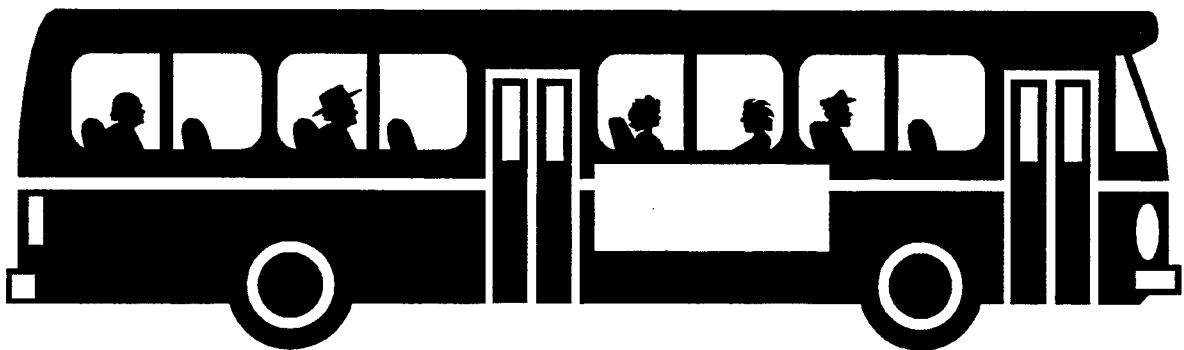




ENVIRONMENTAL COMPLIANCE MANUAL

FOR SMALL URBAN AND RURAL TRANSIT SYSTEMS IN TEXAS

REPORT 1859-2



Cooperative Research Program

**Texas Transportation Institute
The Texas A&M University System
College Station, Texas**

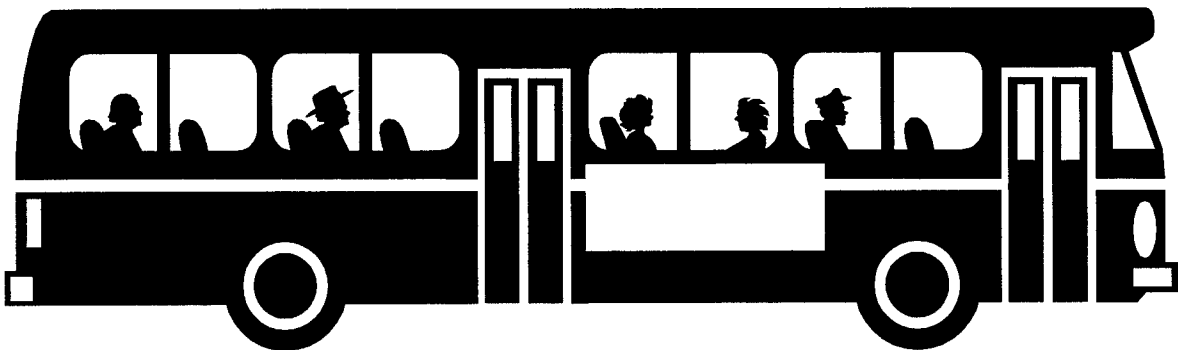
Texas Department of Transportation

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Environmental Compliance Manual for Small Urban and Rural Transit Systems in Texas

by
John H. Overman, A.I.C.P.
Associate Research Scientist
Texas Transportation Institute

Report 1859-2
Project Number 0-1859
Research Project Title: Develop an Environmental Compliance Manual
for Small Urban and Rural Transit Systems

Sponsored by the
Texas Department of Transportation
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May 2001

Texas Transportation Institute
The Texas A&M University System
College Station, Texas 77843-3135

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Chapter 1 - Introduction to Environmental Compliance

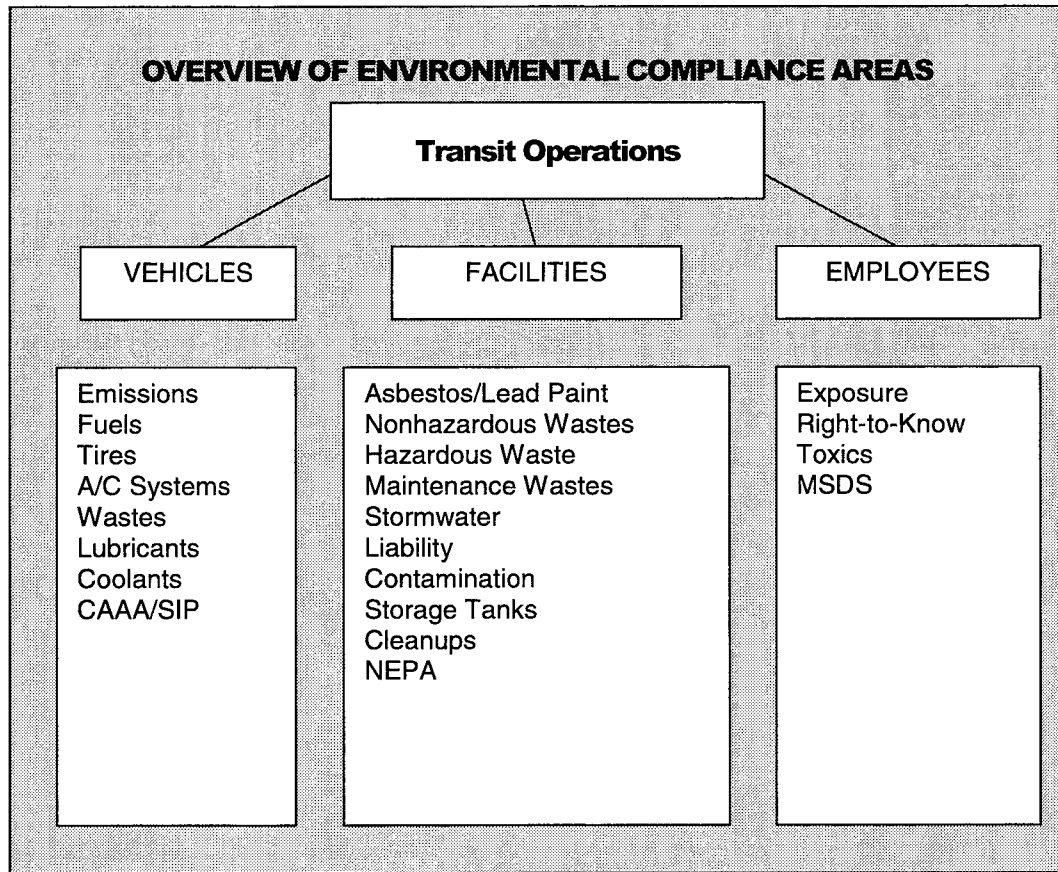
Manual Purpose and Approach

The transit industry is challenged by numerous inter-related environmental compliance requirements. These challenges are often met with limited resources and limited expertise. One practical way to manage the demands of these requirements is to use an environmental compliance manual that places environmental requirements into categories consistent with transit operations and practices.

This manual addresses environmental compliance requirements at small urban and rural transit systems that generally do not have the resources to employ specialized environmental management personnel.

The emphasis areas in the manual are derived from the feedback and real world experiences of small urban and rural transit providers. The manual has a greater focus on areas of compliance that have been identified as problematic for the majority of transit systems in Texas. The general areas of compliance covered in this manual are as follows:

- Chapter 1 – Introduction to Environmental Compliance
- Chapter 2 – Air Quality: Emissions, Fuels, Fleets, and Refrigerants
- Chapter 3 – Petroleum Storage Tanks
- Chapter 4 – Waste Management
- Chapter 5 – Pollution Prevention
- Chapter 6 – Stormwater Management
- Chapter 7 – Toxic Substance Control
- Chapter 8 – Employees and Environmental Compliance
- Chapter 9 – CERCLA Liability and Site Assessments
- Chapter 10 – Contamination and Cleanups
- Chapter 11 – NEPA



What is Environmental Compliance?

The cornerstone of environmental compliance for any type of facility or agency rests on its ability to meet regulatory objectives through:

- accurate record-keeping and record-keeping requirements;
- adequate reporting, monitoring and inspection, and permitting requirements;
- proper waste storage, treatment, disposal, and handling;
- contingency plans, waste minimization, and pollution prevention; and
- maintenance of facility operations, personnel training, and financial responsibility.

There are three major elements to maintaining environmental compliance at any transit facility:

- **Buy-in** – A commitment by managers and staff to hold environmental compliance in high regard. Integrate environmental considerations into decision making just as you would safety or cost.
- **Good recordkeeping** – All of the best intentions mean nothing to regulators unless your compliance actions are documented. Proper documentation, more than anything else, proves your compliance. Good recordkeeping is the most effective way to demonstrate compliance to regulatory agencies.
- **Good housekeeping** – Nothing demonstrates environmental compliance to regulators and the community-at-large more readily than a clean, well maintained facility. Although appearance alone does not ensure compliance, it sends a message that your organization takes pride in the workplace.

Environmental Compliance Resources

There are numerous information resources addressing environmental compliance. Those directly related to transit agencies include the following:

- *Sourcebook on Transit-Related Environmental Regulations* prepared for the Federal Transit Administration (1995). This sourcebook covers a wide variety of environmental requirements associated with the acquisition and maintenance of transit vehicles and transit facilities.
- The Transit Cooperative Research Program (TCRP) *Synthesis of Transit Practice 9: Waste Control Practices at Bus Maintenance Facilities* (1995), provides a broad cross-sectional view of waste management practices from transit properties across the United States.
- On-line sources relating to specific areas of compliance. The Texas Natural Resource Conservation Commission (TNRCC) and the U.S. Environmental Protection Agency (EPA) post documents on their respective websites that can be browsed or downloaded to aid transit managers in their role as environmental compliance managers. These are comprehensive websites that provide compliance information for the environmental programs they administer. They are often the easiest resource for information, guidance, and forms.

Regulatory Agencies

The Texas Natural Resource Conservation Commission (TNRCC) is the principal environmental regulatory agency in Texas, and therefore administers and enforces the

majority of state and federal environmental compliance requirements. However, other state agencies may also administer and enforce environmental requirements. In particular, the Texas Department of Health (TDH), the General Land Office (GLO) and the Texas Railroad Commission (RRC) administer environmental programs that may affect transit operations.

The state agencies and their respective areas of environmental regulation are presented in Table 1-1 below.

Table 1-1. State Agency's Environmental Responsibilities

COMPLIANCE AREA	TNRCC	TDH	GLO	RRC
Air Quality	X			
Water Quality	X		X	
Pollution Prevention	X			
Waste	X	X		
Toxics	X	X		
Spills	X			
Fuel Use & Storage	X		X	X
Employees	X	X		
Contamination	X	X		X

TNRCC– Municipal, industrial and hazardous waste, air quality, air emissions, spills or releases from any source, pollution prevention, inland and coastal water quality

TDH – Toxics: lead and asbestos, indoor air quality, the work environment, certain municipal wastes and disposal

GLO– Alternative fuel usage, coastal and waters, oil spills, energy conservation

RRC– Pipelines, fuels, oil spills, transportation, alternative fuel technical standards

Texas Environmental Codes

Texas Water Code

The Texas Water Code is commonly referenced for compliance with any environmental issue within the state. The Texas Water Code is a statute. This statute gives specified state agencies statutory authority to make rules that protect the waters of the state. Waters of the state means: "groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state." Chapter 26 of the Water Code is

frequently cited as the authority of the state to prevent pollution resulting from a discharge because it provides enforcement authority.

In addition, the water code provides a means to protect the natural environment in the absence of a particular rule, and allows the state to prevent pollution of any kind. In most instances the authority to protect the waters of the state is given to the TNRCC, but protecting natural resources may be the charge of the Parks and Wildlife Department, the Texas Department of Health, the General Land Office, or even the Railroad Commission in matters relating to oil and gas exploration and production.

Texas Health and Safety Code

The Texas Health and Safety Code is similar in function to the Texas Water Code and provides a broad statutory authority for specific agencies to protect the health and safety of citizens. The Texas Department of Health (TDH) is primarily responsible for worker health and safety issues since there is no state-level OSHA equivalent. Environmental aspects of the code generally fall to the responsibility of TNRCC. Title Five of the Texas Health and Safety Code, Sanitation and Environmental Quality, closely resembles the federal laws described in this chapter with regard to the Solid Waste Disposal Act, the Toxic Substances Control Act (TSCA), the Emergency Planning and Community Right-to-Know Act (EPCRA), the Clean Air Act (CAA) and the Clean Water Act (CWA). Chapter 361 establishes a priority list, enforcement authority, water replacement, and natural resource damage claims.

Texas Natural Resource Trustee Program

In Texas, the Texas Natural Resource Trustee program has authority to recover for natural resource damages resulting from coastal oil spills independent of Federal laws. The program is established under 31 TAC 20.1-20.4, 20.10, the *Oil Spill Prevention and Response Act*, and Texas Natural Resources Code 40.107(c)(4). The natural resource trustee agencies include TNRCC, the Texas General Land Office, and the Texas Parks and Wildlife Department. The State determines the measure of damages by assessing the cost to restore, assess, and mitigate future injury, as well as diminution in future value. Per statute, any reliable and valid incident-specific method may be used to determine the value of claims; in most cases, Habitat Equivalency Analysis is used. Monies recovered are used for

restoration, replacement, and protection of natural resources. The State requires public participation in the assessment and restoration processes.

Federal Regulatory Agencies

The principal federal environmental regulatory agency is the Environmental Protection Agency (EPA). Their mission is to protect humans and safeguard the natural environment. EPA creates and enforces environmental regulations based on laws passed by Congress. EPA's rules are found in the Code of Federal Regulations (CFR). Among the other federal agencies with environmental regulations affecting transit operations are the Department of Transportation (DOT) and the Department of Energy (DOE).

Environmental Management Systems

The standards outlined in the International Standards Organization (ISO) 14000 provide a useful framework for comprehensive environmental compliance. ISO 14000 is primarily concerned with environmental management or what the organization should do to minimize activities that have harmful effects on the environment. The TNRCC encourages the regulated community to develop and implement environmental management systems. An environmental management system (EMS) is a set of management processes and procedures that allows an organization to analyze, control, and reduce the environmental impact of its activities or services. The basic elements of an EMS include:

- reviewing environmental goals,
- analyzing environmental compliance requirements,
- setting environmental targets and objectives to reduce impacts and meet requirements,
- establishing a program to meet objectives and compliance requirements,
- monitoring and measuring progress toward objectives and compliance, and
- ensuring environmental awareness among staff and management.

The benefits of implementing an EMS include:

- reducing cost,

- reducing risks,
- improving efficiency and internal communications, and
- improving public image.

Resources needed to implement and EMS

The amount of time and money needed to implement an EMS depends on the size and activities of the organization. In-house labor costs typically constitute the most significant portion of the implementation costs and start at \$13,000 for smaller organizations.

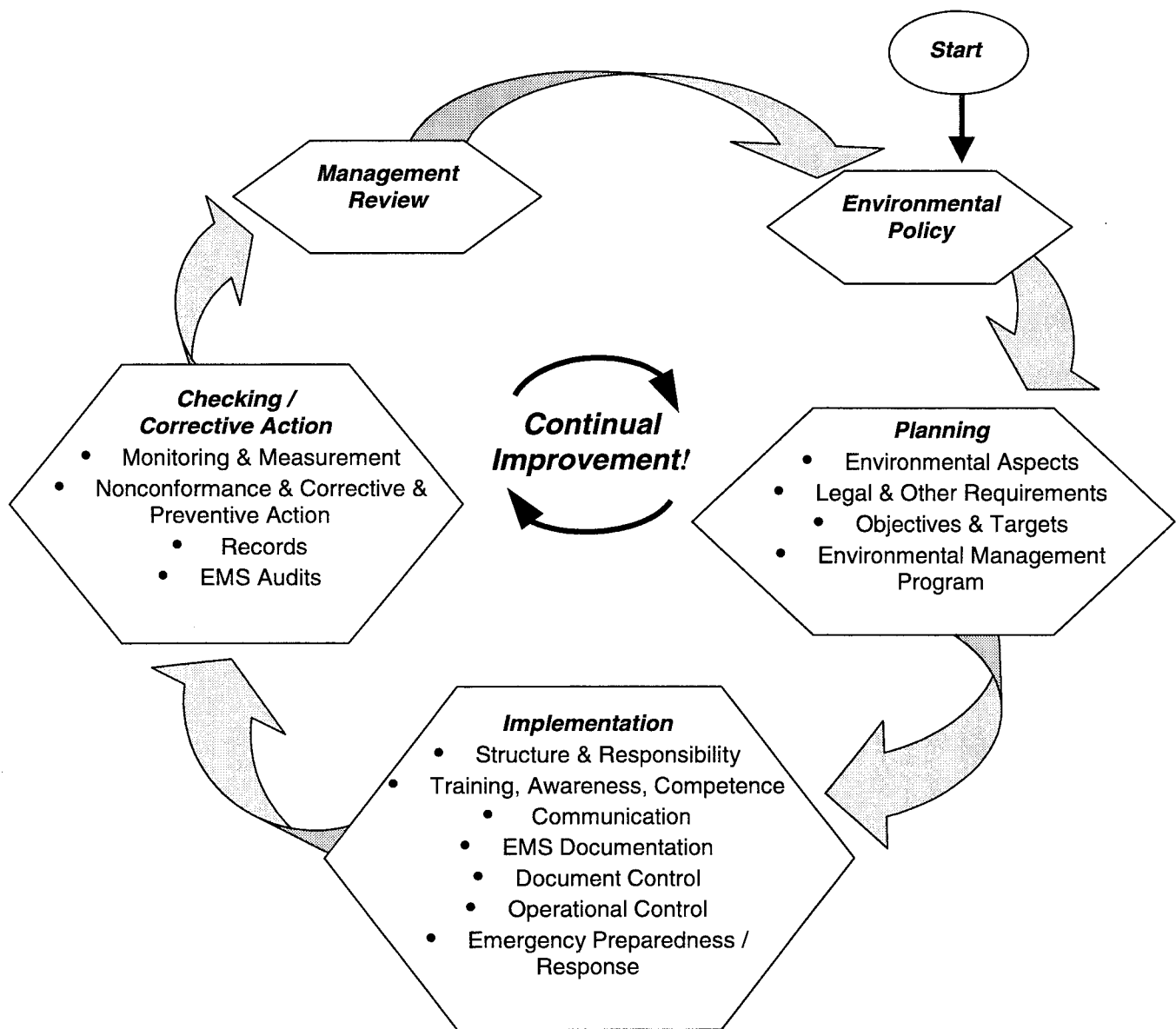
An EMS can be applied in one area of operation or across your entire organization. You should examine the organization's activities and services and determine where the EMS would best serve your needs and your organizational goals.

"Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations" is a complete guide available on the EPA website at <http://www.epa.gov/OWM/wm046200.htm#guide1>. The following pages contain a brief summary of EMS program development.

A Snapshot of EMS

- **Environmental policy** — Develop a statement of your organization's commitment to the environment. Use this policy as a framework for planning and action.
- **Environmental aspects** — Identify environmental attributes of your activities and services. Determine those that could have significant impacts on the environment.
- **Legal and other requirements** — Identify and ensure access to relevant laws and regulations, as well as other requirements to which your organization adheres.
- **Objectives and targets** — Establish environmental goals for your organization, in line with your policy, environmental impacts, the views of interested parties, and other factors.
- **Environmental management program** — Plan actions necessary to achieve your objectives and targets.
- **Structure and responsibility** — Establish roles and responsibilities for environmental management and provide appropriate resources.
- **Training, awareness and competence** — Ensure that your employees are trained and capable of carrying out their environmental responsibilities.
- **Communication** — Establish processes for internal and external communications on environmental management issues.
- **EMS documentation** — Maintain information on your EMS and related documents.
- **Document control** — Ensure effective management of procedures and other system documents.
- **Operational control** — Identify, plan, and manage your operations and activities in line with your policy, objectives, and targets.
- **Emergency preparedness and response** — Identify potential emergencies and develop procedures for preventing and responding to them.
- **Monitoring and measurement** — Monitor key activities and track performance. Conduct periodic assessments of compliance with legal requirements.
- **Nonconformance and corrective and preventive action** — Identify and correct problems and prevent their recurrence.
- **Records** — Maintain and manage records of EMS performance.
- **EMS audit** — Periodically verify that your EMS is operating as intended.
- **Management review** — Periodically review your EMS with an eye to continual improvement.

From: "Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations." P. Stapleton and M. Glover. NSF



From: "Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations." P. Stapleton and M. Glover. NSF

Dealing with Regulators and Inspectors

Demonstrating compliance is achieved through good record keeping, meeting reporting requirements, and sometimes through on-site inspections from regulatory agencies. When environmental inspectors from state agencies visit your facility:

- Be honest and straightforward. Never hide anything, but provide only the information that is requested. It is not necessary to volunteer information that is not requested. A tank inspector does not usually have the interest or authority to review your stormwater plan.
- Be responsive. If you can correct the situation immediately do it, if it will take time, be specific on when and how you will correct the situation.

Reasons for Inspections

Inspections usually come in two types: a scheduled inspection or an unannounced inspection. Most inspections are routine inspections in which a representative from the agency calls several days in advance to schedule the visit. For small facilities, scheduled inspections are infrequent due to limited agency staff resources. Most unscheduled inspections by inspectors from state agencies are in response to a complaint, spill, or emergency. Inspectors at the state level rarely make random visits to a facility in search of compliance infractions.

For scheduled inspections:

- Be sure to have the information and documentation readily available to the inspector when he arrives. Provide the inspector with a place to sit and review the documents.
- Make sure a knowledgeable staff member is available to escort the inspector around the facility if needed, and answer basic questions.
- Everyone should follow safety rules, including the inspector.
- Have a senior staff person or manager meet the inspector and be available, if needed. This sends the message that environmental compliance is important to your organization.
- At the conclusion of the inspection, request that the inspector verbally communicate his findings. Many times inspectors will leave a copy of the inspection checklist. It is appropriate to ask for a copy. Be sure to record the

date of the inspection, name of the inspector, and the purpose of the inspection.

Most inspectors want to help you stay in compliance and can offer suggestions. Remember, inspectors visit hundreds of facilities and can share their experience with common compliance mistakes as well as successful techniques. Do not be afraid to ask questions or request advice. Inspections can be learning opportunities. It is also an opportunity to build trust and confidence.

Unscheduled inspections are usually in response to complaints or spills. In either case, the same basic protocol should be followed. Most inspectors have a right of entry to perform only a specific duty related to their agencies area of compliance. For example, an inspector from the Texas Natural Resource Conservation Commission (TNRCC) has the right to look at your waste storage areas and waste manifests records, but would not be authorized to review an asbestos management plan. If an inspector knocks on your door, find out the specific purpose of their visit and then try to help. Do not waste their time or yours.

Environmental Information Resources

For more information about the various regulatory agencies in Texas, visit their websites. Each agency provides links to environmental rules, compliance forms, and basic compliance information. The TNRCC rules are found in Texas Administrative Code, Title 30. The official rules are available on the Texas Secretary of State home page at <http://www.sos.state.tx.us>.

TNRCC maintains a Local Government Assistance Program. The contact number is 1-800-447-2827, or 512/239-1066. The program provides technical support and assistance for the various environmental programs. In addition, compliance specialists are located in each of the 16 regional offices.

Texas Environmental Agency Resources

Texas Natural Resource Conservation Commission: <http://www.tnrcc.state.tx.us/index.html>

Texas Department of Health: <http://www.tdh.state.tx.us/default.htm>

General Land Office: <http://www.glo.state.tx.us/>

Railroad Commission: <http://www.rrc.state.tx.us/>

Federal Environmental Resources

United States Environmental Protection Agency: <http://www.epa.gov/epahome/>

United States Department of Energy: <http://www.energy.gov/>, or <http://www.ott.doe.gov/>

United States Department of Transportation: <http://www.dot.gov/>, or <http://www.fta.dot.gov/>

Environmental Management Resources

Global Environment and Technology Foundation: <http://www.getf.org/projects/muni.cfm>

EPA Office of Wastewater Management (ISO 14001 guide):

<http://www.epa.gov/OWM/iso2.htm>

Checklist

- ☐ Do you have an environmental policy statement?
- ☐ Do you have a designated manager to coordinate environmental compliance?
- ☐ Have you assessed your significant environmental risks?
- ☐ Do you understand the environmental laws and rules that apply to you?
- ☐ Does operational staff have environmental responsibilities?
- ☐ Does management allocate resources to environmental management?
- ☐ Do employees understand how their work can affect the environment?
- ☐ Do you have a system for internal and external communications?
- ☐ Do you use a manual for procedures on environmental compliance?
- ☐ Do you involve suppliers and contractors in environmental management?
- ☐ Do you have plans to protect the environment in emergencies?
- ☐ Do you measure your emissions and waste?

- ☐ Do you use a procedure to monitor compliance?
- ☐ Do you have a procedure to address and correct handling noncompliance?
- ☐ Do you have a record keeping system?
- ☐ Have you examined all your organization's operations that affect compliance?

Chapter 2 – Air Quality: Emissions, Fuels, Fleets, and Refrigerants

Issues and Regulatory Intent

Legislation

The Clean Air Act (CAA) and its amendments, including the Clean Air Act Amendments (CAAA) of 1990, are designed to “protect and enhance the nation’s air resources so as to promote the public health and welfare and the productive capacity of the population.” The CAA consists of six sections, known as “Titles,” which direct EPA to establish national standards for ambient air quality and for EPA and the States to implement, maintain, and enforce these standards through a variety of mechanisms. State and local governments oversee, manage, and enforce many of the requirements of the CAAA. CAA regulations appear at 40 CFR Parts 50-99.

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms EPA uses to regulate mobile air emission sources. The intent of Title II of the CAAA is to reduce the tailpipe emissions of heavy-duty diesel and gasoline engines, including urban buses. Another aspect of the CAAA is to institute clean fuel vehicles and inspection and maintenance programs.

How are transit operations affected?

Transit operations are affected by air quality requirements primarily through the regulation of:

- tailpipe emissions,
- vehicle procurement,
- fuel usage, and
- refrigerant usage.

The regulations for these various requirements originate from the CAAA of 1990. Transit fleet and fueling operations may also be affected by state and federal energy conservation requirements arising from the Energy Policy Act of 1993.

Small urban and rural transit providers that operate in or near a non-attainment area will also likely be affected by one of many rules intended to reduce vehicle emissions and improve air quality in their region. The most direct impact on rural and small urban transit providers will be on the purchase of new cleaner vehicles, inspection and maintenance of existing vehicles, and/or the use of clean fuels.

State Implementation Plan

The requirements for air quality control measures are described in the State Implementation Plan (SIP). The (SIP) is the official document, housed at the U.S. Environmental Protection Agency (EPA), which details the efforts and commitments made by a state in fulfilling its Clean Air Act obligations. The SIP describes what control measures the state will enforce in order to meet federal clean air requirements. SIP related requirements may include reformulated gasoline, low emission diesel fuel, vehicle maintenance, and inspection. A SIP revision that has been adopted by TNRCC becomes state law immediately, but does not become part of the SIP officially until it has been approved by EPA.

In this chapter, both air quality and energy conservation requirements will be reviewed as they affect bus engine emissions, fuels, and refrigerants from a transit operations perspective.

Emissions

EPA Standards

Emissions from heavy-duty diesel and gasoline vehicles, which include buses, are regulated under Title II of the CAA. EPA issued new rules in December 2000 that include new standards for both heavy-duty gasoline and diesel engines. The effect on transit agencies is primarily on the procurement of new vehicles. The burden of compliance, in most cases, is with the engine manufacturers, but agencies should ensure that the purchase or lease of new vehicles complies with current emission standards.

For heavy-duty diesel engines, the new rule requires:

- a combined standard for oxides of nitrogen (NO_x) and hydrocarbons (HC) of 2.4 grams per brake horsepower-hour (g/bhp-hr). (This is less than the current standard of 4 g/bhp-hr NO_x and 1.3 g/php-hr.),

- new test procedures and compliance requirements over a wider range of test conditions beginning in the 2007 model year, and
- on-board diagnostics (OBD) systems for engines between 8,500 and 14,000 pounds to be phased-in beginning 2005.

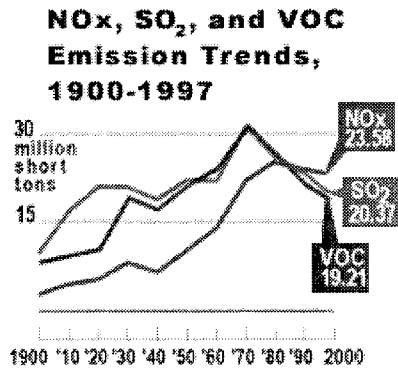
For heavy-duty gasoline engines, the new rules require:

- more stringent emissions for vehicles less than 14,000 pounds gross vehicle weight (GVW) as shown below in Table 2-1,
- new heavy-duty gasoline engines with GVW greater than 14,000 pounds must meet a combined NOx and HC of 1.0 g/bhp-hr. This is less than the current 4.0 g/bhp-hr NOx and 1.9 g/bhp-hr HC standard,
- OBD systems for engines of vehicles between 8,500 and 14,000 pounds, and
- incentives for manufacturers to meet the standard by 2003 or 2004, with implementation beginning in 2005 model year.

Table 2-1. Heavy-Duty Gasoline Emission Standards

Gross vehicle weight	Hydrocarbons (HC)	Oxides of Nitrogen (NOx)
8,500 to 10,000 pounds	0.28 g/mile	0.9 g/mile
10,001 to 14,000 pounds	0.33 g/mile	1.0 g/mile

On May 17, 2000, EPA proposed more stringent emission standards for heavy-duty vehicles that would reduce smog-causing emissions from trucks and buses by 95 percent beyond current levels. Soot emissions also would be reduced by 90 percent beyond current levels. In order to meet these more stringent standards for diesel engines, the proposal requires the sulfur content of diesel fuel to be capped at 15 parts per million – a 97 percent reduction. The standards will take effect in 2006 - 2007. Please refer to the Texas Low Emission Diesel Program and the Texas Clean Fleet Program in Senate Bill 5 of the 77th Legislature, 2001.



Clean Fleets

National Standards

Beginning in 1998, 30 percent of new vehicles purchased by centrally fueled fleets in certain cities will be required to use clean fuels and meet tailpipe standards that are lower than those in place for general passenger cars (0.075 gpm hydrocarbons, 3.4 gpm carbon monoxide, and 0.2 gram per mile nitrogen oxides). The purchase requirement will grow to 70 percent by the year 2000. The program, which is intended to stimulate development of new, low-polluting fuel/vehicle combinations, will affect 22 metropolitan areas in 19 states across the country where pollution levels are high. In Texas, these counties currently include four counties in the DFW nonattainment area, eight counties in the HGA nonattainment area, and El Paso.

Texas Clean Fleets

The Texas Clean Fleet (TCF) program was developed in response to the CAA 1990, which established the Federal Clean Fuel Fleet program. TCF requires fleet owners operating in serious, severe, or extreme nonattainment areas to purchase a percentage of EPA-certified low emission vehicles (LEVs) when replacing or adding fleet vehicles. The percent of purchase can be met by acquiring combinations of the following:

- LEV, inherently low LEVs (ILEVs),
- ultra-low LEVs (ULEVs),
- zero-emission vehicles (ZEVs), or

- credits in the form of Mobile Emission Reduction Credits (MERCs) or Program Compliance Credits (PCCs).

The counties in Texas affected by this program are listed below in Table 2-2.

Table 2-2. Counties Included in Texas Clean Fleet Program

Nonattainment Area	Counties Included
Houston-Galveston Area	Harris, Galveston, Brazoria, Chambers, Fort Bend, Montgomery, Liberty, and Waller
Dallas-Fort Worth Area	Dallas, Tarrant, Denton, and Collin County
El Paso Area	El Paso County

Texas Clean Fleet program applies to:

- Local government fleets if you operate in any of the counties listed above and have a fleet greater than 15 vehicles. If you are a municipal transit system, then you are considered a local government fleet.
- Private fleets with more than 25 vehicles (not counting law enforcement and emergency vehicles). If you are neither a local government fleet, nor a mass transit fleet (as defined in Texas Transportation Code 451-453), then you are a private fleet. A private fleet may include rural transportation providers and county transit authorities.

Essentially, all fleets meeting the size threshold that operate at least 50 percent of the time in nonattainment counties must comply with TCF program. Therefore, it is where you operate that is the determining factor for most transit providers. For example, if the transit system you operate is a rural transportation provider with more than 25 vehicles, you are neither a municipal nor mass transit fleet. You would be classified as a private fleet. If so, and you operate more than 50 percent of the time in one of those counties, then you must comply with TCF.

TCF Compliance Schedule

Compliance with TCF requires that certain fleet percentages are LEVs:

- At least 10 percent of the fleet was LEV certified by September 1, 1998; or 30 percent of fleet vehicle purchases or leases are LEV after September 1998.
- Fifty percent of fleet vehicle purchases or leases are LEV certified after September 2000 through September 2002.
- Seventy percent of light-duty fleet vehicle purchases or leases are LEV certified after September 2002; and 50 percent of heavy-duty fleet vehicle purchases or leases are LEV certified after September 2002.

TCF Exceptions

There are five exceptions to the percent-of-purchase requirements for the years 2000, 2002, and beyond. Applications for exceptions must be submitted one year before the compliance deadline. Exceptions delay enforcement for up to a two-year period, but does not exempt a fleet from any other TCF requirements. TCF allows for the following five exceptions:

- A firm engaged in fixed-price contracts with public works agencies and demonstrating compliance with LEV requirements would result in substantial economic harm to the firm under a contract entered before September 1997.
- Fuels required for LEV operation that meet the normal requirements of the principal business of the fleet are not available in the area where the fleet operates.
- The fleet is unable to secure financing provided by or arranged through a supplier for the fuels required to operate the LEVs.
- The projected net costs to fuel an LEV are reasonably expected to exceed comparable fueling costs for the conventional vehicles when measured over the useful life of the fleet vehicle.
- Original Equipment Manufacturers' (OEM) vehicles or converted vehicles that have been certified by the EPA as LEV and meet the normal requirements and practices of the local government or private entity are not available.

Resources for Clean Fleets

For more information see the program rules in 30 TAC § 114.1, §114.5, §114.150-157, and §114.201 and the TNRCC website at

- <http://www.tnrcc.state.tx.us/air/ms/tcf.htm> and
- <http://www.tnrcc.state.tx.us/air/ms/tcfdocs.html>.

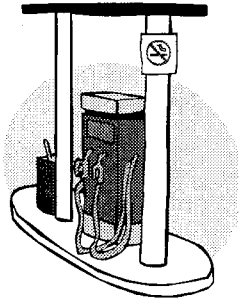
In particular, TNRCC recommends the following guidance documents:

- RG-321: Guidelines for Private and Local Government Fleets;
- RG-322: Guidelines For Vehicle Emission Credits;
- RG-323: Guidelines for Exception Applications; and
- Or call 512 / 239-1438 or 512 / 239-1757.

