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16. Abstract The transit industry is challenged by numerous inter-related environmental compliance requirements. At small urban and rural transit systems, these challenges are often met with limited resources and expertise. Environmental compliance is just one of the many responsibilities a transit manager must meet. The purpose in developing an environmental compliance manual for small urban and rural transit systems in Texas is to provide a tool for transit managers to overcome these challenges and meet environmental requirements. The manual is organized into eleven different areas of environmental compliance targeted to issues related to transit operations.					
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**DEVELOPMENT OF AN ENVIRONMENTAL COMPLIANCE MANUAL
FOR SMALL URBAN AND RURAL TRANSIT SYSTEMS IN TEXAS**

by

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Research Project Title: Develop an Environmental Compliance Manual
for Small Urban and Rural Transit Systems in Texas

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CHAPTER ONE – INTRODUCTION AND BACKGROUND

Numerous inter-related environmental compliance requirements challenge the transit industry. At small urban and rural public transit systems, these compliance challenges are often met with limited resources and limited expertise. Environmental compliance is just one of the many responsibilities a transit manager must meet. The purpose in developing an environmental compliance manual for small urban and rural transit systems in Texas is to provide a tool for transit managers to overcome these challenges and meet environmental requirements.

BACKGROUND

The Texas Department of Transportation undertook this research project to provide assistance to small urban and rural transit managers with environmental compliance. With a very broad and complicated subject matter to address, the challenge in developing the manual was to identify environmental compliance areas that most concerned transit managers and TxDOT and to compile and communicate the information in a concise format.

Researchers conducted a review of environmental compliance issues to identify relevant federal and state requirements, guidelines, rules, and codes. The regulatory review focused primarily on the rules and guidance from the United States Environmental Protection Agency (EPA) and the Texas Natural Resource Conservation Commission (TNRCC), but also included rules and guidance from the Texas Department of Health (TDH) and the Texas Department of Transportation.

In developing the environmental compliance manual for small urban and rural transit systems, environmental requirements were placed into categories generally consistent with transit operations. The environmental topics and emphasis areas were derived from previous transit research and experiences of small urban and rural transit providers. The manual has a greater focus on areas of compliance that have been identified as more problematic. The environmental compliance areas covered in the manual are divided into the following chapters¹:

¹ Environmental Compliance Manual For Small Urban and Rural Transit Systems In Texas. Unpublished research product.

- Chapter 1 – Introduction and Overview
- Chapter 2 - Air Quality: Bus Emissions, Fuels and Fleets
- Chapter 3 – Petroleum Storage Tanks
- Chapter 4 – Waste Management
- Chapter 5 – Pollution Prevention
- Chapter 6 – Stormwater
- Chapter 7 – Toxic Substances
- Chapter 8 – Employees and Compliance
- Chapter 9 – CERCLA Liability and Site Assessments
- Chapter 10 – Contamination and Clean-ups
- Chapter 11 – National Environmental Policy Act (NEPA)

Research Objectives

The overall objective of the research project was to develop an environmental compliance manual aimed at small urban transit managers and transit facility operators. More specifically, the researchers focused on the following objectives:

- identify applicable environmental rules and requirements at typical transit operations,
- provide emphasis in those areas where compliance is of greater concern,
- organize and communicate the requirements effectively,
- provide a quick checklist that would assess overall compliance and prompt further inquiry,
- provide information contacts and resources for more detailed information, and
- provide definitions and key terms.

Guiding Information Resources

The researchers reviewed previous research and publications on environmental regulations affecting public transportation to identify applicable areas of environmental compliance. The researchers also reviewed manuals and guidance and policy documents from

metropolitan transit systems looking for more specific areas of compliance most likely to affect transit operations.

Due to the changing nature of many environmental requirements, the majority of the information used in the manual was obtained from environmental resource agency websites. Agency websites provide the most timely information on the environmental subject areas, especially concerning the changing nature of air quality requirements. The principal environmental regulatory agencies used as resources were the TNRCC, EPA, and TDH.

Limited Survey and Interviews of Small Urban and Rural Transit Managers

A limited telephone and fax survey of small urban and rural transit managers was performed to identify environmental compliance areas of concern. The surveys asked nine transit managers to rank on a scale of one to four the importance and relevance of 11 compliance areas. The responses to these surveys and interviews indicate that environmental compliance issues vary widely depending on the circumstances of each transit operation.

The importance and relevance of the various environmental issues were evenly distributed among six of the compliance areas, indicating that many different environmental compliance areas were important and relevant. Of the nine transit managers responding, the issue most often cited as important and relevant was waste management. The second most commonly cited environmental area of concern was air quality and associated fuel, fleet, and vehicle emission requirements. Concerns on stormwater management and pollution prevention followed as important issues. Other issues cited included the National Environmental Policy Act issues, Comprehensive Environmental Response and Liability Act (CERCLA) and environmental site assessments, and pollution cleanup activities, but with less importance and relevance.

A review of Federal Transit Authority (FTA) circulars and transportation resources identified many of the same issues. Researchers also identified areas of future concern as new requirements for stormwater management, pollution prevention, and fuel and fleets. Additionally, transit operator feedback from a project briefing conducted at a quarterly Public

Transportation meeting in May 2000 supported the proposed areas of emphasis for development of the manual.

REPORT ORGANIZATION

This report presents the same breadth of information compiled in the environmental compliance manual except in a much more condensed format. The environmental compliance manual produced for this project exceeds 200 pages reflecting the breadth and detail of the environmental compliance potentially affecting small urban and rural transit systems. Therefore, for more details on environmental requirements affecting transit systems, the reader should refer to the environmental compliance manual as the primary research product.

