

AGENDA: May 19, 2009

7.1

CATEGORY: New Business

DEPT.: Public Works

TITLE: Energy Efficiency and Conservation Block Grant

RECOMMENDATION

Authorize the City Manager or designee to apply for Federal stimulus funding from the Department of Energy (DOE) through the *Energy Efficiency and Conservation Block Grant (EECBG)* program.

FISCAL IMPACT

Mountain View will receive \$719,000 through the Energy Efficiency and Conservation Block Grant program. These funds are proposed to be used toward three projects. Two of the projects (tennis court LED lights and residential energy efficiency program) would be fully funded using \$419,000 of the grant funds. The remaining project (Shoreline Park microturbines) would be partially funded using \$300,000 of grant funds. The remaining \$200,000 cost for this project is proposed to be funded through Shoreline Infrastructure Maintenance CIPs.

BACKGROUND AND ANALYSIS

In February 2009, the United States Congress funded the Energy Efficiency and Conservation Block Grant program as part of the American Recovery and Reinvestment Act (ARRA). The purpose of the EECBG program is to assist eligible entities in implementing strategies to reduce fossil fuel emissions within their jurisdictions, reduce their own total energy use and improve energy efficiency in the transportation, building and other appropriate sectors. A comprehensive list of authorized activities is provided in Attachment 1.

Of the \$3.2 billion allocated to the EECBG program, Congress designated \$2.6 billion for formula grants to states, U.S. territories, local governments and Indian tribes. The remainder of the funds will be available through competitive grants. Based on population, the City of Mountain View will receive \$719,000. The City must submit an application to the Department of Energy detailing a plan for the use of these funds by June 25, 2009. The application must include an *Energy Efficiency and Conservation Strategy (EECS)* that describes how the funds will be used, leveraged, sustained and accounted for. The DOE must review applications within 180 days from the date of submission. Applicants whose plans are not approved will be given feedback and the opportunity to resubmit their proposals. The funds will be disbursed following DOE approval of the application and EECS.

Program Guidelines

DOE has developed the following core principles to guide entities during the program and project planning process:

- Prioritize energy efficiency and conservation first as the cheapest, cleanest and fastest way to meet energy demand.
- To maximize benefits over the longest possible term, entities should look for ways to link their energy-efficiency efforts to long-term priorities (especially community economic development, community stabilization and poverty reduction efforts).
- Invest funds in programs and projects that create and/or retain jobs and stimulate the economy while meeting long-term energy goals.
- Target programs and projects that will provide substantial, sustainable and measurable energy savings, job creation and economic stimulus effects.
- Give priority to programs and projects that leverage Federal funds with other public and private resources, including coordinated efforts involving other Federal programs targeting community development funded through the Recovery Act such as the Community Development Block Grant program, HOME and job training programs.
- To the extent possible, develop programs and strategies that will continue beyond the funding period.
- Ensure oversight, transparency and accountability for all program activities.
- Enact policies that transform markets, increase investments and support program goals.
- Develop comprehensive plans that benchmark current performance and set aggressive goals.

Measurement and Reporting

With transparency and accountability being cornerstone elements of Federal stimulus programs, the City must be able to demonstrate and report on the following five metrics for the projects it selects:

- Jobs created and/or retained.
- Energy saved.

- Renewable energy generated.
- Greenhouse gas (GHG) emissions reduced.
- Cost savings.

Following approval of its application, the City will be required to provide detailed reports on its progress according to the following schedule:

- *Quarterly* (financial and ARRA performance progress reports).
- *Annually* (DOE performance progress report).
- *At Project Completion* (financial and property certification reports).

Proposed Projects

With the program guidelines in mind, staff gathered and evaluated a comprehensive list of possible projects and programs and recommends allocating the EECBG funds among three projects:

1. Retrofitting Rengstorff Park and Cuesta Park tennis court lights with energy-efficient LED bulbs.
2. Upgrading the Shoreline at Mountain View microturbines that generate renewable energy from landfill gas.
3. Providing free or subsidized home energy audits and efficiency devices to Mountain View residents.

A summary of these projects, including total cost, financial savings, GHG emissions reduced and jobs created, is located in Attachment 2. The projects sustain and create jobs, invest in the market for renewable energy technologies, leverage available funds and use resources efficiently to meet the grant priorities established by the Department of Energy. In addition, these projects balance the benefits of EECBG funding between internal City operations and the residents of Mountain View. Descriptions of projects evaluated and selected by staff as alternatives can be found in the Alternatives section of this report and in Attachment 3. Descriptions of projects evaluated but deemed a poor match for the grant can be found in Attachment 4.

