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January 15, 2014

The Honorable John Marty, Chair  
Environment and Energy Committee  
Minnesota State Senate  
Room 323, State Capitol

The Honorable Melissa Hortman, Chair  
Environment Policy Committee  
Minnesota House of Representatives  
Room 377, State Office Building

The Honorable David Brown  
Environment and Energy Committee  
Minnesota State Senate  
Room 109, State Office Building

The Honorable Pat Garofalo  
Environment Policy Committee  
Minnesota House of Representatives  
Room 247, State Office Building

Dear Committee Members:

Pursuant to Minnesota Statutes 16B.322, Subdivision 8, attached is the Public Buildings Enhanced Energy Efficiency Program (PBEEEP) 2013 Report.

Please contact our office if you have any questions or need assistance.

Sincerely,

A handwritten signature in black ink that reads "Spencer Cronk".

Spencer Cronk  
Commissioner

Attachment



# **2013 PBEEEP REPORT**

**Public Buildings Enhanced Energy Efficiency  
Program**

This information will be made available in alternate format,  
for example, large print, Braille, or cassette tape, upon request  
at TTY 651.297.1545 or by contacting

**Department of Administration**  
**Real Estate and Construction Services**  
**Voice 651.201.2399**  
**Fax 651.296.7650**

**Cost to prepare this report: \$300**

## **PUBLIC BUILDINGS ENHANCED ENERGY EFFICIENCY 2013 REPORT**

Minnesota Statutes 16B.322, subdivision 8, states that the Commissioner of Administration shall submit a report containing, at a minimum, the following regarding projects implemented under this section:

- *the total number of projects*
- *the amount of calculated and, if available, actual energy savings for each project*
- *the cost of each project*
- *the total amount paid for technical services provided under subdivision 3 for each project.*

### **1.0 PROGRAM OVERVIEW**

As of the end of 2013, PBEEEP has achieved its main goals:

- The Energy Efficient Operations program was developed to ensure that facility managers maintain the savings identified in the investigations and use best practices to keep their energy usage as low as possible.
- CEE's training module for the Energy Efficient Operations program was approved by State of Minnesota's Real Property Executive Committee to meet the training requirement of Executive Order 11-3, section 4.b.ii.
- The implementation of selected energy saving measures is complete or in process at all sites that have chosen to move forward with the recommended measures.
- All energy investigation projects at the 71 state government sites enrolled in the program since its inception in August of 2009 were completed in 2012.
- The total building area included in these projects exceeds 31.4 million square feet, of which 17.8 million at 44 sites had detailed investigations.
- Energy use at participating facilities is 6.3% below the weather normalized baseline according to the most recent data in the B3 database.
- The value of the actual annual energy savings (vs. B3baseline) is over \$2.3 million.
- Average energy savings of 7.1% were identified in the energy investigations.

PBEEEP, the Public Buildings Enhanced Energy Efficiency Program, provides expert services for recommissioning and retrofit projects, combined with innovative financing, to help state government buildings save energy and money. PBEEEP's primary activity, and expense, was for engineering studies of state facilities which were all completed in 2012 and reported on in the 2012 PBEEEP Annual Report.

In 2013 there were three main program activities: developing and implementing the Energy Efficient Operations program; providing expert assistance to facilities with regard to selecting measures for implementation; and performing measurement and verification of energy savings. The individual agencies are responsible for prioritizing their implementation projects. Several facilities are considering the use of guaranteed energy savings programs for financing.

### **A. PBEEEP ORGANIZATION**

The Center for Energy and Environment (CEE) has been engaged by the State Of Minnesota, Department Of Administration to develop and administer PBEEEP. CEE is a Minnesota-based nonprofit organization

that works to promote public interest through the responsible and efficient use of natural and economic resources. CEE is the quality assurance provider and day-to-day administrator of the program. CEE developed the Energy Efficient Operations program with the assistance of Herzog-Wheeler and Associates and the University of Minnesota's Center for Sustainable Building Research.

