

Attachment 2

Summary of Energy Savings Since 2007 and Other Energy-Saving Measures: Public Works Department

Completed/Established Programs

County Roads

- Street light LED retrofit
 - Number affected: 60
 - Energy savings: 6,730 kilowatt hours savings per year
 - County cost: \$0 (EECBG funded)
 - Energy cost savings¹: \$1,010 (based on \$0.15/kwh) per year

- Traffic advisory solar-powered signs (estimated 65% energy reduction)
 - Number affected: 21
 - Energy savings: ±6,720 kilowatt hours savings per year
 - County cost: ±\$105,000
 - Energy Cost Savings¹: ±\$1,010 (based on \$0.15/kwh per year)

- Reuse of pavement grindings
 - County contracts require that the contractor identify how the pavement grindings will be recycled.

County Water Systems

- Implemented tiered water rates (water conservation and distribution system energy savings)
 - Energy savings: 33% to 50% estimated water savings
 - Cost: undetermined

Future Retrofit Opportunities

Existing Street lights (County lighting districts)

- LED retrofit of street lights currently using 164,250 kilowatt hours per year (70W to 25W)
 - Number affected: ±450
 - Energy savings: ±50,475 kilowatt hours savings per year
 - Energy cost savings¹: ±\$7,570 (based on \$0.15/kwh per year)
 - County cost: ±\$540,000 (±\$1,200 each)

¹ Excludes additional savings such as significantly longer lifespan; reduced maintenance costs; and no mercury, lead or other known disposable hazards.

Energy Implementation Strategies

The questions below (except for the last question about staffing) are associated with specific energy implementation strategies in the Conservation and Open Space Element (the strategy numbers are indicated in parentheses (e.g., E1.2.2). Following each question is a description of how the Public Works Department is responding to or plans to respond to each strategy.

1. (E1.2.2) Have you or are you currently developing an Emergency Energy Contingency Plan to meet peak electricity and natural gas needs at your essential facilities?
 - a. Critical Department managed water and wastewater treatment facilities are equipped with stand-by generators/transfer switches to provide for handle energy fluctuations and outages. Emergency operations manuals have been developed together with ongoing emergency response training. We have evaluated participation in a Demand Energy Response program for the Lopez Water Treatment Plant, the Salinas Water Booster Station, and the Cayucos Water Treatment facilities. Results of the analysis determined it was infeasible to shut these facilities down during regional high energy need periods. The Nacimiento Water Project will investigate participation in an energy Demand Response program starting January 2012.
2. (E1.3.1) Have you or are you currently retrofitting any existing facilities with low energy using components *such as* LED lights, florescent lights, solar panels, wind generation, biomass, energy efficient pumps, etc?
 - a. Over the past 10-years all county maintained traffic signals have been retrofitted with low energy LED lights. All new traffic signals are required to have low energy LED lights.
 - b. About 60 county maintained street lights have been recently retrofitted with LED bulbs.
 - c. High efficiency pumps and motors, as well as electronic monitoring and control systems, have been installed at the Lopez Lake water treatment facility (upgraded in 2007), the Nacimiento Water Supply system (began operations January 2011), and are in the process of being installed as part of the Salinas Water Booster station (to be completed by April 2012).
3. (E1.3.2) Have you or are you currently applying for any tax-free, low-interest grants to fund renewable energy projects? Provide a description:
 - a. Recently received a grant from the Department of Energy to replace sodium street lights bulbs with LED bulbs.
 - b. Assisted IWMA in obtaining a grant to purchase a compressed natural gas (CNG) collection truck.
4. (E1.4.1) Have you or are you currently retrofitting any existing wastewater or landfill facilities to capture *and* use methane for energy production?
 - a. With the exception of monitoring the closed Los Osos Landfill, the Department does not operate or maintain landfills. The Los Osos Landfill is a closed solid waste landfill facility that ceased operations in 1988. A landfill gas collection and destruction system has been in operation at the facility since 1998 in an effort to reduce Volatile Organic Compounds from groundwater by removing landfill gas/methane from the site. Past considerations to utilize the landfill gas burned through the flare unit at the facility in an effort to produce electricity were deemed infeasible because of the low levels of methane within the gas. The life expectancy for optimum yield of methane collected from the gas field was estimated to have been 10 years (2008). No further re-assessments to utilize the methane have been performed to date.

A Conceptual Level Technical Study, focused on feasibility, in an effort to develop plans to pump and treat contaminated groundwater at the site is currently underway. If a pump and treat pilot program is deemed feasible, consideration will be given to alternative energy sources during the development of any permanent pump and treat system.

