

CITY OF LOS ANGELES

CALIFORNIA

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December 4, 2014

Honorable Bob Blumenfield
Chair, Innovation Technology & General Services Committee
c/o Office of the City Clerk
Room 395, City Hall

Attention: Eric Villanueva, Legislative Assistant

SPECIAL STUDY ITEM R121: STATUS OF ENERGY EFFICIENT RETROFIT OF CITY BUILDINGS

Your Committee requested a report on the General Services Department's (GSD) energy retrofit program in City facilities. This report will outline energy retrofit projects completed to date, energy savings and costs avoided, financing strategies, the methodology for selection of future projects and timeline for completion of energy retrofit projects.

Completed Projects, Energy Savings and Financing Strategies

GSD has completed 263 energy retrofit projects, thereby allowing the City to decrease annual energy consumption by 112 million kBtus and avoid \$3.2 million in annual electrical costs.

Start Date	Program	No. of Projects	Energy/Water Savings	Estimated Savings/Cost Avoidance	Comments
2001	DWP & CEC Loans for Lighting Retrofits	189	68.2 million kBtus	\$1,768,000	In 2010-11, the Water & Electricity Fund was reduced by \$1.2 million
2009	Energy Efficiency and Conservation Block Grant	33	11.8 million kBtus	\$279,000	Savings based on comparison of baseline consumption and current consumption at each facility
2011	Qualified Energy Conservation Bonds	41	32.4 million kBtus	\$1,200,000	Estimated savings based on CAO report dated June 11, 2010.
	Total	263	112 million kBtus	\$3,247,000	

*kBtu refers to kilo British thermal units which reflect total annual energy (electricity, natural gas and/or heating oil) use.



Energy Savings: The percentage decrease in energy consumption or kBtus for a specific lighting or building system retrofit can be calculated through a comparison of existing and expected energy costs. Calculating the actual monetary savings generated by the retrofits is more challenging because each energy project has different life-cycle costs. As noted in the CAO report to the Council and Mayor dated March 20, 2012 (Attachment 1), a lighting system life-cycle can be as short as three to four years or can last a decade depending on type and usage level. HVAC (heating, ventilating and air conditioning) systems are generally more expensive and savings are heavily dependent on the life cycle costs of each system.

Additionally, changes in building utilization can increase or decrease energy consumption and impact the level of savings over time. Further, continued installation of plug-in electrical equipment will erode energy savings after the completion of the retrofit. Similarly, as energy rates increase the actual savings from the energy retrofits also increase over time, thereby lessening the impact of the rate increases over time.

GSD is addressing these challenges through the use of WegoWise, an energy tracking system. The Department entered building information for 250 of the City's largest facilities into WegoWise and is working with DWP to also upload utility information about these facilities into this system. Once utility data is entered, actual comparisons of energy usage before and after energy retrofits are implemented will be feasible. Significant variances in energy usage will also be investigated and explained, thereby providing a reliable means for calculating energy savings over time. In subsequent reports to your Committee, GSD will provide more information about the status of energy tracking.

Financing Strategies: GSD relies on loans, grants and most recently MICLA funds to finance energy retrofits:

- **Loans and Grants:** Beginning in 2001 the Council and Mayor authorized GSD to enter into loan agreements with DWP to borrow funds for energy retrofits. Initially, DWP loans were limited primarily to lighting retrofits with the goal of paying back each loan with energy savings within 10 years.

In 2013-14, the Council and Mayor passed Ordinance 182721 which increased the time GSD has to pay back DWP loans from 10 to 20 years. GSD now may borrow up to \$10 million from DWP at lower interest rates to retrofit City buildings with the most energy-efficient systems. These retrofits are typically more expensive and therefore require a longer payback period.

GSD also obtained low interest loans from the California Energy Commission which were used to complete 35 lighting retrofit projects. These projects also on average reduced energy consumption by 20 percent.

In 2009, the City received \$13 million in American Reinvestment and Recovery Act – Energy Efficiency Conservation Block Grant (EECBG) funding. This funding was used to retrofit 33 City facilities.

Qualified Energy Conservation Bonds (QECBs): In September 2011, Council and Mayor approved use of \$12 million in QECBs to retrofit 41 facilities to achieve at least a 20 percent reduction in energy consumption. The retrofits included replacing old systems with the most energy-efficient ones for HVAC, lighting and lighting control and building automation. All 41 facility energy retrofits are now completed. According to the CAO report (Attachment 1), the net annual savings of the QECB projects will be \$6.7 million over the 17-year repayment schedule.