## **B. PROGRAM DEVELOPMENT**

A training program based on the fifth program guideline, *Sustainable Energy Efficiency Operations Process for PBEEEP Buildings* was added to the program in September 2013. The training was approved by the State's Real Property Executive Committee "for state building operators and managers to operate existing energy-consuming equipment in state owned buildings in the most efficient manner possible."

## **C. PROGRAM RELEASE**

The State Public Building Enhanced Energy Efficiency Program was formally launched on August 6, 2009 with a Webinar jointly presented by the Center for Energy and Environment (CEE) and the Department of Administration for state agencies and the Minnesota State Colleges and Universities campuses.

## 2.0 REPORTING

### A. TOTAL NUMBER OF PROJECTS

**Table 1A: Project Count**

<b>Total Number of Projects (aggregate):</b>	<b>Reporting Period*</b>	<b>Total</b>
Applications		71
Screen Phase		71
Investigation Phase		49
Implementation Phase		49
Verification Phase		12
Completed**		54

\* Only applicable to monthly reporting

\*\* Completed projects include full and partial sites where investigation was not recommended following screening

**Table 1B: Building Count\*\***

<b>Total Number of Buildings (aggregate):</b>	<b>Reporting Period*</b>	<b>Total</b>
Applications		905
Screen Phase		905
Investigation Phase*		386
Implementation Phase		386
Verification Phase		241
Completed		526

\* Only applicable to monthly reporting

### Detailed Information on Projects:

Facility	Agency	Buildings	Square feet	Screen	Investigation	Implement	M&V	Energy Efficient Operations	Complete
St Cloud	Corrections	33	637,420	●					●
Southwest MN State	MnSCU	28	1,276,778	●	●	●	○		
Rochester CTC	MnSCU	32	827,878	●	●	●	○		
Several	DNR	9	226,762	●	●	○	○		
Oak Park Heights	Corrections	16	421,794	●	●	●	●		
Red Wing	Corrections	32	336,527	●	●	●	○		
Rush City	Corrections	6	435,891	●	●	●	○		
Century College	MnSCU	25	732,094	●	●	●	●	●	
Minnesota History Center	PMD	1	492,097	●	●	●	●		
Faribault	Mn Academies	18	437,079	●	●	●	○		
Minneapolis	MVH	6	276,288	●	●	○	○		
Shakopee	Corrections	14	242,068	●	●	●	○		
Willow River	Corrections	13	61,222	●					●
Faribault	Corrections	37	1,136,729	●	●	●	○		
Moose Lake	Corrections	26	573,855	●	●	●	○	●	
MSU Moorhead	MnSCU	40	1,724,372	●	●	●	●		

