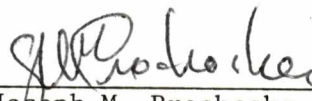


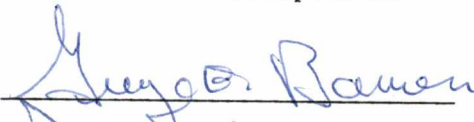
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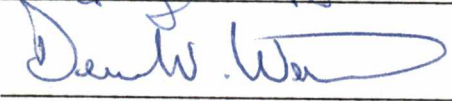
I am submitting herewith a thesis written by Saralee Winn Terry entitled "A Case Study of the Intergovernmental Relationships of Tennessee's Response to the Resource Conservation and Recovery Act of 1976." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science in Planning.



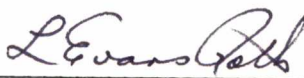
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recommend its acceptance:





Accepted for the Council:



Vice Chancellor
Graduate Studies and Research

A CASE STUDY OF THE INTERGOVERNMENTAL RELATIONSHIPS
OF TENNESSEE'S RESPONSE TO THE RESOURCE
CONSERVATION AND RECOVERY ACT
OF 1976

A Thesis
Presented for the
Master of Science in Planning
Degree
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Saralee Winn Terry

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ABSTRACT

The problem of solid and hazardous waste management has become an issue of concern. As a result of this concern, the Resource Conservation and Recovery Act of 1976 was passed by the United States Congress in 1976. Instances such as Love Canal, New York, and the Valley of the Drums in Kentucky, brought national attention to the mismanagement of hazardous and solid waste.

Three levels of government, federal, state, and local, have had to address the intention of the Resource Conservation and Recovery Act. This thesis is an investigation of how these three levels of government have, or have not worked together, to find solutions for the management of solid and hazardous waste.

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CHAPTER I

INTRODUCTION

The three levels of government, federal, state, and local have been in existence since the Constitution of the United States was ratified in 1788. Since 1788 there have been numerous times when arguments were raised as to what level of government was responsible for various issues. The intergovernmental response of one state, Tennessee, to one federal act, the Resource Conservation and Recovery Act of 1976, is the subject of this research.

History and Background

For the purpose of this study solid waste is defined from the Tennessee Solid Waste Regulations Section 53-4301 (1980) as

any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and any other discarded material, including solid, liquid, semisolid, or contained gaseous material from industrial, commercial, and agricultural operations, and from community activities, but does not include solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under 402 of the Federal Water Pollution Control Act, as amended, or source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954 as amended.

Hazardous waste is defined from the Tennessee Hazardous Waste Regulations, Section 6304, 1981, as:

a waste, or combination of wastes which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:

1. Cause or significantly contribute to an irreversible or incapacitations reversible, illness; or
2. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Since the beginning of time, man has generated some type of waste requiring disposition. Little concern was expressed regarding disposal of solid waste when the United States was primarily agricultural. Rural areas such as the State of Tennessee had an abundance of land available to the people.

In 1830 only 0.8 percent of the population of Tennessee was considered urban. Most Tennesseans lived on farms where food, clothing and shelter were produced, processed, or consumed all on the same premises. An isolated area on each farm was selected as a disposal site for the wastes of its residents.

After the Civil War, more and more Tennesseans moved to cities and towns. By 1970, 58.8 percent of Tennessee was considered urban. As a result of this urbanization, people relied on industries to furnish their food, clothing, and shelter. Table 1 is an illustration of this change from a rural to urban population in Tennessee.

Many of these products were wrapped in packaging which was eventually to be discarded as solid waste. Food was sold in paper, plastic, and metal cans. Clothing was purchased on plastic or wire coat hangers.

Finding a place to dispose of this waste gradually became a common problem across the state. Since people were living in urbanized areas,

Table 1

Urban and Rural Population, Tennessee, 1830-1970,
Decennial Census Years

Year	Total	Urban	Rural	Urban as percentage of total	Rural as percentage of total
1830	681,904	5,566	676,338	0.8	99.2
1840	829,210	6,929	822,281	0.8	99.2
1850	1,002,717	21,983	980,734	2.2	97.8
1860	1,109,801	46,541	1,063,260	4.2	95.8
1870	1,258,520	94,237	1,164,283	7.5	92.5
1880	1,542,359	115,984	1,426,375	7.5	92.5
1890	1,767,518	238,394	1,529,124	13.5	86.5
1900	2,020,616	326,639	1,693,977	16.2	83.8
1910	2,184,789	441,045	1,743,744	20.2	79.8
1920	2,337,885	611,226	1,726,659	26.1	73.9
1930	2,616,556	896,538	1,720,018	34.3	65.7
1940	2,915,841	1,027,206	1,888,635	35.2	64.8
1950	3,291,718	1,452,601	1,839,116	44.1	55.9
1960	3,567,089	1,864,828	1,702,261	52.3	47.7
1970	3,923,687	2,305,307	1,618,380	58.8	41.2

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1970
(Washington, D.C.: 1970).

land had to be shared. It became increasingly difficult for citizens to forfeit their residential and commercial property for the use of waste disposal.

Some people simply discarded their waste in any manner that was convenient. These places became known as open dumps and were health hazards due to the disease-carrying flies, mosquitoes, and rats which they attracted. Dumps were also eyesores and became a source of air pollution when garbage was burned. There was always the possibility that groundwater and nearby lakes and streams would be polluted.

Citizens in Tennessee and across the United States became more and more concerned about these possible health and environmental hazards. Consequently, on October 20, 1965, Congress passed the Solid Waste Disposal Act. According to this act its purpose was:

- 2) to initiate and accelerate a national research and developmental program for new and improved methods of proper and economic solid waste disposal including studies directed toward the conservation of material resources by reducing the amount of waste and unsalvageable materials, and by recovery and utilization of potential resources in solid waste; and
- 2) to provide technical and financial assistance to state and local governments and interstate agencies in the planning development and conduct of solid waste disposal programs.

President Lyndon Johnson and Congress gave the United States Department of Health, Education, and Welfare (HEW) through the Bureau of Solid Waste Management, the power to administer this act. On December 20, 1965, Governor Frank Clement named the Tennessee Department of Public Health as the agency responsible for carrying out the state's role in solid waste management. Until then, solid waste problems were primarily the responsibility of local health boards across the state.

The Department of Public Health applied to HEW for a Solid Waste Disposal Planning Grant on August 12, 1966, in order to administer the federal law. On January 5, 1967, Tennessee initiated a solid waste program. The Department carried out the program through the Solid Waste Section of the Division of Environmental Sanitation.

From 1966 through 1968 the Solid Waste Management Section conducted a comprehensive survey of solid waste management practices in Tennessee. Based on the findings of this survey, the 1969 Tennessee Solid Waste Disposal Act was passed into law on May 20, 1969. This act gave the Department the power to regulate solid waste.

The National Environmental Policy Act (NEPA) became effective January 1, 1970. In December 1970, the Environmental Protection Agency (EPA) was organized to administer the NEPA. The Office of Solid Waste Management was set up within EPA to regulate solid waste programs. States were grouped regionally and EPA offices were established for the purpose of handling program administration. Tennessee, located in Region IV, has its EPA headquarters in Atlanta, Georgia.

The Solid Waste Management Section was upgraded to the Division of Solid Waste Management (DSWM) within the Bureau of Environmental Health in the Tennessee Department of Public Health in 1974. The DSWM was named as the agency responsible for implementing the federal Resources Conservation and Recovery Act of 1976 (RCRA). The intent of this act according to RCRA, Section 6902, 1976, was:

to provide technical and financial assistance for the development of management plans and facilities for the recovery of energy and other resources from discarded materials and for the safe disposal of discarded materials, and to regulate the management of hazardous waste.

RCRA gave definitions of solid and hazardous wastes and said federal standards would be enacted to regulate hazardous waste. Resource recovery and conservation was encouraged by RCRA as a means of solid waste management. Episodes such as Love Canal, New York and Valley of the Drums, in Kentucky continued to bring national attention to the tragedies that could occur when waste was not managed properly.

Tennessee passed the Hazardous Waste Act in 1977. The act designated the Department of Public Health's Division of Solid Waste Management as the agency responsible for regulating hazardous waste. On March 2, 1981, the Tennessee Hazardous Waste Regulations became law.

The Federal Register published EPA's Guidelines for Development and Implementation of State Solid Waste Management Plans on July 31, 1979. These guidelines were required by section 4002(b) of the State Solid Waste Disposal Act, as amended by RCRA. The act required state solid waste programs receiving federal financial assistance to develop approved plans.

According to Section 4002(b) of RCRA, 1976, such a state plan was to provide for:

the identification of state, local, and regional responsibilities for solid waste management, the encouragement of resource recovery and conservation and the application and enforcement of environmentally sound disposal practice.

In 1979, after much discussion, Governor Ray Blanton assigned the responsibility for developing Tennessee's plan to the DSWM. Several Economic Development Districts in Tennessee had asked for the assignment.

On September, 1979, the Division signed a contract with the Tennessee State Planning Office to develop and publish the plan. The Tennessee State Planning Office was chosen because its staff had a range of previous experience with problems statewide in scope.

Current Status

At present, the federal government is in the process of delegating to states the power to regulate both hazardous and solid waste management. RCRA gave the federal government the power to become involved with solid waste disposal and the regulations of hazardous waste. Now the federal government is transferring the responsibility to the states.

EPA has been developing federal regulations for hazardous waste since the passage of RCRA. States have the option of developing their own hazardous waste regulations and having them approved by EPA. State regulations must be as strict as the federal regulations and states may go beyond federal guidelines if they choose to.

Since Tennessee no longer receives any funding from EPA for solid waste programs, the state must provide any funding for programs conducted by the Tennessee Department of Public Health. Tennessee has been granted interim authorization for its hazardous waste regulations. The DSWM plans to work with the EPA and other state officials until the state has been granted the full authority to manage its own hazardous waste programs. The state officials must now decide how much, if any, of this authority will be delegated to local governments.

Statement of the Problem

The delegation of powers from federal to state and then from state to local governments is a current issue. Officials everywhere are reacting to President Reagan's proposal to transfer some of the responsibilities of federal programs to state government. Included in this delegation will be many of the problems involving hazardous and solid waste management.

The purpose of this thesis is to examine how intergovernmental relationships in the State of Tennessee have been affected by RCRA. The examination investigates how Tennessee has reacted to RCRA in the areas of hazardous and solid waste management. The study of the intergovernmental relationships includes how the state government has assumed the responsibilities of federal programs in waste management as well as whether or not Tennessee chose to delegate any of those responsibilities to local governments.

The thesis briefly describes how three other states have managed hazardous and solid waste programs. The research also investigates whether or not the three states have been granted the powers to regulate these programs, and if they have, how they shared the responsibility with local governments. The other states are then compared to Tennessee.

The states of Florida, Kentucky, and North Carolina were chosen because all three are located with Tennessee in Region IV of EPA. Since all are in the same region, they have been under the same type of

federal administration as Tennessee. How they have responded to EPA's administration was investigated as well as how they chose to delegate state authority. All four states share many economic and social characteristics yet vary in physical problems.

Limitations and Assumptions

The analysis will be limited to the portion of RCRA which pertains to the state's management of hazardous and solid waste programs. The thesis assumes that the State of Tennessee has responded to RCRA. A further assumption is that Tennessee state government has chosen not to involve local governments in determining issues and policies for administering state hazardous and solid waste programs.

Organization of Thesis and Analysis

The thesis is a case study of the impact of RCRA upon Tennessee state government. This chapter has given a history and background of the issues of hazardous and solid waste management. A statement of the problem to be investigated has also been supplied. The information was obtained through a literature review and an analysis of legislation, both federal and state, relating to RCRA.

Chapter II is an overview of the current state of the art for hazardous and solid waste management. The description provides information to determine how the government has responded to the issues of the hazardous and solid waste industry. The material was obtained through a survey of available literature as well as through interviews with those who are a part of the industry.

Chapter III is an investigation of the effect on intergovernmental relationships in Tennessee as a result of RCRA. This chapter was based on a legislative review and interviews with selected individuals in Tennessee state government. Those interviewed were involved in the state's response to RCRA (see Appendix A for a list of those who were interviewed).

