

GREEN BUSINESS REPORT – FY 2012

I. Agency Recycling

Item	Description	Recycling Measurement	Quantity
1) Paper	Paper cups, plates, printer paper, newspaper, magazines, and other paper based materials are separately disposed of in office containers, collected by staff and transferred to 64 gallon bins that are picked up and recycled weekly by Marin Sanitary Service.	# of 64 gallon bins	48
2) Aluminum cans	Aluminum beverage cans, aluminum foil, and other aluminum materials are deposited by employees in bins outside the Agency lunch room. The bin contents are periodically transferred to a larger storage area, and the aluminum is sold at a Richmond recycling facility.	lbs. of aluminum	86
3) Plastics	Plastic food, beverage, and storage containers and other plastic materials (labeled #1-#7) are deposited by employees in bins outside the Agency lunch room. The bin contents are periodically transferred to a larger storage area, and the plastic is sold at the Marin Recycling Buyback Center.	# of 64 gallon bins	18
4) Scrap Metal	Iron, Steel, and related metals are collected and then sold for scrap at a recycling facility in Richmond	lbs. of metal	7,492
5) Cardboard	Waste cardboard boxes, packing, and similar material are collected in a 3-yard dumpster. Marin Sanitary Service picks up the dumpster and recycles the materials.	# of 3 yard bins	78
6) Greenwaste	Grass clippings from lawn mowing, and tree branches and leaves from pruning and landscaping activities are deposited in 3-yard dumpsters. Marin Sanitary Service picks up the material and utilized it in a composting operation.	# of 3 yard bins	96

II. Reused Agency Products

Metric	Definition	Reuse Measurement	Quantity
1) Reclaimed water	Treated wastewater that is reused for agency landscape irrigation, tank washdown, cogeneration engine cooling, and offsite use at the Remillard Pond.	million gallons/year % of effluent	327 9.1
2) Biosolids	Treated biosolids that are beneficially reused as: - alternate daily cover at Redwood landfill - soil amendment/fertilizer for land application	wet tons/year wet tons/year	4056 2268
3) Biogas	Biogas that is generated in the Agency's anaerobic digesters is used for fuel in an engine-generator to produce on-site electricity. Although one digester was out of service throughout FY 12, gas production remained relatively steady.	ft ³ of biogas	48,960,589 ft ³

III. Hazardous Material Collection and Disposal

Metric	Description	Recycling Measurement	Quantity
1) Oils and Lubricants	Used oils and lubricants from CMSA equipment, vehicles, and engine-generators are collected and stored in a waste oil facility. The supplier periodically collects the materials for recycling.	gallons	510 gal. used oil 120 gal. of coolant (1) 55gal drum of used oil filters. (1) 55gal drum of pig mats
2) Mercury	Collected mercury containing devices: - amalgam waste at dental offices is collected and disposed of by certified haulers - fluorescent tubes are collected by the public education program agencies - mercury thermometers exchanged for digital thermometers at CMSA	kg linear feet # of thermometers	(79) 4' fluorescent Tubes
3) Pharmaceuticals	Old or unused pharmaceuticals are brought to pharmacies and police stations by the public for proper disposal. CMSA and the Marin County public education program agencies fund the collection and disposal expenses, and the program is administered by the Marin County Environmental Health Department.	lbs. of pharmaceuticals	4,300 lbs
4) Batteries	Depleted, used, or damaged batteries collected by staff and brought to Marin Household Hazardous Waste facility. Sources of batteries include: - Agency vehicles - personal or network computers, - devices (D,C, AAA, 9V, etc.) and employee batteries brought from home	# of batteries # of batteries lbs.	27 lbs AA/AAA/D/C (12) 6 volt and (2) 12 volt batteries
5) Electronic Waste	Electronic products, that contain toxic materials, from Agency facilities and employees - cell phones, computers, computer monitors, etc. – are collected and stored on-site, then periodically disposed of at the Marin Hazardous Household Waste Facility.	# of devices	22 complete Monitor and Tower Units
6) Herbicides and Pesticides	The Agency uses the same types of herbicides and pesticide products utilized by the County of Marin as part of their Integrated Pest Management Program. Waste products are disposed of at the Marin Sanitary Service Household Hazardous Waste Facility.	gallons	20 gal. of Roundup. 200lbs of soil amendments 1 gal of Pesticide

