Strategic Energy Management Plan

School District No. 72 (Campbell River)

March, 2012

Partnering with:

BC hydro
powersmart

Senior Management Support:
Name: M.P. Neale, BBA, CA
Position: Secretary-Treasurer
Signature:

Version 1 for the All Sectors: May 1,2010
Modified by Simon Vickers

Table of Contents

1. BC HYDRO: ENERGY MANAGER 4TH QUARTER ASSESSMENT FORM - SELF- EVALUATION SEMP

For BC Hydro to complete

File Number	School District 72 Campbell River SUCH-11-868 Steve Woods	
Quarter	4	
PSE Signature: SEMP Completed	Tommy Yim	Date: 2012-04-19
Projects that used PS incentives:		

PS Program Incentive	kWh
PSP	
PSP Express	
New Construction	
Total	
Behavioural Program (2%)	

Turn around time for 4th Q review: _____days

Energy Manager: Please complete appropriate year below

- Note: All areas (in your contract Year) must be covered in order to receive 4th quarter payment

Year 1: Plan requirements

5 Critical Element must be included in the Strategic Energy Management Plan	**Page number where the element is addressed in the SEMP**	**Energy Manager evaluation**	**PSE Agrees**
1) A purpose statement which answers the following questions: ☐ a) What are you trying to do? ☐ b) What is the Key Performance Indicator for your organization? ☐ c) Who do you need to engage to make you plan successful?		☐	☐
2) A table that compares all your buildings in your portfolio ☐ a) BEPI		☐	☐
3) Explain what the opportunities are to become more efficient. ☐ a) Project List		☐	☐
4) Outline the budget to implement projects ☐ a) No Budget? Can't forecast your budget? You must explain why not and what you intend to do about getting a budget.		☐	☐
5) Conclusion: How is your plan doing? ☐ a) Outlined kWh saved ☐ b) Actual total dollars saved to the organisation ☐ c) Outlined avoided cost ☐ d) Total dollars saved = Actual + Avoided Cost		☐	☐

Year 2 +: Strategic Energy Management Plan requirements

6 Critical Elements must be included in the Strategic Energy Management Plan	**Page number where the element is addressed in the SEMP**	**Energy Manager evaluation**	**PSE Agrees**
1) A purpose statement which answers the following questions:		☐	☑
☐ a) What is your kWh reduction target?	p. 16		P.9 Sec.3.1 (total energy intensity reduction)
☐ b) What is the Key Performance Indicator for your organization?	p. 8		P.8 Sec.2.3
☐ c) Who do you need to engage to make you plan successful?	p. 20-21		P.20-21 Sec.6.1 & 6.2
2) A table that compares all your building in your portfolio		☐	☑
☐ a) BEPI- updated to the current year	p. 12-14		P.12-14 Sec.4.2
☐ b) Explanation of Top 10 worst performing buildings	p. 13	Top 3 only	P.12 Sec.4.2 (showed top 3 only)
3) Explain what the opportunities are to become more efficient.		☐	☑
☐ a) Project List	p. 19		Project list spreadsheet
☐ b) Initiative List: Behavioural and Organisational	p. 19	(download only, to maintain	Project list spreadsheet
☐ c) Studies: Outline which buildings have had studies completed.	p. 19	document formatting)	Project list spreadsheet
4) Outline the budget to implement projects		☐	☑
☐ a) If No Budget? Can't forecast your budget? You must explain why not and what you intend to do about getting a budget.	p. 6		P.6 Sec.2.1
5) Conclusion: How is your plan doing?		☐	☐
☐ a) Outlined kWh saved	p. 16-17	Additional tables added, per 19 Apr PSE comment	P.17 Sec.5.2 (break out by energy type to show actual kWh and GJ saved)
☐ b) Outlined GHG tons saved	p. 18		P.18 Sec.5.4 (savings not calculated)
☐ c) Outlined total dollars saved to the organisation	p. 16-17		P.17 Sec.5.2
☐ d) Outlined avoided cost	p. 16-17		P.17 Sec.5.2
☐ e) Outlined total dollars saved	p. 16-17		P.17 Sec.5.2
6) Senior Management Support		☐	☑
☐ a) Approval of the SEMP : Signature on the SEMP	Cover Page	Add after review of	

Tracking:

	2nd Q Draft SEMP Submitted Date	Date PSE Coaching Comments Returned to EM	4th Q SEMP submitted date	Reviewed and Coaching comments returned to EM: Date	*If EM needed to resubmit :date	If PSE reviewed: Date

Energy Manager	2012-01-10	[redacted]	2012-03-29	[redacted]	2012-04-26	[redacted]
PSE	[redacted]	2012-01-25	[redacted]	2012-04-19	[redacted]	

PSE Coaching Comments For Improvements (Not required for sign-off)

	Date: Duration	Date: Duration	Date: Duration	Date: Duration
Energy Manager contacted PSE for assistance				

2. OUR ORGANIZATION

2.1 Organizational Profile

Organization Profile									
PEOPLE	Sector	☐ Government X Education ☐ Health ☐ Commercial (_____) ☐ Other (_____)							
	Number of Employees	587 FTE		Number of Sites		22			
OPERATIONS	Energy Management Issues / Obstacles	▪ North Island College and tenants not directly accountable for energy efficiency ▪ Funding and resource limitations							
	Core Business Metrics	1. Per Square meter 2. Student FTE							
	Business Year	July 1st	to	June 30th					
	Budget Cycle	July 1st	to	June 30th					
	Maintenance Cycle	July 1st	to	June 30th					
		Year 1 2009/10		Year 2 2010/11		Year 3 2011/12		Year 4 2012/13	
	Maintenance Budget ($ M)	2009	$6.2	2010	$5.6	2011	$5.6	2012	$5.6
	Energy Efficiency Projects Budget ($ K)	Previous Year	$40	Current Year	$416	Year 1	$796	Year 2	$484
	Operations Budget ($ M)	Previous Year	$0	Current Year	$0	Year 1	$0	Year 2	$0
	Utilities budget ($ M)	Previous Year	$1.6	Current Year	$1.6	Year 1	$1.7	Year 2	$1.7
	Other Incentives ($ K)			Current Year	$100	Year 1	$1000	Year 2	$50
	Capital Budget ($ M)	Previous Year	$4.0	Current Year	$3.4	Year 1	$3.4	Year 2	$3.4

Comments:
Against a backdrop of declining overall funding, funding provided for energy efficiency projects has increased significantly in recent years. Regulatory changes, such as the phase-out of T-12 lights, and opportunity funding through grants has enabled School District No. 72 to pursue this strategy. As a result of energy efficiency projects and behavioural initiatives, the organization has absorbed utility rate increases without significantly increasing the utilities budget.