1. *Retrofitting Rengstorff Park and Cuesta Park Tennis Court Lights.*
 - Eligible under Activity Area 5, Energy Efficiency Retrofits (Attachment 1).

- Cost: \$208,800.
- Portion of cost funded through EECBG: 100 percent (\$208,800).

The City proposes replacing 128 1,000-watt high-pressure sodium bulbs with 128 230-watt LED-retrofitted lighting plates at the Rengstorff Park and Cuesta Park tennis courts.

2. *Upgrading the Shoreline Park Microturbines.*

- Eligible Under Activity Areas 9, Energy Distribution, and 11, Reduction and Capture of Methane and Greenhouse Gases (Attachment 1).
- Cost: \$500,000.
- Portion of cost funded through EECBG: 60 percent (\$300,000).
- Portion of cost funded through Shoreline Infrastructure Maintenance CIPs: 40 percent (\$200,000).

The City operates two microturbines in the Shoreline at Mountain View area that generate electricity from landfill gas. In 2007, together they produced over 1 megawatt of renewable energy. Much of the generated energy goes to power the City's irrigation and sewage pumps and other City facilities. The microturbines will require an upgrade in 2010 in order to continue to operate.

The DOE stresses the importance of leveraging funds to the greatest extent possible. Since this project has good payback and there is a recognized need to upgrade the microturbines, staff believes that supplementing the EECBG grant with funding from Shoreline Infrastructure Maintenance CIPs is an appropriate way to fully fund the project.

3. *Providing Residential Energy Audits and Upgrades.*

- Eligible under Activity Areas 3, Residential and Commercial Building Energy Audits, and 4, Financial Incentive Programs (Attachment 1).
- Cost: \$210,200 for 1,100 to 1,500 home energy audits over 1.5 years.
- Portion of cost funded through EECBG: 100 percent (\$210,200).

According to a recent inventory of the City's GHG emissions, the residential sector accounts for approximately 13 percent of Mountain View's emissions. Thus, to support the City's overall goal of emissions reductions, staff proposes developing a residential energy audit and

efficiency program that provides: (1) free or subsidized home energy audits and energy-saving devices; and (2) engages residents in saving additional energy through behavior modification commitments. Given that: (1) a high percentage (approximately 62 percent) of residents live in multi-family units; (2) low-income residents derive the greatest benefit from lower utility bills; and (3) the greatest opportunity for efficiency improvements are in older single-family homes, staff proposes focusing in these three areas. Further, staff will ensure the program leverages the Internet to provide on-line tools and education for use after the in-home audit.

There are several local for-profit and nonprofit organizations specializing in home energy audits and energy-efficiency education. As part of researching this project, staff consulted with two organizations that provide in-home audit programs: (1) HomeZ, a Mountain View for-profit company that focuses specifically in home energy audits and upgrades; and (2) Acterra, a Palo Alto environmental nonprofit organization that provides basic home energy audits using volunteers and is working with several other local cities in this capacity. To maximize the efficiency of the EECBG funds, the City will issue an RFP for one or more organizations to run the home energy audit and upgrade the program described above. The selected organization(s) will market the program to the public and track and report appropriate performance metrics to the City.

ALTERNATIVES

Alternatives to the three proposed projects include:

1. Change the amount and/or source of funding allocated to the various projects.
2. Select one or more of the alternate projects described below and presented in more detail (i.e., cost, financial savings, GHG emissions reduced) in Attachment 3.

- *LED Streetlights*

LED streetlights are still quite expensive, so the City would only be able to replace a limited number of lamps with the EECBG funds. Their payback is approximately 15 years. Most importantly, since the City pays a flat rate for its streetlight energy use and PG&E has yet to approve a special rate for LED streetlights, the City would not realize the savings resulting from the increased efficiency of the LED bulbs.

- *Extend Community and Energy Audits and Upgrades*

This alternative would extend the proposed project for an additional six months. Operating this program with grant funds for 2.0 years instead of 1.5 years would allow up to 500 more home energy audits to be conducted.

- Green Building Ordinance

Development of an ordinance to establish green building standards for private buildings is included in the proposed 2009-10 CIP. Utilizing grant funds for some or all of this project would free up CIP funds for other projects. However, the grant metrics required to demonstrate energy efficiency and greenhouse gas savings cannot be easily tracked for this project.