- **CIEP Funding:** The current year budget includes \$3.6 million in MICLA and \$400,000 in General Fund financing for energy audits, engineering and retrofit work at various facilities. These funds will be used to implement new energy retrofit projects in the current year as detailed below.

With the \$10 million in DWP loans and MICLA-issued funding, a total of \$14 million is available to GSD to finance retrofit projects in the current year. GSD will also continue to pursue grant and other low interest loans whenever feasible.

Methodology for Selecting Energy Retrofit Projects

Those facilities which are the highest energy users and which will provide the most return on investment are considered by GSD for energy retrofits. The actual selections are made considering several key variables such as energy use intensity (EUI) scores as compared to the national median EUI for property types, square footage, highest level of electricity used and energy audits. Once a facility is selected for a potential retrofit, an energy audit is conducted.

Energy Audits: GSD relies on the Energy Efficiency Technical Assistance Program (EETAP) offered by the DWP for energy audits of selected City facilities. This program provides customers like the City/GSD access to professional energy auditing services performed by participating engineering firms. It also provides a financial incentive to complete the retrofits through reimbursement of energy audit costs to the City upon timely project completion.

The EETAP audits are comprehensive and include an analysis of building and lighting systems, feasible electric and gas energy efficiency measures and water conservation measures, and a prioritized list of applicable measures based on feasibility, life cycle cost and financial analysis for both short-term (less than two years) and long-term (more than two years) payback periods.

Utilizing the methodology discussed above, GSD developed ten EETAP submissions for 2014 and ten for 2015 as shown in Attachment 2. To date, two audits have been completed and include the Van Nuys Police Station and the 77th Street Police Station.

The energy audits conducted under the EETAP program showed specific energy efficiencies at the Van Nuys station that may potentially save 2.4 million kBtus annually. Similarly, at the 77th Street Police Station, the energy audit identified energy efficiencies that may save 3 million kBtus annually.

Energy audits are now in process for the Braude Building, LAFD Air Operations, West Valley and Newton Police Stations. They are expected to be completed and ready for DWP review in mid-December.


The remaining audits for this year include Central Police Station, City Hall, LAPD Ahmanson Recruit Training Center and the Police Administration Building. These audits are expected to be completed and ready for DWP review prior to the end of the fiscal year.

Timeline for Completion of Energy Retrofits

Approximately 44 facilities form the basis of GSD's work program for the next two years. Of the 44, 20 facilities are shown in Attachment 2 and an additional 24 facilities are under consideration for energy audits. Those facilities under consideration include most LAPD stations, several Fire Department locations, and a number of multi-and single occupancy buildings such as City Hall East, Police Administration Building, Hollywood Municipal, Figueroa Plaza, and Westchester Municipal.

GSD will submit approximately ten facilities per year for EETAP audits which is also the maximum allowable under this program. Once the audits are completed and approved, GSD initiates the retrofits. Timelines for the completion of these projects will vary according to the complexity of the work involved. GSD will continue to report back to ITGS on the completion of retrofit projects, energy savings and costs avoided through the Top Ten Project list.

GSD cannot estimate how much completion of the 44 energy retrofit projects will cost at this time. The department anticipates MICLE and General Fund financing will continue to be available in future years to fund these projects. MICLE financing provides the lowest interest financing available. GSD will also continue to pursue grant and other low interest loans as required.



Tony M. Royster
General Manager

Attachments

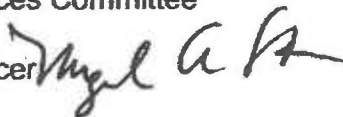
REPORT FROM

OFFICE OF THE CITY ADMINISTRATIVE OFFICER

Date: March 20, 2013

CAO File No. 0220-04788-0000
Council File No. 11-1394
Council District: All

To: Councilmember Jan Perry, Chair
Information Technology and General Services Committee

From: Miguel A. Santana, City Administrative Officer 

Reference: **GSD REPORT - PROVIDING FOR THE FINANCIAL SUSTAINABILITY OF THE GREEN RETROFIT PROGRAM FOR CITY-OWNED FACILITIES**

Subject: **REPORT BACK ON PROVIDING FOR THE FINANCIAL SUSTAINABILITY OF THE GREEN RETROFIT PROGRAM FOR CITY-OWNED FACILITIES**

At its meeting on January 8, 2013, the Information Technology and General Services Committee considered a report from the Department of General Services (GSD C.F. 11-1394) regarding recommendations to develop a financially sustainable green retrofitting program for City-owned facilities. The Chair then directed this Office to review the GSD proposal, including policy options, specific recommendations, and fiscal impact.