2.2 Facility Profile

Facility Profile						
Site	Size m^2	2011 Annual Energy Consumption GJ (e)	2011 Annual Energy Cost ($)	2011 Energy Intensity GJ (e) per m^2	2010 Energy Intensity GJ (e) per m^2	2009 Energy Intensity GJ (e) per m^2
Carihi	10,533	7,868	136,930	0.75	0.82	0.79
Cortes	1,382	1,251	43,439	0.91	0.77	1.03
Cedar	2,389	2,386	48,212	1.00	0.89	0.94
Discovery Passage	1,602	1,393	26,110	0.87	0.83	0.82
EDM	2,409	1,710	33,114	0.71	0.70	0.65
Evergreen	1,330	41	1,372	0.03	NA	NA
Georgia Park	3,375	3,090	59,140	0.92	0.88	0.92
Maintenance/Bus Garage (incl 3 portables)	2,031	1,389	38,846	0.68	0.74	0.55
Ocean Grove	2,525	2,138	42,302	0.85	0.91	1.04
Oyster River	2,106	2,409	47,486	1.14	1.09	1.20
Penfield	2,126	1,726	39,814	0.81	0.60	0.65
Phoenix	8,417	5,794	99,291	0.69	0.73	0.79
Pinecrest (incl 2 portables)	2,915	1,433	40,211	0.49	0.65	0.66
Quadra	2,628	1,300	33,968	0.49	0.50	0.45
Ripple Rock	2,725	1,772	36,504	0.65	0.66	0.71
Robron	7,154	4,636	81,826	0.65	0.62	0.80
Sandowne	3,581	2,598	49,525	0.73	0.76	0.74
Sayward	2,977	1,860	63,613	0.62	0.89	1.04
School Board Office (incl 1 portable)	1,824	1,881	41,052	1.03	1.05	1.02
Southgate (incl 1 portable)	7,546	4,775	84,790	0.63	0.59	0.62
Surge Narrows (incl Community Use)	530	314	11,764	0.59	1.00	1.06
Timberline/NIC (incl 4 portables and NIC)	16,178	19,389	323,136	1.20	1.24	1.51
Willow Point (incl 2 portables)	2,938	2,064	40,801	0.70	0.81	1.01
TOTAL	91,220	73,217	1,423,246	0.80	0.84	1.02

2.3 Key Performance Indicators

Key Performance Indicator *(as of Dec in each year)*				
Variable	Totals			
	2 years ago (2009)	Last year (2010)	Current Year (2011)	Next year (2012)
Square Meters	89,556	88,086	91,220	91,220
Student FTE	5488	5307	5388	5237

3. OUR COMMITMENT

3.1 Energy Policy

As demonstrated by the incorporation of energy conservation initiatives into the School District No. 72 (Campbell River) Carbon Neutral Action Report and the District Strategic Plan Working Document, the Board of School Trustees recognizes the importance of energy conservation from both an economic and ecological point of view. Therefore, the District Energy Policy, written in 1984, was deemed redundant to the Environmental Responsibility Policy and rescinded in 2010.

Our organization has a long term (4 year) goal to obtain energy intensity reduction of 5% by the year 2012 by implementing cost-effective energy management initiatives at all of our facilities. Based on our baseline energy intensity of 0.93 Gigajoules (e) per square meter, our target for 2012 is 0.88 Gigajoules (e) per square meter.

3.2 Environment Responsibility Policy

School District No. 72 (Campbell River) adopted the following Environment Responsibility Policy B-15 on June 23, 2009.

The Board of Education has a responsibility towards sustainable environmental stewardship.

The Board of Education is committed to raising environmental awareness of all staff, students, trustees and the community by delivering effective environmental education and modeling environmentally responsible practices (with respect to wise water use, energy-use reduction and waste minimization). The Board will endeavour to:

- Provide teachers with environmental education resources
- Align what is taught in the classrooms with school operations (curriculum, transportation and facilities)
- Reduce its impact on the environment
- Recognize successful environmental initiatives and programs.

The Board of Education expects that:

- The School district will consistently consider the impact of the environment of decisions that are made in the delivery of curriculum and in daily operations
- Schools will integrate environmental education and environmentally responsible action within the school setting.

The Board of Education authorizes the establishment of an Environmental Awareness Focus Group, which will set goals in relations to

- Environmental education
- Effective implementation of sustainable environmental practices
- Ongoing measurement and evaluation of environmental performance.

Definitions

“Environment” is the surroundings in which an organization operates including air, water, land, natural resources, flora, fauna, humans and their inter-relations.

"Environmental Education" refers to organized efforts to teach about how natural environments function and, particularly, how human beings can manage their behaviour and ecosystems in order to live sustainably. Although the term is often used to imply education within the school system, from primary to post-secondary, it is sometimes used more broadly to include all efforts to educate the public and other audiences, including the use of print materials, websites, media campaigns, etc. Related disciplines include outdoor education and experiential education.

"Impacts on the environment" are any changes to the environment whether adverse or beneficial, wholly or partially resulting from an organization's products or services.

"Sustainable means practices that serve to meet the needs of the present without compromising the ability of future generations to meet their own needs.

"Stewardship" is the act of caring for something that one doesn't own.

3.2.1 Environment Responsibility Regulation

Background

The District is committed to fostering policies, practices and educational programs which will protect and preserve the environment.

Procedures

1. The District will endeavour to purchase "environmentally friendly" products which will provide the highest possible level of performance.

2 The efficient use of energy and water will be guiding principles in all renovations, new construction and operations.

3. The District encourages and supports initiatives to reduce, recycle and recover waste materials in all schools and departments.

4. The District supports staff development initiatives designed to advance environmental awareness, environmental education and care for the environment within annual budget allocations for training and development.

5. Environmental education will continue to be incorporated into the content and methodology of the instructional program.

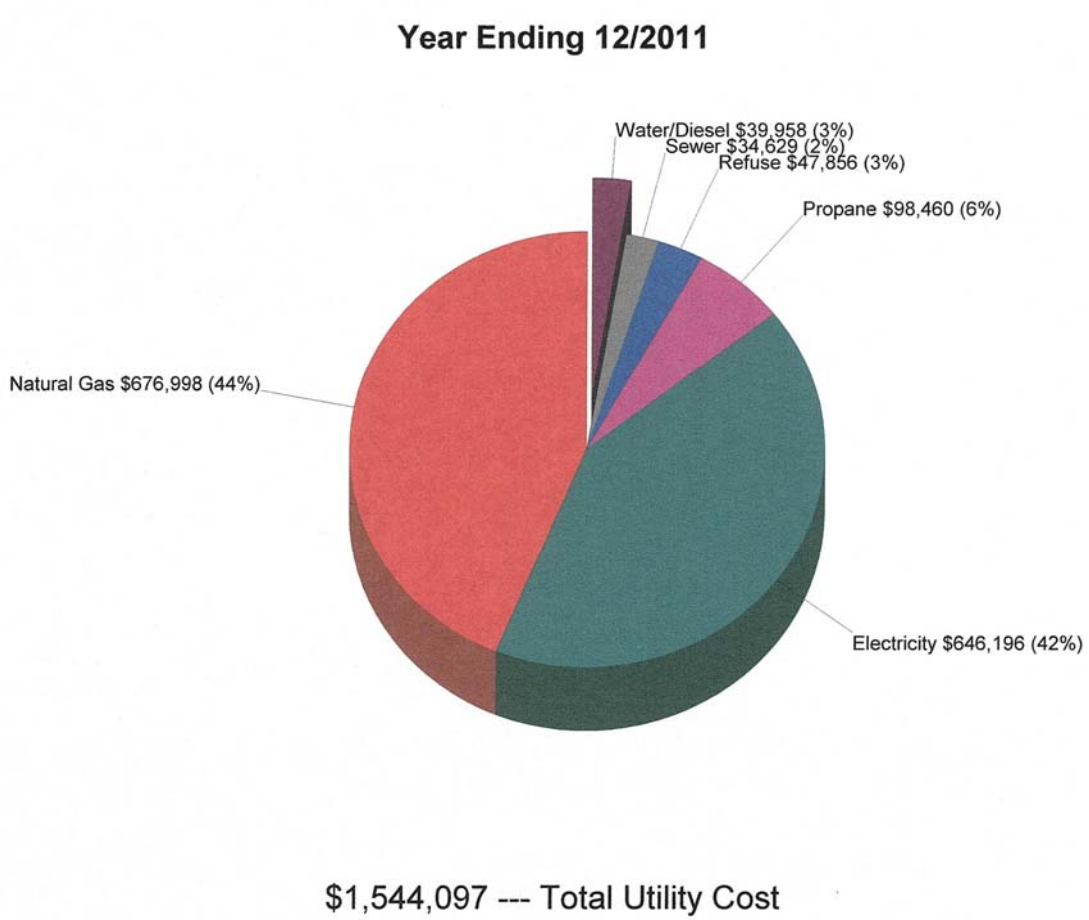
3.3 Why Energy Management is Important to Us?

