

MEETING DATE: 02/25/08

AGENDA ITEM: Introduction of an Ordinance Establishing a Mandatory 1 Kw Solar Photovoltaic Requirement for Each 10,000 Square Feet of Gross Floor Area of New Construction for Commercial and Multi-Family Projects, Including Additions Equal to 10,000 Square Feet or More of Gross Floor Area and Major Renovations to Existing Buildings of 10,000 Square Feet or More of Gross Floor Area.

ATTACHMENTS

		<u>Pages</u>
1.	Ordinance (redline and final versions)	1-10
2.	January 22, 2008 City Council Agenda Item Report	11-16

ATTACHMENT 1

ORDINANCE NO. 2008-_____

AN ORDINANCE OF THE CITY OF CULVER CITY, CALIFORNIA, AMENDING CHAPTER 15.02 OF THE CULVER CITY MUNICIPAL CODE TO ADD SUBCHAPTER 15.02.1000, *et seq.*, ESTABLISHING A MANDATORY 1KW SOLAR PHOTOVOLTAIC REQUIREMENT PER 10,000 SQUARE FEET OF GROSS FLOOR AREA OF NEW CONSTRUCTION.

WHEREAS, California Health and Safety Code §13146 requires local jurisdictions to enforce the California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code; and

WHEREAS, California Health and Safety Code § 17958(a) allows local jurisdictions to establish more restrictive building standards than those contained in the California Building Standards Code, if the amendment is reasonably necessary because of local climatic, geological, or topographical conditions; and

WHEREAS, California Public Resources Code §25402.1 states that a local agency may adopt more restrictive energy standards when they are cost-effective and approved by the California Energy Commission ("CEC"); and

WHEREAS, energy efficiency is an important part of a sustainable Culver City, and Culver City is part of the greater Los Angeles Basin, which climate and topography are known to trap air pollutants that are known to be harmful to human health; and

WHEREAS, solar photovoltaic power generation consumes no fossil fuels, generates no air pollution and will therefore increase energy efficiency and will reduce air pollution in the Los Angeles Basin and Culver City; and

WHEREAS, the City Council of the City of Culver City desires to establish a

mandatory 1kw solar photovoltaic requirement per 10,000 square feet of new construction for commercial and multi-family projects; and

WHEREAS, on June 21, 2007, the CEC approved the City's application for a "Locally Adopted Energy Standard" for a mandatory 1kw solar photovoltaic requirement per 10,000 square feet of new construction for commercial and multi-family projects.

NOW THEREFORE, the City Council of the City of Culver City, California,
DOES HEREBY ORDAIN as follows:

SECTION 1. Based on the foregoing recitations and findings, Chapter 15.02 of the Culver City Municipal Code is hereby amended to add subchapter 15.02.1000, *et seq.* as follows:

SOLAR PHOTOVOLTAIC SYSTEMS

§15.02.1000	Definitions.
§15.02.1005	Requirement.
§ 15.02.1010	Exceptions.
§ 15.02.1015	Building Permit Fees and Inspections.

§ 15.02.1000 DEFINITIONS.

Terms defined herein shall have the following meanings when used in this Subchapter:

Building Official shall mean the Building Official of the City of Culver City or his or her designee.

California Energy Efficiency Standards shall mean the California Energy Efficiency Standards set forth in Title 24, Part 6 of the California Code of Regulations.

City shall mean the City of Culver City.

Director shall mean the Community Development Director of the City

1 of Culver City or his or her designee.

2 ***Solar Photovoltaic System*** shall mean a system that generates
3 electricity from the sun.

