

• LOCAL GOVERNMENT SERIES •

Developing an Environmental Management System

A GUIDE FOR LOCAL GOVERNMENTS



**ENVIRONMENTAL
ASSISTANCE DIVISION**

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(Revised 9/15)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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Part I. Introduction



This publication is a guide for local governments that are considering developing an environmental management system (EMS). It is presented in part using sample EMS documents—a “model” EMS—from a hypothetical Texas town that we’re calling Eniburg. While the environmental rules, aspects, and impacts will vary for different types of local governments, any organization should be able to use these EMS procedures.

What Is an EMS?

An EMS is defined simply as a method used to plan, implement, review, and improve environmental performance. Management systems are already common for many facets of local governments, such as purchasing or hiring. Environmental management systems work much the same way, but focus on how an organization can reduce impacts on the environment from its operations.

Benefits of an EMS

Using an EMS may help you to reduce your risk and liability, increase your efficiency in using resources, and improve your environmental compliance. It may also help you to accomplish some or all of the following goals:

- ◆ reduce costs
- ◆ prioritize environmental issues
- ◆ identify potential problems
- ◆ use materials more efficiently
- ◆ streamline operations
- ◆ improve internal communication
- ◆ enhance employee morale
- ◆ receive incentives through the TCEQ

Regulatory Incentives

In 1992, a program was established to recognize Texas cities and industries for reducing waste generation and air emissions. In 2001, the 77th Texas Legislature passed House Bill 2997 to encourage the use of environmental management systems, and this legislation was adopted into rule under Title 30, Texas Administrative Code, Chapter 90 (30 TAC 90).

The EMS Program

The Environmental Management System Program provides incentives to encourage you to establish an environmental management system. To qualify for incentives, an entity must meet the standards established in 30 TAC 90.30 and must have a third-party-certified EMS for their site. Facilities that implement an EMS may qualify for the following regulatory incentives:

- ◆ A 10 percent credit toward their compliance history scores.
- ◆ A single point of contact within the TCEQ for innovative activities.
- ◆ Individualized technical assistance.

Applying for an Incentive

The TCEQ's Environmental Assistance Division (EAD) handles requests for incentives available under the EMS Program. To apply for an incentive, you must complete and sign TCEQ form 20632, and submit it, along with the required attachments. These attachments include the following:

- ◆ Your entity's environmental policy.
- ◆ A list of the significant environmental aspects of your site.
- ◆ A list of environmental goals and targets for your site.
- ◆ A copy of your site's third-party audit certification.

What Are the Basics of an EMS?

An EMS creates processes and procedures that allow an organization to analyze, control, and reduce the environmental impact of its activities, products, and services. The EMS also allows an organization to continually improve its environmental performance and to adapt to changes that occur inside and outside the organization.

The following six tasks compose the foundation of an EMS:

1. **Develop an environmental policy.** The environmental policy describes your local government's environmental goals and its commitment to the environment.
2. **Assign responsibilities.** Every employee should understand what needs to be done in his or her job when it comes to reducing impacts on the environment.
3. **Identify and prioritize environmental aspects and impacts.** An environmental aspect is an element of your activities, products, or services that may interact with the environment. An impact is a positive or negative change in the environment caused by an aspect.
4. **Set and pursue goals for continuous improvement in environmental performance and compliance.** Once you have identified your significant environmental aspects, you can determine which ones will be related to goals.
5. **Document and demonstrate results.** Results must include reduced risk, enhanced compliance, and reduced pollution.
6. **Evaluate EMS performance.** Measure and monitor your activities to evaluate whether you are making progress toward achieving your environmental goals.

Part II. The Components of an Environmental Management System *(with sample documents)*

To guide you in creating and implementing an EMS for your local government, this portion of the manual outlines 16 components of a typical EMS.

Most of these components are illustrated with sample documents and tables—a “model” EMS—from a hypothetical Texas town that we’re calling Eniburg. This model is likely to include more detail than you will need, but it provides examples and forms that can be tailored to your specific requirements.

As you plan your EMS, keep the following directives in mind:

- ◆ **Make your EMS results oriented.** This element is key in developing your EMS. It means that your EMS should actually reduce risk and help your local government remain compliant, while continually improving environmental performance.
- ◆ **Plan for flexibility.** Design your EMS so that, over time, it will continually adapt during continuous use. It is very important that your EMS change and improve with your activities and functions.
- ◆ **Incorporate your existing systems.** For example, if you already have a system for documentation, develop your EMS manual to incorporate that existing system.

1. Developing an Environmental Policy

The environmental policy states in broad terms the most important environmental commitments of the local government in question. The policy should be signed by a member of executive management—such as a mayor, executive director, or board member—and made available in different formats for all employees.

A local government’s environmental policy should also be made accessible and available upon request to the public, to customers, and to regulatory authorities.

Your organization’s EMS coordinator is responsible for ensuring that only the most recent version of the environmental policy is posted and available.