Energy management is considered an integral component of sustainable environmental practices. The Campbell River School District Strategic Plan (2009-2012) articulates three areas of strategic focus, including "An Expanded and Purposeful Environmental Ethic". Therefore, energy management is an extension of our core organizational raison d'être.

4. UNDERSTANDING OUR SITUATION

4.1 Energy Consumption and Costs

Utility 2011 Calendar Year	Consumption	Costs	
	GJ	$	%
Electricity	28,441	646,196	45.0%
Natural Gas	42,172	676,997	47.2%
Propane	3,142	98,459	6.9%
Diesel	314	14,102	1.0%
Water	65,661 m^3	28,157	2.0%
Sewage Discharged	37,831 m^3	34,629	2.4%
Total Energy	74,069	1,435,754	100.0%



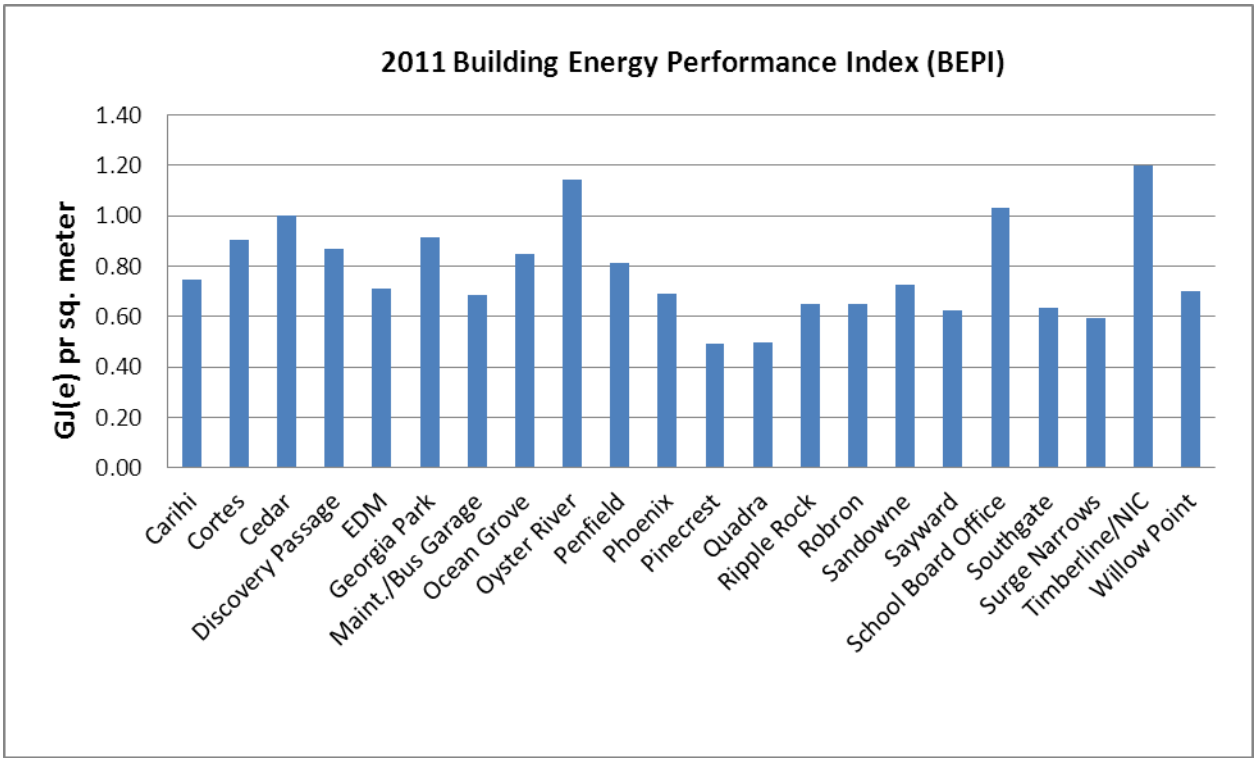
4.2 Savings Opportunity Assessment - Energy Consumption & Cost Intensity

According to Natural Resources Canada, the Building Energy Performance Index (BEPI) for the Educational Sector is an average of 1.8 equivalent Gigajoules (GJ (e)) per square meter. The School District No. 72 BEPI baseline, representing the 2005-2008 four-year average, is 0.93 GJ (e) per square meter. In 2011, our school district BEPI (normalized) was 0.80 GJ (e) per square meter. In 2010, our school district BEPI (normalized) was 0.83 GJ(e) per square meter. In 2009, our school district BEPI (normalized) was 1.05 GJ(e) per square.meter.

Adjusting total energy consumption for weather, the 2011 BEPI for School District No. 72 was the best since 2005. Relative to the BEPI for the Educational Sector, the 2011 BPEI for School District No. 72 was less than one-half that the national average. School District No. 72 has surpassed the long term (4-year) energy intensity target by 10% and one year earlier than forecast.

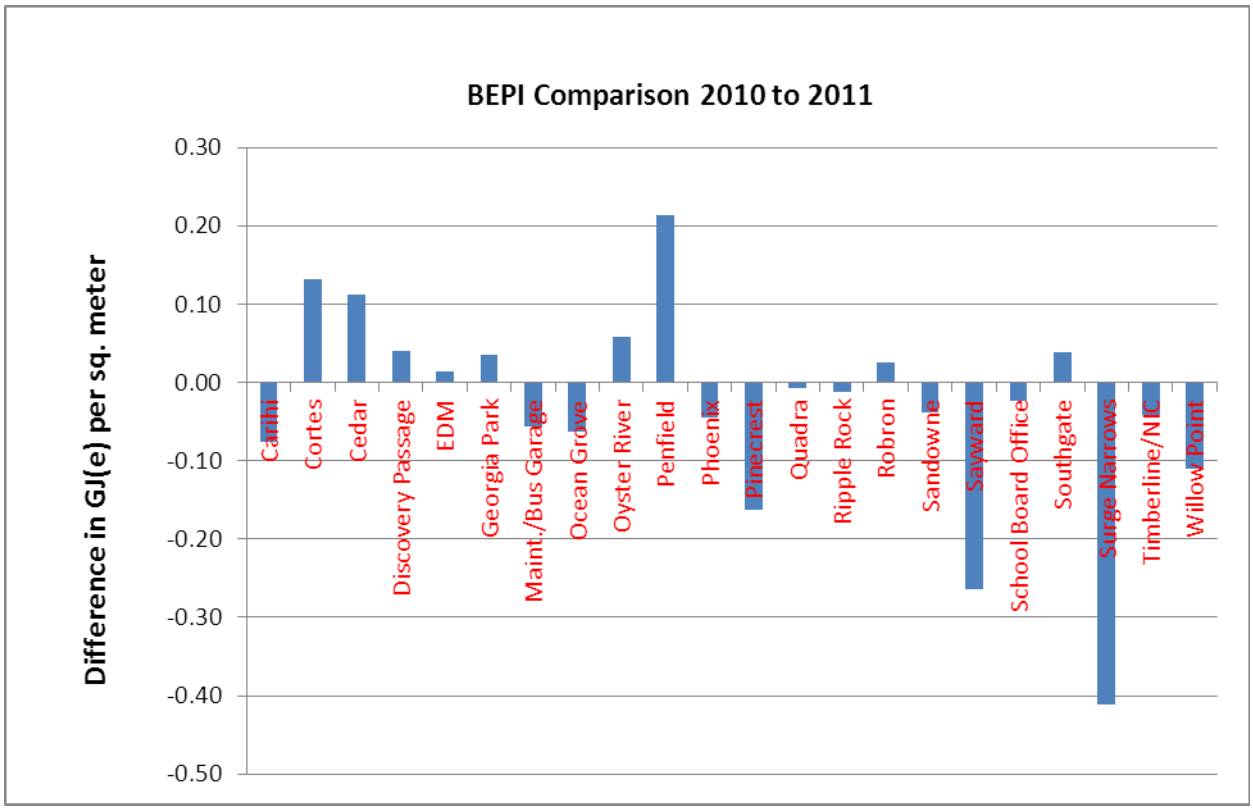
The three buildings in School District No. 72 with the highest BEPI are:

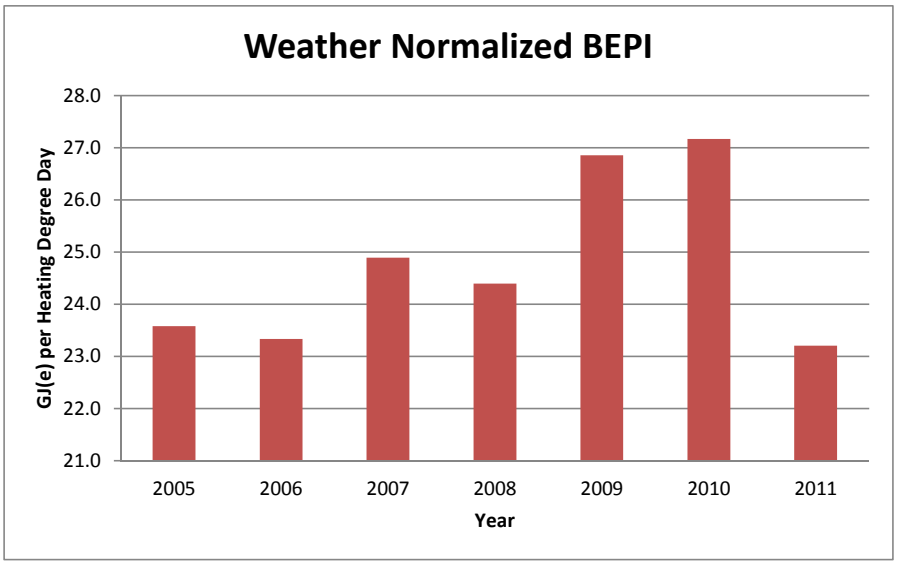
a. The Timberline/North Island College Facility is jointly shared, with many educational programs that are not found elsewhere in the school district. Another unique feature (not found in School District No. 72 schools) is the air conditioning system. North Island College does not have an energy management program. Significant energy savings are expected from the PSECA-funded boiler replacement project completed in 2011 and additional energy savings projects planned for 2012.
b. The relatively high BEPI of School District No. 72 Board Office is attributable to air conditioning, longer operating hours than found in most schools, and a significant number of electronic devices found throughout the facility. Benchmarking with other school districts indicates school board offices usually have a higher energy i than schools.
c. Oyster River is a small school that has experienced a high BEPI in previous years. A PowerSmart lighting upgrade, planned for 2011, should result in energy savings.



As shown in the following BEPI comparison of 2010 and 2011, the most significant improvements in energy intensity were achieved at Surge Narrows Elementary, Sayward Elementary/Middle, and Pinecrest Elementary:

- All energy consumption at Surge Narrows is associated with a diesel generator. This diesel generator supplies both the 2-classroom school and community facilities. Therefore, significant changes in energy consumption can result from changes to the operating hours of the school or the community facility.
- A PowerSmart lighting upgrade was completed in Sayward School in early 2011and a boiler replacement was completed in mid-2010. These energy savings projects are believed to be the primary reasons for the improved BEPI.
- A PowerSmart lighting upgrade was completed in Pinecrest School in early 2011. This project is achieving significant energy savings.


BEPI Comparison 2010 to 2011
Difference in GJ(e) per sq. meter
0.30
0.20
0.10
0.00
-0.10
-0.20
-0.30
-0.40
-0.50
Cadhi
Cortes
Cedar
Discovery Passage
EDM
Georgia Park
Maint./Bus Garage
Ocean Grove
Oyster River
Penfield
Phoenix
Pinecrest
Quadra
Ripple Rock
Robron
Sandowne
Sayward
School Board Office
Southgate
Surge Narrows
Timberline/NIC
Willow Point


Weather Normalized BEPI
GJ(e) per Heating Degree Day
28.0
27.0
26.0
25.0
24.0
23.0
22.0
21.0
2005
2006
2007
2008
2009
2010
2011
Year

5. OUR ACTIONS

From Energy Policy:
Our organization has a long term goal to obtain energy intensity reduction of 5% by the year 2012 (4 years) by implementing cost-effective energy management initiatives at all of our facilities. The baseline used to establish the 2012 target is a four-year average, from 2005-2008. The 2012 target year coincides with the School District No. 72 Strategic Plan, which includes a focus on environmental and energy conservation and awareness.

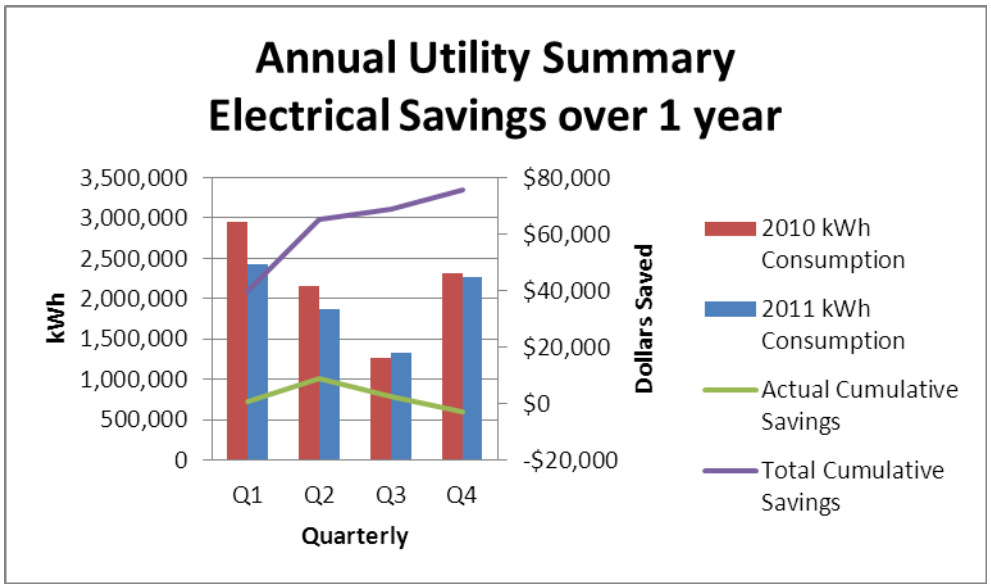
Energy Intensity Targets (GJ per square meters)			
2012 Target	**2009 Actual**	**2010 Actual**	**2011 Actual**
0.89	1.05	0.84	0.80