- Commuter Check Program

This program supplies City employees with up to \$100 per month in commuter checks toward the purchase of a monthly train/bus pass. Currently, 57 employees participate in the program which is being considered for elimination as part of the ongoing budget process. While this project does demonstrate energy and greenhouse gas savings, those savings would only be achieved as long as the program was funded, currently at a cost of \$70,000 per year. In contrast, money spent on the proposed projects would demonstrate savings after exhaustion of grant funds.

NEXT STEPS

Following Council approval, staff will prepare and submit an application and Energy Efficiency and Conservation Strategy to the Department of Energy for disbursement of the City's \$719,000 in EECBG funds.

PUBLIC NOTICING—Agenda posting.

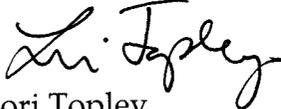
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- Attachments:
1. EECBG Eligible Activities
 2. Summary of Proposed EECBG Projects
 3. Summary of Selected Alternative EECBG Projects
 4. EECBG Projects Analyzed But Not Recommended

EECBG ELIGIBLE ACTIVITIES

1. **Development of an Energy-Efficiency and Conservation Strategy:** Entities may use a grant received under this part to develop and/or implement a strategy for energy efficiency and conservation and to carry out activities to achieve the purposes of the program. All entities receiving direct formula grants from the DOE are required to submit a proposed strategy for approval.
2. **Technical Consultant Services:** Entities may retain technical consultant services to assist the eligible entity in the development of such a strategy, including formulation of energy efficiency, energy conservation and energy usage goals; identification of strategies to achieve those goals through efforts to increase energy efficiency, reduce fossil fuel emissions or reduce energy consumption through investments or by encouraging behavioral changes. Entities may develop methods to measure progress in achieving the goals. Entities may develop and publish annual reports to the population served by the eligible entity describing the strategies and goals and the progress made in achieving them during the preceding calendar year.
3. **Residential and Commercial Building Energy Audits:** Entities may support the conduct of residential and commercial building energy audits.
4. **Financial Incentive Programs:** Entities may establish financial incentive programs and mechanisms for energy-efficiency improvements such as energy-saving performance contracting, on-bill financing and revolving loan funds.
5. **Energy Efficiency Retrofits:** Grants may be made to nonprofit organizations and governmental agencies for the purpose of retrofitting existing facilities to improve energy efficiency.
6. **Energy Efficiency and Conservation Programs for Buildings and Facilities:** Entities may develop and implement energy efficiency and conservation programs for buildings and facilities within the jurisdiction of the entity. The range of activities includes the design and operation of the programs, the identification of the most effective methods for achieving maximum participation and efficiency rates, public education, measurement and verification protocols and identification of energy-efficient technologies.
7. **Development and Implementation of Transportation Programs:** Entities may develop and implement programs to conserve energy used in transportation, including, but not limited to:
 - Employee flex-time programs.

- Promoting use of satellite work centers.
 - Development and promotion of zoning guidelines or requirements that promote energy-efficient development.
 - Development of infrastructure such as bike lanes, pathways and pedestrian walkways.
 - Synchronization of traffic signals.
 - State/local/regional integrated planning activities (i.e., transportation, housing, environmental, energy, land use) with the goal of reducing greenhouse gas emissions and vehicle miles traveled.
 - Incentive programs to reduce commutes by single-occupancy vehicles.
 - Improvements in operational and system efficiency of the transportation system such as implementation of intelligent transportation system (ITS) strategies.
 - Idle-reduction technologies and/or facilities to conserve energy, reduce harmful air pollutants and greenhouse gas emissions from freight movement.
 - Installation of solar panels on interstate rights-of-way to conserve energy in highway operations and maintenance activities.
8. **Building Codes and Inspections:** Entities may develop and implement building codes and inspection services to promote building energy efficiency.
9. **Energy Distribution:** Entities may implement distributed energy-resource technologies that significantly increase energy efficiency, including:
- District heating and cooling systems.
 - Combined heat and power systems.
 - Cogeneration systems.
 - Energy storage systems.
 - Absorption chillers.
 - Desiccant humidifiers.

