

USING the CERES PRINCIPLES as a MANAGEMENT TOOL at a PUBLIC UTILITY

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INTRODUCTION

After the 1989 *Exxon Valdez* oil spill, a group of social investors, environmental groups, religious organizations and pension trustees formed the Coalition for Environmentally Responsible Economies (CERES), pronounced "series." They then drafted the ten CERES Principles, (which were originally called the "Valdez Principles," but were later renamed). The principles cover environmental protection, resource conservation, risk reduction, product safety, public access to information and accountability. Their goal was to link corporate environmental responsibility with the bottom line.

The Louisville & Jefferson County Metropolitan Sewer District (MSD) is a nonprofit utility managing wastewater, stormwater and flood control, and serves 700,000 people. The MSD Board signed the CERES Principles in 1990, and expanded that commitment with its "Environmental Policy Statement" in 1993. While the CERES Principles were created for the private sector, MSD has found creative ways to apply them to its public-sector operations. The Principles and the Statement are intended to guide all MSD employees in their day-to-day activities, purchasing decisions and long-range planning.

THE CERES PRINCIPLES AND THEIR APPLICATION

1. Protection of the Biosphere

MSD invests between \$50 million to \$90 million (USD) into new infrastructure annually. To reduce the impact of that construction, MSD challenges its staff, consultants and contractors to incorporate pollution prevention and environmental protection into all phases of these projects. Sewer alignments are moved away from streams, larger trees and other worthy natural features when possible. Since undisturbed land does not require restoration, MSD continues to upgrade requirements for erosion-prevention and silt-control best management practices (BMPs) on all capital projects.

MSD began water-quality monitoring of local streams, including biological inventories, in 1987 to monitor progress toward its goal of improving ambient stream conditions -- by eliminating septic tanks and almost 400 small, temporary wastewater treatment plants. MSD works to reduce infiltration and inflow that cause diluted wastewater by-passes to streams and the Ohio River. Conversion of wastewater disinfection systems from chlorine to ultraviolet light is happening, where appropriate.

Through the International Council of Local Environmental Initiatives' (ICLEI) Urban CO₂ Reduction Project, MSD is reducing its use of transportation energy and greenhouse emissions, via efficient fleet operation, alternative vehicle fuels, an Employee Commute Options program and support for bicycling.

2. Sustainable Use of Natural Resources

MSD selects papers based on content, not price alone. Hammermill's Unity DP© duplicating paper is currently being used for copying, laser printing and faxing. This unbleached 20-pound stock is made of 100% recycled fiber, at least 50% post-consumer recycled paper. Its slightly grayish-tan hue has two additional benefits: the reduced glare reduces eyestrain and the opacity eliminates show-through.

Styrofoam cups are verboten; staff and guests drink from ceramic cups. At facilities where many employees eat lunch, they do so on reusable dishes with metal utensils.

3. Reduction and Disposal of Wastes

All MSD duplicating machines must be capable of doing duplex (two-sided) copying; employees and consultants are advised to use that feature whenever possible.

MSD diverts a growing list of commodities from the local landfill by recycling. Office programs collect office paper, computer print-outs, newsprint, corrugated cardboard, phone books, laser toner cartridges and aluminum cans. Fleet maintenance personnel recycle used motor oil, batteries, tires, parts and carburetor cleaning fluids and Freon. The Maintenance Department recycles foundry steel, cast iron and other scrap metals, much of which comes from decommissioning temporary facilities.

MSD offers composting training to its employees. Coffee grounds, filters and yardwaste are composted in bins at its Main Office. To provide an alternative to flushing household hazardous wastes down the sewer to the detriment of plant microbes, the environment and employees, MSD co-sponsored several collection events with local government, until it could set up a permanent facility.

Through aggressive monitoring of industrial discharges, MSD has reduced concentrations of heavy metals in its biosolids so that the horticultural sector could use it as a soil amendment. MSD plans two pilot beneficial reuse projects, the products of which will support utilization demonstrations and market surveys.

4. Energy Conservation

By investing heavily in energy conservation, MSD has been able to greatly expand its customer base, yet stabilize its energy costs! Other benefits include reduced CO₂ and other air emissions and improved staff comfort. Employers everywhere tell their employees to work smarter, cheaper and cleaner; MSD's actions speak that message louder to its staff than any words ever could.

MSD committed to participate in the US Environmental Protection Agency's (EPA) Green Lights program in 1990 and met that commitment in January 1997. Efforts began with an on-paper energy-use analysis, which uncovered \$120,000 in annual billing errors! Energy audits of 79K m² (850K ft²) of floor space and the installation of energy-efficient lighting in 90% of that floor space followed. These so-called Green Lights deliver lighting for 25-40% of the electricity required by comparable traditional lighting, with better color rendition and without irritating flicker or hum.

MSD's newly renovated Main Office is one of EPA's 25 Energy Star Showcase Buildings. MSD relamped with Green Lights, upgraded the heating, ventilation and air-conditioning (HVAC) systems and insulated to cut the building's total energy demand in half, to approximately \$1/ft²/yr!

