

CMSA GREEN BUSINESS REPORT – FY 2013

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	62
2) Aluminum	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	283
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	95,163
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	48
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 utilizes it in a composting operation.	# of 3-yard bins	65

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 at the Remillard Pond in Larkspur.	million gallons/year % of effluent	196 6.7
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	4,073 2,052
3) Biogas	Biogas that is generated in the Agency's anaerobic digesters and used for fuel in an engine-generator to produce on-site electricity.	ft ³ of biogas	57,595,172

CMSA GREEN BUSINESS REPORT – FY 2013

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	Oil: 780 gal Coolant: 850 gal (2) 55gal drums of used oil filters (2) 55gal drums 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 are exchanged for digital thermometers at CMSA	kg linear feet # of thermometers	28 344 3
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	5,202
4) Batteries	Depleted, used, or damaged batteries collected by staff are brought to the Marin Household Hazardous Waste Facility. Sources of batteries include: - Agency vehicles - Devices (D,C, AAA, 9V, 6V, etc.) and employee batteries brought from home	# of batteries lbs.	49 – 12V 24 – 6V 168
5) Electronic Waste	Electronic products that contain toxic materials sourced from Agency facilities and employees—such as cell phones, computers, computer monitors, process instrumentation, etc.—are collected and stored on-site, then periodically disposed of at the Marin Hazardous Household Waste Facility.	# of devices	65
6) Herbicides and Pesticides	The Agency uses the same types of herbicide 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	Herbicide: 340 gal Pesticide: 2.2 gal

CMSA GREEN BUSINESS REPORT – FY 2013

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 34 CCFS or 23,936 gallons used in FY13
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 FY13, 14 Agency employees participated in the program, which reduces the number of vehicles on roads during commute hours, emissions and fossil fuel use.
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.	Nine days in FY13 that resulted in lower emissions and GHG reduction
4) Increased Digital Document Management	Digital and email correspondence is used to replace hard-copy mailing. Many Agency documents are posted on the Agency website for viewing electronically.	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

Project/Initiative	Description of Environmental Benefit
1) New Aeration Blowers	Two of the four original single-speed aeration blowers were replaced with high-speed, variable-output turbo blowers this past year. These 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. The aeration system optimization phase of the project is underway and, when completed, the Agency should realize a projected 20%-30% energy savings.
2) Reclaimed Waste System Improvements	This project has been completed and involved replacement of the treatment plant's original reclaimed water pumps, strainers, and hydropneumatic tanks. The new reclaimed water pumps utilize soft-start motors that reduce wear on the pump components and require a lower energy demand during start-up.

CMSA GREEN BUSINESS REPORT – FY 2013

V. Energy Saving Activities, cont.

Project/Initiative	Description of Environmental Benefit
3) Computer Server Virtualization and Desktop Replacement	Seven desktop computers were replaced in FY13 with more powerful, versatile, and energy-efficient machines. The FY13 server virtualization project replaced eight servers with one combined server to reduce energy consumption and the HVAC demand to cool the server cabinet. Two additional servers have been added to the project scope and will be replaced in late 2014, upon completion of our SCADA HMI upgrade project.
4) Lighting System Replacement	<p>Replacement of 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.</p> <p>The Agency upgraded the original road lighting system in 2012. Energy-efficient and light-pollution-reducing LED lamp retrofit kits were selected instead of replacing the entire fixture (lamp and pole). The visible light is comparable to the old fixtures, and the estimated energy savings is about 7,800 kWh per year, resulting in a 3-year return on investment.</p>
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 energy demands fluctuate. For FY13, metrics for energy generation and the resulting electricity procurement savings are:</p> <ul style="list-style-type: none"> - Biogas generation (from Table 3): 57.6 million cubic feet or 34.5 million cubic feet of NG (equivalent gas) - Natural gas purchase: 278,910 therms (SPURR invoices) - Annual energy costs without cogeneration: \$ 695,453 (assumes purchasing all electricity and 1/6 current NG for boiler fuel) - Electricity savings due to cogeneration: \$ 515,453 (non-cogen energy costs, less electric usage FY 13) - Electricity savings due to biogas use: \$ 274,703 value of biogas used as engine fuel (used during peak and part-peak hours)