Other helpful sites relating to clean fleets include:

- Alternatives Fuel Data Center - <http://www.afdc.nrel.gov/fleet.html>
- Alternatives Fuel Fleet Buyer's Guide - <http://www.fleets.doe.gov/>
- EPA Office of Transportation and Air Quality (OTAQ) - <http://www.epa.gov/OMSWWW/>
- EPA Vehicle Inspection and Maintenance and Clean Fuel Fleet Best Practices <http://www.epa.gov/otaq/im.htm>

Fuels



Alternative Fuel Use Program

Public transit systems operating under Chapters 451, 452, and 453 of the Texas Transportation Code are subject to the Alternative Fuel Use Program. In general, this program requires that the purchase or lease of new vehicles be capable of using alternative

fuels. Although the Alternative Fuel Use Program may not apply to rural and small urban transit providers, there are fuel and fleet requirements in effect for many counties in or near nonattainment areas where small urban and rural systems operate. Therefore, small urban and rural transit providers may still be affected by fuel and fleet requirements under the Texas Clean Fleet Program or air quality control measure requirements in accordance with a region's current attainment demonstration documents of the SIP.

Texas Low-Emission Diesel (LED) Fuel Program

TNRCC has proposed a program to implement low emission diesel fuels. The low-emission diesel (LED) fuel program should begin April 1, 2005, and require that diesel fuel produced for delivery and ultimate sale to the consumer in affected areas:

- shall not exceed 500 parts per million (ppm) sulfur,
- must contain less than 10 percent by volume of aromatic hydrocarbons, and
- must have a cetane number of 48 or greater.

The LED Fuel Program also requires that:

- low-emission diesel fuel be used year-round in all diesel fueled compression-ignition engines in both on-road vehicles and non-road equipment operating within the affected counties;
- the sulfur content in the diesel fuel supplied to the DFW, Brazoria Port Arthur (BPA), and HGA ozone nonattainment areas, and 95 central and eastern Texas counties, be reduced to 15 ppm sulfur beginning June 1, 2006;
- diesel fuel producers and importers who provide fuel to the affected areas be registered with the commission and provide quarterly status reports. (The new rule does not directly apply to the user of the fuel but to the supplier and is meant to simply regulate which fuel is available to those who purchase it in the state.)

LED rules will require fuel for both on-road and non-road use in:

- eight counties in the HGA ozone nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties);
- four counties of the DFW ozone nonattainment area which includes (Collin, Dallas, Denton, and Tarrant Counties);

- three counties of the BPA ozone nonattainment area (Hardin, Jefferson, and Orange Counties); and
- 95 additional central and eastern Texas counties (Anderson, Angelina, Aransas, Atascosa, Austin, Bastrop, Bee, Bell, Bexar, Bosque, Bowie, Brazos, Burleson, Caldwell, Calhoun, Camp, Cass, Cherokee, Colorado, Comal, Cooke, Coryell, De Witt, Delta, Ellis, Falls, Fannin, Fayette, Franklin, Freestone, Goliad, Gonzales, Grayson, Gregg, Grimes, Guadalupe, Harrison, Hays, Henderson, Hill, Hood, Hopkins, Houston, Hunt, Jackson, Jasper, Johnson, Karnes, Kaufman, Lamar, Lavaca, Lee, Leon, Limestone, Live Oak, Madison, Marion, Matagorda, McLennan, Milam, Morris, Nacogdoches, Navarro, Newton, Nueces, Panola, Parker, Polk, Rains, Red River, Refugio, Robertson, Rockwall, Rusk, Sabine, San Jacinto, San Patricio, San Augustine, Shelby, Smith, Somervell, Titus, Travis, Trinity, Tyler, Upshur, Van Zandt, Victoria, Walker, Washington, Wharton, Williamson, Wilson, Wise, and Wood Counties).

Refrigerants

Title VI of the CAA is intended to protect stratospheric ozone by phasing out the manufacture of ozone-depleting chemicals and restricting their use and distribution. Production of Class I substances, including 15 kinds of chlorofluorocarbons (CFCs) and chloroform, were phased out (except for essential uses) in 1996.

Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are refrigerants that have been found to harm the ozone layer in the earth's stratosphere. The ozone layer shields the earth from harmful ultra-violet radiation. CFC-12 (also known as R-12 or Freon) and HCFC-22 have been used as refrigerants in air conditioning for motor vehicles and appliances for many years. As a result of the treaty known as the Montreal Protocol, EPA was required under Title VI of the CAAA to implement rules that phase-out ozone depleting chemicals and prevent their release. Section 609 of the CAAA gives EPA the authority to establish requirements to prevent the release of refrigerants during the servicing of motor vehicles and to require recycling of refrigerants.

Recycling and Reclaiming

Refrigerants are either recycled and/or reclaimed. Recycling refers to the use of a machine to remove impurities and oil and then recharge the refrigerant into either the same vehicle or a different vehicle. Recycled refrigerant is not as pure as reclaimed refrigerant. Reclaiming refers to the process of removing all the oil and impurities in the refrigerant and cannot be

performed in the service shop. Reclaimed refrigerant is generally returned from the manufacturer and is essentially identical to new, unused refrigerant.

Since there will be a phase-out of the production and sale of CFCs and HCFCs, the challenge for transit agencies may be in finding and planning for acceptable substitutes and acceptable retrofits. Other challenges will include the purchase of recycling equipment and the certification of technicians. In many instances, the use of outside contractors to service recycle and/or reclaim air conditioning systems is the most practical solution to meeting many requirements.

General Requirements for Freon (CFC-12 or R-12)

For the most part, compliance with regulations affecting transit agencies involves:

- preventing the release of CFCs,
- recovering and/or reclaiming CFCs,
- having trained and certified technicians handle CFCs, and
- record keeping.

For more information regarding air conditioning refrigerants, the ozone layer, and other related subjects, please go to the EPA's motor vehicle air conditioning website at <http://www.epa.gov/ozone/title6/609/609.html>.

The following is a summary list of requirements for servicing motor vehicle air conditioners using CFC-12:

- Venting of CFC-12 into the atmosphere has been prohibited under section 608 of CAAA, since 1992.
- Section 609 (published in 1992) established standards for equipment that recovers and recycles CFC-12 refrigerant from motor vehicle air conditioners, rules for training and testing technicians to handle this equipment, and record-keeping requirements for service facilities and for refrigerant retailers. A supplemental final rule published in May 1995 established a standard for equipment that recovers but does not recycle CFC-12, and training and testing technicians to handle this equipment.
- Technicians repairing or servicing CFC-12 MVACs must use either recover/recycle or recover-only equipment approved by EPA. Technicians who repair or service CFC-12 motor vehicle air conditioners must be trained

and certified by an EPA-approved organization. A list of approved testing programs is available from the website listed above.

- Service shops must certify to EPA that they own approved CFC-12 equipment. If refrigerant is recovered and sent to a reclamation facility, the name and address of that facility must be kept on file.

The following is a summary list of the requirements for servicing motor vehicle air conditioners using HFC-134a:

- Venting HFC-134a refrigerant has been prohibited since 1995 under Section 608.
- Technicians who repair or service HFC-134a MVACs must recover the refrigerant and either recycle it on-site, or send it off-site to a reclamation facility. Technicians must use EPA-approved equipment to perform the refrigerant recovery and recycling. A list of approved recover/recycle and recover-only equipment is available from the website listed above.
- EPA regulations specify that when equipment is converted for use with a new refrigerant, the converted unit must be able to meet the applicable equipment standard. CFC-12 equipment may be permanently converted for use with HFC-134a under certain conditions.
- Technicians who repair or service HFC-134a MVACs must be trained and certified by an EPA-approved organization. If a technician is already trained and certified to handle CFC-12, he does not need to be recertified to handle HFC-134a.
- Service shops must certify to EPA that they own approved HFC-134a equipment.
- The 609 regulations also explain that facilities that charge refrigerant into vehicles but do not perform any other kind of refrigerant servicing or repair are considered to be performing service involving refrigerant, and are therefore subject to all the requirements of the section 609 regulations, including the requirement that they must purchase approved equipment.

Other Clean Air Act Regulations

National Ambient Air Quality Standards (NAAQSs)

Pursuant to Title I of the CAA, EPA has established NAAQSs to limit levels of “criteria pollutants,” including carbon monoxide, lead, nitrogen dioxide, particulate matter, volatile organic compounds (VOCs), ozone, and sulfur dioxide. Geographic areas that meet NAAQSs for a given pollutant are classified as attainment areas; those that do not meet

NAAQSs are classified as nonattainment areas. Under section 110 of the CAA, each state must develop a State Implementation Plan to identify sources of air pollution and to determine what reductions are required to meet federal air quality standards.

New Source Performance Standards (NSPSs)

Title I also authorizes EPA to establish NSPSs, which are nationally uniform emission standards for new stationary sources falling within particular industrial categories. NSPSs are based on the pollution control technology available to that category of industrial source.

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

Under Title I, EPA establishes and enforces NESHAPs, nationally uniform standards oriented towards controlling particular hazardous air pollutants (HAPs). Title I, section 112(c) of the CAA further directs EPA to develop a list of sources that emit any of 189 HAPs and to develop regulations for these categories of sources. To date EPA has listed 174 categories and developed a schedule for the establishment of emission standards. The emission standards will be developed for both new and existing sources based on “maximum achievable control technology” (MACT). The MACT is defined as the control technology achieving the maximum degree of reduction in the emission of the HAPs, taking into account cost and other factors.

Sulfur Dioxide Nitrous Oxide Emissions Program

Title IV of the CAA establishes a sulfur dioxide nitrous oxide emissions program designed to reduce the formation of acid rain. Reduction of sulfur dioxide releases will be obtained by granting to certain sources limited emissions allowances, which, beginning in 1995, will be set below previous levels of sulfur dioxide releases.

Permit Programs

Title V of the CAA of 1990 created a permit program for all “major sources” (and certain other sources) regulated under the CAA. One purpose of the operating permit is to include in a single document all air emissions requirements that apply to a given facility. States are developing the permit programs in accordance with guidance and regulations from EPA.

Once a state program is approved by EPA, permits will be issued and monitored by that state.

For a summary of the CAA visit: http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html

References

Title 30 TAC § 114.1, §114.5, §114.150-157, and §114.201

TNRCC Air - <http://www.tnrcc.state.tx.us/air/ms/tcf.htm> and
<http://www.tnrcc.state.tx.us/air/ms/tcfdocs.html>.

TNRCC Texas Clean Fleet (TCF) - <http://www.tnrcc.state.tx.us/air/ms/tcf.htm>

TNRCC Recommended Guidance Documents

- RG-321: Guidelines for Private and Local Government Fleets
- RG-322: Guidelines for Vehicle Emission Credits
- RG-323: Guidelines for Exception Applications

Alternatives Fuel Data Center - <http://www.afdc.nrel.gov/fleet.html>

Department of Energy, Alternatives Fuel Fleet Buyer's Guide - <http://www.fleets.doe.gov/>

EPA Office of Transportation and Air Quality (OTAQ) - <http://www.epa.gov/OMSWWW/>

EPA Vehicle Inspection and Maintenance and Clean Fuel Fleet Best Practices -
<http://www.epa.gov/otaq/im.htm>

EPA's motor vehicle air conditioning - <http://www.epa.gov/ozone/title6/609/609.html>.

Clean Air Act Amendments, EPA Office of Air Quality -
<http://www.epa.gov/OMSWWW/omshome.htm>

http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html

EPA - <http://www.epa.gov/otaq/im.htm>

http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html

Checklists / Forms

Air Regulations—Federal Requirements

- ☐ Do you use solvents in a cleaning machine other than a 2-gallon or smaller container? If YES: Have you registered with the EPA?
- ☐ Does your business service vehicle air conditioners? If YES: Are technicians certified and equipment approved by the EPA?
- ☐ Is recovered refrigerant sent to an EPA-approved reclaiming facility?
- ☐ If you are in a nonattainment county does your fuel system meet Stage I and Stage II requirements?
- ☐ If required, does your business submit an emissions inventory report to the TNRCC?
- ☐ Does your business avoid being a nuisance (noise emissions, odors)?

Texas Clean Fleets

- ☐ Do you operate in any of the following counties included in Texas Clean Fleets (TCF) Program:

Nonattainment Area	Counties Included
Houston-Galveston Area	Harris, Galveston, Brazoria, Chambers, Fort Bend, Montgomery, Liberty, and Waller
Dallas-Fort Worth Area	Dallas, Tarrant, Denton, and Collin County
El Paso Area	El Paso County

- ☐ If so, do you have a fleet greater than 25 vehicles?
- ☐ If so, were vehicle purchases after September 1998 LEVs?

Glossary

Affected area - Any consolidated metropolitan statistical area or metropolitan statistical area with a population of 350,000 or more that, under the NAAQS set by the FCAA Amendments, is a serious, severe, or extreme nonattainment area.

AFVs - Alternately fueled vehicles.

Certified - A vehicle that has been issued a certificate of conformity by the EPA to ensure compliance with the required emission standards throughout the entire useful life of a vehicle.

CNG - Compressed Natural Gas.

Conventional vehicle - A vehicle that meets all applicable federal emission standards in place at the time of manufacture but is not certified as a low-emission vehicle.

Credit - A Mobile Emission Reduction Credit, Program Compliance Credit, or other reduction in emissions that has been banked with the TNRCC.

Exception - The TNRCC has adopted provisions to the rules on fleets that allow an organization affected by the TCF Program to apply for an exception to the requirements. The ED of the TNRCC is authorized to make these exceptions available to affected local government and private fleets. The review process for exceptions to the LEV requirements of the TCF Program is guided by the regulations cited in 30 TAC Section 114.153. Fleet operators requesting an exception from the LEV requirements of the TCF Program must provide sufficient information to document the conditions for which the exception is being considered. Use the Exception Application Form (TNRCC-10275) to send this information to the TNRCC during the last 12 months of the two-year compliance period.

Fleet - The aggregate of the vehicles under the authority of a local government or private entity and operated primarily within an affected area.

Fleet vehicle - A vehicle registered or required to be registered under the *TTC*, Chapter 502, except school buses. The term ***does not*** include:

- a vehicle owned or operated by an affected organization that, when not in use, is ***normally parked*** at the residence of the individual who ***normally operates*** it;

- a vehicle that has a GVWR over 26,000 lb. (This is the weight of the vehicle as given on the vehicle's registration and includes the weight the vehicle can carry or pull.);
- a vehicle used in the maintenance or repair of underground mass transit facilities that is required by Federal law or regulation to operate on;
- a law enforcement or emergency vehicle, as defined by the TTC.

Heavy-duty vehicle (HDV) - Any passenger vehicle or truck that is capable of transporting people, equipment, or cargo and that has a GVWR over 8,500 lb. and is required to be registered under the TTC. For the purposes of the MERC program, HDVs are divided into weight classes: a light HDV (L-HDV) has a GVWR over 8,500 lb. but not more than 10,000 lb.; a Medium HDV (M-HDV) has a GVWR over 10,000 lb. but not more than 19,500 lb.; and a Heavy HDV (H-HDV) has a GVWR over 19,500 lb.

ILEV (Inherently low-emission vehicle) - A vehicle that has been certified by the EPA to meet the LEV standards and additional evaporative emissions requirements.

Light-duty vehicle (LDV)- Any passenger vehicle or truck that is capable of transporting people, equipment, or cargo and that has a GVWR not more than 8,500 lb. For the purposes of the MERC program, the light-duty class is divided into weight classes: a LDV has a GVWR not more than 6,000 lb. and is a passenger vehicle capable of seating 12 or fewer passengers; a light-duty truck 1 has a GVWR not more than 6,000 lb.; and a light-duty truck 2 has a GVWR over 6,000 lb. but less than 8,500 lb.

Local government - A city, county, municipality, or political subdivision of a state. This term does not include school districts.

Low-emission vehicle (LEV) - A vehicle in a class or category of vehicles that has been certified by EPA for any model year to meet: the LEV standards applicable under the FCAA Amendments; or emission limits at least as stringent as the applicable LEV standards for the FCFF Program.

Mass Transit Authority - A transportation or transit authority as defined in the TTC, Chapters 451–453 (relating to Metropolitan Rapid Transit Authorities, Regional Transportation Authorities, and Municipal Transportation Authorities), that operates a mass transit system under any of those laws.

Mobile Emission Reduction Credit - A credit, obtained by reducing emissions from a mobile source, that is: permanent, quantifiable, and enforceable; surplus (that is over and above requirements of any Federal and State regulations); and banked in accordance with TNRCC regulations.

Mobile source - A non-stationary source of air emissions that may contribute to air pollution, most commonly a motor vehicle.

NAAQS - National Ambient Air Quality Standards.

National Ambient Air Quality Standards - Federal air quality standards established by the EPA to protect the public from exposure to harmful amounts of six air pollutants: ozone, lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, and breathable particulate matter.

Nonattainment area - A defined region within the state that is designated by EPA as failing to meet the NAAQS for a pollutant for which a standard exists.

Normally operates - A person "normally operates" a vehicle if he or she operates it more than 50 percent of the time.

Normally parked at the residence of an individual - The vehicle's parking place after business hours is normally (more than 75 percent of the time) at the residence of the person who operates the vehicle.

Private entity - Any individual, partnership, firm, company, business trust, corporation, organization, or association that owns, operates, or controls a fleet.

Private fleet - All fleet vehicles operated by a private entity.

Program Compliance Credit - Credits that may be granted to a fleet for exceeding the LEV requirements of the TCF Program.

Projected net cost - All expenses associated with the fueling of fleet vehicles after deductions of any available State or Federal funding or incentives for the use of LEVs.

Purchases - The purchase, acquisition, or lease of vehicles (new or used) for operation in a fleet.

Registered vehicle - A motor vehicle that has been licensed for use on public roadways.

Stationary source - Nonmoving sources of air pollution, such as power plants and refineries.

TAC - Texas Administrative Code.

TCF Program - See Texas Clean Fleet Program.

Texas Clean Fleet Program - The program established in Title 30 of the TAC. Provisions for it are found in Sections 30 TAC 114.1, 114.3, 114.150, 114.151, 114.153, 114.157, and 114.201–202.

THSC - Texas Health and Safety Code.

ULEV - See ultra-low-emission vehicle.

Ultra-low-emission vehicle - A vehicle that has been certified by the EPA as an ultra-low-emission vehicle.

Vehicle - A self-propelled device designed to operate with four or more wheels in contact with the ground, in or by which a person or property is or may be transported, and that must be registered under the TTC, Section 502.002.

Chapter 3 – Petroleum Storage Tanks

Issues and Regulatory Intent

Legislation

An Underground Storage Tank (UST) is defined as any one or a combination of underground tanks and any connecting underground pipes used to contain an accumulation of regulated substances, the volume of which (including the volume of the connecting underground pipes) is 10 percent or more beneath the surface of the ground. Federal regulation of USTs began in 1986 under Subtitle I of RCRA in order to protect groundwater resources. Federal UST rules were finalized in 1989 and are found in 40 CFR parts 280 and 281. In Texas, the Texas Natural Resource Conservation Commission administers regulation of both USTs and aboveground storage tanks (ASTs) under Title 30, TAC, Chapter 334. TNRCC regulation also includes additional storage tank requirements. Local regulations are usually enforced by the Fire Marshals Office and may also affect the installation and operation of USTs and ASTs in your community.

How are transit operations affected?

The regulation of petroleum storage tanks (PSTs) may include underground storage tanks and aboveground storage tanks used by transit agencies to store motor fuels, used oil, lubricants, or coolants.

Underground Storage Tanks

USTs that are regulated include those containing petroleum substances such as: gasoline, diesel, used oil, jet fuel, and those containing hazardous substances such as: acetone, methyl ethyl ketone, and numerous other chemicals listed as hazardous substances in CERCLA §101(14). Other USTs commonly excluded from TNRCC regulations include: farm or residential tanks with a capacity of 1100 gallons or less, heating oil tanks, septic tanks, flow-through process tanks, and sumps with a capacity of less than 110 gallons. Hydraulic lifts are excluded from registration requirements, but are still subject to release reporting and cleanup action.

Aboveground Storage Tanks

The TNRCC also requires some aboveground storage tanks to be registered. Regulated ASTs include those which have a capacity of more than 1100 gallons and which store a petroleum product that can propel motor vehicles. By this definition, petroleum products include: gasoline, diesel, kerosene, gasohol, aviation gasoline, and distillate fuel oil. ASTs containing lubricant oil or jet fuel do not need to be registered. Owners of regulated ASTs need to file an Aboveground Storage Tank Registration Form with the TNRCC. As with USTs, the AST information must be amended within 30 days of any change by using the same form.

Petroleum Storage Tanks

PSTs are regulated primarily to prevent releases of petroleum products into the environment that cause contamination of soil and groundwater. Leaks from PSTs have been known to contaminate drinking water wells, cause explosive vapors in sewers, and infiltrate homes and businesses. The most common releases from PSTs occur from leaking pipes and from accidental spills and overfills. The most important strategy for owners and operators of PSTs is to monitor PSTs to prevent leaks and spills. PST installation and technology has advanced significantly since the federal regulations for USTs were promulgated by the EPA in 1989. The PST regulations in Texas cover five broad areas of compliance. These areas include:

- registration and fees;
- technical standards for installation and removal;
- release notification and cleanup;
- recordkeeping; and
- contractor and consultant registration.

Additionally, the PST Remediation Fund provides reimbursement for remediation of contamination resulting from leaking petroleum storage tanks. However, the legislation authorizing the PST Remediation Fund will end in 2003. This manual will not address fund compliance or application for reimbursement. For more information see:

<http://www.tnrcc.state.tx.us/permitting/re/reimb/> or contact reimbursement staff at (512) 239-2001.

Registration and Fees

What needs to be registered?

Owners of certain USTs (including PSTs) existing on or after September 1, 1987, are required to register these tanks with TNRCC, unless they were emptied and filled in place before January 1, 1974. Tanks that are empty or unused still need to be registered. USTs containing substances that are not a liquid at standard temperature and pressure do not need to be registered (propane for example).

Fees

underground storage tank (UST): \$50.00 per tank per year.

aboveground storage tank (AST): \$25.00 per tank per year.

Registration Form

A TNRCC Underground Storage Tank Registration Form is used both to initially register USTs and to later change or amend registered tank information. Within 30 days of any change, tank owners should submit a signed and dated amended registration form to the TNRCC indicating tank removals, owner changes, address changes, release detection upgrades, financial responsibility information, or any other changes. You can check your PST registration on-line at the TNRCC website at <http://www.tnrcc.state.tx.us/permitting/repar/pstregis/pstregisquery2.html>.

Certificate of Registration

Tank owners are required to provide proof of registration before regulated substances can be deposited in an aboveground or underground storage tank. As an acknowledgement of registration, the TNRCC issues official certificates of registration. These certificates should be displayed at the actual tank location to serve as necessary proof of registration upon delivery.

For More Information

The TNRCC tracks registered tanks in a database that includes facility, owner, and tank information supplied by the owner. The registration database information is available on disk or hard copy through information resources at (512) 239-DATA. For additional information or

if you have any questions regarding registration of underground and aboveground storage tanks, please contact the TNRCC Petroleum Storage Tank Division Registration Section at (512) 239-2160.

Financial Responsibility

Owners or operators of USTs storing petroleum must be able to demonstrate their ability to pay for damage costs that could occur if their USTs leak. Owners and operators have several options:

- obtain commercial environmental impairment liability insurance;
- demonstrate self-insurance;
- obtain guarantees, surety bonds, or letters of credit;
- place the required amount into a trust fund administered by a third party; and/or
- rely on coverage provided by a state financial assurance fund.

Local governments have four additional compliance mechanisms tailored to their special characteristics:

- a bond rating test,
- a financial test,
- a guarantee, and
- a dedicated fund.

Most public transit agencies would be classified as local governments for the purposes of financial assurance.

The coverage requirements are as follows:

- \$500,000 per occurrence if throughput is 10,000 gallons monthly or less,
- \$1 million per occurrence if throughput is more than 10,000 gallons monthly,
- \$2 million aggregate if you have more than 100 tanks, and
- \$1 million aggregate if you have fewer than 100 tanks.

Technical Standards for Installation and Removal

Technical standards for PSTs generally apply to the equipment and construction of the entire PST system as well as its operation. These standards cover everything from the types of the materials that can be used for pipes and tanks to allowable methods for inventory reconciliation. Listed below are the broad areas of technical compliance. For a detailed accounting of technical standards, refer to the PST regulations, or consult with the TNRCC PST Division. Many registered PST contractors and consultants can

also review your system to evaluate its compliance with technical standards. PST systems installed since 1989 should meet most technical standards regarding equipment and construction, but should still be evaluated for technical compliance.

All UST systems were required to be in compliance with TNRCC technical standards by December 1998. Any UST system not upgraded to these technical standards must be permanently removed from service.

Leak Detection

Leak detection may include the use of a combination of equipment and inventory control. Allowable release detection methods include:

- automatic tank gauging (ATG) & inventory control,
- vapor or groundwater monitoring,
- interstitial monitoring of double wall pipes and tanks,
- monitoring secondary containment systems, and
- statistical inventory reconciliation (SIR).

Monthly release detection is required for all UST system tanks and piping regardless of when the system was installed. The combination of daily inventory control and periodic tank tightness testing is no longer an allowable method of release detection.

Automatic tank gauging systems, in combination with line-leak detectors, are the most commonly used method release detection for UST and AST systems. Nearly all USTs also contain tank pit monitoring wells.

Spill and Overfill Protection

Spill and overfill equipment include spill “buckets” and overfill prevention valves to prevent releases that occur when the tank is being filled by fuel suppliers/tankers. All systems installed after 1989 were required to have this equipment. All existing systems were required to have spill and overfill equipment by December 1994. Spill and overfill equipment include:

- Tight-fill fitting at the fill port to tank;
- Spill containment buckets at fill risers; and
- Shut-off valve or overflow restrictor in the fill/drop tube.

All UST systems must be properly equipped with tight-fill fittings, spill containment buckets, and overfill prevention devices regardless of when the system was installed.

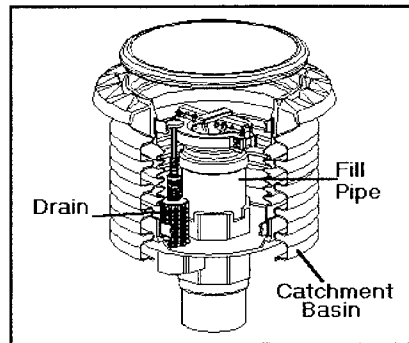
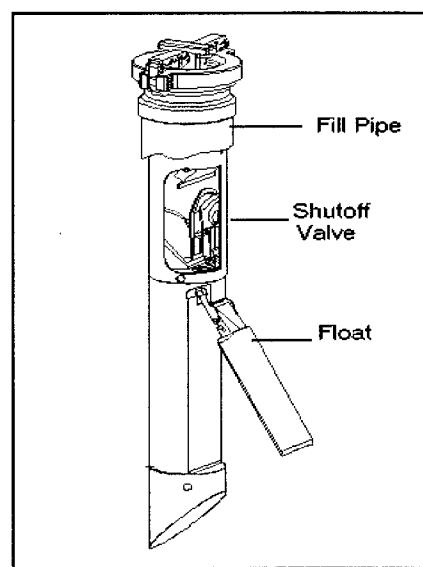


Figure 3-1. Typical Spill Containment Bucket



Corrosion Protection

Corrosion protection applies to the steel tanks, lines, and system components that may store or convey regulated substances. All PST system components were required to meet corrosion protection requirements by December 1998, regardless of when they were installed. In addition, all corrosion protection systems must be designed by a qualified corrosion expert, installed by a qualified corrosion specialist, and monitored by a corrosion technician.

Stage II Vapor Recovery for Fueling Systems

Fueling systems in nonattainment areas of Texas must use stage II vapor recovery equipment to control emissions of volatile organic compounds (VOCs) during the filling of on-road motor vehicle fuel tanks. These facilities must comply with annual testing procedures, proper operation and maintenance and other requirements. Some facilities may be exempt from the rules if they meet specific criteria, but most public and private motor vehicle fuel dispensing facilities located in the following 16 county ozone nonattainment areas must have Stage II vapor recovery systems.

- **Houston/Galveston Area:** Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties;
- **Beaumont/Port Arthur Area:** Hardin, Jefferson, and Orange counties;
- **El Paso Area:** El Paso County; and
- **Dallas/Fort Worth Area:** Collin, Dallas, Denton, and Tarrant counties.

For more information on Stage II Vapor Recovery Requirements see documents from the TNRCC available at <http://www.tnrcc.state.tx.us/permitting/role/pstta/#stage>

Or, contact the Stage II Vapor Recovery staff at (512) 239-2038 in Austin or the regional program offices listed below.

Dallas/Fort Worth Nonattainment Area TNRCC Region 4 - Arlington Tel: (817) 469-6750 Fax: (817) 795-2519	Beaumont/Port Arthur Nonattainment Area TNRCC Region 10 - Beaumont Tel: (409) 898-3838 Fax: (409) 892-2119
El Paso Nonattainment Area TNRCC Region 6 - El Paso Tel: (915) 778-9634 Fax: (915) 778-4576	Houston/Galveston Nonattainment Area TNRCC Region 12 - Houston Tel: (713) 767-3600 Fax: (713) 767-3646

Notification and Cleanups

As of December 31, 1999, the TNRCC had been notified of 22,435 leaking petroleum storage tank (LPST) cases, and the number of reported incidents continues to grow. Of this total, 7,834 (35 percent) were confirmed to have affected groundwater. Also, as of December 31, 1999, 14,827 cases have been closed.

Construction Notification

Owners of regulated underground storage tanks must notify the TNRCC of any construction activity at tank sites 30 days prior to the planned work. Regional TNRCC personnel inspect the construction activity as their schedule allows. The TNRCC maintains a database for all UST activities including construction notification, non-LPST closure reports, no-further action letters, and compliance evaluation inspections. See Construction Notification Form, TNRCC-0495, for more information.

Most work on PST systems, except for routine maintenance, must be performed by a TNRCC registered contractor and supervised by licensed on-site supervisors. This also includes removal and upgrade of PST systems. The work must be done only as outlined in TNRCC rules (see 30 TAC Section 334.55).

Leaks and Suspected Leaks

If you have a leak from a PST system, or if you suspect you have a leak, take the following actions:

***Report spills and leaks
to your TNRCC
Regional Office.***

1. Act to abate any hazards. Stop any immediate threats to human health and safety. This may include:
 - evacuating the area,
 - turning off electrical power/removing any fire hazards, and
 - calling the fire department.
2. If the piping is leaking, discontinue use of the dispenser serviced with the leaking piping.
3. If the tank is leaking, remove the product from the tank. Do not put any more product in the system.
4. Take immediate action to stop and contain the release.
5. Take the system out of service. Shut down the system.
6. Contact the local TNRCC regional office in your area within 24 hours of discovering or suspecting a leak or a spill.

If you *suspect* you may have leak, use your senses—do you see or smell it? Take the following steps to confirm presence of a leak:

- Check product pumps for proper operation.
- Check inventory records for product losses.
- If necessary, have the tanks and lines professionally tested.
- Check tank pit observation wells for product.

Petroleum spills and overfills of less than 25 gallons do not have to be reported if you immediately contain and clean up these releases.

Handling Contamination

You must also make sure you handle contaminated soil properly so that it poses no hazard (for example, from vapors or direct contact).

You may need to contact professional environmental consultants to help you clean up the leak or spill. It is important to remember that the fire department is not necessarily responsible for addressing environmental damage. A fire department's primary mission is to protect human health and safety first, then protect property. Contamination resulting from a spill that does not threaten human health and safety or property is generally not their responsibility.

Comply with TNRCC directives and reporting requirements. A release report (form number: TNRCC-0621) should be filed with the TNRCC within 20 days of discovery or suspicion of a leak or spill to document all initial actions taken to investigate, stop, and clean up the leak or spill.

Based on the information you have provided, the regulatory authority will decide if you must take further action at your site. You may need to develop and submit a Corrective Action Plan that shows how you will meet requirements established for your site by the regulatory authority.

The TNRCC provides a database on professionals who work with LPSTs or USTs. There are four categories of these contractors and consultants:

- Registered LPST Corrective Action Specialists - Environmental consultants who resolve problems related to leaking petroleum storage tanks.
- Registered LPST Corrective Action Project Managers - Environmental consultants and individuals who perform or supervise corrective action at leaking petroleum storage tank sites.
- Registered UST Contractors - Companies that perform or supervise the installation, repair, and removal of underground storage tanks.
- Licensed UST Installer - On-site supervisors/individuals that perform or supervise the installation, repair, and removal of underground storage tanks.

Contact the TNRCC for guidance regarding the cleanup of the spill or release.

For TNRCC rules and publications, you can find the official version of TNRCC rules in the Texas Administrative Code on the Secretary of State's website (<http://www.sos.state.tx.us>). Another way to obtain a copy of the rules, or of TNRCC publications, is to go to TNRCC's website at <http://www.tnrcc.state.tx.us> and click on the link to "rules" or "publications."

PST Record Keeping

You will have to keep records that can be provided to an inspector during an on-site visit to prove your facility meets certain requirements. These records must be kept long enough to show your facility's recent compliance status areas:

- registration certificate and financial responsibility;
- leak detection performance and maintenance records;
- inventory control records for the past year;
- monitoring results and the most recent tightness test for lines and tank;
- records of recent maintenance, repair, and calibration of on-site leak detection equipment;
- records showing the required inspections and tests of your corrosion protection system; and
- records showing that a repaired or upgraded UST system was properly repaired or upgraded.

You must also keep records of any site assessment results. Generally, you should follow this useful rule of thumb for recordkeeping: when in doubt, keep it.

Checklist

- ☐ Do any of your aboveground tanks exceed 1100 gallons? If YES: are they registered?
- ☐ Are all regulated USTs and ASTs registered with the TNRCC?
- ☐ Is a spill prevention control and countermeasure (SPCC) required for your aboveground tanks?
- ☐ Do all regulated USTs meet corrosion protection, spill containment, overfill prevention, leak detection, and other TNRCC requirements?

PST References

TNRCC Petroleum Storage Tank Guidance: <http://www.tnrcc.state.tx.us/permitting/re/pstta/>

EPA Office of Underground Storage Tanks: <http://www.epa.gov/swerust1/ustsystem/index.htm>

EPA Office of Underground Storage Tanks: <http://www.epa.gov/swerust1/index.htm>

Glossary

Abandonment in-place - A method of permanent removal of an underground storage tank (UST) from service where the tank is left in the ground after appropriate preparation and filling with an acceptable solid inert material in accordance with the requirements of §334.55 of this title (relating to Permanent Removal From Service).

Abatement - The process of reducing in sufficient degree or intensity the source of the release or impacted area, and potential fire, explosion, or vapor hazards, such that immediate threats to human health no longer exist. This includes the removal, as necessary, of all regulated substances from any confirmed or suspected release source (including associated aboveground or underground tanks, individual tank compartments, or associated piping) and the removal of phase-separated regulated substances from the impacted area.

Aboveground storage tank (AST) - A non-vehicular device, (including any associated piping), that is made of non-earthen materials; located on or above the surface of the ground, or on or above the surface of the floor of a structure below ground, such as mineworking, basement, or vault; and designed to contain an accumulation of petroleum products.

Ancillary equipment - Any devices that are used to distribute, meter, or control the flow of petroleum substances or hazardous substances into or out of an UST, including, but not limited to, piping, fittings, flanges, valves, and pumps.