This research report is organized into the following chapters:

- [Chapter 1](#) of this report is an introduction and background.
- [Chapter 2](#) of this report provides an overview of the most significant environmental agencies and rules affecting transit agencies.
- [Chapter 3](#) of this report reviews environmental compliance and environmental management.
- [Chapter 4](#) presents each of the 11 areas of compliance covered in the manual.
- The [Appendix](#) provides an environmental compliance checklist. The checklist, which is also included in the environmental compliance manual, consists of 101 questions highlighting compliance points for each of the environmental topics reviewed in the project. The checklist is intended as a starting point for environmental compliance.

[Figure 1](#) illustrates the compliance areas in relation to transit operations including vehicles, facilities, and employees.

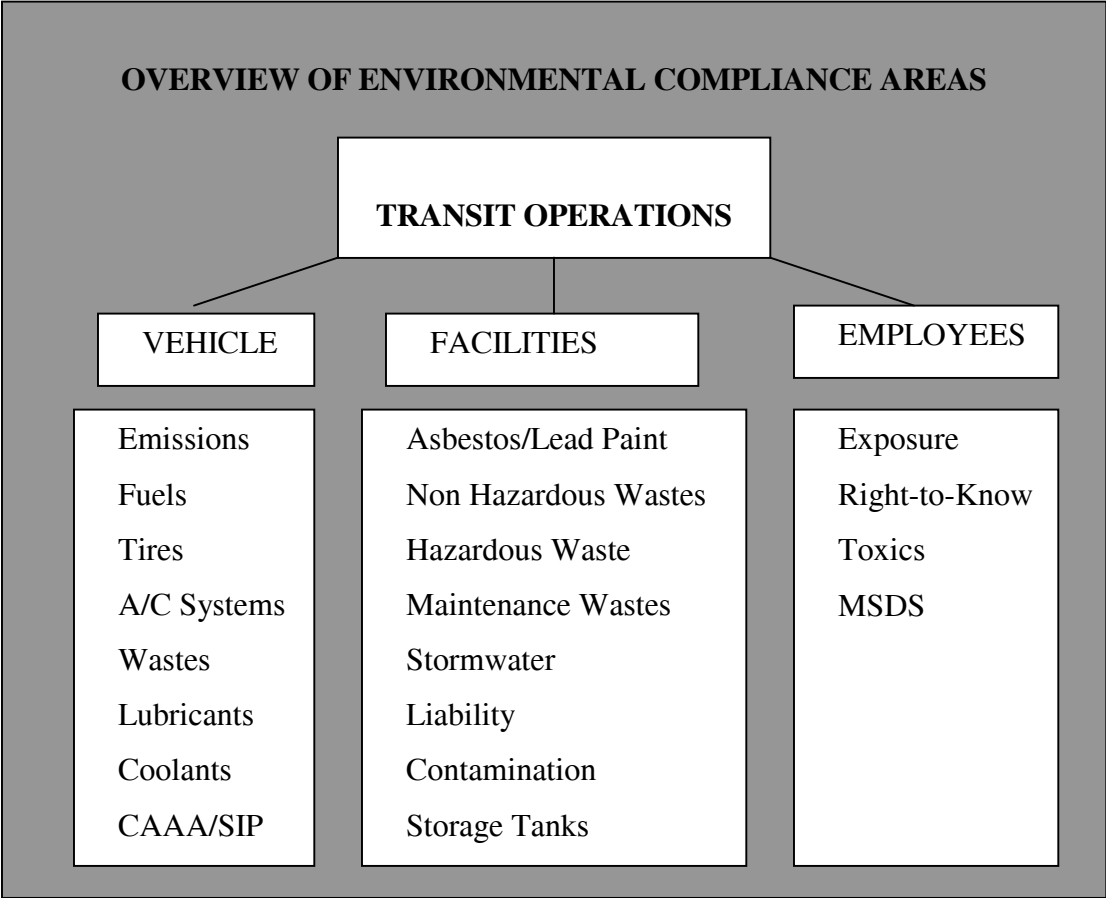


Figure 1. Overview of Environmental Compliance Areas at Transit Facilities.

CHAPTER 2 – ENVIRONMENTAL AGENCIES

Federal environmental requirements are often administered and enforced by state agencies. The 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 TDH, the General Land Office (GLO) and the Texas Railroad Commission (RRC) administer environmental programs that may affect transit operations.

TNRCC and the other state agencies maintain comprehensive websites that provide compliance information for the environmental programs they administer. These sites are often the easiest resource for information, guidance, and forms. The state agencies and their respective areas of environmental regulation are listed below.

Table 1. Texas Agencies and Environmental Regulation.

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 and 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 – alternative fuel technical standards, pipelines, fuels, oil spills

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, TDH, GLO, or even the RRC 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. TDH is primarily responsible for worker health and safety issues since there is no state level Occupational Safety and Health Administration (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, Toxic Substance Control Act (TSCA), Emergency Planning and Community Right-to-know Act (EPCRA), Clean Air Act (CAA), and 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 GLO, 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 EPA. Their mission is to protect human health 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 U.S. Department of Transportation (DOT) and Department of Energy (DOE).

MAJOR FEDERAL ACTS AFFECTING TRANSIT OPERATORS

The federal and state legislation affecting transit systems in Texas is summarized below. Many of the federal environmental requirements are mirrored at the state level with similarly directed legislation. The regulations that affect the transit agencies primarily originate from the

Resource Conservation and Recovery Act (RCRA), the Clean Water Act, the Comprehensive Environmental Response Compensation and Liability Act, and the Clean Air Act Amendments (CAAA).

In Texas, these rules are generally administered by the TNRCC and supported with complementary legislation and rules found in the Texas Administrative Code (TAC) and the Texas Health and Safety Code (THSC). The first stop for information on environmental compliance is the TNRCC website (<http://www.tnrcc.state.tx.us/>). The TNRCC website contains numerous guidance documents, forms, and rules to assist with environmental compliance of transit facilities.