IV. Green Activities

Metric	Description	Environmental Benefit
1) Potable Water Conservation	High efficiency water fixtures have been installed in all Agency facilities and buildings. Staff records the Agency's daily potable water use.	Reduced potable water use 69 CCFS or 51,612 gallons
2) Green Commuting	Programs encourage employees to use alternate commute methods such as carpool, biking, public transit, etc., when convenient and affordable for Agency employees. Administrative procedures are in place to assist in registering, tracking, and utilizing these modes of transportation.	In FY12, <u>19</u> Agency employees participated in the program, which reduces the number of vehicles on roads during commute hours, emissions and fossil fuel use. The value of this benefit was \$4,848 which equates to 1,328 commute trips.
3) Spare the Air Days	Participation in the Bay Area Air Quality Management District's Spare the Air Day program. The Agency does not use gasoline fueled landscape maintenance equipment on these specified days.	Six (6) days in FY12 that resulted in lower emissions and GHG reduction
4) Increased Digital Document Management	Digital and email correspondence to replace hard copy mailing. Many agency documents are now posted on the Agency website for viewing.	Reduced use of paper, toner, and postage
5) Green vehicle fleet	Agency staff use bicycles and electric carts to travel around Agency property and within the treatment plant, and 50% of agency vehicles are alternate fuel – hybrid or compressed natural gas.	Fuel savings and reduced GHG emissions

V. Energy Saving Activities – projects and initiatives that lower the Agency’s annual energy usage

Project/Initiative	Description of energy saving aspect of initiative
1) New Aeration Blowers	Constructed a capital improvement project to replace two of the four original aeration blowers with high-speed, variable output turbo blowers. The new blowers are more energy efficient due to their ability to change motor speeds to match microorganism air demand fluctuations, rather than throttling down the air supply of the single-speed blowers. Projected energy savings of 20%-30% from the elimination of throttling.
2) Digital HVAC Controls	The new digital-display wall thermostats provide easily understandable setting and temperature readings, and the new digitally-controlled HVAC system hot and cold water valves, combined with a smart controller, provide more precise control of heating, cooling, and air flow. This reduces overheating or overcooling of spaces.
3) Computer Server Virtualization and Desktop Replacement	Periodic replacement of employee desktop computers with more powerful, versatile, and energy-efficient machines reduces electricity use. The FY12 server virtualization project was designed to replace eight servers with one combined server and so reduce their energy consumption and HVAC demand to cool the spaces they were used in. Seven of the eight servers have been replaced, and the last replacement, delayed due to unforeseen technical difficulties, is due for replacement in late September.
4) Lighting System Replacement	Replace fluorescent, incandescent, and metal halide fixtures/bulbs throughout the Agency’s facilities with energy efficient lighting – electronic ballast fluorescents or LEDs. Light pollution is considered while researching replacement fixtures.
5) Energy Generation	<p>The Agency uses a cogeneration system comprised of an internal combustion engine coupled to a generator to produce over 90% of the Agency’s energy needs. The system is fueled by biogas generated in the Agency’s anaerobic digesters and purchased natural gas; a small amount of utility electricity is purchased to minimize system disruptions when demand instantaneously changes. For FY12, metrics for energy generation and the resulting electricity procurement savings are:</p> <ul style="list-style-type: none"> - Biogas generation (from Table 3): <i>48.9 million cubic feet or 29.3 million cubic feet of NG (equivalent gas)</i> - Natural gas purchase: <i>326,360 therms (SPURR invoices)</i> - Electricity savings due to cogeneration: <i>\$ 915,925 per year Total KWH – PG&E x \$.253/kwh (annual PG&E average / KWH)</i> - Electricity savings due to biogas use: <i>\$ 133,896 per year Value of biogas added up per month FY12</i>