Example A

City of Eniburg — Our Environmental Policy

Eniburg is committed to improving the environment. We will do so by complying with all environmental laws and regulations.

Eniburg will also strive to:

- ◆ Minimize the amount of waste generated.
- ◆ Ensure the safe disposal of waste.
- ◆ Reuse and recycle whenever possible.
- ◆ Reduce discharge of pollutants into the water.
- ◆ Reduce emissions to the air.
- ◆ Use energy and water efficiently.
- ◆ Monitor our environmental performance.
- ◆ Continuously seek opportunities to improve on our performance.

Every Eniburg employee is responsible for implementing the city’s commitment to improving the environment.

2. Determining the Scope

Scope sets a fence line (imaginary or real) around your EMS coverage area. It helps keep you from making the EMS coverage too large or too small. Some questions you can ask yourself might be: Where do we have the biggest problems? Does our facility have a logical boundary, like a fence line on a landfill or a warehouse for fleet maintenance?

Your organization's scope may include one or more of the following:

- ◆ a landfill
- ◆ a wastewater treatment plant
- ◆ a drinking-water treatment plant
- ◆ fleet maintenance
- ◆ office operations

Since many cities manage a variety of operations such as those listed here, they often choose to set up an EMS for each separate operation or department, which can roll up into the citywide EMS. At the top level, the EMS is a simple document that provides guidance for the development of each department's own EMS.

It is also important to consider that your EMS may need to encompass those departments or programs that contribute to your overall environmental footprint. For example, the EMS for a wastewater treatment plant may also need to cover the pretreatment program, collection-system maintenance, or a biosolids composting facility, since they contribute to the plant's overall environmental impact.

Top management or officials should determine the scope of the EMS. A team of employees from across your organization could comment. Scope documentation should describe what the EMS does and does not cover, and why. The TCEQ encourages that an EMS cover all regulated activities of the applicant within their determined scope.

Example B

City of Eniburg — Scope of Our EMS

The Eniburg EMS covers its wastewater treatment facility. Specifically, the EMS covers all wastewater treatment operations at the site—from the headworks, where untreated wastewater enters the facility, to the point of wastewater discharge. It encompasses the wastewater treatment processes and activities, as well as all other on-site operations, including maintenance, grounds keeping, and offices. Eniburg plans to extend the EMS to its landfill after it has been in place for several years at the wastewater treatment facility. The purpose of executing the rollout in two phases is to provide us the opportunity to learn from successes and mistakes in implementing the wastewater EMS and subsequently apply that knowledge to the landfill facility.

3. Assigning Responsibilities

Your EMS will only succeed if it is clear to all employees that its success is very important to the top manager or official, such as through a mission statement or work plans.

As with any important business-related task, specific employees should assume the various EMS responsibilities.

An EMS generally assigns personnel for each of the following roles:

- ◆ implementation
- ◆ assessment and maintenance
- ◆ training
- ◆ corrective action
- ◆ monitoring environmental performance, goals, and compliance

In assigning responsibilities, you should keep in mind the following key principles:

- ◆ Managerial leadership is vital to the success of an EMS.
- ◆ Managers must make it clear to employees that they consider EMS activities worthwhile and important, and incorporate relevant activities from the EMS into their current job assignment.
- ◆ Assignment of responsibility within the EMS should be accompanied by the granting of authority to accomplish the assigned tasks.
- ◆ EMS assignments should be documented.
- ◆ Each person assigned EMS duties should be periodically evaluated on those duties. Include EMS duties in employee performance plans and compensation policy.

Example C

City of Eniburg — EMS Responsibilities

Eniburg designates the following core EMS functions. As the EMS develops, new tasks may be assigned.

- ◆ **EMS coordinator.** The EMS coordinator, also known as the “implementation coordinator,” has the overall responsibility for the implementation of the EMS. This includes identifying and assigning tasks, maintaining the EMS manual, and leading the EMS team.
- ◆ **EMS team.** The EMS team has members who are responsible for training, corrective action, and monitoring environmental performance and compliance. All team members are responsible for ensuring that they accomplish the EMS activities in their respective areas, and report the results of these activities to the team and upper management.

In addition, the team as a whole is responsible for carrying out certain EMS activities, such as selecting significant environmental aspects. The EMS team also assumes the overall responsibility for the EMS implementation.

The team includes personnel from all areas within the scope of the EMS, from top management to line staff. A management representative on the EMS team will ensure that all tasks are identified and completed on time and will report periodically to management on the progress and results of the EMS.

Table 1. EMS Responsibilities as Assigned

EMS Function	Name	Position
Management Representative	Jose Rodriguez	City Manager
Implementation Coordinator	Carol White	Director of Utilities
Training Coordinator	David Chang	Environmental Programs Manager
Corrective Action Coordinator	Julia Jordan	Plant Manager
Environmental Performance Monitor	Willie Scott	Shift Supervisor
Compliance Performance Monitor	Carol White	Director of Utilities

4. Ensuring Compliance

In an effective EMS, you set goals and develop an action plan for ensuring compliance with applicable environmental laws, regulations, and permit requirements.

