

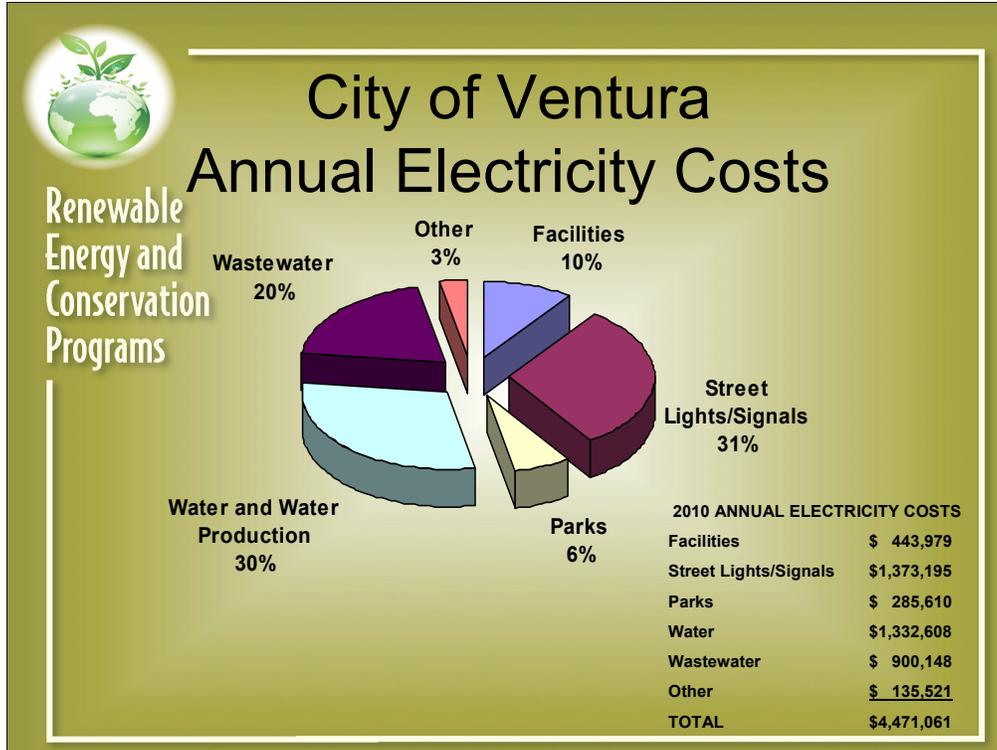
Presented by Rick Raives – Public Works Director, Mary Joyce Ivers – Fleet and Facilities Manager, Joe Yahner – Environmental Sustainability Supervisor

Tonight we are excited to present to you our recent accomplishments in renewable energy and conservation projects. Cutting energy costs and protecting our environment and natural resources has been a focus of the City over the past decades. As a result, we have been able to generate savings of over \$1.7 million dollars 12 million kilowatt hours annually. That is the equivalent of powering over 1,100 homes or reducing 3,500 tons of GHG emissions.

In May 2009, we submitted applications for American Recovery and Reinvestment Act (ARRA). Specifically, an Energy Efficiency and Conservation Block Grant.

- The City has obtained approximately \$1.5 million in Federal Stimulus funding, block grants, and low interest loans to implement a variety of energy efficiency conservation programs.
- Once completed, the projects will save an additional \$128,000 to \$228,000 per year. The estimated range is based on the range of potential payback scenarios for the City Hall photovoltaic system.

Tonight we will be presenting an update and progress report on these programs and projects.