- b. The Department currently manages four separate County Service Areas (CSAs) that provide community wastewater service. These include SLO Country Club, SLO Airport, Galaxy Mobile Home Park and Oak Shores. It is not economically feasible to convert these small treatment plants to allow for the capture and commercial sale of methane.
 - c. The Department currently manages four separate County Service Areas (CSAs) that provide community wastewater service. These include SLO Country Club, SLO Airport, Galaxy Mobile Home Park and Oak Shores. It is not economically feasible to convert these small treatment plants to allow for the capture and commercial sale of methane.
5. (E2.1.2) Have you or are you currently budgeting for capital improvements using life cycle costing (LCC) to identify long-term energy costs, environmental benefits, and cost savings for the life of projects?
- a. For each capital project the Department project managers and designers incorporate green technologies into the projects whenever the opportunities arise. Energy efficiency, cost benefit considerations, and regulatory compliance will continue to be standard procedures. Recent examples include:
 - i. The Nacimiento Water Project was designed and constructed with energy efficient components including pumps and water storage facilities to conserve pump energy needed for delivery. The design process incorporated PG & E's "Savings by Design" program review and component integration.
 - ii. The Los Osos Wastewater Project will be designed with energy efficient lift stations and state-of-the-art treatment facility.
6. (E3.3.1) Have you or are you currently installing renewable energy systems at facilities that pump and *treat* water and wastewater?
- a. The Department has no upcoming project to install solar or other renewable energy systems. However, as existing energy consuming system components (pumps, lights, etc) require replacement the Department specifies that more efficient components be used.
7. (WR4.2) Have you or are you currently implementing tiered water rate structures to incentivize water *conservation*?
- a. The Department operates five separate County Service Areas (CSA) that provide community water service. These include Cayucos, Lopez (South County), Shandon, SLO Airport and Santa Margarita. Tiered water rates were implemented and are now fully established on all CSA.
8. (WR1.4) Have you or are you currently increasing the availability and use of recycled water for use in *outdoor* landscaping areas?
- a. The Department currently manages four separate County Service Areas (CSAs) that provide community wastewater service. These include SLO Country Club, SLO Airport, Galaxy Mobile Home Park and Oak Shores. Although these older facilities were not designed to provide reclaimed water they do provide groundwater recharge.
 - b. The Department will be operating the Los Osos Wastewater Project. This project is being designed with a "purple pipe" system to provide reclaimed water to parks, schools and other facilities within the community, and to provide groundwater recharge.
 - c. The Lopez Water Treatment Plant upgrade completed in 2007 included recycling of partially treated water back through the water treatment process, and the new low pressure membrane system reduced the need for and use of system wash water from approximately 200,000 gallons per day to 20,000 gallons per day.

9. (E3.5.1) Have you or are you currently collaborating with PG&E, Cal Poly or other organizations and *businesses* to sponsor demonstration projects for recycling, solar, wind, LED street lighting, pump efficiencies, etc?
 - a. Department and IWMA provide waste reduction and recycling presentations to numerous organizations and public gatherings throughout the year.
 - b. The Department is in the initial stages of investigating energy recovery possibilities at one of the Nacimiento Water supply turnouts.
10. (E4.3.2) Have you or are you currently implementing Green Building Operations and Maintenance *guidelines* for County projects (e.g. recycled AB and HMA in roads, recycled aggregate in concrete, low VOC construction materials, etc)?
 - a. The Department encourages the use of recycled base material on most all capital projects.
 - b. The Department road crews utilize asphalt grindings for shoulder fill material where environmental constraints allow.
 - c. The Department road crews primarily use untreated well water for dust control over treated potable water.
 - d. The Department's Pavement Management Program is utilizing Cold In-Place Asphalt Recycling resulting in a reported 80% reduction in greenhouse gases when compared to conventional mill and fill paving operations.
11. (E4.3.3) Have you or are you currently offering green building training or support green building *professional* accreditation for County capital project managers and other staff?
 - a. The Department currently has no formal training program in place. However, if individuals request attendance at a green building seminar the Department would support such request if the training complemented their existing (or future) job description and duties.
12. (E4.4.2) Have you or are you currently amending plans and guidelines to encourage projects in urban areas to mitigate urban heat islands (e.g. use light colored aggregate in road overlay projects north of the Cuesta grade)?
 - a. The Department's road maintenance activities acquire asphalt from the plant in relatively minor quantities and therefore we don't have the ability to dictate aggregate color.
13. (E5.1.1) Have you or are you currently creating a waste reduction program aimed at achieving a *diversion* rate of at least 70% by 2015 for the unincorporated county?
 - a. The SLO County region (i.e., the cities and the unincorporated county) are currently diverting about 66% of the overall waste stream. A program is being developed for food waste recycling.
14. (E5.1) Have you or are you currently providing additional opportunities for county residents to recycle *cardboard*, glass, paper, and plastic products?
 - a. All County residents have opportunities to recycle numerous items either through curbside recycling or at any one of the local recycling centers.
15. (E5.1) Have you or are you currently implementing a composting and green waste program in those *communities* without them?
 - a. Commencing in 1994, green waste collection became available for subscribers to waste collection services. Others can take their yard/green material to the local composting operations.