SUMMARY

In order to fulfill the intent and goals of the City's Green Retrofit and Workforce Program (Green Program), the City Council instructed the Department of General Services to prepare a report for Council consideration which would establish a Special Revenue Fund or appropriate mechanisms to support the financial sustainability of green retrofitting all existing City-owned buildings and public spaces.

Summary of Prior Energy Efficiency Projects

Beginning in 2001, the Mayor and Council authorized GSD to enter into loan agreements with the Department of Water and Power to borrow funds for energy efficiency projects. According to GSD, the program resulted in completion of over 250 energy conservation projects and reduced City's energy consumption by approximately 20 million kWh (kilowatt hour) annually.

GSD also continues to apply for California Energy Commission (CEC) loans to complete additional energy conservation projects. In addition, GSD is currently working with the Mayor's Office to develop a financial strategy to identify grants and private financing opportunities to complete additional energy conservation projects.

In 2009, the City received \$13 million in American Reinvestment and Recovery Act – Energy Efficiency Conservation Block Grant (EECBG) funding to retrofit 33 City facilities.

Most recently, in September 2011, the Mayor and Council approved a three-year program to retrofit 52 City buildings utilizing the Qualified Energy Conservation Bonds (QECBs) in the amount not to exceed \$12 million. The net debt service will average approximately \$740,000 per year.

Summary of Recommendations

The Recommendations, if approved, will:

- **Designate a special fund to implement and expand the City's Green Retrofit and Workforce Program** – the existing Energy Conservation Loan Program Fund will be renamed the Green Retrofit Program Fund, and the scope of the new fund will be expanded to include any income received for the purchase, installation, and monitoring of energy efficiency, water conservation, and other environmentally sustainable measures at City facilities. The new fund will retain all interests, savings, and other earnings attributable to the fund for additional retrofit projects.
- **Incorporate Green Retrofit and Workforce Program as part of the City's budget process** - the General Manager of General Services Department will report annually to the Mayor and Council on energy efficiency, water conservation, and other environmentally sustainable projects implemented and recommend funding for new projects to continue and sustain the Green Program as part of the annual budget process.
- **Develop alternative funding opportunities** - the General Manager of General Services Department will work with the Mayor's Office to develop strategies to identify grants, private financing, and any other alternative funding opportunities to expand the City's Green Retrofit and Workforce Program.

RECOMMENDATIONS

That the Council,

1. Approve the designation of the Energy Conservation Loan Program Fund as the Green Retrofit Program Fund to implement and expand the City's Green Retrofit and Workforce Program,
2. Request the City Attorney to prepare and present an ordinance to amend Los Angeles Administrative Code Section 5.532, Energy Conservation Loan Program Fund as described in the draft amendment (Attachment 1),

3. Direct the General Manager of General Services Department to report annually by January 31 to the Mayor and Council on energy efficiency, water conservation, and other environmentally sustainable projects implemented and recommend new projects to continue and sustain the Green Program as part of the annual budget process, and
4. Direct the General Manager of General Services Department to work with the Mayor's Office to develop strategies to identify grants, private financing, and any other alternative funding opportunities to expand the City's Green Retrofit and Workforce Program.

FISCAL IMPACT STATEMENT

If the proposed changes are implemented, no additional General Fund impact is expected.

FINDINGS

1. GSD PROPOSAL

GSD is proposing several funding strategies to ensure financial sustainability of the Green Program (Attachment 2)

a) ISSUANCE OF ADDITIONAL QUALIFIED ENERGY CONSERVATION BONDS (QECBs)

In September 2011, the Mayor and Council approved a three-year program to retrofit 52 City buildings utilizing the Qualified Energy Conservation Bonds (QECBs) in the amount not to exceed \$12 million. The QECBs are federally-subsidized bonds that enable local governments such as the City to borrow money to fund energy conservation projects at very attractive borrowing rates over long terms. The QECB Program requires that the retrofitted buildings achieve at least 20% reduction in energy consumption. The initial \$12 million in QECBs approved by the Mayor and Council is a portion of the total \$39.8 million allocation that the City received in 2010.

b) ADDITIONAL DEPARTMENT OF WATER AND POWER (DWP) and CALIFORNIA ENERGY COMMISSION (CEC) LOANS

Various DWP and CEC loans are available to implement energy efficiency projects at City facilities. The City should continue to use these resources to fund energy conservation efforts. Council has authorized GSD to apply and accept loans from both agencies.

c) GRANT OPPORTUNITIES

The Mayor's Office and GSD are developing strategies to identify grants, private financing, and any other alternative funding opportunities.

d) DEDICATED SPECIAL FUND FOR THE GREEN PROGRAM

GSD recommends the amendment of LACC Section 5.532, the Energy Conservation Loan Program Fund, to provide a financially sustainable mechanism for the Green Program. The Energy Conservation Loan Program Fund was created to allow the City to receive, retain, and disperse loan or other monies from the DWP for the purchase and installation of energy efficiency measures in City facilities. The draft ordinance is attached.