Facility	Agency	Buildings	Square feet	Screen	Investigation	Implementation	M&V	Energy Efficient Operations	Complete
St Cloud State U	MnSCU	56	3,136,612	●	●	○	○		
Lino Lakes	Corrections	35	608,241	●	●	○	○	●	
Elmer Andersen Office Bldg	PMD	1	414,068	●	●	○	○		
BCA Maryland Ave	PMD	1	235,414	●	●	○	○		
Stassen Building	PMD	1	454,392	●					●
State Office Building	PMD	1	290,136	●	●	○	○		
M State Detroit Lakes	MnSCU	7	191,824	●					●
M State Fergus Falls	MnSCU	13	165,862	●					●
M State Moorhead	MnSCU	12	190,328	●					●
M State Wadena	MnSCU	10	136,836	●					●
Riverland Albert Lea	MnSCU	8	146,322	●					●
Riverland Austin	MnSCU	19	361,379	●	●	○	○	●	
Riverland Owatonna	MnSCU	1	25,471	●	●	○	○	○	
Normandale CC	MnSCU	18	476,110	●	●	○	○		
State Parking Garages	PMD	7	1,280,000	●	●	●	●		●
Anoka Ramsey Coon Rapids	MnSCU	26	380,446	●	●	●	○	●	
Anoka Ramsey Cambridge	MnSCU	2	95,000	●	●	●	○	●	
MSU Mankato	MnSCU	36	2,770,177	●	●	○	○	●	
Hennepin Technical College No.	MnSCU	17	423,922	●					●
Hennepin Technical College So.	MnSCU	13	395,697	●					●
AASF Holman Field	Military Affairs	1	95,329	●	●	○	○	●	
Rosemount TACC	Military Affairs	1	99,522	●	●	○	○	●	
Orville Freeman	PMD	1	374,744	●					●
Centennial	PMD	1	317,893	●					●
Veterans Services	PMD	1	87,648	●					●
Health Agriculture Laboratory	PMD	1	181,019	●	●	○	○		
Transportation Building	PMD	1	374,818	●	●	○	○		
Administration Building	PMD	1	80,144	●					●
Judicial Building	PMD	1	252,275	●					●
Capitol Building	PMD	1	378,825	●					●
Mn State Retirement Systems	PMD	1	146,981	●	●	○	○		
Fond du Lac Tribal & CC	MnSCU	9	173,274	●	●	○	○		
Moose Lake	DHS	1	186,048	●					●
Bemidji State University	MnSCU	26	1,605,261	●	●	○	○		
Waters Edge	DOT	2	185,000	●	●	○	○		
Northland CC East Grand Forks	MnSCU	9	171,244	●	●	●	●	●	
Northland CC Thief River Falls	MnSCU	24	321,434	●	●	●	●		
Perpich Center for the Arts	PCAE	4	171,543	●	●	○	○		
St Paul College	MnSCU	2	510,112	●					●
Lake Superior CC	MnSCU	15	362,241	●	●	○	○		
Hibbing CC	MnSCU	22	362,582	● 100	● 100	○ 75	○ 0	○ 50	
Mesabi CTC Eveleth	MnSCU	8	84,373	●					●
Mesabi CTC Virginia	MnSCU	10	124,211	●	●	○	○		
Itasca CC	MnSCU	13	233,327	●					●
Rainy River CC	MnSCU	16	114,685	●					●
Vermilion CC	MnSCU	14	180,376	●	●	○	○		
Ridgewater CC Willmar	MnSCU	30	486,364	●					●
Ridgewater CC Hutchinson	MnSCU	8	195,906	●	●	●	○		
Pine Technical College	MnSCU	11	98,394	●			○		●
St Cloud Technical College	MnSCU	15	397,058	●			○		●
Regional Treatment Center	DHS	13	483,457	●					●
Mn West CTC, Jackson	MnSCU	7	102,050	●					●
Mn West CTC, Worthington	MnSCU	9	144,735	●					●
Anoka Technical College	MnSCU	5	345,293	●					●
BCA, Bemidji	Admin	1	26,854	●	●	○	○	●	
East St Paul TACC	Military Affairs	1		●				●	
<b>Total</b>		<b>905</b>	<b>31,472,111</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>11</b>	<b>12</b>	<b>29</b>

## B. AMOUNT OF CALCULATED AND ACTUAL ENERGY SAVINGS FOR EACH PROJECT

**Table 2: Energy and Cost Savings**

<b>Total Energy and Cost Savings (aggregate)</b>	<b>Total</b>	<b>Total Selected for Implementation</b>
Electric Savings		
Annual Savings (kWh)	<b>17,898,158</b>	<b>14,126,258</b>
Annual Cost Savings (\$)	<b>\$879,746</b>	<b>\$694,346</b>
Peak Demand Savings		
Annual Savings (kWh)	<b>1,051</b>	<b>979 kW</b>
Annual Cost Savings (\$)	<b>\$21,228</b>	<b>\$19,774</b>
Gas Savings		
Annual Savings (MCF)	<b>781,878</b>	<b>636,134</b>
Annual Cost Savings (\$)	<b>\$489,986</b>	<b>\$398,652</b>
GHG reductions (US Tons)	<b>19,154</b>	<b>15,546</b>

