$3,500	\$1,500	\$1,000	\$1,000	\$19,700/Unit
	Heat Pump	\$3,500	\$5,000	\$1,500	\$1,500	\$100	\$2,500	\$1,500	\$500		\$16,200/Unit
	Vertical Unit Ventilator	\$8,000	\$5,000	\$2,000	\$1,500	\$100	\$3,500	\$1,500	\$500	\$500	\$22,600/Unit
	Fan Coil - 4 Pipe	\$2,000	\$5,000	\$2,000	\$1,500	\$100	\$3,000	\$1,500			\$16,100/Unit
	Furnace	\$2,500	\$5,000	\$1,500	\$1,500	\$100	\$1,500	\$1,500	\$2,000	\$1,000	\$16,600/Unit
	Reheat Coil - Hydronic	\$1,800	\$900	\$900	\$500	\$100	\$1,000				\$5,200/Unit
	Minor Circ Pumps	\$800		\$500	\$500	\$100	\$1,500	\$1,000			\$4,400/Unit
	Reheat Coil - Electric		\$750				\$1,500	\$1,000			\$3,250/Unit
	Split System AC	\$1,500	\$1,500	\$2,000	\$500		\$1,000	\$1,000			\$7,500/Unit
	Electric Heat - Force Flow, Unit Heat						\$1,000	\$1,000			\$2,000/Unit
	Baseboard						\$1,000	\$500			\$1,500/Unit
	Low Level Return	\$250	\$500						\$1,500		\$2,275/Unit
	Transfer Door Grille	\$100					\$25		\$200		\$300/Unit
	Other										\$0/Unit
<b>DEDICATED EXHAUST PICKUP</b>											
A	Small Ceiling Grille	\$50	\$50			\$25	\$500				\$625/Unit
B	Large Ceiling Grille	\$50	\$50			\$25	\$500				\$625/Unit
C	Range Hood - Residential	\$100	\$100			\$25	\$500	\$250	\$250		\$1,225/Unit
D	Range Hood - Commercial	\$0	\$0			\$300		\$1,000			\$1,300/Unit
E	Hood - Forge & Melting Crucible	\$12,000	\$12,000			\$100	\$500	\$1,000	\$2,000		\$27,600/Unit
D	Slotted Back - Pick Up	\$1,000	\$1,000			\$100	\$500				\$2,600/Unit
D	Articulating Arm	\$1,200	\$1,200			\$100	\$500				\$3,000/Unit
D	CO - Overhead Flexible	\$2,400	\$2,400			\$100	\$500				\$5,400/Unit
D	Science Fume Hood (ASHRAE 110)	\$13,000	\$13,000			\$150		\$1,500	\$1,000		\$28,650/Unit
E	Wood Shop - Equipment Pick-Up	\$1,000	\$1,000			\$25	\$500				\$2,525/Unit
	Other										\$0/Unit
<b>EXHAUST SYSTEMS</b>											
A	In-Line Fan chr Gooseneck	\$200	\$200		\$500	\$50	\$500	\$500	\$250	\$500	\$2,700/Unit
B	Square Panel - Roof Mount	\$600	\$600		\$500	\$100	\$500	\$750	\$250	\$500	\$3,900/Unit
C	Grease Extraction - Roof Mount	\$2,000	\$2,000		\$2,000	\$100	\$0	\$1,500	\$500	\$1,000	\$9,100/Unit
D	Industrial Vent Set - Roof Mount	\$3,500	\$3,500		\$500	\$100	\$500	\$1,500	\$1,000	\$1,000	\$11,600/Unit
E	Sawdust Collector	\$0	\$0		\$500	\$100	\$500	\$5,000	\$5,000		\$11,100/Unit
	Sawdust Collector Recirculation Systems	\$5,000	\$5,000		\$500	\$0	\$0	\$0	\$1,000		\$11,500/Unit
	Sawdust Collector - Vent If Enclosed	\$0	\$0		\$0	\$0	\$0	\$0	\$2,000		\$2,000/Unit
	Other										\$0/Unit
<b>ADDITIONAL CONTROL SYSTEMS</b>											
	WE Graham						\$500	Per Point			\$55,000/allow
	CO2 Sensors						\$1,200				\$1,200/Unit
	Motion Detectors						\$500				\$500/Unit
	Variable Speed Drive						\$4,500				\$4,500/Unit
	Other										\$0/Unit
<b>GENERAL PLUMBING SYSTEMS</b>											
	DHW Tank - Residential Electric (60 gal)	\$500		\$500				\$1,500	\$500		\$3,000/Unit
	DHW Tank - Storage (120 gal)	\$1,000		\$1,000							\$2,000/Unit
	DHW Recirc Pump	\$250		\$250			\$500	\$500			\$1,500/Unit
	Custodian Sink - Floor Mount - Trim	\$350		\$350					\$500		\$1,200/Unit
	Laundry Tub	\$200		\$200							\$400/Unit
	Drinking Fountain - Bubblers	\$250		\$250					\$100		\$600/Unit
	Drinking Fountain - Wall Mount - Bot Fill (6")	\$1,600		\$1,600				\$750	\$500		\$4,450/Unit
	Hand Wash (64")	\$4,200		\$4,200					\$2,000		\$10,400/Unit
	New Hand Lav - New IR Trim	\$700		\$700					\$500		\$1,900/Unit
	Hand Lav OK - New IR Trim	\$450		\$450							\$900/Unit
	New Wall Mount Urinal - New IR Trim	\$550		\$550				\$1,500			\$2,600/Unit
	Urinal OK - New IR Trim	\$350		\$350					\$500		\$1,200/Unit
	WC - Fixture OK - New IR Trim	\$350		\$350							\$700/Unit
	Acid Waste Piping			\$2,500							\$2,500/Fixture
	Replace Galvanized with Copper	\$0		\$30	\$20						\$50/Metre
	Drain Pipe In-Slab (Sawcutting Required)	\$0		\$30					\$250		\$280/Metre
	Other										\$0/Unit
<b>EMERGENCY PLUMBING FIXTURES</b>											
	Eyewash - New, TMV - New	\$1,200		\$1,200							\$2,400/Unit
	Eyewash - OK, TMV - New	\$800		\$800							\$1,600/Unit
	Eyewash/Shower - New, TMV - New	\$2,400		\$2,400							\$4,800/Unit
	Eyewash/Shower - OK, TMV - New	\$1,100		\$1,100							\$2,200/Unit
	Other										\$0/Unit
<b>NATURAL GAS ISOLATION</b>											
	Emergency Shut Down - Valve	\$50		\$150							\$200/Unit
	Emergency Shut Down - Electronic	\$200		\$300		\$100	\$2,000				\$2,600/Unit
	Other										\$0/Unit
<b>CROSS CONTAMINATION</b>											
	Large DCVA - Fire Protection Systems	\$2,500		\$5,000							\$7,500/Unit
	Small RPBP	\$500		\$500							\$1,000/Unit
	Standard Vacuum Breaker	\$100		\$100							\$200/Unit
	Lab Fixture Vacuum Breaker	\$25		\$50							\$75/Unit
	Other										\$0/Unit
<b>INTERCEPTOR AND ACID NEUTRALIZER</b>											
	Acid Neutralizer	\$5,000		\$5,000				\$5,000			\$15,000/Unit
	Grease Interceptor	\$3,000		\$3,000				\$2,000			\$8,000/Unit
	Oil Interceptor	\$3,000		\$3,000				\$2,000			\$8,000/Unit
	Used Oil Storage Tank	\$8,000		\$1,000				\$500			\$9,500/Unit
	Plaster Interceptor	\$800		\$800							\$1,600/Unit
	Other										\$0/Unit
<b>FLAMMABLE STORAGE CABINET</b>											
	New Cabinet - New 2" Sched 40 Steel Ve	\$2,000		\$500				\$250	\$250		\$3,000/Unit
	Cabinet OK - New 2" Sched 40 Steel Ven			\$500							\$1,000/Unit
	Other										\$0/Unit
<b>FIRE PROTECTION SYSTEMS</b>											
	Replace Glycol System With Dry System			\$10,000							\$10,000/Unit
	Replace Wet Valve with Flow Switch			\$2,500							\$2,500/Unit
	Sprinkler Remainder of Building			\$30							\$30/Sq.m.
	Remove Sprinkler Near Aluminum Melting			\$500							\$500/Unit
	Other										\$0/Unit
<b>BUILDING ENVELOPE</b>											
	Re and Re T-Bar							\$10			\$10/Sq.m.
	New T-Bar							\$50			\$50/Sq.m.
	Single Glazing							\$1,000			\$1,000/Unit
	Chronic Hot / Cold Spots							\$5,000			\$5,000/Unit
	Potential for Extreme Infiltration							\$20,000			\$20,000/Unit
	asbestos							\$100,000			\$100,000/allow
<b>MISC</b>											
	Permits & Inspection Fees			\$500							
	Demolition	hour									
	Bonding	tail									
<b>GRAND TOTAL</b>											
Area:											
Zones:											

No.	NAME: S School		Splits								Sub	10%	10%	12%	12%	PROJECT
ID	Item	Equip. Cost	Duct Install	Pipe Install	Insul.	Bal.	Control	Elect	Cut & Patch	Roof	Total	Location Escal	Contingency	Fee & Disb.	Taxes	TOTAL
PRIMARY HVAC SYSTEMS		\$310,000	\$140,000	\$171,000	\$23,000	\$5,200	\$67,000	\$91,000	\$47,000	\$14,000	\$648,200	\$85,100	\$85,100	\$102,100	\$102,100	\$1,222,800
	Boiler	\$100,000	\$50,000	\$50,000	\$5,000	\$1,500	\$15,000	\$20,000	\$15,000	\$5,000	\$261,500	\$26,200	\$26,200	\$31,400	\$31,400	\$376,700
		\$70,000	\$35,000	\$35,000	\$3,500	\$1,050	\$10,500	\$14,000	\$10,500	\$3,500	\$183,050	\$18,400	\$18,400	\$22,000	\$22,000	\$263,850
		\$40,000	\$20,000	\$20,000	\$2,000	\$600	\$6,000	\$8,000	\$6,000	\$2,000	\$104,600	\$10,500	\$10,500	\$12,600	\$12,600	\$150,800
		\$40,000	\$20,000	\$20,000	\$2,000	\$600	\$6,000	\$8,000	\$6,000	\$2,000	\$104,600	\$10,500	\$10,500	\$12,600	\$12,600	\$150,800
		\$30,000	\$15,000	\$15,000	\$1,500	\$450	\$4,500	\$6,000	\$4,500	\$1,500	\$78,450	\$7,900	\$7,900	\$9,600	\$9,600	\$113,250
	Major Circ Pumps	\$30,000	\$0	\$15,000	\$5,000	\$1,000	\$15,000	\$25,000	\$5,000	\$0	\$96,000	\$9,600	\$9,600	\$11,600	\$11,600	\$138,400
	Main Circulation Piping	\$0	\$0	\$16,000	\$4,000	\$0	\$0	\$0	\$0	\$0	\$20,000	\$2,000	\$2,000	\$2,400	\$2,400	\$28,800
	Outside Air Unit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TERMINAL HVAC SYSTEMS		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Rooftop Top Unit - Large - Heat/Cool	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Rooftop Top Unit - Large - Heat Only	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Rooftop Top Unit - Small	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Heat Pump	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Vertical Unit Ventilator	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Fan Coil - 4 Pipe	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Pumpout	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Reheat Coil - Hydronic	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DEDICATED EXHAUST PICKUP		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	A Small Ceiling Grille	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	B Large Ceiling Grille	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	C Range Hood - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	D Range Hood - Commercial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	E Hood - Forge & Melting Crucible	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	D Slotted Back - Pick Up	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	D Articulating Arm	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	D CO - Overhead Flexible	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXHAUST SYSTEMS		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	A In-Line Fan c/w Gooseneck	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	B Square Panel - Roof Mount	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	D Grease Extraction - Roof Mount	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	D Industrial Vent Set - Roof Mount	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	E Sawdust Collector	\$0	\$0</													

SD 8 Boiler Program																													
Expected Annual Utility Consumption Based on 2011/2012 Data																													
Existing Configuration																													
Facility			Natural Gas									Electricity									Total								
	sq.m		GJ	kWhr	Tonne CO2	GJ/ sq.m.	kWhr/ sq.m	\$	\$/ GJ	\$/ kWhr	\$/ sq.m.	GJ	kWhr	Tonne CO2	GJ/ sq.m.	kWhr/ sq.m	\$	\$/ GJ	\$/ kWhr	\$/ sq.m.	GJ	kWhr	Tonne CO2	GJ/ sq.m.	kWhr/ sq.m	\$	\$/ GJ	\$/ kWhr	\$/ sq.m
LV Rogers Secondary School	10,080	NG	3,963	1,100,921	196.8	0.39	109	\$44,000	\$11.10	\$0.040	\$4.37	3,045	846,000	18.7	0.30	84	\$90,000	\$29.55	\$0.106	\$8.93	7,008	1,946,921	215.5	0.70	193	\$134,000	\$19.12	\$0.069	\$13.29
Mt. Sentinel Secondary School	6,415	NG	2,786	773,951	138.3	0.43	121	\$47,000	\$16.87	\$0.061	\$7.33	1,634	454,000	10.0	0.25	71	\$54,000	\$33.04	\$0.119	\$8.42	4,420	1,227,951	148.4	0.69	191	\$101,000	\$22.85	\$0.082	\$15.74
Adam Roberson Elementary School	4,155	NG	2,046	568,379	101.6	0.49	137	\$32,000	\$15.64	\$0.056	\$7.70	565	157,000	3.5	0.14	38	\$18,000	\$31.85	\$0.115	\$4.33	2,611	725,379	105.1	0.63	175	\$50,000	\$19.15	\$0.069	\$12.03
Central Elementary School	4,052	NG	1,521	422,534	75.5	0.38	104	\$24,000	\$15.78	\$0.057	\$5.92	756	210,000	4.6	0.19	52	\$24,000	\$31.75	\$0.114	\$5.92	2,277	632,534	80.2	0.56	156	\$48,000	\$21.08	\$0.076	\$11.85
WE Graham Elementary School	2,799	Propane	1,080	300,000	63.9	0.39	107	\$31,000	\$28.71	\$0.103	\$11.08	421	117,000	2.6	0.15	42	\$13,000	\$30.87	\$0.111	\$4.64	1,501	417,000	66.5	0.54	149	\$44,000	\$29.31	\$0.106	\$15.72
TOTAL Consumption	27,501		11,396	3,165,785	565.8	0.41	115	\$178,000	\$15.62	\$0.056	\$6.47	6,422	1,784,000	39.5	0.23	65	\$199,000	\$30.99	\$0.112	\$7.24	17,818	4,949,785	605.3	0.65	180	\$377,000	\$21.16	\$0.076	\$13.71

Upgrade to Condensing Sealed Combustion Boiler																													
Facility			Natural Gas								Electricity								Total										
	sq.m	Rate	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m.
LV Rogers Secondary School	10,080	40%	2,378	660,553	118.1	0.24	66	\$26,400	\$11.10	\$0.040	\$2.62	3,045	846,000	18.7	0.30	84	\$90,000	\$29.55	\$0.106	\$8.93	5,423	1,506,553	136.8	0.54	149	\$116,400	\$21.46	\$0.077	\$11.55
Mt. Sentinel Secondary School	6,415	20%	2,229	619,161	110.7	0.35	97	\$37,600	\$16.87	\$0.061	\$5.86	1,634	454,000	10.0	0.25	71	\$54,000	\$33.04	\$0.119	\$8.42	3,863	1,073,161	120.7	0.60	167	\$91,600	\$23.71	\$0.085	\$14.28
Adam Roberson Elementary School	4,155	40%	1,228	341,027	61.0	0.30	82	\$19,200	\$15.64	\$0.056	\$4.62	565	157,000	3.5	0.14	38	\$18,000	\$31.85	\$0.115	\$4.33	1,793	498,027	64.4	0.43	120	\$37,200	\$20.75	\$0.075	\$8.95
Central Elementary School	4,052	20%	1,217	338,027	60.4	0.30	83	\$19,200	\$15.78	\$0.057	\$4.74	756	210,000	4.6	0.19	52	\$24,000	\$31.75	\$0.114	\$5.92	1,973	548,027	65.1	0.49	135	\$43,200	\$21.90	\$0.079	\$10.66
WE Graham Elementary School	2,799	30%	756	210,000	44.7	0.27	75	\$21,700	\$28.71	\$0.103	\$7.75	421	117,000	2.6	0.15	42	\$13,000	\$30.87	\$0.111	\$4.64	1,177	327,000	47.3	0.42	117	\$34,700	\$29.48	\$0.106	\$12.40
TOTAL Consumption	27,501		7,807	2,168,768	387.6	0.28	79	\$124,100	\$15.90	\$0.057	\$4.51	6,422	1,784,000	39.5	0.23	65	\$199,000	\$30.99	\$0.112	\$7.24	14,229	3,952,768	427.1	0.52	144	\$323,100	\$22.71	\$0.082	\$11.75