A questionnaire was developed based on the information acquired in Chapter III. This questionnaire was then sent to three other southeastern states; Florida, Kentucky, and North Carolina. Telephone interviews were conducted after the questionnaires were completed in order to further discuss the responses of each state. The answers provided by the states described how they responded to RCRA in an intergovernmental context. The actual questions and responses given by the three states, as well as Tennessee, are listed in Appendix E. Chapter IV is a comparison of Tennessee's response to RCRA to those of the three other states.

Conclusions and recommendations are presented in Chapter V. The chapter summarized the major issues that determined how Tennessee intergovernmental relationships changed as a result of RCRA. The recommendations include suggestions of how Tennessee state government could improve its role in solid and hazardous waste management.

CHAPTER II

OVERVIEW--CURRENT STATE OF THE ART IN THE MANAGEMENT OF SOLID AND HAZARDOUS WASTE

The management of solid and hazardous waste includes many different activities such as generation, source separation, storage, collection, transportation, and disposal. This chapter is an overview of the current state of the art in the management of solid and hazardous waste. The chapter is divided into two segments; one for solid waste activities and another for those pertaining to hazardous waste.

Solid Waste

Generation

As stated earlier, the generation of waste has increased with the growing population. In 1978, every man, woman, and child threw away 1,400 pounds of trash. For Tennessee, with a population of about 4 million persons, that adds up to approximately 3 million tons of packaging, junk mail, newspapers, food scraps, junk, cans, and whatever else may be considered solid waste.

Producers today say they must package their goods with material that will have to be discarded due to advertising needs and for protection against shoplifters. A product that is packaged in a large display has a greater chance of being caught by the shopper's eye than does a product that is conservatively packaged. Items which are small

and sold in large packages are not as easily stolen as are those which the shoplifter can hide in his or her pockets. It would appear, therefore, that producers will not change the methods in which they package goods in the foreseeable future.

Source Separation

The RCRA defines source separation in Section 6902, 1976, as:

the setting aside of recyclable materials at their point of generation by the generator.

Recyclable materials include paper, glass, and metal materials. These items are set aside or separated from other waste and are then collected and sent to a buyer. Buyers are usually a secondary material processor or a direct industrial user of the product.

Source separation has been around for centuries. It is a quickly implemented, low cost method of recycling certain materials from the municipal waste stream. It is not dependent upon any particular population size to be a success and, therefore, can be implemented by virtually any size city or town. This makes it especially favorable for Tennessee with its varied population densities.

Source separation is less capital intensive than mechanical recycling because people do the processing (cleaning, separation, and bundling) of the materials as they are generated. The main functions of the actual recycling program are to collect, screen, prepare for transport, and then transport the already separated materials. Residents like source separation recycling because it represents a

positive environmental action in which they can participate directly. It requires minimal efforts, expense, and time.

Source separation collection is generally subdivided into two systems named according to the collection method: (1) separate truck, and (2) rack system. In the separate truck approach, manned vehicles are routed throughout the community for the sole purpose of collecting source separated materials for recycling. The system is similar to that used in cities for regular solid waste collection. Only curb or alley pickup service should be practiced when collecting recyclables. On property (back yard) collection is uneconomical due to the relatively low volume of materials picked up per stop. Collection must be done on a regular schedule, e.g., weekly, biweekly, or monthly. The schedule should be simple and uninterrupted so that citizens do not become confused.

The rack or piggy back system is so called because a special container attached to the back or side of a regular compactor truck is used to collect paper bundles (only paper, mainly newsprint, has been collected in this manner due to the small storage area). In a rack system, start up costs are less than separate truck even if racks must be bought or constructed.

The rack system has some advantage over the separate truck method. The separate truck method requires an independent crew and truck to cover each route and for each material being collected unless the trucks are specially designed with separate compartments for different materials. The rack system allows for simultaneous collection of refuse

and paper. Fuel and labor cost are, therefore, reduced. Also, once the racks are made they can be stored indefinitely if there is a severe drop in market prices and brought out again when collection is once more economical.

More people may participate in source separation when they believe it is economically feasible. Some agencies such as TVA separate paper on-site and are able to recycle much of it. Organizations such as the Tennessee Environmental Council have worked with Vanderbilt University to establish centers where people can return newspapers and aluminum cans.

An example of citywide promotion of separation is in Chattanooga, Tennessee. The people of Chattanooga and Hamilton County have been asked by the local government to stack their newspapers by their garbage containers on the days of collection. Newspapers are already separated and are able to be recycled. It has not been decided whether the program has been a success or not.

On-Site Storage

On-site storage is where waste is placed from the time it is generated until it is collected. Methods of on-site storage range from metal cans with tight-fitting lids to plastic and paper bags. Some localities allow plastic cans. Most commercial establishments and apartments utilize dumpsters, which are also used in the rural sections of counties as a means of on-site storage. It is up to the individual in these rural sections to transport his garbage from the place of generation to these dumpsters.

The method of on-site storage is important because it can affect resource recovery and collection practices as well as cause adverse effects on the environment. Resource recovery is affected when source separation is practiced at the point of on-site storage. If waste is separated, time and money can be saved in solid waste practice. Collection costs may be used if special equipment is needed to handle dumpsters or roll-off containers.

Collection

The collection of solid waste takes several forms. Door to door collection is the most expensive type as well as the most time consuming. It is also the most convenient. A truck travels to each home and collects the waste by coming to the back door and picking up each container. Curbside collection requires the resident to carry the waste container to the street side on designated days when the waste is to be collected.

In bulk collection, solid waste is collected from large containers such as dumpsters which are emptied mechanically. Bulk collection is faster and results in fewer injuries, and is also less labor intensive than curbside service. Many of those who use bulk collection are apartment complexes, commercial establishments, and industries.

The frequency of collection is usually twice weekly, weekly, twice monthly or monthly. Twice weekly is ideal for the generator from a standpoint of storage capacity. This practice also cuts down on the amount of odors, insect-vector feeding, and breeding associated with solid waste.

In weekly collection, solid waste is collected on one designated day of each week. A problem with weekly collection is that many household containers are overflowing with waste by the end of the week. During the summer months, fly and mosquito breeding can occur if waste and containers are not properly stored. For these reasons, both twice monthly and monthly, collections are undesirable.

Many municipalities furnish their residents with collection systems owned and operated by the local governments. Residents pay for these services through taxes. When there is a cutback in government spending, some localities have proposed going from a twice weekly to a weekly collection service in order to save money.

Other municipalities contract with the private sector to operate a collection service for their residents. In some instances the private sector may develop a collection service with individual homeowners in an area.

Transportation

The transportation equipment used in solid waste management is usually decided by the type of collection system, the amount of waste generated, and the distance to the treatment or disposal facility. Curb collection is faster than backdoor collection, and trucks are 17 to 20 yards in length. Trucks used in backdoor collection are smaller in length to allow them easy maneuvering in residential driveways.

If there is a great deal of waste to be collected, many services have compactors installed on the trucks so that more space can be

provided for waste. The distance to the treatment or disposal facility will determine how long or short the truck is. A longer length truck will be used if all the waste needs to be collected in one trip.

Processing

Processing is defined in RCRA, Section 6902, 1976, as:

an operation for the purpose of modifying the characteristics or properties of solid waste to facilitate transportation or disposal of solid waste including, but not limited to, incineration, composting, separation, grinding, shredding, and volume reduction.

The transfer station is a processing facility where waste is compacted with a hydraulic ram, packed into a trailer truck and hauled to a landfill. The waste is processed by being reduced in volume for transporting only. It must still be taken to a disposal facility. Transfer stations are used when municipalities have trucks that are not very large in volume so that one truck will be used many times. The facilities are used when a site such as a regional landfill is far away from some collection routes.

Incineration of waste can now produce steam as a form of energy recovery. This process can also reduce the volume of waste by as much as 90 percent. The noncombustibles and residue must still be disposed of after incineration has taken place. Although expensive, the incineration of municipal waste may become a more viable alternative for energy production because it is a renewable resource.

Other processing techniques are shredding, baling and grinding. These techniques are expensive because the machinery is costly to

maintain, therefore adding to the cost of operating a landfill. These processes (shredding, baling, and grinding) only reduce the volume of waste. A residue is left that must still be disposed.

Disposal

Disposal is the return of solid waste to the earth through burial, dumping, or chemical reaction. The selection of what method of disposal that will be used involves factors such as cost, geography, resource recovery, public opinion, and the method's adaptability to economic changes in the area.

The sanitary landfill, or the burial of wastes, is the most common method of solid waste disposal. It involves depositing refuse in a natural or man-made depression, compacting it to the smallest volume, and then covering the refuse with earth or other material in a systematic and sanitary manner. A landfill design is decided by the volume requirements of waste, the needed site improvements, the protection of surface and groundwater, and the control of gas movement (United States Environmental Protection Agency, Sanitary Landfill Design and Operation, Washington, D.C., 1972, pp. 20-30).

In most sanitary landfills, solid waste is spread and compacted in a cell type structure. The size of the cell depends on the amount of compacted waste disposed of each day. At the end of each day, the cell is covered with a layer of soil, and then compacted. The following day, a new cell of refuse is developed.

Sanitary landfills are usually designed in either the trench or area method. When using the trench design, waste is spread and

compacted in an excavated trench. Cover material comes from the excavation of the land and the material is spread and compacted in such a way that a basic cell structure is formed. The trench must be twice as wide as any equipment used. One advantage of the trench method is having cover material readily available from the excavation and the excavated soil can be stockpiled and used later as cover material.

The area form includes having waste spread and compacted on the natural surface of the ground. Cover material is then spread and compacted over it. The area works best on flat or gently sloping land and in quarries, strip mines, ravines, and valleys (U.S. EPA, 1972, p. 27).

Open dumps, as a means of waste disposal, are prohibited by law. Most open dumps are closed and some are in the process of being converted to sanitary landfills. Chemical reaction has been considered a form of incineration and was discussed earlier in this chapter as a form of processing.

Other methods of disposal include grinding, food wastes, garbage feeding, and composting. Grinding means garbage is ground or shredded and flushed into sewers. Grinders are used in homes, restaurants, produce terminals and supermarkets, and are widespread in residential use (Institute for Solid Waste Management of American Public Works Association, Municipal Refuse Disposal, Chicago, 1970, p. 244). They are not commonly used in commercial establishments because of the capital investment, depreciation, cost of additional water, electricity, and additional disposal requirements.

Garbage feeding has waste that is edible and on farms especially built for garbage feeding, it can be separated and fed to hogs (Institute for Solid Waste Management of American Public Works Association, 1970, p. 269). Usually garbage is collected by private haulers who make their own arrangement with restaurants and institutions. It is inconvenient since edible waste must be separated and is not as popular as it once was due to health and agriculture regulations for controlling animal disease. Waste that is left over must still be disposed of by other methods.

Composting is the use of waste as a soil conditioner. The idea is to treat waste with the use of aerobic microorganism under controlled conditions (Institute for Solid Waste Management of American Public Works Association, 1970, p. 293). A humus like material is left that can be used as a fertilizer. However, composting has not been successful because of the economic problems of uncertain markets, and the difficulties in storing, processing, packaging, distributing and selling the product.

Hazardous Waste

Generation

Hazardous waste may cause serious illness or pose a threat to the environment. The waste generated is an undesirable byproduct that is usually the result of a manufacturing process. The major generators among the industries that EPA has studied in detail are listed in Table 2.

Table 2
Major Generators of Waste among Industries
Studied by EPA

Generators	Million tons per year
Primary Metals	8.3
Organic Chemicals	6.7
Electroplating	5.3
Inorganic Chemicals	3.4
Textiles	1.8
Petroleum Refining	1.8
Rubber and Plastics	0.8
Miscellaneous (7 sectors)	0.7
Total	28.8

Source: U.S. EPA, Hazardous Waste Facts, A Statistical Handbook, Washington, D.C., 1980, p. 12.

Hazardous waste comes from many segments of society such as industry, hospitals, research laboratories and all levels of government. Industry is the largest source of generation. These wastes are generated to manufacture such items as cans, fuel, paper, plastics, clothing, rubber, paint, pesticides, and medicines. Table 3 is an illustration of the products that can generate potentially hazardous waste.