The proposed amendment of Section 5.532 will:

- a) Change the name of the Energy Conservation Loan Program Fund to the Green Retrofit Program Fund,
- b) Expand the scope of the fund to include any income received for the purchase, installation, and monitoring of energy efficiency, water conservation, and other environmentally sustainable measures at City facilities,
- c) Attribute all interests, savings, surpluses, other earnings to the fund,
- d) Authorize the General Manager of GSD to make expenditures consistent with the purpose of the fund, including transfer of expenditures incurred or paid by other funds, and
- e) Require the General Manager of GSD to report annually to the Mayor and Council on energy efficiency, water conservation, and other environmentally sustainable projects implemented and recommend new projects to continue and sustain the Green Program.

2. CAO REVIEW OF GSD PROPOSAL

This Office supports the expansion of the scope of the current Energy Conservation Loan Program Fund to include all energy, water, and environmentally sustainable measures and dedicating the new fund as the Green Retrofit Program Fund is an appropriate mechanism for the City to support the Green Retrofit Program.

Once the retrofit energy savings for the initial \$12 million QECB projects are completed and audited to ensure eligibility for the QECB Federal interest rate subsidy, GSD may request approval for additional QECB funding as part of the annual budget process.

GSD may also request approval for application of DWP or CEC loans. GSD may submit a project list with capital cost requirements, projected energy savings, and a repayment schedule to the Mayor and Council for approval.

GSD should work closely with the Mayor's Office to develop long-term strategies to identify grants, private financing, and any other alternative funding opportunities that do not impact the

General Fund to expand the City's Green Retrofit and Workforce Program whenever possible.

3. QECB PROGRAM ANALYSIS

The current Qualified Energy Conservation Bond Program consists of the retrofit of 52 City facilities to achieve energy consumption savings. The QECBs are federally-subsidized bonds that enable local governments such as the City to borrow money to fund energy conservation projects at very attractive borrowing rates over long terms. The QECB Program requires that the retrofitted buildings achieve at least 20% reduction in energy consumption. The three-year retrofit program was approved by Council and Mayor in September 2011. The QECBs repayment term is 17 years.

Although the specific percentage rate of reduction in energy consumption can be calculated based on energy use audit of various building systems (lighting, heating, ventilation, air conditioning, and others), there are several challenges in analyzing the actual monetary savings generated by the retrofits as a result of the following factors:

- The energy rate paid by the City changes over time. If the energy retrofit projects reduce consumption by 20% on the average for a building, the actual monetary savings will increase in tandem with any energy rate increases. Future rate increases are difficult to project in a long-term financial analysis. There are specific laws such as the California Global Warming Solutions Act of 2006 (Assembly Bill 32 or AB 32) that require California to reduce its statewide green-house gas emissions to 1990 levels by 2020. The State's Air Resources Board is tasked with implementing AB 32, and the City's efforts to comply with the legislation will impact energy rates. Over time, the energy retrofit project will lessen the financial impact of any future rate increases.
- The building utilization time is increased or decreased because of changes in service levels provided. For example, if the Library hours are increased after the energy retrofit project is completed; the total energy consumption of the building on monthly/yearly basis would increase significantly due to increased utilization.
- Each energy retrofit project has different life-cycle costs. A lighting system life-cycle can be as short as three to four years or can last a decade depending on type and usage level. HVAC (heating, ventilation, air conditioning) systems are often costly and project energy savings are heavily dependent on life-cycle costs of each system.

As a result, the above-mentioned factors and other energy retrofit related issues, it is difficult to produce more accurate estimates of energy savings. The information provided in the following table provides an overview of the projected cost and savings for the current QECB program.