New Consumption		Savings																														
		Natural Gas									Electricity									Total												
		GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m.				
		3,589	997,017	178.2	0.36	99	\$53,900	\$11.10	\$0.040	\$5.35	0	0	0.0	0.00	0	\$0	\$30.99	\$0.112	\$0.00	3,589	997,017	178.2	0.36	99	\$53,900	\$15.02	\$0.054	\$5.35				
		31%	31%											0%										20%	29%							

Boiler Upgrade Cost \$1,525,000 \$/sq.m \$55  
Simple Payback 28



## Capital Project Request Form

RDER0310 V.4.06

09 OCT 2012 12:10:02

Hidden: No  
 District Priority: High  
 District Ranking: 3  
 Ministry Priority: HIGH

'kim morris' (PRD01)

Project No: 116072

Request Type: Update

## Part A - Project Identification

1. Capital Plan Year: 2012/2013	2. SD Ref. No.: 150	3. Last Modified: Oct. 9, 2012	4. Submitted On: unsubmitted
5. SD No.: 08	6. SD Name: Kootenay Lake	7. Municipality: NELSON	8. Asset No.: 100242
9. Facility No.: 07004	10. Facility Name: HUME ELEMENTARY SCHOOL	Facility Type:	
13. Proj. Cd. MECHUP	14. Project Description: HUME MECHANICAL SYSTEM UPGRADE	11. Current: Elementary School	
15. Proj. Type: MINOR		12. Proposed: Elementary School	

## Part B - Capacity, Area Factors and Allowances

Nominal Capacity:		Kindergarten	Grades 1 - 7	Grades 8 - 12	7. Grade Configuration
1. Actual Existing:		20	250	0	K-5
2. Capacity Adjustments:		0	0	0	
3. Proposed Higher Priority Additions:		0	0	0	
4. Total Existing:		20	250	0	
5. Proposed Addition:		0	0	0	
6. Proposed Total Capacity:		20	250	0	8. K-5
Site Area (ha):		Allowable Building Area (sq.m.)		Allowable Renovation Area (sq.m.)	
9. Required Size:	0.0	12. Total Allowable Area:	0.0	16. Renovations Associated With Additions (%):	20
10. Existing Area:	0.0	13. Existing Area:	0.0	17. Renovation Area:	0.00
11. Total New Area:	0.0	14. Area to be demolished:	0.0	18. Renovation Unit Rate:	0
		15. Area of New Space:	0.0		
Construction Cost Factors:		Equipment Allowance (%):			
19. Base Unit Rate:	1765.00	20. Air Conditioning:	0	LFA: 0.00	MF: 1.00
21. Project Size Factor:	1.050	22. Location Factor:	1.15	23. Ground Factor:	1.00
				24. New Space:	13.0
				25. Freight Allowance:	8.609

## Part C - Estimated Budget

Site Acquisition:		1. Purchase:	0	2. Other Cost:	0	3. Subtotal:	0
Site Development:		4. Development Cost Charges:	0	5. Offsite Costs:	0	6. Adjusted Site Development:	0
		7. Supplementary Site:	0	8. None:	0		
New Construction:		9. New Area:	0.0	Renovations:	13. Renovation Area:	0.00	
		10. Adjusted Unit Rate:	0.0000	14. Renovation Unit Rate:	0		
		11. Subtotal:	0	15. Subtotal:	0		
		12. Supplementary Building:	0	16. Supplementary Costs:	0		
				17. Other Costs:	0		
Building Costs:		18. Build Total:	0	19. Reno Cost:	0	20. Subtotal:	0
Equipment Allowance:		21. New Area:	0.00	Area:	0	Allowance:	0
		22. Area Entitled to Equipment Replacement:	0.00		0		
New Fee:	0.0000	23. Equipment Freight Allowance:	0	24. Subtotal:	0		
Reno Fee:	0.1600	26. New:	0	27. Renovation:	0	28. Subtotal:	0
Fees:	25. Site Dev.:	0	29. New:	0	30. Renovation:	0	31. Subtotal:
Contingency:							
Other:	32. MECHANICAL SYSTEM UPGRADE					33. Subtotal:	1,425,000
Phases:	34. Site:	0	35. Plan:	0	36. Completion:	1,425,000	
	37. Planning Costs in Planning Phase:	0	38. In Completion Phase:	0			
Total Estimated Budget:						39. Subtotal:	1,425,000



Project No.	Project Title	Capital Plan Year	SD No.	SD Ref. No.
116072	MECHUP - HUME ELEMENTARY SCHOOL	2012/2013	08	150

#### Part D - Schedule and Funding

Project Cost Schedule:		Site	Planning	Completion
	1. Year:	2014/2015	2014/2015	2013/2014
	2. Cost:	0	0	1,425,000
Funding Source:	3. Bylaw Capital:	0	0	1,425,000
	4. Capital Reserve:	0	0	0
	5. Land Reserve:	0		0
	6. Local Capital:	0	0	0

#### Part E - Approved Funding

Phase Status:	1. Status:	Requested	Requested	Requested
Approved:	2. Bylaw Capital:	0	0	0
	3. Capital Reserve:	0	0	0
	4. Land Reserve:	0		0
	5. Local Capital:	0	0	0
Variance:	6. Variance	0	0	1,425,000
Net Request:	7. Bylaw Capital:	0	0	1,425,000
	8. Capital Reserve:	0	0	0
	9. Land Reserve:	0	0	0
	10. Local Capital:	0	0	0

#### Part F - Comments

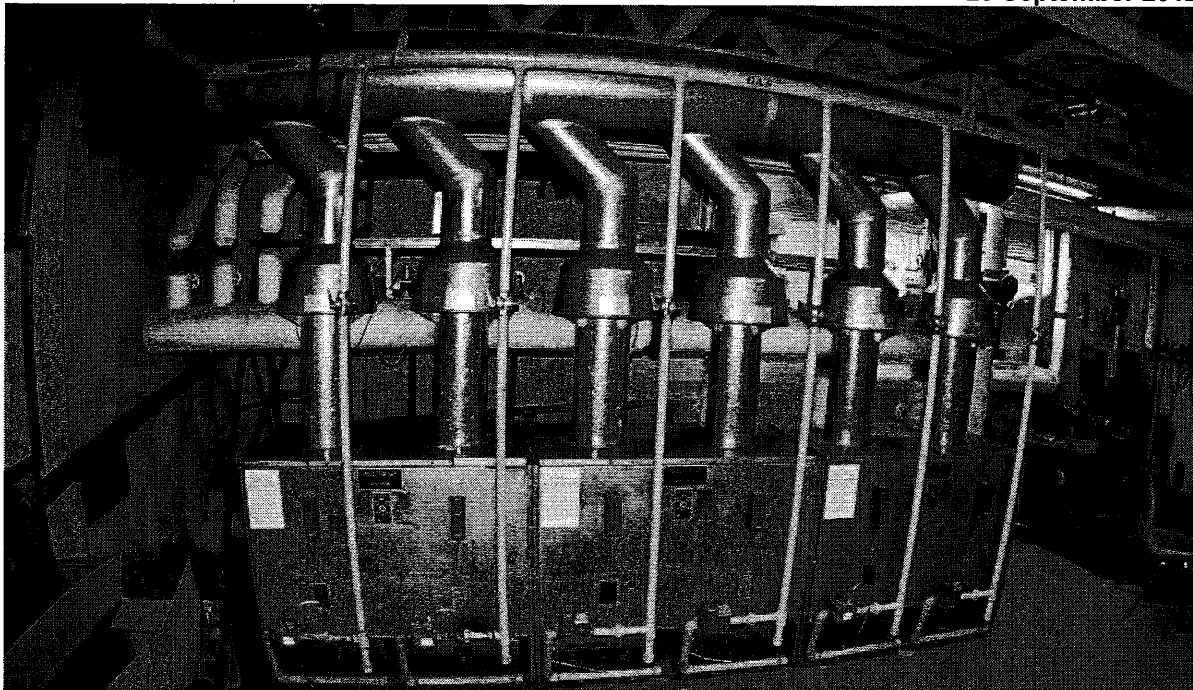
# Hume Elementary School

Nelson, B.C.

## School District No. 8 (Kootenay Lake)

### HVAC Systems Assessment Report

23 September 2012



## 1.0 Executive Summary

- The school appears to be well utilized and is well populated.
- The existing mechanical systems are in **FAIR to POOR** condition. Many systems are at the end of the service life.
- The existing mechanical systems do not comply with **CODES, STANDARDS or GUIDELINES**.
- The existing mechanical systems do not comply with present **ASHRAE 90.1** energy requirements
- The existing mechanical systems do not deliver adequate **FRESH AIR**.
- The existing mechanical systems are not **CONFIGURED** to good engineering practice.
- The existing mechanical systems do not have the appropriate **CAPACITY** to meet the building loads.
- The existing mechanical systems cannot be **CONTROLLED** to match the loads.
- The existing mechanical systems are not configured for ease of **MAINTENANCE**.
- The existing mechanical systems use a disproportionate amount of **ENERGY**.
- Significant upgrades to HVAC systems are required to bring systems to good design practices, guidelines and standards.
- A conventional mechanical upgrade is estimated at ..... **\$1,080,000**.
- To upgrade to a Ground Source Heat Pump (GSHP) is estimated at an additional ..... **\$345,000**.
- A GSHP will save **75 tonnes** of CO2 Per Year.

## 2.0 Description of Existing Building

- Area of building: 3,254 m<sup>2</sup>
- Original building date: 1923. Additions were added in 1966 and 1991.
- Description of existing building: The bulk of the building is a three storey classroom block using a masonry façade. The style of building could be considered heritage and is in very good shape considering its vintage.

## 3.0 Discussion of Existing Mechanical Systems

### Primary Energy Systems

<p>The hydronic heating system is natural draft Hydrotherm boiler. This system was installed in 1980. This system has 10 more years of service life.</p> <p>These boilers are not compatible with energy saving systems like Ground Source Heat Pumps (GSHP) Systems.</p>	<p>The boilers will need to be upgraded to a sealed combustion condensing style boiler that will be compatible with a GSHP system.</p>
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### Energy Transportation Systems

<p>The hydronic piping and pumping systems are original. The configuration of the piping systems is inadequate for the purpose it serves. The additions to the HVAC system over the life of the building were not done in an orderly or thoughtful manner.</p> <p>Piping systems are not compatible with energy saving systems like Ground Source Heat Pumps (GSHP) Systems</p>	<p>Piping and pumping systems will need to be upgraded.</p>
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## Terminal Equipment

Terminal equipment for occupied areas is based on blend of roof top units, constant volume reheat and perimeter radiation. Some system do not provide adequate fresh air .These systems were installed in 1966. These systems are at the end of the service life.	Terminal units will need to be upgraded.
Many zones have high ceilings (10 feet and higher). Stratification (heat migrating to the ceiling in heating season) is an effect that causes cool conditions to occur in the occupied zone (cool complaints). As well, excessive energy usage occurs as the hot supply air is short-circuited to the return openings.	Duct system will need to be upgraded to include low level returns.
The zoning or temperature control is very poor for the building. Many zones are served by one unit or many units serve one zone.	Zone control will need to be upgraded so that one terminal unit serves one zone.

## Controls

The building is mostly serviced by pneumatic controls. These systems are very difficult to service or renovate. These systems are difficult to program for energy savings.	Control system will need to be upgraded to DDC.
The building has not been provided with carbon dioxide sensors in the occupied zones. Carbon dioxide sensors can be used to optimize and maintain appropriate outside air levels.	Control systems will need to be upgraded with CO <sub>2</sub> Sensors.
The electric heating systems are not controlled though the DDC. Energy can be saved by controlling these heating systems through DDC otherwise they will roll back to night setback temperatures with the remainder of the building.	Electric heated need to be upgraded to DDC System.

## Exhaust Air Systems

General Exhaust – dedicated exhaust systems should be provided to zones where objectionable odours should be captured at the source.	General exhaust system will need to be upgraded in a few areas.
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### 4.0 Considerations for Mechanical System Upgrade

Caveat. This review is intended to provide a quick review of the conditions and configuration of the existing mechanical systems where they are apparent. The main purpose of this report is to identify and then develop budgets for upgrades to mechanical systems. If a condition exist but is not apparent, then it may not be addressed in this report. This report must be review by staff familiar with the building to indicate and address any conditions not presented here.

A conventional upgrade to the existing mechanical system will improve the operation, comfort, energy consumption and maintenance of the facility.

We recommend a conventional heat pump system that can be easily upgraded to geothermal.

Utilizing a geothermal system to provide the bulk of the primary energy will nearly eliminate the fossil fuel consumption and will take great strides toward reducing the carbon footprint.

Don Poole P.Eng.