4 **§ 15.02.1005 REQUIREMENT.**

5 All new buildings of 10,000 square feet or more of gross floor area,
6 additions equal to 10,000 square feet or more of gross floor area, and major
7 renovations to existing buildings of 10,000 square feet or more of gross floor
8 area where such renovation is equal to at least fifty percent (50%) of the
9 valuation of the existing building, excluding one and two family residences,
10 parking structures, garages, and renovations or additions to existing
11 buildings, shall be equipped with a 1kw solar photovoltaic system per each
12 10,000 square feet of gross floor area, or fraction thereof. Except as
13 otherwise expressly provided, this Section shall not apply to one and two
14 family residences, parking structures, garages, and renovations or additions
15 to existing buildings. For qualifying projects, the number of panels required
16 for any given system shall be the total required energy production of the
17 project, divided by the energy production capability of a single panel as
18 specified on the project. When calculating the number of panels required,
19 fractional panels equal to or greater than one half shall be rounded up to the
20 nearest whole number; fractional panels less than one half shall be rounded
21 down to the nearest whole number.

22 **§ 15.02.1010 EXCEPTIONS.**

23 Upon the written approval of the Director, an applicant who is unable
24 to install the required solar photovoltaic system due to the configuration of the
25 proposed construction project shall comply with one of the following options
26 in order to satisfy the requirements set forth in Section 15.02.1005:
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1 A. *In-lieu Fee.* An applicant shall pay an in lieu fee in an amount
2 equal to the cost of a solar photovoltaic system installed in a comparable
3 project. Fees generated from in lieu payments pursuant to this subsection,
4 shall be appropriated and disbursed only for solar photovoltaic designs and
5 installations on City buildings or facilities. The amount and process for the
6 collection, utilization and return of fees contemplated by this Section shall be
7 established by resolution of the City Council.

8 B. *Alternate Location.* An applicant shall install a solar
9 photovoltaic system equivalent to a system installed in a comparable project
10 on another building located in Culver City owned by the applicant.

11 **§ 15.02.1015 BUILDING PERMIT FEES AND INSPECTIONS.**

12 A. Plan check and permit fees in an amount not to exceed Five
13 Thousand Dollars (\$5,000) shall be waived for solar photovoltaic installations.
14 This subsection, 15.02.1015.A, shall remain in effect until March 12, 2018,
15 and as of that date is repealed, unless a later enacted statute, enacted
16 before March 12, 2018, deletes or extends that date.

17 B. The value of the required solar photovoltaic system shall not be
18 required to be included in the overall construction valuation of the project for
19 the purposes of determining building permit fees.

20 C. No final inspection shall be approved for a construction project
21 subject to the requirements of this Subchapter, nor shall a temporary or final
22 certificate of occupancy be issued for such project, prior to the installation of
23 the solar photovoltaic system being completed, inspected and fully
24 operational, unless otherwise excepted pursuant to Section 15.02.1010.

25 **SECTION 2.** Pursuant to Section 619 of the City Charter, this Ordinance
26 shall take effect thirty (30) days after the date of its adoption. Pursuant to Sections 616
27 and 621 of the City Charter, prior to the expiration of fifteen (15) days after the adoption,
28

1 the City Clerk shall cause this Ordinance, or a summary thereof, to be published in the
2 Culver City News and shall post this Ordinance or a summary thereof in at least three
3 places within the City.

4 **SECTION 3.** The City Council hereby declares that, if any provision, section,
5 subsection, paragraph, sentence, phrase or word of this ordinance is rendered or declared
6 invalid or unconstitutional by any final action in a court of competent jurisdiction or by
7 reason of any preemptive legislation, then the City Council would have independently
8 adopted the remaining provisions, sections, subsections, paragraphs, sentences, phrases
9 or words of this ordinance and as such they shall remain in full force and effect.

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11 **APPROVED AND ADOPTED** this _____ day of _____, 2008.

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14 _____
15 ALAN CORLIN, Mayor
16 City of Culver City, California

17 ATTEST:

APPROVED AS TO FORM:

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20 _____
21 CHRISTOPHER ARMENTA, City Clerk

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CAROL A. SCHWAB, City Attorney

ORDINANCE NO. 2008-_____

AN ORDINANCE OF THE CITY OF CULVER CITY,
CALIFORNIA, AMENDING CHAPTER 15.02 OF THE CULVER
CITY MUNICIPAL CODE TO ADD SUBCHAPTER 15.02.1000,
et seq., ESTABLISHING A MANDATORY 1KW SOLAR
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FEET OF GROSS FLOOR AREA OF NEW CONSTRUCTION.