API - American Petroleum Institute, a nationally recognized organization which provides certifications and standards for petroleum equipment and services.

Backfill -The volume of materials or soils surrounding the UST bounded by the ground surface, walls, and floor of the tank pit.

Cathodic protection - A technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell, normally by means of either the attachment of galvanic anodes or the application of impressed current.

Closure letter - A letter issued by the agency which states that, based on the information available, the agency agrees that corrective action has been completed for the referenced release in accordance with agency requirements.

Composite tank - A single-wall or double-wall steel tank, to which a fiberglass-reinforced plastic laminate or cladding has been factory-applied to the external surface of the outer tank wall.

Corrective action - Any assessment, monitoring, and remedial activities undertaken to investigate the extent of, and to remediate, contamination.

Free-product (or non-aqueous phase liquid) - A regulated substance in its free-flowing non-aqueous liquid phase at standard conditions of temperature and pressure (e.g., liquid not dissolved in water).

Hazardous substance - Any substance defined or listed in the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), §101(14), (42 United States Code §9601, et seq.), and which is not regulated as a hazardous waste under the federal Solid Waste Disposal Act, Subtitle C, (42 United States Code §6921, et seq.).

Inventory control - Techniques used to identify a loss of product that are based on volumetric measurements in the tank and reconciliation of those measurements with product delivery and withdrawal records.

Leaking petroleum storage tank (LPST) site - A site at which a confirmed release of a petroleum substance from an UST or AST has occurred. Petroleum substance

contamination which results from multiple sources may be deemed as one LPST site by the agency.

Monitoring well - An artificial excavation constructed to measure or monitor the quantity or movement of substances, elements, chemicals, or fluids below the surface of the ground. The term does not include any monitoring well which is used in conjunction with the production of oil, gas, or any other minerals.

NFPA - National Fire Protection Association, a nationally recognized organization which provides certifications and standards for fire protection equipment and services.

Non-aqueous phase liquid (NAPL) - See "Free product (or non-aqueous phase liquid)" as defined in this section.

Observation well - A monitoring well or other vertical tubular structure which is constructed, installed, or placed within any portion of a UST excavation zone (including the tank hole and piping trench), and which is designed or used for the observation or monitoring of groundwater, or for the observation, monitoring, recovery, or withdrawal of either released regulated substances (in liquid or vapor phase) or groundwater contaminated by such released regulated substances.

Occurrence - An incident, including continuous or repeated exposure to conditions, which results in a release from an UST or AST or tank system.

Operator - Any person in day-to-day control of, and having responsibility for the daily operation of the UST system or the AST system, as applicable.

Overfill - A release that occurs when an UST system is filled beyond its capacity, thereby resulting in a discharge of a regulated substance to the surface or subsurface environment.

PEI - Petroleum Equipment Institute, a nationally recognized organization which provides certifications and standards for petroleum equipment and services.

Permanent removal from service - The termination of the use and the operational life of an UST by means of either removal from the ground, abandonment in-place, or change-in-service.

Petroleum product - A petroleum substance obtained from distilling and processing crude oil that is liquid at standard conditions of temperature and pressure, and that is capable of being used as a fuel for the propulsion of a motor vehicle or aircraft, including but not limited to motor gasoline, gasohol, other alcohol-blended fuels, aviation gasoline, kerosene, distillate fuel oil, and Number 1 and Number 2 diesel. The term does not include naphtha-type jet fuel, kerosene-type jet fuel, or a petroleum product destined for use in chemical manufacturing or feedstock of that manufacturing.

Release - Any spilling including overfills, leaking, emitting, discharging, escaping, leaching, or disposing from an UST or AST into groundwater, surface water, or subsurface soils.

Release detection - The process of determining whether a release of a regulated substance is occurring or has occurred from an UST system.

Risk-based corrective action - Site assessment or site remediation, the timing, type, and degree of which is determined according to case-by-case consideration of actual or potential risk to public health from environmental exposure to a regulated substance released from a leaking UST or AST.

Secondary containment - A containment method by which a secondary wall, jacket, or barrier is installed around the primary storage vessel (e.g., tank or piping) in a manner designed to prevent a release from migrating beyond the secondary wall or barrier before the release can be detected. Secondary containment systems include, but are not limited to: double-wall tank and/or piping systems, and impervious liners, jackets, containment boots, sumps, or vaults surrounding a primary (single-wall) tank and/or piping system.

Spill - A release of a regulated substance which results during the filling, placement, or transfer of regulated substances into an UST or during the transfer or removal of regulated substances from an UST system.

Underground storage tank - Any one or a combination of underground tanks and any connecting underground pipes used to contain an accumulation of regulated substances, the volume of which, including the volume of the connecting underground pipes, is 10 percent or more beneath the surface of the ground.

Upgrading - The addition, improvement, retrofitting, or renovation of an existing UST system with equipment or components as required to meet the corrosion protection, spill and overfill prevention, and release detection requirements of this chapter.

Used oil - Any oil or similar petroleum substance that has been refined from crude oil, used for its designed or intended purposes, and contaminated as a result of such use by physical or chemical impurities; and including spent motor vehicle and aircraft lubricating oils (e.g., car and truck engine oil, transmission fluid, and brake fluid), spent industrial oils (e.g., compressor, turbine, bearing, hydraulic, metalworking, gear, electrical, and refrigerator oils), and spent industrial process oils.

Vent lines - All pipes including valves, elbows, joints, flanges, flexible connectors, and other fittings attached to a tank system, which are intended to convey the vapors emitted from a regulated substance stored in an UST to the atmosphere.

Chapter 4 – Waste Management

Issues and Regulatory Intent

Legislation

The hardest part of complying with environmental laws is understanding what the laws mean and knowing what to do. When it comes to waste, the rules and regulations can be very perplexing. There are federal laws and rules from the U.S. Environmental Protection Agency; there are state laws and rules enforced by the Texas Natural Resource Conservation Commission; there are exemptions for certain amounts of waste and special requirements for others. Taken together, waste regulations are intended to promote responsible management and tracking of wastes in order to avoid spills, releases, and unauthorized disposal.

The Resource Conservation and Recovery Act (RCRA) amended the Solid Waste Disposal Act to address solid wastes (Subtitle D), and hazardous waste (Subtitle C) management activities. Congress granted EPA the authority to regulate hazardous wastes from “cradle to grave.” The principle objective of hazardous waste regulation is the protection of human health and the environment. RCRA regulation is also intended to encourage the conservation and recovery of valuable materials. According to RCRA regulations, a material must be defined as a solid waste before it can be considered a hazardous waste; therefore a hazardous waste is a subset of solid waste.

The statutory definition of a solid waste is not based on the physical form of the material, (i.e., whether or not it is a solid as opposed to a liquid or gas). RCRA defines solid waste as any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities.

RCRA regulates generators, transporters, and owner/operators of hazardous waste treatment, storage, and disposal facilities.

In Texas, the principal regulatory authority for the control and disposal of waste is the TNRCC. The TNRCC website has many useful guidance documents and forms available at <http://www.tnrcc.state.tx.us/homepgs/oprr.html> that can assist you in compliance.

How are transit operations affected?

Most transit agencies generate solid waste at their maintenance facilities. Solid wastes include everything from discarded paper, light bulbs, used engine oil, and used solvents. Among these solid wastes, some may be classified as hazardous waste, some are classified as non-hazardous waste, and some are special wastes. The typical wastes regulated at transit agencies include degreasers, used oil, and batteries. However there are other non-hazardous wastes that are regulated as well, such as tires. If you produce any amount of waste—regardless of whether you store, recycle, or throw it away—you are subject to state and federal regulations. The key to compliance with waste regulations includes:

- understanding waste classification,
- minimizing waste to stay below regulatory thresholds and reduce costs,
- good housekeeping practices, and
- good record-keeping practices.

Six steps to compliance with waste regulation are shown in Table 4-1, and relevant information needed to perform the steps is discussed throughout the chapter.

Table 4-1. Steps to Compliance with Waste Regulation

Step	Action	Chapter Information
1	Classify your waste. - Find out if your waste is hazardous. - Use process knowledge and label information. - Check EPA list. - Arrange for laboratory analysis.	Classifying Waste in Texas pp. 4-3 through 4-7
2	Determine generator status.	Determining Generator Status p. 4-8
3	Assign waste codes to each stream. - Assign specific identification number to each hazardous waste stream. - This number is a Texas Waste Code.	Assigning Waste Codes p. 4-9 Refer to TNRCC Guidance RG-22, or call the waste evaluation section at (512) 239-6832.
4	Count wastes and keep records.	Handling Typical Waste Streams pp. 4-9 through 4-13
5	Properly handle waste before disposal.	Handling Typical Waste Streams pp. 4-9 through 4-13
6	Properly transport/dispose of wastes.	Handling Typical Waste Streams pp. 4-9 through 4-13

This chapter is intended to provide a basic understanding of federal and state waste management rules as they apply to transit facilities/operations performing the steps.

Classifying Waste in Texas

There are several broad categories of waste, and each type of waste is classified in a process known as waste classification. Understanding *waste classification* is vitally important to compliance with waste management regulations. The following sections contain definitions needed to properly classify waste generated at your facility and for compliance with waste regulations. Although generally descriptive, these terms have very specific regulatory meanings – especially the use of “hazardous” and “nonhazardous.” Figure 4-1 on p. 4-7 illustrates some of the key ideas associated with four types of waste.

TNRCC has an on-line tool you can use for making a waste determination called the Waste Designation Decision Matrix. Go to http://www.tnrcc.state.tx.us/exec/small_business/matrix/enter.html

Solid Waste

A solid waste is any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities.

Hazardous Waste

Hazardous waste is a subset of solid waste. A hazardous waste is one that is listed as such by the EPA or that exhibits one or more hazardous characteristics: corrosivity, reactivity, or toxicity:

- **Listed hazardous wastes** include more than 400 wastes:
 - “P” and “U” lists are disposed of without being used. These wastes are designated by either a “P” or a “U” followed by a 3-digit code; for example, P120 or U203. The P list includes “acutely hazardous wastes” that are considered especially harmful even in small quantities, such as cyanides. Most businesses rarely generate acutely hazardous waste. U-listed wastes are

hazardous, although not acutely so; this group includes such common compounds as acetone. P and U wastes are actually products that may have exceeded their shelf life and can no longer be used for their intended purpose. Thus, you generate hazardous waste if you discard a P- or U-listed chemical without using it. On the other hand, since P and U wastes come from chemicals that have never been used, the P/U code is no longer applicable once a chemical has been used for its intended purpose.

- “F” and “K” lists—produced during certain processes that are common to industry. The EPA’s “K” list details hazardous wastes produced from specific sources, such as the production of pesticides (K031). The “F” list includes chemicals from nonspecific sources, such as used solvents. A complete list of “listed” wastes can be found in 40 CFR 261, Subpart D.
- **Characteristically hazardous wastes** are wastes that have one or more of the following properties:
 - Corrosivity for wastes that have a pH less than or equal to 2 or greater than or equal to 12.5. These are strongly acidic/alkaline and can burn skin and dissolve metal. For example, hydrochloric acid and sodium hydroxide may be hazardous.
 - Reactivity for wastes that are chemically unstable, may react violently with air, water, other chemicals, or wastes that release any cyanide or sulfide. (Not commonly encountered at vehicle maintenance facilities.)
 - Ignitability for wastes with a flash point of less than 140 degrees F. Spent solvents and paint wastes are sometimes hazardous due to ignitability.
 - Toxicity for wastes listed among 40 chemicals which include heavy metals such as lead and pesticides and organic chemicals.

Nonhazardous Waste

A nonhazardous waste is any industrial waste that is not listed as hazardous and is not characteristically hazardous. In other words, anything that does not meet the definition of hazardous is nonhazardous. Class I nonhazardous industrial wastes include certain levels of constituents that at higher concentrations would be hazardous.

Special Waste

Special waste is a waste that requires special handling, trained people, and/or special disposal methods. This is often due to the size of the waste matrix, the concentration, and the physical, chemical, or biological characteristics of the waste. The TNRCC authorizes landfills to accept special waste through special waste acceptance plans (SWAP). Wastes not included in a SWAP may go to a landfill if a *Request for Authorization for Disposal of a Special Waste Form (TNRCC-0152)* and supporting documentation is submitted to the TNRCC for consideration.

A technical review will then determine whether the request should or should not be granted. Below is a list of special waste examples per 30 TAC 330.2(140) that may apply to transit operations. Other waste may also be special waste but is not listed below:

- hazardous waste from conditionally exempt small quantity generators (CESQGs) - under 100 kilograms/220 pounds per month (about half of a 55-gallon drum for most small transit operators);
- class I industrial waste if going to a municipal solid waste landfill with a dedicated special waste trench;
- septic tank sludge - must pass "paint filter" test;
- grease and grit trap wastes;
- wastes from commercial or industrial wastewater treatment plants, air pollution control facilities; tanks, drums, or containers used for shipping or storing any material that has been listed as a hazardous constituent in 40 CFR, Part 261, Appendix VIII but not listed as a commercial chemical product in 40 CFR 261.33(e); or (f) - empty hazardous waste containers, for example, paint and solvent cans from an auto body shop;
- pesticide containers - empty containers that are not triple-rinsed;
- discarded asbestos - regulated asbestos containing material (RACM) (30 TAC §330.136(b)(3), such as friable, properly managed pipe insulation and nonregulated asbestos containing material (NonRACM) (30 TAC §330.136(b)(4), such as nonfriable, properly packaged brake pads;
- nonhazardous incinerator ash;
- soil contaminated by petroleum products, crude oils, or chemicals - spill cleanup;
- light ballasts and capacitors under 50 ppm PCB; and
- any waste stream the TNRCC deems appropriate - special conditions.

Note: Lead-acid batteries and used oil filters are prohibited for land disposal.

SOLID WASTE Anything and everything discarded whether solid, liquid, or gas				
NON-HAZARDOUS WASTE		SPECIAL WASTE	HAZARDOUS WASTE	
<u>Non-Industrial or municipal solid waste</u> is from a non-industrial/municipal source	<u>Industrial waste</u> is from an industrial facility and is either: Class 1 Class 2 Class 3	<u>Hazardous waste or non-hazardous wastes</u> and include items like: petroleum-contaminated soils, light ballasts, and empty pesticide containers	<u>Listed hazardous</u> because it's listed as: F-listed K-listed P-listed U-listed	<u>Characteristically hazardous</u> because of its: Ignitability Reactivity Corrosivity Toxicity

Figure 4-1. Quick reference chart of waste types

Industrial and Nonindustrial Waste

Industrial waste results from the operations of industry, manufacturing, mining, or agriculture. For example, wastes from manufacturing plants are industrial wastes. Nonindustrial wastes are wastes from schools, hospitals, and most service stations. Most small transit operations are nonindustrial.

Municipal Solid Waste (MSW)

Solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities, including garbage, rubbish, ashes, street cleanings, dead animals, abandoned automobiles, and all other solid waste other than industrial solid waste.

Concept of Waste Streams

Waste classification is often determined by where and how the waste is created. Therefore, municipal waste refers to waste that is typically trash and items that would go to the city or

regional landfill, or municipal sources. This is in contrast to waste from industrial sources. Although the waste in question might be the exact same material, if it comes from a municipal source it is municipal waste, and if comes from an industrial source it is industrial waste. Most rural and small transit agencies are considered municipal sources.

Determining Generator Status

Facilities that generate wastes are classified into three categories based on the amount of hazardous waste generated per month:

- *A large quantity generator (LQG)* generates more than 1000 kilograms (2200 pounds or about 260 gallons) per month.
- *A small quantity generator (SQG)* generates from 100 to 1000 kilograms of waste per month.
- *A conditionally exempt small quantity generator (CESQG)* generates less than 100 kilograms (200 pounds or about 26 gallons) of hazardous waste per month; collects up to 2200-pounds (about five 55-gallon drums of liquid); and, has no time limit on accumulation.

Most fleet maintenance facilities that generate hazardous waste are SQG or CESQG facilities. Typically, the maintenance facilities of Metropolitan Transit Authorities are considered SQGs. CESQGs are exempt from many of the regulations so long as hazardous wastes are properly identified and sent to an appropriate disposal or recycling facility.

CESQGs are allowed to accumulate no more than 1000 kg of hazardous waste on site at any one time without a hazardous waste storage permit. If a CESQ generator exceeds the limit (100 kg) in any month, they are a SQG.

SQGs may accumulate no more than 6000 kg of hazardous waste on site, and must dispose of the waste within 180 days (270 days if the disposal facility is more than 200 miles away) while complying with the accumulation, storage, and disposal rules for small quantity generators.

The best way to simplify compliance with waste rules is to reduce waste. In most instances, small urban and rural transit operators are CESQ generators and generate less than 1000 kg (2200 lbs).

Waste containers need to be properly labeled. Hazardous waste shipments should be accompanied by manifest documents with the appropriate copies maintained on file for at

least three years. SQGs and LQGs must register with EPA and maintain a *Notice of Registration* with the TNRCC listing all hazardous waste streams. Facilities that generate hazardous waste and are not CESQGs will need to submit an *Annual Waste Summary Report* to TNRCC each year. This report requires the generator to quantify and account for the disposition of waste generated at the facility. Also, hazardous waste generators, except for CESQGs who are exempted, are required to submit a *Source Reduction and Waste Minimization Plan* to TNRCC.

Assigning Waste Codes

Facilities that are considered “industrial” must assign waste code numbers to both hazardous and non-hazardous wastes. But the TNRCC considers most fleet maintenance facilities to be “municipal” rather than “industrial” facilities. The TNRCC requires municipal facilities to assign waste code numbers **to hazardous wastes only**. However, it is important to note that all wastes are regulated and require proper management and disposal.

Municipal generators should include a Texas Waste Code Number on the manifest accompanying hazardous waste shipments. This number may be assigned by the generator, or, in the case of one-time shipments, assigned by TNRCC upon submission of the proper form. Information on classifying waste and assigning waste code numbers is summarized in TNRCC’s RG-22, *Guidance for the Classification and Coding of Industrial Wastes and Hazardous Wastes*.

Handling Typical Waste Streams–(Nonindustrial / Municipal Waste)

Since most urban and rural transit agencies are considered municipal sources the following information depicts nonindustrial waste streams. Much of the following is excerpted from TNRCC Recommended Guidance RG 308 and RG 22.

Used Oil

Used petroleum-based lubricants are usually not classified as a hazardous waste, but they must be carefully managed. Recycling is usually the best option for used oil and other lubricants. Most used oil will be accepted by an authorized recycler (registered with TNRCC)

at little or no cost. You are considered a “used oil generator” if you remove used oils or spent engine lubricating oils from a vehicle. These may include but are not limited to the following:

- automotive crankcase oil, including car, truck, marine, and aircraft engine oils not used for engine fuel;
- diesel engine crankcase oil, including car, truck, marine, heavy equipment, aircraft, and railroad engine oils not used for fuel; and
- natural gas fired engine oils; alternative fuel engine oils; transmission fluids; brake fluids; and power steering fluid.

Registration: Your shop must register as a “Used Oil Collection Center” if the shop collects used oil from other shops or from the public.

Storage: Containers used to store used oil must be in good condition, must not leak, and must be clearly marked with the words “Used Oil.” All used oil spills must be cleaned up. Spills of 25 gallons or more must be reported to the TNRCC at 512/463-7727.

Transport and Disposal: Only a registered used oil processor may dispose of used oil. You may transport up to 55 gallons of oil at a time to a registered processor or recycling facility. Only registered used oil transporters may transport larger volumes of used oil.

Used Oil Filters

You are a “used oil filter generator” if your business removes used oil filters from vehicles or other transportation or equipment. Used oil filters should be punctured and thoroughly drained to remove liquids. Many shops crush filters to reduce the volume of filter waste and drain residual liquids. The recovered oil and filter are recycled separately. Containers used to store filters should be clearly labeled.

Registration: A “used oil filter generator” is required to register as a “Used Oil Filter Collection Center” if the shop collects used oil filters from other shops or from the public.

Storage: You may store up to six 55-gallon drums of used oil filters without having to register as a storage facility. Containers must be in good condition, not leak, and be clearly marked with the words “Used Oil Filters” in letters three inches high. The shop owner’s name and phone number must also be written on the container label. You must have sufficient

equipment on-site to respond to a spill volume equivalent to 10 gallons for every 55-gallon drum.

Transport and Disposal: All free-flowing oil must be removed from used oil filters stored on-site. You may store up to six 55-gallon containers of used oil filters on-site. Used oil filters may only be transported by a registered used oil filter transporter and delivered only to a registered used oil filter processor. However, at any one time, you may transport two 55-gallon containers or less of used oil filters yourself without registering as a transporter. All used oil filter shipments must be sealed, properly labeled, and accompanied by a bill of lading. Never dispose of used oil filters with your regular trash.

Used Anti-freeze

If your facility removes antifreeze from vehicles, the antifreeze may be a hazardous waste. Antifreeze may be hazardous if it is mixed with hazardous waste such as solvents, or it may be characteristically hazardous if it comes from an older car and has a high concentration of lead (5 ppm) or a high pH. If your shop generates antifreeze that is nonhazardous, no special rules apply, and it should be treated like any other nonhazardous waste. Remember, antifreeze is always a good candidate for recycling even if the antifreeze is hazardous. You should never drain used antifreeze into the sanitary sewer unless specific permission by the local sewer authority is granted. Authorized recyclers can usually pick up used antifreeze. Recycling equipment is available for purchase, but some equipment may not remove all impurities.

Storage: There are storage requirements only if the antifreeze is hazardous. If it has not been mixed with other hazardous waste and is not characteristically hazardous, then it should be properly stored like any other nonhazardous waste your shop generates.

Transport and Disposal: The TNRCC regulates treatment and disposal only if the antifreeze is hazardous. If your used antifreeze is hazardous, then it must be transported and disposed of like any other hazardous waste you generate. Nonhazardous antifreeze may be discharged to the sanitary sewer if you first get the approval of your local wastewater treatment plant. The best disposal choice for any used antifreeze your shop generates is recycling. In some areas, recycling businesses will pick up your used antifreeze free of charge.

Used Tires

Scrap tires are not classified as hazardous waste, but generally not accepted by landfills unless split, quartered, or shredded. Tire recycling or disposal companies are available to collect used tires in most areas.

Registration: You must register with the TNRCC if your shop routinely generates, transports, or retails used or scrap tires. You must obtain a waste tire generator ID number by calling (512) 239-6695. There is no charge to register.

Storage: You may store a maximum of 500 scrap tires outside and in a nonenclosed area or a maximum of 2,000 scrap tires in an enclosed area. After storing the maximum amount, you have 90 days to remove the scrap tires. If you exceed the maximum storage limits, you must register as a storage facility and meet storage facility requirements such as financial assurance.

Transport and Disposal: Only a TNRCC-registered waste tire hauler may transport scrap tires from your facility. A TNRCC-approved scrap tire manifest must accompany each scrap tire shipment. You may call the TNRCC for authorization to transport the scrap tires yourself. All scrap tires must be transported to an authorized storage site, scrap tire recycling processor, or a landfill. Tires sent to a landfill must first be split, quartered, or shredded.

Spent Lead-Acid Batteries

If your shop removes lead-acid batteries from vehicles or other types of transportation equipment, you are a “generator of lead-acid batteries,” and must comply with specific regulations. In addition, if your business sells batteries, you must register with the Office of the State Comptroller and collect an appropriate fee. Batteries are commonly recycled, which can be made a condition of the purchase contract. They should be stored in a manner that prevents releases to the environment.

Registration: You must register with the TNRCC if your shop reclaims batteries. If you send batteries off-site to be reclaimed, you are not required to register.

Storage: There are no specific requirements for the storage of lead-acid batteries. However, you must ensure that your storage practice does not damage the environment and that any

spills are properly contained and reported. Old batteries should be recycled or disposed of within one year.

Transport and Disposal: Taking spent lead-acid batteries to a reclaimer does not require TNRCC registration or record keeping. However, you must ensure that your transport practices do not cause any spills or damage to the environment. The TNRCC's Technical Support and Used Oil Program can supply you with a list of approved battery-reclaiming facilities.

Spent Solvents, Paint Waste, and Paint Thinners

Solvents and thinners are often classified as hazardous waste. However, solvent recycling programs are available in most areas and can reduce the liability associated with disposal. The use of non-ignitable (low flash) solvents for washing parts may result in a non-hazardous waste stream.

Paint wastes and thinners must be sent to an authorized treatment, storage, disposal, or recycling facility. Frequently, the companies that service and recycle parts cleaning solvent can set up a waste stream to pick up paint wastes.

Storage: There are storage requirements for solvents and paint wastes that are classified as hazardous.

Transport and Disposal: The TNRCC regulates treatment and disposal only if the antifreeze is hazardous. If your used antifreeze is hazardous, then it must be transported and disposed of like any other hazardous waste you generate. Nonhazardous antifreeze may be discharged to the sanitary sewer if you first get the approval of your local wastewater treatment plant. The best disposal choice for any used antifreeze your shop generates is recycling. In some areas, recycling businesses will pick up your used antifreeze free of charge.

Guidance Documents / Publications

"Vehicle Maintenance Facilities: A Federal Compliance Guide"; Published by Specialty Technical Publishers Inc., Phone: (604) 983-3445 - This reference book is a comprehensive guide to federal environmental and safety rules applicable to vehicle maintenance facilities.

TNRCC Publication GI 145 "Local Government Guide to the TNRCC"; Available from TNRCC Publications at (512) 238-0028 or download from the TNRCC web page. This guide provides assistance to local governments on environmental compliance.

TNRCC Publication RG-22 "Guidance for the Classification and Coding of Industrial Waste and Hazardous Waste"; Contact the TNRCC Waste Evaluation Section at (512) 239-6832.

TNRCC Publication RG 325. "The Used Oil Recycling Handbook: Guidance for Used Oil Handlers."

TNRCC Publication RG 234: "Industrial and Hazardous Waste: Rules and Regulations for Small Quantity Generators."

Telephone Assistance

TNRCC Waste Evaluation Section (512) 239-6832

This section can provide information and forms needed for waste classification, reporting, recycling, one-time waste code numbers, as well as answers to general waste-related questions.

TNRCC Local Government Assistance Office (800) 687-9222 or (512) 239-5300

This office can provide information and guidance documents to assist local governmental agencies in complying with environmental regulations, including hazardous waste management.

TNRCC Pollution Prevention and Recycling (512) 239-3100

This office can provide assistance with Source Reduction and Waste Minimization Plans as well as serving as a clearinghouse for recycling information and opportunities.

TNRCC Automotive Waste Section (512) 239-6702

This section can provide information on used tire management, used oil and filter management, and other waste streams commonly associated with the operation and maintenance of motor vehicles.

Internet Resources

TNRCC home page. From there you can access information, publications, and forms from most of the TNRCC Divisions, as well as link to the environmental rules and regulations.

<http://www.tnrcc.state.tx.us>

TNRCC Local Government Assistance: <http://www.tnrcc.state.tx.us/exec/sbea/lga.html>

TNRCC Local Government Guide: <http://www.tnrcc.state.tx.us/admin/topdoc/gi/145/>

TNRCC guidance documents <http://www.tnrcc.state.tx.us/homepgs/oprr.html>

TNRCC on-line *Waste Designation Decision Matrix*:

http://www.tnrcc.state.tx.us/exec/small_business/matrix/enter.html

TNRCC Municipal Waste Information:

<http://www.tnrcc.state.tx.us/permitting/wasteperm/mswperm/>

TNRCC Tire Recycling: <http://www.tnrcc.state.tx.us/permitting/re/eval/we/tires/recycling.html>

EPA Home Page: <http://www.epa.gov>

Pollution Prevention for Auto Repair and Fleet Maintenance:

<http://www.epa.gov/region09/p2/autofleet/>

P2 manuals for Auto Repair and Fleet Maintenance:

<http://wrrc.p2pays.org/indsectinfo.asp?INDSECT=5#Manuals>

Checklist

Waste Regulations—General Requirements

- ☐ Have you performed a hazardous waste determination on all solid waste streams?
- ☐ Do you maintain documentation to support all hazardous waste determinations?
- ☐ Have you assigned a proper waste code identification number to each hazardous waste stream?
- ☐ Do you have monthly waste records to support your claimed generator status either as conditionally exempt small quantity generator (CESQG) or small quantity generator (SQG)?
- ☐ Is your facility registered with the TNRCC?
- ☐ What is your TNRCC Registration No.: _____

What is your EPA ID No.: _____

- ☐ Is your Notice of Registration (NOR) up-to-date, including all waste streams and waste management units?
- ☐ Have you submitted an annual waste summary each year?
- ☐ Do you fulfill all other record-keeping and reporting requirements for your generator status?
- ☐ Do you comply with appropriate accumulation quantity requirements?
- ☐ Is hazardous waste stored in container storage areas at your business?
- ☐ If YES: Are waste containers compatible with their contents, labeled, dated, and sealed?
- ☐ Are containers inspected weekly for leakage and daily for deterioration?

- ☐ Have all on-site hazardous waste recycling activities been registered with the TNRCC?

Waste Regulations—Transportation and Disposal Requirements

- ☐ Do you use a TNRCC-registered transporter?
- ☐ Do you use a TNRCC-registered disposal facility?
- ☐ Do you manifest all hazardous waste that is transported?
- ☐ Do you have copies of manifests (green and white) for the past 3 years?

Used Oil Regulations

- ☐ Are all containers labeled with the words “USED OIL”?
- ☐ Are any hazardous fluids mixed with the used oil? If YES: Is this mixture managed as a hazardous waste?
- ☐ Do you collect used oil from the public?
- ☐ If YES, are you registered with the TNRCC as a used oil collection center?
- ☐ Do you use a TNRCC-registered transporter to remove used oil? (Not necessary if transporting one 55-gallon drum or less.)

Used Oil Filter Regulations

- ☐ Are all containers labeled with the words “USED OIL FILTERS” (in 3-inch letters), the business owner’s name, and business phone number?
- ☐ Are filters drained before recycling?
- ☐ Do you collect used oil filters from the public?
- ☐ If YES, are you registered with the TNRCC as a used oil filter collection center?
- ☐ Do you store six or fewer 55-gallon drums of filters at any time?

- ☐ Do you use a TNRCC-registered transporter to remove the filters? (Not necessary if transporting two 55-gallon drums or less.)
- ☐ Do you use a bill of lading when having the filters transported?
- ☐ Do you keep used oil filters separate from other types of filters (e.g., fuel)?

Lead-Acid Battery Regulations

- ☐ Are all used batteries sent for recycling or reclamation?
- ☐ If you reclaim batteries on-site, has the TNRCC been notified?

Tire Regulations

- ☐ Do you generate, transport, or retail either used or scrap tires?
- ☐ If YES, are you registered with the TNRCC?
- ☐ Do you meet the appropriate storage requirements? Are scrap tires transported by a TNRCC-registered transporter?
- ☐ Do you manifest scrap tires for disposal?
- ☐ If YES, do you receive a return copy of the manifest?

Antifreeze Regulations

- ☐ Do you recycle antifreeze? If NO, do you have approval from the local POTW to discharge antifreeze into the sewer system?
- ☐ Is used antifreeze mixed with any hazardous waste? If YES, is that mixture managed as a hazardous waste?

Glossary

Acutely hazardous wastes - A subset of listed hazardous wastes that carry the "H" code; they are considered very harmful to human health and the environment.

CESQG - Conditionally Exempt Small-Quantity Generator. A facility that is exempt from some provisions of waste regulations because of the relatively small amounts of hazardous waste that it produces.

CFR - Code of Federal Regulations

Characteristically hazardous waste - Any waste that exhibits the characteristics of ignitability, corrosivity, reactivity, and/or toxicity as defined by the EPA in 40 CFR Part 261 Subpart C. These are often referred to as the "D" wastes.

Class 1 waste - Any waste or mixture of waste that, because of its concentration or physical or chemical characteristics is toxic; corrosive; flammable; a strong sensitizer or irritant; a generator of sudden pressure by decomposition, heat, or other means; or may pose a substantial present or potential danger to human health or the environment when improperly processed, stored, transported, disposed of, or otherwise managed.

Class 2 waste - Any individual waste or combination of waste that cannot be described as hazardous waste or as nonhazardous Class 1 or Class 3 waste.

Class 3 waste - Waste that is inert and essentially insoluble (determined through various testing methods), usually including but not limited to materials such as rock, brick, glass, dirt, certain plastics, rubber, and similar materials that are not readily decomposable.

Classification code - This last digit of the Texas waste code represents the classification of the waste stream. The letter H represents hazardous wastes; and the number 1, 2, or 3 represents nonhazardous industrial waste Class 1, 2, or 3.

Conditionally exempt - Small-Quantity Generator: Generators of less than 100 kg (220 lb) per month of hazardous waste, or less than 1 kg (2.2 lb) per month of acutely hazardous waste.

EPA - The Federal Environmental Protection Agency

EPA I. D. number - A number issued by the EPA to identify a facility that generates wastes regulated by that agency.

Form code - This code describes the general type of waste stream. It consists of three numbers, the 5th, 6th, and 7th digits in the Texas waste code. More than one form code may apply to a particular waste stream.

Generator I.D. number - see Texas Solid Waste Registration Number

Hazardous waste - The EPA defines a waste as hazardous if it exhibits one or more of four hazardous "characteristics," or if it is a "listed" waste (see 40 CFR Part 261 Subpart D).

Hazardous waste determination - An evaluation of a waste to determine whether it meets the RCRA definition of a hazardous waste.

Industrial CESQG - A Conditionally Exempt Small-Quantity Generator whose facility would be categorized "industrial" as distinguished from "nonindustrial."

Inert - Inertness refers to the chemical inactivity of an element, compound, or waste. Ingredients added to mixtures chiefly for the purposes of bulk and/or weight are normally considered inert.

Land ban - Generally, a prohibition against land disposal of certain wastes unless they meet certain conditions.

Land ban documentation - Written supporting evidence that a waste can be land-disposed—for example, because it has received some form of treatment.

Listed hazardous wastes - Specific wastes that have been identified by the EPA as hazardous. These are often referred to as the "F" wastes (waste from nonspecific sources); "K" wastes (wastes from specific sources); "P" wastes (acutely hazardous off-specification materials, container residues, and spill residues of these materials); and "U" wastes (toxic, hazardous off-specification materials, container residues, and spill residues). A waste is considered hazardous if (a) it is listed in 40 CFR Part 261 Subpart D, or (b) is mixed with or derived from a waste listed there, and (c) has not been provided a particular exclusion from the definition of hazardous as provided in 40 CFR Sections 261.3–.4.

Notice of Registration (NOR) - TNRCC term for the information it collects in its database on each hazardous or industrial waste handler: generators; transporters; and operators of treatment, storage, and disposal facilities (TSDF). The NOR includes the facility's physical and mailing addresses, owner and operator information, information on waste streams that are generated or handled at the site, a list of individual units at the facility where wastes are managed, and other information. It also contains the state facility identification number, issued by the TNRCC, and the EPA facility number. The term also refers to a printout of information that is sent to a facility when it makes some change in its registration information. An important purpose of sending this printout is to obtain feedback on whether the TNRCC has current and accurate information.