Table 3
Products That Can Generate Hazardous Waste

Products	Hazardous waste generated
Plastics	Organic chlorine compounds
Pesticides	Organic chlorine compounds, organic phosphate compounds
Medicines	Organic solvents and residues, heavy metals (mercury and zinc, for example)
Paints	Heavy metals, pigments, solvents, organic residues
Oil, gasoline, and other petroleum products	Oil, phenols and other organic compounds, heavy metals, ammonia salts, acids, caustics
Metals	Heavy metals, flourides, cyanides, acid and alkaline cleaners, solvents, pigments, abrasives, plating salts, oils, phenols
Leather	Heavy metals, organic solvents
Textiles	Heavy metals, dyes, organic chlorine compounds, solvents

Source: U.S. EPA, Everybody's Problem: Hazardous Waste, Washington, D.C.: 1980, p. 13.

EPA has proposed a list of all hazardous waste. Listing is the most common method for defining hazardous waste in European countries. EPA has also proposed identifying hazardous waste by testing it for the following characteristics; ignitability, corrosivity, reactivity, and toxicity.

Ignitability identifies waste that pose a fire hazard during routine management. The fire hazards include dangers of heat, smoke, and the spreading of harmful particles over wide areas. Corrosivity requires special containers for wastes because these wastes require segregation from other waste. These wastes can dissolve toxic contaminants.

Reactivity is explosiveness. During routine management, this type of waste can react spontaneously with air or water. Toxicity identifies waste that release substances in sufficient amounts to harm human health and the environment.

The consequences of hazardous waste are: pollution of groundwater; contamination of rivers, lakes, and other surface waters; pollution of the air; explosions and burns; poison of the food chain; and poison by direct contact (U.S. EPA, Everybody's Problem: Hazardous Waste, Washington, D.C.; 1980, pp. 1-18).

In 1978 the groundwater of Toone, Tennessee, was polluted with organic compounds that leaked from a nearby landfill. These compounds had been buried in the landfill in 1972 and pesticides from the site contaminated the water supply (U.S. EPA, 1980, p. 1).

The "Valley of the Drums" is a 7-acre site approximately 25 miles south of Louisville, Kentucky. Approximately 17,000 drums were deposited in this site and approximately 6,000 drums held toxic contents. An undetermined quantity of hazardous waste was buried in drums and subsurface pits. Staff from EPA analyzed the site in 1979 and found that surface water had been contaminated by 200 organic chemicals and 30 metals (EPA, 1980, p. 2).

Thirty thousand to 50,000 drums of industrial waste were buried at a site in Chester, Pennsylvania, between 1966 and 1978. Air was polluted when a fire broke out in 1978. Over 45 firemen required medical treatment for lung and skin irritation from chemical burns. A number of homes located within three blocks of the site were evacuated (EPA, 1980, p. 5).

Ten states generate 65 percent of the hazardous waste in America. These states are Texas, Ohio, Pennsylvania, Louisiana, Michigan, Indiana, Illinois, Tennessee, West Virginia, and California (U.S. EPA, Hazardous Waste Facts, A Statistical Handbook, Washington, D.C., 1980, p. 14).

Storage

Storage is the interim containment of hazardous waste after generation and prior to disposal. A storage facility is the location where hazardous waste is stored, either on a temporary basis or for a number of years. If storage of hazardous waste is not managed properly, then fires or spills could threaten the public welfare.

Most generators will store hazardous waste on-site for a short time so they can gather enough of the waste to justify the costs of transporting the waste to a permitted facility. The waste is stored in a container such as a metal drum or a tank that is not portable. Some generators pile their waste on top of the ground while others put waste in surface compoundments called pits, ponds and lagoons.

Transportation

The transporter of hazardous waste is any person engaged in the transportation of hazardous waste. Most hazardous waste is collected and transported by some type of truck or through a bulk method.

Trucks are usually those of the tractor trailer type and carry waste which is stored in drums. A few trucks are those with an open bed and have waste which is not containerized.

Bulk transportation involves the use of trains or layers. Only a small percentage of hazardous waste is collected and transported in this manner.

Those who must transport their hazardous waste often contract with an industry that specializes in transporting hazardous waste. The transporter must collect the waste from the generator and then transfer it to a treatment or disposal facility.

In the past, dishonest transporters or midnight dumpers have illegally disposed of hazardous waste. Often, generators believed their waste was being transported to a facility where it would be treated or disposed of in an environmentally sound manner.

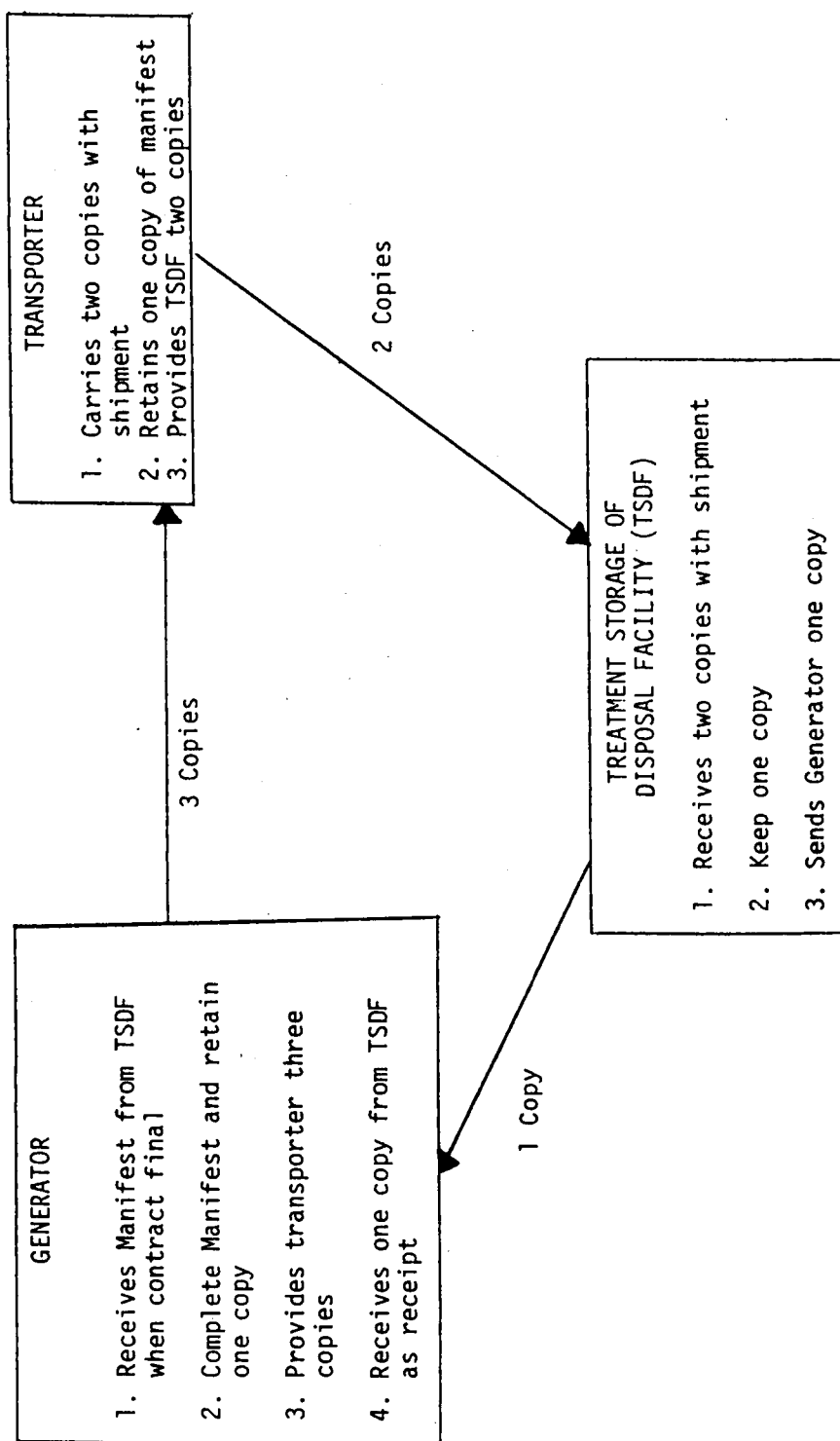
In order to address the problem of hazardous waste transportation, the United States Department of Transportation, the EPA, the DSWM and the Tennessee Public Service Commission have developed a manifest system to track the transportation of hazardous waste. The manifest describes what waste is being generated, who generated the waste, and where the waste is being transported. A manifest diagram is shown in Figure 1.

The state hazardous waste regulation, as does the U.S. EPA's hazardous waste regulations, also provides for the protection of the public from spills during transport. Transporters are required to immediately notify the Tennessee Office of Civil Defense and Emergency Preparedness in case of a spill. The Office of Civil Defense and Emergency Preparedness is responsible for taking any necessary immediate action to protect the public health and the environment, and is ultimately responsible for cleaning up the spill. In Tennessee, the Office of Civil Defense is the state agency responsible for coordinating response to spills. They can and do draw on expertise and resources from other state and local agencies, including the Department of Public Health.

Treatment

Treatment is defined in the Tennessee Hazardous Waste regulations, Section 53-6304, 1981, as:

any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer to transport, amenable for recovery, or amenable for storage.



The Division of Solid Waste Management will receive a copy of the Manifest upon request or if a discrepancy occurs.

Figure 1. Hazardous waste tracking system (manifest).

A treatment facility is a location where hazardous waste is subject to treatment prior to disposal. There are three kinds of processes that can be used to render a hazardous waste less hazardous or nonhazardous. These processes are physical, chemical or biological.

The physical processes include carbon or resin absorption, distillation, centrifuging, flocculation, sedimentation, reverse osmosis and ultrafiltration. Chemical processes are activities such as fixation into solids that are more readily disposed of, neutralization, ion exchange to remove heavy metals, oxidation, and precipitation.

Activated sludge treatment is one biological process. This system destroys hazardous organic compounds, and the left over wastes go through trickling filters and are then decomposed through landfarming as organic-rich wastes.

Incineration is a process of treating hazardous waste by burning it until a small amount of residue is left. The leftover residue must be disposed of in an environmentally sound manner.

EPA has conducted research projects on incineration for chemical wastes. The projects included several types of commercial incinerators and 20 different chemical wastes, including nine pesticides (U.S. EPA, Everybody's Problem: Hazardous Waste, Washington, D.C., 1980, p. 18). One chemical incineration used cement kilns to destroy chlorine which is a toxic waste. The alkalinity of the residue left over waste significantly reduced so disposal was simplified. This process also produced heat that was used as fuel.

In Europe, chlorine or bromine-organic hazardous waste has been burned at sea on special incinerator ships. The possibility of building American ships such as these is being studied by the EPA.

Disposal

Disposal is the final disposition of hazardous waste and a disposal facility is where the final disposition takes place. On occasion, hazardous waste is disposed in the air or water but the most practical waste management alternative is to put the waste in the land.

Hazardous waste that is to be buried is placed in metal or plastic drums that can safely contain these wastes according to staff of the DSWM. The site where the waste will be buried should have soil characteristics with the least possibility of wastes leaking to the groundwater. Those from the DSWM have said sites may use bentonite enhanced soil since this soil has low permeability.

A plastic liner is placed in the ground after a site has been prepared to accept the burial of wastes. The drums of hazardous wastes are packed in the lined burial site with sand or some type of settling materials according to engineers from the DSWM. The operators of any registered burial site are inspected by a state or federal agency to make sure the site is in compliance with regulations for hazardous waste disposal.

Land disposal of hazardous waste can be a source of problems such as fires, explosions, air and groundwater pollution, and direct contact poisoning. EPA analyzed the damage mechanisms involved in a case study of 421 disposal sites. The findings are presented in Table 4.

Table 4

Mechanisms Involved in Incidents of Damage by Disposal Method^a

Disposal method	Surface impoundments	Landfills, dumps	Other land disposal ^b	Storage of wastes	Smeltings, slag mine tailings
Number of cases	89	99	203	15	15
Damage mechanism (number of cases)					
Groundwater (259)	57	64	117	10	11
Surface water (170)	42	49	71	—	8
Air (17)	3	5	9	—	—
Fires, explosions (14)	—	11	3	—	—
Direct contact poisoning (52)	1	6	40	5	—
Wells affected ^c (140)	32	28	74	4	2

^aThe tabulation is based on 421 cases studied thus far. The numbers in the matrix add up to more than 421, because several damage incidents involved more than one damage mechanism.