Resource Conservation and Recovery Act

RCRA, which amended the Solid Waste Disposal Act, addresses 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. In Texas, the principal regulatory authority for the control and disposal of waste is the TNRCC.

Maintenance activities at transit facilities are known to generate solid wastes. Solid wastes include everything from discarded paper to light bulbs to 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. However, 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. When it comes to managing waste, the rules and regulations can be very perplexing. There are:

- federal laws and rules from EPA,
- state laws and rules enforced by TNRCC, and
- 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 key to compliance with waste regulations includes:

- understanding waste terminology and definitions,
- minimizing waste to stay below regulatory thresholds and reduce costs,
- good housekeeping practices, and
- good recordkeeping practices.

Clean Air Act Amendments

The 1990 Clean Air Act Amendments affect transit agencies most directly by regulating vehicle emissions, bus engine emissions, fuels formulation, and the use of refrigerants. The CAAA also affects transit systems less directly by requiring transportation control measures for areas in non-attainment. The requirements for control measures are usually described in the state implementation plan (SIP). The SIP describes what control measures the state will enforce in order to meet federal clean air requirements. The level of control depends on the clean air attainment status of the transit agency location. Non-attainment areas can include rural areas; therefore, transit agencies should reference the counties they operate in to determine the air quality attainment status and requirements.

Clean Water Act

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. The Water Quality Act of 1987 included requirements to control stormwater discharges. Water pollution generated during storm events, whether it is referred to as urban stormwater or non-point source pollution, is now a regulatory focus. Recently, TNRCC was given the authority to administer all stormwater programs.

Municipalities with populations greater than 100,000 (Phase I cities) had to comply with these regulations by 1993. If the transit facility is in a city over 100,000, these requirements are not new. Now compliance extends to municipalities with populations under 100,000 (Phase II cities) which may affect many small urban and rural transit providers. The Phase II Rule automatically covers on a nationwide basis all small MS4s located in “urbanized areas.”

Comprehensive Environmental Response Compensation and Liability Act

CERCLA, also referred to as the Superfund, was enacted in 1980 in order to address uncontrolled releases of hazardous substances. CERCLA assigns liability to “responsible parties” to clean up uncontrolled hazardous waste sites. 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.

Environmental Compliance Information 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 (1994) (1). 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 (2).
- On-line sources relating to specific areas of compliance. The TNRCC and 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.

CHAPTER THREE– ENVIRONMENTAL MANAGEMENT

ENVIRONMENTAL COMPLIANCE

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

- accurate recordkeeping and recordkeeping 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 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.(1) 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 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 an entire organization.

Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations is a complete guide to EMS available on the EPA website at <http://www.epa.gov/OWM/wm046200.htm#guide1> (3).

A summary of the key elements of EMS program development are listed below.

- **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.

TEXAS 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

- TNRCC: <http://www.tnrcc.state.tx.us/index.html>
- TDH: <http://www.tdh.state.tx.us/default.htm>
- GLO: <http://www.glo.state.tx.us/>
- RRC: <http://www.rrc.state.tx.us/>

Federal Environmental Resources

- EPA: <http://www.epa.gov/epahome/>
- U. S. DOE: <http://www.energy.gov/> or <http://www.ott.doe.gov/>
- U. S. DOT: <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>

CHAPTER FOUR – ENVIRONMENTAL COMPLIANCE AREAS

INTRODUCTION

This chapter presents a condensed version of each of the environmental compliance areas included in the environmental compliance manual. The compliance areas include:

- Air Quality: Bus Emissions, Fuels, and Fleets
- Petroleum Storage Tanks
- Waste Management
- Pollution Prevention
- Stormwater Management
- Toxic Substances
- Employees and Compliance
- CERCLA Liability and Site Assessments
- Contamination and Clean-Ups
- National Environmental Policy Act

AIR QUALITY – EMISSIONS, FUELS, FLEETS, AND REFRIGERANTS

The CAA and its amendments, including the Clean Air Act Amendments 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 Transit Operations Are 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. The state implementation plan is the official document, housed at the EPA, and details the efforts and commitments made by a state in fulfilling its CAA 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, and 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. If a transit agency operates in non-attainment counties, a change in the SIP is more likely to affect the operation than other regulations.

Emissions

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 comply with current emission standards.

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. 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 (TCF) Program (4).

Texas Clean Fleets

The 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 non-attainment areas to purchase a percentage of EPA-certified low emission vehicles (LEVs) when replacing or adding fleet vehicles (4). The counties in Texas affected by this program are listed in [Table 2](#).

Table 2. Counties Included in Texas Clean Fleet Program.

Non-Attainment 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

TCF 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 that 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 non-attainment 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.

Texas Clean Fleet 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.

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 non-attainment 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 TCF 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 initiated a program to implement low emission diesel fuels. Implementation of the proposed LED Fuel Program is scheduled to 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 the following:

- 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 Dallas-Ft. Worth (DFW), Brazoria Port Arthur (BPA), and Houston-Galveston Area (HGA) ozone non-attainment 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 non-attainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties);
- four counties of the DFW ozone non-attainment area (Collin, Dallas, Denton, and Tarrant Counties);
- three counties of the BPA ozone non-attainment 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.

CFCs and hydrochloroflourocarbons (HCFCs) are refrigerants that have been found to harm the ozone layer in the earth's stratosphere. 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. Section 609 of the CAAA gives EPA the authority to establish requirements for servicing of motor vehicles and to require recycling of refrigerants.(5)

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.

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
- recordkeeping.