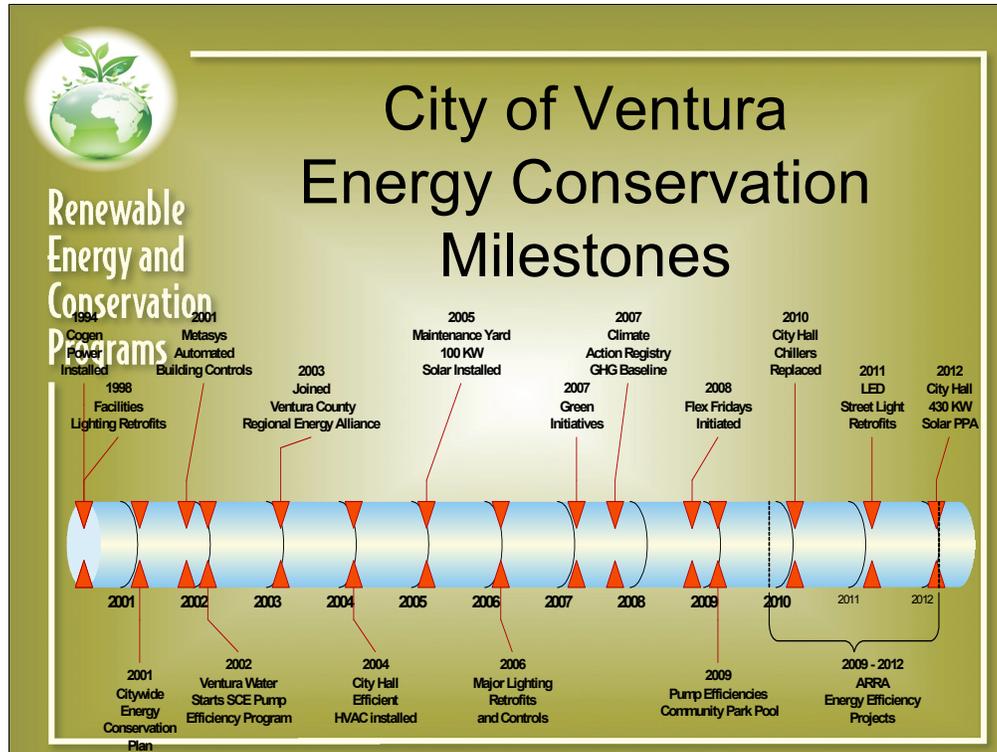
This chart shows where the City spends its electricity costs.

The City spends over \$4.4 million in electricity costs each year.

The Ventura Water department uses 60% of the City's total electricity usage to provide its critical services to the community, which are the largest and half the cost at \$2.2 million.

Street Lighting and Traffic Signals is the second largest cost at \$1.3 million, which includes electricity, and maintenance costs paid to Edison.

However, we have made significant progress in reducing these costs over the years.  
(next slide)



In the past 20 years, these are the major milestones of the efforts made by the City to reduce its electricity usage and associated costs. In 1992, the Ventura Water Wastewater plant installed a Co-generation power system and other plant improvements that saves over \$800,000 a year. Throughout the years many lighting retrofit and energy efficient building equipment projects were completed. In 2003, we entered into a joint power agreement with the VCREA that has provided excellent training opportunities, rebates and incentives for various projects. Our first Photovoltaic project was completed at the Maintenance Yard in 2005, that generates 180,000 kilowatt hours of electricity and saves over \$25,000 a year in electricity costs. Progressing forward, the City's Green Initiative was implemented to demonstrate our commitment to our sustainable City operations and protecting the community we live in.

One goal of the Green Initiative was to reduce electricity usage in City operations by 5% annually and to reduce our Greenhouse gas emissions. We continue to monitor our electricity usage and implement projects to meet this goal. In 2009, we were awarded the ARRA grants funding and are currently in the process of implementing several projects that we are presenting tonight. The projects include the City Hall PPA for a 433 kw photovoltaic system, LED Street lighting replacement, Community Partnerships for energy efficiency and Facilities and Parks lighting retrofits. As you can see, we keep moving forward toward a sustainable City.



## Celebrate Current Successes

**Renewable Energy and Conservation Programs**



- ❖ Silver Level SCE Partner
- ❖ Reduced GHG by 14% in 3 years
- ❖ Saved over \$1.7M in energy costs
- ❖ Reduced 2.8M Kilowatt hrs
- ❖ \$1.5 M Federal Stimulus ARRA




Some of the key successes have resulted in a combination of programs and partnerships that have saved significant energy costs.