- Microturbines.
 - Ground source heat pumps.
10. **Material Conservation Programs:** Entities may implement activities to increase participation and efficiency rates for material conservation programs, including source reduction, recycling and recycled content procurement programs that lead to increases in energy efficiency.
 11. **Reduction and Capture of Methane and Greenhouse Gases:** Entities may use grant funds to purchase and implement technologies to reduce, capture and, to the maximum extent practicable, use methane and other greenhouse gases generated by landfills or similar waste-related sources such as wastewater treatment plants, operations producing food waste, dairy farms and other animal operations.
 12. **Traffic Signals and Street Lighting:** Entities may use grant funds to replace traffic signals and street lighting with energy-efficient lighting technologies, including light-emitting diodes and any other technology of equal or greater energy efficiency.
 13. **Renewable Energy Technologies on Government Buildings:** Entities may use grant funds to develop, implement and install on or in any government building of the eligible entity on-site renewable energy technology that generates electricity from renewable resources, including solar energy; wind energy; fuel cells; and biomass.
 14. **Any Other Appropriate Activity:** Entities may submit any other appropriate activity for approval in the Energy Efficiency and Conservation Strategy.

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SUMMARY OF PROPOSED EECBG PROJECTS

#	Project	Details	Total Project Costs	Percent of Project Costs Funded by EECBG	Amount of Project Costs Funded by EECBG	Financial Savings (Per Year)	Payback Period (Years)	GHG Savings (Lbs./Year)	Jobs Created
1	LED Lights	<i>Rengstorff and Cuesta Park Tennis Courts -- Replace 128, 1000-watt bulbs with 128, 230-watt LED retrofitted lighting plates</i>	\$208,800	100%	\$208,800	\$26,981 (City savings)	7.7	82,561	T.B.D.
2	Landfill Microturbines	<i>Shoreline at Mountain View -- Install two 65kW microturbines at the Flare Station / Irrigation Pump Station and Sewage Pump Station</i>	\$500,000	60%	\$300,000	\$102,000 (City savings)	2.9	334,912	T.B.D.
3	Community Energy Audits and Upgrades *	<i>Community Wide -- Develop a program to conduct in-home energy audits and provide instant-savings efficiency devices for Mountain View residents for 1.5 years</i>	\$210,200	100%	\$210,200	\$220 (Per household)	0 - 0.5	3,401,200	3 - 6

* Based on preliminary conversations with a non-profit and a for-profit entity

SUMMARY OF SELECTED ALTERNATIVE EECBG PROJECTS

#	Project	Details	Total Project Costs	Financial Savings (Per Year)	Payback Period (Years)	GHG Savings (Lbs./Year)	Jobs Created
4	LED Streetlights	<i>Community Wide --</i> Convert all City streetlights to LED bulbs	\$1,557,000	\$107,000	14.6	327,267	T.B.D.
5	Community Energy Audits and Upgrades *	<i>Community Wide --</i> Develop a program to conduct in-home energy audits and provide instant-savings efficiency devices for Mountain View residents for 2.0 years	\$288,346	\$220 (Per household)	0 - 0.5	4,859,200	3 - 6
6	Green Building Ordinance	<i>Community Wide --</i> Develop a green building ordinance for <i>private development</i>	\$70,000	Unknown	Unknown	Unknown	T.B.D.
7	Commuter Checks	<i>City Employees --</i> Continue offering public transportation commute incentives for City employees	\$70,000	T.B.D.	T.B.D.	T.B.D.	0

* Based on preliminary conversations with a non-profit and a for-profit entity

EECBG PROJECTS ANALYZED BUT NOT RECOMMENDED

Solar Power

EECBG guidelines allow solar panels attached to City buildings but, given their typical 8- to 15-year payback, they are not as attractive an option. Furthermore, power purchase agreements (PPAs), which require no up-front City investment, may be a better source of funding for City solar energy.

Solar Hot Water

While the Eagle Pool heater consumes a significant amount of energy and would have benefited from a solar heater, upgrades associated with swimming pools are ineligible for funding under EECBG guidelines.

Wind Power

Preliminary analysis indicates the City does not have suitable locations for installing economically viable wind turbines. Since the EECBG program seeks measureable results and requires clear reporting of performance metrics, using these funds to install a wind anemometer to derive more conclusive data on Mountain View's potential for wind power was deemed inappropriate.

Pumps and Motors

Staff analyzed replacing pumps and motors in the irrigation pump station, but with a 33.3-year payback and no electricity/greenhouse gas savings, it was not deemed a viable option.

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