Air Quality Information Resources

- TNRCC clean fleet website at <http://www.tnrcc.state.tx.us/air/ms/tcf.htm> and <http://www.tnrcc.state.tx.us/air/ms/tcfdocs.html>
- TNRCC Recommended Guidance Documents:

RG-321: Guidelines for Private and Local Government Fleets

RG-322: Guidelines For Vehicle Emission Credits

- 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 website: <http://www.epa.gov/ozone/title6/609/609.html>.
- Clean Air Act Amendments, EPA Office of Air Quality: http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html
- EPA Office of Transportation and AirQuality: <http://www.epa.gov/otaq/im.htm>

PETROLEUM STORAGE TANKS

An underground storage tank (UST) is defined as any one or 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 TNRCC administers regulation of both USTs and above-ground storage tanks (ASTs) under Title 30, TAC, Chapter 334. TNRCC regulation also includes additional storage tank requirements. The city's Fire Marshals Office usually enforces local regulations and may also affect the installation and operation of USTs and ASTs in your community.

How Transit Operations Are Affected

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

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.

The TNRCC also requires some ASTs 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.

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.

The following records must be kept long enough to show the facility's recent compliance status:

- 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 tanks;
- records of recent maintenance, repair, and calibration of on-site leak detection equipment;
- records showing the required inspections and tests of corrosion protection system; and
- records showing that a repaired or upgraded UST system was properly repaired or upgraded.

PST Information Resources

- 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>

WASTE MANAGEMENT

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.

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 Transit Operations Are Affected

Most transit agencies generate solid waste at their maintenance facilities. Solid wastes include everything from discarded paper, to light bulbs, used engine oil, to 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 recordkeeping practices.

Six steps to compliance with waste regulation listed below are described and discussed in the environmental compliance manual.

1. Classify your waste. Find out if your waste is hazardous using process knowledge and label information, EPA list, and or laboratory analysis.
2. Determine generator status.
3. Assign waste codes to each waste stream (Texas Waste Code).

4. Count wastes and keep records.
5. Properly handle waste before disposal.
6. Properly transport/dispose of waste.

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. Although generally descriptive, these terms have very specific regulatory meanings – especially the use of “hazardous” and “non-hazardous” 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.

A **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. (6)

- **Listed hazardous wastes** include more than 400 wastes.
- **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 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.

A **non - hazardous 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 non - hazardous. Class I non-hazardous industrial wastes include certain levels of constituents that at higher concentrations would be hazardous. (6)

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. (6)

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 220 pounds (100 kilograms) 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 non-regulated asbestos containing material (NonRACM) (30 TAC §330.136(b)(4), such as non-friable, properly packaged brake pads;
- non-hazardous incinerator ash;
- soil contaminated by petroleum products, crude oils, or chemicals - spill clean-up;
- light ballasts and capacitors under 50 ppm polychlorinated bi-phenol (PCB);
- any waste stream the TNRCC deems appropriate - special conditions.

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

Industrial waste results from the operations of industry, manufacturing, mining, or agriculture. For example, wastes from manufacturing plants are industrial wastes. Non-industrial wastes are wastes from schools, hospitals, and most service stations (6). Most small transit operations are non-industrial.

Municipal solid waste (MSW) is 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 (6).

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.

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 2200 pounds (1000 kilograms) or about 260 gallons per month.
- A *small quantity generator* (SQG) generates from 220 to 2200 pounds (100-1000 kilograms) of waste per month.
- A *conditionally exempt small quantity generator* generates less than 220 pounds (100 kilograms) 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 2200 pounds (1000 kilograms) of hazardous waste on site at any one time without a hazardous waste storage permit. If a CESQ generator exceeds the limit in any month, they are a SQG.

SQGs may accumulate no more than 13227.7 lbs (6000 kilograms) 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.

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.

Waste Management Information Resources

- The TNRCC website
<http://www.tnrcc.state.tx.us/permitting/re/eval/we/index.html>
- TNRCC Local Government Guide:
<http://www.tnrcc.state.tx.us/admin/topdoc/gi/145/>
- 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 Used Oil Recycling Program:
http://www.tnrcc.state.tx.us/permitting/re/eval/we/used_oil.html
- 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.”

STORMWATER MANAGEMENT

Stormwater Rules

In 1990, EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) stormwater 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 stormwater management program as a means to control polluted discharges from these MS4s. Phase II of the rules extends coverage of the NPDES stormwater program to certain “small” MS4s.

Phase II Small MS4s

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 stormwater runoff is often transported to MS4s and ultimately discharged into local rivers and streams without treatment. EPA’s Stormwater Phase II Rule establishes an MS4 stormwater management program that is intended to improve the nation’s waterways by reducing the quantity of pollutants that stormwater 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.

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 stormwater management coordinated on a watershed basis. Small urban and rural transit providers should participate in these programs as partners in the region.

Texas Pollution Discharge Elimination System

In Texas, EPA identified six *large* municipal systems that must comply with the new federal stormwater 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 stormwater permit. The Statewide Stormwater Quality Task Force maintains a survey of current stormwater permits in the state of Texas and their status (7).

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 Transit Operations Are 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.

The EPA has identified 11 categories of "facilities with stormwater discharges associated with industrial activity." Transit agencies usually fall under one of the following categories:

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

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 Stormwater 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 stormwater management plan that includes structural controls 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 stormwater requirements, first contact the local government or regional stormwater management authority.

Small urban and rural transit agencies should participate in stormwater management programs within their cities and/or regions to achieve compliance with the Phase II stormwater rules. In most cases, this will involve implementing BMPs to control stormwater 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.

Stormwater Management Information 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/wwperm/tpdes.html>
- TNRCC Water Quality page:
<http://www.tnrcc.state.tx.us/water/quality/index.html>

TOXIC SUBSTANCE CONTROL

The Toxic Substances Control Act (TSCA) granted 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.

Under TSCA, EPA has established an inventory of chemical substances. TSCA can ban the manufacture or distribution in commerce, limit the use, require labeling, or place other restrictions on chemicals that pose unreasonable risks. In Texas, the Texas Department of Health administers most of the rules related to TSCA.