No:	NAME: Hume	HVAC Type: RTU + CV -RH + Rad									
ID	Item	Comment	Qty	Location	Qty	Location	Qty	Location	Qty	Location	Qty Req'd
<b>PRIMARY HVAC SYSTEMS</b>											
	Boiler		3	Mech							3 Unit
	Fluid Cooler (or Cooling Tower)			Outside							0 Unit
	Chiller - W to W (or W to Air)			Mech							0 Unit
	Heat Pump - W to W (or W to Air)			Mech							0 Unit
	Ground Source HX (Vert, Horiz or Ditch)		40	Field							40 Unit
	Major Circ Pumps		2	Mech							2 Unit
	Main Circulation Piping		200	Mech							200 Metre
	Outside Air Unit		1	Mech		Roof					1 Unit
	Multi-Zone			Roof							0 Unit
	Relief Air Gooseneck			Roof							0 Unit
	Other										0 Unit
<b>TERMINAL HVAC SYSTEMS</b>											
	Roof Top Unit - Large - Heat/Cool		1	Gym		Shop		Theater			1 Unit
	Roof Top Unit - Large - Heat Only			Gym		Shop		Theater			0 Unit
	Roof Top Unit - Small			Class							0 Unit
	Heat Pump		19	Class							19 Unit
	Vertical Unit Ventilator			Class							0 Unit
	Fan Coil - 4 Pipe			Class							0 Unit
	Furnace			Class							0 Unit
	Reheat Coil - Hydronic			Class							0 Unit
	Minor Circ Pumps			Mech							0 Unit
	Reheat Coil - Electric			Class							0 Unit
	Split System AC			Class		Server					0 Unit
	Electric Heat - Force Flow, Unit Heat		4	Entry/Stair		Storage					4 Unit
	Baseboard		8	Office							8 Unit
	Low Level Return			All							0 Unit
	Transfer/ Door Grille		20	All							20 Unit
	Other										0 Unit
<b>DEDICATED EXHAUST PICKUP</b>											
A	Small Ceiling Grille			Elect Rm		Server		Storage - Sm.		WR - Single	0 Unit
B	Large Ceiling Grille			Gang WR	4	photocopy		general			0 Unit
B	Range Hood - Residential			Home Ec		Staff					0 Unit
C	Range Hood - Commercial			Kitchen		Servery					0 Unit
D	Hood - Forge & Melting Crucible			Metal							0 Unit
D	Slotted Back - Pick Up			Welding		Paint		Varsol			0 Unit
D	Articulating Arm			Welding		Solder					0 Unit
D	CO - Overhead Flexible			Auto							0 Unit
D	Science Fume Hood (ASHRAE 110)			Science		Prep					0 Unit
E	Wood Shop - Equipment Pick-Up			Woodshop		Tech					0 Unit
	Other										0 Unit
<b>EXHAUST SYSTEMS</b>											
A	In-Line Fan w/ Gooseneck			In Room							0 Unit
B	Square Panel - Roof Mount		4	Roof							4 Unit
C	Grease Extraction - Roof Mount			Roof							0 Unit
D	Industrial Vent Set - Roof Mount			Roof							0 Unit
E	Sawdust Collector			Outside							0 Unit
	Sawdust Collector Recirculation Systems			Inside							0 Unit
	Sawdust Collector - Vent If Enclosed			Inside							0 Unit
	Other										0 Unit
<b>ADDITIONAL CONTROL SYSTEMS</b>											
	V3 Upgrade or Main Panel		1								1 Site
	CO2 Sensors		20								20 Unit
	Motion Detectors		1								1 Unit
	Variable Speed Drive		2								2 Unit
	Other										0 Unit
<b>GENERAL PLUMBING SYSTEMS</b>											
	DHW Tank - Residential Electric (60 gal)			Mech							0 Unit
	DHW Tank - Storage (120 gal)			Mech							0 Unit
	DHW Recirc Pump			Mech							0 Unit
	Custodian Sink - Floor Mount - Trim			Custodian		Art					0 Unit
	Laundry Tub			Mech		Home Ec					0 Unit
	Drinking Fountain - Bubbler			Class							0 Unit
	Drinking Fountain - Wall Mount - Bot Fill (no frg.)			Corridor		Change		Weights			0 Unit
	Hand Wash (54")			Shops							0 Unit
	New Hand Lav - New IR Trim			Gang WR		Change Rm		Staff			0 Unit
	Hand Lav OK - New IR Trim			Gang WR		Change Rm		Staff			0 Unit
	New Wall Mount Urinal - New IR Trim			Gang WR		Change Rm		Staff			0 Unit
	Urinal OK - New IR Trim			Gang WR		Change Rm		Staff			0 Unit
	WC - Fixture OK - New IR Trim			Gang WR		Change Rm		Staff			0 Unit
	Acid Waste Piping			Science							0 Fixture
	Replace Galvanized with Copper										0 Metre
	Drain Pipe In-Slab (Sawcutting Required)										0 Metre
	Other										0 Unit
<b>EMERGENCY PLUMBING FIXTURES</b>											
	Eyewash - New, TMV - New			Woodshop		Tech Ed		Electricity		Physics	0 Unit
	Eyewash - OK, TMV - New			Woodshop		Tech Ed		Electricity		Physics	0 Unit
	Eyewash/Shower - New, TMV - New			Metalshop		Autoshop		Science		Chem Prep	0 Unit
	Eyewash/Shower - OK, TMV - New			Metalshop		Autoshop		Science		Chem Prep	0 Unit
	Other										0 Unit
<b>NATURAL GAS ISOLATION</b>											
	Emergency Shut Down - Valve			Science		Forge					0 Unit
	Emergency Shut Down - Electronic			Science							0 Unit
	Other										0 Unit
<b>CROSS CONTAMINATION</b>											
	Large DCVA - Fire Protection Systems			Sprinkler		Premise		Irrigation			0 Unit
	Small RFBP			Boiler		Tower					0 Unit
	Standard Vacuum Breaker			Custodian		Hose Bibb		Darkroom		Hair Wash	0 Unit
	Lab Fixture Vacuum Breaker			Science		Science Prep					0 Unit
	Other										0 Unit
<b>INTERCEPTOR AND ACID NEUTRALIZER</b>											
	Acid Neutralizer			Science		Boiler		Darkroom			0 Unit
	Grease Interceptor			Teaching Kitchen							0 Unit
	Oil Interceptor			Autoshop							0 Unit
	Used Oil Storage Tank			Autoshop							0 Unit
	Plaster Interceptor			Pottery							0 Unit
	Other										0 Unit
<b>FLAMMABLE STORAGE CABINET</b>											
	New Cabinet - New Z" Sched 40 Steel Vent Thru Roof			Chem Storage		Autoshop		Finishing		Art	0 Unit
	Cabinet OK - New Z" Sched 40 Steel Vent Thru Roof			Chem Storage		Autoshop		Finishing		Art	0 Unit
	Other										0 Unit
<b>FIRE PROTECTION SYSTEMS</b>											
	Replace Glycol System With Dry System			Sprinkler Station							0 Unit
	Replace Wet Valve with Flow Switch			Sprinkler Station							0 Unit
	Sprinkler Remainder of Building			All							0 Sq.m.
	Remove Sprinkler Near Aluminum Melting Crucible			Forge							0 Unit
	Other										0 Unit
<b>BUILDING ENVELOPE</b>											
	Re and Re T-Bar										0 Sq.m.
	New T-Bar										0 Sq.m.
	Single Glazing										0 Unit
	Chronic Hot / Cold Spots										0 Unit
	Potential for Extreme Infiltration										0 Unit
	asbestos		1								1 allow
<b>MISC</b>											
	Permits & Inspection Fees										5 Unit
	Demolition										10% % of is
	Bonding										1% % of is
<b>GRAND TOTAL</b>											
Area:	3254	Sq m.									
Zones:	20										

No:	NAME: Hume	Itemized Unit Rate									
ID	Item	Equip. Cost	Duct Install	Pipe Install	Insul.	Bal. & Comm.	Control	Elect	Cut & Patch	Roof	Overall Unit Rate
<b>PRIMARY HVAC SYSTEMS</b>											
	Boiler	\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150 /Unit
	Fluid Cooler (or Cooling Tower)	\$0		\$0	\$2,000	\$150	\$6,000	\$5,000	\$30,000		\$43,150 /Unit
	Chiller - W to W (or W to Air)	\$0		\$0	\$500	\$150	\$2,500	\$5,000	\$1,500		\$9,650 /Unit
	Heat Pump - W to W (or W to Air)	\$0		\$0	\$500	\$150	\$3,000	\$5,000	\$1,500		\$10,150 /Unit
	Ground Source HX (Vert. Horiz or Ditch)			\$5,000					\$1,000		\$6,000 /Unit
	Major Circ Pumps	\$3,000		\$1,500	\$500	\$100	\$1,500	\$2,500	\$500		\$9,600 /Unit
	Main Circulation Piping			\$160	\$40						\$200 /Metre
	Outside Air Unit	\$0	\$0		\$2,500	\$200	\$3,000	\$5,000	\$2,500	\$2,000	\$15,200 /Unit
	Multi-Zone 1	\$0	\$0		\$2,500	\$300	\$3,000	\$5,000	\$2,500	\$2,000	\$15,300 /Unit
	Relief Air Gooseneck	\$2,000	\$2,000		\$1,000	\$200	\$500		\$500	\$500	\$6,700 /Unit
	Other										\$0 /Unit
<b>TERMINAL HVAC SYSTEMS</b>											
	Roof Top Unit - Large - Heat/Cool	\$12,000	\$12,000	\$1,500	\$2,500	\$200	\$5,000	\$5,000	\$2,500	\$2,000	\$42,700 /Unit
	Roof Top Unit - Large - Heat Only	\$0	\$0	\$1,500	\$2,500	\$200	\$3,500	\$5,000	\$2,500	\$2,000	\$17,200 /Unit
	Roof Top Unit - Small	\$5,000	\$5,000	\$1,000	\$1,500	\$200	\$3,500	\$1,500	\$1,000	\$1,000	\$19,700 /Unit
	Heat Pump	\$8,500	\$5,000	\$1,500	\$1,500	\$100	\$2,500	\$1,500	\$500		\$21,100 /Unit
	Vertical Unit Ventilator	\$5,000	\$5,000	\$2,000	\$1,500	\$100	\$3,500	\$1,500	\$500	\$500	\$22,600 /Unit
	Fan Coil - 4 Pipe	\$2,000	\$5,000	\$2,000	\$1,500	\$100	\$3,000	\$1,500			\$15,100 /Unit
	Furnace	\$2,500	\$5,000	\$1,500	\$1,500	\$100	\$1,500	\$1,500	\$2,000	\$1,000	\$16,600 /Unit
	Reheat Coil - Hydronic	\$1,800	\$900	\$900	\$500	\$100	\$1,000				\$5,200 /Unit
	Minor Circ Pumps	\$800		\$500	\$500	\$100	\$1,500	\$1,000			\$4,400 /Unit
	Reheat Coil - Electric		\$750				\$1,500	\$1,000			\$3,250 /Unit
	Split System AC	\$1,500	\$1,500	\$2,000	\$500		\$1,000	\$1,000			\$7,500 /Unit
	Electric Heat - Force Flow, Unit Heat						\$1,000	\$1,000			\$2,000 /Unit
	Baseboard						\$1,000	\$500			\$1,500 /Unit
	Low Level Return	\$250	\$500						\$1,500		\$2,250 /Unit
	Transfer/ Door Grille	\$100				\$25			\$200		\$300 /Unit
	Other										\$0 /Unit
<b>DEDICATED EXHAUST PICKUP</b>											
A	Small Ceiling Grille	\$50	\$50			\$25	\$500				\$625 /Unit
B	Large Ceiling Grille	\$50	\$50			\$25	\$500				\$625 /Unit
C	Range Hood - Residential	\$100	\$100			\$25	\$500	\$250	\$250		\$1,225 /Unit
D	Range Hood - Commercial		\$0			\$300		\$1,000			\$1,300 /Unit
E	Hood - Forge & Melting Crucible	\$12,000	\$12,000			\$100	\$500	\$1,000	\$2,000		\$27,600 /Unit
D	Slotted Back - Pick Up	\$1,000	\$1,000			\$100	\$500				\$2,600 /Unit
D	Articulating Arm	\$1,200	\$1,200			\$100	\$500				\$3,000 /Unit
D	CO - Overhead Flexible	\$2,400	\$2,400			\$100	\$500				\$5,400 /Unit
D	Science Fume Hood (ASHRAE 110)	\$13,000	\$13,000			\$150		\$1,500	\$1,000		\$28,650 /Unit
E	Wood Shop - Equipment Pick-Up	\$1,000	\$1,000			\$25	\$500				\$2,525 /Unit
	Other										\$0 /Unit
<b>EXHAUST SYSTEMS</b>											
A	In-Line Fan c/w Gooseneck	\$200	\$200		\$500	\$50	\$500	\$500	\$250	\$500	\$2,700 /Unit
B	Square Panel - Roof Mount	\$600	\$600		\$500	\$100	\$500	\$750	\$250	\$500	\$3,800 /Unit
C	Grease Extraction - Roof Mount	\$2,000	\$2,000		\$2,000	\$100	\$0	\$1,500	\$500	\$1,000	\$9,100 /Unit
D	Industrial Vent Set - Roof Mount	\$3,500	\$3,500		\$500	\$100	\$500	\$1,500	\$1,000	\$1,000	\$11,600 /Unit
E	Sawdust Collector	\$0	\$0		\$500	\$100	\$500	\$5,000	\$5,000		\$11,100 /Unit
	Sawdust Collector Recirculation Systems	\$5,000	\$5,000		\$500	\$0	\$0	\$0	\$1,000		\$11,500 /Unit
	Sawdust Collector - Vent If Enclosed	\$0	\$0		\$0	\$0	\$0	\$0	\$2,000		\$2,000 /Unit
	Other										\$0 /Unit
<b>ADDITIONAL CONTROL SYSTEMS</b>											
	V3 Upgrade or Main Panel						\$500	Per Point			\$5,000 /Site
	CO2 Sensors						\$1,200				\$1,200 /Unit
	Motion Detectors						\$500				\$500 /Unit
	Variable Speed Drive						\$4,500				\$4,500 /Unit
	Other										\$0 /Unit
<b>GENERAL PLUMBING SYSTEMS</b>											
	DHW Tank - Residential Electric (60 gal)	\$500		\$500				\$1,500	\$500		\$3,000 /Unit
	DHW Tank - Storage (120 gal)	\$1,000		\$1,000							\$2,000 /Unit
	DHW Recirc Pump	\$250		\$250			\$500	\$500			\$1,500 /Unit
	Custodian Sink - Floor Mount - Trim	\$350		\$350					\$500		\$1,200 /Unit
	Laundry Tub	\$200		\$200							\$400 /Unit
	Drinking Fountain - Bubbler	\$250		\$250					\$100		\$600 /Unit
	Drinking Fountain - Wall Mount - Bot Fill (	\$1,600		\$1,600				\$750	\$500		\$4,450 /Unit
	Hand Wash (54")	\$4,200		\$4,200					\$2,000		\$10,400 /Unit
	New Hand Lav - New IR Trim	\$700		\$700					\$500		\$1,900 /Unit
	Hand Lav OK - New IR Trim	\$450		\$450							\$900 /Unit
	New Wall Mount Unit - New IR Trim	\$550		\$550					\$1,500		\$2,600 /Unit
	Urinal OK - New IR Trim	\$350		\$350					\$500		\$1,200 /Unit
	WC - Fixture OK - New IR Trim	\$350		\$350							\$700 /Unit
	Acid Waste Piping			\$2,500							\$2,500 /Fixture
	Replace Galvanized with Copper	\$0		\$30	\$20						\$50 /Metre
	Drain Pipe In-Slab (Sawcutting Required)	\$0		\$30					\$250		\$280 /Metre
	Other										\$0 /Unit
<b>EMERGENCY PLUMBING FIXTURES</b>											
	Eyewash - New, TMV - New	\$1,200		\$1,200							\$2,400 /Unit
	Eyewash - OK, TMV - New	\$800		\$800							\$1,600 /Unit
	Eyewash/Shower - New, TMV - New	\$2,400		\$2,400							\$4,800 /Unit
	Eyewash/Shower - OK, TMV - New	\$1,100		\$1,100							\$2,200 /Unit
	Other										\$0 /Unit
<b>NATURAL GAS ISOLATION</b>											
	Emergency Shut Down - Valve	\$50		\$150							\$200 /Unit
	Emergency Shut Down - Electronic	\$200		\$300		\$100	\$2,000				\$2,600 /Unit
	Other										\$0 /Unit
<b>CROSS CONTAMINATION</b>											
	Large DCVA - Fire Protection Systems	\$2,500		\$5,000							\$7,500 /Unit
	Small RBPB	\$500		\$500							\$1,000 /Unit
	Standard Vacuum Breaker	\$100		\$100							\$200 /Unit
	Lab Fixture Vacuum Breaker	\$25		\$50							\$75 /Unit
	Other										\$0 /Unit
<b>INTERCEPTOR AND ACID NEUTRALIZER</b>											
	Acid Neutralizer	\$5,000		\$5,000					\$5,000		\$15,000 /Unit
	Grease Interceptor	\$3,000		\$3,000					\$2,000		\$8,000 /Unit
	Oil Interceptor	\$3,000		\$3,000					\$2,000		\$8,000 /Unit
	Used Oil Storage Tank	\$8,000		\$1,000					\$500		\$9,500 /Unit
	Plaster Interceptor	\$800		\$800							\$1,600 /Unit
	Other										\$0 /Unit
<b>FLAMMABLE STORAGE CABINET</b>											
	New Cabinet - New 2" Sched 40 Steel Ve	\$2,000		\$500					\$250	\$250	\$3,000 /Unit
	Cabinet OK - New 2" Sched 40 Steel Ven			\$500					\$250	\$250	\$1,000 /Unit
	Other										\$0 /Unit
<b>FIRE PROTECTION SYSTEMS</b>											
	Replace Glycol System With Dry System			\$10,000							\$10,000 /Unit
	Replace Wet Valve with Flow Switch			\$2,500							\$2,500 /Unit
	Sprinkler Remainder of Building			\$30							\$30 /Sq.m.
	Remove Sprinkler Near Aluminum Melting			\$500							\$500 /Unit
	Other										\$0 /Unit
<b>BUILDING ENVELOPE</b>											
	Re and Re T-Bar								\$10		\$10 /Sq.m.
	New T-Bar								\$50		\$50 /Sq.m.
	Single Glazing								\$1,000		\$1,000 /Unit
	Chronic Hot / Cold Spots								\$5,000		\$5,000 /Unit
	Potential for Extreme Infiltration								\$20,000		\$20,000 /Unit
	asbestos								\$75,000		\$75,000 /allow
<b>MISC</b>											
	Permits & Inspection Fees			\$500							
	Demolition		hour								
	Bonding		tal								
<b>GRAND TOTAL</b>											
Area:	3254										
Zones:	20										