RCRA - Resource Conservation and Recovery Act (amendment to the Solid Waste Disposal Act). Primarily designed to regulate five types of disposal activities: hazardous waste, solid waste, underground storage tanks, oil waste, and medical waste. In this guidance document, any mention of "RCRA" refers to RCRA Subtitle C, which applies to all handlers of hazardous waste, including generators; transporters; and operators of treatment, storage, and disposal (TSDF) facilities. (RCRA, a federal law, covers only whether a solid waste is either hazardous or nonhazardous. Texas regulations further subdivide nonhazardous waste into Classes 1, 2, and 3.)

Registration number - *see* Texas Solid Waste Registration Number

Sequence number - The first four digits of the Texas waste code (actually these four characters may be numbers, letters, or a combination of the two). The sequence number is used as an internal numbering system determined by each generator. The number of a waste may range from 0001 to 9999, and can only be used once.

Solid waste - Any discarded material such as garbage; refuse; sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; or other material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations. Solid wastes include any material that is abandoned by being disposed of; burned or incinerated; or accumulated, stored, or treated before or in lieu of these activities. Certain recycled materials are also considered wastes. Solid wastes are often referred to simply as "wastes."

Solid waste registration number - *see* Texas Solid Waste Registration Number

Special waste - Wastes that require special handling, specially trained people, and/or special disposal methods. These special requirements often arise from the sheer size of the waste itself, lack of knowledge about the process that generated it, and/or the physical characteristics of the waste.

State I.D. number - *see* Texas Solid Waste Registration Number

State solid waste number - *see* Texas Solid Waste Registration Number

STEERS - State of Texas Environmental Electronic Reporting System. Enables online reporting of waste management information to the TNRCC by regulated businesses, industries, and other organizations.

TAC - Texas Administrative Code. Title 30 of TAC contains TNRCC rules on industrial solid waste and municipal hazardous waste, among other subjects.

Texas solid waste registration number - A number, issued by the TNRCC for the purpose of, identifying a facility that generates wastes regulated by the state of Texas; also referred to in a variety of ways: generator I.D. number, generator number, state I.D. number, state solid waste number, Texas registration number, Texas solid waste registration number, registration, and registration number.

TRI: Toxics Release Inventory - Requires certain companies to report air emissions, waste disposal, and wastewater discharges.

TSDF - Treatment, storage, and disposal facility; also called designated facility.

Waste - Unwanted, discarded, or abandoned materials left over from a manufacturing process; refuse from places of human or animal habitation.

Waste code - Also referred to as Texas waste code. This eight-digit code identifies a waste stream. The first four digits are the sequence number, the next three digits are the form code, and the last digit is the waste's classification (sequence number + form code + classification code = waste code). (Some of the "digits" referred to here actually may be letters or a combination of letters and numbers.)

Waste stream - The total flow of solid waste from homes, businesses, institutions, and manufacturing plants that is recycled, burned, or disposed of in landfills; or segments of that

total flow, such as the “residential waste stream” or the “recyclable waste stream.” (It should be noted that the terms “waste stream,” “solid waste,” and “waste” are often used interchangeably by federal and state regulators as well as many members of the regulated community.)

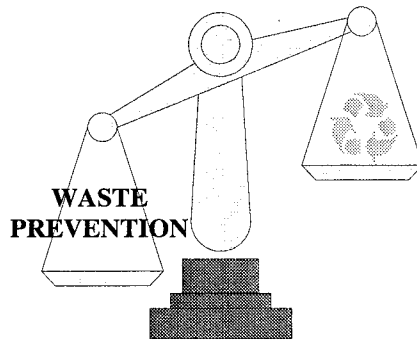
WRPA - Waste Reduction Policy Act—requires that certain facilities prepare a Source Reduction and Waste Minimization Plan.

Chapter 5 – Pollution Prevention

Issues and Regulatory Intent

Legislation

Pollution Prevention (P2), also known as “source reduction” by the Environmental Protection Agency, consists of a variety of practices that reduce, eliminate, or prevent pollution at its source. P2 and source reduction regulations are intended to protect natural resources through conservation or increased efficiency in the use of energy, water, or other materials. Maintenance activities at transit facilities are known to cause pollution from a wide variety of sources. P2 is all about addressing the sources of pollution before they become problems, as pollution never created avoids the need for expensive investments in waste management and cleanup. By anticipating the future, pollution prevention reduces both financial costs (raw materials, waste disposal, permit fees, waste management, and cleanup) and real environmental costs (health and safety risks for workers and environmental damage).



National Pollution Prevention Policy

Under Section 6602(b) of the Pollution Prevention Act of 1990, Congress established a national policy to prioritize environmental management. Pollution prevention was identified as the highest priority. The ranking of environmental management strategies is as follows:

- prevention--reduce pollution at the source,
- reuse--reuse/recycle when you can not reduce,
- treatment--treat pollution when you can not reduce or reuse/recycle, and
- disposal--safely dispose of pollution as a last resort.

The Pollution Prevention Act defines “source reduction” to mean any practice which:

- reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and
- reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes:

- equipment or technology modifications,
- process or procedure modifications,
- reformulation or redesign of products,
- substitution of raw materials, and
- improvement in housekeeping, maintenance, training, or inventory control.

Texas Waste Reduction Policy Act

The Waste Reduction Policy Act (WRPA) is a pollution prevention planning law enacted by the Texas Legislature in 1991. WRPA requires businesses that generate more than 1.1 tons of hazardous waste per year to have a source reduction and waste minimization plan. A good source reduction and waste minimization plan begins with applying pollution prevention practices to everything you do: rethink, reduce, reuse, and recycle. WRPA is intended to facilitate long-range planning by businesses to prevent the generation of pollution and waste while potentially saving money and reducing environmental liability.

How are transit operations affected?

The WRPA applies to your transit operation if you answer **yes** to **one or both** of the following questions:

- Is your facility required to report to the Toxics Release Inventory (TRI) using Form R? (The TRI Form R is used to report on-site releases and off-site transfers of toxic chemicals, as required by the Superfund Amendments and Reauthorization Act, Title III, section 313.)
- Does your facility generate 1.102 or more tons of hazardous waste in a calendar year as reported to the TNRCC on your Annual Waste Summary?

Most small urban and rural transit properties are SQGs or CESQGs and do **not** report and use the TRI Form R. However, facilities that report less than 13.2 tons of hazardous waste annually and **do not** report on the TRI Form R may prepare a simplified five-year Source Reduction and Waste Minimization Plan and a one-page Executive Summary and Certificate of Completeness and Correctness. You **are not required** to submit an Annual Progress Report.

If you generate less than 13.2 tons of hazardous waste but must report to the TRI on Form R, you must complete the large-quantity generator/TRI plan described above for your TRI reportable waste streams.

Reporting Requirements

In most cases, small urban and rural transit providers **will not be required** to prepare a Source Reduction/Waste Minimization (SRWM) plan unless they are a SQG. SQGs that do not report on Form R may prepare a simplified five-year source reduction/waste minimization plan and a one-page Executive Summary and Certificate of Completeness and Correctness. The TNRCC has these simplified reports in *Source Reduction and Waste Minimization Executive Summary and Certificate of Completeness and Correctness for Small-Quantity Generators/Non-TRI Reporters* (RG-196). The guidance is available on the TNRCC website <http://www.tnrcc.state.tx.us/exec/sbea/p2tech.html>

The SW/WM plan must include the following:

- list of all hazardous waste generated at the site,
- description of SRWM projects,
- facility reduction goals, and
- executive summary / certificate of completeness.

For more information contact the TNRCC Pollution Prevention and Industry Assistance at 512/239-3100, or e-mail at ppc@tnrcc.state.tx.us. The TNRCC also offers pollution prevention workshops.

The Evolution of the Waste Can



Pollution Prevention Guide for Fleet Maintenance Facilities

This is a list of pollution prevention ideas (not requirements) from TNRCC that may be implemented at your facility to reduce pollution and possibly save money. If you have any questions concerning the information contained in this list, please contact the TNRCC at 512/239-3100 for engineering and technical assistance.

Antifreeze

Recycle antifreeze either on-site or off-site. If more than 1,000 gallons per year of antifreeze is used, the payback period will generally be less than one year.

Parts Cleaning

Reuse solvent by installing filtration or distillation units. Cover sinks to prevent solvent evaporation loss. To prevent spillage, remove parts from washers slowly. Consider alternatives to hazardous solvents. Many nonhazardous solvent substitutes are available, including high flash point hydrocarbon solvents (greater than 150 degrees F) and water-based solvents. (*Note:* Nonhazardous solvents can become hazardous as a result of contamination from, for example, carburetor cleaner, gasoline, or hazardous solvents.) Install a bioremediation parts washer that uses enzymes to eat oil and grease.

Oil Conservation and Filtration

Contract with an oil recycler for waste oil collection and recycling. Institute an oil analysis program to ensure that oil is only changed when necessary. Reliable, low-cost oil analysis equipment is available. Install bypass filtration systems to extend oil life. Bypass filtration

systems generally remove impurities as small as one micron in size. Drain and crush used oil filters and send to a recycling company. Certain companies recycle every part of the filter, including residual oil, metal, and the filter component. Install reusable screen filters for the main oil filter.

Aerosol Products

Pressurized aerosol cans are considered hazardous and cannot legally be thrown in the trash. Aerosol cans may be depressurized by spraying remaining propellant or by special equipment that allows the can to be punctured in a safe manner. Purchase chemicals (such as spray lubricant) in bulk and apply with either pump sprayers or new specialized spray cans which can be pressurized up to 200 pounds per square inch with shop air. Empty and depressurize used aerosol cans. Send the empty cans for metal recycling.

Facility Maintenance and Cleaning

Minimize spills and cleanup by using drip pans. Use reusable absorbents and recover spilled fluids with wringers for recycling. If wringing out flammable solvents, be sure to electrically ground the wringer. Sweep shop floors instead of hosing them down with water. Build a solids tray to reduce solids in the sump. Reassess the need for sumps. If you don't need a sump, plug it. Send contaminated shop rags to an industrial laundering facility for cleaning and reuse. (*Note:* The facility must be in compliance with all federal and state wastewater discharge regulations.)

Batteries

Store lead-acid batteries upright and off the ground with a leak containment system around the area. Extend lead-acid battery life with advanced battery management programs. Trickle charge systems, solar trickle charge systems, and brass connectors can significantly extend battery life by improving conductivity and reducing sulfation of the lead plates in the battery. Consider new deep-cycle batteries, which can last much longer than conventional batteries.

Other Resources

"Recycle Texas On-line" is a searchable database of companies that recycle various materials such as antifreeze, oil, and metals. You can also order the publication (GI-24)

EPA's *EnviroSense Solvent Substitution Data Systems* for access to solvent alternative information through a single, easy-to-use command structure. EPA's *Pollution Prevention for Auto Repair* includes fact sheets, videos, and case studies.

Resources

The following are on-line pollution prevention resources:

TNRCC Pollution Prevention web pages:

<http://www.tnrcc.state.tx.us/exec/oppr/ppplng/wrpa.html>

<http://www.tnrcc.state.tx.us/exec/sbea/p2tech.html>

EPA Pollution Prevention web pages:

http://www.epa.gov/region09/cross_pr/p2/whatis.html

<http://www.epa.gov/p2/index.htm>

<http://es.epa.gov/>

<http://www.epa.gov/opptintr/library/libppic.htm>

<http://www.epa.gov/opptintr/library/ppicdist.htm>

Pollution Prevention for Auto Repair and Fleet Maintenance:

<http://www.epa.gov/region09/p2/autofleet/>

P2 manuals for Auto Repair and Fleet Maintenance:

<http://wrrc.p2pays.org/indsectinfo.asp?INDSECT=5#Manuals>

Checklist

- ☐ Is your business subject to the Waste Reduction Policy Act? (Excludes conditionally exempt small-quantity generators)
- ☐ If YES: Has a Source Reduction Waste and Minimization Plan been developed?
- ☐ Has an executive summary been submitted to the TNRCC?

Glossary

Acute hazardous waste - Hazardous waste listed by the Administrator of the United States Environmental Protection Agency under the Federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. §6901 et seq.), because the waste meets the criteria for listing hazardous waste identified in 40 Code of Federal Regulations, §261.11(a)(2).

Conditionally exempt small-quantity generator - A generator that does not accumulate more than 1,000 kilograms of hazardous waste at any one time on his facility and who generates less than 100 kilograms of hazardous waste in any given month.

Environment - Water, air, and land and the interrelationship that exists among and between water, air, land, and all living things.

Facility - All buildings, equipment, structures, and other stationary items located on a single site or on contiguous or adjacent sites that are owned or operated by a person who is subject to this subchapter or by a person who controls, is controlled by, or is under common control with a person subject to this subchapter.

Generator and generator of hazardous waste - Have the meaning assigned by the Texas Solid Waste Disposal Act, Health and Safety Code Annotated, §361.131.

Large-quantity generator - A generator that generates, through ongoing processes and operations at a facility: (a) more than 1,000 kilograms of hazardous waste in a month; or (b) more than one kilogram of acute hazardous waste in a month.

Pollutant or contaminant - Includes any element, substance, compound, disease-causing agent, or mixture that after release into the environment and on exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions, including malfunctions in reproduction, or physical deformations in the organism or its offspring.

Release - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

Small quantity generator - A generator that generates through ongoing processes and operation at a facility: (a) equal to or less than 1,000 kilograms but more than or equal to 100 kilograms of hazardous waste in a month; or (b) equal to or less than one kilogram of acute hazardous waste in a month.

Source reduction - Has the meaning assigned by the Federal Pollution Prevention Act of 1990, Pub.L. 101-508, §6603, 104 Stat. 1388.

Tons - 2,000 pounds, also referred to as short tons.

Toxic release inventory - A program which includes those chemicals on the list in Committee Print Number 99-169 of the United States Senate Committee on Environment and Public Works, titled "Toxic Chemicals Subject to the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA, 42 United States Code Annotated, §11023), 313" including any revised version of the list as may be made by the Administrator of the EPA.

Waste minimization - A practice that reduces the environmental or health hazards associated with hazardous wastes, pollutants, or contaminants. Examples may include reuse, recycling, neutralization, and detoxification.

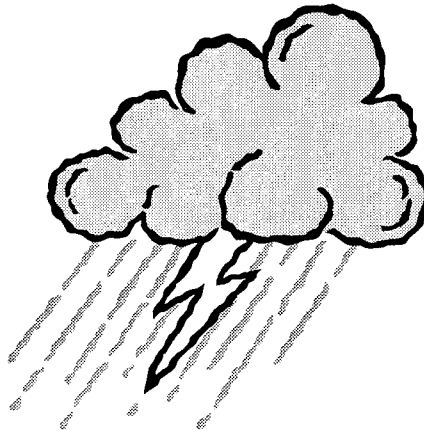
Chapter 6 – Stormwater Management

Issues and Regulatory Intent

Legislation

Stormwater Phase II Rules

In 1990, EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) storm water program. The Phase I program for municipally separate storm sewer systems (MS4s) requires operators of “medium” and “large” MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a storm water management program as a means to control polluted discharges from these MS4s. Phase II of the rules extends coverage of the NPDES storm water program to certain “small” MS4s.



What Is a Phase II Small MS4?

A small MS4 is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers, on a nationwide basis, all small MS4s located in “urbanized areas” (UAs) as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and, on a case-by-case basis, those small MS4s located outside of UAs that the NPDES permitting authority designates.

Polluted storm water runoff is often transported to MS4s and ultimately discharged into local rivers and streams without treatment. EPA's Storm Water Phase II Rule establishes an MS4 storm water management program that is intended to improve the nation's waterways by reducing the quantity of pollutants that storm water picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

What Are the Phase II Small MS4 Program Requirements?

Operators of regulated small MS4s (usually cities with populations under 100,000) are required to design their programs to:

- reduce the discharge of pollutants to the "maximum extent practicable" (MEP),
- protect water quality, and
- satisfy the appropriate water quality requirements of the Clean Water Act.

Implementation of the MEP standard will typically require the development and implementation of best management practices (BMPs) and the achievement of measurable goals to satisfy the following six minimum control measures. These options are intended to promote a regional approach to storm water management coordinated on a watershed basis. Small urban and rural transit providers should participate in these programs as partners in the region:

- **Public Education and Outreach** - Distribute educational materials and perform outreach to inform citizens about the impacts polluted storm water runoff discharges can have on water quality.
- **Public Participation/Involvement** - Provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a storm water management panel.
- **Illicit Discharge Detection and Elimination** - Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).

- Construction Site Runoff Control - Develop, implement, and enforce an erosion and sediment control program for construction activities that disturb one or more acres of land (controls could include silt fences and temporary storm water detention ponds).
- Post-Construction Runoff Control - Develop, implement, and enforce a program to address discharges of post-construction storm water runoff from new development and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (e.g., wetlands) or the use of structural BMPs such as grassed swales or porous pavement.
- Pollution Prevention/Good Housekeeping - Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

Texas Pollution Discharge Elimination System

In Texas, EPA identified six *large* municipal systems that must comply with the new federal storm water regulations: Austin, Dallas, El Paso, Fort Worth, Houston, and San Antonio. Several *medium* systems must also obtain an NPDES permit. In all, 19 municipal systems in Texas must obtain an NPDES storm water permit. The Statewide Storm Water Quality Task Force maintains a survey of current storm water permits in the State of Texas and their status.

The State of Texas assumed the authority to administer the NPDES program in Texas on September 14, 1998. The TNRCC's Texas Pollutant Discharge Elimination System (TPDES) program now has federal regulatory authority over discharges of pollutants to Texas surface water.

How are transit operations affected?

Maintenance activities at transit facilities are known to cause stormwater pollution in urban areas. Activities such as fueling, brake repair, and equipment cleaning require the use of detergents, solvents, and other chemicals that become waterborne when rainfall washes the pollutants from buildings, garages, parking lots, and storage areas into nearby rivers and streams. Water pollution generated during storm events, whether it is referred to as urban

stormwater or non-point source pollution, is now a regulatory focus. Small urban and rural transit operations are affected if they operate in phase II cities where MS4s are permitted.

Transit Activities Requiring Permits

The EPA has identified 11 categories of “facilities with storm water discharges associated with industrial activity.” Transit agencies usually fall under one of the following categories:

- transportation facilities;
- construction operations disturbing five or more acres;
- facilities where materials, such as transportation equipment, are exposed to storm water.

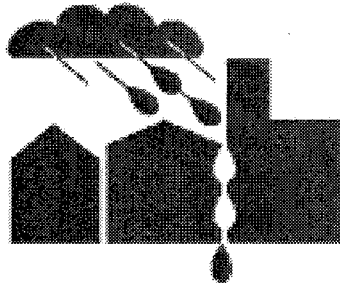
Construction Permits

Since October 1, 1992, EPA has required federal permits for construction activities that disturb more than five acres. This requirement can be interpreted to be applicable to a single site or multiple sites, if part of a “common plan” of development that will ultimately disturb more than five acres. These permits are required for all private construction activities in the U.S. and public construction activities in cities with populations greater than 100,000.

Basic requirements for industrial operations are the development of a Storm Water Pollution Prevention Program (SWPPP) for the site that includes inspections and implementation of BMPs to reduce pollution in their runoff.

Municipalities

For municipalities, the rules require that each municipality develop a storm water management plan that includes structural controls (physical facilities) for minimizing pollution in the runoff from new development, and use of at least non-structural BMPs on existing areas to reduce pollution in the runoff to the “maximum extent practicable.”



Compliance in Phase I Cities

Municipalities with populations greater than 100,000 (Phase I cities) had to comply with these regulations by 1993. For transit facilities in cities over 100,000, these requirements are not new. Now compliance extends to municipalities with populations under 100,000 (Phase II cities) and therefore may affect many small urban and rural transit providers. The full rule-making document is available on the U.S. government website at <http://www.epa.gov/earth1r6/6en/w/sw/home.htm>.

Compliance in Phase II Cities

For transit facilities in Phase II cities, these requirements may be new. To comply with storm water requirements, first contact the local government or regional stormwater management authority.

What Should Transit Agencies Do?

Small urban and rural transit agencies should participate in storm water management programs within their cities and/or regions to achieve compliance with the Phase II storm water rules. In most cases, this will involve implementing BMPs to control storm water at the transit facility. Transit agencies may need to evaluate the effectiveness of their chosen BMPs to determine whether the BMPs are reducing the discharge of pollutants from their systems to the "maximum extent practicable" and to determine if the BMP mix is satisfying the water quality requirements of the Clean Water Act. While monitoring is not required under the rule, the NPDES permitting authority has the discretion to require monitoring if deemed necessary.

Fleet Maintenance and Vehicle Operation

Your facility can contribute contaminants to runoff when vehicles and equipment are improperly operated, maintained, or repaired. Leaky and poorly maintained equipment and improper maintenance work areas might result in an illegal discharge.

GENERAL POLLUTION PREVENTION BMPs:

- ☐ Inspect all vehicles and heavy equipment frequently for leaks.
- ☐ Conduct all vehicle and equipment maintenance at one location away from storm drains, preferably on a paved surface under cover.
- ☐ Move activities indoors, or cover equipment areas with a permanent roof. Conduct maintenance only in areas designed to prevent storm water pollution.
- ☐ Inspect and clean equipment to prevent leaks and excessive buildup of contaminants. Keep drip pans and containers under areas that might drip.
- ☐ Use drip pans or drop cloths to catch drips and spills if you drain and replace motor oil, radiator coolant, or other fluids on site.
- ☐ Never pour materials down storm drains. Connect process equipment areas to the sanitary sewer or a facility wastewater treatment system.
- ☐ Avoid hosing down work areas. Clean small spills with rags, conduct general cleanup with damp mops and clean larger spills with absorbent material

Vehicle and Equipment Fueling

Spilled fuel can contribute contaminants to runoff from your facility. Improperly stored rags used to clean up spilled fuel may also result in an illegal discharge.

GENERAL POLLUTION PREVENTION BMPs:

- ☐ Covering fueling areas.
- ☐ Install perimeter drains or slope the surrounding pavement inward with drainage to a sump or an oil-water separator.
- ☐ Pave fueling areas with concrete rather than asphalt or apply a sealant to protect asphalt from spilled fuels.
- ☐ Install vapor recovery nozzles to control drips.
- ☐ Discourage "topping off" fuel tanks.
- ☐ Use a drip pan to collect drips and avoid spills.
- ☐ Use absorbent materials or mop up small spills and for general cleaning rather than hosing down the area. Remove the absorbent materials promptly.
- ☐ Use a rag cleaning service for contaminated rags used to clean up.

Vehicle and Equipment Washing and Cleaning

Your facility can contribute contaminants to runoff if wash water from equipment and vehicle cleaning is rinsed onto parking lots or into gutters or storm drains. Improperly stored rags may also result in an illegal discharge.

GENERAL POLLUTION PREVENTION BMPs:

If possible use off-site commercial washing and steam cleaning.

Use designated wash areas, preferably covered, to prevent contact with stormwater. Berm wash areas or use other measures to contain wash water.

Designate a washing site for vehicles where water will drain by gravity to the sewer system. Never discharge wash water to the storm drain. Discharge it to the sanitary sewer after contacting your local agency to find out if pre-treatment is required, or if possible, filter and recycle it.

Alternatively, divert wash water to an open lawn or other vegetated areas so that it can percolate into the ground.

If it is not possible to divert wash water to the sanitary sewer or a vegetated area, use at-grade storm drains fitted with filter fabric bags. These bags can be hung down into the drains' catch basins to filter out solids from the wash water runoff. The solids can be removed when the bags are full.

Protect curb gutter inlets with filter fabric to trap solids from the wash water runoff. Post signs in the washing area that states that oil changes are prohibited there.

Wash vehicles with biodegradable, phosphate-free detergent.

Use non-toxic cleaning products – baking soda paste for battery heads, cable clamps, and chrome; baking soda mixed with a mild, biodegradable dishwashing soap for wheels and tires; white vinegar or lemon juice mixed with water for windows.

Use a bucket (not a running hose) to wash and rinse cars to conserve water.

Avoid pressure washing if possible. Conduct pressure washing only if you are equipped to capture and properly dispose of all wash water. This area should be bermed to collect the wash water and graded to direct the wash water to a treatment facility. In addition, use high-pressure, low-volume water to reduce overspray.

Another way to recycle water is to use wash water from the final wash step for the first wash step, which doesn't require clean wash water. Likewise, use final rinse water for the first rinse step, which doesn't require clean rinse water.

Make sure that the drains at your facility are installed with grit traps and are routed through an oil separator.

Properly contain and dispose of clean up materials (rags, towels, absorbent materials, etc.).

Label all storm drain inlets "No Dumping."

☐ Educate employees on proper washing methods to prevent pollution.

Table 6-1. Common Transit Facility Runoff Pollutants and Their Sources

Activity	Pollutant Source	Pollutant
Fueling	- Spills/leaks during fuel deliveries - Spills caused by topping off tanks - Rainfall falling on fueling area or stormwater running over the area - Hosing or wetting down fuel area	Fuel, oil, heavy metals Fuel, oil, heavy metals Fuel, oil, heavy metals Fuel, oil, heavy metals
Vehicle & Equipment - Maintenance	- Parts cleaning - Waste disposal of greasy rags, oil filters, air filters, batteries, transmission fluid, radiator fluids - Fluids replacement; spills of oil, degreasers, hydraulic fluids, transmission/radiator fluids	Chlorinated solvents, oil, heavy metals, acid/alkaline wastes Oil, heavy metals, chlorinated solvents, acid/alkaline wastes, ethylene glycol Oil, arsenic, heavy metals, organics, chlorinated solvents, ethylene glycol
Outdoor Vehicle & Equipment Storage and Parking	- Leaking vehicle fluids	Oil, hydraulic fluids, arsenic, heavy metals, organics, fuel
Painting Areas	- Paint and paint thinner spills - Spray painting - Sanding or paint stripping - Paint cleanup	Paint, spent chlorinated solvents, heavy metals Paint solids, heavy metals Dust, paint solids, heavy metals Paint, chlorinated solvents, heavy metals
Vehicle or Equipment Washing Areas	- Washing or steam cleaning	Oil, detergents, heavy metals, chlorinated solvents, phosphorus, salts, suspended solids
Liquid Storage in Aboveground	- External corrosion and structural failure - Installation problems - Spills and overfills due to operator error - Failure of piping systems - Leaks and spills during pumping of liquids during delivery	Fuel oil, heavy metals, materials being stored Fuel oil, heavy metals, materials being stored Fuel oil, heavy metals, materials being stored Fuel oil, heavy metals, materials being stored Fuel oil, heavy metals, materials being stored
Cold Weather Activities	- Salt application - Dirt/ash application	Sodium chloride Suspended solids, heavy metals
Improper Connection to Storm Sewer	- Process wastewater - Sanitary water - Floor drains - Vehicle wastewaters - Radiator flushing wastewater - Leaking USTs	Dependent on operations Bacteria, BOD, suspended solids Oil, heavy metals, chlorinated solvents, fuel, ethylene glycol Oil, detergents, metals, chlorinated solvents, phosphorous Ethylene glycol Materials stored

Table 6-2. TNRCC Regional Storm Water Contacts

Amarillo Region Eddie Vance 806/353-9251 FAX 806/358-9545	Waco Region Larry Fergusson 254/751-0335 FAX: 254/772-9241
Lubbock Region Joe Bragg 806/796-7092 FAX: 806/796-7107	Beaumont Region Georgie Volz 409/898-3838 FAX: 409/892-2119
Abilene Region Charles Keith 915/698-9674 FAX: 915/692-5869	Austin Region Patty Reeh 512/339-2929 FAX: 512/339-3795
Arlington Region Sid Slocum 817/469-6750 FAX: 817-795-2519	Houston Region John Ward 713/767-3500 FAX: 7113/767-3520
Tyler Region Noel Luper 903/535-5100 FAX: 903/595-1562	San Antonio Region Bobby Caldwell 210/490-3096 FAX: 210/454-4329
El Paso Region Terry McMillan 915/778-9634 FAX: 915/778-4576	Corpus Christi Region Mickey Garza 512/980-3100 FAX: 512/980-3101
Midland Region Michael Edmiston 915/570-1359 FAX: 915/570-4795	Harlingen Region Hipo Cabrera 956/425-6010 FAX: 956/412-5059
San Angelo Region Ricky Anderson 915/655-9479 FAX: 915/658-5431	Laredo Region Jorge Bacelis 956/791-6611 FAX: 956/791-6716

Checklist

- ☐ Are you regulated under Phase I of the stormwater rules?
- ☐ Are you regulated under Phase II of the stormwater rules?
- ☐ Do you have a small municipal separate storm sewer system (MS4)?
- ☐ Is your small MS4 designated as regulated?
- ☐ Are you in an urbanized area as defined by the Bureau of Census? (An urbanized area is a central place(s) and urban fringe that together have a population of at least 50,000 and an overall population density of at least 1,000 people per square mile.)
- ☐ Is your facility part of a stormwater management area?

- ☐ Have you implemented best management practices to control polluted runoff from your facility?

For Additional Information

U.S. EPA Office of Wastewater Management

Phone: 202 260-5816

E-mail: SW2@epa.gov

Internet: www.epa.gov/owm/sw/phase2

U.S. EPA Water Resource Center

Phone: 202 260-7786

E-mail: center.water-resource@epa.gov

Internet Resources

EPA Region 6: <http://www.epa.gov/earth1r6/6en/w/sw/home.htm>

EPA Office of Wastewater Management: <http://www.epa.gov/owm/sw/phase2/>

EPA Stormwater page: <http://www.epa.gov/owm/sw/about/index.htm>

TNRCC / TPDES page: <http://www.tnrcc.state.tx.us/permitting/waterperm/wwwperm/tpdes.html>

TNRCC Water Quality page: <http://www.tnrcc.state.tx.us/water/quality/index.html>

Glossary

Ambient - Refers to the existing water quality in a particular waterbody. The natural conditions that would be expected to occur in water not influenced by humans. For stream sampling purposes, those periods of stream flow not influenced by recent storm events.

Baseflow - The stream discharge composed of ground water drainage and delayed surface drainage.

Beneficial use - Those uses of state surface waters to be protected as identified by the state standards classification system.

Best Management Practice (BMP) - A practice or combination of practices determined to be the best known or most practicable means of preventing or reducing, to a level compatible with water quality goals, the amount of pollution generated by nonpoint sources. BMPs are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility.

Biochemical Oxygen Demand (BOD) - The quantity of oxygen utilized primarily in the biochemical oxidation of organic matter in a specified time and at a specified temperature. A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. Large amounts of organic waste use up large amounts of dissolved oxygen, thus the greater the degree of pollution, the greater the BOD.

Biomonitoring - The use of living organisms in water quality surveillance to indicate compliance with water quality standards or effluent limits and to document water quality trends. The use of living organisms to test the suitability of effluent for discharge into receiving waters and to test the quality of such waters downstream from a discharge.

Chloride - Common anionic form of chlorine which carries one net negative charge. A common anion in many waters. Increased levels of chloride will heighten the corrosive effects of water and (when combined with sodium) cause a salty taste.

Classified Waterway - Water bodies that have designated uses as set forth by the State of Texas Water Quality Standards.

Chemical Oxygen Demand (COD) - A measure of the amount of oxygen required to oxidize organic and oxidizable inorganic compounds in water. The COD test, like the BOD test, is used to determine the degree of pollution in an effluent.

Design Storm - The rainfall frequency and duration which is used for the adequate design of storm water control systems. For example, a two-year, 24-hour design storm refers to a storm that, on average, occurs once in a two-year period and has a duration of 24 hours.

Designated Segment (classified stream) - Stream or water body with defined uses and assumed numerical criteria intended to protect those uses. Segment name, number,

boundaries, defined uses, and numerical criteria appear in the Texas Surface Water Quality Standards.

Designated Uses - Those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act. Uses can include cold water fisheries, public water supply, agriculture, etc.

Detention Pond - A storm water control practice (commonly referred to as a Best Management Practice) which intercepts storm water runoff and detains for later release. This is used both to treat the quality of the runoff and provide mitigation from quantity (flooding) impacts. Detention ponds can be configured in a variety of ways depending on the exact need.

Discharge - The volume of water that passes through a given cross-section of a channel or sewage outfall during a unit of time (MGD, ft³/s, or m³/s).

Dissolved Oxygen (DO) - The amount of free (not chemically combined) oxygen in water. The concentration of oxygen held in solution in water, which is vital to fish and other aquatic organisms and for the prevention of odors. Usually it is measured in mg/L or expressed as a percentage of the saturation value for a given water temperature and atmospheric pressure. In general, oxygen levels decline as pollution increases.

Dissolved Solids - The total amount of dissolved material, organic and inorganic, contained in water or wastes. Excessive dissolved solids make water unpalatable for drinking and unsuitable for industrial uses.

Effluent - A discharge of pollutants (usually in liquid form) into the environment, partially or completely treated or in its natural state. Generally used in regard to discharges into waters. Liquid flowing out of a system, such as a discharge of storm water from an urban outfall, liquid waste from a factory, or water leaving a sewage treatment plant.

Filtration - In storm water treatment, a common process that removes particulate matter by separating water from solid material usually by passing it through sand.

Floatable - Generally considered storm water pollutants, floatables can best be described as litter and other man-made solid wastes that wash into drainageways. Various plastics (bottles, cups, etc.) are most noticeable as they float on the surface. Hence the term.

Heavy Metals - Metals with high molecular weights that are of concern because they are generally toxic to animal life and human health if naturally occurring concentrations are exceeded. Examples include, arsenic, chromium, lead, and mercury.

Impervious Surface - Typically, any man-made surface which significantly decreases the ability of precipitation to infiltrate, thereby increasing runoff. Rooftops and paved areas are typical impervious surfaces.

Infiltration and Inflow (I/I) - The flow of extraneous water into sanitary sewers intended for wastewater only. Inflow is the flow of storm water runoff into sanitary sewers and occurs soon after rain events begin. This occurs through pipes in need of repair and, in some cases, illicit connection of storm water drains to sanitary sewers. Infiltration is the flow of groundwater into sewers and occurs over a longer period of time.

Major Outfall - A municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).

Maximum Extent Practicable (MEP) - The standard to which the USEPA measures performance of municipal storm water quality management programs associated with an NPDES storm water permit. MEP is a technology-based standard that recognizes cost-effectiveness.

Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section

208 of the CWA that discharges to waters of the United States; (2) Designed or used for collecting or conveying storm water; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Non-Structural Control - A storm water control practice (commonly referred to as a Best Management Practice) which is NOT physically constructed and is typically programmatic in nature. Public education is an example of a non-structural practice.

NPDES - National Pollutant Discharge Elimination System initiated in 1972 by the amendments to the Federal Water Pollution Control Act (the Clean Water Act) to address the discharge of pollutants to navigable waters from point sources.

NPDES Phase 1 Storm Water Rules - In the 1987 amendments to the Clean Water Act, Congress directed EPA to establish a permitting framework under the National Pollutant Discharge Elimination System program to address storm water discharges associated with urban areas and certain industrial activities. In response to this directive, EPA published NPDES permit application requirements [Federal Register, November 16, 1990] for *Phase I Storm Water Discharges* from 1) Large Municipal Separate Storm Sewer Systems (MS4) – systems serving a population of 250,000 or more; 2) Medium Municipal Separate Storm Sewer Systems – systems serving a population of 100,000 or more, but less than 250,000; and, 3) Industrial Activities – including construction activities of five or more acres.