How Transit Operations Are Affected

The rules originating from TSCA affecting transit agencies are primarily associated with regulating the asbestos containing materials (ACM) and lead-based paint that may be present in transit facilities.

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 were approved and became effective on October 20, 1992. The purpose of the rules is to control and minimize the public exposure to airborne asbestos fibers 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. Workers whose jobs relate to the physical aspects of a building such as electricians, plumbers, and maintenance personnel, and those who occupy such buildings, are at the greatest risk of asbestos-related disease unless proper training, personal protection, and/or engineering controls are used.

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 recordkeeping. 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.

The Asbestos Programs Branch of the TDH 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.

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 TDH by the public building owner and/or operator. In a facility, notification to abate amounts described in National Emission Standards for Hazardous Air Pollutants (NESHAP) must be submitted to the department by the facility owner and/or operator. A project design, with respect to friable asbestos containing building materials (ACBM), must be prepared by either a licensed consultant (for a school or public building) or an accredited project designer (for a commercial building) (8).

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 that ACM should be located, appropriately managed, and that those workers who may disturb it should be properly trained and protected.

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.

The Texas Environmental Lead Reduction Rules (TELRR) by TDH cover several areas of lead-based paint activities in housing, mostly constructed prior to 1978. It also includes 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 day cares and preschools effective May 10, 1998 (9).

The TELRR rules DO NOT cover non-residential public and commercial buildings or steel structures. Therefore, most small and urban transit facilities would not be affected unless a transit facility was associated with a child-occupied facility.

Toxic Substance Information Resources

- Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book), EPA 560/5-85-024.
- EPA Office of Air Quality: <http://www.epa.gov/region4/air/asbestos/asbestos.htm>
- EPA Indoor Air Pollution Guide: <http://www.epa.gov/iaq/pubs/hpguide.html>
- TDH Toxic Substances Control Division: <http://www.tdh.state.tx.us/beh/TSCD/default.htm>
- TDH Environmental Lead Branch: <http://www.tdh.state.tx.us/beh/lead/default.htm>
- TDH Indoor Air Quality Branch: <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>

EMPLOYEES AND ENVIRONMENTAL COMPLIANCE

The Superfund Amendments and Reauthorization Act (SARA) of 1986 created the Emergency Planning and Community Right-to-Know Act, 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).

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 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 fire fighters, 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 (10).

The TDH 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.

Texas Hazard Communication Act (THCA)

The worker right-to-know program is administered under the authority of the 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. A similar federal law, which is enforced by the OSHA, covers employees of private facilities in Texas. The TDH Hazard Communications 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) (10).

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 TDH at <http://www.tdh.state.tx.us/beh/HazCom/Enforcement.htm>. The TDH also 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 TDH Hazard Communication Branch. There are also commercially available written training programs that may be modified for use by a public employer (10).

How Transit Facilities Are Affected

Unless a small urban or rural agency is storing over 1500 gallons (about 10,000 pounds) of fuel at any time, they 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 material safety data sheets (MSDS) and prepare a Hazardous Communication (HazCom) program.

OSHA’s Hazard Communication Standard and the THCA are designed to ensure that employers and employees are aware of all chemical hazards in the workplace. Material safety datasheets 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 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.

Employees and Environmental Compliance Information 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>
<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.
- 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, Texas Civil Statutes; Article 47826, Revised 1993.

CERCLA LIABILITY AND SITE ASSESSMENTS

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.

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 RCRA.

A *hazardous material* is a product that requires special handling. When spilled or not handled properly, a hazardous material may become a hazardous waste, or a hazardous substance.

How Transit Operations Are 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. The Phase I environmental site assessment (ESA) is intended to discover

environmental conditions that could affect your liability with respect to the intended use of that property.

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 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 (11).

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.

The terms *joint and several liability* are common law methods for assigning liability. As found in CERCLA, it is 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 (12).

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 (12).

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, agencies can use risk management practices themselves from environmental liability.

There are several strategies that agencies can use to minimize liability. They include:

- due diligence,
- indemnification,
- risk assessment, and
- insurance.

Environmental Site Assessments

ESAs are designed to identify environmental hazards. The initial assessment, the Phase I ESA, is usually performed to screen a property for potential environmental hazards prior to transfer or development to satisfy due diligence. A Phase I ESA should be conducted on all property transfers, acquisitions, property management, and/or construction projects.

The ESA 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.

It is 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 by small urban and rural transit providers, contact the TxDOT District Environmental Coordinator and Public Transportation Coordinator should be contacted.

The American Society of Testing and Materials (ASTM) publishes standards for conducting Phase I site assessments. These standards include ASTM E-1527-94: “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,”(13) and E-1528-97: “Standard Practice for Environmental Site Assessments: Transaction Screen Process”(14). 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.

ESAs do not typically screen for environmental considerations prescribed in NEPA. A NEPA style environmental assessment has a different purpose and therefore different guidelines.

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 if action is required to resolve environmental risks discovered in the assessment.

CERCLA Liability and Site Assessment Information 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 Environmental Terms:
<http://www.tnrcc.state.tx.us/permitting/remed/superfund/glossary.html>

CONTAMINATION AND CLEANUPS

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. For minor spills and accidents, the best remedy is for responsible parties to be prepared and have a response plan in place before a spill occurs. 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.

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. Statutory requirements include:

- 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.”
- 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.

Level of Cleanup

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’s Texas Risk Reduction Program (TRRP).

The Texas Risk Reduction Program 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 TNRCC’s Office of Waste Management.

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 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) (15). TRRP most commonly regulates the cleanup and management of hazardous wastes and substances referred to as chemicals of concern (COCs), which are released into the environment from regulated commercial and industrial facilities. Beginning September 1, 2003, TRRP will also apply to the Petroleum Storage Tank Program.