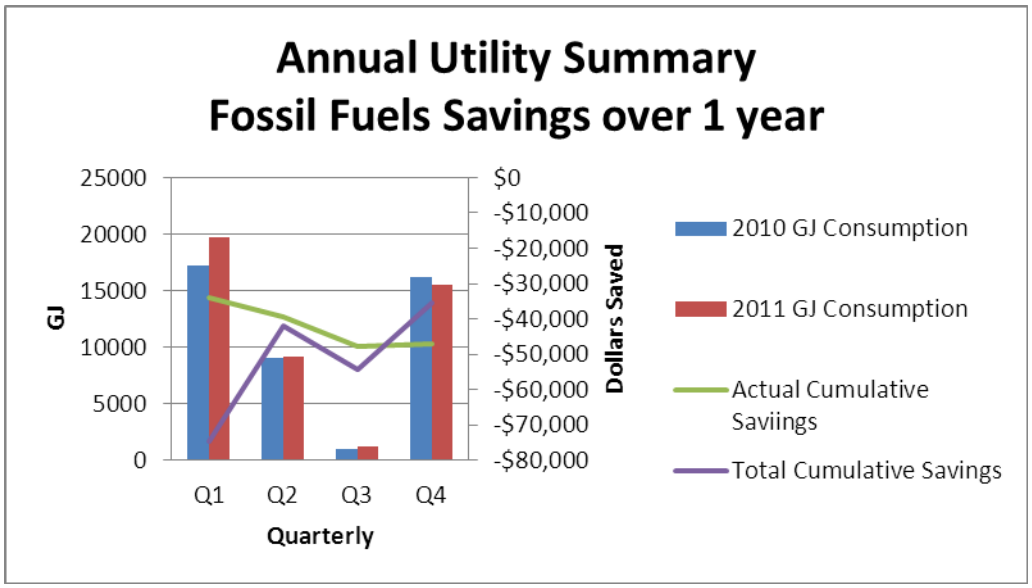
5.1 Quarterly Goals and Objectives-

Total Energy Savings are summarized in the following table and graphs. Total cumulative savings includes both the actual cumulative savings and cost avoidance (the expense that would have occurred at current utility rates without reducing consumption).

For 2011, School District No. 72 achieved total cumulative savings of approximately $75,000 in electricity costs. However, approximately $35,000 of these cumulative savings were offset by increased fossil fuel costs.

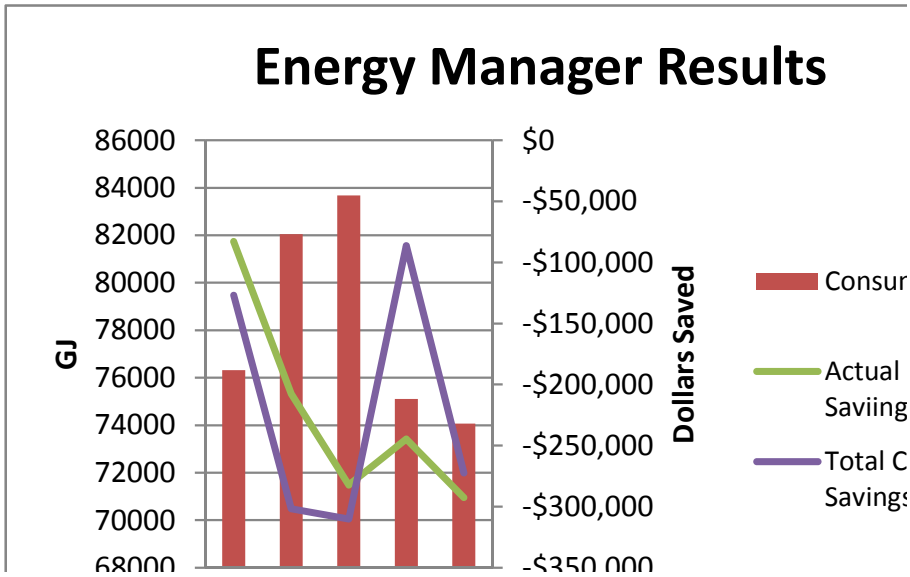
	Previous Years Quarterly Consumption		Actual Savings				Total Savings	
Quarter	2010 GJ Consumption	2011 GJ Consumption	GJ Comparision	GJ % Reduction	$	Actual Cumulative Savings	Avoided Costs	Total Cumulative Savings
Q1	27,902	28,456	(554)	-2%	$ (33,032.00)	$ (33,032.00)	$ (9,904.00)	$ (42,936.00)
Q2	16,787	15,880	907	5%	$ 2,747.00	$ (30,285.00)	$ 18,084.00	$ (12,201.00)
Q3	5,527	5,996	(469)	-8%	$ (14,884.00)	$ (45,169.00)	$ (11,746.00)	$ (56,915.00)
Q4	24,584	23,711	873	4%	$ (5,069.00)	$ 50,238.00	$ 16,843.00	$ (33,395.00)





Energy Manager Program Results

Despite a significant reduction in energy consumption since enrolling in the Energy Manager program in April 2009, overall energy cost savings remains elusive because of rate increases. Cost avoidance, the amount School District No. 72 would have paid without any reductions in energy consumption, is significant. Cost avoidance in 2010 was approximately $158,000. In 2011, cost avoidance was approximately $20,000. This suggests that considerable ”low-hanging fruit” was implemented in 2010. Looking forward, energy conservation projects will require greater technical expertise and more attention to encouraging behavioural change.



5.2 Annual Goals and Objectives

- **Annual Consumption**

Total Energy

		Actual Savings				Total Savings		
Quarter	Total GJ(e) Consumption	GJ(e) Comparison savings from previous year	GJ(e) % Reduction	$	Actual Cumulative $ Savings	Avoided Costs	Total Cumulative Savings	Notes
2007	76,315	(2,742)	-3.7%	$ (82,976.00)	$ (82,976.00)	$ (43,876.00)	$ (126,852.00)	
2008	82,051	(5,737)	-7.5%	$ (124,718.00)	$ (207,694.00)	$ (94,093.00)	$ (301,787.00)	
2009	83,679	(1,628)	-2.0%	$ (74,711.00)	$ (282,405.00)	$ (27,633.00)	$ (310,038.00)	Start EM Program April 2009
2010	75,101	8,662	10.3%	$ 37,715.00	$ (244,690.00)	$ 158,278.00	$ (86,412.00)	
2011	74,069	1,032	1.4%	$ (47,733.00)	$ (292,423.00)	$ 19,968.00	$ (272,455.00)	