^bHaphazard disposal on vacant properties, on farmland, spray irrigation, etc.

^cNot included as a damage mechanism.

Note: The dates presented in this table have been derived solely from case studies associated with land disposal of industrial wastes.

Source: U.S. EPA, State Decision-Makers Guide for Hazardous Waste Management (Washington, D.C.: 1977), p. 11.

The table indicates that groundwater contamination is the most common type of damage followed by surface water contamination. Illegal dumping which is shown as "other land disposal" and includes promiscuous dumping or dumping on land not designated for disposal is the most significant source of damage. The most environmental damage occurs in states that do not have regulatory programs for hazardous waste disposal.

Disposal is the least preferred waste management alternative, but in many situations, is the only one realistically available. There is a need for disposal facilities because some wastes cannot be realistically reused, recovered, or treated.

CHAPTER III

EFFECT ON INTERGOVERNMENTAL RELATIONSHIPS IN TENNESSEE

AS A RESULT OF RCRA

This chapter is an investigation of the intergovernmental relationships regarding solid and hazardous wastes between the federal, state, and local governments in Tennessee before and after the passage of RCRA. Issues that shaped the intergovernmental relationships are addressed for both solid and hazardous wastes. The information was obtained through a series of interviews. No one has been quoted directly in order for those questioned to feel they could speak without reservation. Those who were interviewed are listed as Appendix A.

Solid Waste

According to those interviewed, the relationships for solid waste management between federal and state, and state and local governments could be classified as cooperative from the time of the first federal solid waste legislation until RCRA was passed (1965-1976). The issue which needed cooperation prior to RCRA of 1976 was the proper management of federal funds used for state and local solid waste programs. The control of how these funds were spent was left in the hands of the state or DSWM.

Those interviewed from the federal, state, and local governments found this relationship to be satisfactory. The federal sources said

the federal government's function was to provide funds and technical information for solid waste programs to the state.

Those from the state who addressed this management issue said the DSWM provided technical assistance to local governments from 1965 to 1981. Local sources said the way the funds were managed gave the local governments the freedom to establish their own priorities as to how the funds would be used in different localities.

Since local governments could establish their own priorities, this left the state free to use DSWM staff time to educate the public regarding solid waste management. The DSWM spoke to various civic organizations about the dangers of open dumps and the advantages of sanitary landfills. When the State Solid Waste Regulations were passed in 1969, they gave the state the authority to regulate solid waste through permitting disposal facilities.

Even with this regulatory authority the issue for the federal/state and state/local relationships was the proper management of funds provided for solid waste activities. Those interviewed said the relationship between all levels of government was still cooperative until 1979.

On July 31, 1979, EPA's "Guidelines for the Development and Implementation of a State Solid Waste Management Plan," was published in the Federal Register. These guidelines required states to develop approved plans for solid waste programs (Section 4002(b) of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976).

It was during the development of Tennessee's plan that the federal/state and then state/local relationship for solid waste programs changed. The key issue was still the management of solid waste funds but all sides no longer agreed as to how these funds should be spent or managed.

Those interviewed from the federal government said EPA wanted Tennessee to use federal dollars to develop a state solid and hazardous waste management plan. Such a plan would describe how the state was going to manage waste during a five-year time period. The EPA wanted Tennessee to use federal dollars to specifically describe where landfills were needed in different areas, as well as promote the use of treatment and processing facilities. The state disagreed with EPA and this disagreement led to a breakdown in the cooperation between federal and state solid waste management agencies.

The state wanted to continue to use the federal dollars to offer technical assistance upon request to local governments rather to develop a detailed plan. Those from the state who were interviewed said the staff of the DSWM believed EPA was using federal dollars set aside to develop state plans as a way of becoming involved in the daily management of solid waste activities.

Therefore, from 1979 until 1981, the issue of management of federal and state dollars caused the relationship between all three levels of government to become strained. Those interviewed from the state said the DSWM reacted negatively to federal suggestions as to how the state plan should be developed. The federal government ceased to fund solid

waste planning activities in October 1981. This cutback in funding has eased the strain on the federal and state solid waste relationship because there is now little contact between the two regarding solid waste problems. However, the relationship between state and local governments has changed drastically since 1981 according to state and local sources interviewed.

When the state stopped receiving federal dollars in 1981, the state stopped supplying local governments with many services. These services included supplying technical assistance for local solid waste problems involving on-site storage, collection, transportation, treatment, and disposal. The local governments had come to rely on state assistance when developing solutions for solid waste problems. When the state ceased to provide this technical assistance in 1981, local governments were faced with two alternatives. One was to turn to the private sector or consultants for services once provided by the state without cost. The other alternative was that they could develop and fund their own local expertise by raising taxes or initiating a fee for services rendered.

In 1981, the state also ceased to fund the Local Assistance Grants. These grants were provided by the state legislature for local governments interested in developing a solid waste program. The state funded between 10 and 50 percent of local solid waste facilities such as landfills. Those interviewed from the local government expressed disappointment over the loss of funds and said the staff of the local governments believed they had been let down by the state. Those from

the local government said the state had encouraged local officials to turn to the state for help and guidance in solving their solid waste problems.

In 1981, the state not only stopped offering technical assistance but also ceased funding local solid waste management activities. The result was a change in the relationship between state and local governments from cooperation to mutual independence. Those interviewed from the state and local government perceived the role of the DSWM had changed dramatically since the passage of RCRA. The change in role was from being a provider of technical assistance in solid waste management to that of a regulator of hazardous waste. The issues that caused this change in the role of the DSWM and thus further describe the intergovernmental relationships are investigated in the following section.

Hazardous Waste

The issues that determined the federal/state and state/local relationships for hazardous waste management were funding, management, and politics. When RCRA was passed in 1976, a federal agency, EPA, was granted primacy for the first time in administering a federal environmental law. According to those from the state who were interviewed, the fact that EPA had been given the authority to regulate, not just to assist, with this hazardous and solid waste program, determined what issues would shape the intergovernmental relationships.

Funding

When Tennessee began developing its hazardous waste program in 1977, those interviewed from the DSWM said the state planned to use federal funds. Such federal funds were to provide approximately 75 percent of the funding of hazardous waste management for approximately five years (1981-1985).

Those from the staff of the DSWM said the thrust of the hazardous waste program was to insure effectiveness, fairness, and consistency with the federal hazardous waste program, and other state and federal programs (Tennessee State Planning Office, "Final Draft of the Tennessee Solid Waste Management Plan," p. 35). The Final Draft of the Tennessee Solid Waste Management Plan was prepared between 1979 and 1981. At the time the DSWM planned to provide state funding of 25 percent or 25 percent of the hazardous waste program through an in-kind match system. Table 5 is a summary of state and federal funds for hazardous waste activities in Tennessee from 1981 through 1985.

Table 5

Funding for Tennessee Hazardous Waste Program (1981-1985)

	1981	1982	1983	1984	1985
Federal	771,000	771,000	771,000	771,000	771,000
State	257,000	257,000	257,000	257,000	257,000
Total	1,028,000	1,028,000	1,028,000	1,028,000	1,028,000

Source: Tennessee State Planning Office, "Final Draft of the Tennessee Solid Waste Management Plan," 1981, p. 92.

However, the DSWM was notified at the end of 1981, after the plan had been developed, that there would be a reduction in federal funding for state hazardous waste management. Those interviewed from the Tennessee Department of Public Health said they had been preparing for this reduction by exploring other ways of funding the state program. As a result, these sources said the DSWM would assess fees from those who generate, transport, store, treat, or dispose of hazardous waste.

The DSWM is given an appropriation each year from the state legislature based on the estimates the Commissioner of the Department of Public Health submits to the legislature. The Commissioner estimates what it will cost the DSWM to administer the program. The legislature then appropriates state funding for hazardous waste management. The DSWM turns over all fees collected back to the state general fund and receives another appropriation from the legislature during the following fiscal year.

Those interviewed from the federal and state government said there would be a reduction of 15 percent in the amount of federal funds the DSWM would receive for hazardous waste management beginning in October 1982. Staff from the DSWM said since a new President had taken office in 1981, the working relationship with EPA had not been as strained as it was between 1977 and 1981 regarding hazardous waste programs. However, many of those from the state believe the DSWM should prepare to find ways for the state to fund 100 percent of the hazardous waste program. They said they believe this because EPA no longer involves themselves in the daily management of state programs, there was a

15 percent reduction federal funds, and the current administration has encouraged turning over some federal programs or responsibilities to the state.

Management

Those interviewed from the Tennessee Department of Public Health said strong suggestions from EPA caused the state to change the structure and enforcement procedures of some of its environmental programs. The DSWM was one such changed program.

The Commissioner decided the directors of the four environmental divisions for air, water, radiological health, and solid and hazardous waste would develop Memoranda of Agreement. These memoranda would specify how these divisions would work together when investigating environmental problems such as the leaching of waste from a sanitary landfill into a nearby stream. Appendix B contains examples of such memoranda.

The state sources talked with said EPA had encouraged the state to develop these memoranda. They also said that the development of these memoranda was the most positive thing to come out of the federal and state relationship since the passage of RCRA.

Local government sources also found these memoranda helpful. Those interviewed from local governments said they believed the state was more organized when responding to environmental problems as a result of the memoranda. The memoranda clarified what division was responsible for what kind of problem as well as how different divisions would work together.

Staff from the Department of Public Health said the staff from the Bureau of Environmental Management and Quality Assurance Administration, which houses the different environmental divisions, also decided to update the enforcement procedures used by the different divisions. Staff from the DSWM said EPA had suggested ways of improving the methods in which the state brought enforcement procedures against a violator. These staff members also said when EPA first suggested making these changes, that state staff resented EPA's interference. However, these same staff members said the new procedures were more beneficial to all involved.

The new enforcement procedure of the DSWM is shown in Appendix C. The new procedures streamlined enforcement procedures by clarifying the amount of time between steps of enforcement. The new procedures are now used by all the divisions within the Bureau of Environmental Management and Quality Assurance Administration, whereas, before 1982, each division had its own set of enforcement procedures.

Finally, the management of the state hazardous waste program was affected by a reorganization of the DSWM. Those from the DSWM said the decision was made to reorganize so that the staff could spend more time on hazardous waste enforcement and less time on solid waste technical assistance. Table 6 is an allocation of the resources of the DSWM that began in 1982. Identified are job titles, number of positions, and the number of man-years to be allocated to both hazardous and solid waste management activities. Table 6 shows that 29.0 man-years will be spent on hazardous waste activities as opposed to 8.0 spent in 1982 on solid waste activities.

Table 6
Allocation of Man-Hours of the DSWM, 1982

Job title	Number of positions	Man-Years	
		Nonhazardous	Hazardous
Environmental Engineer 6	1	.5	.5
Environmental Engineer 5	1	.5	.5
Environmental Engineer 4	0	0	0
Environmental Engineer 3	1	0	1.0
Environmental Engineer 2	5	0	5.0
Environmental Engineer 1	3	0	3.0
Chief Env. Tech. Serv.	1	.5	.5
Environmental Consultant 3	6	.5	5.5
Environmental Consultant 2	6	3.0	3.0
Environmental Consultant 1	3	0	1.0
Geologist 3	1	0	1.0
Geologist 2	1	0	3.0
Geologist 1	3	0	0
Chemist 3	1	1.0	0
Chemist 2	2	2.0	1.0
SWM Operator Trainee	1	0	1.0
Systems Analyst 2	1	0	1.0
Health Administrator 3	1	0	1.0
Health Programs Coordinator 2	1	0	1.0
Total	39	8.0	29.0

Source: Tennessee State Planning Office, "Final Draft of the Tennessee Solid Waste Management Plan," 1981, p. 61.

Appendix C also includes organization charts of the DSWM before RCRA or prior to 1982. The new organization chart was based on some of the suggestions made by EPA according to the staff of the DSWM. This new organization is also illustrated in Appendix C. The reorganization of the DSWM will become effective in 1982 and was made to include more staff for hazardous waste enforcement. The Permits and Quality Assurance Section was created as was Field Operations for Technical Assistance and Enforcement. The staff of the DSWM said the section for Policy Development and Planning was created so that the staff would be better equipped to address the needs of the state, and also those of the private sector regulated by the new hazardous waste programs.

