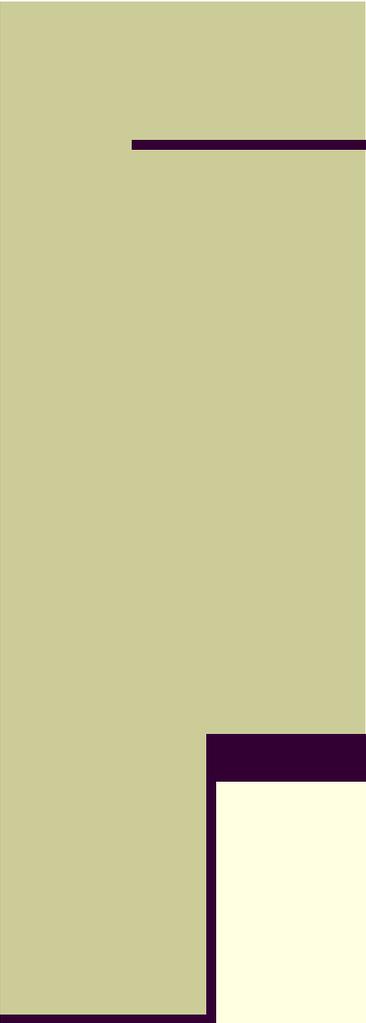




San Joaquin County Facilities Management



Gabriel Karam, PE, LEED, AP
Facilities Management Director
July 8, 2010

Presentation Objective

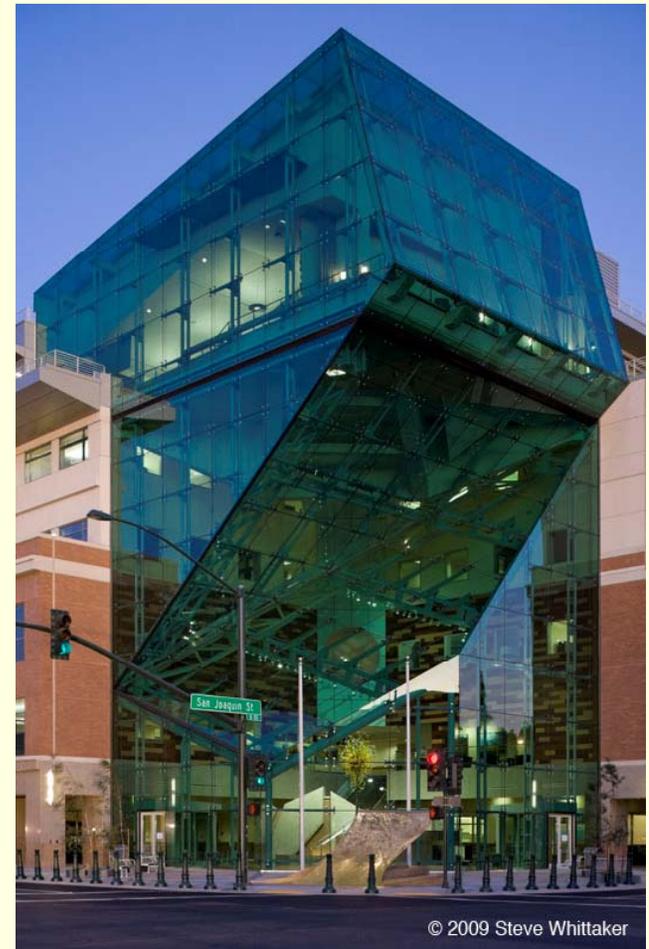
- ❖ Review San Joaquin County's efforts to improve energy efficiency through equipment replacement using CEC Grant funds.

San Joaquin County Green Purchasing Policy

In February 2008, San Joaquin County's Board of Supervisors adopted a Green Purchasing Policy that promotes sustainability of the environment.

The policy states:

- County shall purchase energy efficient equipment with the up-to-date energy efficient functions.
- County shall replace inefficient lighting with energy-efficient equipment when practicable.
- County shall purchase products for which the U.S. Environmental Protection Agency (EPA) Energy Star certification is available and that meet Energy Star certification when practicable.



San Joaquin County Administration Building



Administration Building Solar Panels



Facilities Management

- ❖ Total budget: \$16.4 M
- ❖ Total staffing: 50
- ❖ Number of Structures: 416
- ❖ Square Footage: approximately 4 million

EECBG Grant

- ❖ San Joaquin County Qualifies for \$836,781
- ❖ Grant funds will be expended as follows:
 - Equipment - \$644,800
 - Total labor - \$411,200
 - County share - \$250,000
 - Grant share - \$161,200
 - Overhead - \$30,781
- ❖ Grant will assist the County with projects to:
 - Reduce fossil fuel emissions
 - Improve energy efficiency in building

Project Overview

- ❖ County Selected the Direct Equipment Purchase
- ❖ Assembled team to evaluate and determine equipment and locations
- ❖ 6 locations: install VFDs for Pumps & Air Handling Units
- ❖ 17 locations: replace 70 HVAC units sizes between 2 tons and 10 tons