NATIONAL ENVIRONMENTAL POLICY ACT

NEPA affects nearly all aspects of transportation development, including public transportation. 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.

The USDOT 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/).

TxDOT adopted regulations (43 TAC) 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.

TxDOT uses Memoranda of Understanding (MOUs) 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.

NEPA Assessment

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)
Migratory Bird Treaty Act 16USC§703-712
Fish and Wildlife Coordination Act of 1958 (16 USC 661-666[C])
Farmland Protection Policy Act (FPPA)
Coastal Barrier Resources Act (CBRA)
Texas Coastal Management Program (TCMP)
Rivers and Harbors Act of 1899
Federal Water Pollution Control Act/Clean Water Act of 1972
National Pollutant Discharge Elimination Control System 1990
National Flood Insurance Act (NFIA) of 1968
Executive Order 11988 (National Flood Insurance Program)
Executive Memorandum of April 26, 1994 (Landscaping)
Section 404 Regulatory Program
Texas Antiquities Code
National Historic Preservation Act of 1966
U.S. Department of Transportation Act of 1966
Transportation Equity Act for the 21st Century (TEA-21)
Title VI of the Civil Rights Act of 1964
Uniform Relocation Assistance and Real Properties Acquisitions Act (URARPA)
Executive Order 12898 – Environmental Justice
Native American Graves Protection and Repatriation Act (NAGPRA)
Executive Order 13007 (EO 13007)
Clean Air Act (42 USC 7401-7626)

Resource Conservation and Recovery Act
Comprehensive Environmental Response, Compensation and Liability Act

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 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, it is important to consult with 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. Addressing community impact issues require analysis of the social and economic resources in a community and how they are affected by the project. 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. The assessment should also include the positive community effects a project may have and encourage public involvement and participation. See FHWA's "Community Impact Assessment: A Quick Reference for Transportation" (16).

Historic resources have also been identified as problem areas for development at small urban and rural transit systems. 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 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. For a complete description of the process, assessment, and documentation requirements, contact the 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.

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 2](#) for an overview of the environmental documentation process.

All projects should begin with a statement of purpose and need that accurately describes the project or action. The purpose and need statement guides the project or action through the process.

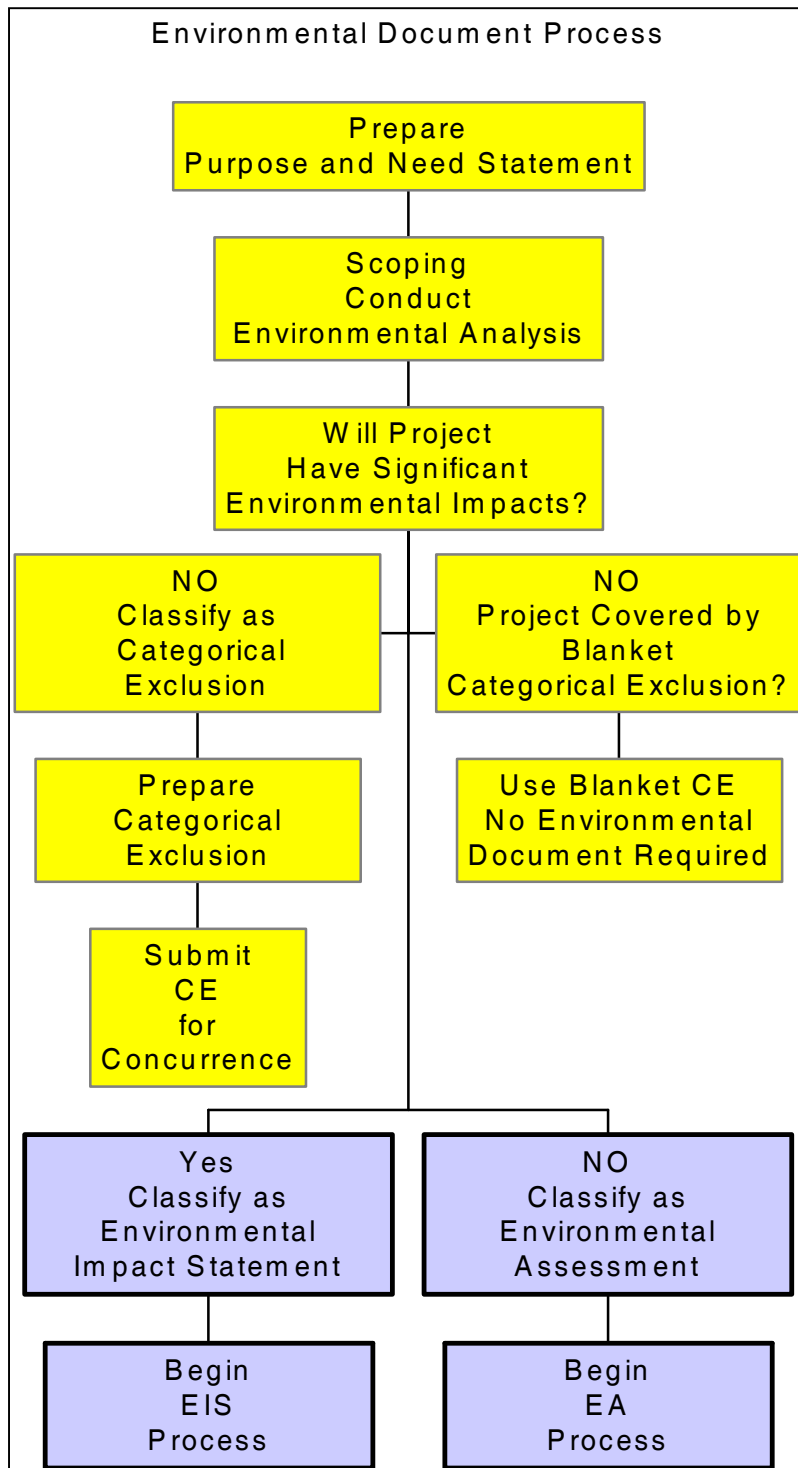


Figure 2. Overview of TxDOT Environmental Documentation Process.