Here is one method to ensure environmental compliance:

- ◆ **Review your existing system for ensuring compliance, if you have one.** How well has it worked for you in the past? Have you been able to discover and resolve compliance problems? Have you had any environmental enforcement actions? How could the system be better?
- ◆ **Make a list of all environmental regulations that apply to you within your EMS scope.** If you need help identifying the regulations, call the TCEQ Small Business and Local

Government Assistance Hotline at 800-447-2827, or visit the TexasEnvirohelp website, at <www.texasenvirohelp.org>. For each regulation, list your requirements (for example: permits, reporting, and record keeping). How are you complying with each of these now? Can you improve?

- ◆ **Decide which goals would help you comply with environmental laws, regulations, and permit requirements.** Once you have listed some tentative goals, consider how to measure improvement. Some local governments find it useful to measure improvement by doing a compliance self-assessment twice a year. In their self-assessment, they establish deadlines for determining the underlying cause of any problems and procedures to ensure that the problems are resolved and all action documented.
- ◆ **Develop an action plan to make sure your organization is progressing toward compliance.**

Example D

City of Eniburg — Compliance Action Plan

As part of its EMS, Eniburg has developed an action plan to ensure compliance with all laws and regulations.

The director of utilities, Carol White, serves as the EMS compliance performance monitor and is responsible for the following duties:

- ◆ Maintaining an updated list of all applicable environmental rules.
- ◆ Assigning duties to the appropriate managers for ensuring compliance with each rule, and assigning new duties if rules change.
- ◆ Making sure that managers develop work instructions to ensure compliance.
- ◆ Ensuring that a yearly internal compliance assessment is performed, to check progress toward compliance goals.

The city manager makes sure that compliance goals are documented and retains the results from internal compliance assessments (see Table 2). The yearly compliance assessments ensure that we are complying with all applicable local, state, and federal environmental rules within our EMS scope, and that compliance is continually improving.

Table 2. Documentation of Internal Compliance Evaluation (excerpt)

Regulation	WQ Permit WQ-0123789-001	30 TAC 305.125(11)(B)	40 CFR 355.30	30 TAC 317.6(b)(1)(D)
Person Responsible	Plant Manager	Plant Manager	Director of Utilities	Environmental Programs Manager
Compliance Check Date	01/31/14	04/01/14	03/20/14	02/07/14
Results	Compliant	Compliant	Non-compliant	Non-compliant
Underlying Cause of Non-compliance	N/A	N/A	Volumes of chlorine gas had changed since last notification	Inadequate training; staff was not aware of the safety requirement
Corrective Action Date	N/A	N/A	03/23/14	Chlorine safety equipment ordered — installed 3/01/14
Date Compliance Verified	2/15/14	4/01/14	3/24/14	03/04/14

5. Determining Environmental Aspects

The elements of your organization's activities that affect the environment are called environmental aspects. The mere potential for environmental impact is enough to consider an element an environmental aspect.

The process of identifying environmental aspects (and impacts) is one of the most technically challenging tasks in creating an EMS. It requires an analysis of each of your organization's activities, products, or services.

Use your best judgment to select the most appropriate people to determine your environmental aspects. The key is to assign people who know your operations and how they might affect the environment. One option is to make the EMS team responsible for identifying environmental aspects, with help from employees familiar with the applicable process.

Knowing the environmental aspects of your organization will allow you to prioritize and manage actual and potential impacts on the environment.

There are several ways to approach the identification of environmental aspects. One method involves the following steps:

1. List the operations, programs, or departments that fall within the scope of the EMS.
2. Identify the environmental aspects of these operations, using an input-output diagram or a process map.
3. List the environmental aspects and their actual or potential impacts. Quantify the aspects, if possible, because that will help you measure your progress later.

The purpose of this last step is to get all aspects on paper so you can prioritize them later in the process.

A local government is the sum of its many functions and services. Each function or service is in turn made up of many components. Our sample document cannot list all the aspects for a local government. For the purpose of this model, we will only examine aspects associated with a wastewater treatment plant (WWTP).

Example E

City of Eniburg — Our Environmental Aspects

Eniburg identified its environmental aspects by using the following three steps:

Step 1. Listing activities within its EMS scope.

Eniburg identified the following activities associated with the operations and processes of the publicly owned treatment works:

- ◆ wastewater collection (filtration, bar screens, lift station)
- ◆ wastewater treatment (chlorine contact chamber, bio-digesters, aeration ponds)
- ◆ wastewater discharge
- ◆ sludge (biosolids) treatment (drying beds, drying presses)
- ◆ sludge (biosolids) disposal (trucking)

Step 2. Identifying the elements (inputs and outputs) of each activity that has affected or could affect the environment (see Table 3).

Step 3. Quantifying these aspects where possible and listing each of their actual or potential environmental impacts (see Table 4).