Electricity

		Actual Savings				Total Savings		
Quarter	Total KwHr Consumption	KwHr Comparison savings from previous year	KwHr % Reduction	$	Actual Cumulative $ Savings	Avoided Costs	Total Cumulative Savings	Notes
2007	8,567,852	(68,527)	-0.8%	$ (16,675.00)	$ (16,675.00)	$ (4,654.00)	$ (21,329.00)	
2008	9,496,898	(929,046)	-10.8%	$ (30,531.00)	$ (47,206.00)	$ (59,913.00)	$ (107,119.00)	
2009	9,326,287	170,611	1.8%	$ 12,867.00	$ (34,339.00)	$ 10,968.00	$ (23,371.00)	Start EM Program April 2009
2010	8,768,978	557,309	6.0%	$ (43,119.00)	$ (77,458.00)	$ 40,846.00	$ (36,612.00)	
2011	7,902,166	866,812	9.9%	$ (3,666.00)	$ (81,124.00)	$ 70,901.00	$ (10,223.00)	

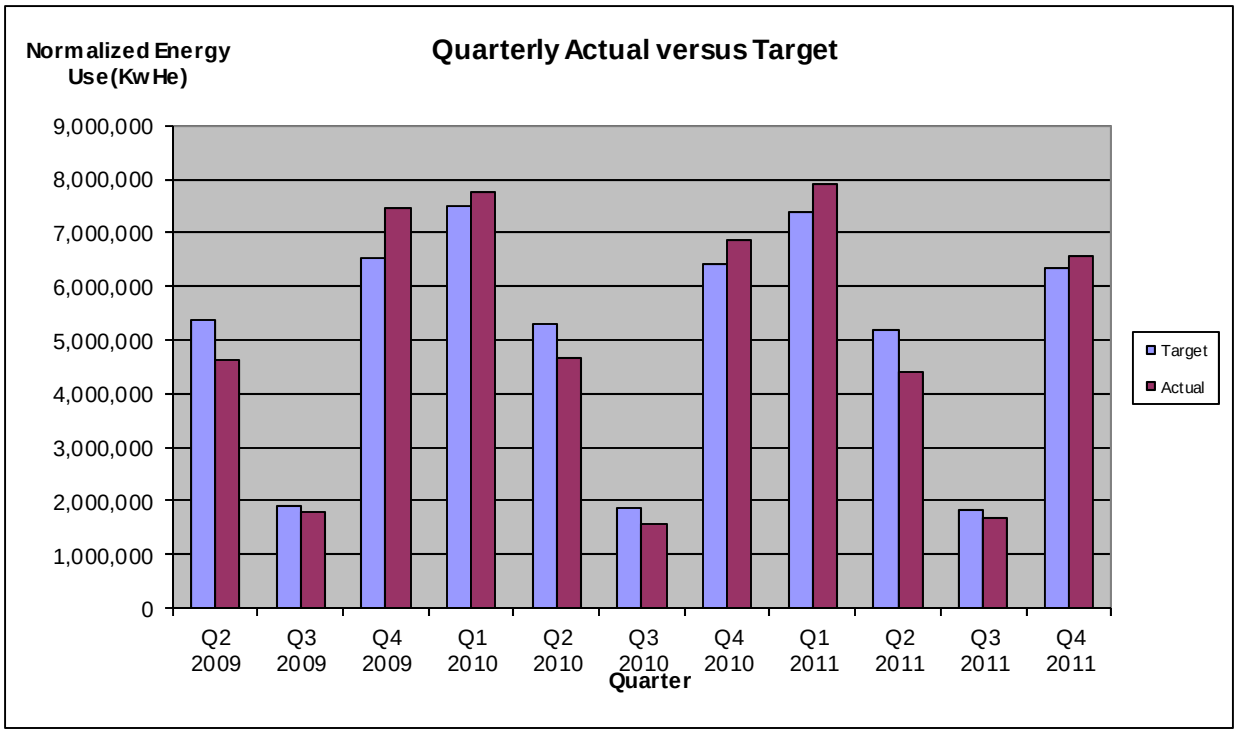
Fossil Fuels

		Actual Savings				Total Savings		
Quarter	Total GJ Consumption	GJ Comparison savings from previous year	GJ % Reduction	$	Actual Cumulative $ Savings	Avoided Costs	Total Cumulative Savings	Notes
2007	45,471	(2,496)	-5.8%	$ (66,302.00)	$ (66,302.00)	$ (35,080.00)	$ (101,382.00)	
2008	47,863	(2,392)	-5.3%	$ (94,185.00)	$ (160,487.00)	$ (36,652.00)	$ (197,139.00)	
2009	50,105	(2,242)	-4.7%	$ (87,579.00)	$ (248,066.00)	$ (36,735.00)	$ (284,801.00)	Start EM Program April 2009
2010	43,533	6,572	13.1%	$ 77,929.00	$ (170,137.00)	$ 112,169.00	$ (57,968.00)	
2011	45,769	(2,236)	-5.1%	$ (50,087.00)	$ (220,224.00)	$ (38,747.00)	$ (258,971.00)	

5.3 Annual Energy Intensity by Key Performance Indicators

Year	Annual Normalized Electricity Consumption (kWhe)	# FTE Students (as of Sep 30th)	Energy Intensity (kWh(e)/ FTE Students)	Percent Change in Energy Intensity (%)
2006	8,499,325	5927	1434	
2007	8,567,852	5714	1499	+4.3
2008	9,496,898	5538	1714	+12.5
2009	9,326,287	5440	1701	-0.8
2010	8,768,978	5278	1661	-2.4
2011	7,900,356	5312	1487	-10.5
Total (Current Year to 3 years prior to Energy Manager Program)				+3.6

Analysis shows that electrical consumption was increasing significantly in the years immediately prior to School District No. 72 adopting the BC Hydro Energy Manager Program in April 2009. This trend has now been reversed.



5.4 Greenhouse Gas Emissions

As a public sector organization, School District No. 72 is required to report annually on steps taken to reduce Greenhouse Gas Emissions. A copy of the School District No. 72 Carbon Neutral Action Report is available from the LiveSmart BC web site (http://www.livesmartbc.ca/government/neutral_action_reports.html). Pursuant to the Greenhouse Gas Reduction Targets Act, School District No. 72 is carbon-neutral through the purchase of carbon offsets from the Pacific Carbon Trust at current rate of $25 per tonne of CO2 (e). Cost avoidance achieved through reduced greenhouse gas emissions.

Reportable Greenhouse Gases in Tonnes $CO_2(e)$

Calendar Year	Direct Emissions		Indirect Emissions		Biomass	Total	Savings
	Buildings	Fleet	Buildings	Office Supplies	Emissions		
2008	2,103	449	194	108	---	2853	NA
2009	2151	355	226	124	---	2856	($75)
2010	1933	450	202	75	31	2690	$4150
2011	1997	465	176	41	17	2695	($125)

5.5 Planned Actions (Project List)

A listing of technical projects, organizational/behavioural initiatives, and completed studies is available at the following:

http://www.sd72.bc.ca/downloads/SD72_SEMP_Timeline_Mar_2012.zip

Projects completed in 2011/12 resulted in reduced annual electrical consumption of approximately 475,000 KwH and $51,000 per year in utility costs.