NPDES Phase 2 Storm Water Rules - EPA issued the Storm Water Phase II Proposed Rules in January 1998. These rules will essentially require two more classes of facilities to obtain coverage on a nationwide basis by May 31, 2002 – 1) Small Municipal Separate Storm Sewer Systems - located in urbanized areas, and 2) Small Construction Sites – including clearing, grading, and excavating activities that result in land disturbances of equal to or greater than one acre and less than five acres. EPA expects to issue the final Phase II Rules by March 1, 1999.

NPS Pollution (Nonpoint Source Pollution) - Pollution sources that are diffuse, do not have a single point of origin. Human-made or human-induced pollution caused by diffuse, undefinable sources that are not regulated as point sources, resulting in the alteration of the chemical, physical, biological, and/or radiological integrity of the water.

Operator - The owner or contractor (or both) of a site who has 'day to day operational control' of construction operations at the site. The operator is the person(s) responsible for maintenance of the SWPPP and implementation of the pollution reduction measures defined in the SWPPP. The operator commits to this responsibility through the submission of the NOI.

Outfall - The mouth of a sewer, drain, or conduit where an effluent is discharged into a receiving water.

pH - A measure of the acidity or alkalinity of a material, liquid, or solid. pH is represented on a scale of 0 to 14 with 7 representing a neutral state, 0 representing the most acidic, and 14 the most alkaline.

Point Source - Pollution arising from a well-defined origin, such as a discharge from an industrial plant.

Pollution Prevention - Eliminating or reducing at the source the use, generation or release of toxic pollutants, hazardous substances, and hazardous wastes.

Pollution Prevention BMPs - Everyday operational practices that prevent pollution by reducing potential pollutants at the source. They typically do not require maintenance or construction.

Receiving Water - Rivers, lakes, oceans, or other bodies that receive treated or untreated effluents.

Retention Pond - A storm water control practice (commonly referred to as a Best Management Practice) which intercepts storm water runoff and retains it or detains it longer than 40 or so hours. Retention ponds are used for small drainage areas, often on industrial and commercial sites, to prevent contaminated runoff from reaching waterways.

Runoff - The portion of rainfall, melted snow, or irrigation water that flows across ground surface and eventually is returned to streams. Runoff can pick up pollutants from the air or the land and carry them to receiving water.

Sediment - The soil particles deposited through the process of sedimentation as a product of erosion. These soil particles settle out of runoff at variable rates based on the size of the particle and soil type.

Sewer - Any pipe or conduit used to collect and carry away sewage or storm water runoff from the generating source to treatment plants or receiving streams. A sewer that conveys household and commercial sewage is called a sanitary sewer. If it transports runoff from rain or snow, it is called a storm sewer. Often storm water runoff and sewage are transported in the same system or combined sewers.

Site Control - A storm water control practice (commonly referred to as a Best Management Practice) which is designed to control stormwater quality and or quantity from a small development or site.

Source Control BMPs - These practices limit the amount of runoff generated from a site and may or may not require construction and maintenance.

Stream Segment - Surface waters of an approved planning area exhibiting common biological, chemical, hydrological, natural, and physical characteristics and processes. Segments will normally exhibit common reactions to external stresses (e.g., discharge or pollutants). Segmented waters include most rivers and their major tributaries, major reservoirs and lakes, and marine waters that have designated physical boundaries, specific uses, and specific numerical physicochemical criteria.

Storm Water Pollution Prevention Plan (SWPPP) - A SWPP consists of a series of phases and activities to first characterize your site and then to select and carry out actions which prevent the pollution of storm water discharges. This applies to construction activities as well as permanent industrial activities.

Structural Control - A storm water control practice (commonly referred to as a Best Management Practice) which is physically constructed (and hence becomes a capital improvement) and typically reduces runoff or intercepts storm water runoff and detains and/or treats it.

Suspended Solids - Small particles that hang (suspend) in the water column and create turbid or cloudy conditions.

Total Maximum Daily Loads (TMDL) - A written, quantitative assessment of water quality problems and contributing sources, which identifies responsible parties and specifies actions needed to restore and protect water quality standards. TMDLs must include allocations for permitted point source discharges, nonpoint sources, and a margin of safety in setting the total amount of pollutants that a water body can safely assimilate. The margin of safety cannot be used as a set-aside for future growth or impacts to the water body.

Total Dissolved Solids (TDS) - An aggregate of carbonates, bicarbonates, chlorides, sulfates, phosphates, nitrates, etc., of calcium, magnesium, manganese, sodium, potassium, and other cations that form salts. High TDS concentrations exert varying degrees of osmotic pressures and often become lethal to the biological inhabitants of an aquatic environment.

Unclassified Waters - In Texas, those waters for which no classification has been assigned, and which have not been identified in Appendix A of Title 30 Texas Administrative Code.

Urban Runoff - Storm water from city streets and gutters that usually contains a great deal of litter and organic and bacterial wastes.

Volatile Organic Compound (VOC) - A group of solvent-like chemicals used in many industrial processes. Several of these chemicals are harmful to human health if inhaled, ingested, drunk, or in contact with skin.

Water Quality Criteria - The levels of pollutants that affect the suitability of water for a given use. Generally, water use classifications include public water supply, recreation, propagation of fish and other aquatic life, agricultural use, and industrial use.

Water Quality Standard - Acceptable limits on water quality parameters - for instance, those criteria set by the State, with review by the EPA, so that when enforced they will meet the goals of the Clean Water Act.

Watershed - The area drained by a given stream. An area bounded peripherally by a water divide and draining to a particular water course or body of water. Topography is the primary determinant of watershed boundaries.

Chapter 7 – Toxic Substance Control

Issues and Regulatory Intent

Legislation

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) granted the Environmental Protection Agency (EPA) authority to create a regulatory framework for collecting data on chemicals in order to evaluate, assess, mitigate, and control risks which may be posed by their manufacture, processing, and use. TSCA provides a variety of control methods to prevent chemicals from posing unreasonable risk.

TSCA standards may apply at any point during a chemical's life cycle. Under TSCA, EPA established an inventory of chemical substances. Under TSCA §6, EPA can ban the manufacture or distribution in commerce, limit the use, require labeling, or place other restrictions on chemicals that pose unreasonable risks. Among the chemicals EPA regulates under §6 authority are asbestos, chlorofluorocarbons, and polychlorinated biphenyls (PCBs). In Texas, the Texas Department of Health administers most of the rules related to TSCA.

How are transit operations affected?

These rules affect transit agencies primarily by regulating the asbestos-containing materials (ACM) and lead-based paint that may be present in transit facilities.

Asbestos

Definition and Background

Asbestos is a naturally occurring mineral that was most commonly used in building materials like floor tile, ceiling tile, mastic, and insulation primarily during the period after World War II through the early seventies. The mineral form of asbestos used in building materials consists of minute fibers typically 0.1 to 10 micrometers in length. The fibers are generally invisible to the human eye without magnification and can stay suspended in the air for many hours. The

fibers are strong, durable, and resistant to heat and fire. Asbestos has been used in thousands of consumer, industrial, maritime, automotive, scientific, and building products. Other common asbestos-containing products are pipe-covering, insulating cement, gaskets, packing materials, thermal seals, boiler insulation materials, transite board, cement pipe, fireproofing spray, joint compound, roofing products, insulated electrical wire and panels, and brake and clutch assemblies. These materials are referred to as asbestos-containing materials.

Asbestos is still used in many materials, but now 99 percent of the world's current asbestos production is chrysotile, a fiber which industry sources claim is a less dangerous health threat. Nevertheless, the EPA and OSHA do not prescribe a safe exposure level for any type of asbestos.

Asbestos containing material (ACM) is defined by Texas rules as materials or products that contain more than 1.0 percent of any kind or combination of asbestos, as determined by the EPA recommended methods as listed in EPA/600/R-93/116.

The Asbestos Problem

ACM is a problem when it is friable and when it is disturbed in a way to make the asbestos fibers airborne. The term "friable" means that the asbestos is easily crumbled by hand, releasing fibers into the air. Sprayed on asbestos insulation is highly friable. Asbestos floor tile is not considered friable. Asbestos-containing ceiling tiles, floor tiles, fire doors, and shingles, for example, will not usually release asbestos fibers unless they are disturbed or damaged in some way. If an asbestos ceiling tile is drilled or broken, for example, it may release fibers into the air. Damage and deterioration will increase the friability of ACM. Water damage, continual vibration, aging, and physical impact such as drilling, grinding, cutting, sawing, or striking can break the materials down making the fiber more likely to become airborne.

In the initial Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed and those materials that were unlikely to result in significant fiber release. The terms "friable" and "non-friable" were used to make this distinction. EPA has since determined that, if severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers.

Asbestos Regulation

The U.S. Environmental Protection Agency and the Occupational Safety and Health Administration are responsible for regulating environmental exposure and protecting workers from asbestos exposure. OSHA is responsible for the health and safety of workers who may be exposed to asbestos in the work place, or in connection with their jobs. EPA is responsible for developing and enforcing regulations necessary to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. EPA also regulates state and local government workers who may be exposed to asbestos, or perform asbestos work that is not covered by OSHA.

In Texas, TDH regulates asbestos. More specifically, the Asbestos Programs Branch of the Toxic Substance Control Division within TDH is responsible for administering EPA asbestos rules. (There is no state-level OSHA equivalent.) The Texas Asbestos Health Protection Rules (Rules) were approved and became effective on October 20, 1992. The Rules established the procedures and means to implement the provisions of Senate Bill 1341 and House Bill 79. The purpose of the Rules is to establish the means of control and minimization of public exposure to airborne asbestos fibers, a known carcinogen and dangerous health hazard, by regulating asbestos disturbance activities in buildings that afford public access or occupancy.

The Rules require that a person must be appropriately licensed or registered to engage in asbestos abatement or any asbestos-related activity. Those who have jobs relating to the physical aspects of a building including carpenters, electricians, plumbers, telephone and maintenance personnel, and those who occupy such buildings, are at great risk of asbestos-related disease unless proper training, personal protection, and/or engineering controls are rigorously employed.

The EPA's Worker Protection Rule (40 CFR Part 763, Subpart G) extends the OSHA standards to state and local employees who perform asbestos work and who are not covered by the OSHA Asbestos Standards or by a state OSHA plan. The rule parallels OSHA requirements and covers medical examinations, air monitoring and reporting, protective equipment, work practices, and record keeping. People who plan to renovate or remove asbestos from a building of a certain size, or who plan to demolish any building, are required to notify the TDH.

Exclusions to the Texas Asbestos Health Protection Rules

- private residences and apartment buildings with no more than four dwelling units,
- industrial or manufacturing facilities, in which access is controlled and limited principally to employees therein because of processes or functions dangerous to human health and safety, and
- federal buildings and military installations.

EPA's Regulations Governing Asbestos

Asbestos Ban and Phase Out Rule

In 1989 EPA published *Asbestos: Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions*; Final Rule (40 CFR Part 763, Subpart I). The rule will eventually ban about 94 percent of the asbestos used in the U.S. (based on 1985 estimates). For example, asbestos-containing drum brake linings and roof coatings will be banned. The rule will be implemented in three stages between 1990 and 1997.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The Clean Air Act (CAA) of 1970 requires EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with Section 112 of the CAA, EPA established NESHAP. Asbestos was one of the first hazardous air pollutants regulated under Section 112. On March 31, 1971, EPA identified asbestos as a hazardous pollutant, and on April 6, 1973, EPA promulgated the Asbestos NESHAP in 40 CFR Part 61, Subpart M.

Basic Requirement of the Asbestos NESHAP

Asbestos NESHAP is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos. Accordingly, it specifies work practices to be followed during renovations of buildings that contain a certain threshold amount of friable asbestos, and during demolitions of all structures, installations, and facilities (except apartment buildings that have no more than four dwelling units). Most often, the Asbestos NESHAP requires action to be taken by the person who owns, leases, operates, controls, or supervises the

facility being demolished or renovated (the owner), and by the person who owns, leases, operators, controls, or supervises the demolition or renovation (the operator). The regulations require owners and operators subject to the Asbestos NESHAP to notify delegated state and local agencies before demolition or renovation activity begins. The regulations restrict the use of spray asbestos and prohibit the use of wet applied and molded insulation (i.e., pipe lagging). The Asbestos NESHAP also regulates asbestos waste handling and disposal.

Sources covered by the Asbestos NESHAP

The Asbestos NESHAP currently regulates the following activities and facilities by:

- milling of asbestos;
- roadways containing ACM;
- commercial manufacture of products that contain commercial asbestos;
- demolition of all facilities;
- renovation of facilities that contain friable ACM;
- spraying of ACM;
- processing (fabricating) of any manufactured products that contain asbestos;
- use of insulating materials that contain commercial asbestos;
- disposal of asbestos-containing waste generated during milling; manufacturing, demolition, renovation, spraying, and fabricating operation;
- closure and maintenance of inactive waste disposal sites;
- operation of and reporting on facilities that convert asbestos-containing waste material into non-asbestos material;
- design and operation of air cleaning devices;
- reporting of information pertaining to process control equipment, filter devices, asbestos-generating processes, etc.; and
- active waste disposal sites.

Who to Call in Texas

The Asbestos Programs Branch of the Texas Department of Health has two programs to meet these concerns. The Licensing Program issues licenses to persons qualified for asbestos-related work in public buildings. The Enforcement Program has regional inspectors available to monitor asbestos removal in buildings and to respond to community concerns to ensure that public exposure is minimized. To contact each of the following departmental personnel, please dial and ask for the desired extension.

Texas Department of Health - Toxic Substances Control Division

1100 W. 49th Street

Austin, Texas 78756

(512) 834-6600 or (800) 572-5548 (Texas only)

Notification Requirements

Notification is required for any demolition of a facility or public building, whether or not asbestos has been identified in a public building, a notification to abate any amount of asbestos must be submitted to the Texas Department of Health by the public building owner and/or operator. In a facility, notification to abate amounts described in NESHAP must be submitted to the department by the facility owner and/or operator.

A project design, with respect to friable ACBM, must be prepared by either a licensed consultant (for a school or public building) or an accredited project designer (for a commercial building).

What a Transit Manager Needs to Know about Asbestos

EPA's advice on asbestos is neither to rip it all out in a panic nor to ignore the problem under a false presumption that asbestos is risk free. Rather, EPA recommends a practical approach that protects public health by emphasizing where asbestos material in buildings should be located, that it should be appropriately managed, and that those workers who may disturb it should be properly trained and protected. According to the EPA:

- Although asbestos is hazardous, human risk of asbestos disease depends upon exposure.

- Asbestos levels in buildings seem to be very low, based upon available data. Accordingly, the health risk we face as building occupants also appears to be very low.
- Removal is often not the best course of action to reduce asbestos exposure. In fact, an improper removal can create a dangerous situation where none previously existed.
- EPA only requires asbestos removal in order to prevent significant public exposure to asbestos, such as during building renovation or demolition.
- EPA recommends in-place management whenever asbestos is discovered. An in-place management program will usually control fiber releases, particularly when ACM is not significantly damaged or likely to be disturbed.

Be diligent in selecting an asbestos contractor. Ask for references, and check to see if the contractor has any violations or fines and adequate insurance. Anyone engaged in asbestos-related activities in a public building in the State of Texas must be appropriately licensed or registered by the Texas Department of Health. This includes asbestos inspectors, abatement contractors, and operations and maintenance (O&M) contractors.

A cursory assessment of the potential for ACM in your building may not be conclusive. For example, a typical phase one initial site assessment may include 10-15 samples for asbestos. The results are dependent on the experience and knowledge of the person conducting the assessment. Don't be shy about asking for credentials, licenses, insurance, or any information about your contractors and consultants.

Health Effects of Asbestos

Exposure to asbestos by inhalation is dangerous to human health. All asbestos-related diseases have a long latency period, which means it may take 20 to 40 years for the first symptoms to show up. The amphibole fibers used commercially (amosite, crocidolite) are extremely hazardous, and inhalation of only one fiber into the lungs will cause asbestosis and may lead to lung cancer or mesothelioma.

Ingestion of asbestos on the other hand is not considered hazardous. Therefore eating or drinking asbestos is not known to be a significant health threat. It is important to know that 99 percent of the world's current asbestos production is chrysotile. The primary concern is exposure to asbestos products that were used in the past containing amosite and crocidolite, which are prohibited today.

What do I do if I think I have ACM?

Leave it alone. If you plan to renovate or dismantle a public building, the owner should have an asbestos inspection performed by licensed asbestos inspector.

How to Avoid Asbestos Exposure

In order to avoid being exposed to asbestos, you must be aware of the locations in which it is likely to be found. If you do not know whether something is asbestos or not, assume that it is until it is verified otherwise. Remember that you cannot tell if floor or ceiling tiles contain asbestos just by looking at them.

Environmental professionals or the TDH can take samples from materials in order to determine whether or not they contain asbestos. If you need to have materials analyzed or tested for asbestos, never try to take a sample yourself unless you are licensed to do so.

If you have reason to suspect that something is asbestos, either because it is labeled as such, or because it is something that is likely to contain asbestos (floor tile, for example), DO NOT DISTURB IT. Never drill, hammer, cut, saw, break, damage, move, or disturb any asbestos-containing materials or suspected materials.

Housekeeping

Housekeepers and custodians should never sand or dry buff asbestos-containing floor tiles, and only wet stripping methods may be used during stripping operations. Low abrasion pads should be used at speeds below 300 rpm.

Broken and fallen ceiling tiles should be left in place until identified. Only after they have been identified as safe may they be removed. Asbestos tiles should be removed by asbestos abatement workers.

Broken and damaged asbestos floor tiles must also be removed by asbestos abatement workers.

If, for example, you discover some sprayed-on asbestos insulation has been knocked off of a ceiling or wall, this would be considered a spill. As such it would need to be cleaned up immediately by asbestos abatement workers. Do not attempt to clean up spills yourself!

Disturb the material as little as possible. Also report any damaged pipe insulation, ceiling tile, floor tile, fallen clumps of sprayed-on insulation, etc. Take measures to prevent others from disturbing the spill until the asbestos abatement crew arrives.

By knowing where asbestos is likely to be located and then taking measures not to disturb it, you will protect yourself and others from exposure to this hazardous substance.

Public Buildings

This includes the interior space of a building used or to be used for purposes that provide for public access or occupancy, including prisons and similar buildings. Interior space includes exterior hallways connecting buildings, porticos, and mechanical systems used to condition interior space. The term does not include:

- an industrial facility to which access is limited principally to employees of the facility because of processes or functions that are hazardous to human safety or health;
- a federal building or installation (civilian or military);
- private residence;
- an apartment building with no more than four dwelling units;
- a manufacturing facility or building that is limited to workers and invited guests under controlled conditions; and
- a building, facility, or any portion of which has been determined to be structurally unsound and in danger of imminent collapse by a professional engineer, registered architect, or a city, county, or state government official.

For More Information

Consult *Guidance for Controlling Asbestos-Containing Materials in Buildings* (Purple Book), EPA 560/5-85-024.

Internet Resources

EPA Office of Air Quality: <http://www.epa.gov/region4/air/asbestos/asbestos.htm>

<http://www.epa.gov/region4/air/asbestos/inform.htm>

<http://www.worksafe.org/Training/>

EPA Indoor Air Pollution Guide: <http://www.epa.gov/iaq/pubs/hpguide.html>

Texas Department of Health Information Resources:

<http://www.tdh.state.tx.us/beh/asbestos/default.htm>

Lead-Based Paint

Regulation

The Texas Environmental Lead Reduction Rules (TELRR) by TDH cover several areas of lead-based paint activities in target housing (most housing constructed prior to 1978), including the training and certification of persons conducting lead inspections, risk assessments, abatements, and project design. The rules require that lead training providers be accredited by the TDH and also set standards for conducting lead-based paint activities. The TELRR was amended to include child-occupied facilities such as daycares and preschools effective May 10, 1998.

The TDH Lead Rules apply to target housing, which may include single and multi-family residences, and apartment buildings, and child-occupied facilities such as preschools and daycares. The rules DO NOT cover non-residential public and commercial buildings, or steel structures or 0-bedroom dwellings such as efficiencies, studio apartments, dormitory housing, military barracks, and rentals of individual rooms in residential dwellings. **Therefore, most small and urban transit facilities would not be affected unless the transit facility is associated with a child-occupied facility.**

For More Information

Contact the TDH Toxic Substance Control Division at (512) 834-6612 or (888) 778-9440 (toll-free in Texas); or the National Lead Information Clearinghouse at (800) 424-LEAD (5323).

For guidance on lead in drinking water, contact the TNRCC drinking water systems section at (512) 239-6020.

For lead waste disposal contact the TNRCC waste evaluation section at (512) 239-6412 or (512) 239-6832, or contact your regional TNRCC office.

Internet Resources

Texas Department of Health Environmental Lead Branch:

<http://www.tdh.state.tx.us/beh/lead/default.htm>

TDH Indoor Air Quality: <http://www.tdh.state.tx.us/beh/IAQ/>

EPA Lead Programs: <http://www.epa.gov/opptintr/lead/>

EPA Indoor Air Quality: <http://www.epa.gov/iaq/ia-intro.html>

Checklist

- ☐ Does your building contain asbestos? If YES, have you had an inspection by a licensed asbestos inspector?
- ☐ Is it left undisturbed, away from potential human exposure?
- ☐ Do you have a management plan?
- ☐ Does your business comply with all requirements of the Toxics Release Inventory?
- ☐ Does your business have Material Safety Data Sheets or other information sheets for all chemicals used in the past 24 months?
- ☐ Is there any evidence of spills? If YES: Has your business taken appropriate reporting and abatement actions?

Glossary

ACM - asbestos-containing material

AHERA - Asbestos Hazard Emergency Response Act of 1986

ANSI - American National Standards Institute

ASTM - American Society for Testing and Materials

NESHAP - National Emission Standards for Hazardous Air Pollutants

NIOSH - National Institute for Occupational Safety and Health

OAQPS - Office of Air Quality Planning and Standards

OSHA - Occupational Safety and Health Administration

PEL - permissible exposure limit

PLM - polarized light microscopy

TSCA - Toxic Substances Control Act

Lead-based paint - Paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams per square centimeter or more than 0.5 percent by weight.

Chapter 8 – Employees and Environmental Compliance

Issues and Regulatory Intent

Emergency Planning and Community Right-to-Know Act

The Superfund Amendments and Reauthorization Act (SARA) of 1986 created the Emergency Planning and Community Right-to-Know Act (EPCRA, also known as SARA Title III), a statute designed to improve community access to information about chemical hazards and to facilitate the development of chemical emergency response plans by state and local governments. EPCRA required the establishment of state emergency response commissions (SERCs), responsible for coordinating certain emergency response activities and for appointing local emergency planning committees (LEPCs).

EPCRA and the EPCRA regulations (40 CFR Parts 350-372) establish four types of reporting obligations for facilities that store or manage specified chemicals:

- EPCRA §302 requires facilities to notify the SERC and LEPC of the presence of any extremely hazardous substance (the list of such substances is in 40 CFR Part 355, Appendices A and B) if it has such substance in excess of the substance's threshold planning quantity, and directs the facility to appoint an emergency response coordinator.
- EPCRA §304 requires the facility to notify the SERC and the LEPC in the event of a release equaling or exceeding the reportable quantity of a CERCLA hazardous substance or an EPCRA extremely hazardous substance.
- EPCRA §311 and §312 require a facility at which a hazardous chemical, as defined by the Occupational Safety and Health Act, is present in an amount exceeding a specified threshold to submit to the SERC, LEPC, and local fire department material safety data sheets or lists of MSDSs and hazardous chemical inventory forms (also known as Tier I and II forms). This information helps the local government respond in the event of a spill or release of the chemical.
- EPCRA §313 requires manufacturing facilities included in SIC codes 20 through 39, which have ten or more employees, and which manufacture, process, or use specified chemicals in amounts greater than threshold quantities, to submit an annual toxic chemical release report. This report, known commonly as the Form R, covers releases and transfers of toxic

chemicals to various facilities and environmental media, and allows EPA to compile the national Toxic Release Inventory (TRI) database.

All information submitted pursuant to EPCRA regulations is publicly accessible, unless protected by a trade secret claim.

Texas Community Right-to-Know Act (TCRA)

The community right-to-know program has been established under both federal and state laws. As a result of these laws, all facilities (including transit) which store significant quantities of hazardous chemicals must share this information with state and local emergency responders and planners. Facilities in Texas share this information by filing annual hazardous chemical inventories called Texas Tier Two Forms with the state, with Local Emergency Planning Committees (LEPCs), and with local fire departments.

The Texas Tier Two Reports contain facility identification information and detailed chemical data about hazardous chemicals stored at the facility. Emergency response personnel, such as firefighters, can use information contained in Texas Tier Two Reports to plan response strategies in the event that an emergency situation arises. Private citizens in the community may request and receive copies of the Texas Tier Two Reports, as well as custom reports generated from Texas Tier Two data.

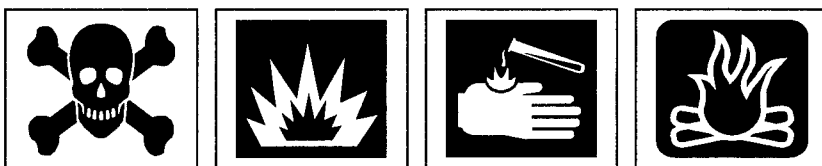
The Hazard Communication Branch serves as the state repository for community right-to-know information, provides outreach for compliance on both the federal and state laws, supports LEPCs in community right-to-know endeavors, and administers an enforcement program. Annual inventory filing fees, which are collected under the TCRA, provide the funding for both the community and worker right-to-know programs.

The community right-to-know laws are separated into three separate sections of the Texas Health and Safety Code:

- Chapter 505 - Manufacturing Facility Community Right-To-Know Act,
- Chapter 506 - Public Employer Community Right-To-Know Act, and
- Chapter 507 - Non-manufacturing Facilities Community Right-To-Know Act.

Texas Hazard Communication Act (THCA)

The worker right-to-know program is administered under the authority of the Texas Hazard Communication Act (THCA). The THCA requires public employers to provide information, training, and appropriate personal protective equipment to their employees who may be exposed to hazardous chemicals in their workplaces. Public employers include (but are not limited to) cities, counties, state agencies, public schools, public colleges and universities, and volunteer service organizations. This includes small urban and rural transit agencies. Employees of private facilities in Texas are covered by a similar federal law, which is enforced by the U.S. Occupational Safety and Health Administration. The Branch provides both consultative and enforcement-related evaluations of public workplaces to ensure that public employees are protected from hazardous chemicals in their workplaces (25 TAC §§ 295.1-295.9, 295.11-295.13 - Texas Hazard Communication Act).



Worker Right-to-Know Program - Frequently Asked Questions

Is there a required notice that public employers must post in order to comply with the Texas Hazard Communication Act (THCA)?

Yes. The THCA requires that public employers post copies of a document which is called the “Notice to Employees” in locations where notices are normally posted. The size and wording of the “Notice to Employees” is described in the Rules for the THCA (Title 25 of the Texas Administrative Code, Section 295.5), and copies of the Notice are available from the TDH or by following this link <http://www.tdh.state.tx.us/beh/HazCom/Enforcement.htm>

How do I develop a written hazard communication training program?

The Branch has a written guidance document to assist public employers in developing the written training program. The “Model Written Hazcom Program” is available on request from the Branch or by clicking here. There are also commercially available written training programs that may be modified for use by a public employer. However, public employers are cautioned that the written training program must be designed for their specific workplaces. Therefore, it is imperative that these employers ensure that their written training program

meets the requirements of the THCA and Rules. One of the most common problems with commercially available written training programs is that they are usually designed for compliance with the federal Occupational Safety and Health Administration's (OSHA's) Hazard Communication Standard and NOT for compliance with the THCA.

Is annual training for employees required under the THCA?

No. The original THCA required annual training, but this requirement was deleted when the THCA was revised in 1993. Public employers are now required to train employees who use or handle hazardous chemicals on an as needed basis. They are also required to provide additional training "when the potential for exposure to hazardous chemicals in the employee's work area increases significantly or when the employer receives new and significant information concerning the hazards of a chemical in the employee's work area." This requirement means that the employer must consider several factors in determining the frequency of training, including the abilities of the employee to retain training information, the complexity of employee tasks, and the degree of hazardous chemical exposure. New or newly assigned employees must be trained before they work with or in an area containing a hazardous chemical.

Are public employers required to send written records of training to the Branch?

No. This provision of the original THCA was deleted when the Act was revised in 1993. Public employers must maintain their own employee training records and make these records available to a representative of the Department, upon request.

Does the THCA apply to hazardous chemicals that do not exceed the thresholds specified for the "Workplace Chemical List"?

Yes. The THCA requires that public employers meet the Act's requirements for labeling, maintenance of material safety data sheets, training, provision of personal protective equipment, etc., for ANY amount of a hazardous chemical. The only thresholds specified in the THCA are those for the workplace chemical list, which is a list of all hazardous chemicals which exceed 55 gallons or 500 pounds.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) granted EPA authority to create a regulatory framework to collect data on chemicals in order to evaluate, assess, mitigate, and control

risks which may be posed by their manufacture, processing, and use. TSCA provides a variety of control methods to prevent chemicals from posing unreasonable risk.

Under TSCA, EPA has established an inventory of chemical substances. Under TSCA § 6, EPA can ban the manufacture or distribution in commerce, limit the use, require labeling, or place other restrictions on chemicals that pose unreasonable risks. Among the chemicals EPA regulates under § 6 authority are asbestos, chlorofluorocarbons, and polychlorinated biphenyls.

In Texas, the Texas Department of Health administers most of the rules related to TSCA.

Possible Requirements for Transit Facilities

The following sections describe reports and programs that a transit facility may have to comply with. Unless your small urban or rural agency is storing over 1,500 gallons (about 10,000 pounds) of fuel at any time, you probably are not required to complete Texas Tier Two reports.

Regarding worker right-to-know requirements, all public agencies (including small urban and rural transit providers) are required to comply with requirements to maintain MSDS sheets and a HazCom program.

Community Right-to-Know Program – Frequently Asked Questions

Transit facilities have to complete the Texas Tier Two report if they store 500 pounds or more of an extremely hazardous substance (which is not likely), or if they store 10,000 pounds or more of a generally hazardous substance (such as gasoline). Most small urban and rural systems in Texas do not need to complete Tier Two reports. The following are common questions pertaining to this report.

What is a Texas Tier Two Report?

The Texas Tier Two Report is an annual hazardous chemical inventory which provides detailed information on chemicals which meet or exceed specified reporting thresholds at any time during a calendar year. There are two types of thresholds that determine whether a hazardous chemical will be included on the Texas Tier Two Report:

There are very low thresholds for any of the listed Extremely Hazardous Substances (500 pounds or the Threshold Planning Quantity in pounds for the specific listed chemical, whichever amount is less).

For all other “generally hazardous chemicals” [products which require a material safety data sheet under the federal Occupational Safety and Health Administration’s Hazard Communication Standard], the threshold for reporting is 10,000 pounds.

The Texas Tier Two Report includes facility tracking information, as well as information on the hazardous chemicals being reported, including common and chemical names of products, hazard classifications, reporting ranges, days on site, container types, and storage locations.

Does a facility which stores or uses hazardous chemicals at or above the reporting thresholds have to file a Texas Tier Two Report and filing fee every year?

Yes. The facility owner or operator is responsible for filing the Report and filing fee for every year during which the facility met or exceeded the reporting thresholds. For most facilities, this requirement has been in effect since 1988.

Can the TDH provide me with a list of all hazardous chemicals which may have to be reported on the Texas Tier Two Report?

No. Technically, there is no “list” of all reportable hazardous chemicals (sometimes referred to as the OSHA list) because there are approximately 650,000 products which may require a material safety data sheet under OSHA’s Hazard Communication Standard, there are new products being invented and produced every day which may meet OSHA’s definition of a “hazardous chemical,” and there is no standardized system for naming hazardous chemical products. In other words, the “list” is extremely large and ever-changing. Instead of using a list, the Branch relies on OSHA’s definition of “hazardous chemical” to determine which products may need to be reported on the Texas Tier Two Report. So, if you are required to maintain or provide an MSDS for a substance that you store or use at your facility, you should assume that it needs to be reported unless it meets one of the exemptions listed in the annual Tier Two reporting booklet.

Toxic Release Inventory (TRI) Reporting Requirements

A facility must report if it meets the following criteria:

- it has 10 or more full-time employees;
- it is one of 27 specific industries that include the manufacturing sector and even new industries;
- it manufactures/processes more than 25,000 pounds/year per chemical, or uses more than 10,000 pounds/year per chemical; or
- it manufactures, processes, or uses more than 10 or 100 pounds/year or 0.1 grams of any persistent, bioaccumulative, toxic chemical (PBT) depending on their applicable triggering amount. (PBTs include chemicals such as mercury, PCBs, dioxins, and DDT. These are toxic chemicals that tend to persist in the environment or build up in food chains.)

There are about 650 chemicals on the TRI list at this time. In Texas, about 1,200 facilities have reported a TRI each year since reporting began in 1987.

Material Safety Data Sheets

The Occupational Safety and Health Administration's Hazard Communication Standard and the THCA are designed to ensure that employers and employees are aware of all chemical hazards in the work place. MSDSs are the primary source of information on all chemicals used in the workplace. Each time a new product is procured, the data sheet should be obtained from the supplier and placed in a designated location readily accessible to employees. The MSDS contains the physical and chemical characteristics and health hazards associated with the product, as well as handling precautions and emergency procedures.

A product's MSDS should be evaluated prior to purchasing or accepting trial samples of a product. This information can be useful in determining if accepting the product poses additional safety concerns or if unused residuals will require disposal as hazardous waste. A fact sheet published by Texas Department of Health is provided below for additional information.

FACT SHEET

Standards for Current and Substitute Material Safety Data Sheets (MSDSs) Under the Texas Hazard Communication Act

Texas Hazard Communication Act (THCA) Rules Revisions:

Prior to September 1999 public employers in Texas were required by the THCA to maintain the most recent manufacturer-specific MSDSs for hazardous chemicals which they use or store. The THCA's administrative rules (25 TAC Section 295.1 – 295.12) were revised effective September 1, 1999, to provide employers with greater flexibility to obtain appropriate MSDSs to comply with the requirements of the THCA. Under these revisions a current substitute MSDS can be used in certain cases.

Standards for "Current" MSDSs:

Per 25 TAC Section 295.5(a), a "current" MSDS is one which contains "the most recent significant hazard information for the hazardous chemical as determined by the chemical's manufacturer." Often chemical manufacturers will update their MSDSs without making significant changes to the chemical hazard information. In these cases, the previous MSDS will be considered "current" for regulatory purposes under §295.5(a).

Appropriate Use of Substitute MSDSs:

A substitute (non-manufacturer-specific) MSDS can be used if it is identical to the manufacturer-specific MSDS both in identity and formulation of the hazardous chemical. The hazardous chemical in question must be consistently prepared or produced by several different manufacturers to established industry standards. The medical treatment information for exposure to the chemical must be readily available to the medical community.