Those interviewed from the state said as a result of these management changes, there had been a better flow of information to the federal as well as to the local governments regarding hazardous waste management. The staff also said that the state would be spending less time on solid waste technical assistance, as a result of these management changes. Those from the local government expressed disappointment and said this change would weaken the state and local solid waste working relationship.

Politics

From 1977 until 1981, what was once a cooperative working relationship between the federal, state, and local governments became strained. One of the major reasons for this was that the DSWM changed from an office that offered technical assistance for solid waste

management to a state agency that regulated hazardous waste. The reasons that the DSWM changed its state role were often political according to those interviewed. The following paragraphs describe why the state decided to change its role according to those interviewed.

According to state staff that were questioned, the Commissioner of Public Health made the decision to get the state in the position of administering a hazardous waste program for a variety of reasons. The Commissioner believed it was the responsibility of the DSWM to run the hazardous waste program because the state had been involved as long as the federal government in administering solid waste programs. The Commissioner believed if the state did not make an effort to administer the hazardous waste program, the state would lose all control of managing hazardous waste problems in Tennessee. The state had assumed administration of other federal programs in the past through its Departments of Labor, Employment Security, and Human Services.

The Commissioner and DSWM were encouraged to develop a program by industry that would be affected by any hazardous waste regulations. Those interviewed from the private sector said industry preferred having the state regulate hazardous waste than being under the jurisdiction of EPA. Industry believed federal regulations would be harsher, as the EPA would want zero contamination by hazardous waste of any sort. Industry was also under the impression that EPA staff were usually idealistic, right out of school, with little experience in solid and waste problems and that they would not be as practical in dealing with industrial problems as the state would be. Industry thought EPA was noted for

requiring more paperwork by the private sector in order to be in compliance with an environmental program. Finally, the industry said it would be less expensive to work under the DSWM. EPA's closest office would be in Atlanta and this would require extensive traveling on the part of industry. The Division had its headquarters in Nashville and also had established field offices in Memphis, Jackson, Chattanooga, Knoxville, and Johnson City. Therefore, the state would be closer in proximity to hazardous waste problems in Tennessee.

There were two sides for those representing environmental concerns. One side said EPA was unable to send enough people to Tennessee who would be readily available to enforce a hazardous waste program, therefore, since the DSWM already had field offices across the state, the DSWM should administer the program. The other side said EPA was better equipped to run the program than was the DSWM. This person said EPA had better laboratory facilities to analyze hazardous waste and was better informed regarding the current state of the art in various hazardous waste issues.

Finally, lobbyists convinced the state legislature that it would be in the best interest of Tennessee for the state to administer a hazardous waste program. These lobbyists represented private industry that would be regulated by hazardous waste programs, environmental groups, and the Tennessee Department of Public Health. As a result, in 1977, the state legislature passed the Tennessee Hazardous Waste Law. According to staff of the DSWM who were interviewed, the reason the state enacted a law so soon after RCRA of 1976 was that state lawmakers

believed the federal government would assume managing hazardous waste in the state if the DSWM was not immediately given the authority to do so.

This decision by the state to set up a state hazardous waste program was the cause for problems in the working relationships between the federal, state, and local governments. The reason was, the state and federal government disagreed about the structure of the proposed state regulations and the state left the local governments out of the process of developing these regulations.

RCRA provided that within 18 months after the passage of the act, EPA would have developed a set of federal regulations that would regulate hazardous waste from its point of generation to its disposal. The states also had the right and capability to develop their own hazardous waste regulations as long as these regulations were substantially equivalent to those that were federal.

According to the staff of the DSWM, the state and federal government disagreed about what was "substantially equivalent" to the federal regulations. This disagreement continued from the time Tennessee began developing its hazardous waste program in 1977 until 1981 when the state regulations became law. Table 7 is a summary of the process the state went through with EPA in order to get approval for the state hazardous waste program. One example of the continued disagreement between the DSWM and EPA was the right of the state to get the authority to inspect the on-site disposal by an industry of hazardous waste. In 1981, the DSWM was granted the authority to do so because the state regulations were substantially equivalent to the proposed federal regulations.

Table 7
Development of Federal and State Hazardous Waste Regulations

Year	Federal government	Tennessee state government
1976	• RCRA became law • Federal regulations to be out in 18 months	
1977	• EPA prepared first draft of federal regulations	• Tennessee Hazardous Waste Law • DSWM held a series of six public meetings across state to identify public concerns and ideas for regulations • Rough preliminary set of regulations submitted for limited public review by DSWM
1978	• Prepares and publishes first set of regulations	• DSWM reviews proposed EPA regulations • Changes state regulations to be substantially equivalent to federal
1979	• EPA reviews public comments for first set of federal regulations • EPA reviews Tennessee's second set of regulations and recommends changes to be "substantially equivalent"	• DSWM reviews and responds to first set of federal regulations • DSWM reviews public comments for second set of state regulations
1980	• EPA prepares second set of federal regulations • EPA reviews Tennessee's proposed regulations in order to see if they are substantially equivalent to not yet finalized federal regulations	• Legislature adopts emergency hazardous waste regulations • DSWM submits second set of regulations with changes necessary to be substantially equivalent to EPA
1981	• EPA continues to develop federal regulations	• Tennessee Hazardous Waste Regulations become effective March 2, 1981
1982	• Final form of federal regulations expected	• Last part of Tennessee regulations to be approved October, 1982

According to one staff member of the DSWM, it was obvious that EPA had too many problems with the proposed federal regulations and was not going to meet their deadline for promulgating the final regulations. Therefore, the decision was made to try to anticipate what would be accepted as substantially equivalent to federal regulations that were not yet developed. This anticipation on the part of the DSWM led to many disagreements between the DSWM and EPA in the development of Tennessee's hazardous waste program. Local governments could only participate at hearings held by the DSWM regarding the proposed program.

Those from the staff of the Tennessee Department of Public Health said the state left out local governments in the development of the hazardous waste program because it was politically expedient to do so. The staff said they believed local governments did not have the technical expertise to participate in writing the regulations. These state staff further justified their position with local governments by saying that representatives of local governments could participate in public hearings. Public hearings were held by the DSWM so that interested citizens, including local officials, would have the opportunity to react to the proposed hazardous waste program. The staff from the DSWM also said the new Solid Waste Disposal Control Board had representatives from local governments since one member comes from the County Services Association, one from the Tennessee Municipal League, and another is the Executive Director of the Tennessee State Planning Office. All proposed regulations for hazardous waste must be approved by the Solid Waste Disposal Control Board, according to staff from the DSWM.

The issues of funding, management, and politics defined the intergovernmental relationships for Tennessee's hazardous waste program. According to the staff of the DSWM, there was a feeling of basic distrust on the part of the state towards EPA in all of these areas. Therefore, the state reacted to this distrust toward federal government by leaving out the local governments in the funding, management, and politics of the state hazardous waste program.

CHAPTER IV

COMPARISON OF TENNESSEE'S RESPONSE TO RCRA TO THOSE OF FLORIDA, KENTUCKY, AND NORTH CAROLINA

The states of Florida, Kentucky, and North Carolina were affected by the Resource Recovery and Conservation Act of 1976. This chapter is an analysis of the response of these states to RCRA in an intergovernmental context and a comparison of these three responses to that of Tennessee. The information for Chapter IV was obtained through a questionnaire and by telephone interviews. The telephone interviews were used as a follow-up to discuss different aspects of the questionnaires.

The listing of questions and answers given by each state is shown as Appendix D. A representative from the Tennessee Division of Solid Waste Management completed a questionnaire. Tennessee's answers are shown along with those of Florida, Kentucky, and North Carolina in order that the reader can make a comparison of Tennessee's response to that of the other states.

Several conclusions can be drawn from the answers provided by the questionnaires and telephone interviews. Florida, Kentucky, North Carolina, and Tennessee responded to RCRA in an intergovernmental context. All four states have decided to administer solid and hazardous waste programs.

Tennessee and Kentucky have had the most difficult working relationship with EPA or the federal government because these two states decided to develop their own hazardous waste programs. Florida and North Carolina were able to avoid many of these problems by adopting the federal regulations as the state regulations by reference.

Most of Kentucky's and Tennessee's problems with EPA since the passage of RCRA were due to the requirement that state regulations be "substantially equivalent" to the federal regulations. Since these states developed state regulations before the federal regulations were completed, they had to guess what would be accepted by EPA as "substantially equivalent" to the forthcoming federal regulations. Again, Florida and North Carolina avoided these problems by adopting EPA's regulations by reference as the state regulations.

Those interviewed said they had the same working relationship with the federal government before RCRA, first in dealing with the U.S. Department of Health, Education and Welfare, and later with the EPA. Between 1965 and 1976, the federal government provided funds and each individual state determined how the funds would be used. The federal and state relationship in all states could be classified as flexible and cooperative between 1965 and 1976.

During this period (1965-1976), the state agency responsible for implementing state solid waste programs provided technical assistance to local governments. The states offered guidance to local governments for activities such as on-site storage, collection, transportation, and disposal of solid waste. With the exception of North Carolina, the

states encouraged the local governments to develop the expertise to develop alternative solutions for their solid waste problems. North Carolina wanted local governments to rely on the state for such expertise.

From 1965 through the present, disposal, and to some extent, treatment of solid waste has been regulated by the responsible state agency in all cases examined. Tennessee was the only state that offered grants to local governments for the development of solid waste solutions.

Since every state decided to administer the new hazardous waste programs from the same agency that was responsible for solid waste problems they all experienced similar problems. The most common problem all four states had was the difficulty they went through as the state agency changed from a staff that offered solid waste technical assistance to local governments to a hazardous waste regulatory agency.

EPA identified very specific areas of hazardous waste management for regulation such as notification of generation, identification of hazardous waste, short and long term storage of waste, transportation, treatment, disposal and the public participation process. As mentioned before, Florida and North Carolina avoided many conflicts with EPA by adopting the federal program but even they had to change the state law in order to be in compliance with requirements set forth for public participation in RCRA.

All four states were affected by the cutoff of federal funds for solid waste planning activities in 1981. This cutoff affected each state differently in developing a program to regulate hazardous waste.

Florida relied on federal funds to keep the state solid waste program in operation. Since the state had little confidence in the existing program with federal funding, they reduced state solid waste activities to a minimal level, regulating solid waste treatment and disposal facilities. Those interviewed said they did not believe their staff was very strong in technical expertise before RCRA and the reason they had decided to adopt the federal regulations was that they were not staffed to develop their own.

What was already a weak state and local relationship before RCRA is even more so now because the state offers no technical assistance or guidance at all to local governments. Those from the state in Florida said the state had not made any attempt to include the local governments in the hazardous waste program. They felt local governments in Florida probably felt the same way the state did when RCRA was enacted and that was that a lower level of government, the state, could only react to a federal program, RCRA. Florida has decided to spend its time and resources on learning to regulate hazardous waste programs. Therefore, the responsibility for solid waste was shifted to the local governments in this state as a result of RCRA. This reaction was also found in Kentucky and Tennessee and to some extent in North Carolina.

Kentucky reacted to the cutoff in federal funds for solid waste activities by encouraging local governments to develop their own approaches to solid waste problems. Kentucky said it had a cooperative state field staff that was readily available to local governments. Because of the loss of federal solid waste funds and as a result of

changing to a regulator of hazardous waste, Kentucky told the state field staff to transfer the responsibility for the disposal of solid waste to local governments. Local governments reacted by turning to the private sector for what was once provided to them by the state without costs. Again, a state changed from an offerer of technical assistance in solid waste to a regulator of hazardous waste. Local governments in Kentucky had no choice but to accept the responsibility to develop their own solutions to solid waste or to leave their constituents without adequate solid waste facilities.

Interviewees from North Carolina said the state had spent the years between 1965 and 1976 in developing state expertise that could address any solid waste problem presented by a local government. North Carolina had encouraged local governments to depend on the state for technical assistance in all solid waste activities from storage to disposal. Those interviewed said it had been with great reluctance that the state has decided to shift some of these responsibilities to local governments.