For example,

- the City is a Silver Level SCE Partner – The Energy Leader Partnership Program with SCE and VCREA is a tiered incentive program in which participating cities can achieve a valued partner level, silver level, gold level and platinum level based on the energy savings achievements of the cities municipal facilities and the community. As the City and community achieve higher energy savings, the City gets higher financial incentives to fund projects. The partnership also requires the City to support SCE demand response program and develop an energy action plan. The City should achieve the gold level by the end of the year, which requires a 10% energy savings from both the City and the community. Edison recently presented staff with this plaque to recognize Ventura for achieving its silver level achievements.
- In the last 3 years, the City reduced municipal Greenhouse Gas emissions by 14%, which has reduced the City’s energy and fuel costs by over \$800,000 over that time period. The 14% reduction is equivalent to removing 380 vehicles from the road.
- During this time, the City has reduced 2.8 million kilowatt hours each year through energy efficiencies at City building, water and wastewater facilities, and street signals and lights –saving \$300,000 per year on the City’s electrical bills.
- The most recent success in the City obtaining \$1.5 Million in Federal Stimulus American Recovery and Reinvestment Act of 2009 funds to the City.



## ARRA Projects (\$1.5M)

### Renewable Energy and Conservation Programs

#### Energy Block Grant \$1M

- Solar Power PPA
- LED Street Lights
- Energy Efficiency for Non-Profits
- Community-wide Greenhouse Gas Reduction Modeling

#### 1% CEC Loan \$500K

- City Hall HVAC
- Lighting Retrofits and Automated Controls
- IT Server Virtualization



**These are the projects that are being funded by ARRA grants and 1% low interest loans. One of the criteria of the grant funding is jobs creation or retained. We estimate approximately 10 to 15 jobs created with our projects.**

Project	CEC Funding	% Complete	\$ Savings	Annual Savings
City Hall Chillers	\$165,000	100%	\$20,000	155,000 kwh
Lighting Upgrades	\$220,000	65%	\$27,000	195,000 kwh
Server Virtualization	\$50,000	10%	\$5,600	40,000 kwh
Automated HVAC Controls	\$ 65,000	0%	\$52,600	390,000 kwh

## LED Street Lights Replacements



Now we'd like to highlight some of the ARRA projects approved by the Council.

One great example is the street lighting retrofit at the Intersection of Telegraph Road and Hill Street.

The Before picture on the left shows the High Pressure Sodium lights that are being replaced.

And the After picture on the right shows the new LED lights that are 40% more energy efficient, and provides a better illumination for traffic safety.

Approximately 500 of the City-owned Street lights will be replaced with the energy efficient LED lights that are funded through the ARRA grant funds. These LED lights will save the City's Street Lighting District over \$30,000 per year and save over 400,000 kw. In addition, SC Edison plans to retrofit the remaining street lights that will help reduce the City's electricity bill in the future.



## Energy Efficiency Program for Non-profit Organizations

**Renewable Energy and Conservation Programs**

- Reduce utility costs – more funds to serve community
- 20 Non-Profit facilities
- VCREA - Program administration (\$19,500)
- Funding –
  - \$175,500 ARRA
  - \$28,000 Edison Incentives
- Saves non-profits about \$42,000 each year



- Assistance League
- Bible Fellowship Church
- Boys and Girls Club
- Catholic Charities
- Center for Spiritual Living
- Chapel Lane Senior Apartments
- City Church
- Grace Lutheran Church
- Homecomings, Inc
- Knights of Columbus
- Livingston Memorial
- Music Festival
- Salvation Army
- Solid Rock Christian Center
- Three Angels Pre-School
- Unitarian Universalist Church
- Ventura Museum
- YMCA

While the City Hall solar and LED streetlight projects were proposed to reduce energy use and save money for the City, two additional ARRA projects were selected to have a wider benefit for the community.

The Energy Efficiency Program for Non-Profit Organizations was created to provide local non-profits the opportunity to reduce their utility bills by providing energy efficient lighting retrofits at no cost to the organization. The idea behind the program is that by reducing the utility costs of these non-profits, they can focus more resources on the important services they provide the community. The criteria for participating in the program is that they must be a non-profit organization located in the City, they must pay their own electricity bill, and their bill must average over \$200 per month. The City has contracted with the VCREA to help administer the program and oversee the lighting installation contractor.