(Example E continued on next page)

Table 3. Analysis of Operations, Using Inputs and Outputs (excerpt)

Operation	Inputs	Outputs
Line Replacement (wastewater collection)	Water, chemicals (disinfection), raw materials, fuel (for machinery)	Wastewater, air emissions, sewage
Bar-Screen Cleaning (wastewater collection)	Water, chemicals	Sewage, wastewater
Effluent Discharge (wastewater discharge)	Raw wastewater, chemicals (chlorine), energy	Sludge (biosolids), wastewater, chemicals
Line Cleaning (wastewater collection and treatment)	Water, chemicals, energy for cleaning machines	Contaminated wastewater, biosolids

Table 4. Identification of Environmental Impacts (excerpt)

Operation	Environmental Aspect (quantified, if possible)	Actual and/ or Potential Impacts
Bar-Screen Cleaning	Waste: sewage (lbs.)	Soil and/or groundwater contamination, public health
Effluent Discharge	Water quality: total suspended solids (mg/L or lbs./day)	Reduced air quality, odor, soil and/or groundwater contamination, and possible nuisance issues in transport
Biosolids (Sludge) Disposal	Waste: biosolids (tons/day)	Reduced air quality, odor, soil and/or groundwater contamination, and possible nuisance issues in transport
Pumping of Wastewater Through Plant	Energy: electricity (kWh/day)	Reduced air quality and natural-resource depletion (coal-fueled electric power plant)

6. Prioritizing Environmental Aspects

This section aims to help you prioritize your environmental aspects by determining which aspects have the greatest impact on the environment, currently or potentially.

You determine whether or not an aspect is significant by ranking it according to criteria such as probability of occurrence, volume, effects the impacts may have, and other benchmarks you feel are important.

There are several ways of determining significance. Whichever way you choose, make sure to consider regulatory requirements, and document your method of determining that an aspect is significant. The point is to look at all of your aspects and to figure out systematically, using common sense, which of their impacts is environmentally significant.

There are a number of common systems you can use, or you can design your own. The following is an example of one system. You may use any of the factors listed here to decide significance for your organization. Try to pick factors that are relevant for your organization and your community.

- List the organization's aspects.** You may group similar aspects from activities that take place across the facility, such as chemical storage or mechanical repairs. If you choose to group aspects, make sure that you do not lose an aspect or impact that is unique to a particular area of your facility or scope.
- Select which factors to consider when determining significance.** Examples of factors you could use are:
 - regulatory concerns
 - toxicity
 - community issues
 - adverse publicity
 - human-health impacts
 - nuisance
 - chemical and material risks
 - probability of occurrence
 - natural resources used: type, quantity
 - volume
 - impact on air quality, water quality, and land
 - other
 - frequency
- Instruct the EMS team to score each aspect's environmental impact.** You can do this by assessing each impact according to the factors you have chosen. Give the impact a score between 1 and 5, where 1 is the lowest level of concern, and 5 the highest. Decide on a total score above which you will consider the impact significant. It is common to have at least two to three significant aspects and impacts when you finish this process. You may have more (see Example F).

Example F

City of Eniburg — Prioritizing Our Environmental Aspects

Table 5. How Eniburg Determined Significant Environmental Aspects

Operation	Aspect	Impacts <i>(Actual and/or Potential)</i>	Regulatory Concerns*	Community Issues†	Natural Resources Used‡	Chemical and Material Risks‡	Overall Score‡	Significant?
Bar-Screen Cleaning	Gallons of sewage	Soil and groundwater contamination, public health	5	5	3	4	17	Yes
Bar-Screen Sewage Compaction	Gallons of sewage spilled	Soil and groundwater contamination, worker health, odor	5	2	1	4	12	Yes
Raw-Sewage Centrifugation	Gallons of wastewater	Surface water quality, soil and groundwater contamination, public health issues	5	4	3	2	14	Yes
Bar-Screen Equipment Cleaning	Gallons of disinfectant	Resource depletion, worker health issues, contaminated wastewater	1	2	3	5	11	No
Bar-Screen Overflow	Gallons of raw wastewater spilled	Soil and groundwater contamination, public health issues, resource depletion (chemicals, freshwater)	5	4	3	5	17	Yes
Overall Screening	kWh/day Electricity	Resource depletion, air quality (coal-fired generator)	1	2	5	1	9	No

Note: This analysis is for the manual treatment of wastewater, i.e., from the headworks and screening to the clarifiers.

*Regulatory concerns are either Yes (5) or No (1). In other words, the specific aspect is either regulated or unregulated.

†For these three factors, each operation is given a score between 1 and 5, where 1 is the lowest level of concern and 5 the highest.

‡An overall score greater than or equal to 12 is considered significant.

7. Setting Environmental Performance Goals

An important part of an EMS is to set goals and develop an action plan that will enable your local government to achieve continuous improvement in environmental performance.

When you establish goals, keep in mind compliance, continuous improvement, and reducing your environmental impacts. Also, goals should have a timeline and be measurable so that you can track achievements. The TCEQ encourages entities to set measurable goals for environmental performance using the Environmental Performance table (see Appendix).