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jurisdictions to enforce the California Code of Regulations (CCR), Title 24, also known as
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jurisdictions to establish more restrictive building standards than those contained in the
California Building Standards Code, if the amendment is reasonably necessary because of
local climatic, geological, or topographical conditions; and

WHEREAS, California Public Resources Code §25402.1 states that a local
agency may adopt more restrictive energy standards when they are cost-effective and
approved by the California Energy Commission ("CEC"); and

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City, and Culver City is part of the greater Los Angeles Basin, which climate and
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WHEREAS, the City Council of the City of Culver City desires to establish a

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WHEREAS, on June 21, 2007, the CEC approved the City's application for a "Locally Adopted Energy Standard" for a mandatory 1kw solar photovoltaic requirement per 10,000 square feet of new construction for commercial and multi-family projects.

NOW THEREFORE, the City Council of the City of Culver City, California,
DOES HEREBY ORDAIN as follows:

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§ 15.02.1010	Exceptions.
§ 15.02.1015	Building Permit Fees and Inspections.

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2 **Solar Photovoltaic System** shall mean a system that generates
3 electricity from the sun.

4 **§ 15.02.1005 REQUIREMENT.**

5 All new buildings of 10,000 square feet or more of gross floor area,
6 additions equal to 10,000 square feet or more of gross floor area, and major
7 renovations to existing buildings of 10,000 square feet or more of gross floor
8 area where such renovation is equal to at least fifty percent (50%) of the
9 valuation of the existing building, shall be equipped with a 1kw solar
10 photovoltaic system per each 10,000 square feet of gross floor area, or
11 fraction thereof. Except as otherwise expressly provided, this Section shall
12 not apply to one and two family residences, parking structures, garages, and
13 renovations or additions to existing buildings. For qualifying projects, the
14 number of panels required for any given system shall be the total required
15 energy production of the project, divided by the energy production capability
16 of a single panel as specified on the project. When calculating the number of
17 panels required, fractional panels equal to or greater than one half shall be
18 rounded up to the nearest whole number; fractional panels less than one half
19 shall be rounded down to the nearest whole number.

20 **§ 15.02.1010 EXCEPTIONS.**

21 Upon the written approval of the Director, an applicant who is unable
22 to install the required solar photovoltaic system due to the configuration of the
23 proposed construction project shall comply with one of the following options
24 in order to satisfy the requirements set forth in Section 15.02.1005:

25 A. *In-lieu Fee.* An applicant shall pay an in lieu fee in an amount
26 equal to the cost of a solar photovoltaic system installed in a comparable
27 project. Fees generated from in lieu payments pursuant to this subsection,
28

1 shall be appropriated and disbursed only for solar photovoltaic designs and
2 installations on City buildings or facilities. The amount and process for the
3 collection, utilization and return of fees contemplated by this Section shall be
4 established by resolution of the City Council.

5 B. *Alternate Location.* An applicant shall install a solar
6 photovoltaic system equivalent to a system installed in a comparable project
7 on another building located in Culver City owned by the applicant.

8 **§ 15.02.1015 BUILDING PERMIT FEES AND INSPECTIONS.**

9 A. Plan check and permit fees in an amount not to exceed Five
10 Thousand Dollars (\$5,000) shall be waived for solar photovoltaic installations.
11 This subsection, 15.02.1015.A, shall remain in effect until March 12, 2018,
12 and as of that date is repealed, unless a later enacted statute, enacted
13 before March 12, 2018, deletes or extends that date.

14 B. The value of the required solar photovoltaic system shall not be
15 required to be included in the overall construction valuation of the project for
16 the purposes of determining building permit fees.

17 C. No final inspection shall be approved for a construction project
18 subject to the requirements of this Subchapter, nor shall a temporary or final
19 certificate of occupancy be issued for such project, prior to the installation of
20 the solar photovoltaic system being completed, inspected and fully
21 operational, unless otherwise excepted pursuant to Section 15.02.1010.