\$175,000 in stimulus funding plus \$28,000 in SCE incentives will be used to fund the project. Installations should begin later this month. REA estimates that the more efficient lights will save the non-profits about \$42,000 each year in electricity costs.



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## Greenhouse Gas Reduction Modeling Project

- Innovative, community focused decision making modeling tool
  - Evaluate costs / benefits of efficiency measures
- Help City make informed decisions
- Seek funding for energy efficiency projects
- Evaluate neighborhood level emissions
  - Transportation, Residential Energy Use, etc.

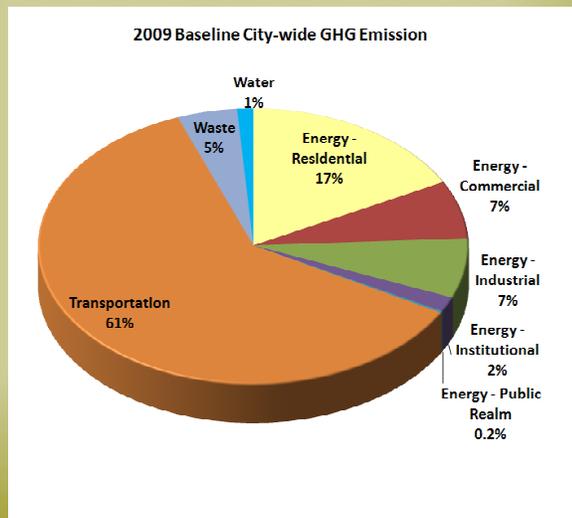
The other project with a community focus is the greenhouse gas reduction modeling project. ARRA grant recipients were encouraged to use the funds to not only do energy efficiency projects, but to also pioneer innovative projects that may lead to future funding or grant opportunities. This is one such project. This project created a very detailed inventory of community wide GHG emissions and then created a modeling tool to evaluate the most effective and cost efficient strategies for reducing emissions. The results from this project can help the City make informed decisions about this issue and hopefully position the City to seek grants and funding to support some of the recommended strategies. The project also includes a neighborhood level analysis that will take an even more detailed look at the Mid-town community.



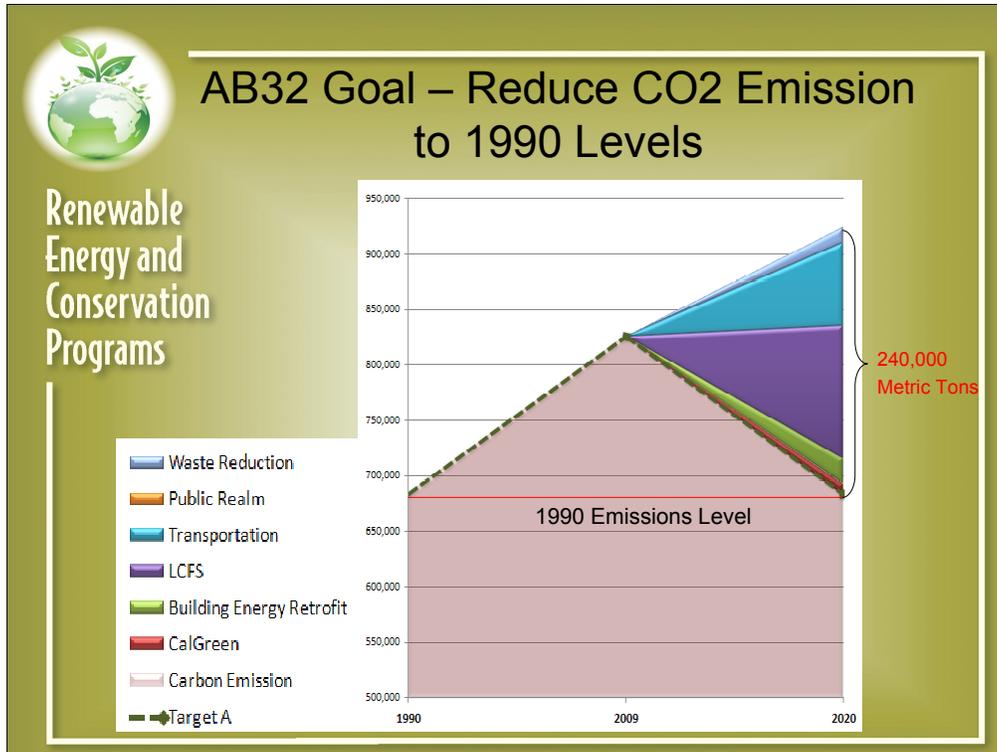
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## City-wide Greenhouse Gas Inventory

