

**TOWN OF
APPLE VALLEY, CALIFORNIA**

AGENDA MATTER

Subject Item:

AUTHORIZE EXPENDITURE OF A PORTION OF REMAINING BOND PROCEEDS FOR CONSTRUCTION OF RENEWABLE SOLAR ENERGY PROJECT AT TOWN HALL.

Summary Statement:

On April 28, 2009, the Town Council passed a resolution authorizing submittal of an application for the Energy Efficiency and Conservation Block Grant (EECBG) funds made available through the American Recovery and Reinvestment Act (ARRA) of 2009. On May 28, 2009, staff submitted an application for construction of a renewable solar energy system on the roof of Town Hall. On September 14, 2009, the Town received notice that the grant application was successful.

The size of the proposed system was calculated to meet 90%-100% of the energy needs of Town Hall. For the purpose of formulating an estimated project budget for the grant application, specific information was obtained from a local solar power contractor:

Complete Install/Labor for a 217 kW Solar System Roof mount and a stand alone patio covering 3,600 sq ft.	\$230,000
Material, 1,290 panels inverters, racking, mounting hardware, wire, monitoring system, lumber, permits, engineering.	\$1,393,594
Estimated total cost	\$1,623,594

The system is projected to be funded from a combination of sources as indicated below:

Total cost	\$1,623,594
Federal grant	641,200
State rebate (over five years)	711,830
Local government cost	270,564

Recommended Action:

Authorize expenditure of a portion of remaining bond proceeds for construction of renewable solar energy project at Town Hall.

Proposed by: Diana McKeen **Item Number** _____

T. M. Approval: _____ **Budgeted Item** Yes No N/A

Summary Statement - Continued
Renewable Solar Energy Project
Page Two

The up front cost to the Town would be approximately \$982,394, which can be funded with a portion of remaining bond proceeds. The Town would also take advantage of the California Solar Initiative which promotes renewable solar energy projects. Under this program, the Town would be reimbursed for building a renewable energy system based on the system size. The size of the specific photovoltaic array planned would result in a total rebate from the state of \$711,830, payable on a monthly basis over five years.

Based on the California Solar Initiative refund of approximately \$11,864 per month plus the anticipated energy savings of \$3,000 per month, all of the Town's costs are projected to be recouped in a little less than eight years.

The solar contractor who provided the anticipated costs, based on its experience installing similar systems, estimated the job would take less than six weeks to complete.

Attached are the system cost estimates plus a simplified payback schedule for reference.

Summary Statement - Continued
 Renewable Solar Energy Project
 Page Three



13448 Manhasset Road, Ste. 9, Apple Valley, CA 92308
 (760) 669-5460 Office (866) 495-4763 Fax



Town of Apple Valley

Team:

Scott Mazzola, Project Manager

Goal:

- Eliminating Overall Energy Cost
- Power Factor Control
- Increase Energy Efficiency
- Reduce Carbon Footprint
- Return On Investment
- Energy Cost Savings

Current Conditions:

Average Electric Bill at: \$4,532 /month
 Average Demand: 90 kW
 No Power Factor Control
 High Electrical Cost

Procedures to date:

- 1) An Energy Audit was performed with 12 month Power Profile from SCE.
- 2) Site evaluation has been completed.
- 3) A study of the on peak, off peak and daily usage was analyzed for the past 12 months.
- 4) A breakdown of demand charges was completed for the past 12 months.
- 5) An evaluation of the kW charge per hour was performed for the past 12 months.

System Design

The solar system will produce 444,894 kW annually, with a daily kW average of 1218.
 The system will have a 10 year warranty from Desert Solar.
 The system will have a 25 year factory panel warranty.
 Desert Solar will maintain the system for the 10 years.
 The system will have web monitoring.
 Installation of power factor control units.
 Desert Solar will do all the work necessary to obtain the renewable energy grant.

Solution:

- Install 187 kW system (roof)
- Install 30 kW system (patio)
- Power factor control units

Expected Result:

- Reduced Energy Cost
- Regulated Power factor
- Eliminate Demand Charges

Warranty & Maintenance:

- 25 year PV panel warranty
- 10 year parts and labor
- 10 year inverter warranty

System Cost Breakdown:

Total Cost	\$1,623,594
State Rebate	\$711,830
Federal Grant	\$641,200

Total Cost after Incentives: \$270,564

Savings:

	Current	New
Per month electric	\$4,532	\$1,440
Equipment lease	N/A	\$0
Average/mo savings	N/A	\$3,092

Cost Payback:

Inflation will be less than 6 years.