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23 shall take effect thirty (30) days after the date of its adoption. Pursuant to Sections 616
24 and 621 of the City Charter, prior to the expiration of fifteen (15) days after the adoption,
25 the City Clerk shall cause this Ordinance, or a summary thereof, to be published in the
26 Culver City News and shall post this Ordinance or a summary thereof in at least three
27 places within the City.
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1 **SECTION 3.** The City Council hereby declares that, if any provision, section,
2 subsection, paragraph, sentence, phrase or word of this ordinance is rendered or declared
3 invalid or unconstitutional by any final action in a court of competent jurisdiction or by
4 reason of any preemptive legislation, then the City Council would have independently
5 adopted the remaining provisions, sections, subsections, paragraphs, sentences, phrases
6 or words of this ordinance and as such they shall remain in full force and effect.

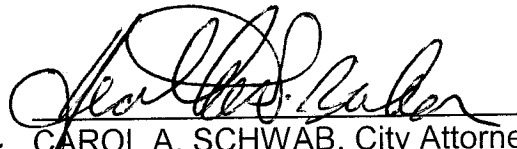
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8 **APPROVED AND ADOPTED** this ____ day of _____, 2008.

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11 _____
12 ALAN CORLIN, Mayor
13 City of Culver City, California

14 ATTEST:

APPROVED AS TO FORM:

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17 _____
18 CHRISTOPHER ARMENTA, City Clerk

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22 CAROL A. SCHWAB, City Attorney
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City of Culver City, California
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ATTACHMENT 2

Meeting Date: 01/22/08		Item Number: A-2	
AGENDA ITEM: 1) Introduction of an Ordinance Establishing a Mandatory 1 Kilowatt Solar Photovoltaic Requirement for Each 10,000 Square Feet of Gross Floor Area of New Construction for Commercial and Multi-Family projects; and 2) Adoption of a Resolution Establishing the Amount and Process for the Collection, Utilization and Return of In-Lieu Fees Contemplated by the Ordinance.			
Contact Person/Dept.: Craig Johnson/ Building Safety Division		Phone Number: (310) 253-5802	
Fiscal Impact: Yes ☒ No ☐		General Fund: Yes ☒ No ☐	
Public Hearing: ☐		Action Item: ☒ Attachments: ☒	
Public Notification: Major commercial, industrial and multifamily builders on file (01/03/08); Master Notification List (1/16/08).			
Department Approval: Sol Blumenfeld (01/14/08)		City Attorney Approval: Carol Schwab (by H. Baker)(01/15/08)	
Fiscal Impact Review: Jeff Muir (01/15/08)		City Manager Approval: Jerry B. Fulwood (01/16/08)	

RECOMMENDATION:

Staff recommends the City Council:

1. Introduce an ordinance establishing a mandatory 1 kilowatt ("kw") solar photovoltaic requirement for each 10,000 square feet of gross floor area of new construction, or fraction thereof, for commercial, industrial and multi-family projects. This requirement would not apply to one and two family homes, renovations and additions, parking garages and parking structures; and,.
2. Adopt a resolution establishing the amount and process for the collection, utilization and return of in-lieu fees contemplated by the Ordinance.

BACKGROUND / DISCUSSION:

On June 18, 2007, the City Council directed staff to develop a Solar Photovoltaic Ordinance subject to approval of the California Energy Commission ("CEC"). The intent of the ordinance is to require photovoltaic electricity production for on-site energy consumption and reduce carbon emissions generated by buildings. A 1 kW solar voltaic system produces 1,151 kilowatt hours ("kwh") annually which, in turn, reduces carbon emissions by 940 pounds each year.

