

# City of Lemoore

## Phase 3 Solar Program – Item A



**Chevron Energy Solutions**

**March 19, 2013**

**Presented by:**

**Ashu Jain, P.E., C.E.M.**

**Conrad Newberry, P.E.**

**Jonathan Brown, P.E., LEED AP**

**Senior Business Development Manager**

**Senior Project Director**

**Project Manager**

# Agenda



- CES History with City of Lemoore
- Solar Project Layouts
- Program Financial Analysis
- Local Contractor Outreach
- Program Benefits

# Successful Track Record at City of Lemoore



- Phase 1 – Completed \$3.9 million integrated energy and water conservation project in July 2009
  - Solar projects generating 10% more energy than estimated
  - No cost change orders
- Phase 2 – Completed \$0.7 million LED street lighting replacement project in January 2013
- Phase 3 – City Council authorized Chevron Energy Solutions to develop the solar program in October 2012
- Assisting the City with writing a grant for Lemoore Senior Citizen Center

# Well #6 – North Well Field: Single-Axis Tracking Ground Mounted Solar Project – 288 kW



**CITY OF LEMOORE**

**3/13/2013**

**WATER WELL No. 6  
ELDER AVENUE & 17TH AVENUE  
LEMOORE, CA 93245**



# Well #7 – North of West Hills College: Fixed Tilt Ground Mounted Solar Project – 230 kW



**CITY OF LEMOORE**

**WATER WELL No. 7  
BUSH STREET & MARSH DRIVE  
LEMOORE, CA 93245**

**3/13/2013**



**Chevron Energy Services International**  
A Division of Chevron U.S.A. Inc.  
BUREAU, CALIFORNIA OFFICE  
145 S. STATE COLLEGE BLVD., SUITE 400  
PACIFIC PALMS, CA 91768  
PHONE (714) 851-3436

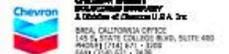
# Well #10: Fixed Tilt Ground Mounted Solar Project – 238 kW, Solar Parking Canopies – 269 kW



**CITY OF LEMOORE**

**WATER WELL No. 10 & CINNAMON MUNICIPAL COMPLEX (CMC)  
711 W. CINNAMON DRIVE  
LEMOORE, CA 93245**

**3/13/2013**



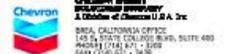
# Cinnamon Municipal Complex: Fixed Tilt Ground Mounted Solar Project – 86 kW



**CITY OF LEMOORE**

**WATER WELL No. 10 & CINNAMON MUNICIPAL COMPLEX (CMC)  
711 W. CINNAMON DRIVE  
LEMOORE, CA 93245**

**3/13/2013**



# Well #11 – Lemoore Avenue & Glendale Avenue: Fixed Tilt Ground Mounted Solar Project – 115 kW



**CITY OF LEMOORE**

**WATER WELL No. 11  
18TH AVENUE & E. GLENDALE AVENUE  
LEMOORE, CA 93245**

**3/13/2013**



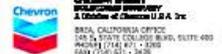
# Well #13 – East of West Hills College: Fixed Tilt Ground Mounted Solar Project – 266 kW



**CITY OF LEMOORE**

**WATER WELL No. 13  
PEDERSON STREET & COLLEGE AVENUE  
LEMOORE, CA 93245**

**3/13/2013**



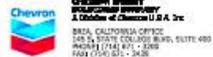
# 40 G Street Facility: Single-Axis Tracking Ground Mounted Solar Project – 72 kW, Thin Film Tank Roof Mounted Solar Project – 44 kW



ARRAY	MODULES	KW DC STC
1	240	72.0
2	220	21.3
3	220	21.3
TOTAL	680	114.6

**CITY OF LEMOORE**  
**40 G STREET WATER FACILITY**  
**40 G STREET**  
**LEMOORE, CA 93245**

3/13/2013



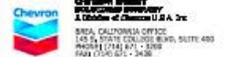
# Waste Water Treatment Plant: Single Axis Tracking Ground Mounted Solar Project – 414 kW



CITY OF LEMOORE

WATER WELL No. 9 & WASTE WATER TREATMENT PLANT  
19TH AVENUE & ENTERPRISE DRIVE  
LEMOORE, CA 93245

3/13/2013



# Local Contractor Outreach



- Reviewed current Business License database
- Reviewed Chamber of Commerce membership directory
- Interviewed contractors with trades applicable to project – civil, structural, electrical
- Intend to hire the following Lemoore-based contractors for this program:
  - Wood Bros. Inc.
  - Stoney's Sand & Gravel, LLC
  - Gibson Gate & Fencing Systems
- Potentially, approximately one-third of the total subcontracted work will be performed by Lemoore-based contractors
- Potentially, approximately three-fourths of the total subcontracted work will be performed by companies located within 50 miles of City Hall

# Program Financial Analysis



- Feasibility Study Phase:
  - Annual projected net savings during the 15-year finance term: \$127,000
  - Total projected net savings over project life: \$25.2 million
- After Program Development:
  - Annual projected net savings during the 15-year finance term: \$242,000
  - Total projected net savings over project life: \$31.1 million