## Implementation Status

Site Name	Measures Identified	Measures with 3 yr payback	Measures selected to date	Measures Reported as Implemented	Cost (Estimated, actual if known)	kWh	Therms	MMBtu
ARCC Cambridge	9	6	9	9		55,922	3,783	
ARCC Coon Rapids	6	4	5	4		11,324	8,818	
BCA Bemidji	3	1	3			76,272	5,589	
BCA St Paul	2	1	2	2		854,589	69,326	
Bemidji State	44	31	35	34		514,681	11,073	
Century College	15	6	12	12	\$ 17,821	297,549	23,022	
DNR Northern MN	5	1						
DOT Waters Edge	7	3	6	4		140,908	948	
Elmer Anderson	7	4	7	7		230,054		542
Fond du Lac Tribal CC	7	4	7	4	\$ 2,182	33,206	19,444	
Health Agriculture Lab	4	3	1					148
Lake Superior College	2	2	2			53,928	8,248	
MCF Faribault	35	18	17	17	\$ 38,800	161,368	21,643	
MCF Lino Lakes	30	22	30	30		469,518	34,865	
MCF Moose Lake	18	3	6			60,233	32,901	
MCF Oak Park Heights	13	8	8	8		241,399	10,025	
MCF Red Wing	8	2	7	2	\$ 7,620	30,121	2,161	
MCF Rush City	14	2	9	7	\$ 6,668	535,377	8,142	
MCF Shakopee	18	14	12	12		23,456	5,556	
MN Academies	21	14	21	19		140,688	1,020	338
MN History Center	10	7	10	10	\$ 134,590	785,745	42,550	
MN Retirement Systems	3	1	3	3		37,578		181
MSU Mankato	35	25	30	26	\$ 22,247	1,040,046	69,216	
MSU Moorhead	41	21	37	27	\$ 43,803	343,115	40,784	
MVH Minneapolis	13	3	13	1		585,625	55,543	
NHED Hibbing	12	11	12			98,453		1075
NHED Vermilion Ely	6	4	5	2		48,694		533
NHED Virginia	4	3	2			63,415		514



Site Name	Measures Identified	Measures with 3 yr payback	Measures selected to date	Measures Reported as Implemented	Cost (Estimated, actual if known)	kWh	Therms	MMBtu
Normandale CC	9	5	8	8		222,430	19,215	
Northland CTC E Grand Forks	3	0	3	3		22,533		
Northland CTC Thief River	4	0	3			9,949		
Parking Garages	7	0	7	7	\$ 1,614,780	488,153		
Perpich Center	7	6	6			246,465	6,961	
Ridgewater CC Hutchinson	3	1	3			45,026	543	
Riverland CC Austin	5	2	5			439,452	277	
Riverland CC Owatonna	4	2	3			19,439	379	
Rochester CTC	13	10	13	12		258,659	50,599	
Rosemount TACC	11	1	11			185,355	5,398	
Southwest MSU	58	33	43	10	\$ 365,598	5,006,314	598	
St Cloud SU	44	17	12			670,893	77,507	
St Paul AASF	5	2	5					
State Office Building	6	1	2			188,036	-	0
Transportation Building	8	5	8			498,399	-	3300
<b>Total</b>	<b>579</b>	<b>309</b>	<b>443</b>	<b>280</b>	<b>\$ 2,254,109</b>	<b>15,234,367</b>	<b>636,134</b>	<b>6,631</b>

**C. TOTAL PAID FOR TECHNICAL SERVICES PROVIDED UNDER SUBD. 3**

**Table 3: Technical Services Costs for CEE Services**

<i>Development Costs (aggregate):</i>	<i>Reporting Period (2012)</i>	<i>Total Program</i>
Program Development Costs	0	108,595.
<b><i>Project Costs (aggregate):</i></b>		
Program Administration Costs	25,375.00	432,043.75
Technical Services (from Table 3)	121,380.00	1,177,415.95
<b>Total Cost of CEE's Services</b>	<b>146,755.00</b>	<b>1,718,054.70</b>