Solar Panels

American made panels
 1290 total panels
 BP, Sunpower, Evergreen or Kyocera

Inverters

Xantrex, SMA or PV Power

5/20/2009

**Projected Payback
 Federal Energy Efficiency & Conservation Block Grant**

		Energy savings	State rebate	Cost Payback Balance
2010	January	\$3,000	\$11,864	\$982,340
	February	\$3,000	\$11,864	\$967,476
	March	\$3,000	\$11,864	\$952,612
	April	\$3,000	\$11,864	\$937,748
	May	\$3,000	\$11,864	\$922,884
	June	\$3,000	\$11,864	\$908,020
	July	\$3,000	\$11,864	\$893,156
	August	\$3,000	\$11,864	\$878,292
	September	\$3,000	\$11,864	\$863,428
	October	\$3,000	\$11,864	\$848,564
	November	\$3,000	\$11,864	\$833,700
	December	\$3,000	\$11,864	\$818,836
2011	January	\$3,000	\$11,864	\$803,972
	February	\$3,000	\$11,864	\$789,108
	March	\$3,000	\$11,864	\$774,244
	April	\$3,000	\$11,864	\$759,380
	May	\$3,000	\$11,864	\$744,516
	June	\$3,000	\$11,864	\$729,652
	July	\$3,000	\$11,864	\$714,788
	August	\$3,000	\$11,864	\$699,924
	September	\$3,000	\$11,864	\$685,060
	October	\$3,000	\$11,864	\$670,196
	November	\$3,000	\$11,864	\$655,332
	December	\$3,000	\$11,864	\$640,468
2012	January	\$3,000	\$11,864	\$625,604
	February	\$3,000	\$11,864	\$610,740
	March	\$3,000	\$11,864	\$595,876
	April	\$3,000	\$11,864	\$581,012
	May	\$3,000	\$11,864	\$566,148
	June	\$3,000	\$11,864	\$551,284
	July	\$3,000	\$11,864	\$536,420
	August	\$3,000	\$11,864	\$521,556
	September	\$3,000	\$11,864	\$506,692
	October	\$3,000	\$11,864	\$491,828
	November	\$3,000	\$11,864	\$476,964
	December	\$3,000	\$11,864	\$462,100

Summary Statement - Continued
 Renewable Solar Energy Project
 Page Five

2013	January	\$3,000	\$11,864	\$447,236
	February	\$3,000	\$11,864	\$432,372
	March	\$3,000	\$11,864	\$417,508
	April	\$3,000	\$11,864	\$402,644
	May	\$3,000	\$11,864	\$387,780
	June	\$3,000	\$11,864	\$372,916
	July	\$3,000	\$11,864	\$358,052
	August	\$3,000	\$11,864	\$343,188
	September	\$3,000	\$11,864	\$328,324
	October	\$3,000	\$11,864	\$313,460
	November	\$3,000	\$11,864	\$298,596
	December	\$3,000	\$11,864	\$283,732
2014	January	\$3,000	\$11,864	\$268,868
	February	\$3,000	\$11,864	\$254,004
	March	\$3,000	\$11,864	\$239,140
	April	\$3,000	\$11,864	\$224,276
	May	\$3,000	\$11,864	\$209,412
	June	\$3,000	\$11,864	\$194,548
	July	\$3,000	\$11,864	\$179,684
	August	\$3,000	\$11,864	\$164,820
	September	\$3,000	\$11,864	\$149,956
	October	\$3,000	\$11,864	\$135,092
	November	\$3,000	\$11,864	\$120,228
	December	\$3,000	\$11,864	\$105,364
2015	January	\$3,000		\$102,364
	February	\$3,000		\$99,364
	March	\$3,000		\$96,364
	April	\$3,000		\$93,364
	May	\$3,000		\$90,364
	June	\$3,000		\$87,364
	July	\$3,000		\$84,364
	August	\$3,000		\$81,364
	September	\$3,000		\$78,364
	October	\$3,000		\$75,364
	November	\$3,000		\$72,364
	December	\$3,000		\$69,364
2016	January	\$3,000		\$66,364
	February	\$3,000		\$63,364
	March	\$3,000		\$60,364
	April	\$3,000		\$57,364
	May	\$3,000		\$54,364
	June	\$3,000		\$51,364
	July	\$3,000		\$48,364
	August	\$3,000		\$45,364
	September	\$3,000		\$42,364
	October	\$3,000		\$39,364
	November	\$3,000		\$36,364
	December	\$3,000		\$33,364

Summary Statement - Continued
Renewable Solar Energy Project
Page Six

2017	January	\$3,000		\$30,364
	February	\$3,000		\$27,364
	March	\$3,000		\$24,364
	April	\$3,000		\$21,364
	May	\$3,000		\$18,364
	June	\$3,000		\$15,364
	July	\$3,000		\$12,364
	August	\$3,000		\$9,364
	September	\$3,000		\$6,364
	October	\$3,000		\$3,364
		\$282,000	\$711,840	\$993,840