You do not have to set a goal for every significant aspect. You may determine that you cannot effect a change in a particular significant aspect due to technological or budgetary limitations. Be sure to document the reasons why a goal was not set regarding any significant aspects.

The following tips can help you set successful environmental performance goals:

1. Set goals that are realistic.
2. Make certain the goals reduce your impact on the environment, have a timeline, and are measurable. For each goal, decide how to measure performance. Keep in mind that you will need baseline data to be able to measure progress. You should also normalize your data to take into account increases or decreases in operations. (*Note: To “normalize” is to standardize data obtained from different sources at different periods. Table 7 provides an example.*)
3. Clearly state which employees are responsible for measuring progress toward goals and which employees for undertaking corrective action when necessary.
4. Set an action plan for achieving the goals (see tables 8 and 9).
5. Communicate the reasons for selecting each goal.
6. Measure and monitor progress towards goals on a routine basis.

Example G

City of Eniburg — Environmental Performance Goals

In 2011, Eniburg’s Department of Utilities set an environmental goal for the wastewater treatment plant: to reduce its disposal of sludge (biosolids) at the landfill by 10 percent in 2014. In 2011 and 2012, its average flow was 1 million gallons per day (MGD). In 2013, the average flow increased to 2 million gallons per day. There was no change in waste per gallon coming into the plant all three years. When department staff members tallied the landfill receipts in 2014, they found that the WWTP had generated 46 tons more biosolids than in 2011, which did not meet the reduction goal of 10 percent. One of the EMS team members realized that they needed to normalize their data to reflect that they were treating more wastewater per year. After this correction, they found that they had actually decreased their waste disposal of biosolids at the landfill by almost 20 percent!

Table 6. Biosolids Disposed, Year-to-Year Comparison

Reporting Year	Year 1 (2011)	Year 3 (2013)
Quantity of Biosolids Disposed	76 tons	122 tons
Average Flow	1.0 MGD	2.0 MGD
Normalized Total	76 tons	61 tons
Change from 2011	n/a	15 tons less (19% decrease)

(Example G continued on next page)

Table 7. Normalizing Biosolids per Million Gallons of Treated Wastewater

2011			
$\frac{417 \text{ lbs. of sludge/day}}{1 \text{ million gallons of treated wastewater/day}}$	=	$\frac{417 \text{ lbs. of sludge}}{\text{Million gallons of treated wastewater}}$	$\times 365 \text{ days} = 76 \text{ tons of sludge/year}$
2013			
$\frac{667 \text{ lbs. of sludge/day}}{2 \text{ million gallons of treated wastewater/day}}$	=	$\frac{334 \text{ lbs. of sludge}}{\text{Million gallons of treated wastewater}}$	$\times 365 \text{ days} = \sim 61 \text{ tons of sludge/year}$

Table 8. Environmental Performance Goals

Goal	Related Significant Environmental Aspect	What Part of Our Environmental Policy Does This Relate To?	Performance Indicator
Reduce pounds per day of total suspended solids in the effluent by 10% (per MGD of treated wastewater)	Water quality	Reducing emissions to water and air	Total suspended solids value on the monthly lab reports
Increase beneficial reuse of biosolids by 20% (normalized by daily influent load of BOD)*	Waste	Reusing and recycling whenever possible	Biosolids manifests
Reduce energy use (kWh) by 5% per year (per MGD of treated wastewater)	Energy use	Using energy efficiently	Meter reading and/or monthly bills

*BOD: biochemical oxygen demand

(Example G continued on next page)

(Example G continued)

Table 9. Action Plans (excerpt)

Indicator	Total suspended solids (TSS) value on the monthly laboratory reports
Goal	To reduce pounds of TSS per million gallons (of treated wastewater) in the effluent discharge by 10%.
Action Plan	Analyze what improvements can be made to the wastewater treatment system to increase efficient removal of TSS.
Persons Responsible	WWTP Lead Operator and City Engineer (where necessary)
Budget	\$2,000 initially, with more funds to be authorized by the Eniburg Council and/or the City Manager as required
Schedule	Initial review of system to be completed by 01/15/2011 Meeting to discuss findings and timeline for implementing recommendations to be held by 02/28/2012 Changes to system to be completed no later than 12/31/2012
Review Cycle	Once the changes have been implemented, lab reports will be reviewed monthly by David Chang, Eniburg's Environmental Programs Manager, to assess progress.

8. Implementing Training

To ensure that all employees know the extent of their job duties when it comes to the environment, you should provide them with environmental awareness training. You should also provide task-specific training to those employees whose jobs are associated with significant environmental aspects (see Table 10).