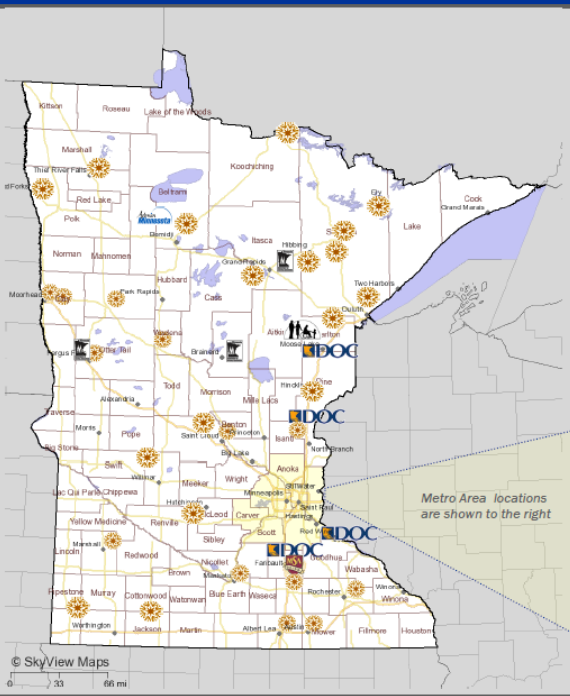
**D. COST OF EACH ACTIVE PROJECT**

**Table 3: Project Costs**

Site Name	2013		Program to Date	
	CEE	Provider	CEE	Provider
MCF St Cloud			\$ 5,640.00	
Southwest MSU	\$ 212.50		\$ 54,272.50	\$ 260,039.00
Rochester CTC	\$ 212.50		\$ 30,592.95	\$ 156,920.00
DNR Northern MN			\$ 18,766.25	\$ 18,438.00
DNR St Paul			\$ 608.75	
MCF Oak Park Heights	\$ 467.50		\$ 19,833.62	\$ 87,900.00
MCF Red Wing			\$ 17,463.75	\$ 41,570.00
MCF Rush City	\$ 42.50		\$ 24,348.75	\$ 63,850.00
Century College	\$ 1,167.50		\$ 44,592.50	\$ 100,000.00
MN History Center	\$ 892.50		\$ 24,175.00	\$ 95,200.00
MN Academies	\$ 217.50	\$ -	\$ 30,860.00	\$ 76,812.00
MVH Minneapolis			\$ 8,538.75	\$ 39,600.00
MCF Shakopee	\$ 207.50		\$ 23,733.75	\$ 48,000.00
MCF Willow River			\$ 1,360.00	
MCF Faribault	\$ 247.50	\$ -	\$ 36,214.50	\$ 241,842.00
MCF Moose Lake	\$ 42.50		\$ 21,148.75	\$ 51,880.00
MSU Moorhead	\$ 510.00	\$ -	\$ 86,755.00	\$ 225,622.00
St Cloud SU	\$ 85.00		\$ 64,071.63	\$ 344,765.00
MCF Lino Lakes			\$ 42,556.25	\$ 132,235.00
Elmer Anderson	\$ 127.50		\$ 13,773.75	\$ 65,800.00
BCA St Paul	\$ 42.50		\$ 11,442.50	\$ 38,200.00
Stassen Building			\$ 2,320.00	
State Office Building			\$ 8,313.75	\$ 43,200.00
M State Detroit Lakes			\$ 702.50	
M State Fergus Falls			\$ 4,251.25	
M State Moorhead			\$ 1,712.50	
M State Wadena			\$ 1,241.25	
Riverland CC Albert Lea			\$ 811.25	
Riverland CC Austin			\$ 21,977.75	\$ 65,000.00
Riverland CC Owatonna			\$ 2,042.50	\$ -
Normandale CC	\$ 127.50		\$ 16,276.25	\$ 85,200.00
State Parking Garages			\$ 9,233.75	\$ 24,500.00
State Parking Garage			\$ 1,255.00	\$ 136,789.90
ARCC- Coon Rapids Campus	\$ 212.50	\$ -	\$ 30,206.25	\$ 61,652.00
ARCC Cambridge			\$ 9,451.25	\$ 38,817.00
MSU Mankato	\$ 1,530.00	\$ -	\$ 59,788.75	\$ 262,447.50
St Paul AASF			\$ 7,221.25	\$ 46,600.00
Rosemount TACC	\$ 892.50		\$ 15,271.25	\$ -