# Program Financial Analysis



Project Fee \$9,055,297  
 Financing Costs during Construction \$252,075  
 Total Amount Financed \$9,307,372

1	2	3	4	5	6	7	8	9
Year	Projected Utility Cost Avoidance	California Solar Incentive	Total Program Savings	Payment to Lessor	Measurement & Verification	O&M Services	Total Program Costs	Projected Net Savings
1	\$707,485	\$310,410	\$1,017,895	\$730,040	\$10,500	\$35,261	\$775,802	\$242,093
2	\$739,145	\$308,858	\$1,048,003	\$758,557	\$10,815	\$36,538	\$805,910	\$242,093
3	\$772,221	\$307,314	\$1,079,535	\$788,428	\$11,139	\$37,875	\$837,442	\$242,093
4	\$806,778	\$305,777	\$1,112,555	\$819,714	\$11,473	\$39,276	\$870,462	\$242,093
5	\$842,882	\$304,248	\$1,147,130	\$852,475	\$11,817	\$40,745	\$905,037	\$242,093
6	\$880,601	\$0	\$880,601	\$596,220	\$0	\$42,288	\$638,508	\$242,093
7	\$920,007	\$0	\$920,007	\$634,006	\$0	\$43,908	\$677,914	\$242,093
8	\$961,178	\$0	\$961,178	\$673,471	\$0	\$45,613	\$719,085	\$242,093
9	\$1,004,190	\$0	\$1,004,190	\$714,690	\$0	\$47,408	\$762,097	\$242,093
10	\$1,049,128	\$0	\$1,049,128	\$757,736	\$0	\$49,299	\$807,035	\$242,093
11	\$1,096,076	\$0	\$1,096,076	\$815,633	\$0	\$38,350	\$853,983	\$242,093
12	\$1,145,126	\$0	\$1,145,126	\$863,532	\$0	\$39,501	\$903,033	\$242,093
13	\$1,196,370	\$0	\$1,196,370	\$913,591	\$0	\$40,686	\$954,277	\$242,093
14	\$1,249,908	\$0	\$1,249,908	\$965,908	\$0	\$41,906	\$1,007,815	\$242,093
15	\$1,305,841	\$0	\$1,305,841	\$1,020,585	\$0	\$43,164	\$1,063,748	\$242,093
16	\$1,364,278	\$0	\$1,364,278	\$0	\$0	\$44,459	\$44,459	\$1,319,819
17	\$1,425,329	\$0	\$1,425,329	\$0	\$0	\$45,792	\$45,792	\$1,379,537
18	\$1,489,112	\$0	\$1,489,112	\$0	\$0	\$47,166	\$47,166	\$1,441,946
19	\$1,555,750	\$0	\$1,555,750	\$0	\$0	\$48,581	\$48,581	\$1,507,169
20	\$1,625,370	\$0	\$1,625,370	\$0	\$0	\$50,038	\$50,038	\$1,575,332
21	\$1,698,105	\$0	\$1,698,105	\$0	\$0	\$51,540	\$51,540	\$1,646,566
22	\$1,774,096	\$0	\$1,774,096	\$0	\$0	\$53,086	\$53,086	\$1,721,010
23	\$1,853,486	\$0	\$1,853,486	\$0	\$0	\$54,678	\$54,678	\$1,798,808
24	\$1,936,430	\$0	\$1,936,430	\$0	\$0	\$56,319	\$56,319	\$1,880,111
25	\$2,023,085	\$0	\$2,023,085	\$0	\$0	\$58,008	\$58,008	\$1,965,077
26	\$2,113,618	\$0	\$2,113,618	\$0	\$0	\$59,749	\$59,749	\$2,053,870
27	\$2,208,203	\$0	\$2,208,203	\$0	\$0	\$61,541	\$61,541	\$2,146,662
28	\$2,307,020	\$0	\$2,307,020	\$0	\$0	\$63,387	\$63,387	\$2,243,632
29	\$2,410,259	\$0	\$2,410,259	\$0	\$0	\$65,289	\$65,289	\$2,344,970
30	\$2,518,118	\$0	\$2,518,118	\$0	\$0	\$67,248	\$67,248	\$2,450,870
<b>Totals</b>	<b>\$42,979,196</b>	<b>\$1,536,607</b>	<b>\$44,515,802</b>	<b>\$11,904,586</b>	<b>\$55,744</b>	<b>\$1,448,698</b>	<b>\$13,409,029</b>	<b>\$31,106,774</b>

**Notes By Column:**

- (2) Utility Cost Avoidance is escalated by 5% to account for inflation
- (5) Payment to Lessor is based on an annual interest rate of 3.25%, 15 year term. Actual rate will be determined at closing
- (6) Measurement and Verification services are escalated by 3% to account for inflation
- (7) O&M Services do not include panel washing

# Program Benefits



Program projected to contribute over \$31 million to the Water, Sewer and General Funds

Program will attract over \$1.5 million in incentives

Program includes construction of new parking lot at Cinnamon Municipal Complex

Reduces the impact of future utility rate increases

Minimum City risk because of turnkey design-build program with single source responsibility

Stimulates local economy and provides local jobs

Questions?



Thank you