



City of San Jose, California Environmental Services Department Water Resources Division

Profile



San Jose, California

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From its founding in 1777 as California's first city, San José has been a leader, driven by its spirit of innovation. Today, San José stands as the largest city in Northern California and the Capital of Silicon Valley. As the 10th largest city in the U.S., San José is committed to remaining a top-ranked place to do business, work, and to live.

In demonstrating this commitment, San José City Council adopted the San José [Green Vision](#) on October 30, 2007, a fifteen-year plan to transform San José into a world center of Clean Technology innovation, promote cutting-edge sustainable practices, and demonstrate that the goals of economic growth, environmental stewardship and fiscal responsibility are inextricably linked. This Green Vision lays out 10 bold goals which will result in environmental sustainability, economic growth and improved quality of life for San José residents.

Fenceline

As part of San José's drive to become an environmentally and economically sustainable city, the City's Environmental Services Department's (ESD) works with our community to conserve resources and safeguard the environment for future generations. ESD's responsibilities include wastewater treatment, solid waste management and recycling, water conservation, water pollution prevention, energy conservation, and the delivery of potable water through the San José Municipal Water System.

An Environmental Management System (EMS) provided the department with a structured approach for managing its own environmental and regulatory responsibilities by establishing

an overall policy and annual goals – allowing it to demonstrate by example the practices and principles it espouses to the public, or “walk the walk.”



In December 2005, John Stufflebean, the Director of Environmental Services, initiated work on the development of an EMS for ESD. Beginning in January 2006, the EMS cross-functional core team was assembled. The team chose to initially develop an EMS for ESD’s Water Resources Division (WRD). The WRD is comprised of the San José Municipal Water System (Muni Water) and the South Bay Water Recycling System (SBWR). Muni Water provides drinking water to approximately 26,500 metered connections serving about 100,000 residents within San José. Muni Water has facilities for utilizing three main sources of potable supply: groundwater, San Francisco Water Department treated surface water, and Santa Clara Valley Water District treated surface water. SBWR is responsible for implementing a water recycling program which delivers tertiary-treated wastewater (from the San Jose/Santa Clara Water Pollution Control Plant) for non-potable uses such as industrial cooling and processing, irrigation and power generation.



The Municipal Water System Building

The division has about 46 employees, including administration, operations, maintenance, inspection, and engineering and a combined operating/capital budget of over \$45M. Although all sections of WRD were included, our primary focus was on O&M activities, because that’s where Muni really gets out there and interacts with the environment on an operational level.

Significant Aspects and Impacts

As part of the EMS development process the WRD went through an exercise to identify all the environmental aspects and impacts from its activities and practices. These aspects/impacts were prioritized, and the significant aspects/impacts identified. The initial aspects/impacts selected were vehicle use, disposable battery use, and further study of the distribution system’s fluoridation equipment and practices and landscaping activities. Objectives and targets were set for managing these significant aspects/impacts and Environmental Management Programs (EMPs) were put in place.

Objectives and Targets

The WRD identified five initial objectives for the EMS, with corresponding targets, as follows:

Activity/Operation	Aspect	Impact	Objective	Target
Backflow testing, cross connection testing, meter reading, SCADA operation, shop and hand tool use, valve exercising, fluoride injection maintenance, water quality testing, back-up generator use, landscaping, pump station maintenance and well use.	Battery Usage	Universal waste	Reduce volume of universal waste generated by the Water Resources Division. Reduce overall costs on battery spending.	Switch out 100% batteries with rechargeable batteries as stocks are depleted. Evaluate available reductions in battery power needed by introducing flashlights with Light Emitting Diodes (LEDs) instead of traditional flashlight light bulbs.
Landscaping	Electricity use, equipment use, pesticide/herbicide use, potable/reclaimed water use, use of rags, vehicle use, weeding.	GHG emissions, hazardous waste, noise pollution, resource consumption, universal waste, yard waste.	Expand water reduction measures to reduce the use of natural and human resources in maintaining the landscaping for the Municipal Water System and South Bay Recycled Water sites.	Expand water reduction measures to 2 additional sites; 4 total.
Various general operations activities including backflow testing, back up generator use, cross connection testing, fluoride injection maintenance, hydrant maintenance, landscaping, large meter accuracy testing, main break, main flushing, meter reading, meter replacement, painting, pipe or service replacement, pump station maintenance, reservoir cleaning, reservoir draining, turnout maintenance, valve	Vehicle Use	GHG emissions, resource consumption, solid waste	Reduce Greenhouse Gas Emissions	Continue to track vehicle emissions and follow Green Fleet Policy for replacement vehicles.

Activity/Operation	Aspect	Impact	Objective	Target
exercising, vehicle maintenance, water quality testing.				
Fluoride Injection Maintenance	Chemical use/delivery, electricity use, battery use, vehicle use, equipment use.	GHG emissions, potential ground/surface water contamination, resource consumption, solid waste, universal waste.	Determine whether Muni's fluoride injection system is using the best available equipment, options for reliability and/or safety improvements, and what safety, handling, and control measures are in place.	Completed documentation of system safety and control measures for three dosing stations by 12/01/08.

Benefits of Adopting an EMS

The City of San Jose has realized a number of benefits resulting from the adoption of an EMS in their Water Resources Division.

- Reduced vehicle fuel costs
- Lowered greenhouse gas emissions
- Improved infrastructure knowledge
- Capture of institutional knowledge
- Decreases in solid/universal waste
- Documented roles, responsibilities and authorities
- Greener landscaping practices
- Streamlining operations
- Better regulatory compliance
- Improved Emergency Response Procedures
- Increased environmental awareness and staff participation



City of San Jose
Alternative fuel vehicle

The Water Resources Division EMS has lowered environmental impacts associated with daily operations by replacing disposable batteries with rechargeable ones, eliminating a stream of universal waste, and successfully piloting efficient landscaping practices at two of its sites, resulting in a 75% decrease in water consumption, a 66% decrease in yard waste generated, decreased pesticide and herbicide use, and a 50% decrease in staff maintenance time.

Vehicle use is a good demonstration of how well EMS activity complemented existing City Policies or identified gaps where more work is needed. In looking at the vehicles, we found low overall fleet MPG with associated high fueling costs, in part due to a fleet that had aged somewhat due to the freeze on vehicle purchases, and in part to some of the equipment packages that need to be carried. This led to a search for tools that would help improve the situation. Were there vehicle purchasing guidelines that could help improve MPG or help lower emissions? It turned out there wasn't something specific, but the City did have a recently revised Environmental Purchasing and Procurement Policy (EP3), and more recently

had adopted some aggressive green house gas (GHG) reduction goals. This in turn led to a partnership with General Services Fleet Management in developing a Green Fleet administrative policy. This was one of the really powerful results from the EMS process: that in identifying aspects in one location, we are often identifying aspects that are common on a citywide basis, and in addressing these, we can promote a much wider application of the benefits.

Registration



WRD staff with ISO 14001 Banner

In September of 2008, Environmental Services' Water Resources Division became the first operational group in the City to achieve ISO 14001 certification.

Next Steps

The next step for WRD is maintaining their EMS, adjusting to the ongoing audit schedules, and practicing continual improvement. ESD started the EMS certification process with WRD because it was a relatively small, well-run operation that probably would not have huge environmental issues to deal with which would allow us to concentrate on learning how best to implement an EMS.

Costs/Resources

The Water Resources Division's EMS development, implementation, and certification took about 3,120 staff hours and \$27,000 for consulting and registration fees over a 1 ½ year period.