Out of all the states surveyed, North Carolina seemed the most hesitant to give up its role of technical assistance in solid waste to local governments and to change to a regulator of hazardous waste. North Carolina wants EPA to renew its funding of solid waste planning activities because the state has relied so heavily on federal funds in the past as a means of offering technical assistance to local governments. Until 1981, the state offered what it thinks was an aggressive solid waste program to local governments in North Carolina without cost because it was paid for with federal funds.

The state began to assess the private sector for the technical review of applications of solid waste treatment and disposal facilities after EPA stopped funding North Carolina's solid waste program. Tennessee is now considering doing the same thing. Those interviewed in North Carolina said the state does not want to charge a fee to review municipal applications but if local governments want to continue to receive technical assistance from the state, they may have to pay for it. The state legislatures provide funds for North Carolina's, as well as Florida's, Kentucky's and Tennessee's solid waste programs.

Those interviewed from all states agreed that lawmakers want to insure the state will be able to properly administer a hazardous waste program before it continues to administer a solid waste program. Those on the staff of the North Carolina Solid and Hazardous Waste Management Branch do not know at this time whether or not the state will continue to fund the solid waste program. The feeling there now is that the private sector representing the hazardous waste industry will encourage the politicians to let the responsibility for solid waste programs go to the local governments so that there will be adequate staff in the state to administer the hazardous waste program. North Carolina will have to decide whether or not the state will spend the money to fund both of these programs.

North Carolina expressed the most reluctance to shift solid waste problems to local governments since the state has encouraged the local governments to rely on state staff in the past for developing solutions to local solid waste problems. The state does not believe local

governments are equipped professionally at this time to handle their own solid waste problems. If the state does shift solid waste to local governments, those interviewed want it to be a slow and gradual process of local governments assuming these responsibilities.

What Tennessee has in common with Florida, Kentucky, and North Carolina is that the state has reacted to RCRA by changing its role as an offerer of technical assistance in solid waste to a regulator of hazardous waste. All four states experienced difficulty in replacing the federal funds for solid waste activities lost in 1981. Every state went through a change in its working relationship with EPA and later local governments as a result of RCRA.

What was frequently said was that before RCRA or from 1965 to 1976, the federal government funded state governments for solid waste planning and management. The federal government usually left the states alone to spend these monies, however each state decided what was best. In all four states' local governments were supported either in the form of grants as Tennessee did, or by offering technical assistance to local governments. This technical assistance ranged from very limited, as in the case of Florida, to somewhat extensive, as in the case of North Carolina. In three of the investigated states local governments were satisfied with state solid waste programs during the years of 1965 to 1976. The exception was Florida in which there appeared to be inadequate staffing to help local governments.

In all four states, the relationship between the state and federal government before RCRA was one of cooperation with the federal

government offering guidance and assistance when the states requested it for solid waste management. Each state, in turn, spent the federal funds in some form of assistance to local governments. The federal government left it up to the states to decide how the money would be spent. All of those interviewed said local governments were pleased in receiving any form of assistance for solid waste management.

After RCRA, the relationship between every state agency that administered solid waste programs and EPA changed drastically. Tennessee officials said EPA demanded much more technical information in quarterly reports than EPA had before RCRA. Those interviewed in the other three states expressed the same views. Many interviewed believed that, after RCRA, EPA interfered too much on a daily basis in the management of state solid waste activities. Kentucky, Florida, and Tennessee said in some ways they were relieved to lose the federal funds for solid waste activities in 1981 because EPA would no longer have an excuse to say how the state should manage solid waste programs.

Only those interviewed from North Carolina said the state had a good working relationship with EPA in solid waste after RCRA. They went on to say this continued cooperation was a result of North Carolina wanting to implement all of EPA's suggestions in state solid waste programs. They concluded that the staff would have no problem in receiving federal dollars again for state solid waste programs because the state had always agreed with the way EPA wanted North Carolina to spend federal funds. Those interviewed in the other three states disagreed, stating they would rather not receive federal dollars if they had to implement EPA's suggestions in the state solid waste programs.

All interviewed expressed regret at losing the state's role of guidance in solid waste but said since there are not insufficient state funds to administer both solid and hazardous waste, running a hazardous waste program had become a higher priority in every state. Tennessee and Kentucky acquired the most technically capable state staffs to administer a hazardous waste program. Florida does not foresee sufficient state funds to acquire additional expertise and North Carolina is trying to use the present staff to administer both solid and hazardous waste without expanding state personnel.

There was agreement that EPA thought the federal government was better equipped to administer a hazardous waste program than the states were during the years of 1976 to 1981. All those who were interviewed from the various states said EPA's attitude regarding the competency of the states had changed since the present administration took office in 1981. This administration has cut back EPA staff and has told the federal agency that states have the right to administer hazardous waste programs if these programs are "substantially equivalent" to the federal regulations.

Both the states which developed state hazardous waste regulations, Kentucky and Tennessee, said there had been a significant improvement in the working relationship between the state and federal government since 1981. These two states said EPA had been much more agreeable about what was "substantially equivalent" in state proposals after 1981. North Carolina and Florida detected little change in the federal-state relationship since 1976. North Carolina, however, expressed regret at

losing federal funds for solid waste activities and misses the guidance and daily advice the state received from EPA prior to 1981.

In the area of state and local relationships since RCRA, local governments had no choice concerning the change in the role of the state agency from solid to hazardous waste regulation. It appears that local governments in all four states are faced with some common problems.

Local governments will have to pay for solid waste management. The alternatives are either turning to the private sector for the development of solid waste alternatives, or hiring technicians who are trained to work in the areas of solid waste. Either way is going to cost the local government additional dollars.

There was an agreement among all interviewed that the state hazardous waste program would not be delegated to local governments. It was felt that local governments do not have the funds to administer hazardous waste programs nor are they adequately staffed to do so. The only exception was North Carolina who said local staff would be used to participate in the inspection of those who generate small amounts of hazardous waste.

There was a consensus among all that local governments would not play an active role in the development of state hazardous waste programs. Locals can develop land use regulations pertaining to the areas around hazardous waste facilities and develop incentives to encourage the location of such a facility in an area. Kentucky is the only state studied which permits local fiscal courts, such as city councils and county courts, to veto the siting of hazardous waste

facilities. Tennessee was the only state where the siting of such hazardous waste facilities was viewed as the determining factor as to what kind of relationship the state would have with local governments regarding hazardous waste management.

In summary, all four states reacted to RCRA by changing from that of an agency that offered technical assistance to local governments in solid waste to regulators of hazardous waste. Every state made this change due to a loss of federal funds for solid waste planning. Even though the federal government is now providing much of the funds for states to manage hazardous waste, every state investigated is anticipating a reduction in these federal funds. Tennessee will experience a loss of 15 percent of federal funds for hazardous waste beginning in October 1982. All the states are preparing to fund their own state programs by assessing fees and through appropriations by state legislatures.

The individual state legislatures have told Florida, Kentucky, North Carolina, as well as Tennessee that hazardous waste management will be a higher priority for state funds than will solid waste management. The result has been that every state has had to shift solid waste programs over to the management of local governments. North Carolina has been the most reluctant to do so. This shifting of responsibilities, first in solid waste from federal to state, and from state to local, and now in hazardous waste from federal to state, but not state to local, has been the intergovernmental response of the states of Florida, Kentucky, North Carolina, and Tennessee to the Resource Conservation and Recovery Act of 1976.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Tennessee's response to RCRA was decided by two major issues. The issues were funding, and the politics involved in structuring the state's hazardous waste program. This chapter is a summary of how these two issues shaped the state's response to RCRA. Recommendations have also been made as to how Tennessee could improve its role in hazardous and solid waste management.

From 1965 until the present, funding for Tennessee's solid and hazardous waste programs have come from four sources. Those were the federal, state, and local governments and the private sector. RCRA changed the way the state had structured its budget for solid, and later hazardous, waste management.

During the years before RCRA (1965 to 1976) the federal government funded Tennessee's solid waste management planning. The federal government allowed the DSWM to choose the way the dollars would be spent. The DSWM acted as a source of providing technical assistance to local governments with the help of these federal funds. The intergovernmental relationship of federal, state, and local governments prior to RCRA was based on the state's flexibility to spend federal dollars.

After RCRA, this flexible relationship between the federal, state and local governments ceased to exist due to a change in funding. In

order for the DSWM to receive federal funds, the state was required to meet specific technical criteria set forth by EPA. The relationship was no longer one of cooperation between the two. In 1981, the Division ceased to receive any federal funds for solid waste planning.

This loss of federal funds changed the intergovernmental relationship between the state and local governments of Tennessee. The state shifted all responsibilities of solid waste, with the exception of regulating treatment and disposal facilities, to the local governments. Local governments now have to develop their own solid waste solutions due to the state's loss of federal funds. Therefore, the effect on the intergovernmental relationships in Tennessee was to shift the funding responsibilities. The federal government shifted the funding of solid waste programs to the state, which in turn, shifted funding responsibilities to the local units of government.

The politics involved in shaping the state's hazardous waste program was the other factor that shaped Tennessee's response to RCRA. As stated in Chapter III, the state decided to develop its own hazardous waste programs for several reasons. They were: the decision made by the Commissioner of Public Health to administer a state hazardous waste program; the preference of the hazardous waste industry to be under the regulation of the DSWM rather than EPA; the encouragement by environmental groups for the state to develop its own hazardous waste technicians; and finally, the problems that the Division had in its working relationship with EPA after RCRA.

All of these factors were a part of the political pressures the state experienced in developing a hazardous waste program. These pressures caused the state to resent the role EPA played while the state was developing the hazardous waste program. The state believed EPA was too demanding in the decisions regarding what was "substantially equivalent" to federal regulations in the proposed state regulations. The state also wanted an end to the technical information required by EPA since RCRA in its quarterly reports. Both of these areas of conflict between the Division and EPA no longer were problems for the state after 1981.

The state and local relationship was affected by the political pressures the DSWM experienced in developing a hazardous waste program. The DSWM changed from an office of technical assistance for local governments to a regulator of hazardous waste. In doing this, the DSWM was carrying out the wishes of the Governor, the Commissioner of the Department of Public Health, and the state legislature. Therefore, the programs needed by local governments for solid waste were no longer considered necessary by the state. Hazardous waste regulation became the primary responsibility of the DSWM.

Local governments were essentially ignored by the state as it developed this hazardous waste program. The only way local governments could participate in the state program was to react to proposed hazardous waste regulations at public hearing. This may prove to have been a major oversight by the state as industry tries to locate hazardous waste facilities in the state. Appendix E is a summary

prepared by the Tennessee State Planning Office of what has already happened when such a facility was proposed for Hickman County in 1981.

The Governor said the state should encourage the location of regulated hazardous waste facilities in the Safe Growth Plan.

Recommendations on page six were:

1. The Department of Public Health should fully implement the state Hazardous Waste Management Program and obtain authorization from the U.S. Environmental Protection Agency to operate the federal program at the state level. Current resources are adequate to begin implementing the program, but additional professional employees will be necessary.
2. The program should pay for itself. A fee system should be established, paid by the generator, and based on the amount of hazardous waste he produces each year.
3. A geologic evaluation should be initiated to begin the process of identifying one or more potential sites for hazardous waste disposal, treatment and processing in Tennessee.
4. The Department of Economic and Community Development should work closely with the Department of Public Health and, in turn, with local communities to explore the development of such disposal facilities. The possibility of financial incentives to local communities hosting such a facility should be studied. Local improvements could be supported, for example, by a per-ton fee based on the life and total capacity of the facility.

Other ideas were presented by those interviewed for Chapter III as to how the state and local government should or should not work together in locating such a site. One source said the Safe Growth Team should conduct a study and select sites suitable for such facilities. Based on their recommendations, the Governor would select a site and send his staff to the area. Discussion would be held with local officials to determine whether or not the area desired such a facility. Then the Governor would notify interested hazardous waste industries to begin to

work the communities and develop what he believes are needed facilities in the state.

Others said the Department of Economic and Community Development along with the DSWM and Tennessee State Planning Office should begin now to conduct educational seminars with local officials throughout the state. Such seminars would give local officials the feeling of participating in developing a solution for a potential economic problem in the state. These discussions would include frank discussions about the problems and opportunities an area that had such a facility could experience. Those who supported this idea said it would be very important that local officials be told about the possible environmental dangers as well as the economic opportunities a hazardous waste facility could bring to an area. These seminars would prepare local officials to talk with those from the hazardous waste industry at the beginning of the siting process when geological surveys for locating facilities are conducted.