Example H

City of Eniburg — EMS Training

Table 10. Training Requirements

Significant Environmental Aspect	Associated Job Functions	Work Instruction Needed?	Responsible Person
Waste	Biosolids disposal	Yes, WWTP operators need to be trained in more efficient biosolids dewatering procedures and retention rationales.	WWTP Lead Operator
	Maintenance (pump and lift-station inspections)	Yes, plant operators need to be better able to analyze any deficiencies in pump and lift-station operations.	WWTP Shift Supervisor
Air Emissions	Biosolids transportation	Yes, the trucking contractor needs to be trained on the applicable rules for covering the trucks.	Director of Utilities
	Odor control system inspections	No, odor-control system is operating as required.	n/a

9. Controlling Liability

As part of your EMS, you should strive to ensure that the environmental impacts associated with any accidents, spills, or emergency situations are avoided or controlled as soon as possible to reduce the risk to people and the environment. Your EMS must address impacts from the perspective of liability control as well as regulatory compliance.

Example I

City of Eniburg — Liability Control

1. Eniburg has an Emergency Response Committee charged with identifying potential upset or emergency scenarios and developing and implementing appropriate procedures for dealing with these scenarios.
2. With the assistance of the EMS coordinator, the Emergency Response Committee has three principal duties:
 - Identify the significant environmental impacts from potential emergency scenarios.
 - Make plans to minimize these impacts.
 - Ensure that adequate training, including simulations and drills, is provided to appropriate staff to implement these procedures.
3. The Emergency Response Committee meets quarterly.
4. The EMS outlines procedures for maintaining records of the potential emergency scenarios that Eniburg is prepared for, the potential environmental impacts associated with each scenario, and the procedures established to minimize these impacts.

10. Establishing Procedures for Changes and New Activities

When you purchase new supplies, modify your services, or provide new products, you should strive to ensure that environmental concerns are considered. Any new action by your organization may result in a change or modification of the environmental aspects contained within the EMS.

Example J

City of Eniburg — Procedures for Changes

1. **Before an order is made for a new chemical, product, or piece of equipment, or some other input to the facility, the Eniburg Wastewater Treatment Plant Manager will notify the EMS coordinator of the anticipated action.** The EMS committee will review the proposed change and implement changes to the EMS prior to the new item being put to use.
2. **Before any modification or expansion of the WWTP is undertaken, the EMS committee will review how the new plans affect the environmental performance of the facility.** If necessary, the committee should modify the EMS so that it takes these changes into account.

11. Evaluating and Demonstrating Performance

You should regularly write a review of how you are following your EMS and how your goals and procedures have enabled you to accomplish one or more of the following three principal goals:

1. Reduce pollution.
2. Enhance or maintain compliance.
3. Reduce risk.

These reviews of EMS performance should occur at least annually. You should base your findings on an evaluation of objective evidence, including interviews with employees, observations, and documentation.

Regularly evaluating the EMS will enable you to determine which parts of the EMS are working well and what needs improvement. Results should show progress toward EMS goals—such as, for example, concrete reductions in emissions and waste.

Your review should consist of three components:

1. An internal assessment.
2. A management briefing on the results.
3. A description of the measures or steps that will be taken to ensure that the findings are incorporated into action plans.

Internal Assessment

A team of two or three managers and employees can conduct an internal assessment. It is important that those conducting the assessment not assess their own work area, and that they are allowed to perform the assessment as independently as possible.

Management Briefing

Once all the relevant information has been obtained and conclusions have been drawn, you should organize the results and present your findings to the management or officials of your local government. You should discuss your findings with your local government officials to get feedback on your efforts, and to analyze deficiencies in the EMS.

Measures to Incorporate Findings

Equipped with the feedback from your local officials, and the conclusions drawn regarding the deficiencies in the EMS, the EMS team can then work with the top management representative to make any needed modifications to the EMS.

Example K

City of Eniburg — Procedures for EMS Performance Reviews

Eniburg's assessment team checks to make sure that the following three requirements are being met:

1. Each employee is properly performing the tasks assigned to him or her as part of the EMS.
2. Eniburg's environmental policy is being followed.
3. Progress is being made in meeting the environmental goals.

The assessment team then writes up its findings, which may reveal a minor, moderate, or major "nonconformity."

A minor nonconformity occurs when a procedure is being implemented inconsistently, yet without causing major failings in the EMS as a whole.

(Example K continued)

A moderate nonconformity occurs when one or more elements of the EMS are only partially addressed. This level of nonconformity does not cover outcomes that result in significant noncompliance or that fail to address significant environmental impacts.

A major nonconformity occurs when one or more of these “criteria” are met:

1. An EMS task is clearly not being performed.
2. One of the commitments in the policy is not being followed.
3. No progress is being made in achieving an environmental goal.

Corrective action is taken for all nonconformities.

The EMS coordinator maintains the records of each assessment. At least once a year, a full internal assessment is conducted.

12. Documenting EMS Implementation

To demonstrate the effectiveness of your EMS, you need to provide written documentation of your accomplishments and implementation procedures. Documentation is a required part of an EMS, but it should not be the main emphasis. Your EMS implementation should be evident through your performance.