Site Name	2013		Program to Date	
	CEE	Provider	CEE	Provider
Centennial Building			\$ 2,817.50	
Orville Freeman Building			\$ 2,300.00	
Veterans Services			\$ 1,577.50	
Health Agriculture Lab	\$ 2,337.50		\$ 13,748.75	\$ 25,000.00
Transportation Building			\$ 20,873.75	\$ 64,000.00
Administration Building			\$ 1,428.75	
Judicial Building			\$ 2,396.25	
Capitol Building			\$ 1,798.75	
MN Retirement Systems			\$ 8,840.00	\$ 21,900.00
Fond du Lac Tribal CC	\$ 85.00		\$ 8,263.75	\$ 47,620.00
DHS Moose Lake			\$ 637.50	
Bemidji State	\$ 175.00		\$ 27,951.25	\$ 178,304.00
DOT Waters Edge	\$ 200.00		\$ 12,468.75	\$ 45,900.00
Northland CTC E Grand Forks	\$ 170.00		\$ 19,742.50	
Northland CTC TRF	\$ 85.00		\$ 14,863.75	\$ 124,371.00
Perpich Center	\$ 150.00		\$ 13,017.50	\$ 34,950.00
St Paul College			\$ 2,200.00	
Lake Superior College	\$ 42.50		\$ 13,293.75	\$ 47,572.00
NHED Hibbing	\$ 637.50		\$ 19,317.50	\$ 116,165.00
NHED Eveleth			\$ 1,833.75	
NHED Virginia	\$ 42.50		\$ 5,262.50	\$ -
NHED Itasca			\$ 1,922.50	
NHED Rainy River			\$ 1,648.75	
NHED Vermilion Ely	\$ 42.50		\$ 4,176.25	\$ -
Ridgewater CC Willmar			\$ 3,320.00	
Ridgewater CC Hutchinson			\$ 14,724.55	\$ 45,346.00
Pine TC			\$ 2,160.00	
St Cloud TC			\$ 2,487.50	
DHS Anoka AMRTC			\$ 2,030.00	
MN West CTC-Jackson Campus			\$ 3,140.00	
MN West -Worthington Campus			\$ -	
Anoka Technical College			\$ 4,930.00	
BCA Bemidji	\$ 2,276.25		\$ 19,862.50	\$ 23,565.00
Energy Efficient Operations	\$ 99,652.70		\$ 134,787.20	
Building Asset Rating	\$ 8,246.25		\$ 14,767.50	
Total	\$ 121,380.00	\$ -	\$ 1,177,415.95	\$ 3,627,572.40

### Participants Across Minnesota



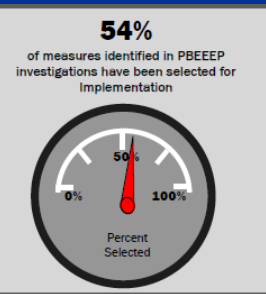
### Participation by State Agency

Agency Sites	Buildings	Square Feet	Savings
MN State Colleges & Universities	617	19,483,996	\$760,842
Department of Administration	22	5,387,308	\$346,400
Department of Corrections	212	4,405,484	\$256,781
Minnesota State Academies	18	437,079	\$14,284
Veterans Affairs	6	276,288	\$63,176
Department of Natural Resources	9	226,762	\$1,033
Military Affairs	2	194,851	\$22,681
Human Services	14	669,505	
Department of Transportation	2	185,000	\$10,449
Perpich Center for Arts Education	3	157,575	\$21,731
<b>Total</b>	<b>905</b>	<b>31,423,848</b>	<b>\$1,497,376</b>

### Metro Area



### Implementation Progress



PBEEEP was made possible with funding from the U.S. Department Of Energy and the Minnesota Department Of Commerce, Office Of Energy Security