Lodi Agricultural Commissioner's Office



Sheriff's Administration



Juvenile Hall



Equipment to Replace



	Variable Frequency Drives	QUAN	SIZE
1	Domestic water pumps for County buildings at Micke Grove Park	2	1 20-HP; 1 40-HP
2	Jail cooling tower VFD and new motor	1	1 30-HP
3	Jail Central Plant boiler & chillers secondary pumps	4	2 50-HP; 2 150-HP
4	Sheriff Admin building air handlers 105 and 106 supply and return fans	4	2 25-HP; 1 50-HP; 1 60-HP
5	Jail Central Plant Chillers VFDs	2	2 430-HP
	TOTAL	13	

	HVAC Units:	QUAN	SIZE
1	Public Works Main Building	12	8 5-ton; 3 3-ton; 1 2-ton
2	Road Maintenance	5	3 4-ton; 2 3-ton all 460 3 phase
3	Lodi Community Center	2	1 4-ton gas split 208 3 phase; 1 5-ton gas split 208 3 phase
5	Taft Community Center	3	1 5-ton pack; 2 3.5-ton
6	Simms Station Ag	1	5-ton heat pump
7	Old Ag Commission Office - Hazelton	3	1 4-ton 208 3-phase; 2 4-ton packs 208 single phase
8	Channel Maintenance/Field Engineering office	4	3 3-ton splits with horizontals; 1 3.5-ton split with horizontals
9	Public Defender's Building	18	4 3-ton; 10 5-ton; 4 7.5-ton
10	Boathouse OakGrove Park 5ton heat pump	1	1 5-ton
11	Nature Center - Oak Grove Park	2	1 5-ton split heat pump; 1 3-ton split heat pump
12	Veterans Offices	3	2 2.5-ton; 1 2-ton
13	Historical Museum - Micke Grove Park Erickson Bldg.	6	3 3-ton packs 3 phase; 2 3-ton packs 460 3 phase; 1 4-ton pack 460 3 phase
14	Thornton Library	2	1 7.5-ton pack 208 3 phase; 1 5-ton pack 208 3 phase both with curb adapters
15	Traffic Sign Shop	1	1 5-ton
16	Juvenile Probation - Camp	5	5 4-ton
17	Sheriff Kitchen	2	2 10-ton
	TOTAL	70	

Award Overview

- ❖ CEC staff guidance and assistance
- ❖ Awarded \$836,781 by California Energy Commission in April 2010.
- ❖ Sustain manufacturing jobs in the U.S.
- ❖ Contracted portion of work will support local businesses
- ❖ Award will help retain jobs within Facilities Management
 - Utilizing experienced staff with combined experience of over 75 years.
 - Expect to keep as much work internally as possible.

Anticipated Energy Savings

- ❖ The estimated energy savings would be about 0.5 million kwh and avoided CO2 is approximately 750 thousand lbs annually.
- ❖ After installation of the new equipment the County estimates energy cost savings of about 20%

Expected Outcome

- ❖ After installation of the new equipment the County estimates energy cost savings of about 20% per year.
- ❖ Additional savings in repair and labor costs are estimated to be over \$25,000 per year for the first few years.
- ❖ The estimated energy savings would be about 0.5 million kwh and avoided CO2 is about 750 thousand lbs annually.

Challenges and Regrets

Challenges

- ❖ Processing time of application and award.
- ❖ Will impact normal operations of building occupants.
- ❖ Takes away from regular assigned duties while working with less staff.

Regrets

- ❖ Not able to get more funding for other aging equipment.

Improvement Areas

- ❖ Notification of availability of grant and deadline to submit application was too short to meet detailed application requirements
- ❖ Processing time for review and award of grants

San Joaquin County's Contributions to CEC Guiding Principles for ARRA Funds

- ❖ How does this project create and stimulate jobs in California?

Majority of grant spent on equipment purchases that sustain manufacturing jobs, create business for distributors in California and support local businesses for contracted portion of the project

San Joaquin County's Contributions to CEC Guiding Principles for ARRA Funds

- ❖ How does this project achieve lasting and measurable energy benefits?

70 aged HVAC units are being replaced with ones with higher SEER ratings and installing 13 VFDs on pumps and air handlers will achieve significant and measurable energy benefits for the County

San Joaquin County's Contributions to CEC Guiding Principles for ARRA Funds

- ❖ How will this project expend money efficiently, with accountability and minimal admin burden?

In-house installations means more control and accountability

San Joaquin County's Contributions to CEC Guiding Principles for ARRA Funds

- ❖ How will this project contribute to meeting California's energy and environmental policy goals?

Through the replacement and installation of the large number of HVAC units and VFDs, this project will extensively reduce the emission of CO₂ and provide significant savings in kwh.

WHAT NEXT

- ❖ Kick-off meeting with Commission Project Manager and Grants officer – July 2010
- ❖ Order equipment – July 2010
- ❖ Begin installation – September 2010
- ❖ Complete installation/project – February 2012
- ❖ Draft final report – April 2012
- ❖ Submit final report - June 2012



Any Questions?