Your EMS procedures will need to be defined, appropriately documented, and updated when necessary. It is not always necessary to develop new documents. If you are already required to have documents for certain regulations or permits, don’t re-create them for the EMS. Documentation can be in various formats, including electronic or hard copy. Keep a method in place to ensure that the most up-to-date version of the documentation is available. Documentation should be available for all EMS components, including the following five essential ones:

1. Environmental policy.
2. Responsibilities (assigned and embedded in work instructions, job descriptions, performance plans and reviews).
3. Environmental aspects (identified and prioritized).
4. Goals and action plans for environmental performance and compliance.
5. Regular assessments.

13. Establishing Procedures for Corrective Action

The corrective-action process is used to ensure that your local government’s actual or potential compliance issues and EMS nonconformities are addressed quickly and effectively (see form below).

Example L

City of Eniburg — Procedures for Corrective Action

1. Eniburg’s city manager will assign responsibility to an appropriate employee for taking action to correct each compliance issue or nonconformity identified in the internal assessment.
2. The person responsible then undertakes the required corrective action, calling upon top government officials, management representatives, the EMS committee, and others for assistance as necessary.
3. When the corrective action is complete, the responsible person and the management representative should document the corrective measures.
4. The EMS coordinator maintains the records of corrective actions.

(Example L continued on next page)

Table 11. Documenting a Corrective-Action

Corrective Action Form <i>(one problem per form)</i>	
Statement of the Problem: A biosolids transport vehicle was observed in June without the required cover or signage.	
Date of evaluation: 6/23/2014	
Description of nonconformity or actual/potential compliance issue: The TCEQ requires signage on transporters (detailed in 30 TAC 312.144) of wastewater biosolids.	
Description of potential solution: Conduct biweekly inspections of biosolids transporters to verify that they meet the rule. Require documented training of all transporters from the independent contractor. All observations of noncompliance will result in direct notice to the contractor.	
Person responsible for corrective actions: Julia Jordan	
Deadline for corrective actions: 8/31/2014	
Corrective Action Completion	
<i>Actions taken:</i> The contractor held a seminar and training for biosolids haulers in July. The contractor provided documentation of course completion on 7/28/2014. Weekly inspections have not documented any deviations from the biosolids transporter requirements since 7/14/2014.	
<i>Date verified:</i> 8/22/2014	
_____ Carol White, Management Representative	_____ Julia Jordan, Responsible Person

14. Developing Stakeholder Involvement

You should ensure that interested external stakeholders receive information about your organization's environmental activities, although this communication is not required in order to receive incentives. Your environmental policy should be made available to the public.

You should also, where appropriate, develop a policy for considering and responding to queries, comments, or complaints from stakeholders. Many local governments have a procedure or forms and documents for tracking contact with the public. These can be incorporated into an EMS to assist in streamlining stakeholder activities.

The EMS committee can identify the stakeholders and their potential interests in the environmental performance of your organization (see Table 12). If your committee decides that proactive communication with any group on environmental issues is necessary, the decision should be recorded and responsibility assigned to specific employees.

When a community member or a stakeholder sends in communication about your environmental performance or management, the message should be forwarded to the EMS management representatives or local government officials.

The EMS representative decides on whether to respond to the communication and in what manner. The EMS representative also maintains records of communications and responses (see Example M).

Example M

City of Eniburg — Stakeholder Involvement

Table 12. Stakeholders and Environmental Issues

Stakeholder	Potential Environmental Interest	Proactive Communication Plan (Optional)	Person Responsible
Neighboring industrial operations that discharge into the same body of water as the WWTP	<ul style="list-style-type: none"> worry about being blamed for water pollution caused by the WWTP possible impact on property values nuisance odors truck traffic from septic waste haulers coming to the dump station 	<ul style="list-style-type: none"> open house biannual meetings between the executive management of the WWTP and industrial neighbors 	Director of Utilities
Nearby residents	<ul style="list-style-type: none"> curiosity about the WWTP operations concerns about water pollution health concerns about swimming in WWTP discharge water concerns about eating fish caught in WWTP discharge water 	<ul style="list-style-type: none"> open house information pamphlet distributed to all neighbors annual fishing derby sponsored by the WWTP 	Director of Utilities, City Media Department
Local environmental groups	<ul style="list-style-type: none"> concerns about water pollution concerns about wildlife health impacts concerns about habitat alteration or loss 	<ul style="list-style-type: none"> open house biannual meeting between the executive management of the WWTP and environmental groups joint projects between the WWTP and environmental groups to monitor or improve wildlife habitat 	Director of Utilities

(Example M continued on next page)

Table 13. A Sample Record of Communication

Stakeholder Communication Record
<p>Date communication received: 2/28/14 Type of communication: E-mail Received from: George Brown Address / telephone number: E-mail: george.brown@email.net Content of communication <i>(attach copy if possible):</i> <i>(E-mail through contact page on our website)</i> I live about 1 mile from your plant entrance. When the wind is blowing from your direction, the smell is very bad. What can you do about this? George Brown (123) 456-7890</p> <p>Will the WWTP respond? <input type="checkbox"/> Yes <input type="checkbox"/> No Date of response: 3/2/14 Person responding: Carol White Position: Director of Utilities Nature of response <i>(attach copy if possible):</i> <i>(By e-mail)</i> Dear Mr. Brown, We apologize for the bad smell. A wastewater treatment plant sometimes produces odors. We are in the process of adding some equipment to our plant to reduce these odors. The new equipment is scheduled to come online on May 1, 2014. If you have any questions or would like to visit the plant to see what we are doing, please let me know. I would be glad to answer your questions or arrange a visit. Sincerely, Carol White Director of Utilities Eniburg, Texas</p> <p>Are internal actions necessary? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If yes, fill out a corrective action form.)</i></p>