16. (CR2.3) Have you or are you currently reducing construction and demolition waste by requiring a minimum of 75% of nonhazardous construction and demolition debris generated on site to be recycled or salvaged?
 - a. The Department has amended the standard contract boilerplate language for our construction contracts to ensure compliance with Chapter 8.12 "Solid Waste Management" of SLO County Code Title 8 Health and Sanitation, requiring recycling of at least 50% of the construction and demolition waste generated by construction projects.
 - b. The Department is currently following state mandates for 50% recycling for construction and demolition debris.
 - c. The Nacimiento Water Supply construction project required a minimum 75% recycling/salvaging.
17. (AQ2.4) Have you or are you currently encourage waste haulers on contract with the County to use clean, alternative fuels for waste collection vehicles?
 - a. The Department has encouraged franchisees to use alternative fuels in their waste collection vehicles.
18. (E14) Have you or are you currently increase methane capture rates at all operating landfills in the county?
 - a. With the exception of monitoring the closed Los Osos Landfill, the Department does not operate or maintain landfills. An engineering investigation of the potential for capture of additional methane at the Los Osos landfill in 2006 indicated an inefficient and non-economic benefit.
19. (E5.1.3) Have you or are you currently developing new standards to accommodate recycling within trash enclosures (enclosures should accommodate two 4-yard containers)?
 - a. Through the development review process, the Department is requiring sufficient space for all waste/recycling/green waste containers in all proposed commercial establishment projects. There are County development standards that support this effort.
 - b. Through the development review process, the Department requires development project conditions of approval which ensure recycling is implemented at all special events; and all commercial and residential developments.
20. (E7.1.1) Have you or are you currently amending the Land Use Ordinance to codify non-renewable energy facility design, siting and operation standards (e.g. safety, visibility, undergrounding of transmission lines, flood and geologic conditions)?
 - a. The Department will work closely with the Planning and Building Department in the development of future ordinance amendments which implement the Board adopted policies of the Conservation and Open Space Element and the EnergyWise Plan.
21. (BR3.2) Have you or are you currently pursuing a program to plant and maintain trees on County-maintained roads, medians, and public parking lots in the unincorporated communities?
 - a. For safety and maintenance reasons, the Department currently recommends that no new trees be planted within the right-of-way, which includes road edges and medians. To mitigate maintenance issues (heaving of pavement or sidewalks due to root growth, foliage droppings in storm drain system, etc) we plan to submit a recommended tree list in our 2014 Standards Update for Board of Supervisor approval.
 - b. The Department does not maintain public parking lots.

22. (AQ1.3) Have you or are you currently improving access to community-wide pedestrian and bicycle *networks* by removing barriers and providing additional bike- and pedestrian-oriented infrastructure.
- a. The Department reviews each proposed development project for implementation of “complete streets” circulation to insure the county’s right-of-way is available for bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities, as well as public utilities.
 - b. We continue working closely with County Parks (General Services) for the safe implementation of future segments of the Bob Jones Trail and the Cayucos to Morro Bay trail.
 - c. The Department has recently completed the following projects that reduce barriers and increase multimodal access
 - i. Safe Routes to School, Nipomo constructed class I path connecting Nipomo Elementary to residential neighborhoods.
 - ii. Hutton Road widening, installed a class II bike lane on Hutton Road
 - iii. Orchard and Joshua Overlay created a class II bike lane on portion of Orchard and Joshua that were being resurfaced.
 - iv. Main Street bike lane, constructed a missing portion of bike lane to Main Street, Templeton
 - d. In addition the Department is currently working on projects that will add bike lanes to a portion of Templeton Road and La Panza Road. All of this work is being done in accordance with the County’s Bikeways Plan.
23. Have you assigned a division staff position/person(s) to review each capital project for incorporation of green strategies; and be responsible for ongoing monitoring and annual reporting of the Division’s COSE energy *and* greenhouse gas emission reduction compliance?

For each capital project the Department project managers and designers are responsible to ensure each project is as energy and cost efficient as possible.

Other Public Works Department Energy Efficient Measures

1. The Department has adopted a voluntary 9-80 schedule to reduce fuel usage.
2. The Department’s road maintenance crews have adopted a 4-10 work schedule between April and October to reduce fuel usage and minimize daily mobilization losses.
3. Department staff on-call for storm emergencies is provided a county vehicle to take home to reduce fuel usage and to minimize response times.
4. The Department’s construction vehicles recently completed fleet upgrades or were retired in compliance with the Air Resources Board regulations.
5. Numerous Department employees actively participate or assist with ongoing development of the County’s Ride Share Program.
6. The Department supports the County’s Bicycle Advisory Committee with website links and staff attendance.
7. The Department encourages staff to bring their own reusable plates, cups and utensils to each special function as opposed to purchasing disposable utensils.