No:	NAME: Hume		Splits										Sub	5%	10%	12%	12%	PROJECT	H A S B	PHASE	PHASE
ID	Item	Equip. Cost	Duct Install	Pipe Install	Insul.	Bal.	Control	Elect	Cut & Patch	Roof	Total	Escalation	Contingency	Fee & Disb.	Taxes	TOTAL		1	2		
PRIMARY HVAC SYSTEMS	Boiler	\$36,000	\$15,000	\$250,000	\$13,000	\$850	\$10,500	\$16,000	\$48,000	\$3,500	\$392,850	\$19,800	\$39,500	\$47,400	\$47,400	\$446,950		\$213,350	\$333,600		
	Fluid Cooler (or Cooling Tower)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$109,350	\$109,350	\$0		
	Chiller - W to W (or W to Air)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	Heat Pump - W to W (or W to Air)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	Ground Source HX (Vert, Horiz or Ditch)	\$0	\$0	\$200,000	\$0	\$0	\$0	\$0	\$0	\$40,000	\$0	\$240,000	\$12,000	\$24,000	\$28,800	\$28,800	\$333,600	2	\$0	\$333,600	
	Major Circ Pumps	\$6,000	\$0	\$3,000	\$1,000	\$200	\$3,000	\$5,000	\$1,000	\$0	\$19,200	\$1,000	\$2,000	\$2,400	\$2,400	\$27,000	\$27,000	\$27,000	\$0	\$0	
	Main Circulation Piping	\$0	\$0	\$32,000	\$8,000	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000	\$2,000	\$4,000	\$4,800	\$4,800	\$55,600	1	\$55,600	\$0	
	Outside Air Unit	\$0	\$0	\$0	\$2,500	\$200	\$3,000	\$5,000	\$2,500	\$2,000	\$15,200	\$800	\$1,600	\$1,800	\$1,800	\$21,400	\$21,400	\$21,400	\$0	\$0	
	Multi-Zone	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Relief Air Gooseneck	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
TERMINAL HVAC SYSTEMS	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Roof Top Unit - Large - Heat/Cool	\$175,500	\$107,000	\$30,000	\$31,000	\$2,100	\$64,500	\$41,500	\$16,000	\$2,000	\$469,600	\$23,950	\$47,000	\$56,700	\$56,700	\$653,600		\$653,600	\$0	\$0	
	Roof Top Unit - Large - Heat Only	\$12,000	\$12,000	\$1,500	\$2,500	\$200	\$5,000	\$5,000	\$2,500	\$2,000	\$42,700	\$2,200	\$4,300	\$5,200	\$5,200	\$59,600	1	\$59,600	\$0	\$0	
	Roof Top Unit - Small	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Heat Pump	\$161,500	\$95,000	\$28,500	\$28,500	\$1,900	\$47,500	\$28,500	\$9,500	\$0	\$400,900	\$20,100	\$40,100	\$48,200	\$48,200	\$557,500	1	\$557,500	\$0	\$0	
	Vertical Unit Ventilator	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Fan Coil - 4 Pipe	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Reheat Coil - Hydronic	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Minor Circ Pumps	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Reheat Coil - Electric	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
DEDICATED EXHAUST PICKUP	Split System AC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Electric Heat - Force Flow, Unit Heat	\$0	\$0	\$0	\$0	\$0	\$4,000	\$4,000	\$0	\$0	\$8,000	\$400	\$800	\$1,000	\$1,000	\$11,200	1	\$11,200	\$0	\$0	
	Baseboard	\$0	\$0	\$0	\$0	\$0	\$8,000	\$4,000	\$0	\$0	\$12,000	\$600	\$1,200	\$1,500	\$1,500	\$16,800	1	\$16,800	\$0	\$0	
	Low Level Return	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Transfer/Door Grille	\$2,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$0	\$6,000	\$300	\$600	\$800	\$800	\$8,500	1	\$8,500	\$0	\$0



Hume Elementary School																											
3,254 sq m															23-Sep-12												
Expected Annual Utility Consumption Based on 2012 Data																											
Existing Configuration																											
	Natural Gas									Electricity									Total								
	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.
Existing Consumption	2,000	555,600	99.3	0.61	171	\$31,000	\$15.50	\$0.056	\$9.53	486	135,000	3.0	0.15	41	\$15,000	\$30.87	\$0.111	\$4.61	2,486	690,600	102.3	0.76	212	\$46,000	\$18.50	\$0.067	\$14.14

		Option 1 - Conventional Upgrade																										
		Natural Gas								Electricity								Total										
		GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m	\$	\$/GJ	\$/kWhr	\$/sq.m
New Consumption		1,800	500,040	89.4	0.55	154	\$27,900	\$15.50	\$0.056	\$8.57	486	135,000	3.0	0.15	41	\$15,000	\$30.87	\$0.111	\$4.61	2,286	635,040	92.4	0.70	195	\$42,900	\$18.77	\$0.068	\$13.18
Savings		200	55,560	9.9	0.06	17	\$3,100	\$15.50	\$0.056	\$0.95	0	0	0.0	0.00	0	\$0	\$30.87	\$0.111	\$0.00	200	55,560	9.9	0.06	17	\$3,100	\$15.50	\$0.056	\$0.95
	10%										0%									8%		10%						
																		Conventional Cost				\$1,080,000			\$/sq.m	\$332		

		Option 2 - Ground Source Heat Pump - Adder																										
New Consumption	Savings	Natural Gas								Electricity								Total										
		GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO2	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.
		500	138,900	24.8	0.15	43	\$7,750	\$15.50	\$0.056	\$2.38	462	128,250	2.8	0.14	39	\$14,250	\$30.87	\$0.111	\$4.38	962	267,150	27.7	0.30	82	\$22,000	\$22.88	\$0.082	\$6.76
		1,500	416,700	74.5	0.46	128	\$23,250	\$15.50	\$0.056	\$7.15	24	6,750	0.1	0.01	2	\$750	\$30.87	\$0.111	\$0.23	1,524	423,450	74.6	0.47	130	\$24,000	\$15.74	\$0.057	\$7.38
		75%									5%									61%		73%						
		Conventional and GSHP Cost \$1,425,000 \$/sq.m \$438																										
		Simple Payback For GSHP 17																										



## Capital Project Request Form

RDER0310 V.4.06

09 OCT 2012 12:10:22

Hidden:  
District Priority:  
District Ranking:  
Ministry Priority:No  
High  
4

'kim morris' (PRD01)

Project No: N/A

Request Type: New

## Part A - Project Identification

1. Capital Plan Year: 2012/2013	2. SD Ref. No.: 152	3. Last Modified: Oct. 9, 2012	4. Submitted On: unsubmitted
5. SD No.: 08	6. SD Name: Kootenay Lake	7. Municipality: KASLO	8. Asset No.: 120384
9. Facility No.: 86018	10. Facility Name: J V HUMPHRIES ELEM -SECONDARY	Facility Type:	
13. Proj. Cd. MECHUP	14. Project Description: JV HUMPHRIES ELEM-SECONDARY MECHANICAL UPGRADE	11. Current: Elementary-Secondary Sch	
15. Proj. Type: MINOR		12. Proposed: Elementary-Secondary Sch	

## Part B - Capacity, Area Factors and Allowances

Nominal Capacity:		Kindergarten	Grades 1 - 7	Grades 8 - 12	7. Grade Configuration
1. Actual Existing:		20	200	150	K-12
2. Capacity Adjustments:		0	0	0	
3. Proposed Higher Priority Additions:		0	0	0	
4. Total Existing:		20	200	150	
5. Proposed Addition:		0	0	0	
6. Proposed Total Capacity:		20	200	150	8. K-12
Site Area (ha):		Allowable Building Area (sq.m.)			Allowable Renovation Area (sq.m.)
9. Required Size:	0.0	12. Total Allowable Area:	0.0		16. Renovations Associated With Additions (%):
10. Existing Area:	0.0	13. Existing Area:	0.0		17. Renovation Area:
11. Total New Area:	0.0	14. Area to be demolished:	0.0		0.00
		15. Area of New Space:	0.0		18. Renovation Unit Rate:
					0
Construction Cost Factors:		Equipment Allowance (%):			
19. Base Unit Rate:	1785.00	20. Air Conditioning:	0	LFA: 0.00	MF: 1.00
21. Project Size Factor:	1.050	22. Location Factor:	1.15	23. Ground Factor:	1.00
				24. New Space:	17.3
				25. Freight Allowance:	8.609

## Part C - Estimated Budget

Site Acquisition:		1. Purchase:	0	2. Other Cost:	0	3. Subtotal:	0
Site Development:		4. Development Cost Charges:	0	5. Offsite Costs:	0	6. Adjusted Site Development:	0
		7. Supplementary Site:	0	8. None:	0		0
New Construction:		9. New Area:	0.0	10. Adjusted Unit Rate:	0.0000	11. Subtotal:	0
		12. Supplementary Building:	0	13. Renovation Area:	0.00	14. Renovation Unit Rate:	0
				15. Subtotal:	0	16. Supplementary Costs:	0
				17. Other Costs:	0	18. Build Total:	0
Building Costs:		19. Reno Cost:	0	20. Subtotal:	0		0
Equipment Allowance:		21. New Area:	0.00	22. Area Entitled to Equipment Replacement:	0.00	23. Equipment Freight Allowance:	0
New Fee	Reno Fee					24. Subtotal:	0
0.0000	0.1600					25. Site Dev.:	0
Fees:	26. New:	0	27. Renovation:	0	28. Subtotal:	0	0
Contingency:	29. New:	0	30. Renovation:	0	31. Subtotal:	0	0
Other:	32. Mechanical Upgrade - HVAC					33. Subtotal:	500,000
Phases:	34. Site:	0	35. Plan:	0	36. Completion:	500,000	
	37. Planning Costs in Planning Phase:	0	38. In Completion Phase:	0			
Total Estimated Budget:						39. Subtotal:	500,000

Project No.	Project Title	Capital Plan Year	SD No.	SD Ref. No.
N/A	MECHUP - J V HUMPHRIES ELEM -SECONDARY	2012/2013	08	152

#### Part D - Schedule and Funding

##### Project Cost Schedule:

	Site	Planning	Completion
1. Year:	2014/2015	2014/2015	2013/2014
2. Cost:	0	0	500,000

##### Funding Source:

3. Bylaw Capital:	0	0	500,000
4. Capital Reserve:	0	0	0
5. Land Reserve:	0	0	0
6. Local Capital:	0	0	0

#### Part E - Approved Funding

##### Phase Status:

1. Status:	Requested	Requested	Requested
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##### Approved:

2. Bylaw Capital:	0	0	0
3. Capital Reserve:	0	0	0
4. Land Reserve:	0	0	0
5. Local Capital:	0	0	0

##### Variance:

6. Variance	0	0	500,000
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##### Net Request:

7. Bylaw Capital:	0	0	500,000
8. Capital Reserve:	0	0	0
9. Land Reserve:	0	0	0
10. Local Capital:	0	0	0

#### Part F - Comments

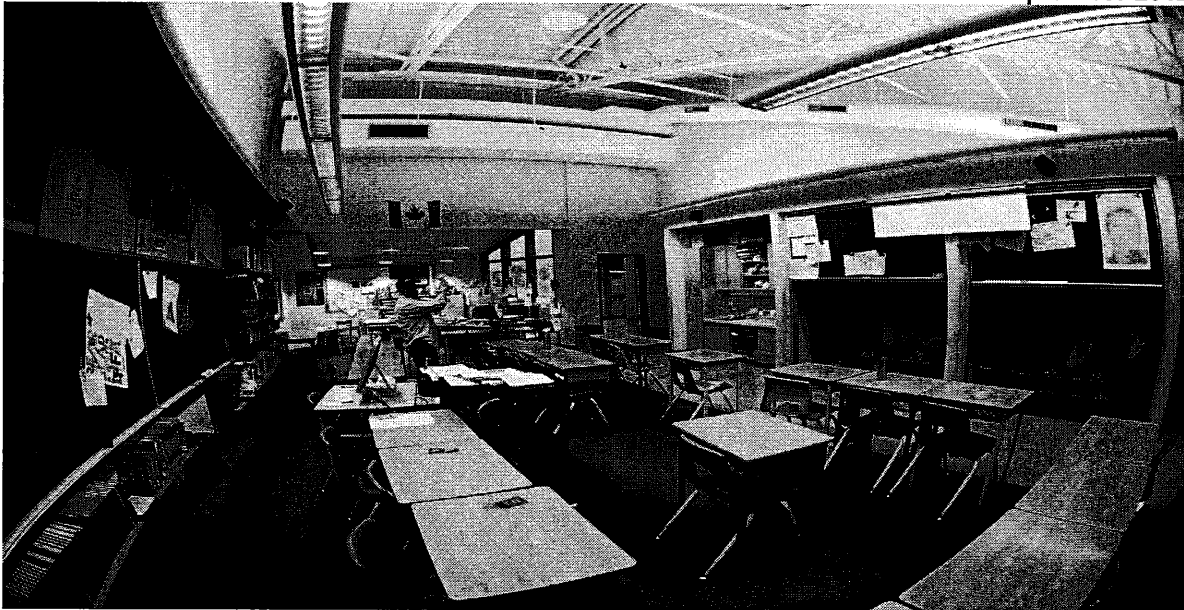
# JV Humphries Elementary Secondary School

Kaslo, B.C.

## School District No. 8 (Kootenay Lake)

### HVAC Systems Assessment Report

23 September 2012



Typical High Ceiling Classroom

## 1.0 Executive Summary

- The school appears to be well utilized and is well populated.
- The existing mechanical systems are in **FAIR** condition.
- The existing mechanical systems do not comply with present **ASHRAE 90.1** energy requirements
- The existing mechanical systems are not **CONFIGURED** to good engineering practice.
- The existing mechanical systems do not have the appropriate **CAPACITY** to meet the building loads properly as they are significantly oversized.
- The existing mechanical systems cannot be **CONTROLLED** to match the loads.
- The existing mechanical systems are not configured for ease of **MAINTENANCE**.
- The existing mechanical systems use a disproportionate amount of **ENERGY**. This problem is compounded by the heating source is propane, and propane cost are significantly higher than other energy sources.
- Significant upgrades to ventilation and plumbing systems are required to bring systems to good design practices, guidelines and standards.
- A conventional mechanical upgrade is estimated at ..... \$500,000.
- A upgrade to the mechanical systems will save **77 tonnes** of CO2 Per Year

## 2.0 Description of Existing Building

- Area of building: 6,200 m<sup>2</sup>
- Original building date: 1993.
- Description of existing building: The building is single storey with non-combustible construction. The lower floor is slab on grad. The roof structure is made up of insulation on Q-deck supported with open web steel joists. The roof structure is sloped for the bulk of the building.

## 3.0 Discussion of Existing Mechanical Systems

### Primary Energy and Air Handling Systems

The hydronic heating system is natural draft super hot boiler. This system was installed in 1993. This system does not modulate well and is oversized.  The boiler heating is supplemented with a cascading style geothermal system.	The boilers will need to be upgraded to a sealed combustion condensing style boiler.
The primary cooling system is air cooled condensing unit that serves the central core of the building. This system was installed in 1993.	
The air handing units are Scott Springfield hydronic heated systems. These systems were installed in 1993.	