Substitute MSDS Examples:

- Motor fuels such as gasoline, diesel, propane, etc.
- Automotive fluids such as transmission fluid, brake fluid, and certain lubricating oils and greases.
- Asphalt such as that used in paving and roofing operations.
- Liquid household bleach such as Clorox, Purex, and certain generic brands that contain the primary ingredient "sodium hypochlorite" in the same concentration.

Questions About MSDSs?

If you have questions about MSDSs or other requirements of the Texas Hazard Communication Act, contact the Hazard Communication Branch at 1-800-452-2791 (toll-free), (512) 834-6603, or www.tdh.state.tx.us/ech/env/hazcom.htm.

Hazard Communication Program

A hazard communication program (HCP) is prepared to ensure that employees and others who work with or are exposed to hazardous substances are fully aware of the hazards of

such substances and know how to protect themselves. HCPs should comply with the following state and federal laws:

- Code of Federal Regulations, Title 29, Hazard Communication Standard, Sub part Z, Section 1910.1200, Toxic and Hazardous Substances, and
- State of Texas Hazard Communication Act, Texas Civil Statutes; Article 47826, Revised 1993.

The HCP typically includes information and procedures described in the following sections.

Container Labeling

Ensure all containers of hazardous chemicals entering the workplace are properly labeled with:

- chemical name and contents;
- physical and health hazard warnings; and
- name and address of the manufacturer, importer, or responsible party.

Ensure that:

- all pipe(s) with chemicals are labeled and identified properly; and
- a label on an existing container of hazardous chemicals is not removed or defaced unless it is illegal, inaccurate, or does not conform to OSHA standards or applicable labeling requirements.

The National Fire Protection Association labeling system is not an acceptable means of container labeling under the THCA but is an acceptable supplement to the labeling requirements of the THCA. This system, which rates in terms of severity, uses a diamond-shaped label which is divided into four sections but does not identify the hazards as required by the THCA. The sections relate to the material's health hazards, flammability, reactivity, and special precautions. In the first three sections, numbers are used to convey the degree of hazard: 0 (low) through 4 (high). The white section of the diamond uses symbols to convey special precautions required.

A model Hazard Communication Program is available from the TDH on their website at

<http://www.tdh.state.tx.us/beh/HazCom/Enforcement.htm>

It is a complete "fill-in-the-blank" written plan with forms and definitions.

Employee Information and Training

Employees should have access to the MSDS for any new hazardous material being introduced into the work place prior to their using the material. Employees should be trained in the proper use of, and hazards associated with, the particular hazardous material. The training program should include topics (both general and specific) required at a minimum by the THCA as follows:

- information on interpreting labels and MSDS sheets and how these two methods of hazard communication are related;
- training on the location of hazardous chemical products;
- training in safe handling of hazardous chemical products;
- training in the proper use of protective equipment and first aid treatment for the chemicals to which the employee may be exposed;
- training on first aid treatment to be used with respect to the specific hazardous chemical to which employees may be exposed;
- general safety understanding on the handling, cleanup procedures, and disposal of hazardous chemicals;
- training on the acute and chronic effects of the hazardous chemical products in each work area;
- training in general safety instructions on the handling, cleanup procedures, and disposal of hazardous chemicals;
- documents recording the following:
 - the date of each training class,
 - a roster of the employees who were trained in each issue,
 - the name of the instructor conducting each session, and
 - the specific THCA topics covered with each training session.
- All training records will be maintained for at least five years beyond the date of training.
- Emergency responders will be trained on recognizing, evaluating, and controlling exposure to chemicals.
- New employees should be familiar with the HCP and the MSDSs applicable to their job.

- Employees should be informed about the chemical and physical hazards of their workplace and how to protect themselves and other employees from these hazards; and be aware of where the HCP, the standard, applicable MSDSs and list of chemicals are located for their review. An employee should inform their supervisor of any change in the process that might compromise the health and safety of the facility, employees, or the environment.

Employees should also receive information and training on the following:

- an overview of the requirements contained in the Hazard Communication Regulation, including their rights under the Regulation;
- any operations in their work area where hazardous substances are present;
- location and availability of the Written Hazard Communication Program;
- physical and health effects of the hazardous substances;
- methods and observation techniques used to determine the presence or release of hazardous substances in the work area;
- how to lessen or prevent exposure to these hazardous substances through usage of engineering controls, work practices, and/or the use of personal protective equipment;
- emergency and first aid procedures to follow if employees are exposed to hazardous substance(s); and
- how to read labels and review MSDSs to obtain appropriate hazard information.

Hazardous Non-Routine Tasks

Periodically, employees may be required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee should be given information by their supervisor about hazards to which they may be exposed during such an activity. This information should include:

- specific hazards;
- protective/safety measures which must be utilized; and
- measures the company has taken to lessen the hazards including ventilation, respirators, presence of another employee, and emergency procedures.

The supervisor will obtain assistance from risk management if necessary.

Informing Contractors

Ensure that contractors are adequately informed regarding hazardous substances in the work site, including hazardous substances to which they may be exposed while on the job site, and precautions the employees may take to lessen the possibility of exposure by usage of appropriate protective measures.

In Case of Emergencies

Managers (or a designee) should report to the Texas Department of Health within 48 hours after any occurrence that directly or indirectly involves chemical exposure or asphyxiation and that is fatal to one or more employees or that results in hospitalization of five or more employees. The report must relate the circumstances of the accident, the number of fatalities, and the extent of injuries.

Employee Protected Rights

The Texas Department of Health Notice to Employees (THCA) is required at locations where notices are normally posted, informing employees of their rights under the Texas Hazardous Communications Act. Employee rights under the THCA are guaranteed and may not be waived.

Material Safety Data Sheets

Maintain an MSDS system for all required products. Review incoming data sheets for new and significant health/safety information to ensure that the new information is distributed to the affected employees. Keep and review annually for accuracy and completeness of each MSDS. The MSDS system should include:

- List the current master inventory list of all MSDS.
- The identity used on the MSDS shall be the same as used on the container label.
- The chemical and common name of all ingredients determined to present a hazard shall appear on all MSDSs.

The MSDS should list:

- the physical and chemical characteristics of the chemical including vapor pressure, flash point, etc.;
- the fire, explosion, and reactivity hazard(s) of the chemical mixture including the boiling point, flash point, and autoignition temperature;
- health hazards of the chemical mixture including signs and symptoms of exposure and medical conditions recognized as aggravated by exposure with primary route(s) of entry;
- permissible exposure limit (PEL) or any other exposure limit used or recommended by the manufacturer, importer, or employer;
- whether it is on the carcinogen listing by the National Toxicology Program or has been found to be a potential carcinogen by the International Agency for Research on Cancer listing, or by OSHA 1910.1003 – 1016;
- control measures including fire, engineering, personal protective equipment;
- general precautions for safe handling and use including protective measures during repair and maintenance and procedures for cleanup of spills and leaks;
- emergency and first aid procedures;
- date prepared or changed; and
- name, address, telephone numbers of manufacturer, importer, or responsible party to call in an emergency.

Respirators

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use should be encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers.

However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards.

Respirator protection programs are established for the use and maintenance of respiratory protection equipment used to reduce employee exposure to air contaminants above an exposure limit, or allow employees to work safely in potentially hazardous environments. A respiratory protection program should be designed to comply with the Occupational Safety

and Health Administration's Worker Protection Rule (29 CFR 1910.134). Managers should identify all areas of potential exposure and determine if a program is necessary.

Keep in mind that if the contaminant is flammable and the estimated or actual concentration approaches the lower explosive limit (LEL), precautions other than respiratory protection may be necessary prior to entry. Only appropriate NIOSH/OSHA-approved respirators should be used. Written standard operating procedures governing the selection and use of respirators should be established. The general guidelines for a respiratory program are outlined below.

- Respirators must be selected on the basis of hazards to which the work is exposed.
- Users must be instructed and trained in the proper use of respirators and their limitations.
- Where practicable, the respirators should be assigned to individual workers for their exclusive use.
- Respirators must be regularly cleaned and disinfected. Those issued for the exclusive use of one worker must be cleaned after each day's use, or more often if necessary. Those used by more than one worker must be thoroughly cleaned and disinfected after each use.
- Respirators must be stored in a convenient, clean, and sanitary location.
- Respirators used routinely must be thoroughly inspected at least once a month and after each use.
- Appropriate surveillance of work area conditions and degree of employee exposure or stress must be maintained.
- Regular inspections and evaluations must be conducted to determine the continued effectiveness of the program.
- Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment.

Contact Information

AGENCY	CONTACT
Texas Department of Public Safety Emergency Response Center 5805 N. Lamar Blvd. PO Box 4087 Austin, Texas 78773-0001	[800/832-8224 Emergency planning training, overall coordination of state agencies and LEPCs
Texas Department of Health Hazard Communications Branch Div. of Occ. Safety & Health 1100 West 49th St. Austin, Texas 78756	Paula J. McKinney 512/834-6603 1-800-452-2791 (Secs. 301-304, 311, 312 chemical reporting)
Texas Natural Resource Conservation Commission Office of Pollution Prevention and Recovery	Becky Kurka 512/2393100
U.S. Environmental Protection Agency Region VI 1445 Ross Avenue Dallas, Texas 75202-2733	Dusty Pruitt 214/655-2270 Sec. 313: Gerald Cranny 214/655-7244 Jill Lyons

Resources

Occupational Health and Safety Administration Hazard Communication Regulations

http://www.osha-slc.gov/OshStd_data/1910_1200.html

The TDH Hazard Communication Branch:

(<http://www.tdh.state.tx.us/beh/HazCom/default2.htm>)

<http://www.tdh.state.tx.us/beh/HazCom/Enforcement.htm>, and

<http://www.tdh.state.tx.us/beh/HazCom/links.htm>.

TDH Hazard Communication Fact Sheets:

Fact Sheet HCB 002 Revisions to the Administrative Rules of the Texas Hazard
Communication Act.

FACT SHEET HCB 003 Model Written Hazard Communication Program for Public Employers in Texas

FACT SHEET: HCB 005 Workplace Chemical List

FACT SHEET: HCB 007 Standards for Chemical Container Labels

FACT SHEET: HCB 009 Model Employee Training Roster

FACT SHEET: HCB 017 Standards for Personal Protective Equipment

Code of Federal Regulations, Title 29, Hazard Communication Standard, Sub part Z, Section 1910.1200, Toxic and Hazardous Substances.

State of Texas Hazard Communication Act (THCA), Texas Civil Statutes; Article 47826, Revised 1993.

Agency for Toxic Substances and Disease Registry Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333 Phone: 1-888-42-ATSDR or 1-888-422-8737 FAX: 404-639-6359, E-mail: ATSDRIC@cdc.gov

Checklist

- ☐ Does your agency store more than 10,000 pounds of a generally hazardous material? If yes, you may need to comply with all requirements of the Toxics Release Inventory reporting.
- ☐ Does your business have material safety data sheets or other information sheets for all chemicals used in the past 24 months?
- ☐ Do you have a written HazCom Plan?

Glossary

EPCRA or SARA Title III - the Federal Emergency Planning and Community Right-To-Know Act, also known as the Superfund Amendments and Reauthorization Act of 1986, Title III, Pub. L. No. 99-499 et seq.

Extremely hazardous substance - any substance as defined in EPCRA, Section 302, or listed by the United States Environmental Protection Agency in 40 CFR Part 355, Appendices A and B.

Hazardous chemical - a term defined by 29 CFR 1910.1200(c), except that the term does not include: (a) any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration; (b) any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use; (c) any substance to the extent that it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the public; (d) any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual; and (e) any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate consumer.

Label - any written, printed, or graphic material displayed on or affixed to a container of hazardous chemicals.

Local emergency planning committee (LEPC) - a committee formed under the requirements of EPCRA, Section 301, and recognized by the state emergency response commission for the purposes of emergency planning and public information.

Material safety data sheet (MSDS) - a document containing chemical hazard and safe handling information that is prepared in accordance with the requirements of the OSHA standard for that document.

Physical hazard - a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water-reactive in terms defined in the OSHA standard.

Public employer - (a) the state and political subdivisions of the state, including state, county, and municipal agencies; (b) public schools, colleges, and universities; (c) river authorities and publicly owned utilities; (d) volunteer emergency service organizations; and (e) other similar employers who are not covered by the federal Occupational Safety and Health Act of 1970

(Pub. L. No. 91–596), the Federal Coal Mine Health and Safety Act of 1969 (Pub. L. No. 91–173), or the Federal Mine Safety and Health Amendments Act of 1977 (Pub. L. No. 95–164).

State emergency response commission (SERC) - means the state emergency management council or other committee appointed by the governor in accordance with EPCRA.

Threshold planning quantity (TPQ) - the minimum quantity of an extremely hazardous substance for which a facility owner or operator must participate in emergency planning, as defined by the EPA pursuant to EPCRA, Section 302.

Tier two form - (a) a form specified by the department under Section 506.006 for listing hazardous chemicals as required by EPCRA; or (b) a form accepted by the EPA under EPCRA for listing hazardous chemicals together with additional information required by the department for administering its functions related to EPCRA.

Chapter 9 – CERCLA Liability and Site Assessments

Issues and Regulatory Intent

Legislation

The Comprehensive Environmental Response, Compensation, and Liability Act, also referred to as the Superfund, was enacted in 1980 in order to address uncontrolled releases of hazardous substances that may endanger public health welfare or the environment. CERCLA assigns liability to responsible parties to clean up uncontrolled hazardous waste sites.

The Superfund Amendments and Reauthorization Act of 1986 revised various sections of CERCLA, extended the taxing authority for the Superfund, and created a free-standing law, SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act (EPCRA).

CERCLA uses the term *hazardous substance* to include those substances listed in 40 CFR Table 302 (over 300 chemicals), listed hazardous wastes, characteristic hazardous wastes, toxicity characteristic waste, and listed radionuclides. A *hazardous substance* may also include any substance that presents an imminent and substantial danger to public health or welfare. There are many hazardous substances that are not hazardous wastes as defined by the Resource Conservation and Recovery Act (RCRA). (See Chapter 4 - Waste Management.) A hazardous material is used to describe a product that requires special handling. When spilled or not handled properly, a hazardous material may become a hazardous waste, or a hazardous substance.

The CERCLA hazardous substance release reporting regulations (40 CFR Part 302) direct the person in charge of a facility to report to the National Response Center any environmental release of a hazardous substance which equals or exceeds a reportable quantity. Reportable quantities are listed in 40 CFR §302.4. A release report may trigger a response by EPA, or by one or more federal or state emergency response authorities.

Environmental risks are identified and documented by conducting environmental site assessments. The Phase I environmental site assessment, as it is commonly known, is intended to discover environmental conditions that could affect your liability with respect to the intended use of that property. Subsequent phases of environmental assessments may be needed to further define and mitigate environmental risks or contamination.

How are transit operations affected?

The most common environmental liability affecting transit agencies is the occurrence of contamination on properties owned or managed by the agency. The most common way to minimize liability is by assessing and managing potential environmental risks as they are discovered.

Transit agencies can be involved as responsible parties if they are:

- current owners or operators of the facility,
- former owners or operators at the time the hazardous substance was disposed,
- the party who arranged for disposal, or
- the party who transported the substance.

CERCLA liability is joint, several, and strict; meaning that any party that is identified as responsible must share the cost of cleanup. There are exclusions and defenses to CERCLA liability for government agencies and use of eminent domain, and involuntary acquisitions, but neither would likely apply to transit agencies. The purpose of this chapter is to summarize what environmental liability is and how to minimize it, as well as to explain the requirements of environmental site assessments.

Environmental & Regulatory Liability

The term liability can take on different forms. A legal definition of liability means an enforceable obligation, either through a voluntary contractual obligation or a unilaterally imposed obligation. The law establishes both the liability and the party responsible for the liability. In terms of accounting practices, a liability is a present obligation to make an expenditure or provide a service in the future.

In general, an environmental liability, such as contamination at your facility, is a legal obligation to make a future expenditure due to the past or ongoing use, release or threatened release of a particular substance, or other activities that adversely affect the environment. A potential liability is one in which there is a potential obligation in the future. Its potential may depend on future events or future laws. What makes potential liability different from existing liability is that for potential liabilities the responsible party has an opportunity to mitigate or prevent future obligations by its own practices.

Liabilities may come from a wide variety of sources. These include federal, state, and local rules and regulations that can be enforced by governmental agencies, or in some cases, citizen suits. Common law also provides numerous sources of liability in the form of nuisance and trespass suits, personal injury suits, and toxic tort.

Table 9-1 lists the basic categories of environmental liabilities and the potential future obligations that may arise.

Table 9-1. Liability and Future Obligation Issues

Liability	Future Obligation
Compliance obligations	Administrative costs, employee training, enacting management /construction practices, new or upgraded facilities, site monitoring, site/activity inspections
Remediation obligation	Cleanup of soil or groundwater, pollution prevention, remediation systems installation, operation and maintenance, site monitoring
Fines and penalties	Civil and criminal fines and penalties
Compensation for personal injury, economic loss, or property damages under common law	Expenses from settlements, legal defense, contractor claims, and occupational/worker health and safety claims
Punitive damages, professional negligence	Expenses from settlement or legal defense
Natural Resource Damages	Originating from CERCLA, CWA , and OPA, the cost of restoration of natural resources, not including private property
NEPA obligations	Cost of mitigation, civil suits

The liability to a transit provider may include all of these sources in addition to state-specific laws and regulations. The liability to the individual is usually limited to those issues founded in common law, but some environmental regulations include criminal penalties and fines for individuals. Most notable of these is CERCLA, which may impose fines on individuals who fail to act or make proper notifications.

Joint, Several, and Strict Liability

The terms *joint and several liability* are common law methods for assigning liability. As found in CERCLA, it used to define the scope of liability. Simply put, joint and several liability means that each and every responsible party could possibly be held liable individually for the entire cost (obligation) of cleanup. In other words, if you are liable for any damages you can be liable for all damages. If a company contributed in any way to the presence or release of a hazardous substance, then the company can be responsible for the entire liability, unless it can show that its contribution was distinct and divisible. This usually results in an allocation of responsibility among responsible parties.

Strict liability refers to the standard of liability and means the government does not need to prove any intent, negligence, or intentionally wrongful act. The government must only show that the responsible party contributed to the release of a hazardous substance. A responsible party is liable for cleanup under strict liability if they have contributed to hazardous conditions based simply on the occurrence of a release regardless of fault. Strict liability may fall upon those who, even with proper care, expose the community to a dangerous risk. At the state level, strict liability is most commonly used because it does not require proof of negligence or willful intent. Texas uses joint, several, and strict liability as liability standards for the state superfund program.

Worker Health and Safety Liability

The use of certain materials requires safe handling procedures to assure that worker safety and health do not become a liability issue. The authority for protecting worker health and safety originates from the Occupational Health and Safety Act. OSHA covers nearly all employers in the private sector to provide safe and healthful working conditions for every working man and woman in the nation. In most cases, environmental pollution protection standards will be stricter than will OSHA standards. The liability arising from OSHA

regulations will more likely arise from new construction or maintenance activities that occur in existing contaminated areas.

Vicarious Liability

In simple terms, vicarious liability means you are liable for someone else's conduct. For example, an agency, or agency manager, can be held liable for actions or conduct made by individuals, such as an employee, or even a supervisor, even if they are unaware of the conduct. A common example would be when an agency is held liable for the sexual harassment of an employee even though the agency, and its management, were not involved.

Common Law Liability

To this point, the discussion is primarily centered on liability from regulatory sources. Liability arising from common law is also a possibility in the form of trespassing and nuisance suits. The use of common law has become more frequently used as a remedy for contaminated land. The common law remedies include nuisance, trespass, negligence, and strict liability. The liability generally hinges on the relationship of the landowner to the party being held responsible for the contamination.

Trespass

Trespass is an interference with a land owner's interest in the exclusive possession of the property. To be considered trespass via contamination, the substance must intentionally enter the land by either direct placement or with the knowledge that it will flow onto another's land. For example, you may place a substance on your own land, but if you can expect the substance to flow onto an adjacent land, then it could be trespassing.

Nuisance

A nuisance consists of a substantial and unreasonable interference with the use and enjoyment of another's land and does not necessarily require the entry onto the land. Additionally, nuisance can be created by conduct whether intentional or not. There can also be liability if one fails to exercise due care when using another's land. For example, one may have permission to dispose of waste on another's land; however, due care must be taken to

avoid a nuisance in doing so, or nuisance to adjacent lands. This can include the actions by contractors.

Negligence

Negligence with respect to contamination generally refers to an individual's failure to exercise due care. This generally means that the individual responsible either for the transportation, disposal, or management of the material failed to do his job properly and failed to prevent foreseeable harm. Negligence means failure to use ordinary care, that is, failing to do that which a person of ordinary prudence would have done under the same or similar circumstances or doing that which a person of ordinary prudence would not have done under the same or similar circumstances. Ordinary care means that degree of care that would be used by a person of ordinary prudence under the same or similar circumstances.

Proximate cause means that cause which, in a natural and continuous sequence, produces an event, and without which cause such event would not have occurred. In order to be a proximate cause, the act or omission complained of must be such that a person using ordinary care would have foreseen that the event, or some similar event, might reasonably result therefrom. There may be more than one proximate cause of an event.

Strategies to Limit Liability

Can the potential environmental liabilities and risks be managed? Yes, just as one would take the care to manage safety risk, risk management practices can be used to protect an agency from environmental liability.

There are several strategies that can be used to minimize liability. They include:

- due diligence,
- indemnification, and
- insurance.

These strategies are discussed below.

Due Diligence

Due diligence should involve taking all reasonable measures necessary to minimize liability. Due diligence includes, but is not limited to:

- monitoring the compliance with pertinent environmental regulations,
- record keeping and knowing the potential impacts of using the material, and
- documenting the usage and location of the material and its use, storage, and placement.

Indemnification

Although liability can not be contracted away, there are contractual ways to reduce an agency's portion of payment for cleanup if it occurs. Indemnification agreements are contractual instruments that may be used to reduce future potential cleanup costs. It is important to note that indemnification agreements do not shield an agency from liability, but can provide a basis to recover cleanup cost, if necessary. The agreements can be for a specified amount, an amount defined by the cost of the cleanup, a portion of the cleanup, or the amount of the contract with the supplier. In many instances, suppliers and contractors only enter into indemnification agreements for the amount of the contract.

Insurance

Examining the insurance coverage used by businesses can be complex because there is a wide variety of policies and issues associated with them. However, a common way for businesses to protect themselves from liabilities is through insurance policies. (These are not used by departments of transportation, but by private businesses and contractors.)

The Commercial General Liability (CGL) insurance policy is relied on by most businesses to provide coverage for claims arising out of the insured operations, premises, and products for bodily injury and property damage, plus the defense of those claims. However, as a result of many costly claims resulting from cleanups, CGL policies now usually contain a pollution exclusion, and claims arising from the release, spill, or discovery of contamination are not included under a business's CGL policy.

There are separate policies known as Pollution Legal Liability (PLL) insurance. These specialty policies are designed to provide coverage for off-site third party bodily injury and property damage caused by environmental impairment that results from either sudden, or not sudden pollution incident.

There is also Contractor Pollution Liability (CPL) to address exclusions in the CGL policies for contractors as a stop-gap measure for contractors. CPL coverage is used to cover specific pollution liability, defense coverage, and cleanup costs for conditions arising from the contractor's described operations. PLL and CPL insurance can provide limited protection to suppliers, handlers, or contractors involved in the use of contaminated materials in construction application. Determining the insurance coverage of suppliers and contractors should be part of the due diligence process.

In conclusion, liability arises from two major sources: environmental health and safety regulations originating from statutory law; and nuisance, trespass, and personal injury liability originating from common law. The future obligation resulting from regulatory liability generally takes the form of potential cleanup costs, and future obligations from common law take the form of damages from suits.

Environmental Site Assessments

Environmental site assessments are designed to identify environmental hazards. ESAs do not typically screen for environmental considerations and categories prescribed in the National Environmental Policy Act. A NEPA style environmental assessment has a different purpose and therefore different guidelines.

The environmental site assessment process has three general phases of work:

- A Phase I ESA is typically a **qualitative** investigation using only visual observations and review of existing information to recognize potential hazards.
- A Phase II ESA is a **quantitative** investigation where samples are collected to further define or characterize suspected environmental hazards or risks.
- A Phase III ESA uses the results of Phase I and II investigations to develop management and/or corrective actions that address the environmental hazards known to exist at the site.

Phase I Assessments

Phase I assessments are usually performed to screen a property for potential environmental hazards prior to transfer or development. A Phase I should be conducted on all property transfers, acquisitions, property management, and/or construction projects.

For the purposes of this manual, only the Phase I ESA will be discussed because it is the most commonly performed level of environmental assessment. It is also important to note that there are sometimes different names for a Phase I ESA. For example, TxDOT refers to a Phase I ESA as the "Initial Site Assessment." Other organizations may refer to them as "Level One Site Assessment." Regardless of the name, all Phase I ESAs have the same basic content and format. For specific requirements of a Phase I ESA, contact the sponsoring agency for the latest format and content requirements.

For projects at small urban and rural transit providers contact your TxDOT District Environmental Coordinator and Public Transportation Coordinator. Also, be sure to use experienced environmental professionals to perform the assessment. A list of pre-qualified environmental firms is available from TxDOT.

Initial Site Assessment Report

The basic Initial Site Assessment report may vary in length and complexity depending on the site. In many instances, Phase I initial site assessments are presented as a form, checklist, or brief report. For large or more complex sites, a Phase I may include extensive historical and regulatory reviews and sampling data. Initial site assessments are used as a screening tool to determine if further detailed assessment may be needed. The site location and condition determine the level of analysis that is required. If the initial site assessment is going to be performed by a consultant or contractor, be sure to agree on a detailed scope of work before the assessment begins.

Regardless of the site and its complexity, environmental site assessments should be performed by environmental professionals trained to recognize potential environmental hazards.

A Phase I ESA report usually includes the following sections:

- cover page, disclaimer, table of contents;

- executive summary, introduction, scope of services;
- site description, site history, site environmental history;
- review of regulatory agency information and records search;
- findings of the site inspection;
- review of surrounding properties;
- summary of findings and conclusions;
- recommendations;
- maps and figures;
- ownership history documentation (chain-of -title);
- aerial photographs and site inspection photographs;
- list of contacts and references;
- information on suspected environmental hazards;
- relevant material safety data sheets, operational information, or site records;
and
- environmental compliance documentation of the site or facility.

Site Assessment Standards

The American Society of Testing and Materials has published standards for conducting Phase I site assessments. These include ASTM E-1527-94: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," and E 1528-97: "Standard Practice for Environmental Site Assessments: Transaction Screen Process." Most Phase I assessments are based around these standards. For transit projects in Texas, project managers should refer to guidelines from TxDOT, FTA, and FHWA.

TxDOT Requirements for Initial Site Assessments

For TxDOT and transportation projects the initial site assessment should include at a minimum:

- a review of the project design, right-of-way, and/or site requirements;

- a review of existing and previous land use;
- a review of regulatory agency databases and files;
- a project site visit and surrounding area field survey;
- interviews with persons knowledgeable about the site; and
- a determination if further investigation is needed, or action is required to resolve environmental risks discovered in the assessment.

Determining Project Requirements

An examination and review of the project requirements should be performed to evaluate the potential for encountering potentially hazardous material or contamination. This may include demolition and construction plans, property and/or right-of-way being acquired to determine the project's "footprint" and how the proposed activities may encounter environmental hazards now and in the future. Establishing the project requirements will determine how much inquiry and investigation is needed for each component of the site assessment.

Existing and Previous Land Use

The purpose of reviewing existing and previous land use is to identify uses and/or occupants of the site that may have caused an environmental hazard or contamination. The review of land uses should also include adjacent properties that may have had releases or contamination that could migrate onto the subject site. Property uses should be identified from the present back to its first development and use. Future land use plans should also be considered. Land uses can be reviewed using:

- aerial photographs;
- city zoning and land use maps, certificate of occupancy records, and tax records;
- fire insurance maps, street directories, and city directories;
- USGS topographic maps;
- USDA Soils Conservation Surveys; and
- land titles and deed records.

Regulatory Agency Review

The purpose of reviewing regulatory agency files is to identify recorded incidents of contamination, spills, or facilities with potential for contamination or violations. The review should include activities on adjacent sites. Information from local, state, and federal agencies should be reviewed. Many of these databases are available on-line through EPA or TNRCC websites. Typically, the review will include the following:

- National Priorities List for 1 mile radius,
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) for 0.5 miles radius,
- RCRA Treatment Storage and Disposal Facilities (TSDF) for 1 mile radius,
- RCRA generators for project limits and adjacent properties,
- Texas Superfund Sites for 1 mile radius,
- Leaking Petroleum Storage Tank (LPST) Sites and Registered PSTs for 0.5 mile radius,
- Municipal Solid Waste Landfills for 0.5 mile radius, and
- Emergency Response Notification System (ERNS) for project limits.

Additional inquiry and review of agency files on specific facilities may be required to determine the extent and potential risks presented by the known or registered sites.

Site Reconnaissance

In addition to reviewing information from regulatory databases, an on-site reconnaissance should be conducted to identify suspected risks. The site walk-through should visually identify the presence of contamination or hazardous structures that could affect project development. The assessment should also include an on-site visit and “windshield” survey of the surrounding area. A photographic record should be made to document conditions at the time of the on-site visit.

Interviews

Interviews should be conducted with persons who are knowledgeable about the site and the adjacent areas to determine the nature and extent of suspected hazards. The interviews

should include property owners, operators, residents, and employees. Interviews should also be conducted with appropriate local regulatory agencies, fire officials, and inspectors.

Determining the Need for Additional Investigation, Action, or Coordination

Based on the information collected and reviewed during the assessment, a determination should be made if further investigation or action is needed. All Phase I initial site assessments should include a recommendation either for no additional action or investigation, or specifically identify what actions should be taken. The assessment findings and report should become part of the project development record just as any other plans or specifications. If additional investigations, actions, or considerations are needed, they should be specific in nature as to how they would affect the project or site development. These recommendations may include directions on avoiding certain areas of suspected contamination, or recommendation for additional subsurface investigation to determine the nature and extent of contamination.

Resources

The American Society of Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments are available online at <http://www.astm.org/>

TNRCC Remediation Division: <http://www.tnrcc.state.tx.us/permitting/remed/ihw.html>

TNRCC Innocent Owner/Operator Program:
<http://www.tnrcc.state.tx.us/permitting/remed/vcp/iop.html>

TNRCC Glossary of Terms:
<http://www.tnrcc.state.tx.us/permitting/remed/superfund/glossary.html>

Checklist

- ☐ Do you know what your environmental liabilities are?
- ☐ If you are you planning to purchase property for a facility, did you perform an environmental site assessment?

- ☐ Did the assessment find any potential risk or liability from contamination, asbestos, or lead paint?

Glossary

ASTM - The American Society of Testing and Materials

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CERCLIS - CERCLA Information System

EPA - United States Environmental Protection Agency

EPCRA - Emergency Planning and Community Right-To-Know Act

ESA - environmental site assessment

LEPC - Local Emergency Planning Committee

NCDB - National Compliance Database (for TSCA, FIFRA, EPCRA)

NPL - National Priorities List

NRC - National Response Center

RCRIS - RCRA Information System

SERCs - State Emergency Response Commissions

TRIS - Toxic Release Inventory System

TCRIS - Toxic Chemical Release Inventory System

TSDF - Treatment, Storage, and Disposal Facility

Chapter 10 – Contamination and Cleanups

Issues and Regulatory Intent

Other chapters have addressed preventing pollution and managing waste. When spills or accidental releases occur, the resulting contamination must be addressed. The requirements that govern spills and the cleanup of contamination are very complicated. If you know you have a contamination problem at your facility, you should seek guidance from both the TNRCC and an experienced environmental firm.

For minor spills and accidents, the best remedy is to be prepared and have a response plan. Minor spills can often be addressed simply as a matter of housekeeping. However, allowing minor leaks and/or spills to go unaddressed or unattended can have serious long-term consequences.

The rules concerning spills and cleanups are summarized later in this chapter.

Small Spills

Taking the appropriate level of action in response to a spill, or “release,” may save you thousands of dollars and a mountain of paperwork. Too little of a response and the incident could endanger human health, safety, and the environment. Too much of a response and you waste thousands of dollars on unnecessary cleanup crews, and you could create a media circus on your parking lot.

What should Transit managers do?

- Be prepared! Use common sense! Take advantage of workshops and training offered by the TNRCC.
- Have a “spill-kit” readily available at locations where spills are most likely to occur. Make sure the spill-kit is stocked appropriately with absorbents and containment devices.
- Have a response plan for what to do and who to contact.
- Have your staff trained and familiar with the plan.

- Don't over-react – Don't under-react!

Can I take care of a small spill myself?

Yes, most minor spills can be handled with on-site personnel and equipment, but you will need a few basic materials such as a spill-kit and trained personnel. Also refer to Chapter 3 – Petroleum Storage Tanks for more information. Typically, if it's a small spill that stays on-site, does not contaminate soil or water, can be completely cleaned up in a few hours, and causes no harm to people or wildlife, then it's OK to clean it up yourself without reporting.

When in doubt, call the regional TNRCC office for guidance. But, in general, it is OK to clean it up yourself and not report it if **ALL** of the following apply:

- It is less than 20 gallons of a petroleum product.
- It is contained to a small area completely within your facility.
- It is not a highly toxic substance.
- It can be easily contained with on-site equipment materials and personnel.
- It can be readily cleaned up and put in a container, or several large trash bags or trash cans.
- It does not enter a water way, the storm sewer, or potentially affect surface waters.
- It does not threaten or endanger human health or safety.
- It does not threaten livestock, wildlife, or habitat.
- It does not affect anyone or anything else.

What should I do for small spills?

- Identify the substance. Know what you are dealing with and take appropriate action to protect human health and safety.
- Stop the source of the spill or release.
- Contain the spill. Keep it from spreading.
- Clean up all visible contamination or product spilled using absorbents. (It is usually NOT a good idea to use water to wash it away.)

- Manage all the waste from the spill properly. In many cases, small amounts (2-3 trash bags or less than 30 gallons) of petroleum type spill waste can be discarded with your trash or spent sorbents. For larger amounts of spill waste contact your local TNRCC office for guidance or a special waste code.

You should call the fire department if there is a danger to human safety or a potential for fire or property damage. Contact your local fire department before spills occur to find out what actions are required in your local jurisdictions.

When should I call the TNRCC about a spill?

The TNRCC requires notification for releases or spills into the environment “as soon as possible, but no later than 24 hours after the occurrence.” You should contact the TNRCC if **ANY** of the following apply:

- It is more than 25 gallons of a petroleum product, including releases from underground storage tank systems.
- It is **not** contained to a small area completely within your facility.
- It leaves or spreads from your facility.
- It is a highly toxic substance.
- It **cannot** be easily contained with on-site equipment materials and personnel.
- It **cannot** be readily cleaned up (in a matter of hours, not days).
- It enters a water way, creek, drainage ditch, the storm sewer, or potentially affects “waters of the state.”
- It threatens or endangers human health or safety.
- It threatens or endangers livestock, wildlife, or habitat.