A third alternative suggested for the state's role in locating hazardous waste facilities was that of an appointed Blue Ribbon Committee. Members of the Committee would be appointed by the Governor and would represent the state and local governments, the hazardous waste industry, and the Tennessee Environmental Council. This committee would study what other states are doing to locate hazardous waste facilities and make recommendations to the Governor based on the successes and failures of other states.

The location of such a hazardous waste facility is something the state will encourage, according to the Governor. How the state chooses to include, or not include, the local governments of Tennessee in locating such a facility, will determine what kind of relationship the two have during the coming years.

In the opinion of the writer, there are ways that the state could improve its management of solid and hazardous waste. The state should pay more in order that it can retain professional technicians. As it is now, the state serves as a period of training until someone has developed enough expertise to offer a valuable contribution. This is especially true for engineers who leave the state, after two to five years, to higher paying jobs in the private sector. As a result, the state experiences a constant turnover in those who will administer the state's hazardous waste program.

The hazardous waste programs in the DSWM have been crisis-oriented from the beginning. The program is still relatively new but the staff has not been consistent in the manner it brings enforcement proceedings against violators. The DSWM may want to contract with consultants to conduct research and make laboratory analysis and spend valuable staff time on enforcing the regulations.

The DSWM should again offer technical assistance to local governments for solid waste management. A minimum of one type of environmental consultant should be staffed in each field office. This person would work with local officials and representatives of the Tennessee State Planning Office in developing short and long-term

solutions for regional solid waste problems. These two offices, the DSWM and TSPO, could work together to develop an extensive data base that would allow problems and opportunities for various communities in the state to be easily identified.

Finally, the state should consider changing the structure of the office that has administered hazardous and solid waste programs. Those environmental programs that are now housed in the Bureau of Environmental Health Services could be taken out of the Department of Public Health and set up as a separate department. Such a state department would be patterned after the programs of EPA. This state agency would receive federal funds in the form of block grants and administer programs to local governments in the form of technical assistance according to priorities set by the state. This reorganization would strengthen state programs by moving the present bureau up to a department level. The new structure would also minimize the duplication of the efforts of the federal government therefore strengthening the federal/state and then state/local relationships.

How the state decides to set the priorities for hazardous and solid waste programs will determine what kind of relationship the state has with the federal government. If the state is able to administer the hazardous waste program and continues to receive technical information from EPA, then the state should have a relationship based on cooperation with the federal government.

At the present, the state has shifted the responsibilities of solid waste management to local governments. Local governments in Tennessee

now lack the resources to administer efficient solid waste programs without the technical assistance that was once provided by the state. Research needs to be done to determine how local governments will respond to this lack of technical assistance. Local governments will either find sources of funding to develop their own technical expertise or the state will change its course and once again provide local governments with assistance. Most probably, the change in the state will be caused by pressure being put on the legislature to appropriate funds for the DSWM to administer both solid and hazardous waste programs.

The state and local government relationship in hazardous waste management will be determined by the proposed location of hazardous waste facilities. This relationship will not be one of a general nature that includes all local governments in the state. Instead, the relationship will be determined on a case by case or a location by location basis. Those in one end of the state, such as Johnson City, probably will not care what is proposed for the other end of the state, such as Memphis. Therefore, the state and local relationship will be formed as Tennessee reacts to the proposed location of hazardous waste facilities.

In conclusion, politics and funding have shaped the intergovernmental relationships in Tennessee for solid and hazardous waste management. The environmental consequences of the mismanagement of both solid and hazardous waste have been ignored. As a result, all three levels of government may have to reconsider the structure now used to control solid and hazardous waste problems.

At the local level of government where waste management plans are actually carried out, municipalities and counties will be forced to reevaluate their methods of management. The economic crunch already put on local budgets, the inflating costs of waste management, the energy situation, stricter environmental protection standards combined with the high cost of alternatives, increased environmental liability, and the problem of constructing new disposal sites, will frustrate local governments in dealing with waste management. Those frustrations may cause local officials to rush into alternatives that are not technologically sound, reliable, or cost effective.

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APPENDICES

APPENDIX A

THOSE INTERVIEWED FOR CHAPTER III

1. Ernest Blakenship
Director of Industry Affairs
Tennessee Manufacturers Association
March 19, 1982
2. Dr. Michael T. Bruner
Assistant Commissioner for the Environment
Tennessee Department of Public Health
March 10, 1982
3. Judge Verda Cope
County Executive for Scott County, Tennessee
Tennessee Solid Waste Control Board
March 24, 1982
4. Dwight Hinch
Chief of Policy Planning and Development
Tennessee Division of Solid Waste Management
March 10, 1982
5. Bill Holland
Coordinator for State Solid Waste Plans and
State Hazardous Waste Regulations
Region IV
United States Environmental Protection Agency
February 16, 1982
6. Bob Lovelace
Intergovernmental Relations
Tennessee Municipal League
March 29, 1982
7. Bobby Morrison
Chief of Permits and Quality Assurance
Tennessee Division of Solid Waste Management
March 10 and 29, 1982
8. Dr. Ruth Neff
Director
Tennessee Environmental Council
March 8, 1982
9. Bill Nolan
Former Member of the Tennessee House
of Representatives
Knox County
March 26, 1982

10. Stephen H. Norris
Representative of Governor Alexander's Staff
Executive Director of Tennessee State Planning Office
and Tennessee Solid Waste Control Board
March 11, 1982
11. John Saucier
President
Tennessee Environmental Council
Former Director of Tennessee Department of
Public Health
Water Quality Control Board
PRC Environmental Management
March 9, 1982
12. Wayne Scharber
Director of the Environment
Tennessee Department of Public Health
March 16, 1982
13. Ben Smith
Director
Safe Growth Team
Tennessee Department of Conservation
March 2, 1982
14. Joe Sweat
Tennessee Municipal League
March 19, 1982
15. Greer Tidwell
Environmental Management
Chairman of Tennessee Solid Waste Control Board
March 16, 1982
16. Tom Tiesler
Director
Tennessee Division of Solid Waste Management
Technical Secretary to Tennessee Solid Waste
Control Board
March 16, 1982
17. Ted VonCannon
Special Assistant to the Commissioner
Tennessee Department of Economic and Community
Development
Tennessee Solid Waste Control Board
March 12, 1982

18. Don Waller
Director
Tennessee Local Planning Office
Former Chairman of Tennessee Solid Waste
Control Board
March 17, 1982
19. Robert H. Wolle
Environmental Consultant to the Commissioner
Tennessee Department of Public Health
Tennessee Solid Waste Control Board
March 10, 1982
20. S. D. Wooten
Browning-Ferris Industries
Tennessee Solid Waste Control Board
February 25, 1982
21. Ed Young
Tennessee Municipal League
March 19, 1982

APPENDIX B

Memorandum of Agreement

Whereas the Tennessee Department of Public Health, through the Division of Solid Waste Management (DSWM) is required by Section 53-4301, et. seq., Tennessee Code Annotated, to regulate the construction, operation, and maintenance of solid waste processing and disposal facilities in order to protect the public health, safety, and welfare and specifically in respect to this agreement the waters of the State of Tennessee through a comprehensive siting and monitoring program: and

Whereas the Tennessee Department of Public Health, Division of Water Quality Control (DWQC) in the administration of TCA Section 70-324 et. seq., has the responsibility for the protection of the waters of the State: and

Whereas the Tennessee Department of Public Health has a public obligation to maintain a coordinated regulatory program of all regulated environmental functions in the State of Tennessee the standards by which these programs are administered shall be consistent. This agreement shall be the mechanism by which this objective is attained.

Therefore, both divisions mutually understand, agree and approve that the Division of Solid Waste Management is recognized as the agency having authority for the regulation of sanitary landfills in such a manner as to avoid the pollution of surface and groundwaters in the State of Tennessee through the administration of the following activities.

Site Selection

1. DSWM will conduct preliminary site reviews in the selection of potential sites for sanitary landfills.
2. DSWM will provide DWQC with a 7½ minute USGS quadrangle sheet noting the location of all sites which potentially warrant further geologic investigation by DSWM. DWQC will provide written comments on these sites as to potential impacts of the proposed sitings. These comments will be considered in the completion of the preliminary site review drafted by DSWM staff. Particular information shall include, but not necessarily be restricted to, location of water and waste water treatment facilities, stream classification, and any other information deemed pertinent to proposed sitings.

Technical Review

1. DSWM will utilize Maximum Contaminant Levels (MCL's) as established by DWQC in the management of discharges to surface and groundwater from sites approved by DSWM.
2. DSWM will conduct a geologic and hydrologic review of all potential disposal sites with the objective of evaluating the potential impact of site operation on the ground and surface waters. This review shall consider groundwater and surface water movement in order that a suitable monitoring program may be established.

3. DSWM will ascertain and require that the design of a sanitary landfill, utilizes to the extent necessary, all adaptable best management practices (BMP's) for silt control to minimize the potential for degradation of receiving streams. Monitoring programs shall be adapted to evaluate the effectiveness of control at each site. The BMP's to be reviewed include, but are not restricted to:
 - 1) Phased site development (minimum excavated areas)
 - 2) Timely revegetation
 - 3) Grade control on slopes (outslopes and working area)
 - 4) Silt retention appurtenances (silt screens, check dams, etc.)
 - 5) Stabilized drainage appurtenances
 - 6) Surface water control
 - 7) Soil characteristics and silt potential
 - 8) Silt structures (basins, etc.)
4. DSWM will ascertain that any leachate collection and treatment system for sanitary landfills be properly designed according to design criteria established by DWQC. DSWM will coordinate field assessments of all system with assistance from DWQC as necessary.
5. DSWM or the Solid Waste Disposal Control Board will permit/register all sites meeting the above requirements and other requirements specifically within the Solid Waste Act or Regulations.

Monitoring, Compliance Monitoring & Enforcement

1. DSWM will establish site specific requirements for monitoring and inspections. This monitoring shall reflect MCL's and site specific parameters as necessitated by special waste permits.
 - a) Annual monitoring shall reflect standards in Table 1.
 - b) Quarterly monitoring shall be site specific. Results of quarterly monitoring may require review of supplemental parameters for compliance reviews. (Table 2)
 - c) Additional monitoring requirements may be required by DSWM if site and/or waste reviews so dictate.
2. DSWM will perform compliance monitoring as necessary. All violations of stream standards will be reported to DWQC. Laboratory analysis will be provided by DWQC to the extent available. Contracts with private labs will be negotiated by DSWM for additional laboratory support.
3. All enforcement activity on violations will be conducted with DSWM acting as lead agency. Violations may be pursuant to the Water Quality Control Act; Solid Waste Disposal Act, or Hazardous Waste Management Act.

Table 1

Annual

Parameter	Maximum Level
A. Primary	(mg/l) ppm
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium (VI)	0.05
Fluoride	1.4-2.4
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
<u>Pesticide</u>	
Endrin	.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
<u>Herbicide</u>	
2,4-D	0.1
2,4,5-TP Silver	0.01
B. Secondary	(mg/l)
Chloride	250
Copper	1
Foaming Agents (MBAS)	0.5
Iron	0.3
Manganese	0.05
Sulfate	250
TDS	500
Zinc	5
Color	15 Color Units
Odor	3 Threshold Odor Number
pH	6.5-8.5

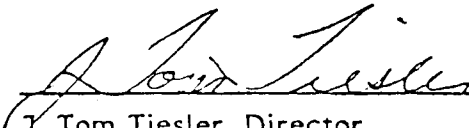
Table II

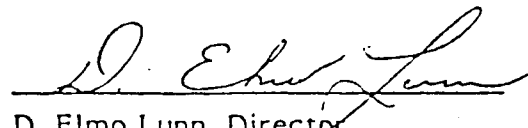
pH
 toc (or BOD & COD)
 Color
 TDS (or Conductivity)
 Phenols
 TKN

Nitrate
 Lead
 Chromium
 Chloride
 Silt (as specified by DSWM)
 Suspended Solids

Whereas there are anticipated technical and legal changes which may require modification of these procedures periodically, the undersigned Division Directors will scrutinize this Agreement on a continuing basis.

