DATE ISSUED: March 18, 2002 REPORT NO: 02-060

ATTENTION: Committee on Rules, Finance and Intergovernmental Relations
Agenda of March 20, 2002

SUBJECT: US Green Building Council Leadership in Energy and Environmental Design Certification Program

SUMMARY:

Issue: Should the City revise Council Policy 900-14, Sustainable Building Practices ("Green Building") for Public and Private Projects, to adopt the US Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Certification Program "Silver Level" as the design standard for all future City facilities larger than 5000 square feet?

Manager's Recommendations:

1. Revise Council Policy 900-14 to reflect updated California Title 24 energy requirements and adopt the USGBC LEED "Silver Level" as the design standard for future City facilities larger than 5000 square feet.
2. Require each design development team to provide a cost analysis related to implementation of the LEED "Silver Level", including increased capital cost for construction, benefits of reduced life cycle costs and estimated simple payback periods.
3. Incorporate an Energy Conservation and Management Division LEED certification review and signing authority into Requests for Council Action and Requests for Manager Action for all City projects including new construction, remodels or modifications.
4. Include an Energy Conservation and Management Division LEED certification review during the 30 and 90 percent construction drawing review process for all City construction projects.
5. Direct the Public Buildings and Parks Division of the Engineering and Capital Projects Department to incorporate LEED "Silver Level" certification in capital improvement projects approved for design in fiscal year 2003.

Other Recommendations – None

Fiscal Impact – None with this action. Additional costs for implementation of LEED requirements will be evaluated with each project.

BACKGROUND

California, and the City, entered into 2001 in the midst of an unprecedented energy emergency as a result of the consequences of the State's 1996 energy deregulation legislation. Energy supplies were unreliable, rolling black outs had been experienced in parts of the state, energy prices had doubled and Summer 2001 was predicted to have severe energy shortages with up to 35 days of rolling blackouts.

In his January 8, 2001 State of the City Address, Mayor Murphy outlined ten goals for the City to pursue during his term in office. Goal #9, Pursue Energy Independence, addressed the energy issues facing the City and proposed establishing a City Energy Administrator position and implementing a program to make San Diego a model city in terms of energy conservation and the use of renewable energy resources. On February 12, 2001, Council adopted a comprehensive resolution, R-2001-1112, directing the City Manager to implement the Mayor's energy recommendations. An Interim Energy Administrator was appointed on February 13, 2001, and the Energy Conservation and Management Division was established in the Environmental Services Department on July 1, 2001.

The City's strategy to address the energy emergency and pursue energy independence was outlined in City Manager Report No. 01-032 to the Rules Committee on February 21, 2001. The strategy involved five areas and significant activity has taken place in each of them as described below:

1. Manage City Energy Use. The Energy Conservation and Management Division was designated as the central point to receive, process and manage all City energy accounts and bills. Each of the over 3,000 energy accounts is being validated to ensure it is a City account, charged to the correct department and at the most appropriate tariff rate. The City is entering into an Electronic Data Interchange Agreement with SDG&E so all energy bills will be received, processed and paid electronically. When combined with new business intelligence software and time of use meters, the City will have a far greater ability to analyze and manage its energy use than has ever been possible.
2. Conserve Energy. In calendar 2000, total City energy use was 217 million kilowatt hours. Through the City's Summer Action Plan and broad based conservation efforts by City departments, calendar 2001 energy consumption was reduced by almost 21 million kilowatt hours compared to the prior year's energy consumption. Conservation efforts will be a continuing priority in the City's energy management strategy.
3. Enhance Energy Efficiency in Existing City Facilities. The majority of the City's

future energy consumption will be in or by existing facilities. The City has been upgrading the energy efficiency of those facilities on an on-going basis and needs to continue to replace less efficient energy consuming equipment with higher energy efficiency equipment. Examples of the upgrades include replacing the chillers in the City Administration Building, changing from T-12 florescent lamps with mechanical ballasts to T-8 bulbs with electronic ballasts, replacing incandescent traffic signal bulbs with LED bulbs that use 90% less energy and have a 5 to 7 year life compared to 18 months for incandescent bulbs, and installing active daylighting systems in City buildings to virtually eliminate the use of artificial lighting for most daylight hours. Up-grading the energy efficiency of existing facilities has the potential to significantly reduce total City energy consumption and should be continued as an on-going strategy.

4. Pursue Energy Independence in City Facilities through Self-Generation of Electrical Energy using Renewable Resources. Three of the City's wastewater facilities are energy independent, because they generate more power than they use, by utilizing the methane gas from the wastewater treatment processes and landfill gas from the Miramar Landfill as a renewable resource fuel. Additionally, in 2001, the City commissioned a 1.3 MW hydroelectric generation unit at the Point Loma Treatment Plant using treated water entering the offshore discharge pipe as its "fuel." In early April, Council will be asked to approve the first two City photovoltaic energy generation systems for the Environmental Services Department's Ridgehaven Green Building and its Miramar Place Operations Center Administration Building. Additional projects will be brought forward as funding is secured.
5. Ensure Energy Efficiency in New Facilities and Major Remodels. Council Policy 900-14 requires new City facilities and major remodels to be designed to be 25% more energy efficient than required by Title 24, the State's energy efficiency standards. Recently, the City adopted the 2000 edition of California's Title 24 that reduces energy consumption in new facilities by 37% compared to the prior standard. As a result, Council Policy 900-14 needs to be updated.