### Energy Transportation Systems

The hydronic piping and pumping systems are original. The configuration of the piping systems is inadequate for the purpose it serves as all the systems are oversized and cannot be controlled well to match the loads.	Piping and pumping systems will need to be upgraded.
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## Terminal Equipment

<p>Terminal equipment for occupied areas are based on constant volume reheats with radiant ceiling panels. These systems were installed in 1993. These systems are not performing well.</p> <p>The radiant ceiling panels were positioned at very high level and are not effective at heating the lower levels. To change the elevation of these panels will be problematic as the configuration of the room does not lend well to this modification. It will be better to modify the reheat coil.</p> <p>The reheat coils were undersized to handle the full heating requirements of the space. The coils should be upgraded to a higher capacity.</p>	<p>Terminal heating coils will need to be upgraded.</p> <p>Radian Ceiling panels should be removed.</p>
<p>Terminal units for unoccupied areas such as entry ways and perimeter ancillary are hydronic force flow, unit heater or baseboard heating systems.</p>	
<p>Many zones have high ceilings (10 feet and higher). Stratification (heat migrating to the ceiling in heating season) is an effect that causes cool conditions to occur in the occupied zone (cool complaints). As well, excessive energy usage occurs as the hot supply air is short-circuited to the high level return openings.</p>	<p>Duct system will need to be upgraded to include low level returns.</p>
<p>The zoning or temperature control is very poor for the building. Many zones are served by one unit or many units serve one zone.</p>	<p>Zone control will need to be upgraded so that one terminal unit serves one zone.</p>
<p>There are certain zones that are chronically hot in summer or cool in the winter. The capacity of the system is not capable of meeting the loads for the zones. This is mainly for the zones at the end of the wings. Devices will need to be placed on terminal systems so that systems can be properly balanced. All systems will need to be rebalanced so heating effect is shared to all zones.</p>	<p>A complete rebalancing of the systems is required.</p>

## Controls

The building is serviced by first generation or unsupported digital control systems. These systems are very difficult to service or renovate. These systems are difficult to program for energy savings.	Control system will need to be upgraded to more modern DDC.
The building has not been provided with carbon dioxide sensors in the occupied zones. Carbon dioxide sensors can be used to optimize and maintain appropriate outside air levels.	Control systems will need to be upgraded with CO <sub>2</sub> Sensors.

### 4.0 Considerations for Mechanical System Upgrade

A upgrade to the existing mechanical system will improve the operation, comfort, energy consumption and maintenance of the facility.

The configuration of the mechanical systems for this building did not take into account the high ceilings in the building and much of the heat generated by the terminal systems is short circuited away from the occupied zone. The primary heating systems are over taxed.

We recommend reconfiguring the bulk of the existing systems to eliminate stratification, provide proper zoning and proper capacity in the terminal systems. This will include eliminating radiant ceiling panels as they have proven to be in effective.

Don Poole P.Eng.

No:	NAME: JV Humphries		HVAC Type: CV + RV and Radiant Ceiling Panel									
ID	Item	Comment	Qty	Location	Qty	Location	Qty	Location	Qty	Location	Qty	Req'd
<b>PRIMARY HVAC SYSTEMS</b>												
	Boiler		3	Mech							3	Unit
	Fluid Cooler (or Cooling Tower)			Outside							0	Unit
	Chiller - W to W (or W to Air)			Mech							0	Unit
	Heat Pump - W to W (or W to Air)			Mech							0	Unit
	Ground Source HX (Vert, Horiz or Ditch)			Field							0	Unit
	Major Circ Pumps		2	Mech							2	Unit
	Main Circulation Piping		45	Mech							45	Metre
	Outside Air Unit			Mech		Roof					0	Unit
	Multi-Zone			Roof							0	Unit
	Relief Air Gooseneck			Roof							0	Unit
	balancing all systems		1								1	Allow
<b>TERMINAL HVAC SYSTEMS</b>												
	Roof Top Unit - Large - Heat/Cool			Gym		Shop		Theater			0	Unit
	Roof Top Unit - Large - Heat Only			Gym		Shop		Theater			0	Unit
	Roof Top Unit - Small			Class							0	Unit
	Heat Pump			Class							0	Unit
	Vertical Unit Ventilator			Class							0	Unit
	Fan Coil - 4 Pipe			Class							0	Unit
	Furnace			Class							0	Unit
	Reheat Coil - Hydronic		29	Class							29	Unit
	Minor Circ Pumps			Mech							0	Unit
	Reheat Coil - Electric			Class							0	Unit
	Split System AC			Class		Server					0	Unit
	Electric Heat - Force Flow, Unit Heat			Entry/Stair		Storage					0	Unit
	Baseboard			Office							0	Unit
	Low Level Return		29	All							29	Unit
	Transfer/Door Grille			All							0	Unit
	Other										0	Unit
<b>DEDICATED EXHAUST PICKUP</b>												
A	Small Ceiling Grille			Elect Rm		Server		Storage - Sm.		WR - Single	0	Unit
B	Large Ceiling Grille			Gang WR		photocopy		general			0	Unit
C	Range Hood - Residential			Home Ec		Staff					0	Unit
D	Range Hood - Commercial			Kitchen		Servery					0	Unit
E	Hood - Forge & Melting Crucible			Metal							0	Unit
D	Slotted Back - Pick Up			Welding		Paint		Varsol			0	Unit
D	Articulating Arm			Welding		Solder					0	Unit
D	CO - Overhead Flexible			Auto							0	Unit
D	Science Fume Hood (ASHRAE 110)			Science		Prep					0	Unit
E	Wood Shop - Equipment Pick-Up			Woodshop		Tech					0	Unit
	Other										0	Unit
<b>EXHAUST SYSTEMS</b>												
A	In-Line Fan c/w Gooseneck			In Room							0	Unit
B	Square Panel - Roof Mount			Roof							0	Unit
C	Grease Extraction - Roof Mount			Roof							0	Unit
D	Industrial Vent Set - Roof Mount			Roof							0	Unit
E	Sawdust Collector			Outside							0	Unit
	Sawdust Collector Recirculation Systems			Inside							0	Unit
	Sawdust Collector - Vent If Enclosed			Inside							0	Unit
	Other										0	Unit
<b>ADDITIONAL CONTROL SYSTEMS</b>												
	V3 Upgrade or Main Panel		1								1	Site
	CO2 Sensors		33								33	Unit
	Motion Detectors										0	Unit
	Variable Speed Drive		2								2	Unit
	Other										0	Unit
<b>GENERAL PLUMBING SYSTEMS</b>												
	DHW Tank - Residential Electric (60 gal)		2	Mech							2	Unit
	DHW Tank - Storage (120 gal)			Mech							0	Unit
	DHW Recirc Pump			Mech							0	Unit
	Custodian Sink - Floor Mount - Trim			Custodian		Art					0	Unit
	Laundry Tub			Mech		Home Ec					0	Unit
	Drinking Fountain - Bubbler			Class							0	Unit
	Drinking Fountain - Wall Mount - Bot Fill (no frig.)			Corridor		Change		Weights			0	Unit
	Hand Wash (54")			Shops							0	Unit
	New Hand Lav - New IR Trim			Gang WIR		Change Rm		Staff			0	Unit
	Hand Lav OK - New IR Trim			Gang WIR		Change Rm		Staff			0	Unit
	New Wall Mount Urinal - New IR Trim			Gang WIR		Change Rm		Staff			0	Unit
	Urinal OK - New IR Trim			Gang WIR		Change Rm		Staff			0	Unit
	WC - Fixture OK - New IR Trim			Gang WIR		Change Rm		Staff			0	Unit
	Acid Waste Piping			Science							0	Fixture
	Replace Galvanized with Copper										0	Metre
	Drain Pipe in-Slab (Sawcutting Required)										0	Metre
	Other										0	Unit
<b>EMERGENCY PLUMBING FIXTURES</b>												
	Eyewash - New, TMV - New			Woodshop		Tech Ed		Electricity		Physics	0	Unit
	Eyewash - OK, TMV - New			Woodshop		Tech Ed		Electricity		Physics	0	Unit
	Eyewash/Shower - New, TMV - New			Metalshop		Autoshop		Science		Chem Prep	0	Unit
	Eyewash/Shower - OK, TMV - New			Metalshop		Autoshop		Science		Chem Prep	0	Unit
	Other										0	Unit
<b>NATURAL GAS ISOLATION</b>												
	Emergency Shut Down - Valve			Science		Forge					0	Unit
	Emergency Shut Down - Electronic			Science							0	Unit
	Other										0	Unit
<b>CROSS CONTAMINATION</b>												
	Large DCVA - Fire Protection Systems			Sprinkler		Premise		Irrigation			0	Unit
	Small RBPB			Boiler		Tower					0	Unit
	Standard Vacuum Breaker			Custodian		Hose Bibb		Darkroom		Hair Wash	0	Unit
	Lab Fixture Vacuum Breaker			Science		Science Prep					0	Unit
	Other										0	Unit
<b>INTERCEPTOR AND ACID NEUTRALIZER</b>												
	Acid Neutralizer			Science		Boiler		Darkroom			0	Unit
	Grease Interceptor			Teaching Kitchen							0	Unit
	Oil Interceptor			Autoshop							0	Unit
	Used Oil Storage Tank			Autoshop							0	Unit
	Plaster Interceptor			Pottery							0	Unit
	Other										0	Unit
<b>FLAMMABLE STORAGE CABINET</b>												
	New Cabinet - New 2" Sched 40 Steel Vent Thru Roof			Chem Storage		Autoshop		Finishing		Art	0	Unit
	Cabinet OK - New 2" Sched 40 Steel Vent Thru Roof			Chem Storage		Autoshop		Finishing		Art	0	Unit
	Other										0	Unit
<b>FIRE PROTECTION SYSTEMS</b>												
	Replace Glycol System With Dry System			Sprinkler Station							0	Unit
	Replace Wet Valve with Flow Switch			Sprinkler Station							0	Unit
	Sprinkler Remainder of Building			All							0	Sq.m.
	Remove Sprinkler Near Aluminum Melting Crucible			Forge							0	Unit
	Other										0	Unit
<b>BUILDING ENVELOPE</b>												
	Re and Re T-Bar										0	Sq.m.
	New T-Bar										0	Sq.m.
	Single Glazing										0	Unit
	Chronic Hot / Cold Spots										0	Unit
	Potential for Extreme Infiltration										0	Unit
	Other										0	Unit
<b>MISC</b>												
	Permits & Inspection Fees										3	Unit
	Demolition										10%	% of Is
	Bonding										1%	% of Is
<b>GRAND TOTAL</b>												
Area:	6200 Sq.m.											
Zones:	33											