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On June 21, 2007, the CEC unanimously approved Culver City's application for a "Locally Adopted Energy Standard," with one revision. The previously proposed "one empty conduit" requirement for projects not qualifying for mandatory solar photovoltaic, as set forth in the draft ordinance, was not approved by the CEC and as such has been removed from the proposed Ordinance. (Attachment 1)

On July 16, 2007, staff returned to City Council with a revised ordinance based upon the CEC's approval. At that time staff clarified that the ordinance was intended to apply to all new construction, with the exceptions noted above, regardless of size. However, the Council had several questions and concerns. Staff utilized the time Between the Council's discussion on July 16 and this evening's presentation, to refine the proposed ordinance. Therefore, the following additional items are being presented as part of this evening's item for the City Council's consideration. (1) Clarifying the minimum project size and building additions vs. new construction, (2) rounding to meet the required fractional equivalent for a required photovoltaic system, (3) in lieu payment and (4) on-site installation options. Due to these changes to the Ordinance, it must be re-introduced. However, staff has confirmed with the CEC that the ordinance does not need to return to them for approval prior to Council's adoption.

Additionally, responses to the questions posed at prior meetings are presented below:

- 1. Required thresholds – Does the requirement apply to projects less than 10,000 sq. ft.? What is the requirement for projects 10,000 sq. ft. or greater and how is the project requirement established when the area calculation does not result in a whole number? Is the square footage determined by the footprint of the building?**

The revised floor area threshold requirement in the proposed Ordinance now applies only to new construction projects of 10,000 sq. ft. or greater with the requirement determined by the gross floor area rather than building footprint. For example, a qualifying three-story building with 3,334 s.f. per floor would meet the minimum 10,000 s.f. threshold. (Qualifying projects include commercial, industrial and multifamily residential projects. One and two family structures, garages and parking structures are exempted from the proposed Ordinance).

With regard to projects of 10,000 s.f. or greater, the project applicant will be required to install 1 kw of solar photovoltaic, or fraction thereof. For example, a 15,000 s.f. qualifying project would be required to install 1.5 kw of solar energy production; a 28,000 s.f. qualifying project would be

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required to install 2.8 kw, and so on. Solar systems range in size from 175 watt to 200 watt panels. As such, it is possible that new construction projects can meet the proposed energy requirements in fractional energy loads. Staff recommends rounding down to the nearest whole number to establish the required number of photovoltaic energy panels. Thus the calculation to establish the total number of required panels is determined by multiplying the project square footage by 0.1 (to determine the total required energy production capability of the system in watts) and dividing that number by the energy production capability (in watts) of a single panel of the type utilized by the project, then rounding down to the nearest whole number to determine the total number of panels required.

Example:

15,000 sq ft x 0.1 = 1500 watts total system requirement

1500w / 175-watt panels = 8.57 panels

1500w / 200-watt panels = 7.5 panels

Rounded down to nearest whole number = 8 panels required at 175 watts each or 7 panels required at 200 watts each

Section 15.02.1005 of the proposed Ordinance has been revised accordingly:

"For qualifying projects, the number of panels required for any given system shall be the total required energy production of the project, divided by the energy production capability of a single panel as specified on the project, rounded down to the nearest whole number."

The systems can typically be accommodated on new project roof areas, even when there is significant gross floor area in a project. Each panel is approximately 4' x 6' so in the 8 panel system described above, only 192 sq. ft. of roof or surface area would be required. If a project was 75,000 sq. ft., 37 panels would be required at 200 watts per panel, which would only require 888 sq. ft.

2. Does the requirement apply to building additions?

As currently proposed, all qualifying new construction projects greater than 10,000 sq. ft. must conform to the proposed Ordinance. The revised ordinance is directed at new building projects and specifically excludes renovations or additions to existing buildings and one and two family residences, garages and parking structures. Section 15.02.1005 of the proposed Ordinance provides that *all new buildings* with 10,000 sq. ft. or

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more of gross floor area are subject to the requirement to install photovoltaic systems.

It is important to note that the Building Code identifies alterations and new construction as new freestanding buildings and several smaller areas of additions. In the event that there is a dispute about the application of the Ordinance, a building permit applicant may file an appeal with the City's Building & Safety Board of Appeal.