15. Implementing Community Outreach

Community outreach involves working with your community to identify environmental projects that the community wants, and then participating in those projects. This can provide a great opportunity to show your commitment to the community.

16. Demonstrating Results

You should review and assess your results annually to see if you are making progress toward your goals, and to review compliance. Your EMS coordinator usually prepares a performance report, with input from the EMS team, and approval by top management or local government officials.

A performance report demonstrates progress toward your EMS goals. Your report should show management, your staff, and the TCEQ at what stage your local government is in the process and how close you have come to your goals.

Useful measures of your local government's progress might include the following:

- ◆ percent of goals achieved
- ◆ money saved
- ◆ reductions in number and amount of spills or accidental air releases
- ◆ reductions in air emissions, hazardous waste generated, nonhazardous waste generated, wastewater discharged, or pollutants in wastewater
- ◆ reductions in energy usage or water usage
- ◆ reductions in the number of notices of violation from the TCEQ
- ◆ improvement in compliance history

Example N

City of Eniburg — Performance Report

Table 14. Annual Performance of Water-Conservation Efforts

Annual Performance	Water Conserved*		
	Year 1 (2013)	Year 2 (2014)	Year 3 (2015)
Reporting Year			
Quantity Reduced	10 gal.	2 gal.	3 gal.
Estimated Cost Savings (if any)	\$20,000	\$3,000	\$2,000
Briefly describe how you achieved your environmental improvements	Developed a biosolids reuse (compost) program and increased de-watering efficiency.		

*Environmental Improvement (see *Environmental Performance Table*)

Appendix. Environmental Performance

Table 15. Indicators and Units Used to Rate the Different Categories of Environmental Performance

Category	Indicator	Units
<i>Supply-Chain Goals</i>		
Material Procurement	Increase recycled content of materials purchased	Pounds, Tons
	Reduce hazardous/toxic components of materials purchased	Pounds, Tons
<i>Process-Improvement Goals</i>		
Materials Use	Reduce amount of materials used	Pounds, Tons
	Reduce total packaging materials used	Pounds, Tons
Water Use	Reduce total water used	Gallons
Energy Use	Reduce total non-transportation energy used, by fuel type	kWh, MMBtu
Transportation	Reduce amount of transportation fuel used (total or specific)	Gallons, Cubic feet
Land Use	Increase land or wildlife habitat conserved	Square feet, Acres
<i>Emissions and Waste Goals</i>		
Air Quality	Reduce emissions of VOCs	Pounds, Tons
	Reduce emissions of NO _x	Pounds, Tons
	Reduce emissions of SO _x	Pounds, Tons
	Reduce emissions of PM ¹⁰	Pounds, Tons
	Reduce emissions of CO and CO ₂	Pounds, Tons
	Reduce emissions of HAPs	Pounds, Tons
Water Quality	Reduce discharges with COD	Pounds, Tons
	Reduce discharges with BOD	Pounds, Tons
	Reduce discharges of toxics (total or specific)	Pounds, Tons
	Reduce discharges of total suspended solids	Pounds, Tons
Waste Reduction	Reduce nonhazardous waste generated, broken down by management method (total or specific)	Pounds, Tons
	Reduce hazardous waste generated, broken down by management method (total or specific)	Pounds, Tons

(Table 15 continued on next page)

(Table 15 continued)

Product-Improvement Goals		
Product Improvement	Decrease expected lifetime energy use of end product (total or specific)	kWh, MMBtu
	Decrease expected lifetime water use of end product (total or specific)	Gallons
	Decrease expected lifetime waste (to air, water, land) from product use (total or specific)	Pounds, Tons
	Decrease waste to air, water, land from disposal or recycling or recovery (total or specific)	Pounds, Tons

Abbreviations

BOD	biochemical oxygen demand	MMBtu	million metric British thermal units
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	PM	particulate matter
COD	chemical oxygen demand	SO_x	sulfur oxides
HAPs	hazardous air pollutants	VOCs	volatile organic compounds
kWh	kilowatt-hour		

For More Information

For information on Incentives for Environmental Management Systems, visit:

Incentives for Environmental Management Systems

www.tceq.texas.gov/goto/EMSincentives



For confidential environmental compliance assistance for small businesses and local governments, contact:

Small Business and Local Government Assistance

Hotline: 800-447-2827

TexasEnvirohelp website: www.texasenvirohelp.org

E-mail: sbap@tceq.texas.gov