No:	NAME: JV Humphries	Itemized Unit Rate									
ID	Item	Equip. Cost	Duct Install	Pipe Install	Insul.	Bal. & Comm.	Control	Elect	Cut & Patch	Roof	Overall Unit Rate
<b>PRIMARY HVAC SYSTEMS</b>											
	Boiler	\$10,000	\$5,000	\$5,000	\$500	\$150	\$1,500	\$2,000	\$1,500	\$500	\$26,150/Unit
	Fluid Cooler (or Cooling Tower)	\$0		\$0	\$2,000	\$150	\$6,000	\$5,000	\$30,000		\$43,150/Unit
	Chiller - W to W (or W to Air)	\$0		\$0	\$500	\$150	\$2,500	\$5,000	\$1,500		\$9,650/Unit
	Heat Pump - W to W (or W to Air)	\$0		\$0	\$500	\$150	\$3,000	\$5,000	\$1,500		\$10,150/Unit
	Ground Source HX (Vert, Horiz or Ditch)	\$0		\$0	\$500		\$1,000		\$5,000		\$6,500/Unit
	Major Circ Pumps	\$3,000		\$1,500	\$500	\$100	\$500	\$1,500	\$500		\$7,600/Unit
	Main Circulation Piping			\$180	\$40						\$200/Metre
	Outside Air Unit	\$0	\$0		\$2,500	\$200	\$3,000	\$5,000	\$2,500	\$2,000	\$15,200/Unit
	Multi-Zone	\$0	\$0		\$2,500	\$300	\$3,000	\$5,000	\$2,500	\$2,000	\$15,300/Unit
	Relief Air Gooseneck	\$2,000	\$2,000		\$1,000	\$200	\$500		\$500	\$500	\$6,700/Unit
	balancing all systems					\$20,000					\$20,000/Allow
<b>TERMINAL HVAC SYSTEMS</b>											
	Roof Top Unit - Large - Heat/Cool	\$0	\$0	\$1,500	\$2,500	\$200	\$5,000	\$5,000	\$2,500	\$2,000	\$18,700/Unit
	Roof Top Unit - Large - Heat Only	\$0	\$0	\$1,500	\$2,500	\$200	\$3,500	\$5,000	\$2,500	\$2,000	\$17,200/Unit
	Roof Top Unit - Small	\$5,000	\$5,000	\$1,000	\$1,500	\$200	\$3,500	\$1,500	\$1,000	\$1,000	\$19,700/Unit
	Heat Pump	\$3,600	\$5,000	\$1,500	\$1,500	\$100	\$2,500	\$1,500	\$500		\$16,200/Unit
	Vertical Unit Ventilator	\$8,000	\$5,000	\$2,000	\$1,500	\$100	\$3,500	\$1,500	\$500	\$500	\$22,600/Unit
	Fan Coil - 4 Pipe	\$2,000	\$5,000	\$2,000	\$1,500	\$100	\$3,000	\$1,500			\$15,100/Unit
	Furnace	\$2,500	\$5,000	\$1,500	\$1,500	\$100	\$1,500	\$1,500		\$1,000	\$16,600/Unit
	Reheat Coil - Hydronic	\$500	\$300	\$300	\$500	\$100	\$500				\$2,300/Unit
	Minor Circ Pumps	\$800		\$500	\$500	\$100	\$1,500	\$1,000			\$4,400/Unit
	Reheat Coil - Electric		\$750				\$1,500	\$1,000			\$3,250/Unit
	Split System AC	\$1,500	\$1,500	\$2,000	\$500		\$1,000	\$1,000			\$7,500/Unit
	Electric Heat - Force Flow, Unit Heat						\$1,000	\$1,000			\$2,000/Unit
	Baseboard							\$500			\$1,500/Unit
	Low Level Return	\$250	\$500				\$25		\$1,500		\$2,275/Unit
	Transfer Door Grille	\$100							\$200		\$300/Unit
	Other										\$0/Unit
<b>DEDICATED EXHAUST PICKUP</b>											
A	Small Ceiling Grille	\$50	\$50			\$25	\$500				\$625/Unit
B	Large Ceiling Grille	\$50	\$50			\$25	\$500				\$625/Unit
C	Range Hood - Residential	\$100	\$100			\$25	\$500	\$250	\$250		\$1,225/Unit
D	Range Hood - Commercial	\$0	\$0			\$300	\$500	\$1,000			\$1,300/Unit
E	Hood - Forge & Melting Crucible	\$12,000	\$12,000			\$100	\$500	\$1,000	\$2,000		\$27,600/Unit
F	Slotted Back - Pick Up	\$1,000	\$1,000			\$100	\$500				\$2,600/Unit
G	Articulating Arm	\$1,200	\$1,200			\$100	\$500				\$3,000/Unit
H	CO - Overhead Flexible	\$2,400	\$2,400			\$100	\$500				\$5,400/Unit
I	Science Fume Hood (ASHRAE 110)	\$13,000	\$13,000			\$150		\$1,500	\$1,000		\$28,650/Unit
J	Wood Shop - Equipment Pick-Up	\$1,000	\$1,000			\$25	\$500				\$2,525/Unit
	Other										\$0/Unit
<b>EXHAUST SYSTEMS</b>											
A	In-Line Fan c/w Gooseneck	\$200	\$200		\$500	\$50	\$500	\$500	\$250	\$500	\$2,700/Unit
B	Square Panel - Roof Mount	\$800	\$800		\$500	\$100	\$500	\$750	\$250	\$500	\$3,800/Unit
C	Grease Extraction - Roof Mount	\$2,000	\$2,000		\$2,000	\$100	\$0	\$1,500	\$500	\$1,000	\$9,100/Unit
D	Industrial Vent Set - Roof Mount	\$3,500	\$3,500		\$500	\$100	\$500	\$1,500	\$1,000	\$1,000	\$11,600/Unit
E	Sawdust Collector	\$0	\$0		\$500	\$100	\$500	\$5,000	\$5,000		\$11,100/Unit
F	Sawdust Collector Recirculation Systems	\$5,000	\$5,000		\$500	\$0	\$0	\$0	\$1,000		\$11,500/Unit
G	Sawdust Collector - Vent if Enclosed	\$0	\$0		\$0	\$0	\$0	\$0	\$2,000		\$2,000/Unit
	Other										\$0/Unit
<b>ADDITIONAL CONTROL SYSTEMS</b>											
	V3 Upgrade or Main Panel						\$500	Per Point			\$5,000/Unit
	CO2 Sensors						\$1,200				\$1,200/Unit
	Motion Detectors						\$500				\$500/Unit
	Variable Speed Drive						\$4,500				\$4,500/Unit
	Other										\$0/Unit
<b>GENERAL PLUMBING SYSTEMS</b>											
	DHW Tank - Residential Electric (60 gal)	\$500		\$500				\$1,500	\$500		\$3,000/Unit
	DHW Tank - Storage (120 gal)	\$1,000		\$1,000							\$2,000/Unit
	DHW Recirc Pump	\$250		\$250			\$500	\$500			\$1,500/Unit
	Custodian Sink - Floor Mount - Trim	\$350		\$350					\$500		\$1,200/Unit
	Laundry Tub	\$200		\$200							\$400/Unit
	Drinking Fountain - Bubbler	\$250		\$250					\$100		\$600/Unit
	Drinking Fountain - Wall Mount - Bot Fill (6")	\$1,600		\$1,600				\$750	\$500		\$4,450/Unit
	Hand Wash (6")	\$4,200		\$4,200					\$2,000		\$10,400/Unit
	New Hand Lav - New IR Trim	\$700		\$700					\$500		\$1,900/Unit
	Hand Lav OK - New IR Trim	\$450		\$450							\$900/Unit
	New Wall Mount Urinal - New IR Trim	\$550		\$550				\$1,500			\$2,600/Unit
	Urinal OK - New IR Trim	\$350		\$350				\$500			\$1,200/Unit
	WC - Fixture OK - New IR Trim	\$350		\$350							\$700/Unit
	Acid Waste Piping			\$2,500							\$2,500/Unit
	Replace Galvanized with Copper	\$0		\$30	\$20						\$50/Metre
	Drain Pipe In-Slab (Sawcutting Required)	\$0		\$30					\$250		\$280/Metre
	Other										\$0/Unit
<b>EMERGENCY PLUMBING FIXTURES</b>											
	Eyewash - New, TMV - New	\$1,200		\$1,200							\$2,400/Unit
	Eyewash - OK, TMV - New	\$800		\$800							\$1,600/Unit
	Eyewash/Shower - New, TMV - New	\$2,400		\$2,400							\$4,800/Unit
	Eyewash/Shower - OK, TMV - New	\$1,100		\$1,100							\$2,200/Unit
	Other										\$0/Unit
<b>NATURAL GAS ISOLATION</b>											
	Emergency Shut Down - Valve	\$50		\$150							\$200/Unit
	Emergency Shut Down - Electronic	\$200		\$300		\$100	\$2,000				\$2,600/Unit
	Other										\$0/Unit
<b>CROSS CONTAMINATION</b>											
	Large DCVA - Fire Protection Systems	\$2,500		\$5,000							\$7,500/Unit
	Small RBP	\$500		\$500							\$1,000/Unit
	Standard Vacuum Breaker	\$100		\$100							\$200/Unit
	Lab Fixture Vacuum Breaker	\$25		\$50							\$75/Unit
	Other										\$0/Unit
<b>INTERCEPTOR AND ACID NEUTRALIZER</b>											
	Acid Neutralizer	\$5,000		\$5,000					\$5,000		\$15,000/Unit
	Grease Interceptor	\$3,000		\$3,000					\$2,000		\$8,000/Unit
	Oil Interceptor	\$3,000		\$3,000					\$2,000		\$8,000/Unit
	Used Oil Storage Tank	\$8,000		\$1,000					\$500		\$9,500/Unit
	Plaster Interceptor	\$800		\$800							\$1,600/Unit
	Other										\$0/Unit
<b>FLAMMABLE STORAGE CABINET</b>											
	New Cabinet - New 2" Sched 40 Steel Ve	\$2,000		\$500					\$250	\$250	\$3,000/Unit
	Cabinet OK - New 2" Sched 40 Steel Ve			\$500					\$250	\$250	\$1,000/Unit
	Other										\$0/Unit
<b>FIRE PROTECTION SYSTEMS</b>											
	Replace Glycol System With Dry System			\$10,000							\$10,000/Unit
	Replace Wet Valve with Flow Switch			\$2,500							\$2,500/Unit
	Sprinkler Remainder of Building			\$30							\$30/Sq.m.
	Remove Sprinkler Near Aluminum Melting			\$500							\$500/Unit
	Other										\$0/Unit
<b>BUILDING ENVELOPE</b>											
	Re and Re T-Bar								\$10		\$10/Sq.m.
	New T-Bar								\$50		\$50/Sq.m.
	Single Glazing								\$1,000		\$1,000/Unit
	Chronic Hot / Cold Spots								\$5,000		\$5,000/Unit
	Potential for Extreme Infiltration								\$20,000		\$20,000/Unit
	Other										\$0/Unit
<b>MISC</b>											
	Permits & Inspection Fees			\$500							\$500/Unit
	Demolition										
	Bonding										
<b>GRAND TOTAL</b>											
Area:	6200										
Zones:	33										



JV Humphries Elementary Secondary School																											
6,200 sq m																											
23-Sep-12																											
Expected Annual Utility Consumption Based on 2011/2012 Data																											
Existing Configuration																											
	Propane									Electricity									Total								
	GJ	kWhr	Tonne CO <sub>2</sub>	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO <sub>2</sub>	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO <sub>2</sub>	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.
Existing Consumption	3,240	900,000	191.6	0.52	145	\$92,000	\$28.40	\$0.102	\$14.84	1,476	410,000	9.1	0.24	66	\$46,000	\$31.17	\$0.112	\$7.42	4,716	1,310,000	200.7	0.76	211	\$138,000	\$29.26	\$0.105	\$22.26

Mechanical Upgrade																											
	Propane									Electricity									Total								
	GJ	kWhr	Tonne CO <sub>2</sub>	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO <sub>2</sub>	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.	GJ	kWhr	Tonne CO <sub>2</sub>	GJ/sq.m.	kWhr/sq.m.	\$	\$/GJ	\$/kWhr	\$/sq.m.
New Consumption	1,944	540,000	115.0	0.31	87	\$55,200	\$28.40	\$0.102	\$8.90	1,402	389,500	8.6	0.23	63	\$43,700	\$31.17	\$0.112	\$7.05	3,346	929,500	123.6	0.54	150	\$98,900	\$29.56	\$0.106	\$15.95
Savings	1,296	360,000	76.7	0.21	58	\$36,800	\$28.40	\$0.102	\$5.94	74	20,500	0.5	0.01	3	\$2,300	\$31.17	\$0.112	\$0.37	1,370	380,500	77.1	0.22	61	\$39,100	\$28.55	\$0.103	\$6.31
	40%									5%									29%			38%					
Propane 24,700 kJ/Liter																											
Conventional and GSHP Cost \$500,000 \$/sq.m \$81																											
Simple Payback For GSHP 13																											



## Capital Project Request Form

RDER0310 V.4.06

09 OCT 2012 12:10:57

Hidden:  
District Priority:  
District Ranking:  
Ministry Priority:No  
High  
5

'kim morris' (PRD01)

Project No: N/A

Request Type: New

## Part A - Project Identification

1. Capital Plan Year: 2012/2013	2. SD Ref. No.: 207	3. Last Modified: Oct. 9, 2012	4. Submitted On: unsubmitted
5. SD No.: 08	6. SD Name: Kootenay Lake	7. Municipality: NELSON	8. Asset No.:
9. Facility No.:	10. Facility Name: N/A	Facility Type:	
13. Proj. Cd. BUSREP	14. Project Description: REPLACE 4-72 PASSENGER BUSES (2089, 2080, 1082, 1083)	11. Current:	
15. Proj. Type: MINOR		12. Proposed:	

## Part B - Capacity, Area Factors and Allowances

Nominal Capacity:		Kindergarten	Grades 1 - 7	Grades 8 - 12	7. Grade Configuration
1. Actual Existing:		0	0	0	U
2. Capacity Adjustments:		0	0	0	
3. Proposed Higher Priority Additions:		0	0	0	
4. Total Existing:		0	0	0	
5. Proposed Addition:		0	0	0	
6. Proposed Total Capacity:		0	0	0	8. U
Site Area (ha):		Allowable Building Area (sq.m.)			Allowable Renovation Area (sq.m.)
9. Required Size:	0.0	12. Total Allowable Area:	0.0		16. Renovations Associated With Additions (%):
10. Existing Area:	0.0	13. Existing Area:	0.0		17. Renovation Area:
11. Total New Area:	0.0	14. Area to be demolished:	0.0		0.00
		15. Area of New Space:	0.0		18. Renovation Unit Rate:
					0
Construction Cost Factors:		Equipment Allowance (%):			
19. Base Unit Rate:	0	20. Air Conditioning:	0	LFA: 0.00	MF: 1.00
21. Project Size Factor:	1.000	22. Location Factor:	1.15	23. Ground Factor:	1.00
				24. New Space:	0.0
				25. Freight Allowance:	8.609

## Part C - Estimated Budget

Site Acquisition:		1. Purchase:	0	2. Other Cost:	0	3. Subtotal:	0
Site Development:		4. Development Cost Charges:	0	5. Offsite Costs:	0	6. Adjusted Site Development:	0
		7. Supplementary Site:	0	8. None:	0	9. Subtotal:	0
New Construction:		9. New Area:	0.0	Renovations:	13. Renovation Area:	0.00	
		10. Adjusted Unit Rate:		14. Renovation Unit Rate:	0		
		11. Subtotal:	0	15. Subtotal:	0		
		12. Supplementary Building:	0	16. Supplementary Costs:	0		
				17. Other Costs:	0		
Building Costs:		18. Build Total:	0	19. Reno Cost:	0	20. Subtotal:	0
				Area	21. New Area:	0.00	
				Allowance	22. Area Entitled to Equipment Replacement:	0.00	
					23. Equipment Freight Allowance:	0	
					24. Subtotal:	0	
					25. Renovation:	0	
					26. Renovation:	0	
					27. Renovation:	0	
					28. Renovation:	0	
					29. Renovation:	0	
					30. Renovation:	0	
					31. Subtotal:	434,520	
Other:		32. 4-70 Passenger Buses					
Phases:		34. Site:	0	35. Plan:	0	36. Completion:	434,520
		37. Planning Costs in Planning Phase:	0	38. In Completion Phase:	0		
Total Estimated Budget:						39. Subtotal:	434,520

Project No.	Project Title	Capital Plan Year	SD No.	SD Ref. No.
N/A		2012/2013	08	207

#### Part D - Schedule and Funding

Project Cost Schedule:		Site	Planning	Completion
1. Year:		2014/2015	2014/2015	2012/2013
2. Cost:		0	0	434,520
Funding Source:	3. Bylaw Capital:	0	0	434,520
	4. Capital Reserve:	0	0	0
	5. Land Reserve:	0		0
	6. Local Capital:	0	0	0

#### Part E - Approved Funding

Phase Status:	1. Status:	Requested	Requested	Requested
Approved:	2. Bylaw Capital:	0	0	0
	3. Capital Reserve:	0	0	0
	4. Land Reserve:	0		0
	5. Local Capital:	0	0	0
Variance:	6. Variance	0	0	434,520
Net Request:	7. Bylaw Capital:	0	0	434,520
	8. Capital Reserve:	0	0	0
	9. Land Reserve:	0	0	0
	10. Local Capital:	0	0	0

#### Part F - Comments



**BRITISH  
COLUMBIA**

Ministry of Transportation  
and Infrastructure  
Commercial Vehicle  
Inspection Report

**FINAL INSPECTION  
CONFIRMATION NUMBER**  
**8642612**

**PJ15297**

DECAL EXPIRY DATE

**30 SEP 2013**

INSPECTION RESULT: **Pass**  
INSPECTION TYPE: **Complete**  
REASON FOR INSPECTION: **Annual**  
COLLISION REPAIR FACILITY:

WORK ORDER #  
INSPECTION START DATE  
**19 SEP 2012 08:00**

INSPECTION COMPLETE DATE  
**19 SEP 2012 11:10**

REASON NOTE:

TECHNICIAN NAME:

PHONE #:

INSPECTOR'S NUMBER: **M05909-006**  
INSPECTOR'S NAME: **PETERSON, GARY BRUCE**  
LICENCE EXPIRY DATE: **28 FEB 2014**  
FACILITY NUMBER: **P4638-022**  
FACILITY NAME: **SD NO. 8(KOOTENAY LAKE)**  
INSPECTION CLASS: **5 - School Bus**

OWNER/  
LESSEE: **Board of Education of S.D. # 8**  
ADDRESS: **570 Johnstone Rd.**  
CITY: **Nelson** PROV: **BC** POSTAL CODE: **V1L6J2**  
REGISTRATION #: **01206511** VEH. JURISDICTION: **BC** PLATE: **2570FL**  
YEAR: **2003** MAKE: **BLUEBIRD** MODEL:  
BODY STYLE: **BUS** VIN: **1HVBBAAN73H563839**  
ODOMETER: **274488 KM** FUEL TYPE: **Diesel**  
UNIT/FLEET #: **72** 2089 BRAKE TYPE: **Air**

"F" Failed "R" Repaired Same Day "P" Passed "PC" Passed With Caution "O" Out Of Service "NA" Not Applicable

	F	R	P	PC	O	NA		F	R	P	PC	O	NA
Section 1 - Power Train			✓				Pressure Fuel						
							Liquid Propane Gas						✓
							Compressed Natural Gas						✓
Section 2 - Suspension			✓				Pressure Fuel Inspector's Name & Number						
Section 3 - Hydraulic Brakes						✓	Air Brake Chamber Type, Size and Push Rod Stroke Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Type: Clamp Clamp						
							Size: 20L 24LL						
Section 3A - Air Brakes			✓				Slack: Auto Auto						
							Left: 35 38						
							Right: 35 38						
Section 4 - Steering			✓				Comments:						
Section 5 - Instruments, Auxillary Equipment			✓				Air Brake Camshaft Rotation Measurement (degrees)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Left: 65 40						
Section 6 - Lamps			✓				Right: 75 40						
							Comments:						
Section 7 - Electrical System			✓				Brake Lining/Pad Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
Section 8 - Body & Frame			✓				Type: Lining (S Lining (S						
							Left: 14 18						
							Right: 14 18						
Section 9 - Tires & Wheels			✓				Comments:						
Section 10 - Couplers & Hitches						✓	Rotor/Drum Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
Section 10 - Special Use Vehicle Components						✓	Type: Drum Drum						
							Left: 0 0						
							Right: 0 0						
							Comments: 1 - Drums not removed; 2 - Drums not removed						
General Inspection Comments:													

Inspector's Name **PETERSON, GARY BRUCE**

Signature

The Inspector's signature above is certification that this vehicle has been inspected to the requirements of the Motor Vehicle Act and Regulations.