Level of Cleanup

Risk Reduction Rules for Spills

The objective of each spill cleanup should be to return the site to pre-spill or background conditions. When this is not feasible, responsible parties are directed to the TNRCC Risk Reduction Rules (See 30 TAC Chapter 335 Subchapter A for health-based cleanup standards and guidance on deed recordation).

Cleanup Standards for Total Petroleum Hydrocarbons (TPH)

Cleanup standards are not established for TPH due to lack of toxicity values. Concentrations of constituents of concern (COC), for which toxicity values have been established (e.g., benzene), should be determined and compared to health-based standards. In instances where no compounds are present for which toxicity values have not been established, an acceptable level of residual TPH should be based upon the following:

- No liquid product should be left in the soil.
- The hydrocarbons should not generate vapors, which exceed 25 percent of the lower explosive limit, measured with a properly functioning and calibrated combustible gas indicator.
- The TPH should not harm vegetation, especially where the vegetation is a food source to animals.
- The TPH concentrations should not create an odor nuisance.
- Site monitoring data should indicate that TPH levels are stable or declining.

Frequently Asked Questions

Is the person who discovers contamination required to report to TNRCC?

The person responsible for the spill is the person who is legally required to report it. The “person responsible” is presumed to be the owner or operator of a facility or vessel from which a spill occurs or any other person who suffers, causes, or allows a spill; however, any private citizen complaining of pollution may choose to remain anonymous.

If the spill is obviously endangering the public health or welfare through traffic hazard, explosion, fire, noxious gas, water contamination, or other means, immediate notification to the local fire department, law enforcement authority, or health authority, and then the TNRCC, is appropriate.

When are third parties (property owners, cities, counties, lenders) responsible for spill cleanup?

“Person responsible” or “responsible person” means:

- the owner, operator, or demise charterer of a vessel from which a spill emanates;
- the owner or operator of a facility from which a spill emanates; and
- any other person who causes, suffers, allows, or permits a spill or discharge.

When responsible parties are unknown, unable, or unwilling, State funds may be authorized and expended in cleanup. It is mandated by the Texas Water Code that the TNRCC must seek reimbursement of cleanup costs from any and all responsible persons identified above.

What if the spiller is unable or unwilling to respond?

The TNRCC OSC may determine that the responsible person is unable or unwilling to respond, or that the response undertaken is inadequate. In these cases, the TNRCC may activate state remediation funds and take over the response action.

Can the spiller be penalized for failing to respond?

The TNRCC will pursue cost recovery actions for state-funded cleanups and it may pursue administrative, civil, and criminal penalties. Section 26.268 of the Texas Water Code provides exemptions from penalties for spills if the responsible party reports the spill promptly in compliance with Section 26.039, takes reasonable precautions to minimize impacts, and provides reasonable efforts to cleanup, unless there is no negligence involved in the occurrence of the spill.

Does the TNRCC currently require a spill contingency plan?

Currently, the only TNRCC requirement for contingency planning is 30 TAC 335.112 and 30 TAC 335.152, applicable to permitted and interim hazardous waste storage, treatment, and disposal facilities. Most small urban and rural transit properties are not required to have a formal contingency plan, but should be prepared for minor incidents as a matter of good housekeeping and facility management.

Does the TNRCC license emergency response contractors or cleanup product vendors?

No, licensing or registration by the TNRCC is not required of companies or individuals providing spill cleanup and emergency response services or products. The emergency response area does maintain a resource list of contractors and vendors.

Spill Rules and Laws

The TNRCC adopted spill response rules (30 TAC Sections 327.1-327.5) regarding spill prevention and control that became effective May 23, 1996. The rules define what a reportable spill is and outline what is to be reported to the state by telephone, to local government, and affected persons or property owners. Also, response requirements are described along with the follow-up written report requirement:

- 30 TAC 335 Subchapter E.113 and 30 TAC 335 Subchapter F.153 require that interim and permitted facilities report emergency situations to TNRCC.
- Reporting of releases from underground storage tanks is required under 30 TAC 334.72.

Statutory Requirements

- Section 26.039 of the Texas Water Code requires that accidental spills and releases be reported to TNRCC.
- Section 26.262 of the Texas Water Code states that "it is the policy of the state to prevent the spill or discharge of hazardous substances into the waters in the state and to cause the removal of such spills and discharges without undue delay."
- Section 26.039 and Subchapter G requires reporting discharges, spills, and releases to the TNRCC "which cause or may cause pollution of water in the state." A telephone report is required by the person responsible "as soon as possible and not later than 24 hours after the occurrence." Reporting is required and reportable spills are defined in agency rules (see 30 Texas Administrative Code [TAC] Chapter 327). Additionally, there are state requirements that facilities report any major upset condition (see 30 TAC Chapter 101).
- Section 101.6 with such being defined as an unscheduled occurrence or excursion of a process or operation that results in an emission of air contaminants that contravenes the Texas Clean Air Act (Texas Health and Safety Code, Chapter 382, Vernon Supp. 1990) and is beyond immediate control, or a release that is initiated to protect life in the immediate or adjacent

areas (see 30 TAC Chapter 101, Section 101.6). Reporting of releases from underground storage tanks is required under 30 TAC 334.72. The TNRCC encourages calls directly to a regional office during regular business hours (8:00 AM to 5:00 PM) or to the agency's 24-hour number — 512/463-7727 or 512/239-2507.

After hours, an answering service receives incoming calls, and then an operator/paging system notifies TNRCC staff of release reports. The TNRCC may also be called directly by persons other than the person responsible for a discharge, spill, or release when the caller wants to provide or obtain information regarding an environmental emergency. The 1-800 number is a system established under the authority of the Oil Spill Prevention and Response Act of 1991 with calls received at the Department of Public Safety, and then the telephone reports are relayed to the TNRCC or another agency with jurisdiction, such as the Texas General Land Office or Texas Railroad Commission.

Reporting Spills to EPA

Hopefully, small urban or rural transit operators will never need to report a spill to the EPA. Reportable spills, as defined by federal regulations (40 Code of Federal Regulations [CFR] 302.6), must be immediately reported by the responsible person to the National Response Center (NRC) duty officer in Washington D.C. The toll-free number for the NRC is 1-800-424-8802. All notices of spills received at the NRC are relayed immediately by telephone to the predesignated federal on-scene coordinator (OSC) for the affected area.

As a member of the State Emergency Response Commission, the TNRCC is responsible for taking the regulated community's accidental release reports (Superfund Amendments and Reauthorization Act [SARA], Title III, Section 304 [40 CFR 355.40]). The TNRCC also receives continuous release reports for releases that are stable in quantity and rate (Federal Register, July 24, 1990).

Information to Report to TNRCC

When making a telephone report of a spill or pollution complaint, it will be helpful if the following information is available:

- the date and time of the spill or release;
- the identity or chemical name of material released or spilled as well as whether the substance is an extremely hazardous substance;

- an estimate of the quantity of material released or spilled and the time or duration of the event;
- the exact location of the spill, including the name of the waters involved or threatened, and/or other medium or media affected by the release or spill;
- the source of the release or spill;
- the name, address, and telephone number of the party in charge of, or responsible for, the facility, vessel, or activity associated with the release or spill;
- the extent of actual and potential water pollution;
- the party at the release or spill site, who is in charge of operations at the site and the telephone number of this party;
- the steps being taken or proposed to contain and clean up the released or spilled material and any precautions taken to minimize impacts including evacuation;
- the extent of injuries, if any; and
- any known or anticipated health risks associated with the incident and, where appropriate, advice regarding medical attention necessary for exposed individuals; possible hazards to the environment (air, soil, water, wildlife, etc.). This assessment may include references to accepted chemical databases, material safety data sheets, and health advisories. Estimated or measured concentrations of a contaminant may be requested by the TNRCC for the state's hazard assessment; and, identity of governmental and/or private sector representatives responding on-scene.

Technical Assistance

TNRCC staff provide monitoring and oversight of responsible party spill cleanup activities under the authority of the Texas Water Code. TNRCC staff can provide technical and regulatory assistance in the management of wastes and other residual materials that result from spills which includes management of industrial and municipal solid wastes and hazardous wastes. Technical assistance is provided in other related areas such as spill notifications, contingency plan issues, cleanup levels, and in-state funded cleanups.

The TNRCC is the state's co-primary member of the Federal Region VI Regional Response Team, and it represents the state in matters related to inland spills or releases of oil, and inland or coastal releases of hazardous substances or other pollutants.

Spill Waste Management

TNRCC regional emergency responders and emergency response staff in the central office provide technical assistance regarding the management of spill residues and the provision of generator identification numbers and waste codes.

Consult your regional OSC or call Emergency Response (ER) Central at 512/239-2508 for assistance on the following procedures.

Industrial vs. Nonindustrial Spill Waste

Industrial solid waste is defined in 30 TAC 335.1 as "solid waste resulting from or incidental to any process of industry or manufacturing, or mining or agricultural operation, which may include hazardous waste as defined in this section." In nearly all situations, small urban and rural transit providers are "non-industrial."

Residues of spills that occur during transportation and spills that are otherwise not resulting from or incidental to an industrial process and do not generate a hazardous waste (as defined in 40 CFR 261) do not meet the definition of industrial solid wastes. However, the disposal facilities authorized to receive contaminated media by the TNRCC may require that spill wastes be classified, documented, and transported like industrial wastes prior to acceptance.

Use of TNRCC Waste Code

An eight-digit TNRCC waste code may be required prior to management in a facility authorized by the TNRCC to accept contaminated media (depending upon the characteristics of the waste). The TNRCC waste classification system is based on self classification of waste by the generator. The method for assigning the eight-digit waste code is explained in 30 TAC Chapter 335 Subchapter R.

Unique Sequence Code

Industrial and hazardous spill wastes require a unique four-digit sequence code (as part of the eight-digit waste code) used for computerized tracking at the TNRCC. This sequence code is assigned by Emergency Response Unit (ERU) staff for spill-related wastes. To obtain the sequence code, complete TNRCC Form 0757, Request for Texas Waste Code for

Shipment of Class 1,2,3, and EPA Hazardous Waste. The request may be faxed to 512/239-2527. This form is also used to request temporary state and EPA generator ID numbers (discussed below).

Generic Sequence Code

Generators of spill wastes that are not industrial and not hazardous, may self assign the generic sequence code "SPIL" as part of the eight-digit waste code.

Manifest Required

Shipment of Class 1 industrial and hazardous spill wastes to an offsite waste management facility must be documented through use of a Uniform Hazardous Waste Manifest (except for conditionally exempt small quantity generators). These forms and additional information regarding this requirement may be obtained by calling the TNRCC Waste Evaluation Section at 512/239-6840.

Temporary EPA Generator ID Numbers

A 12-digit EPA generator ID number is required on manifests for shipment of hazardous wastes. Generators of hazardous spill wastes may request a site-specific temporary EPA generator ID number from ERU using TNRCC Form 0757 (described above).

State Generator ID Number

Either a unique five-digit state generator ID number or a generic, temporary state generator ID number must be shown on the manifest. Generators of spill wastes may request a site-specific temporary state generator ID number from ERU using TNRCC Form 0757 (described above).

Management of Spill Waste as Nonindustrial Waste

Options available for nonindustrial spill waste (other than disposal) include treatment at a facility registered by the TNRCC Petroleum Storage Tank Program to receive contaminated media, onsite treatment, reuse, reclamation, and recycling. Proposals for the appropriate

management of spill residues, which are not industrial wastes, must receive the approval of the TNRCC regional office on-scene coordinator or ERU central office staff.

Use of a Petroleum Storage Tank Division Registered Facility

The TNRCC PST Division has entered into an agreement with the ERU to allow certain contaminated soils from spills and releases to be accepted and treated at soil treatment and recycling facilities regulated under 30 TAC Chapter 334 Subchapter K. Petroleum-contaminated soils that are nonindustrial and not hazardous from spills and releases (and that are basically the same as contaminated soils from PST-regulated remediations), may be considered for these facilities. TNRCC approval is given on a case-by-case basis and requires specific approval of both the waste stream and PST-registered facility. Contact the ERU staff at 512/239-2508 for assistance.

Texas Risk Reduction Program

The Texas Risk Reduction Program (TRRP) rules adopted September 2, 1999, establish a uniform set of risk-based, performance-oriented technical standards to guide cleanups at affected properties. TRRP is administered by the TNRCC's Office of Waste Management Program.

The rule defines the requirements for assessing the extent of the environmental problem, establishing human health and environmentally protective concentration levels (PCLs), and cleaning up or controlling the environmental problem. Complying with the TRRP rule involves the following four steps:

1. Determine if TRRP is applicable to your situation and site conditions.
2. Conduct affected property assessment.
3. Establish protective concentration levels and select remedy standard.
4. Implement remedy standard.

In each of these steps you may be required to file related notices, reports, or both. (See www.tnrcc.state.tx.us/permitting/trrp.htm.)

TRRP sets out guidelines to assess the extent of any chemical of concern (COC) in soil and groundwater. The land and groundwater affected by the COCs must be classified in accordance with criteria so that proper cleanup levels and cleanup requirements can be established. For example, more stringent cleanup levels are applied to residential properties than commercial/industrial properties. Groundwater is also classified so that the areas with sensitive groundwater have stricter cleanup requirements.

COCs that are found in concentrations higher than the calculated PCLs must be cleaned up or controlled under one of the two remedy standards established in the rule. A tiered process is used to establish both human health and ecological protective concentration levels (PCLs): Tier 1, 2, and 3. This tiered process for human health PCLs is patterned after the tiered process of the *ASTM Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites* ES-1739-95.

The first tier is based on conservative, generic models that do not account for site-specific factors. Tier 1 is the simplest and cheapest method to set protective concentration levels, but generally results in the most stringent levels. Tier 3 uses the most sophisticated methods and is likely the most expensive, but it factors in the most site-specific considerations. Because of this, it makes sense to start with Tier 1 and progress to Tier 2 or 3 only when warranted.

The Texas Risk Reduction Program most commonly regulates the cleanup and management of hazardous wastes and substances referred to as chemicals of concern, which are released into the environment from regulated commercial and industrial facilities.

TRRP sets out new requirements for how to determine if releases or closures pose unacceptable risk. If they do, the rule defines requirements for what must be done to reduce the risk, prevent pollution, or protect natural resources.

The TRRP applies to releases of COCs into the environment that are produced, stored, or disposed at commercial and industrial facilities or operations. Beginning September 1, 2003, TRRP will also apply to the Petroleum Storage Tank Program.

TNRCC Emergency Response

To report an environmental **emergency, discharge, spill, or air release**, call:

TNRCC Regional Offices, Monday through Friday 8:00 AM to 5:00 PM:

- Region 1, Amarillo: 806/353-9251
- Region 2, Lubbock: 806/796-7092
- Region 3, Abilene: 915/698-9674
- Region 4, Arlington: 817/588-5800
- Region 5, Tyler: 903/535-5100
- Region 6, El Paso: 915/834-4949
- Region 7, Midland: 915/570-1359
- Region 8, San Angelo: 915/655-9479
- Region 9, Waco: 254/751-0335
- Region 10, Beaumont: 409/898-3838
- Region 11, Austin: 512/339-2929
- Region 12, Houston: 713/767-3500
- Region 13, San Antonio: 210/490-3096
- Region 14, Corpus Christi: 361/825-3100
- Region 15, Harlingen: 956/425-6010

Or, Texas Natural Resource Conservation Commission at (800) 832-8224 or the 24-hour TNRCC Texas Environmental Release Hotline at (512) 239-2507 or (512) 463-7727.

Internet Resources

TNRCC Emergency Response:

http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

TNRCC Regional Offices: <http://www.tnrcc.state.tx.us/admin/directory/region/reglist.html>

TNRCC Risk Reduction Program: <http://www.tnrcc.state.tx.us/permitting/trrp.htm>

TNRCC Petroleum Storage Tanks: <http://www.tnrcc.state.tx.us/permitting/remed/rpr/>

Checklist

- ☐ Do you have a spill kit to clean up small spills?
- ☐ Do you have personnel trained to handle small spills?
- ☐ Do you have a plan and contact information (who to call) in case of an emergency?
- ☐ Do you have contaminated soils or groundwater at your facility?
- ☐ If YES, does it require corrective action?
- ☐ Have you performed a cleanup under the Texas Risk Reduction Program?

Chapter 11 - NEPA

Issues and Regulatory Intent

The National Environmental Policy Act (NEPA) affects nearly all aspects of transportation development, including public transportation. In 1969, Congress passed and President Richard Nixon signed into law, the National Environmental Policy Act of 1969. The act, sets forth the basic policy for protection of the environment and accomplished three major goals:

- It set national environmental policy.
- It established a basis for environmental impact statements (EISs).
- It created the Council on Environmental Quality (CEQ).

NEPA requires many government agencies to use an interdisciplinary approach in planning and decision making for actions that impact the environment. It requires an assessment of environmental impacts on human environment and consideration of alternatives and mitigation where feasible. The Council on Environmental Quality (CEQ) developed regulations for the environmental impact assessment process and documentation.

In addition to NEPA, the provisions of other statutes, regulations, and executive orders affect the decision making on federally assisted transportation projects. These mandates, covering air and water quality, historic preservation, parklands protection, habitat preservation, civil rights, and social burdens of transportation investments, are summarized below.

23 Code of Federal Regulations (CFR) 771

The United States Department of Transportation environmental regulations are in 23 CFR 771. These regulations are the basis for surface transportation projects. In general, 23 CFR 771 requires:

- documentation to demonstrate compliance,
- an evaluation of alternatives including the “no-build” alternative,
- public involvement, and
- mitigation when necessary (www.fhwa.dot.gov/).

43 Texas Administrative Code

TxDOT adopted regulations for environmental analysis that mirror USDOT regulations in 23 CFR 771 and contain additional sections for public transportation, aviation, maintenance operations, the Gulf Intracoastal waterway, and The Coastal Coordination Council.

Memoranda of Understanding (MOU)

MOUs are used by TxDOT to reach agreement with other state agencies that have responsibility for protection of the environment or for preservation of historical or social resources. TxDOT has MOUs with Texas Parks and Wildlife (TPW), Texas Historical Commission (THC), and TNRCC.

Natural Resources Protection Compliance

NEPA requires the assessment of human and natural environment for federal actions. The following is a list of federal and state laws, rules, and executive orders that protect the human and natural environment.

Endangered Species Act of 1973 as Amended (15 USC 1531-1543)

The Endangered Species Act (ESA) of 1973 ensures that federal actions (or actions using federal funds) do not jeopardize the existence of any listed endangered or threatened species, or adversely modify or destroy critical habitat of such species. The purpose of the act is to conserve threatened and endangered species and their habitats. Consult with the United States Fish and Wildlife Service (USFWS) for more information.

Migratory Bird Treaty Act 16 USC §703-712

Please check with TxDOT's Environmental Division on the requirements of the Migratory Bird Act Treaty requirements.

Fish and Wildlife Coordination Act of 1958 (16 USC 661-666[C])

The Fish and Wildlife Coordination Act (FWCA) of 1958 requires that federal agencies obtain comments from the USFWS and the state agency responsible for fish and wildlife (TPWD).

This coordination is required whenever a project impacts a stream channel or other body of water.

Farmland Protection Policy Act (FPPA)

The Farmland Protection Policy Act (7 USC 4201 et seq.) is implemented by federal regulations published in 7 CFR 658. The purpose of the act is to prevent unnecessary conversion of farmland.

Coastal Barrier Resources Act (CBRA)

The Coastal Barrier Resources Act outlines requirements to minimize the loss of life and damage to the coastal barrier systems along the Atlantic and Gulf coasts. CBRA identifies coastal areas that will be protected by placing restrictions on the use of federal funds for developmental activities, including federally funded highway projects.

Texas Coastal Management Program (TCMP)

The TCMP is based primarily on the Coastal Coordination Act of 1991 (33 Tex. Natl. Res. Code ann. 201 et. seq.). The TCMP established a Coastal Coordination Council (CCC) headed by the Texas Land Commissioner. The CCC (a multi-agency panel) reviews projects and reviews proposed rules to determine whether or not projects or actions in coastal counties conform to the TCMP.

Rivers and Harbors Act of 1899

The U.S. Army Corps of Engineers (USACE) began regulating activities in navigable waters with the Rivers and Harbors Act of 1899. The act includes waters defined as navigable by the Coast Guard but may also include rivers which were historically navigable or which with modification may be available for future use to transport interstate commerce.

Federal Water Pollution Control Act/Clean Water Act (CWA) of 1972

The CWA (33 USC 1251B1387, as amended) was enacted to maintain and restore the chemical, physical, and biological integrity of the waters of the U.S. The broader jurisdiction

under this law includes not only navigable waters, but most waters of the country and adjacent wetlands.

National Pollutant Discharge Elimination Control System (NPDES) 1990

The purpose of this legislation is to improve the quality of the nation's rivers, lakes, and streams by reducing pollution from nonpoint sources. NPDES requires storm water discharge permits (EPA C Section 402, Water Quality Act of 1987). (See Chapter 6 of this manual.)

National Flood Insurance Act (NFIA) of 1968

The purpose of the NFIA is to provide flood insurance to property owners in flood-prone areas. The National Flood Insurance Program (NFIP) was established to reduce future flood losses through local floodplain management and requires participating cities, counties, or states, to adopt floodplain management ordinances containing certain minimum requirements intended to reduce future flood losses. Federal Emergency Management Agency (FEMA) has jurisdiction.

Executive Order 11988

Executive Order 11988 requires all federal agencies to comply with NFIP criteria. It is the basis for assessment of flood hazards that may be related to highway improvements encroaching on or affecting base flood level.

Executive Memorandum of April 26, 1994

The subject of the Executive Memorandum signed by President Clinton is landscaping on federal projects. In addition, TxDOT issued "Guidance on Environmentally Beneficial Landscaping Practices & NEPA Compliance," dated July 5, 1996. The guidance requires that federal projects be designed to:

- use regionally native plants for landscaping;
- design, use, or promote construction practices that minimize adverse effects on the natural habitat;

- seek to prevent pollution by, among other things, reducing fertilizer and pesticide use; and
- implement water-efficient and runoff reduction practices. (See the TxDOT *Landscape and Aesthetics Manual* for more information.)

Section 404 Regulatory Program

The Council of Environmental Quality (CEQ) established the 404 Regulatory Program making it unlawful to discharge dredged or fill material into waters of the U.S. without first receiving authorization from the U.S. Army Corps of Engineers. The Section 404 Program can issue *Nationwide Permits* and individual *404 permits*.

Cultural/Socio-Economic Resources Protection Compliance

Texas Antiquities Code

The Texas Antiquities Code and its implementing rules require that TxDOT notify the THC when proposed projects have the potential to affect cultural resources that may qualify as State Archeological Landmarks. For more information on the Texas Antiquities Code, see the TxDOT *Project Development Policy and Practice Manual*.

National Historic Preservation Act of 1966

The NHPA (Section 106) requires federally funded and permitted projects to consider historic properties and to coordinate these effects with the Texas Historical Commission (THC) and interested parties, and to avoid or mitigate any adverse effects on historic properties. Historic properties are any buildings, structures, objects, or archeological sites eligible for the National Register of Historic Place (National Register). (See <http://www.achp.gov/regs.html>.)

FHWA has executed a programmatic agreement with THC, the Advisory Council on Historic Preservation, and TxDOT, setting for TxDOT's Section 106 responsibilities. FHWA has executed a separate programmatic agreement with the THC, the Advisory Council on Historic Preservation, and TxDOT for enhancement projects. Each programmatic agreement requires that TxDOT complete the Section 106 coordination on behalf of FHWA.

U.S. Department of Transportation Act of 1966

Section 4(f) of the USDOT Act requires documentation when right-of-way will be taken from publicly owned parks, recreation areas, wildlife or waterfowl refuges, publicly or privately owned historic sites, and archeological sites that merit preservation in place. For federally funded projects, the documentation must prove that there is no prudent or feasible alternative to the proposed action and that the project includes all possible planning to minimize harm to the resource.

Section 4(f) evaluations require TxDOT to prepare documentation that describes a wide range of project alternatives that would avoid taking the resource and includes a plan to minimize harm to any affected historic properties.

Transportation Equity Act for the 21st Century (TEA-21)

The Intermodal Surface Transportation Act of 1991 had a strong focus on transportation planning and the environment. TEA-21 continues that focus, requiring the integration of certain aspects of transportation planning into the environmental process. TEA-21 calls for a proactive public involvement process that provides complete information, timely public notice, full public access to key decisions, and early and continuing public involvement in the development of an intermodal transportation system. For more information on TEA-21, see the TxDOT *Project Development Policy and Practice Manual*.

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 assures that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination on the basis of race, color, national origin, religion, age, sex, or disability. TxDOT certifies all project-related public hearings for compliance with Title VI. For a copy, see http://www.fhwa.dot.gov/environment/title_vi.htm.

Uniform Relocation Assistance and Real Properties Acquisitions Act (URARPA)

The URARPA of 1970, amended in 1987, mandates that property owners receive compensation for properties acquired for transportation projects and requires non-

discriminatory right-of-way policies with regard to appraisals and acquisitions of homes and businesses and residential relocations.

Executive Order 12898 – Environmental Justice

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) requires that federally funded projects identify and address disproportionately high and adverse health and environmental impacts to minority populations and low-income populations (See <http://www.epa.gov/docs/oejpubs/execordr.txt.html>.)

Native American Graves Protection and Repatriation Act (NAGPRA)

The NAGPRA requires that agencies and museums receiving federal funds must identify tribal affiliations for Native American remains and return those human remains to the interested groups. (See <http://www.cast.uark.edu/products/NAGPRA/nagpra.dat/lgm003.html>.)

Executive Order 13007 (EO 13007)

EO 13007 states that agencies shall attempt to avoid damaging “Indian sacred sites” on federal and Indian lands. EO 13007 is concerned with adverse effects to locations of “traditional cultural properties” (TCP) and the need to maintain accessibility by Indian religious practitioners to TCPs.

Air Quality

This Clean Air Act (CAA) (42 USC 7401-7626) established permanent federal support for air pollution research and provided federal assistance to states for development of pollution control agencies. The act has been amended several times. The 1990 CAAA established specific criteria that must be met for air quality nonattainment areas.

Resource Conservation and Recovery Act

RCRA governs the management of non-hazardous (solid) waste, hazardous waste, and underground storage tanks. Specifically, the RCRA program regulates solid waste recycling

and disposal; federal procurement of products containing recycled materials; waste minimization; hazardous waste generators and transporters; and hazardous waste treatment, storage and disposal facilities (TSDFs). The assessment should seek to avoid liability by identifying known or possible hazardous waste and contamination.

Comprehensive Environmental Response, Compensation Liability Act

CERCLA of 1980, commonly referred to as "Superfund," provides EPA authority to respond to releases or threatened releases of hazardous substances, pollutants, or contaminants that may endanger human health or the environment. CERCLA requires reporting of releases, establishes the liability of persons responsible for releases of hazardous substances, and established a trust fund to provide for cleanup when no responsible party can be identified.

Texas Water Code

Under Chapter 26 of the Texas Water Code, Texas Hazardous Substances Spill Prevention and Control Act, a "person responsible" or "responsible person" for discharges or spills of hazardous substances includes owner or operators of either a vessel or of a facility from which a spill emanates, and any other person who causes, suffers, allows, or permits a spill or discharge. The current property owner is ultimately responsible for contamination leaving the property or affecting groundwater.

How NEPA Affects Transit Development

The NEPA process is the overarching umbrella under which the mandates and considerations of all laws affecting transit project development are considered. Although, many types of small transit projects can be undertaken with minimal environmental review because of their limited scope, the NEPA process and good planning go hand-in-hand and should be considered for all projects.

Major proposed actions involving substantial new construction with off-site or long-term impacts usually merit a detailed review, done with

Early planning and coordination with the TxDOT district coordinators, the TxDOT Environmental Division, and other project partners are essential to navigating the environmental clearance process successfully.

appropriate public involvement, and documented in an environmental document. The level of environmental review and analysis should be determined through joint decision making with the project partners. When planning a transit project, consult with your TxDOT district coordinators to determine the appropriate level of environmental analysis.

Two areas of assessment are more likely to affect transit projects at small urban and rural properties:

- community impacts, and
- historic resources.

Community Impacts

For transit projects at small urban and rural properties, particular attention should be given to community impacts. Community impacts require analysis of the social and economic resources in a community and how they are affected by the project. See FHWA's "Community Impact Assessment: A Quick Reference for Transportation" (FHWA-PD-96-036).

The community impact assessment may include considering land use changes, economic and business effects, mobility and access issues, public safety, displacements, and other transportation modes. Be sure to include the positive community effects a project may have and encourage public involvement and participation.

Historic Resources

Transit projects must comply with review and mitigation requirements set forth by the National Historic Preservation Act and The Texas Antiquities Code. Therefore, coordination with the Texas Historical Commission (THC) should begin early if you suspect the project may involve buildings more than 50 years old. If buildings, structures, or objects 50 years of age or more are found within the project's area of potential effects, a professional historian may need to determine if the property or objects are eligible for preservation. If no historic resources 50 years of age or older are found within the project area, the THC still has 15 days to concur. Contact the TxDOT district environmental coordinator and/or the environmental division to ensure compliance with THC requirements.

Environmental Clearance Process

Early planning and coordination are the keys to successfully navigating the environmental clearance process. Entire manuals have been prepared on how to navigate the environmental clearance process and prepare environmental documents. Experience counts!

This section provides an overview of the basic process relating to small urban and rural transit providers. For a complete description of the process, and assessment and documentation requirements, please contact your TxDOT district public transportation coordinator, or the Environmental Division at TxDOT.

The environmental clearance process begins with determining the project scope, funding, purpose and need, and anticipating environmental issues of concern. In many cases, a preliminary screening checklist will help determine what level of environmental assessment and documentation will be needed. Coordination with the TXDOT environmental division and district environmental coordinators will make navigating the process easier.

Most actions and/or projects undertaken by small urban and rural transit providers should be categorical exclusions. If you have a major project that will require an environmental assessment, begin your planning early and develop a project coordinating team.

Environmental Documents

Documentation of the environmental assessment process is required for nearly all actions. The documents provide a description of the social, economic, and environmental impacts of a project. There are four basic categories of documents. Each successive document builds upon the previous one and becomes more detailed. The level of environmental analysis and documentation generally increases for larger and more complex projects. See Figure 11-1 for an overview of the environmental documentation process.

All projects should begin with a statement of purpose and need.

Purpose and Need Statement

One of the most important steps is preparing a purpose and need statement that (P&N) accurately describes the project or action. The purpose and need statement guides the project or action through the process. A good P&N sails along. A poorly written statement stumbles through the process.

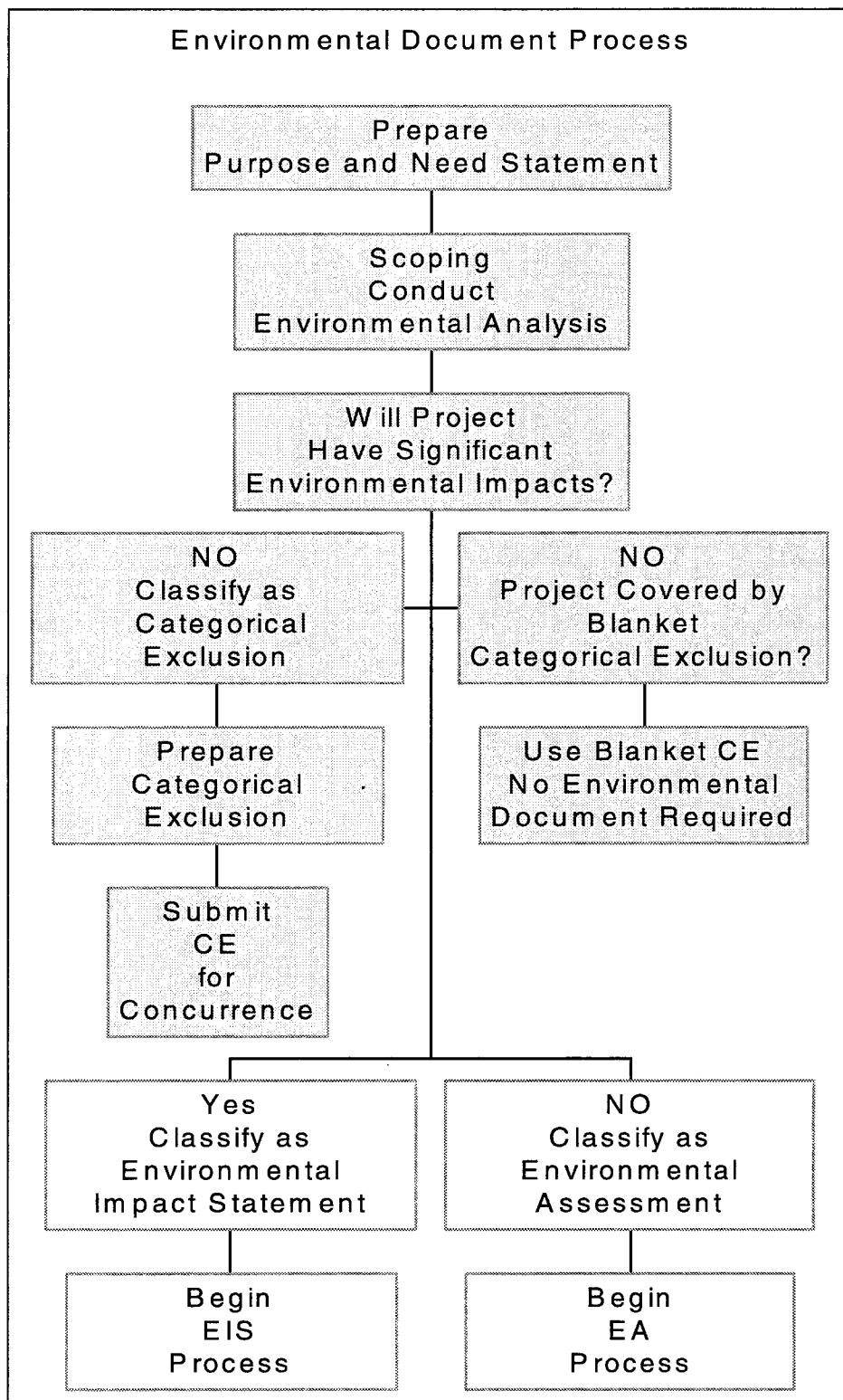


Figure 11-1. NEPA Documentation Process

Categorical Exclusions (CE)

A categorical exclusion is a document for projects that have minimal social, economic, or environmental impact. These projects typically involve maintenance, improvement, or routine actions and projects that do not significantly affect the environment. CEs constitute the vast majority of projects or actions that would be encountered for small urban or rural transit providers. Public transportation CEs could be used for projects such as construction of a new bus storage or maintenance facility in areas with existing transportation or similar land use activity. Most CMAQ projects qualify for CEs.

Some types of CEs require little or no documentation. These are known as ***Blanket CEs*** and include projects or activities such as installing small passenger facilities, landscaping, traffic signals, bus rehabilitation, facility and vehicle upgrades, or ridesharing.

Programmatic CEs can be used for projects meeting a specific criteria where TxDOT and USDOT have agreements with the resource agencies. These type of projects must conform to the State Implementation Plan (SIP), be consistent with the Coastal Zone Management Plan, and not impact any federally listed endangered species or habitat.