3. Other than solar photovoltaic, what alternate energy production could be used to satisfy the requirement?

Staff originally proposed to the CEC that the requirement include solar hot water heating or other renewable energy sources as alternates. The CEC staff specifically required that other alternate energy sources be excluded due to the energy output of other means being much more unpredictable. The output of solar photovoltaic systems are reasonably predictable based on the type of panels, the mounting configuration of the panels, the annual percentage of cloud cover of the specific area (in this case Culver City), and the estimated dust coverage of the solar panels.

Staff has investigated with other cities the potential use of windmills to satisfy the alternate energy requirement. These cities have reported neighborhood complaints related to noise and view problems associated with windmills. Due to these concerns, staff does not recommend that windmills be included as an alternate means of complying with the Ordinance. An individual may nevertheless voluntarily install a windmill on their property, provided, they are able meet all City Building and Zoning Code requirements, as well as all other applicable County requirements.

4. Can a project applicant install a solar photovoltaic system on another building rather than pay the in-lieu fee?

The proposed Ordinance provides that a project applicant who is unable to meet the solar photovoltaic requirement as part of a proposed project because it is infeasible or impractical to do so because of spatial constraints, may elect to meet their requirement in two options:

- Pay to the City an in-lieu fee in an amount equivalent to the cost of the required solar photovoltaic system. The in lieu fee would then be used for the installation of a solar photovoltaic system on existing City buildings. This action would require that the City Council adopt a resolution outlining

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the process to utilize the collected funds for installation on existing city buildings; or

- Install a solar photovoltaic system equivalent to the requirement on another location on the property as approved by the Building Official.

5. What are the exceptions to the requirement? Should the discretion to waive the requirement be placed with the Community Development Director rather than the Building Official?

The proposed Ordinance provides that the Building Official may waive the requirement where it is satisfied through other means or is unduly burdensome or impractical. For example, it may be waived where a project has a LEED Certification and is meeting the low energy impact intent of the Ordinance without any solar photovoltaic system being installed. In such a situation, it may be acceptable to waive the requirement.

Consistent with the Building Official's purview over most of the Building Code, the discretion to waive such requirement most appropriately resides with the City's Building Official, however, such matters may also be referred City's Building Safety Appeals Board or to the Community Development Director who may refer the matter to the City's Appeals Board for review.

To illustrate a sample project, the following example is provided:

A three story building with 3,334 sq. ft. of gross floor area per floor would meet the minimum 10,000 sq. ft. qualification requiring installation of a 1 kw photovoltaic system (3,334 sq. ft./floor x 3 floors = 10,002 Sq. ft. of gross floor area). A 1 kw system would cost approximately \$11,000 and the estimated payback would be 16.5 years. However, due to the added energy savings for a project, if the system is financed as part of overall building construction, this payback may produce a positive cash flow of \$3.00 per month or \$34 per year based on a 30 year loan and including Federal tax credits and State tax rebates. The system will also produce energy savings of 1,151 kw hours per year resulting in the economic benefit of energy savings irrespective of project financing. As proposed, the proportionate cost for the energy system is less than one-half of one percent of the overall building construction cost.

FISCAL ANALYSIS:

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From the City's perspective there will be less reliance upon utilities and less UUT revenue generated on a per project basis. The 10,000 sq. ft. threshold means that the effect will be small. (For example, if the proposed Ordinance had been in full effect in FY 06-07, it is estimated there would have been a loss of \$836 in UUT revenues for all qualifying projects).

ATTACHMENTS:

2. Staff Reports of June 18th and July 16th, 2007
3. Application to the California Energy Commission
4. Proposed Ordinance
5. Proposed Resolution

MOTIONS:

That the City Council:

1. Introduce the Ordinance establishing a mandatory 1 kw solar photovoltaic requirement for each 10,000 square feet of gross floor area of new construction for commercial, industrial and multi-family projects; and,
2. Adopt a Resolution establishing the amount and process for the collection, utilization and return of in-lieu fees contemplated by the Ordinance.