Approved 2012/13 projects are expected to result in reduced annual electrical consumption of approximately 429,000 KwH

6. APPENDIX

Number of stakeholders	3	Energy Manager	Steve Woods
Executive Support	Tom Longridge, Peter Neale, Nevenka Fair	Energy Committee	Dionne Lapointe-Bakota, Drew Williams, Gary Pollock, Jeanne Stoppard, Dave Brown (community liaison), Steve Woods, Linda St. Pierre, 2 students (rotating committee members)
Energy Volunteers	5		

6.1 List of Stakeholders:

Groups			
Name	Title	Organization	Contact Info
Steve Woods	Manager of Operations	Operations	Steve.woods@sd72.bc.ca
Jeanne Stoppard	Secretary	Operations	Jeanne.stoppard@sd72.bc.ca
Drew Williams	Environmental Sustainability Coordinator	Operations	Drew.williams@sd72.bc.ca

6.2 List of Energy Volunteers

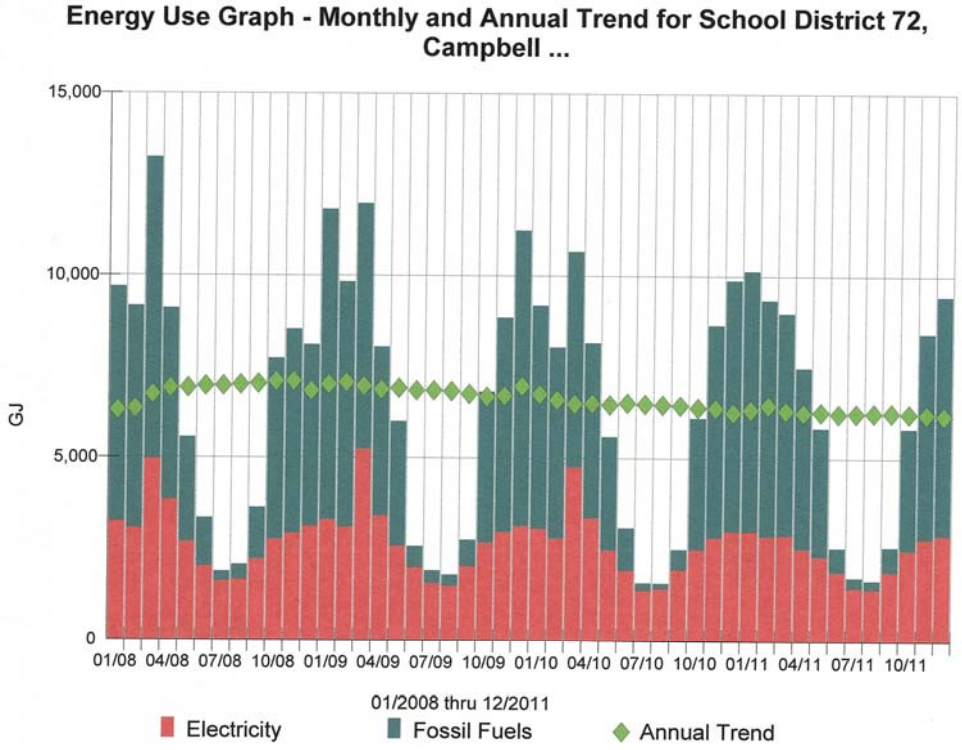
Stakeholders			
Name	Title	Organisation	Contact Info
Dionne Lapointe-Bakota	Teacher	Phoenix	Dionne.Lapoint-Bakota@sd72.bc.ca
Gary Pollock	Leadhand Custodian	Timberline/North Island College	Gary.Pollock@sd72.bc.ca
Dave Brown		Private Citizen	dbrown@sfu.ca
Linda St. Pierre	Secretary I	Human Resources	Linda.StPierre@sd72.bc.ca

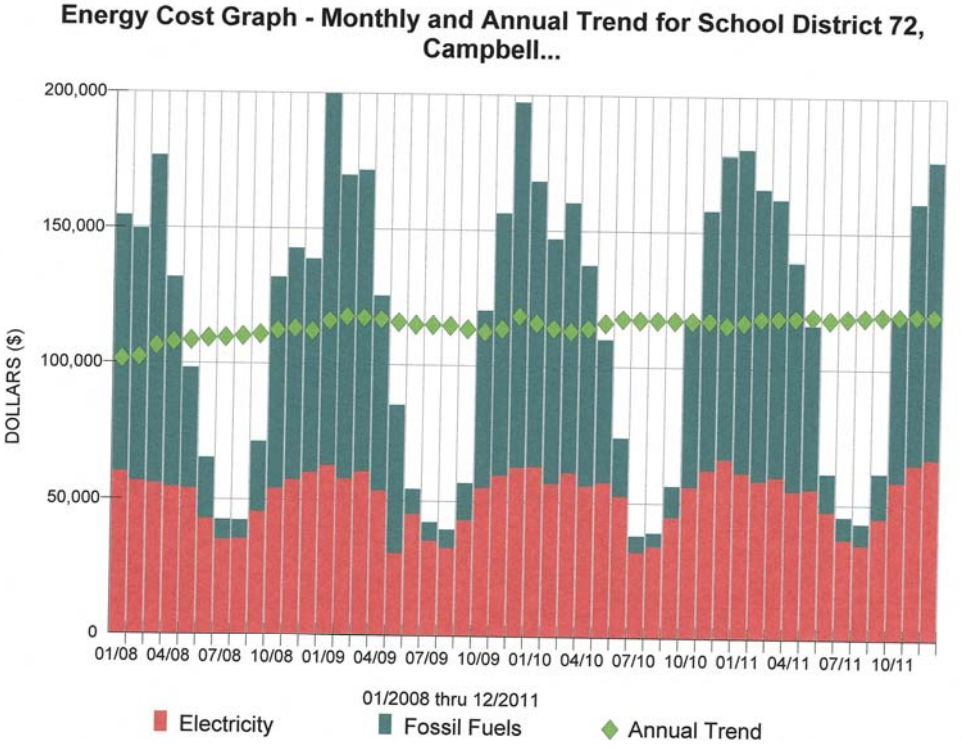
6.3 Baseline Energy Use: Account Histories

The following table summarizes baseline energy costs using a four-year average for calendar years 2005-2008. Electrical Demand Charges are included in the Energy Charges.

	Electricity (Normalized)			Fossil Fuels (Normalized)	Overall
Month	Energy Charge $	Power Factor Charge $	Total Electricity Cost $	Total Charges $	Total Charges $
Jan	55,768	11	55,779	86,347	142,125
Feb	52,545	2	52,547	79,230	131,777
Mar	50,532	0	50,532	83,206	133,737
Apr	50,147	0	50,147	58,236	108,383
May	50,058	6	50,063	34,931	84,994
Jun	42,013	29	42,042	16,409	58,452
Jul	31,901	36	31,938	6,304	38,242
Aug	30,405	229	30,634	6,459	37,092
Sep	42,006	73	42,079	18,685	60,764
Oct	51,100	11	51,110	55,902	107,013
Nov	54,964	16	54,979	75,274	130,253
Dec	56,879	4	56,883	83,103	139,985
TOTAL	$568,316	$415	$568,731	$604,084	$1,172,815
Percentage of Total Charges	48.5%	0.0%	48.5%	51.5%	100.0%

The following graphs show a gradual reduction in energy consumption since 2008, resulting in cost avoidance from utility rate increases.





6.4 Asset Registry

School District No. 72 does not have an Asset Registry. One school, Surge Narrows, relies on a diesel generator for heat and electrical power. Two schools, Cortes and Sayward, use propane boilers for heat and domestic hot water. Two schools, Quadra and Penfield, rely on electrical heating systems. No information is available on equipment owned by North Island College, North Island College enrolment or staff occupancy, or tenants of School District No. 72 facilities.