The CE document should include and describe:

- the proposed action;
- alternatives;
- right-of-way requirements, costs, and funding sources;
- characteristics of the project area with a site map and location;
- potential impacts;
- a description of mitigation, if any; and
- public and/or agency comments including supporting comments from local entities.

A summary of TxDOT's project development process and environmental clearance process is provided in Figure 11-2.

Project Development Process

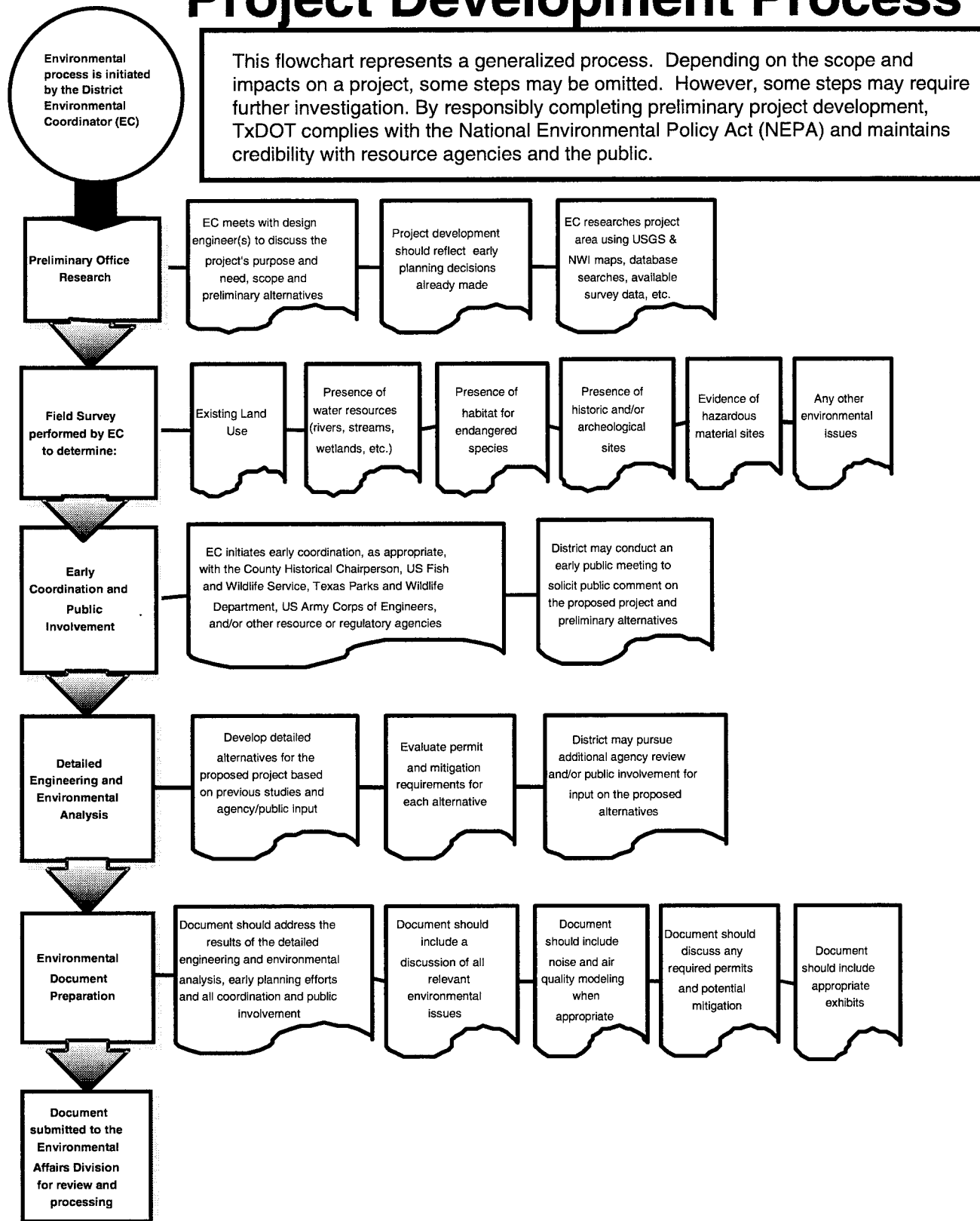


Figure 11-2. TxDOT Project Development Process

Resources

NEPA NET at <http://ceq.eh.doe.gov/nepa/nepanet.htm>

FTA Office of Planning at: <http://www.fta.dot.gov/>

Council on Environmental Quality: <http://www.whitehouse.gov/ceq/>

FHWA Office of Planning, Environment, and Real Estate:

<http://www.fhwa.dot.gov/environment/genrlenv.htm>

Community Impact Assessment Guide:

<http://www.fhwa.dot.gov/////environment//nepa/cia.htm>

Checklist

- ☐ Are you planning to build, construct, or expand service in such a way as to require an environmental assessment (EA) under the National Environmental Policy Act (NEPA)?
- ☐ Are buildings, structures, or objects 50 years of age or more found within the project area? If YES, it could be a potentially historic site.
- ☐ Does your planned activity qualify for a categorical exclusion (CE)?
- ☐ Did you include environmental justice considerations and community impacts by identifying adverse human health, environmental, or interrelated social and economic effects of the activity on minority populations and low-income populations?

Federal Transit Administration – Information Required for Probable Categorical Exclusion

- ☐ DETAILED PROJECT DESCRIPTION
- ☐ LOCATION (INCLUDING ADDRESS): Attach a site map or diagram, which identifies the land uses and resources on the site and the adjacent or nearby land uses and resources. This is used to determine the probability of impact on sensitive receptors (such as schools, hospitals, residences) and on protected resources.
- ☐ METROPOLITAN PLANNING AND AIR QUALITY CONFORMITY: Is the proposed project "included" in the current adopted MPO plan, either explicitly or in a grouping of projects or activities? What is the conformity status of that plan? Is the proposed project, or are appropriate phases of the project, included in the TIP? What is the conformity status of the TIP?
- ☐ ZONING: Description of zoning, if applicable, and consistency with proposed use.
- ☐ TRAFFIC IMPACTS: Describe potential traffic impacts; including whether the existing roadways have adequate capacity to handle increased bus and other vehicular traffic.
- ☐ CO HOT SPOTS: If there are serious traffic impacts at any affected intersection, and if the area is nonattainment for CO, demonstrate that CO hot spots will not result.
- ☐ HISTORIC RESOURCES: Describe any cultural, historic, or archaeological resource that is located in the immediate vicinity of the proposed project and the impact of the project on the resource.
- ☐ NOISE: Compare the distance between the center of the proposed project and the nearest noise receptor to the screening distance for this

type of project in FTA's guidelines. If the screening distance is not achieved, attach a "General Noise Assessment" with conclusions.

- ☐ VIBRATION: If the proposed project involves new or relocated steel tracks, compare the distance between the center of the proposed project and the nearest vibration receptor to the screening distance for this type of project in FTA's guidelines. If the screening distance is not achieved, attach a "General Vibration Assessment" with conclusions.
- ☐ ACQUISITIONS AND RELOCATIONS REQUIRED: Describe land acquisitions and displacements of residences and businesses.
- ☐ HAZARDOUS MATERIALS: If real property is to be acquired, has a Phase I site assessment for contaminated soil and groundwater been performed? If a Phase II site assessment is recommended, has it been performed? What steps will be taken to ensure that the community in which the project is located is protected from contamination during construction and operation of the project? State the results of consultation with the cognizant State agency regarding the proposed remediation?
- ☐ COMMUNITY DISRUPTION AND ENVIRONMENTAL JUSTICE: Provide a socio-economic profile of the affected community. Describe the impacts of the proposed project on the community. Identify any community resources that would be affected and the nature of the effect.
- ☐ USE OF PUBLIC PARKLAND AND RECREATION AREAS: Indicate parks and recreational areas on the site map. If the activities and purposes of these resources will be affected by the proposed project, state how.
- ☐ IMPACTS ON WETLANDS: Show potential wetlands on the site map. Describe the project's impact on on-site and adjacent wetlands.
- ☐ FLOODPLAIN IMPACTS: Is the proposed project located within the 100-year floodplain? If so, address possible flooding of the proposed project

site and flooding induced by proposed project due to its taking of floodplain capacity.

- ☐ IMPACTS ON WATER QUALITY NAVIGABLE WATERWAYS AND COASTAL ZONES: If any of these are implicated, provide detailed analysis.
- ☐ IMPACTS ON ECOLOGICALLY-SENSITIVE AREAS AND ENDANGERED SPECIES: Describe any natural areas (woodlands, prairies, wetlands, rivers, lakes, streams, designated wildlife or waterfowl refuges, and geological formations) on or near the proposed project area. If present, state the results of consultation with the state department of natural resources on the impacts to these natural areas and on threatened and endangered fauna and flora that may be affected.
- ☐ IMPACTS ON SAFETY AND SECURITY: Describe the measures that would need to be taken to provide for the safe and secure operation of the project after its construction.
- ☐ IMPACTS CAUSED BY CONSTRUCTION: Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, air and water quality, safety and security, and disruptions of traffic and access to property.

APPENDIX A - Directory of Contacts

TxDOT District Environmental Contacts

ABILENE (ABL) (8)	(915) 676-6802
..... Fax (915) 676-6902	
Bill Leach	(915) 676-6822
AMARILLO (AMA) (4)	(806) 356-3200
..... Fax (806) 356-3263	
Cheryl Grimes Luther	(806) 356-3249
ATLANTA (ATL) (19)	(903) 799-1229
..... Fax (903) 799-1313	
Susan McClain	(903) 799-1311
Franklin Allen	(903) 799-1303
John Callison	(903) 799-1302
Bobby Jones	(903) 799-1307
AUSTIN (AUS) (14)	(512) 832-7000
..... Fax (512) 832-7157	
Mike Walker	(512) 832-7168
Gary Lantrip	(512) 832-7103
Cal Newnam	(512) 832-7179
Shirley Stone Nichols	(512) 832-7108
BEAUMONT (BMT) (20)	(409) 898-5756
..... Fax (409) 896-0265	
Paul Smith	(409) 898-5792
John Ritter	(409) 898-5742
BROWNWOOD (BWD) (23)	(915) 646-2591
..... Fax (915) 643-0306	
Mike Belvin	(915) 643-0446
BRYAN (BRY) (17)	(979) 778-9600
..... Fax (979) 778-9702	
Mike Carpenter	(979) 778-9766
Cynthia Fuhrer	(979) 778-9690
Lee Ellison	(979) 778-9690
CHILDRESS (CHS) (25)	(940) 937-7100
..... Fax (940) 937-7154	
Dwayne Culpepper	(940) 937-7157
W. O. Gragson	(940) 937-7178
CORPUS CHRISTI (CRP) (16)	(361) 808-2300
..... Fax (361) 808-2407	
Paula Sales	(361) 808-2329
Steven Ashley	(361) 808-2379
Mary Perez	(361) 808-2374
David Potter	(361) 808-2376
Gina Salazar	(361) 808-2262
DALLAS (DAL) (18)	(214) 320-6100
..... Fax (214) 320-4470, Alt. Fax (214) 320-6625	
Dan Perge	(214) 320-6283
Stan Hall	(214) 320-6155
Joy Carter	(214) 320-6248
John Debnier	(214) 320-6282
Jay McCurley	(214) 320-6207
Tim Nesbitt	(214) 320-6245
Bruce Nolley	(214) 320-6156
George Reeves	(214) 320-6158
Mike Renfrow	(214) 320-4472
David Stauder	(214) 320-4466
Erik Walsh	(214) 320-4468

EL PASO (ELP) (24)	(915)-774-4200
..... Fax (915) 774-4370	
Judy Ramsey	(915) 774-4322
Mary Telles-Goins	(915) 774-4324
Noemi Horn	(915) 774-4323
Carmen Ramos	(915) 774-4234
FORT WORTH (FTW) (2)	(817) 370-6500
..... Fax (817) 370-6759	
Judy Anderson	(817) 370-6710
Burt Clifton	(817) 370-6542
Robert Perales	(817) 370-6755
Sonja Whitehead	(817) 370-6567
Robert Allen	(817) 370-6533
Jamye Sawey	(817) 370-6862
HOUSTON (HOU) (12)	(713) 802-5000
..... Fax (713) 802-5896	
Robin Sterry	(713) 802-5248
Stanley W. Cooper (Asst. Supervisor)	(713) 802-5244
Greta Blankenship	(713) 802-5267
Curt Kamman	(713) 802-5245
David Hoth	(713) 802-5262
Joe Liggio	(713) 802-5408
Michel Kayyal	(713) 802-5252
Lance Olenius	(713) 802-5271
Susan Patterson	(713) 802-5247
Jim Roscher	(713) 802-5246
Bob Stelchek	(713) 802-5269
Chris Wrbas	(713) 802-5249
LAREDO (LRD) (22)	(956) 712-7400
..... Fax (956) 712-7402	
Melisa Montemayor	(956) 712-7445
Adrian Gause	(956) 712-7742
LUBBOCK (LBB) (5)	(806) 748-4411
..... Fax (806) 748-4380	
Davis Melton	(806) 748-4416
Matt Evans	(806) 748-4438
LUFKIN (LFK) (11)	(936) 634-4433
..... Fax (936) 633-4378 Alt. Fax (936) 633-4373	
John Miller	(936) 633-4302
Craig Rollins	(936) 633-4425
ODESSA (ODA) (6)	(915) 332-0501
..... Fax (915) 498-4760	
Rick Hopkins	(915) 498-4759
PARIS (PAR) (1)	(903) 737-9300
..... Fax (903) 737-9289	
Chris Brook	(903) 737-9288
PHARR (PHR) (21)	(956) 702-6100
..... Fax (956) 702-6110	
Velma Garcia	(956) 702-6148
Mark Iglesias	(956) 702-6150
Amy Rodriguez	(956) 702-6181
Juan Alcazar	(956) 702-6182

SAN ANGELO (SJT) (7).....(915) 944-1501
.....Fax (915) 947-9244
Nancy Fisher(915) 947-9232
Kimberly Dybdahl(915) 947-9322

SAN ANTONIO (SAT) (15)(210) 615-1110
.....Fax (210) 615-6142
Barrlynn West.....(210) 615-5840
John D. Bryant(210) 615-5838
Janice Gieber(210) 615-5816

TYLER (TYL) (10).....(903) 510-9100
.....Fax (903) 510-9138
Jay Tullos(903) 510-9153
Lance Marshall(903) 510-9107
Christine Crosby.....(903) 510-9159
Randy Hopmann.....(903) 510-9296
Wes McClure.....(903) 510-9224

WACO (WAC) (9).....(254) 867-2738
.....Fax (254) 867-2890
Mike Rhodes.....(254) 867-2739
John Moravec.....(254) 867-2757
David Jayroe(254) 867-2861
Alisa Polansky (IH 35 Office).....(254) 754-8087

WICHITA FALLS (WFS) (3)(940) 720-7700
.....Fax (940) 720-7848
Jeff Warren(940) 720-7745

YOAKUM (YKM) (13).....(361) 293-4423
.....Fax (361) 293-4303
Bryan Ellis.....(361) 293-4323
Alan Sharp(361) 293-4371

TxDOT Environmental Affairs Division

Mailing Address:..... 125 E.11 St., 78701

Physical Address: 118 E. Riverside, 78704

All numbers are area code 512-416-xxxx

ADMINISTRATION

Dianna Noble, P.E., (DD)	2734
Ken Bohuslav, P.E., (DDD)	2605
Judy LeViseur (DD/DDO Admin)	2734
Donnie Nolte (HR Mgr.)	2761
Jan Woolverton (HR Officer)	2570
Lorie Ledesma-Ramirez (Auto. Mgr.)	2578
Mark Rodriguez (Automation Help)	2541
Courtney Dumas (ETS Contract)	2774
Sean Ayala (GIS)	2662

COMMUNICATIONS SECTION

Jean Beeman, Section Mgr. & PI Officer	3171
Roland Limon (Admin)	2691
Richard Goldsmith (Web/ENVision Editor)	2743
Greg Quinn (Photography)	2616
Jim Dobbins (Writer)	3006

PROJECT MANAGEMENT

Ken Bohuslav, P.E., Section Mgr.	2605
Pat Tiger (Admin)	3002
Melissa Neeley (Planner)	2620
Mike Shearer (Noise)	2622
Wayne Young (Air)	2890

Field Area I

Tom Bruechert, Supervisor	2735
Julie Perales.	2612
Jenise Walton	2763

Field Area II

Elvia Gonzalez, Supervisor	2610
Jo Jarrell	2889
Michelle Skinner	2644

Field Area III

Dean Tesmer, Supervisor	2649
Craig Dunning	2646
Kyle Ford	2710

NATURAL RESOURCES MANAGEMENT (NRM)

Jeff Casbeer, Section Director	3014
Roland Limon (Admin)	2691
Tom Remaley P.E., Permit Assist. Officer.	2607

Biological Resources Management

Kenneth Holmes, Supervisor	2786
Karen Clary	2767
Bill Hood	2623
Sue McClenahan	3209

Water Resources Management

Norm King, Supervisor	2705
Rick Costa, P.E.	2697
Melissa Gabriel	2681
Dennis Nielsen	2721

HAZARDOUS MATERIAL MNGT. SECTION

David Boswell, P.E., Section Director	3007
Carol Caldwell (Admin)	2606

Operations & Maintenance

Don Hill, P.E., Supervisor	3009
Daniel Benson	2692
Rodney Concienne	3012
Sheran Wright	2753

Project Development

Jim Barta, P.E., Supervisor	3008
Terry Dempsey	3010
Lynn Lloyd	3232
Doug Mack	2634

CULTURAL RESOURCES MANAGEMENT

Ann Irwin	2626
Susie Watson (Admin)	2617

Archeological Studies

Nancy Kenmotsu, Supervisor	2631
Jim Abbott	2758
Allen Bettis	2747
Jon Budd	2640
Lain Ellis	2109
Chuy Gonzalez	2641
Barbara Hickman	2637
Al McGraw	2633
Tim Meade	2583
Dennis Price	2636

Historical Studies

Lisa Hart	2628
Cherise Bell	2619
Daniel Harris	2133
Bruce Jensen	2657
Beth Reed	2611
Mario Sanchez	2770

TxDOT Public Transportation Coordinators

Abilene
Dale Rector
915-676-6811
915-676-6902(fax)

Amarillo
Bill Harvey
806-356-3246
806-356-3297(fax)

Atlanta
Sonya Hudson
903-799-1310
903-799-1313(fax)

Austin
Ed Collins
512-832-7041
512-832-7080(fax)

Beaumont
Lynn Babin
409-898-5785
409-898-0265(fax)

Brownwood
Tammy Cope
915-643-0448
915-643-0306(fax)

Bryan
Sarah Chamberland
979-778-9755
979-778-9709(fax)

Childress
Tonya Cummings
940-937-7164
940-937-7229(fax)

Corpus Christi
Stephen Ndimma
361-808-2351
361-808-2407(fax)

Dallas
Anne Polk
214-320-6153
214-320-4470(fax)

El Paso
Mary Telles-Goins
915-774-4324
915-774-4263(fax)

Ft. Worth
Mary Hobson
817-370-6534
817-370-6759(fax)

Houston
Lucy Lapaglia
713-802-5315
713-802-5894(fax)

Laredo
Olmar Cantu
956-712-7484
956-712-7402(fax)

Lubbock
Lynn Castle
806-748-4480
806-748-4380(fax)

Lufkin
Michael Offield
936-633-4303
936-633-4378(fax)

Odessa
Alfredo Gonzales
915-498-4766
915-489-4684(fax)

Paris
Audrey Andrews
903-737-9225
903-737-9289(fax)

Pharr
Gracie Cantu
956-702-6147
956-702-6110(fax)

San Angelo
Tommy Robinson
915-947-9264
915-947-9244(fax)

San Antonio
Carolyn Goodall
210-615-5924
210-615-6296(fax)

Tyler
Darla Dike
903-510-9114
903-510-9138(fax)

Waco
Gary Rushing
254-867-2746
254-867-2738(fax)

Wichita Falls
Carolyn Askins
940-720-7712
940-720-7848(fax)

Yoakum
Wanda Carter-Dyer
361-293-4395
361-293-4372(fax)

TNRCC Regional Offices

The TNRCC does not support a general-access, toll-free telephone number. However, below is a list of 1-800 and 1-888 numbers maintained for specific uses. Please note that calls cannot be transferred to other areas of the agency from these connections.

Information Lines:

1-800-447-2827

Local Government Assistance: Hot line for local governments to obtain information, advice, and assistance from the TNRCC.

1-800-687-4040

Public Assistance on Permitting: One-stop calling for the general public to inquire about permitting activity within the TNRCC.

1-800-447-2827

Small Business Assistance: Hot line for small businesses to request environmental information and how to comply with environmental regulations.

TNRCC District Offices

Region 1, Amarillo

Regional Director: Brad Jones
Executive Assistant: Lanita Tidmore
3918 Canyon Dr.
Amarillo, TX 79109-4933
Main Line: 806/353-9251
Fax: 806/358-9545

Perryton Special Project Office
Judy Headlee
511 South Main
Perryton, TX 79070
806/435-8059
Fax: 806/434-8443
Section Managers:
Air/Pantex - Rich Lee
Water/Waste - Eddy Vance
Fax: 806/358-9545

Region 2, Lubbock

Regional Director: Jim Estes
Executive Assistant: Verna Talkmitt
4630 50th St., Ste. 600
Lubbock, TX 79414-3520
Main Line: 806/796-7092
Fax: 806/796-7107
Section Managers
Water/Waste - Joe Bragg
Air/Waste - James Jagers

Region 3, Abilene

Regional Director: Winona Henry
Executive Assistant: Lynn McConnell
1977 Industrial Blvd.
Abilene, TX 79602-7833
Main Line: 915/698-9674
Fax: 915/692-5869
Section Managers:
Water - Charles Keith
Waste/Air - Mike Burch

Region 4, Arlington

Regional Director: Frank Espino
Assistant Regional Director: Robert Ross
Executive Assistant: Jere Martin
1101 East Arkansas Lane
Arlington, TX 76010-6499

Main Line: 817/588-5800
Fax (Administration): 817/274-4445
Fax (Mail Room): 817/795-2519
Fax (Air Program): 817/795-2941
Fax (Water Program): 817/795-2946
Fax (Waste Program): 817/795-2985
Section Managers
Air - Tony Walker
Water - Sid Slocum
Waste - Sam Barrett

Region 5, Tyler

Regional Director: Leroy Biggers
Executive Assistant: Karen Stone
2916 Teague Dr.
Tyler, TX 75701-3756
Main Line: 903/535-5100
Fax: 903/595-1562
Section Managers
Air - Charles Murray
Water - Noel Luper
Waste - Michael Brashear

Region 6, El Paso

Regional Director: Archie Clouse
Administrative Assistant: Debbie Alarilla
401 E. Franklin Ave., Ste. 560
El Paso, TX 79901-1206
Main Line: 915/834-4949
Fax: 915/834-4940
Section Managers
Air - Kevin Smith
Water/Waste - Terry McMillan

Region 7, Midland

Regional Director: Jed Barker
Admin. Assistant: Sylvia Robertson
3300 North A St., Bldg. 4, Ste. 107
Midland, TX 79705-5404
Main Line: 915/570-1359
Fax: 915/570-4795
Section Managers:
Air - Jesse Spencer
Water/Waste - Michael Edmiston

Region 8, San Angelo

Regional Director: Ricky Anderson
Exec. Assistant: Rosalinda Rodriguez

622 S. Oakes, Ste. K
San Angelo, TX 76903-7013
Main Line: 915/655-9479
Fax: 915/658-5431
Section Manager
Air/Water/Waste - Brent Wade

Region 9, Waco

Regional Director: Anna Dunbar
Executive Assistant: Karen Garbett
6801 Sanger Ave., Ste. 2500
Waco, TX 76710-7826
Main Line: 254/751-0335
Fax: 254/772-9241
Section Managers
Air - Salal Tahiri
Water - Kyle Headley
Waste - vacant

Region 10, Beaumont

Regional Director: Vic Fair
3870 Eastex Fwy.
Beaumont, TX 77703-1892
Main Line: 409/898-3838
Fax: 409/892-2119
Section Managers
Air - Marion Everhart
Water - Georgiana Volz
Waste - Keith Anderson

Region 11, Austin

Regional Director: Patty Reeh
1921 Cedar Bend Dr., Ste. 150
Austin, TX 78758-5336
Main Line: 512/339-2929
Fax: 512/339-3795
Section Managers
Water - Elston Johnson
Waste/Air - Barry Kalda

Region 12, Houston

Regional Dir.: Leonard H. Spearman, Jr.
Asst. Regional Dir. Don A. Thompson
Administrative Assistant: Zoila Iglesias
5425 Polk Ave., Ste. H
Houston, TX 77023-1486
Main Line: 713/767-3500
Fax (Administration): 713/767-3520
Fax (Air Program): 713/767-3761
Fax (Water Program): 713/767-3691
Fax (Waste Program): 713/767-3646

Section Managers
Air - Arturo Blanco
Water - Donna G. Phillips
Waste - Marsha Hill

Region 13, San Antonio

Regional Director: Richard Garcia
Executive Assistant: Janet Maitland
14250 Judson Rd.
San Antonio, TX 78233-4480
Main Line: 210/490-3096
Fax: 210/545-4329
Section Managers
Air - Leo Butler
Water - Bobby Caldwell
Waste - Henry Karnei
Watermaster - Albert Segovia
210/490-3096
1-800-733-2733
Watermaster Fax: 210/545-4329

Region 14, Corpus Christi

Regional Director: Carlton (Buddy) Stanley
Administrative Assistant: Linda Evans
6300 Ocean Dr., Ste. 1200
Corpus Christi, TX 78412-5503
Main Line: 361/825-3100
Fax: 361/825-3101
Section Managers
Air - Jim Bowman
Water - Mickey Garza
Waste - Russell Lewis

Region 15, Harlingen

Regional Director: Tony Franco
Executive Assistant: Diana Doñes
1804 West Jefferson Ave.
Harlingen, TX 78550-5247
Main Line: 956/425-6010
Fax: 956/412-5059
Watermaster: Carlos Rubinstein
956/430-6056
Fax: 956/430-6052
Section Managers
Water - Arturo Rodriguez
Waste/Air - Lorinda Gardner

Region 16, Laredo

Regional Director: Gerardo J. Pinzon
Admin. Assistant: Carmen Ramirez

1403 Seymour, Ste. 2
Laredo, TX 78040-8752
Main Line: 956/791-6611
Fax: 956/791-6716

APPENDIX B – Environmental Compliance Checklist (101 Questions on Compliance)

Environmental Management

- ☐ Do you have an environmental policy statement?
- ☐ Do you have a designated manager to coordinate environmental compliance?
- ☐ Have you assessed your significant environmental risks?
- ☐ Do you understand the environmental laws and rules that apply to you?
- ☐ Does operational staff have environmental responsibilities?
- ☐ Does management allocate resources to environmental management?
- ☐ Do employees understand how their work can affect the environment?
- ☐ Do you have a system for internal and external communications?
- ☐ Do you use a manual for procedures on environmental compliance?
- ☐ Do you involve suppliers and contractors in environmental management?
- ☐ Do you have plans to protect the environment in emergencies?
- ☐ Do you measure your emissions and waste?
- ☐ Do you use a procedure to monitor compliance?
- ☐ Do you have a procedure to address and correct handling noncompliance?
- ☐ Do you have a recordkeeping system?
- ☐ Have you examined all your organization's operations that affect compliance?

Air Regulations

- ☐ Do you use solvents in a cleaning machine other than a 2-gallon or smaller container? If YES: Have you registered with the EPA?
- ☐ Does your business service vehicle air conditioners? If YES: Are technicians certified and equipment approved by the EPA?
- ☐ Is recovered refrigerant sent to an EPA-approved reclaiming facility?
- ☐ If you are in a nonattainment county does your fuel system meet Stage I and Stage II requirements?
- ☐ If required, does your business submit an emissions inventory report to the TNRCC?
- ☐ Does your business avoid being a nuisance (noise emissions, odors)?

Texas Clean Fleets

- ☐ Do you operate in any of the following counties included in Texas Clean Fleets (TCF) Program:

Nonattainment Area	Counties Included
Houston-Galveston Area	Harris, Galveston, Brazoria, Chambers, Fort Bend, Montgomery, Liberty, and Waller
Dallas-Fort Worth Area	Dallas, Tarrant, Denton, and Collin
El Paso Area	El Paso

- ☐ If so, do you have a fleet greater than 25 vehicles?
- ☐ If so, were vehicle purchases after September 1998 LEVs?

Petroleum Storage Tanks

- ☐ Do any of your aboveground tanks exceed 1100 gallons? If YES: are they registered?
- ☐ Are all regulated USTs and ASTs registered with the TNRCC?

- ☐ Is a spill prevention control and countermeasure (SPCC) required for your aboveground tanks?
- ☐ Do all regulated USTs meet corrosion protection, spill containment, overfill prevention, leak detection, and other TNRCC requirements?

Waste Regulations—General Requirements

- ☐ Have you performed a hazardous waste determination on all solid waste streams?
- ☐ Do you maintain documentation to support all hazardous waste determinations?
- ☐ Have you assigned a proper waste code identification number to each hazardous waste stream?
- ☐ Do you have monthly waste records to support your claimed generator status either as conditionally exempt small quantity generator (CESQG) or small quantity generator (SQG)?
- ☐ Is your facility registered with the TNRCC?
- ☐ What is your TNRCC Registration No.: _____
- ☐ What is your EPA ID No.: _____
- ☐ Is your Notice of Registration (NOR) up-to-date, including all waste streams and waste management units?
- ☐ Have you submitted an annual waste summary each year?
- ☐ Do you fulfill all other record-keeping and reporting requirements for your generator status?
- ☐ Do you comply with appropriate accumulation quantity requirements?
- ☐ Is hazardous waste stored in container storage areas at your business?
- ☐ If YES: Are waste containers compatible with their contents, labeled, dated, and sealed?

- ☐ Are containers inspected weekly for leakage and daily for deterioration?
- ☐ Have all on-site hazardous waste recycling activities been registered with the TNRCC?

Waste Regulations—Transportation and Disposal Requirements

- ☐ Do you use a TNRCC-registered transporter?
- ☐ Do you use a TNRCC-registered disposal facility?
- ☐ Do you manifest all hazardous waste that is transported?
- ☐ Do you have copies of manifests (green and white) for the past 3 years?

Used Oil Regulations

- ☐ Are all containers labeled with the words “USED OIL”?
- ☐ Are any hazardous fluids mixed with the used oil? If YES: Is this mixture managed as a hazardous waste?
- ☐ Do you collect used oil from the public?
- ☐ If YES: Are you registered with the TNRCC as a used oil collection center?
- ☐ Do you use a TNRCC-registered transporter to remove used oil? (Not necessary if transporting one 55-gallon drum or less.)

Used Oil Filter Regulations

- ☐ Are all containers labeled with the words “USED OIL FILTERS” (in 3-inch letters), the business owner’s name, and business phone number?
- ☐ Are filters drained before recycling?
- ☐ Do you collect used oil filters from the public?
- ☐ If YES: Are you registered with the TNRCC as a used oil filter collection center?

- ☐ Do you store six or fewer 55-gallon drums of filters at any time?
- ☐ Do you use a TNRCC-registered transporter to remove the filters? (Not necessary if transporting two 55-gallon drums or less.)
- ☐ Do you use a bill of lading when having the filters transported?
- ☐ Do you keep used oil filters separate from other types of filters (e.g., fuel)?

Lead-Acid Battery Regulations

- ☐ Are all used batteries sent for recycling or reclamation?
- ☐ If you reclaim batteries on-site, has the TNRCC been notified?

Tire Regulations

- ☐ Do you generate, transport, or retail either used or scrap tires?
- ☐ If YES: Are you registered with the TNRCC?
- ☐ Do you meet the appropriate storage requirements? Are scrap tires transported by a TNRCC-registered transporter?
- ☐ Do you manifest scrap tires for disposal?
- ☐ If YES: Do you receive a return copy of the manifest?

Antifreeze Regulations

- ☐ Do you recycle antifreeze? If NO: Do you have approval from the local POTW to discharge antifreeze into the sewer system?
- ☐ Is used antifreeze mixed with any hazardous waste? If YES: Is that mixture managed as a hazardous waste?

Pollution Prevention Checklist

- ☐ Is your business subject to the Waste Reduction Policy Act (WRPA)? (Excludes conditionally exempt small-quantity generators)
- ☐ If YES: Has a Source Reduction Waste and Minimization (SRWM) Plan been developed?
- ☐ Has an executive summary been submitted to the TNRCC?

Stormwater / TPDES

- ☐ Are you regulated under Phase I of the stormwater rules?
- ☐ Are you regulated under Phase II of the stormwater rules?
- ☐ Do you have a small municipal separate storm sewer system (MS4)?
- ☐ Is your small MS4 designated as regulated?
- ☐ Are you in an urbanized area as defined by the Bureau of Census? (An urbanized area is a central place(s) and urban fringe that together have a population of at least 50,000 and an overall population density of at least 1,000 people per square mile.)
- ☐ Is your facility part of a stormwater management area?
- ☐ Have you implemented best management practices to control polluted runoff from your facility?

Toxic Substances

- ☐ Does your building contain asbestos? If YES, have you had an inspection by a licensed asbestos inspector?
- ☐ Is it left undisturbed, away from potential human exposure?
- ☐ Do you have a management plan?

- ☐ Does your business comply with all requirements of the Toxics Release Inventory?
- ☐ Does your business have Material Safety Data Sheets or other information sheets for all chemicals used in the past 24 months?
- ☐ Is there any evidence of spills? If YES: Has your business taken appropriate reporting and abatement actions?
- ☐ Does your business comply with all requirements of the Toxics Release Inventory, The Texas Hazard Communication Act, and Texas Community Right-to-Know Act?
- ☐ Does your business have material safety data sheets or other information sheets for all chemicals used in the past 24 months?

CERCLA and Environmental Liabilities

- ☐ Do you know what your environmental liabilities are?
- ☐ If you are planning to purchase property for a facility, did you perform an environmental site assessment?
- ☐ Did the assessment find any potential risk or liability from contamination, asbestos, or lead paint?

Cleanups and Contamination

- ☐ Do you have a spill kit to clean up small spills?
- ☐ Do you have personnel trained to handle small spills?
- ☐ Do you have a plan and contact information (who to call) in case of an emergency?
- ☐ Do you have contaminated soils or groundwater at your facility?
- ☐ If YES: Does it require corrective action?

- ☐ Have you performed a cleanup under the Texas Risk Reduction Program?

NEPA

- ☐ Are you planning to build, construct, or expand service in such a way as to require an environmental assessment (EA) under the National Environmental Policy Act (NEPA)?
- ☐ Are buildings, structures, or objects 50 years of age or more found within the project area? If yes, could it be a potentially historic site?
- ☐ Does your planned activity qualify for a categorical exclusion (CE)?
- ☐ Did you include environmental justice considerations and community impacts by identifying adverse human health, environmental, or interrelated social and economic effects of the activity on minority populations and low-income populations?