Annual Emissions = 825,000 MT



The first step in this project was the completion of a detailed GHG inventory for the entire City of Ventura, including households, businesses, industry and vehicles. The inventory estimates the total emissions in 2009 to be 825,000 Metric tons of carbon. In comparison, the City's emissions from municipal operations are about 13,000 MT, or about 1.5% of the communities total GHG emissions. As you can see, by far the largest emissions source is from transportation, which is the emissions from our cars and trucks. Residential energy use from our electricity and natural gas use is the next largest, followed by energy use form commercial and industrial. Knowing this information helps show us where we can target our efforts.



The inventory tells us where we are, then the next step is where do we go from here. This chart demonstrates a scenario for the community to reduce its GHG emission to 1990 levels, which is the goal created by the Global Warming Solutions Act or AB32. The redline in the chart indicates the City's estimated GHG emission in 1990. The dotted green line indicates the growth of our emissions since 1990. A business as usual approach would put our annual emissions at about 925,000 tons by 2020. The colored triangles represent how different reduction measures can reduce the community's emissions to 1990 levels by 2020. In this scenario, the two biggest pieces of the pie are the LCFS – Low Carbon Fuel Standard adopted in 2009 and reducing transportation emissions, which basically means reducing the amount of miles we all drive. Making existing homes and buildings more efficient is also one of the main strategies.

This is just a brief snapshot of this project. This project is very unique and state of the art. As far as we know, Ventura is the only City in the country that has done this type of analysis on a community wide basis.



Ventura has partnered with many organizations to support and promote our energy efficiency programs. Some of them are listed here. The one we would really like highlight is the City's partnership with the VCREA. Since 2003, they have supported our energy efficiency efforts. Utilizing VCREA's expertise and \$341,000 in incentives, the City has completed over 20 energy efficiency projects saving the City over \$260,000 each year. They currently support the Energy Leadership program with SCE and are also helping to administer the Non-profit energy efficiency program. We are thankful to all of these partners for their support.

## Future Opportunities

**Renewable Energy and Conservation Programs**

- ❖ Renewable Energy - Solar & Wind
- ❖ Solar Thermal Pool Heating
- ❖ Plug-In Hybrids & Electric Vehicles
- ❖ Energy Efficient Water & Wastewater
- ❖ Support Community Efforts

The City has made significant progress in reducing its energy use. Most of the low hanging fruit, such as installing energy efficient lighting, has been achieved and we must now look for other opportunities.

Although the City has already invested in renewable energy, such as the yard and City Hall photovoltaic systems, additional opportunities for solar remain at other City facilities.

One potential opportunity is at Kimball Park where City staff is currently looking into the feasibility of a solar hot water project to help heat the large competition pool.

City staff will also continue to look for opportunities to purchase hybrid, alternative fuel and electric vehicles when feasible.

As described in an earlier slide, water and wastewater use about 60% of the City's electricity. Over the years they have made significant energy efficiency improvements, however, there are still opportunities to do more.

As we saw in the slide with the pie chart of the community wide greenhouse gas inventory, our municipal energy use and GHG emissions pale in comparison to the entire community. The City should continue to support our businesses and households' efforts to reduce energy and save money. We can support and promote local utility programs, such as Energy Upgrade California, that provide information and financial incentives to residents and businesses and we can continue to seek out funding and grant opportunities that will support community wide energy efficiency.



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## Contacts

Mary Joyce Ivers – (805) 652-4539  
[mjivers@ci.ventura.ca.us](mailto:mjivers@ci.ventura.ca.us)

Joe Yahner – (805) 652-4558  
[jyahner@ci.ventura.ca.us](mailto:jyahner@ci.ventura.ca.us)