Why Develop an EMS?

While the decision to develop and implement an EMS entails a commitment of time and monetary resources, EMS implementation experiences from water and wastewater utilities and other local government organizations have shown consistent short-term and long-term returns on investment. In addition to economic savings, water and wastewater facilities have realized a wide-range of other benefits, including improved relationships with regulators, neighbors and other external stakeholders, better public perception and image, and improved operational efficiency and control. As a manager, you should consider the following questions to assess whether an EMS is appropriate for your organization:

- Would you like to reduce inefficiencies and thereby reduce operations and maintenance costs?
- Would you like to manage risks and liabilities more effectively?
- Does your organization have a reliable and effective process for monitoring and complying with laws and regulations?
- Do you feel that your organization can make other environmental improvements?
- Would you like your water or wastewater utility to be a leader in environmental stewardship?
- Are you concerned about retirement, staff turnover and undocumented operational knowledge?
- Are you concerned about public image?
- Would improved communication and teamwork be useful in daily operations?
- Would you welcome more input from frontline staff on potential improvements?

If you answered “yes” to any of these questions, an EMS may provide tangible benefits to your organization. Water and wastewater utilities based their decisions to develop and implement an EMS on the issues presented above and they have realized positive benefits and returns on investment from pursuing EMS goals.

An EMS offers your wastewater utility the ability to change from a culture of reaction to one of proactive decision-making, where sound, operational practices are institutionalized and your employees are foreseeing opportunities for environmental and operational improvements.
What is an EMS?

What is an Environmental Management System (EMS)?

A management system is a set of tools, policies and procedures, training and expertise that can be used to create programs and plans tailored to meet the resources and goals of an organization. An EMS is built around the framework of “plan, do, check, act” that uses a standard process to identify organizational goals, implement them, determine progress, and make improvements to ensure that environmental considerations are fully integrated into the organization’s mission and operations. Key elements of an EMS include:

- Defining roles and responsibilities
- Identifying and prioritizing environmental impacts
- Setting measurable objectives and targets
- Verifying and establishing operational controls
- Monitoring and measuring activities and progress
- Aiming for continual improvement as part of a review (feedback) cycle

An EMS provides a systematic way to review and improve operations for better organizational control and environmental performance. It can enable an organization to:
1) Reduce operating costs; 2) Improve environmental performance; 3) Reduce vulnerability to environmental violations, fines and penalties; and 4) Capture institutional knowledge and plan for succession. Because an EMS provides a continual improvement management framework, it can be adapted to particular industries through programs such as the National Biosolids Partnership (NBP) and Responsible Care™, helping to transform an organization from reactive to proactive (eliminating problems before they occur). Organizations with an EMS no longer apply quick fixes to issues, but provide a systematic (“find, fix, and prevent”) approach to managing environmental responsibilities through strategic planning and decision making.

Assistance

UF/TREEO can provide technical assistance to companies that are interested in implementing an Environmental Management System. Experienced UF/TREEO staff and adjunct faculty can provide assistance ranging from an on-site assessment and detailed gap analysis to participation in internal audit activities and support in the development and implementation of an EMS. For more information on EMS assistance, please contact William T. Engel, Ph.D., CET, at 352/392-9570 ext. 210 or bengel@treeo.ufl.edu.
UF/TREEO EMS Expertise

UF/TREEO has assisted many public entities in implementing an EMS. The agencies in Florida are: Orange County Convention Center, Jacksonville Electric Authority (JEA), City of Tallahassee, Collier County, City of Chiefland, Orange County Public Schools, the University of Central Florida and Palm Bay Utilities.

Following is a list of specific EMS implementation and training projects:

**Orange County Convention Center—Orlando, FL**
UF/TREEO provided technical assistance to the Orange County Convention Center in its quest to implement an EMS. UF/TREEO was under subcontract to Global Environmental and Technology Foundation, the major contractor to the EPA Municipal III Project. The project was completed in the summer of 2005. They are now ISO 14001 certified. Please see www.peercenter.net for additional information on the project.

**Jacksonville Electric Authority (JEA) – Jacksonville, FL**
UF/TREEO provided assistance to a Water Treatment Facility with JEA. The assistance was to design, develop and implement an EMS for a Water Treatment Facility. The project is complete and they are now ISO 14001 certified.

**City of Tallahassee – Tallahassee, FL**
UF/TREEO is providing assistance to the Water Utility Department Treatment Division. This covers two Wastewater Treatment Facilities. The project involves providing assistance and guidance in the design, development and implementation of an EMS for their facilities. The project is complete; they will have their ISO 14001 certification audit in July 2007.

**National Biosolids Partnership**
UF/TREEO was selected in December 2003 by the National Biosolids Partnership to provide Technical Support to three biosolids EMS candidate public owned treatment works [RFP (NBP001-03)]. UF /TREEO is currently working with Collier County and the City of Chiefland in the State of Florida. This project began in March 2004. In July 2004, three additional facilities, South Bend, Fort Wayne and Elkhart, Indiana, were added. UF/TREEO has a subcontract with Clean Manufacturing Technology and Safe Materials Institute at Purdue University to provide technical support to these facilities.

**Orange County Public School System – Orlando, FL**
UF/TREEO was asked to assist the public school system in the design and development phase of their EMS. The school system’s EMS was required by FDEP as part of a consent order. UF/TREEO has completed its part of this project. The school system is proceeding with their EMS implementation.

**University of Central Florida – Orlando, FL**
UF/TREEO was asked to provide technical assistance to University of Central Florida (UCF) staff so it could begin the development and implementation of its EMS. UCF’s EMS was required by FDEP as part of a consent order. UF/TREEO has completed its part of the project. UCF is proceeding with its EMS implementation.

**Palm Bay Utilities – Palm Bay, FL**
UF/TREEO has a contract with the City of Palm Bay to design, develop and deliver a 2 ½ day EMS training course for the individuals of the Palm Bay Utilities who will be responsible for designing and implementing their EMS. The developed courses include, EMS Overview and EMS Internal Audit. Their goal is to pursue ISO 14001 certification.
In June 2004, UF/TREEO’s contract with the Global Environment and Technology Foundation was modified so that UF/TREEO could provide EMS technical assistance to Oakland County, Michigan, and Rivanna and Charlottesville, Virginia. The project involved technical assistance, as well as presenting a series of four workshops held approximately every six months. Oakland County, Michigan is now ISO 14001 certified.

In addition to providing technical assistance, UF/TREEO was asked to assist the Global Environment and Technology Foundation in the design, development and delivery of EMS training in January 2004 in Orlando, Florida and in June 2004 in Charlottesville, Virginia.