A categorical exclusion (CE) 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.

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 (17).

Programmatic CEs can be used for projects meeting specific criteria where TxDOT and USDOT have agreements with the resource agencies. These type of projects must conform to the state implementation plan, be consistent with the Coastal Zone Management Plan, and not impact any federally listed endangered species or habitat (17).

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.

NEPA Information Resources

- NEPA NET: <http://ceq.eh.doe.gov/nepa/nepanet.htm>
- FTA Office of Planning: <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/genlenv.htm>
- Community Impact Assessment Guide: <http://www.fhwa.dot.gov/environment/nepa/cia.htm>

A summary of TxDOT's project development process and environmental clearance process is provided in [Figure 3 \(18\)](#).

Project Development Process

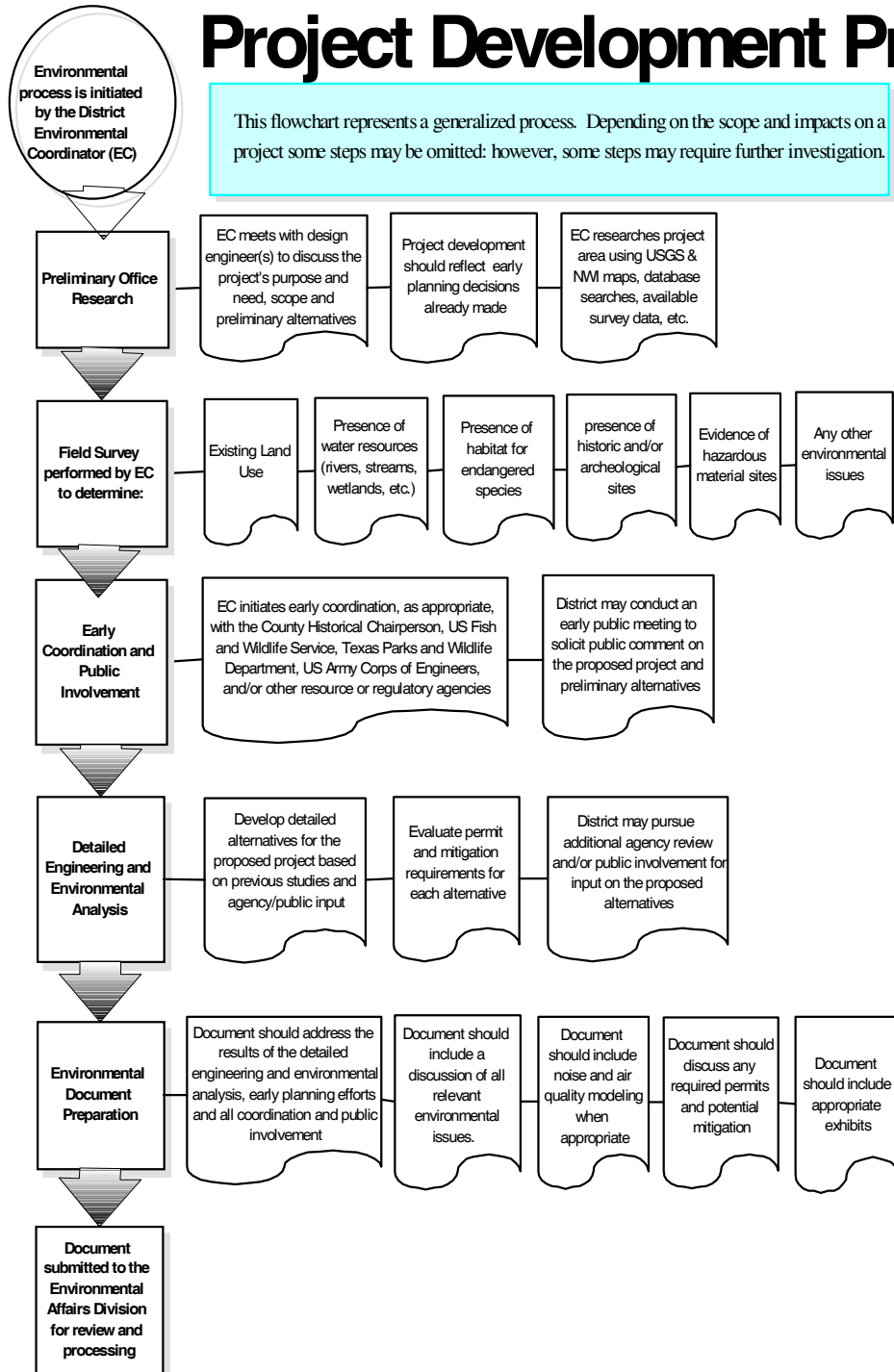


Figure 3. TxDOT Project Development Process

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<http://www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdes.html>
- (8) Texas Department of Health, DH Toxic Substance Control Division website, FAQ:
<http://www.tdh.state.tx.us/beh/TSCD/default.htm>
- (9) TDH Environmental Lead Branch FAQ: <http://www.tdh.state.tx.us/beh/lead/default.htm>
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<http://www.tdh.state.tx.us/beh/HazCom/default2.htm>.
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APPENDIX-ENVIRONMENTAL COMPLIANCE CHECKLIST

101 QUESTIONS ON ENVIRONMENTAL COMPLIANCE²

Environmental Management

1. Do you have an environmental policy statement?
2. Do you have a designated manager to coordinate environmental compliance?
3. Have you assessed your significant environmental risks?
4. Do you understand the environmental laws and rules that apply to you?
5. Does operational staff have environmental responsibilities?
6. Does management allocate resources to environmental management?
7. Do employees understand how their work can affect the environment?
8. Do you have a system for internal and external communications?
9. Do you use a manual for procedures on environmental compliance?
10. Do you involve suppliers and contractors in environmental management?
11. Do you have plans to protect the environment in emergencies?
12. Do you measure your emissions and waste?
13. Do you use a procedure to monitor compliance?
14. Do you have a procedure to address and correct handling noncompliance?
15. Do you have a recordkeeping system?
16. Have you examined all your organization's operations that affect compliance?