**NOTICE: KEEP THIS VEHICLE INSPECTION REPORT WITH VEHICLE REGISTRATION**

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BRITISH  
COLUMBIA

Ministry of Transportation  
and Infrastructure

Inspection Identifier: MV913\_20120507\_1322

Page 1 of 1

CVSA decal:

### SCHOOLBUS INSPECTION REPORT / NOTICE and ORDER

Vehicle(s) inspected this 07 of MAY YR 2012 at 13:22 (24hr Clock) at Nelson

Inspection Type: **Reinspection**

Inspected By: **MV913 R.RICHARDSON**

Violation Ticket #:

#### INSPECTION RESULT: **Pass**

Owner: **BOARD OF ED OF SD 8**

Address: **570 JOHNSTONE RD**

City: **NELSON** Prov: **BC** Postal Code: **V1L6J2**

NSC #: **200641461**

Registration: **01206511**

Plate #: **2570FL**

Jur: **BC**

Make: **BLUEBIRD**

Year: **2003**

Model:

Body Style: **BUS**

Fuel Code: **Diesel**

Unit/Fleet: **2089**

Seating Capacity:

Mobility Aid:

Odometer: **271940 KM**

VIN: **1HVBBAAN73H563839**

CVIP decal: **PH09117**

CVIP Jur: **BC**

#### INSPECTION RESULTS

**\*\*\* NO VIOLATIONS IDENTIFIED \*\*\***

#### BRAKE INFORMATION

**\*\*\* BRAKE DETAILS NOT APPLICABLE FOR THIS INSPECTION \*\*\***

#### ADDITIONAL COMMENTS:

Repairs complete

Peace Officer (Inspector): **R.RICHARDSON**

Number: **MV913**

2 - 310 Ward St Nelson V1L 5S4

Assist:

The information on this form is collected under the authority of the Motor Vehicle Act, Section 217. The information will be used to process your vehicle inspection and/or Notice and Order. If you have any questions please contact the issuing Officer or call CVSE at (250) 952-0577. Visit [www.cvse.ca](http://www.cvse.ca)

MV3028E (012011)

THIS REPORT MUST BE RETAINED BY THE CARRIER FOR FOUR YEARS



BRITISH  
COLUMBIA

Ministry of Transportation  
and Infrastructure  
Commercial Vehicle  
Inspection Report

FINAL INSPECTION  
CONFIRMATION NUMBER  
8430935

**1272**  
PJ15272

DECAL EXPIRY DATE  
31 MAR 2013

INSPECTION RESULT: <b>Pass</b>	WORK ORDER #	INSPECTION START DATE <b>19 MAR 2012 08:00</b>	INSPECTION COMPLETE DATE <b>19 MAR 2012 14:15</b>
INSPECTION TYPE: <b>Complete</b>	REASON NOTE:		
REASON FOR INSPECTION: <b>Annual</b>	TECHNICIAN NAME:		
COLLISION REPAIR FACILITY:	PHONE #:		
INSPECTOR'S NUMBER: <b>M05909-006</b>	OWNER/LESSEE: <b>Board of Education of S.D. # 8</b>		
INSPECTOR'S NAME: <b>PETERSON, GARY BRUCE</b>	ADDRESS: <b>570 Johnstone Rd.</b>		
LICENCE EXPIRY DATE: <b>28 FEB 2014</b>	CITY: <b>Nelson</b>	PROV: <b>BC</b>	POSTAL CODE: <b>V1L6J2</b>
FACILITY NUMBER: <b>P4638-021</b>	REGISTRATION #: <b>00877802</b>	VEH. JURISDICTION: <b>BC</b>	PLATE: <b>6223EM</b>
FACILITY NAME: <b>SCHOOL DISTRICT NO. 8</b>	YEAR: <b>2002</b>	MAKE: <b>BLUEBIRD</b>	MODEL:
INSPECTION CLASS: <b>5 - School Bus</b>	BODY STYLE: <b>BUS</b>	VIN: <b>1HVBBAAN62H524643</b>	
	ODOMETER: <b>254964 KM</b>	FUEL TYPE: <b>Diesel</b>	
	UNIT/FLEET #: <b>(72) 2080</b>	BRAKE TYPE: <b>Air</b>	

"F" Failed "R" Repaired Same Day "P" Passed "PC" Passed With Caution "O" Out Of Service "NA" Not Applicable

	F	R	P	PC	O	NA		F	R	P	PC	O	NA
Section 1 - Power Train			✓				Pressure Fuel						
							Liquid Propane Gas						✓
							Compressed Natural Gas						✓
Section 2 - Suspension			✓				Pressure Fuel Inspector's Name & Number						
Section 3 - Hydraulic Brakes					✓		Air Brake Chamber Type, Size and Push Rod Stroke Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Type: Clamp Clamp						
							Size: 20L 24LL						
							Slack: Auto Auto						
							Left: 36 38						
							Right: 36 38						
							Comments:						
Section 3A - Air Brakes New rear drums and shoes			✓				Air Brake Camshaft Rotation Measurement (degrees)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Left: 65 25						
							Right: 65 25						
							Comments:						
Section 4 - Steering replaced RH tie rod			✓				Brake Lining/Pad Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Type: Lining (S Lining (S						
							Left: 15 21						
							Right: 16 21						
							Comments: 2 - New lining						
Section 5 - Instruments, Auxillary Equipment			✓				Rotor/Drum Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Type: Drum Drum						
							Left: 0 0						
							Right: 0 0						
							Comments: 1 - drums not removed; 2 - New Drums						
Section 6 - Lamps			✓										
Section 7 - Electrical System			✓										
Section 8 - Body & Frame			✓										
Section 9 - Tires & Wheels			✓										
Section 10 - Couplers & Hitches					✓								
Section 10 - Special Use Vehicle Components					✓								
General Inspection Comments:													

Inspector's Name **PETERSON, GARY BRUCE**

Signature

The Inspector's signature above is certification that this vehicle has been inspected to the requirements of the Motor Vehicle Act and Regulations.

**NOTICE: KEEP THIS VEHICLE INSPECTION REPORT WITH VEHICLE REGISTRATION**

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BRITISH  
COLUMBIAMinistry of Transportation  
and Infrastructure

Inspection Station: MV913 (0111128) 1028

CVSA decal

## SCHOOLBUS INSPECTION REPORT / NOTICE and ORDER

Vehicle(s) inspected this 28 of NOV YR 2011 at 10:38 (24hr Clock) at NelsonInspection Type: **Complete**Inspected By: **MV913 R.RICHARDSON**

Violation Ticket #:

INSPECTION RESULT: **Pass**

Owner: <b>BOARD OF ED OF SD 8</b>	Registration: <b>00877802</b>	Plate #: <b>6223EM</b>	Jur: <b>BC</b>
Address: <b>570 JOHNSTONE RD</b>	Make: <b>BLUEBIRD</b>	Year: <b>2002</b>	Model:
City: <b>NELSON</b> Prov: <b>BC</b> Postal Code: <b>V1L6J2</b>	Body Style: <b>BUS</b>	Fuel Code: <b>Diesel</b>	Unit/Fleet: <b>2080</b>
NSC #: <b>200641461</b>	Seating Capacity:	Mobility Aid:	Odometer: <b>247725 KM</b>
	VIN: <b>1HVBBAAN62H524643</b>		
	CVIP decal: <b>PH09088</b>	CVIP Jur: <b>BC</b>	

## INSPECTION RESULTS

\*\*\* **NO VIOLATIONS IDENTIFIED** \*\*\*

## BRAKE INFORMATION

Axle #	Brake Type	Chamber Type	Chamber Size	Slack Type	Left	Right
1	Air	Clamp	20L	Automatic	1 1/4	1 3/8
2	Air	Clamp	24L	Automatic	1 1/2	1 1/2

Peace Officer (Inspector): **R.RICHARDSON**Number: **MV913**

310 Ward St Nelson V1L 5S4

Assist:

The information on this form is collected under the authority of the Motor Vehicle Act, Section 217. The information will be used to process your vehicle inspection and/or Notice and Order. If you have any questions please contact the issuing Officer or call CVSE at (250) 952-0577. Visit [www.cvse.ca](http://www.cvse.ca)

MV3028E (012011)

THIS REPORT MUST BE RETAINED BY THE CARRIER FOR FOUR YEARS



BRITISH  
COLUMBIA

Ministry of Transportation  
and Infrastructure  
Commercial Vehicle  
Inspection Report

FINAL INSPECTION  
CONFIRMATION NUMBER

8405570

18269

PJ15269

DECAL EXPIRY DATE

28 FEB 2013

INSPECTION RESULT: <b>Pass</b>	WORK ORDER #	INSPECTION START DATE <b>24 FEB 2012 10:45</b>	INSPECTION COMPLETE DATE <b>24 FEB 2012 13:32</b>
INSPECTION TYPE: <b>Complete</b>	REASON NOTE:		
REASON FOR INSPECTION: <b>Annual</b>	TECHNICIAN NAME:		
COLLISION REPAIR FACILITY:	PHONE #:		
INSPECTOR'S NUMBER: <b>M05909-006</b>	OWNER/ LESSEE: <b>Board of Education of S.D. # 8</b>		
INSPECTOR'S NAME: <b>PETERSON, GARY BRUCE</b>	ADDRESS: <b>570 Johnstone Rd.</b>		
LICENCE EXPIRY DATE: <b>28 FEB 2014</b>	CITY: <b>Nelson</b>	PROV: <b>BC</b>	POSTAL CODE: <b>V1L6J2</b>
FACILITY NUMBER: <b>P4638-021</b>	REGISTRATION #: <b>00716372</b>	VEH. JURISDICTION: <b>BC</b>	PLATE: <b>6179EM</b>
FACILITY NAME: <b>SCHOOL DISTRICT NO. 8</b>	YEAR: <b>2001</b>	MAKE: <b>BLUEBIRD</b>	MODEL:
INSPECTION CLASS: <b>5 - School Bus</b>	BODY STYLE: <b>BUS</b>	VIN: <b>1HVBBAAN51H415430</b>	
	ODOMETER: <b>287971 KM</b>	FUEL TYPE: <b>Diesel</b>	
	UNIT/FLEET #: <b>72</b> 1082	BRAKE TYPE: <b>Air</b>	

"F" Failed "R" Repaired Same Day "P" Passed "PC" Passed With Caution "O" Out Of Service "NA" Not Applicable

	F	R	P	PC	O	NA		F	R	P	PC	O	NA
Section 1 - Power Train			<input checked="" type="checkbox"/>				Pressure Fuel						
							Liquid Propane Gas						<input checked="" type="checkbox"/>
							Compressed Natural Gas						<input checked="" type="checkbox"/>
Section 2 - Suspension			<input checked="" type="checkbox"/>				Pressure Fuel Inspector's Name & Number						
							Air Brake Chamber Type, Size and Push Rod Stroke Measurement (mm)						
Section 3 - Hydraulic Brakes						<input checked="" type="checkbox"/>	Axle # 1 2 3 4 5 6 7 8 9						
							Type: Clamp Clamp						
Section 3A - Air Brakes			<input checked="" type="checkbox"/>				Size: 20L 24LL						
							Slack: Auto Auto						
Section 4 - Steering			<input checked="" type="checkbox"/>				Left: 35 36						
							Right: 35 38						
Section 5 - Instruments, Auxillary Equipment			<input checked="" type="checkbox"/>				Comments:						
							Air Brake Camshaft Rotation Measurement (degrees)						
Section 6 - Lamps replace 8 switch bulbs			<input checked="" type="checkbox"/>				Axle # 1 2 3 4 5 6 7 8 9						
							Left: 70 95						
Section 7 - Electrical System			<input checked="" type="checkbox"/>				Right: 70 90						
							Comments:						
Section 8 - Body & Frame replace 1 crossmember bolt			<input checked="" type="checkbox"/>				Brake Lining/Pad Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
Section 9 - Tires & Wheels			<input checked="" type="checkbox"/>				Type: Lining (S Lining (S						
							Left: 16 14						
Section 10 - Couplers & Hitches						<input checked="" type="checkbox"/>	Right: 16 14						
							Comments:						
Section 10 - Special Use Vehicle Components						<input checked="" type="checkbox"/>	Rotor/Drum Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Type: Drum Drum						
							Left: 0 0						
							Right: 0 0						
							Comments: 1 - Drums not removed; 2 - Drums not removed						
General Inspection Comments:													

Inspector's Name **PETERSON, GARY BRUCE**

Signature

The Inspector's signature above is certification that this vehicle has been inspected to the requirements of the Motor Vehicle Act and Regulations.  
**NOTICE: KEEP THIS VEHICLE INSPECTION REPORT WITH VEHICLE REGISTRATION**

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CVSE0014 (120125)

CVSE  
COUNCILMinistry of Transportation  
and Infrastructure

Inspection Identifier: MV913\_20120312\_1542

CVSA decal:

**SCHOOLBUS INSPECTION REPORT / NOTICE and ORDER**Vehicle(s) inspected this 12 of MAR YR 2012 at 15:42 (24hr Clock) at NelsonInspection Type: **Complete**Inspected By: **MV913 R.RICHARDSON**

Violation Ticket #:

**INSPECTION RESULT: Pass**Owner: **BOARD OF ED OF SD 8**Address: **570 JOHNSTONE RD**City: **NELSON** Prov: **BC** Postal Code: **V1L6J2**NSC #: **200641461**Registration: **00716372**Plate #: **6179EM**Jur: **BC**Make: **BLUEBIRD**Year: **2001**

Model:

Body Style: **BUS**Fuel Code: **Diesel**Unit/Fleet: **1082**

Seating Capacity:

Mobility Aid:

Odometer: **289048 KM**VIN: **1HVBBAAN51H415430**CVIP decal: **PJ15269**CVIP Jur: **BC****INSPECTION RESULTS****\*\*\* NO VIOLATIONS IDENTIFIED \*\*\*****BRAKE INFORMATION**

Axle #	Brake Type	Chamber Type	Chamber Size	Slack Type	Left	Right
1	Air	Clamp	20L	Automatic	1 1/4	1 1/4
2	Air	Clamp	20L	Automatic	1 1/2	1 5/8

Peace Officer (Inspector): **R.RICHARDSON**Number: **MV913**

310 Ward St Nelson V1L 5S4

Assist:

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MV3028E (012011)

THIS REPORT MUST BE RETAINED BY THE CARRIER FOR FOUR YEARS



BRITISH  
COLUMBIA

Ministry of Transportation  
and Infrastructure  
Commercial Vehicle  
Inspection Report

FINAL INSPECTION  
CONFIRMATION NUMBER

8417851

PJ  
15270

PJ15270

DECAL EXPIRY DATE

31 MAR 2013

INSPECTION RESULT: **Pass**  
INSPECTION TYPE: **Complete**  
REASON FOR INSPECTION: **Annual**  
COLLISION REPAIR FACILITY:

WORK ORDER #  
INSPECTION START DATE: **06 MAR 2012 08:00**  
INSPECTION COMPLETE DATE: **06 MAR 2012 14:15**

REASON NOTE:

TECHNICIAN NAME:

PHONE #:

INSPECTOR'S NUMBER: **M05909-006**  
INSPECTOR'S NAME: **PETERSON, GARY BRUCE**  
LICENCE EXPIRY DATE: **28 FEB 2014**  
FACILITY NUMBER: **P4638-021**  
FACILITY NAME: **SCHOOL DISTRICT NO. 8**  
INSPECTION CLASS: **5 - School Bus**

OWNER/LESSEE: **Board of Education of S.D. # 8**  
ADDRESS: **570 Johnstone Rd.**  
CITY: **Nelson** PROV: **BC** POSTAL CODE: **V1L6J2**  
REGISTRATION #: **00716269** VEH. JURISDICTION: **BC** PLATE: **6178EM**  
YEAR: **2001** MAKE: **BLUEBIRD** MODEL:  
BODY STYLE: **BUS** VIN: **1HVBBAAN71H415431**  
ODOMETER: **300280 KM** FUEL TYPE: **Diesel**  
UNIT/FLEET #: **72** 1083 BRAKE TYPE: **Air**

"F" Failed "R" Repaired Same Day "P" Passed "PC" Passed With Caution "O" Out Of Service "NA" Not Applicable

	F	R	P	PC	O	NA		F	R	P	PC	O	NA
Section 1 - Power Train			<input checked="" type="checkbox"/>				Pressure Fuel						
							Liquid Propane Gas						<input checked="" type="checkbox"/>
							Compressed Natural Gas						<input checked="" type="checkbox"/>
Section 2 - Suspension			<input checked="" type="checkbox"/>				Pressure Fuel Inspector's Name & Number						
Section 3 - Hydraulic Brakes						<input checked="" type="checkbox"/>	Air Brake Chamber Type, Size and Push Rod Stroke Measurement (mm)						
Section 3A - Air Brakes			<input checked="" type="checkbox"/>				Axle # 1 2 3 4 5 6 7 8 9						
Section 4 - Steering			<input checked="" type="checkbox"/>				Type: Clamp Clamp						
Section 5 - Instruments, Auxiliary Equipment			<input checked="" type="checkbox"/>				Size: 9 6						
Section 6 - Lamps replace low air bulb		<input checked="" type="checkbox"/>					Stack: Auto Auto						
Section 7 - Electrical System			<input checked="" type="checkbox"/>				Left: 32 34						
Section 8 - Body & Frame new wiper blade		<input checked="" type="checkbox"/>					Right: 34 34						
Section 9 - Tires & Wheels			<input checked="" type="checkbox"/>				Comments:						
Section 10 - Couplers & Hitches						<input checked="" type="checkbox"/>	Air Brake Camshaft Rotation Measurement (degrees)						
Section 10 - Special Use Vehicle Components						<input checked="" type="checkbox"/>	Axle # 1 2 3 4 5 6 7 8 9						
							Type: Lining (S Lining (S						
							Left: 16 20						
							Right: 16 20						
							Comments:						
							Brake Lining/Pad Measurement (mm)						
							Axle # 1 2 3 4 5 6 7 8 9						
							Type: Drum Drum						
							Left: 0 0						
							Right: 0 0						
							Comments: 1 - drums not removed; 2 - drums not removed						
General Inspection Comments:													

Inspector's Name **PETERSON, GARY BRUCE**

Signature

The Inspector's signature above is certification that this vehicle has been inspected to the requirements of the Motor Vehicle Act and Regulations.