Leaky buildings are being weatherized; boilers, insulated and extra-efficient motors, installed. Even little things count: turning off vending-machine lights is saving ≈\$300/year in one building! As PCs, printers and copiers are upgraded, only EPA Energy Star rated equipment is bought, using competition to save costs and reduce pollution without added costs -- simply by rewriting bidding specifications.

5. Risk Reduction

All MSD employees receive AIDS and Hazmat Level I training, where they are advised about Material Safety and Data Sheets (MSDSs) on substances they might encounter on the job. Based on job needs, 200+ other courses are provided to staff, e.g., advanced Hazmat, confined spaces, respiratory protection and first aid. Tailgate safety classes provide operations and maintenance personnel with reality-based training tailored to their needs and in context. A training van carries "pickle buckets" for seats, a TV/VCR, generator, snacks and coffee to job sites in the field. For example, weed cutters learn about avoiding eye injuries and construction inspectors about preventing trench cave-ins.

MSD installed its first biofilter to scrub air escaping a large combined sewer next to a major employer and all but eliminated odor complaints without expensive, troublesome and possibly risky chemicals.

6. Safe Services

MSD has posted signs at all combined sewer overflows, retrofitted deep sewer-access holes with locking lids and found substitutes for cleaning agents judged to potentially pose risk to housekeepers.

7. Environmental Restoration

For decades, MSD's engineers, like others throughout the US, spent much effort and money to widen, channelize and line local streams with heavy stone and concrete to "improve" drainage, "minimize" flooding and render wetlands suitable for development. This old approach actually aggravated flooding and drainage problems, increased erosion and destroyed natural areas. MSD is now working with the community to implement a greenways program to reclaim and enhance waterways by restoring natural settings, meandering streams and buffer vegetation. Greenways provide better flood control and stormwater management, water quality and wildlife habitat protection, recreational areas, walking and bike paths and lower flood insurance rates. Several projects, including a recreational corridor along the county's 55-km (35-mi) Ohio River bank, are partially complete and already very popular.

MSD is working with community groups and local government to begin restoring riparian zones to their natural vegetative state to recover the flood-mitigation qualities and habitats that mowed grass lacks. Soil bioengineering design principles are being incorporated into applicable capital projects.

Since 1989, communities on both banks of the Ohio River have set aside a Saturday in June to clean up debris from its Pittsburgh, Pennsylvania source to its Cairo, Illinois mouth. MSD coordinates those activities along the entire Jefferson County bankside.

8. Informing the Public

MSD promotes openness to employees, the public and the media. Any employee may answer a reporter's questions if he or she feels competent to do so. Numerous citizen advisory groups have input into decision-making on MSD projects and programs. Each capital project includes meetings with affected citizens. This policy occasionally demands a fair amount of work, but has paid off in credibility, community support, trust and fair reporting of MSD's issues.

Employees are encouraged to be involved with community and environmental groups, government commissions and professional organizations. The staff volunteers for stream clean-ups and Earth Day events, provides speakers and arranges site visits. MSD provides any citizens group that cleans a local stream with work gloves, garbage bags and disposal of the debris, including abandoned cars.

MSD works with local schools on their environmental special projects and underwrites traveling environmental performances. Supervised and trained students from several environmental-technology high schools are employed at MSD in an on-going summer project to survey and sample every pipe discharging into county streams -- a requirement of the EPA Urban Stormwater permit program -- to confirm that they contain no sanitary waste.

MSD shares its knowledge and experience with its peers from other cities in the local region and throughout North America, South America, Europe, Africa and Asia.

9. Management Commitment

One Executive Offices engineer is assigned full-time to coordinate implementation of the environmental principles throughout the agency, but all employees are explicitly accountable for abiding by the CERES Principles, the Environmental Policy Statement and the related policies and procedures. They are also required to report events involving potential environmental harm. A confidential reporting system is available to anyone who believes staff is not following the letter or spirit of laws and regulations. Supervisors rate employees' environmental support in annual pay-for-performance reviews. New Employee Orientation includes a presentation on how MSD's commitment relates to their duties.

Programs with new costs are more likely to be supported if they support the CERES commitment.

The Purchasing Department has stepped up their scrutiny of what is bought, from whom, to include a more thorough review of supplies and suppliers and services. The purchase of products made with recycled materials is especially emphasized. If contractors fail to meet environmental requirements, they can be declared ineligible for future contracts.

10. Audits and Reports

CERES signatories are required to complete a rather lengthy, but worthwhile detailed annual report. This task demands coordination and input from all internal departments. The process gets employees talking to each other and learning about each other's duties, needs and problems. Many employees get one-on-one opportunities to bring their concerns and ideas to the attention of management. Strategies for improvement often spontaneously flow out of the give-and-take. The teamwork ethic is reinforced.

Internal reporting to MSD management and its Board encourages coordination and accountability.

Regular environmental audits of MSD facilities will be added to health and safety audits in 1997.

CONCLUSIONS

From the financial perspective, MSD's experience is that its CERES commitment comes with manageable and acceptable costs and often results in a better financial bottom line.

MSD has found that many of the activities related to implementation of the CERES Principles have improved the agency's image and credibility in the community. While the general public has little knowledge of the Principles, they have heard about the *Valdez* oil spill, find environmental problems worrisome and recognize that MSD acts upon its beliefs and works to improve upon the status quo.