



## **Staff Report**

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### REPORT ON CITY FACILITIES ENERGY AUDIT

Honorable Mayor and Council Members:

#### **Summary**

As part of the City's green initiative, an energy use assessment and energy audit have been conducted on City facilities. The assessment and audit were conducted by the Energy Watch Program, a joint project of Pacific Gas & Electric Company and the Association of Bay Area Governments (ABAG) at no cost to the City. Belmont was one of over fifty cities in the Bay Area participating in the program. The goal of the audit was to identify energy inefficiencies in individual facilities and assist in addressing the problems. The reports primary focus is on retrofitting lighting in our facilities. This report is for information only, no action is required.

#### **Background**

The City enrolled in the ABAG Energy Watch Program in April 2007. The Facility Energy Assessment Report was completed in July of this year. The executive summary of the report is attached. The report focused on eight facilities, the Civic Center Complex (City Hall/PD), Belmont Library, Twin Pines Senior & Community Center, Barrett Community Center, Corporation Yard, Manor Building, Parks & Recreation Office (includes the Lodge and Cottage) and CID Building. Based on the findings in the assessment the consultants recommended that an energy audit be completed on six of the facilities. These facilities included the Civic Center Complex, Belmont Library, Twin Pines Senior & Community Center, Barrett Community Center, Corporation Yard and Parks & Recreation Office. The facilities recommended for the audit were selected based on the likelihood of realizing significant reductions in energy use through the installation of new and more efficient lighting and fixtures.

#### **Discussion**

**Lighting-** In early August Energy Watch staff and a lighting consultant conducted detailed audits of the City facilities identified above. The lighting audit identified the potential for significant savings throughout City facilities. The report recommends replacing entire existing lighting fixtures, replacing incandescent lights with compact fluorescent lights (CFL), replacing existing fluorescent tubes with the latest generation of tubes and in some cases delamping specific areas in facilities that have excess lighting.

Estimated costs and accompanying savings for the specific facilities audited are shown on the following table:

**Table 1 – City of Belmont Lighting Feasibility Study Estimated Costs**

Building	Total kW Saved	Total kWh Saved	Annual Electricity Cost Savings	Total Installed Cost	Total Rebate	Total Cost Including Rebate	Simple Payback, Years	Long Term Payback, Years	CO2e Reductions (1)
Barrett Community Center	27	60,498	\$ 9,982	\$ 15,185	\$12,100	\$ 3,085	0.3	\$ 224,690	27,829
Library	6	19,056	\$ 3,144	\$ 10,220	\$ 3,811	\$ 6,409	1.7	\$ 50,186	8,766
City Hall	6	18,774	\$ 3,098	\$ 7,714	\$ 3,755	\$ 3,959	1.3	\$ 111,751	8,636
Corp Yard	15	11,527	\$ 1,902	\$ 9,394	\$ 2,305	\$ 7,089	3.7	\$ 133,821	5,302
Ballpark	22	10,780	\$ 1,779	\$ 9,000	\$ 7,700	\$ 1,300	0.7	\$ 133,697	4,959
Senior Center	3	4,841	\$ 799	\$ 4,845	\$ 968	\$ 3,877	4.9	\$ 68,798	2,227
Lodge	1.3	1,984	\$ 327	\$ 1,388	\$ 397	\$ 991	3.0	\$ 19,829	913
Park & Rec	0.4	669	\$ 110	\$ 635	\$ 134	\$ 501	4.5	\$ 9,024	308
Cottage	0.4	410	\$ 68	\$ 285	\$ 82	\$ 203	3.0	\$ 4,072	189
<b>Total</b>	<b>80</b>	<b>128,539</b>	<b>\$ 21,209</b>	<b>\$ 58,666</b>	<b>\$31,252</b>	<b>\$ 27,414</b>	<b>1.3</b>	<b>\$ 852,572</b>	<b>59,128</b>

Based on an avoided greenhouse gas emissions factor from PG&E in 2005 of 0.49 pounds of carbon dioxide equivalent (CO2e) per kilowatt-hour.  
 Note: The Direct Install Program has pre-approved cost per fixture type, this assessment is an estimate and should be within + or - 15% of Direct Installed costs.  
 Ballpark, Lodge, Park and Rec and Cottage will not be included in the Direct Install Program. A max rebate of \$25,000 for DI Program allowed.

If all the items identified are implemented the simple preliminary payback estimate for the lighting retrofits and modifications in the facilities averages 1.3 years. However, over the long term, based on 15 years (the rated life of a ballast) the total estimated savings is approximately \$850,000. The analysis does not take into account the additional savings in longer lamp life which translates into reduced maintenance costs.

Staff will be working with Energy Watch staff to submit applications for the various rebate programs that may apply to our program. Through 2007, ABAG Energy Watch is offering a Direct Install Program rebate of \$0.20/kWh saved for lighting retrofits and pays up to 100% of the project cost, to a maximum of \$25,000 per agency for qualifying facilities. The program is a Direct Install Program, which means ABAG Energy Watch will provide free pre- and post-audits, lighting design services, assist with rebate applications and is partnered with a qualified lighting installer to conduct the lighting installations. This turn key project can expedite the installation of the new equipment. This application must be submitted to ABAG ENERGY WATCH by November 1, 2007.

**Heating Ventilation and Air Conditioning (HVAC)-**

The audit also looked at HVAC units at the Twin Pines Senior Community Center, Corporation Yard and Parks & Recreation Office. The recommendation for these units is to replace the equipment at the end of their useful life spans. The units should be replaced with the highest efficiency equipment available.

**Other Items-**

Wireless transmitters- One substantial item of energy savings was identified in the initial assessment. Several years ago the City inherited 40 wireless transmitters from RCN. The transmitters are located on utility and street light poles. It was the intention at the time to use the transmitters for a City wireless network. The program was never developed, but the City has continued to pay the monthly electricity costs for each transmitter. Staff has started the process to disconnect the transmitters which will provide a savings of approximately \$5000 annually.

Solar Photovoltaic Energy- Although the energy audit did not address the specifics of installing solar photovoltaic panels on City facilities the report strongly encourages the use of this type of technology.

### **General Plan/Vision Statement**

We get involved in town matters because we care about living here.

Our actions today preserve and enhance Belmont's beauty to make it even lovelier for our grandchildren.

### **Fiscal Impact**

There is no immediate fiscal impact associated with this report. Should the various projects proceed staff will return with more detail of related costs as required. However, it should not be overlooked that the implementation of the recommendations in the report will save the City over \$850,000 in energy costs in 15 years.

### **Public Contact**

Posting of City Council agenda.

### **Recommendation**

Staff recommends that the Council accept the Energy Efficiency Recommendations Report.

### **Alternatives**

1. Refer back to staff for additional information

### **Attachments**

1. Executive Summary – Facility Energy Assessment Report

Respectfully submitted,

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