² Checklist adapted from An Environmental Guide for Texas: Automotive Repair Shops. TNRCC RG -308. June 1998.

Air Regulations

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

Texas Clean Fleets

- 23. 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

- 24. Does the state implementation plan affect your fueling or fleet operations?
- 25. If so, do you have a fleet greater than 25 vehicles?
- 26. If so, were vehicle purchases after September 1998 LEVs?

Petroleum Storage Tanks

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

Waste Regulations—General Requirements

31. Have you performed a hazardous waste determination on all solid waste streams?
32. Do you maintain documentation to support all hazardous waste determinations?
33. Have you assigned a proper waste code identification number to each hazardous waste stream?
34. Do you have monthly waste records to support your claimed generator status either as conditionally exempt small quantity generator or small quantity generator?
35. Is your facility registered with the TNRCC?
36. What is your TNRCC Registration No.: _____
37. What is your EPA ID No.: _____
38. Is your Notice of Registration (NOR) up-to-date, including all waste streams and waste management units?
39. Have you submitted an annual waste summary each year?
40. Do you fulfill all other recordkeeping and reporting requirements for your generator status?
41. Do you comply with appropriate accumulation quantity requirements?

- 42. Is hazardous waste stored in container storage areas at your business?
- 43. If YES: Are waste containers compatible with their contents, labeled, dated, and sealed?
- 44. Are containers inspected weekly for leakage and daily for deterioration?
- 45. Have all on-site hazardous waste recycling activities been registered with the TNRCC?

Waste Regulations—Transportation and Disposal Requirements

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

Used Oil Regulations

- 50. Are all containers labeled with the words “USED OIL”?
- 51. Are any hazardous fluids mixed with the used oil? If YES: Is this mixture managed as a hazardous waste?
- 52. Do you collect used oil from the public?
- 53. If YES: Are you registered with the TNRCC as a used oil collection center?
- 54. 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

- 55. Are all containers labeled with the words “USED OIL FILTERS” (in 3-inch letters), the business owner’s name, and business phone number?

- 56. Are filters drained before recycling?
- 57. Do you collect used oil filters from the public?
- 58. If YES: Are you registered with the TNRCC as a used oil filter collection center?
- 59. Do you store six or fewer 55-gallon drums of filters at any time?
- 60. Do you use a TNRCC-registered transporter to remove the filters? (Not necessary if transporting two 55-gallon drums or less.)
- 61. Do you use a bill of lading when having the filters transported?
- 62. Do you keep used oil filters separate from other types of filters (e.g., fuel)?

Lead-Acid Battery Regulations

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

Tire Regulations

- 65. Do you generate, transport, or retail either used or scrap tires?
- 66. If YES: Are you registered with the TNRCC?
- 67. Do you meet the appropriate storage requirements? Are scrap tires transported by a TNRCC-registered transporter?
- 68. Do you manifest scrap tires for disposal?
- 69. If YES: Do you receive a return copy of the manifest?

Antifreeze Regulations

- 70. Do you recycle antifreeze? If NO: Do you have approval from the local publicly owned treatment works (POTW) to discharge antifreeze into the sewer system?

71. Is used antifreeze mixed with any hazardous waste? If YES: Is that mixture managed as a hazardous waste?

Pollution Prevention Checklist

72. Is your business subject to the Waste Reduction Policy Act (WRPA)? (Excludes conditionally exempt small-quantity generators.)

73. If YES: Has a Source Reduction Waste and Minimization (SR/WM) Plan been developed?

74. Has an executive summary been submitted to the TNRCC?

Stormwater / TPDES

75. Are you regulated under Phase I of the stormwater rules?

76. Are you regulated under the Phase II of the stormwater rules?

77. Do you have a small municipal separate storm sewer system?

78. Is your small MS4 designated as regulated?

79. 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 1000 people per square mile.)

80. Is your facility part of a stormwater management area?

81. Have you implemented best management practices to control polluted runoff from your facility?

Toxic Substances

82. Does your building contain asbestos? If YES, have you had an inspection by a licensed asbestos inspector?

83. Is it left undisturbed, away from potential human exposure?

84. Do you have management plan?
85. Does your business comply with all requirements of the Toxics Release Inventory?
86. Does your business have material safety data sheets or other information sheets for all chemicals used in the past 24 months?
87. Is there any evidence of spills? If YES: Has your business taken appropriate reporting and abatement actions?
88. Does your business comply with all requirements of the Toxics Release Inventory, The Texas Hazard Communication Act, and Texas Community Right-to-Know Act?

CERCLA and Environmental Liabilities

89. Do you know what your environmental liabilities are?
90. If you are planning to purchase property for a facility, did you perform an environmental site assessment?
91. Did the assessment find any potential risk or liability from contamination, asbestos, or lead paint?

Cleanups and Contamination

92. Do you have a spill kit to clean up small spills?
93. Do you have personnel trained to handle small spills?
94. Do you have a plan and contact information (who to call) in case of an emergency?
95. Do you have contaminated soils or groundwater at your facility?
96. If YES: Does it require corrective action?
97. Have you performed a cleanup under the Texas Risk Reduction Program?

National Environmental Policy Act

98. Are you planning to build, construct, or expand service in such a way as to require an environmental assessment under the NEPA?
99. 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?
100. Does your planned activity qualify for a categorical exclusion ?
101. 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?