6.5 Studies: Energy Breakdown

In 2011, normalized electrical consumption for School District No. 72 was approximately 8.0 million Kilowatt-hours, compared to 8.8 million Kilowatt-hours in 2010. Normalized fossil fuel consumption in 2011 was approximately 42,800 gigajoules, compared to 43,300 in 2010. Comparing 2011 and 2010, the 9.6% reduction in total energy consumption is partially attributable to the lighting and mechanical system upgrades affecting 10 schools (over one-half of School District No. 72 schools). Another significant contribution was the continuing time delay in completing chiller repairs in the Timberline Secondary/North Island College facility.

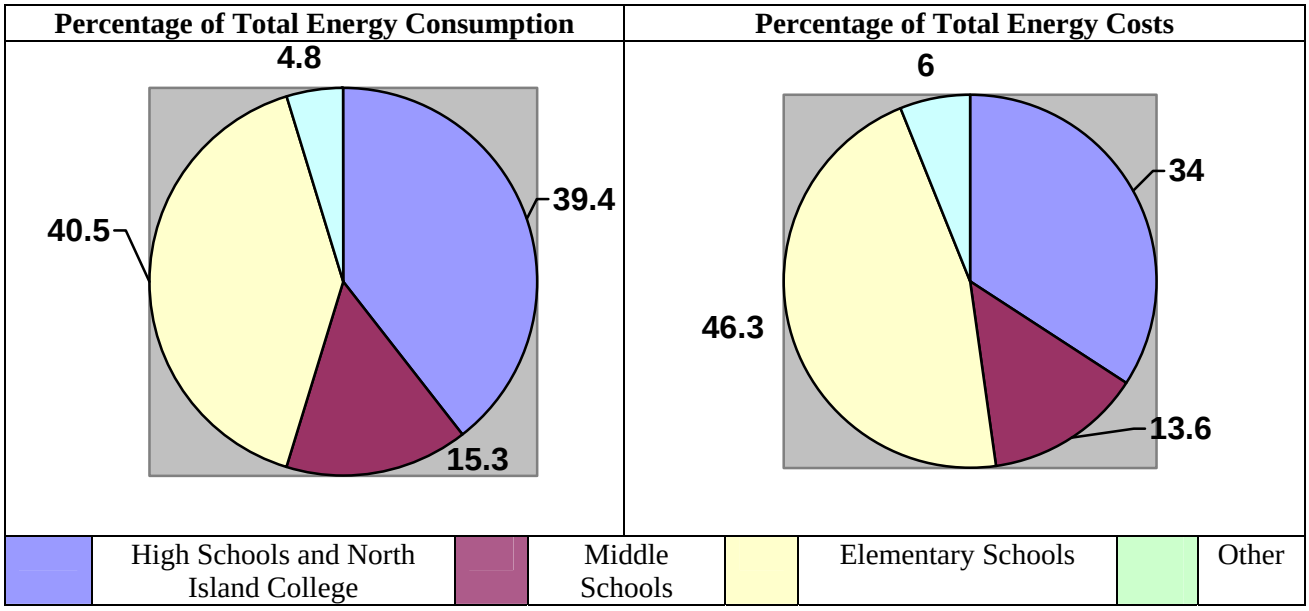
In 2011, normalized electrical consumption costs for School District No. 72 were $646,200, an increase of approximately $3,200 from 2010. Normalized fossil fuel costs for 2011 were $677,000, a decrease of approximately $59,000 from 2010.

Overall electricity costs remained stable despite the 9.6% reduction in consumption. This suggests significant cost avoidance as a result of energy conservation measures. Natural gas consumption and costs decreased in 2011, indicating stable utility rates.

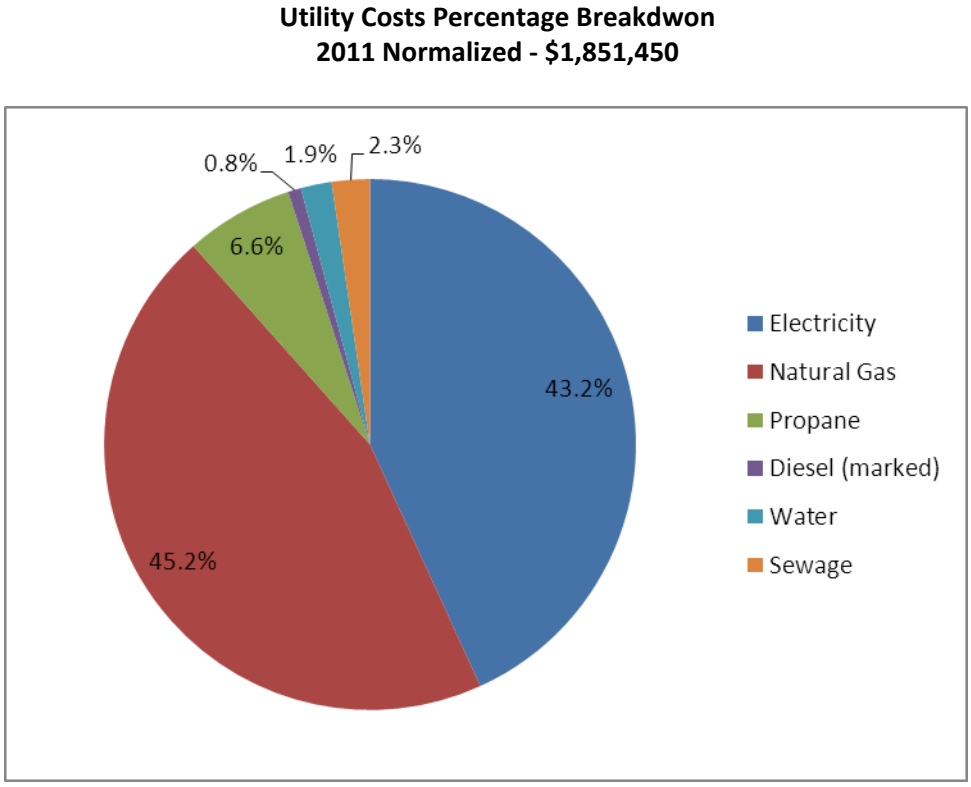
Based on average household consumption of about 10,000 kilowatt-hours of electricity per year[1], School District No. 72 annual electrical consumption is the equivalent of approximately 790 homes.

As indicated in the follow chart, total energy consumption and costs are mainly attributable to school operations. Other facilities include Robron Centre, the School Board Office, the Maintenance Building and Bus Garage. Of these, less than 5 percent of consumption and costs are associated with support facilities.

[1] The BC Energy Plan (http://www.energyplan.gov.bc.ca/bcep/default.aspx?hash=4)



Utility (Jan – Dec 2011)	Normalized Consumption	Normalized Costs	
	GJ	$	%
Electricity	28,441	646,197	43.2
Natural Gas	42,776	676,997	45.2
Propane	1,998	98,459	6.6
Diesel (marked)	316	11,800	0.8
Water	*65,664 m3*	28,156	1.9
Sewage	*37,821 m3*	34,629	2.3
Total	73,531 GJ	1,851,450	100



6.6 Current Business Practice Gaps

The 2011 and 2012 Energy Management Assessments are available at the following:
http://www.sd72.bc.ca/downloads/SD72_EMA_Action_Plan.zip

A comparison of these two assessments indicates an improvement of 5.8% in the Level of Rigour was achieved during the 2011/12 Energy Management contract. The 4.3% increase in the Total Balance Rating, however, indicates that improvement was focussed in specific areas rather than achieving some improvement in all areas.

The Energy Management Assessment Gantt chart (Action Timeline) and journal notes is available at the following:
http://www.sd72.bc.ca/downloads/SD72_SEMP_Timeline_Mar_2012.zip