As the City entered into 2002, the energy situation was greatly improved with sufficient energy supplies during the first quarter due to conservation, new generating facilities and long-term energy supply contracts. Energy supplies are projected to be adequate for Summer 2002 unless conservation wanes and high temperatures are experienced. However, the City needs to remain committed, on a long-term basis, to its comprehensive energy management strategy and the pursuit of energy independence.

Adopting the LEED "Silver Level" as the City's design standard would be a positive step toward achieving energy independence and sustainable development. This report discusses the benefits of adopting the LEED "Silver Level" as the City's design goal for all new City facilities and significantly remodeled facilities over 5,000 square feet.

DISCUSSION

The LEED certification program was developed between 1995 and 1998 by USGBC volunteers, including architects, engineers and contractors, to foster the development of more environmentally friendly and sustainable buildings. In December 1998, the USGBC launched 50 pilot projects. The pilot program ended in October 1999 and evaluations of the pilot projects refined the LEED certification program to be more performance based rather than prescriptive based. In March 2000, USGBC awarded 12 pilot LEED certifications. In 2002, the USGBC anticipates incremental project cost reductions as architects, engineers, and contractors participate in education programs to clarify and reduce documentation requirements for the various certification levels.

The LEED certification program targets design and construction practices that significantly reduce or eliminate the negative impacts of construction on the environment and the facility occupants by addressing five major areas:

1. Sustainable site planning
2. Safeguarding of water and water efficiency
3. Energy conservation
4. Conservation of materials and resources
5. Indoor environmental quality

LEED certification projects exist in Australia, Canada, China, France, Hong Kong, India, Japan and Spain. United States interest includes both State and City agencies. State users include California, Maryland, Massachusetts, New Jersey, New York, Oregon, and Pennsylvania. Local Government jurisdictions that have adopted LEED standards for new facilities include Austin TX, Arlington VA, Boulder CO, Cook County IL, Portland OR, San Jose CA, and Seattle WA.

The USGBC LEED Rating System is a self-assessing system to guide project development. There are four possible levels of LEED certification:

LEED Certified	26 to 32 points
Silver Level	33 to 38 points
Gold Level	39 to 51 points
Platinum Level	52 to 69 points

There are 64 points possible by meeting goals and objectives in the five primary LEED categories. An additional 5 points can be obtained for innovation and team accreditation, resulting in a maximum of 69 points for any one project.

Goals of the LEED Rating System

Sustainable Sites - 14 pt. maximum
- ?Develop only appropriate sites
- ?Reuse existing building and/or sites
- ?Protect natural and agricultural use
- ?Reduce needs for automobile use
- ?Protect and/or restore sites

Water Efficiency - 5 pt. maximum
- ?Reduce the quantity of water needed for the building
- ?Reduce municipal water supply and treatment burden

Energy and Atmosphere - 17 pt. maximum
- ?Establish energy efficiency and system performance
- ?Optimize energy efficiency
- ?Encourage renewable and alternative energy sources
- ?Support ozone protection protocols

Materials and Resources - 13 pt. maximum
- ?Reduce the amount of materials needed
- ?Use materials with less environmental impact
- ?Reduce and manage waste

Indoor Environmental Quality - 15 pt. maximum
- ?Establish minimum indoor air quality performance to prevent the development of indoor air quality problems in buildings, maintaining the health and well being of the occupants.

LEED Innovation & Accreditation Credits - 5 pt. maximum
- ?To provide design teams and opportunity to be awarded points for exceptional performance above requirements set by LEED or innovation Performance in Green Building categories not specifically addressed in LEED
- ?Accredited Professional

A majority of government agencies participating in the USGBC LEED certification program have adopted the LEED "Certified" or LEED "Silver Level" as the standard for new facilities within their jurisdictions. A facility built to new California Building Code (Title 24) standards will attain 16-18 points strictly as a reflection of the code's minimum energy standards. The additional 19-20 points to reach the "Silver Level" could be a combination of additional energy conservation measures, sustainable site selection, water efficiency, indoor environment quality, or other items listed above.

Currently, the USGBC reports project budgets in northern California were increased by 0.5 to 3 percent for LEED "Certified" and 8 to11 percent for LEED "Silver Level". Additional City staff time will be required for design review and LEED documentation that is expected to add an additional 1.5 percent to project cost until standard processing procedures are developed.

This small increase, as a percentage of initial capital cost, associated with delivering LEED "Silver Level" facilities will yield an estimated payback period of 5 to 10 years. This payback results from increased building efficiencies associated with energy conservation, water conservation and improved building performance. The reduction in

operating cost for a LEED "Silver Level" facility is estimated to be between 17 to 25 percent. This reduction accumulates annually for the facility's full life cycle and reflects a true cost reduction after the initial payback period.

ALTERNATIVE

Do not revise Council Policy 900-14, Sustainable Building Practices ("Green Building") for Public and Private Projects, to adopt the US Green Building Council's, Leadership in Energy and Environmental Design (LEED) Certification Program "Silver Level" as the design standard for all future City facilities larger than 5000 square feet.

This is not recommended because LEED "Silver Level" facilities are highly cost effective over their full life cycle, and few City buildings are sold or taken out of service in less than the normal life cycle for a building.

Respectfully submitted,

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Tom Blair
Energy Administrator

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Richard L. Hays
Environmental Services Director

Approved:

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George I. Loveland
Senior Deputy City Manager

HAYS/EPLER/TB