**NOTICE: KEEP THIS VEHICLE INSPECTION REPORT WITH VEHICLE REGISTRATION**

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BRITISH  
COLUMBIA

Ministry of Transportation  
and Infrastructure

Inspection Identifier: MV913 20111130 1145

CVSA decal:

### SCHOOLBUS INSPECTION REPORT / NOTICE and ORDER

Vehicle(s) inspected this 30 of NOV YR 2011 at 10:45 (24hr Clock) at Playmore

Inspection Type: **Complete**

Inspected By: **MV913 R.RICHARDSON**

Violation Ticket #:

#### INSPECTION RESULT: **Pass**

Owner: **BOARD OF ED OF SD 8**

Address: **570 JOHNSTONE RD**

City: **NELSON** Prov: **BC** Postal Code: **V1L6J2**

NSC #: **200641461**

Registration: **00716269**

Plate #: **6178EM**

Jur: **BC**

Make: **BLUEBIRD**

Year: **2001**

Model:

Body Style: **BUS**

Fuel Code: **Diesel**

Unit/Fleet: **1083**

Seating Capacity:

Mobility Aid:

Odometer: **297990 KM**

VIN: **1HVBBAAN71H415431**

CVIP decal: **PH09093**

CVIP Jur: **BC**

#### INSPECTION RESULTS

**\*\*\* NO VIOLATIONS IDENTIFIED \*\*\***

#### BRAKE INFORMATION

Axle #	Brake Type	Chamber Type	Chamber Size	Slack Type	Left	Right
1	Air	Clamp	20L	Automatic	1 3/8	1 1/4
2	Air	Clamp	30L	Automatic	1 1/2	1 1/2

Peace Officer (Inspector): **R.RICHARDSON**

Number: **MV913**

310 Ward St Nelson V1L 5S4

Assist:

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MV3028E (012011)

THIS REPORT MUST BE RETAINED BY THE CARRIER FOR FOUR YEARS

OCT-22-2012 14:12:34

Page 1 of 8

**Report Name:** RDER0330

**Report Title:** School District Summary of Capacities and Projected Enrolment

**Purpose:** Report 10 years of forecasted enrolments (source 1558 report) and 2 years actual enrollments for the selected capital plan year.

**Selection Parameters:**

**School District:** 08 Kootenay Lake

**Capital Plan Year:** 2012/2013

**Source Forms: Ministry of Education: form 1701**

		<b>Ministry Projections</b>	<b>Ministry Actuals</b>
<b>Inclusion/Exclusion:</b>	<b>Standard School</b>	(type 0)	included included
	<b>Continuing Education</b>	(type 1)	excluded included
	<b>Distance Education Schools</b>	(type 2)	excluded excluded
	<b>Alternate Program/School</b>	(type 3)	included included
	<b>Provincial School (Jericho Hill)</b>	(type 4)	included included
	<b>Youth Custody/Residential Attendance Centre</b>	(type 5)	included included
	<b>Short Term Provincial Resource Programs</b>	(type 6)	included included
	<b>Long Term Provincial Resource Programs</b>	(type 7)	included included
	<b>Electronic Delivery Programs</b>	(type 8)	included included
	<b>Open Independent Schools</b>	excluded	excluded
	<b>Home School Registrations</b>	excluded	excluded
	<b>Non- open Schools (closed or reserved)</b>	excluded	excluded
	<b>Students Younger Than School Age</b>	excluded	excluded
	<b>Students Older Than School Age</b>	excluded	excluded



# School District Summary of Capacities and Projected Enrolments

22 OCT 2012 14:12:34

RDER0330 (R10.3)

'kim morris' (PRD01)

Capital Plan Year: 2012/2013

School District: 08 Kootenay Lake

Facility No.      School Name		Facility Status	Opening Date	Grade Config	Nominal Capacity	Operating Capacity	Actual Enrolment				Forecast Enrolments														
							2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022							
86004	ADAM ROBERTSON ELEMENTARY	OPEN	09/01/1938	K-7																					
Comments																									
							K	20	19	K-F	37	42	49	45	45	44	45	44	44	45	42	44			
							E	475	442	K-H															
										E	310	310	297	304	298	303	299	310	314	316	312	309			
							S			S															
07016	BLEWETT ELEMENTARY SCHOOL	OPEN	09/01/1962	K-5																					
Comments																									
Changing to K-5 July 1/08							K	20	19	K-F		22	24	22	22	23	23	23	22	22	22	22			
							E	100	90	K-H	17														
										E	83	90	86	96	107	109	114	114	113	113	113	112			
							S			S															
07033	BRENT KENNEDY ELEMENTARY	OPEN	09/01/1977	K-6																					
Comments																									
							K	20	19	K-F	42	32	34	35	34	33	35	32	34	34	35	35			
							E	200	184	K-H															
										E	176	192	187	192	198	199	199	202	203	203	202	203			
							S			S															
86014	CANYON/LISTER ELEMENTARY	OPEN	09/01/1961	K-7																					
Comments																									
							K	20	19	K-F	11	18	12	17	20	19	20	18	19	20	20	20			
							E	175	162	K-H															
										E	113	136	128	122	120	122	124	120	124	125	133	136			
							S			S															
08000	CONTINUING ED SD 08	OPEN	09/01/1993	8-12																					
Comments																									
							K			K-F															
							E			K-H															
										E															
							S			S	1														

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## School District Summary of Capacities and Projected Enrolments

22 OCT 2012 14:12:34

RDER0330 (R10.3)

'klm morris' (PRD01)

Capital Plan Year: 2012/2013

School District: 08 Kootenay Lake

Facility No.      School Name		Facility Status	Opening Date	Grade Config	Nominal Capacity	Operating Capacity	Actual Enrolment				Forecast Enrolments											
							2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022				
08001	CRAWFORD BAY ELEM-SEC	PROPOSED	N/A	K-12																		
Comments																						
							K	20	19	K-F			6	6	7	8	6	6	7	7	7	7
							E	75	69	K-H												
										E			42	44	39	39	41	43	40	46	47	48
							S	75	75	S			23	22	24	30	32	32	37	27	26	26
08006	CRAWFORD BAY ELEM-SEC (OLD)	OPEN	09/01/1947	K-12																		
Comments																						
							K	20	19	K-F		6										
							E	^ 50	46	K-H	10											
										E	45	52										
							S	75	75	S	19	27										
08019	ERICKSON ELEMENTARY	OPEN	09/01/1996	K-7																		
Comments																						
							K	20	19	K-F	18	21	22	20	21	21	22	20	20	20	21	20
							E	200	186	K-H												
										E	175	158	146	147	149	144	147	145	146	146	144	145
							S			S												
08016	HOMELINK CENTER	OPEN	09/01/1964	K-12																		
Comments																						
							K	20	19	K-F	15	13	31	31	31	31	31	31	31	31	31	31
							E	200	186	K-H												
										E	103	90	184	184	184	184	184	184	184	184	184	184
							S			S	51	35	62	62	62	62	62	62	62	62		
							CONSOLIDATED INTO SD 8 CONNECT EFFECTIVE JULY 1, 2007 Program = 1 day in session in facili															
07004	HUME ELEMENTARY SCHOOL	OPEN	09/01/1920	K-5																		
Comments																						
							K	20	19	K-F		29	44	38	38	35	35	35	33	33	35	35
							E	250	226	K-H	38											
										E	146	159	157	177	176	180	181	190	181	176	171	171
							S			S												
							Changing to K-5 July 1/08															

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# School District Summary of Capacities and Projected Enrolments

22 OCT 2012 14:12:34

RDER0330 (R10.3)

'kim morris' (PRD01)

Capital Plan Year: 2012/2013

School District: 08 Kootenay Lake

Facility No.      School Name		Facility Status	Opening Date	Grade Config	Nominal Capacity	Operating Capacity	Actual Enrolment				Forecast Enrolments												
							2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022					
86018	J V HUMPHRIES ELEM -SECONDARY	OPEN	09/01/1994	K-12																			
Comments																							
							K	20	19	K-F	23	5	7	6	7	10	11	9	8	10	10	10	
							E	200	186	K-H	121	124	122	118	112	103	111	110	111	121	124	128	
							S	150	150	E	125	109	100	97	101	106	99	98	95	81	72	76	
										S													
86005	JEWETT ELEMENTARY	OPEN	09/01/1946	K-7																			
Comments																							
							K	20	19	K-F	4	3	3	5	4	3	4	3	3	4	4	4	
							E	75	69	K-H	24	23	18	16	19	19	18	19	19	22	21	21	
							S			E													
										S													
99070	KOOTENAY LAKE LEARNING CEN	OPEN	09/01/1995	8-12																			
Comments																							
							K			K-F													
							E			K-H													
							S			E													
										S	38	18											
07013	L V ROGERS SECONDARY	OPEN	09/01/1956	9-12																			
Comments																							
Changing to 9-12 July 1/08							K			K-F													
							E			K-H													
							S	725	725	E	763	733	737	684	692	671	652	662	667	651	650	666	
										S													
07025	MOUNT SENTINEL SECONDARY	OPEN	09/01/1950	7-12																			
Comments																							
							K			K-F													
							E	50	50	K-H	60	47	39	49	41	49	54	48	49	53	54	52	
							S	350	350	E	318	317	298	271	273	258	242	245	245	243	259	267	
										S													

49

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## School District Summary of Capacities and Projected Enrolments

**School District:** 08 Kootenay Lake

8

For capacity planning purposes, K full time (KF) forecasts and K half time (KH) forecasts are converted to K forecasts using the formula  $K = KF + KH$ .



## School District Summary of Capacities and Projected Enrolments

22 OCT 2012 14:12:34

RDER0330 (R10.3)

'kim morris' (PRD01)

Capital Plan Year: 2012/2013

School District: 08 Kootenay Lake

Facility		Actual Enrolment					Forecast Enrolments												
Facility No.	School Name	Facility Status	Opening Date	Grade Config	Nominal Capacity	Operating Capacity	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	
98001	SD 008 CONNECT PROGRAM	OPEN	03/30/2000	K-12															
Comments				K			K-F		3	5	5								
				E			K-H	4											
							E	44	44	53	53	53	53	53	53	53	53	53	53
				S			S	285	192	381	381	381	381	381	381	381	381	381	381
07014	SOUTH NELSON ELEMENTARY	OPEN	09/01/1960	K-5															
Comments				K	20	19	K-F		31	36	33	33	34	34	32	32	33	33	
Changing to K-5 July 1/08. Closing if Trafalgar project approved				E	200	180	K-H	27											
							E	189	151	153	141	130	114	122	125	121	120	120	119
				S			S												
07005	TRAFALGAR MIDDLE SCHOOL	OPEN	09/01/1920	6-8															
Comments				K			K-F												
Changing to 6-8 July 1/08. Changing to K-8 if Trafalgar project approved.				E	375	375	K-H	285	293	285	255	264	283	258	239	286	304	288	
							E												
				S	200	200	S	153	148	136	156	129	126	138	145	113	126	160	144
07026	W.E. GRAHAM COMMUNITY SCHD	OPEN	09/01/1950	K-10															
Comments				K	20	19	K-F	5	1	5	3	5	5	4	4	4	5	5	
				E	125	116	K-H	42	35	25	20	20	24	28	27	27	30	30	
							E												
				S	100	100	S	22	21	20	27	23	14	5	7	10	10	10	9
99178	WILDFLOWER	OPEN	09/01/2007	1-7															
Comments				K			K-F												
Located in Central Elementary				E			K-H												
							E	75	79	120	125	124	121	112	112	109	105	106	107
				S			S	12	8	19	20	24	34	44	40	33	37	33	28

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# School District Summary of Capacities and Projected Enrolments

22 OCT 2012 14:12:34

RDER0330 (R10.3)

'kim morris' (PRD01)

Capital Plan Year: 2012/2013

School District: 08 Kootenay Lake

Facility No.	School Name	Facility Status	Opening Date	Grade Config	Nominal Capacity	Operating Capacity	Actual Enrolment				Forecast Enrolments									
							2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022		

07034 WINLAW ELEMENTARY SCHOOL OPEN 09/01/1978 K-6

## Comments

K	20	19	K-F	12	12	14	14	13	12	13	13	14	15	14	14
E	75	69	K-H	66	68	73	72	79	81	77	79	79	79	80	81
S			E												

86012 YAHK ELEMENTARY OPEN 09/01/1956 K-6

## Comments

K			K-F	5	6	2	4	3	2	2	4	3	2	3	2
E	50	46	K-H	21	12	11	13	16	18	16	16	16	17	17	18
S			E												

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# School District Summary of Capacities and Projected Enrolments

( District Totals / Ministry Forecasts / Variances )

22 OCT 2012 14:12:34

RDER0330 (R10.3)

'kim morris' (PRD01)

Capital Plan Year: 2012/2013

School District: 08 Kootenay Lake

		Nominal Capacity	Actual Enrolment												
			2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	
District Totals:	K	340	K-F	197	309	369	352	352	350	355	345	347	349	350	350
			K-H	123	0	0	0	0	0	0	0	0	0	0	0
	E	3400	K												
	S	2600	E												
			S												
Total					5198	5143	5136	5148	5150	5191	5203	5239	5260	5277	
Ministry Forecasts:															
			K	314	319	316	316	323	361	369	374	379	382		
			E	2381	2363	2365	2379	2388	2407	2467	2536	2603	2673		
			S	2139	2125	2127	2129	2137	2128	2103	2083	2092	2111		
Total				4834	4807	4808	4824	4848	4896	4939	4993	5074	5166		
District Variances:															
			K	55	33	36	34	32	-16	-22	-25	-29	-32		
			E	57	102	121	142	143	133	114	88	5	-58		
			S	252	201	171	148	127	178	172	183	210	201		
Total				364	336	328	324	302	295	264	246	186	111		

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