Qualified Energy Conservation Bond Program

	<u>Annual</u>	<u>Total (17 years)</u>
Debt Service - average	\$964,409	\$16,394,953
Federal Interest Subsidy - average	-\$224,647	-\$3,818,999
Net Debt Service	\$739,762	\$12,575,954

	<u>Annual</u>	<u>Total (15 years)*</u>
Expected Energy Savings	\$1,286,456	\$19,296,840
Total Net Savings		\$6,720,886

* Accounts for construction time prior to energy savings being realized

The analysis shows that the QECB Program will provide approximately \$6.7 million in net savings over the 17 year repayment schedule. As the actual energy savings are quantified and audited for the QECB Program. The data will provide the basis for a more complete financial analysis. The data will allow for a plan to expand or extend the City Green Energy Program.

Attachments

ATTACHMENT 1

Draft Amendment

Existing Ordinance No. 174068 Chapter 132, Division 5 of the Los Angeles Administrative Code provides that the City may borrow funding from the City's Department of Water and Power for the purchase and installation of energy efficiency and conservation measures in City buildings and facilities. This amendment would allow for the inclusion of water efficiency and conservation measures, maintain a financial accounting of savings, ensure loan accounting and repayment, and provide for the future sustainability of all conservation programs from any and all sources of conservation funding.

Chapter 132, Division 5 of the Los Angeles Administrative Code, is amended to provide for an Energy and Water Conservation Program Fund.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Chapter 132, Division 5 of the Los Angeles Administrative Code, is hereby amended to read:

CHAPTER 132

GREEN RETROFIT PROGRAM FUND Sec. 5.532 Creation and Administration of the Fund.

- a. There is hereby created and established in the Treasury of the City of Los Angeles a special fund to be known as the "Energy and Water Conservation Program Fund," hereinafter referred to in this Chapter as the "Fund."
- b. The purpose of the Fund shall be for the receipt, retention and disbursement of grant and other monies and property accepted from persons or entities or, otherwise received by the City for the purchase, installation and monitoring of energy and water efficiency measures in City buildings and facilities.
- c. All interest and other earnings, including energy and water rebates and incentives attributable to this program in the Fund shall be credited to the Fund and shall be devoted to the purposes thereof.
- d. The Fund shall be administered by the General Manager of the Department of General Services, or his or her designee, hereinafter referred to in this Chapter as

the "General Manager." Expenditures therefrom shall be authorized by the General Manager consistent with one or more provisions of Los Angeles City Ordinance No.180633, to fund the cost of purchasing, installing and monitoring energy and water efficiency measures in City buildings and facilities. For the purposes of this Section, expenditures shall include the transfer of expenditures incurred and/or paid by any other Funds administered by the Department of General Services. The General Manager shall report annually by January 31 on energy and other savings that result from completed energy and water remediation projects and provide recommendations for new projects to the Mayor and City Council with the intention of continuing and sustaining conservation projects in the City.

- e. All revenues and expenditures of the Energy and Water Conservation Program shall be accounted for in the Fund. The General Manager shall report to the City Council regarding and identifying all revenues and expenditures of the Fund, as well as the purposes for which the expenditures were made. Each report shall cover a fiscal year and shall be submitted within 60 days after the close of said fiscal year.
- f. At the close of any fiscal year, surplus money remaining in the fund shall remain in the Fund and shall not revert to the Reserve Fund to ensure the future sustainability of energy and water conservation projects.

Sec. 2. The City Clerk shall certify to the passage of this ordinance and cause the same to be published in some daily newspaper printed and published in the City of Los Angeles.

I hereby certify that the foregoing ordinance was passed by the Council of the City of Los Angeles at its meeting of

City Clerk

By _

Deputy

City Attorney.

By

Deputy City Attorney

EETAP Submissions

Fiscal 2014

Building Name	Building Address
Braude Building	6262 Van Nuys Blvd
LAFD Air Ops	16617 Arminta
Central Police Station	251 E 6th St
Van Nuys Police	6240 Sylmar
77th St Police	7600 Broadway
West Valley Police	19020 Vanowen
Newton Police	3400 S Central
Main City Hall	2200 N Spring St
ARTC	5651 Manchester Blvd
Police Administration Building	100 W 1st

Fiscal 2015

Building Name	Building Address
Emergency Operations Center	500 E Temple
Metro 911	100 N LA St
Valley 911	23001 Roscoe Blvd
Metro Detention	180 N LA St
East Valley Refuse	11050 Pendelton St
Hollenbeck Police Station	2111 E 1st St
Harbor Police Station	2175 Gibson Blvd
FS 401 Shops	140 N Ave 19
DOT Hollywood	411 Vermont
Southwest Police Station	1546 MLK Blvd