AGREED to this date _____ and subject to change in writing upon assessment of such need.


J. Tom Tiesler, Director
Division of Solid Waste Management


D. Elmo Lunn, Director
Division of Water Quality Control

APPROVED:


EUGENE W. FOWINKLE, M.D.
Commissioner
Tennessee Department of Public Health

MEMORANDUM OF UNDERSTANDING
between the
TENNESSEE PUBLIC SERVICE COMMISSION
and the
TENNESSEE DEPARTMENT OF PUBLIC HEALTH

I. Purpose

The purpose of this Memorandum of Understanding (MOU) is to delineate the areas of responsibility of the Tennessee Public Service Commission (TPSC) and the Tennessee Department of Public Health (TDPH) for the enforcement of standards applicable to the shipment and transportation of hazardous waste. This MOU will also set forth those areas of joint responsibility and cooperation between the two Agencies.

II. Statutory Basis

A. TDPH and the Regulation of Hazardous Wastes Management

The Tennessee Hazardous Waste Management Act (Tennessee Code Annotated Title 53 Chapter 63) in sections 53-6306(a), 53-6308(a) and (b), and 53-6305 provide for the regulation of transporters of hazardous wastes in the State by TDPH. This includes the requirements that transporters utilize the manifest system to assure that hazardous wastes are transported only to approved facilities, obtain a permit from TDPH prior to transporting hazardous wastes in the State, and comply with regulations requiring the reporting of information. The law also makes it unlawful for transporters to transport hazardous wastes in such a manner as to create a public nuisance or hazard to the public health, or to dispose of hazardous waste in that manner or in violation of TDPH regulations. These requirements apply to transporters engaged in both intrastate and interstate transportation of hazardous wastes, except that the regulations developed pursuant to this law do not require permits of transporters who transport through the state only hazardous wastes which are neither generated, stored, treated, or disposed of in this state.

B. TPSC and the Regulation of Hazardous Materials Transportation

Tennessee Code Annotated 65-1501 et. seq. and 65-301 et. seq. requires TPSC to promulgate safety regulations governing the operations of motor carriers and railroads. Pursuant to this authority, TPSC has adopted the hazardous material regulations as set forth in Title 49, Code of Federal Regulations, Parts 100-179, and supplements, revisions, and amendments thereto. These regulations cover both motor carriers and railroads and require, among other things, proper marking, containerization, storage, shipping papers and placarding.

III. Background

A. Regulatory Overlap

TPSC and TDPH have both promulgated regulations concerning hazardous waste material transportation. The TPSC regulations (Tennessee Rules 1220-2-1-.32 and 1220-3-1-.04) require shippers of hazardous waste, as

defined by the U.S. Environmental Protection Agency (EPA), to comply with both TPSC's hazardous material transportation regulations and with hazardous waste management regulatory requirements for generators (involved in the transportation of hazardous wastes) which are substantially equivalent to those adopted by TDPH. The definition of hazardous waste used is practically identical to that adopted by TDPH, and also includes wastes which were previously designated hazardous materials. These wastes must comply with the new TPSC standards for hazardous waste material.

B. Areas of Individual Regulation

There are, however, areas over which only one or the other Agency has jurisdiction. One such area is the TDPH requirement that transporters clean up any discharges of hazardous waste they are carrying. TPSC cannot incorporate such a requirement into its regulations because it is beyond TPSC's authority.

TPSC, on the other hand, requires that certain safety features be installed on all motor vehicles. TDPH's authority does not extend to such safety requirements, and they are not included in TDPH's regulations. Nor do the TDPH regulations impose the packaging, labeling, marking, and placarding requirements on generator/shippers that TPSC does.

IV. Terms of Agreement

A. The Tennessee Department of Public Health Will:

1. Conduct an on-going program to monitor compliance of generators of hazardous waste and hazardous waste management facilities with the hazardous waste management regulations;
2. Bring enforcement actions, at times, involving hazardous waste transporters where the transportation is ancillary to treatment, storage or disposal of hazardous waste or other activities normally under the primary jurisdiction of TDPH as discussed in this MOU (For example, a "midnight dumper" will be considered an illegal disposer. The fact that the "dumper" is transporting the waste is ancillary to the disposal of the waste and TDPH will bring appropriate enforcement action against him.);
3. Provide to TPSC on a continuing basis, a list of all transporters who have notified TDPH and their identification number;
4. Immediately notify TPSC of any possible violation of TPSC's hazardous materials regulations of which it is aware and provide all relevant information;
5. Investigate reports from TPSC which give TDPH cause to suspect that a violation of the hazardous waste management regulations has occurred and, where warranted, initiate appropriate regulatory or enforcement action under the Tennessee Hazardous Waste Management Act;

6. Provide TPSC with any information obtained during the course of a TDPH investigation which TDPH believes may violate the hazardous materials regulations of TPSC;
7. Make available to TPSC any reports, documents, or other evidence necessary to support an enforcement action that has been initiated by TPSC; and
8. Make available to TPSC any reports, documents, or other evidence necessary to support a regulatory action involving hazardous waste materials;

B. The Tennessee Public Service Commission Will:

1. Conduct an on-going program of inspection of transporters and shippers of hazardous waste to monitor their compliance with the hazardous materials regulations;
2. Immediately advise TDPH of any possible violation of TDPH's hazardous waste management regulations of which it is aware and provide all relevant information;
3. Investigate reports from TDPH which give TPSC cause to suspect that a violation of the hazardous materials regulations has occurred and, where warranted, initiate appropriate regulatory or enforcement action;
4. Provide TDPH with any information obtained during the course of a TPSC investigation which TPSC believes may involve a violation of TDPH's hazardous waste management regulations; and
5. Make available to TDPH any reports, documents, or other evidence necessary to support enforcement and regulatory actions involving hazardous wastes.

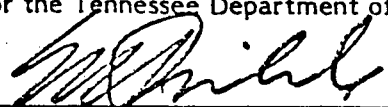
C. Each Agency Will:

1. Coordinate investigations and enforcement actions regarding violations involving hazardous waste to avoid duplication of effort;
2. Maintain a close working relationship with the other including an exchange of information relative to the Agencies' planned hazardous waste material compliance monitoring and enforcement activities;
3. Designate for the other Agency a Headquarters contact point to whom communication regarding this agreement or matters affected thereby may be referred for attention; and
4. Issue and exchange with the other instructions and guidelines implementing this Memorandum of Understanding identifying the interagency contact and liaison representative, and setting forth other pertinent operational procedures to be followed relative to this agreement.

V. Effect

- A. This Memorandum of Understanding is not intended to limit in any way the statutory authority or jurisdiction of either Agency.
- B. Nothing in this Memorandum of Understanding modifies other existing agreements, or precludes either Agency from entering into separate agreements setting forth procedures for special programs which can be handled more efficiently and expeditiously by such special agreement.
- C. This Memorandum of Understanding when accepted by both Agencies shall continue in effect unless modified by mutual written consent of both Agencies or terminated by either Agency upon a thirty day written notice.
- D. Any conflict arising as a result of this Memorandum of Understanding will be resolved by the Commissioner of TDPH and the Chairman of TPSC or their designees.

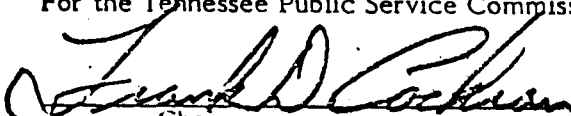
For the Tennessee Department of Public Health,



Commissioner

11/13/20
Date

For the Tennessee Public Service Commission,



Chairman

11/18/20
Date

Whereas the Tennessee Department of Public Health, through the Division of Solid Waste Management (DSWM) is required by Section 53-4301, et. seq., Tennessee Code Annotated, to regulate the construction, operation, and maintenance of solid waste processing and disposal facilities in order to protect the public health, safety, and welfare and specifically in respect to the agreement the air quality of the State of Tennessee through a comprehensive siting and inspection program of approved disposal facilities: and

Whereas the Tennessee Department of Public Health, Division of Air Pollution Control (DAPC) has in the Administration of TCA Section 53-3412 et. seq., developed procedures and standards for the protection of the air quality of the State: and

Whereas the Tennessee Department of Public Health has a public obligation to maintain a coordinated regulatory program of all regulated environmental functions in the State of Tennessee the standards by which these programs are administered shall be consistent. This agreement shall be the mechanism by which this objective is attained.

Therefore, be it resolved that both divisions mutually understand, agree and approve that the Division of Solid Waste is recognized as the agency having authority for the regulation of sanitary landfills in such a manner as to preclude the pollution of the air in the State of Tennessee through the administration of the following activities innumarated, herein.

11-19-80

Date

7-4-80

Date

Harold E. Anderson
Technical Secretary Air Pollution Control Board

John J. Fisher
Director of Solid Waste Management

Site Selection

1. DSWM will conduct preliminary site reviews in the selection of potential sites for sanitary landfills or special waste sites.
2. DSWM will provide DAPC with location of sites and other information deemed pertinent to proposed sitings, handling, and operating procedures for air contaminant waste.

Technical Review

1. DSWM will utilize DAPC established management practices and adhere to the regulations found in Chapter 1200-3-11-.02 of the TAPCR for the disposal of (special air contaminant) wastes at sites approved by DSWM.
2. DSWM will ascertain that the design of a sanitary landfill or special waste site utilizes all adaptable best management practices (BMP's) for emission control of special air contaminant wastes to minimize the potential for degradation of the air quality.

The BMP's to be reviewed include, but are not restricted to:

- 1) Phased site development (minimum specific area).
- 2) Timely correct handling procedures, cover, compaction and revegetation.
- 3) Soil characteristics, geologic structure for minimum potential of movement and surface water control.
- 4) Operators protective equipment.
- 5) No visible emissions.
- 6) Logs completed (shipping and receiving).

Inspections and Enforcement

1. DSWM will establish site specific requirements for compliance. The compliance shall reflect BMP's and site specific handling as necessitated by special air contaminant waste permit and procedures.
2. DSWM will perform inspections as necessary. All violations of air quality will be reported to DAPC in writing within ten (10) days.
3. All enforcement activity on violations at the disposal site will be conducted with DSWM acting as lead agency.

Preliminary's

1. Contact must be established with the appropriate Solid Waste Management representative.
2. The site selected for the material must be registered and approval obtained in writing prior to disposal of the material through the Division of Solid Waste Management. All appropriate agencies and individuals will be presented with this information.

3. Permission from the official responsible for the approved facility must also be obtained in writing prior to the disposal of the material. All appropriate agencies and individuals will be presented with this information.

Procedures for Disposal of Asbestos Waste

1. Ten days advance notice must be given to the DAPC of asbestos removal to allow field personnel to view the removal procedures at the originating site. This can be in the form of a routine removal schedule or an individual letter.
2. The containers for the waste must be in fact leak-tight containers and approved by the Division of Air Pollution Control.
3. The waste should be transported in an enclosed vehicle or on a covered carrier as described in Tennessee Code Annotated 39-4544. Shipper's Log will be filled in before leaving generation point. Upon arrival at the point of disposal, receiver's log will be filled out. Upon completion of the entire job (or disposal process), a copy of both logs will be submitted to the Division of Solid Waste Management.
4. Advance notice must be given to the landfill operator prior to receiving the waste, or a routine schedule established such that the operator will have time to prepare an area to receive the waste. Communications should be good between the contractors or plants and landfill operators to allow flexibility.
5. Respirators must be provided for the landfill operators involved in the disposal process.
6. The appropriate solid waste and air pollution control representatives will witness the initial disposal to assure proper handling and disposal procedures (if desired by the respective agencies).
7. The asbestos waste containers must be confined to a specific area, prepared by the landfill operator, at the disposal site to assure proper disposal with minimum complications.
8. The containers of waste must be handled carefully and deliberately such that there will be no rupturing of containers nor visible emissions in the disposal process.
9. The operator will immediately apply one foot of cover material over the waste and then compact the cover material.
10. Upon completion, the site shall be recorded with the Register of Deeds as a former disposal site containing asbestos.
11. Specific area used for disposal of asbestos shall be noted on site plan.

APPENDIX C

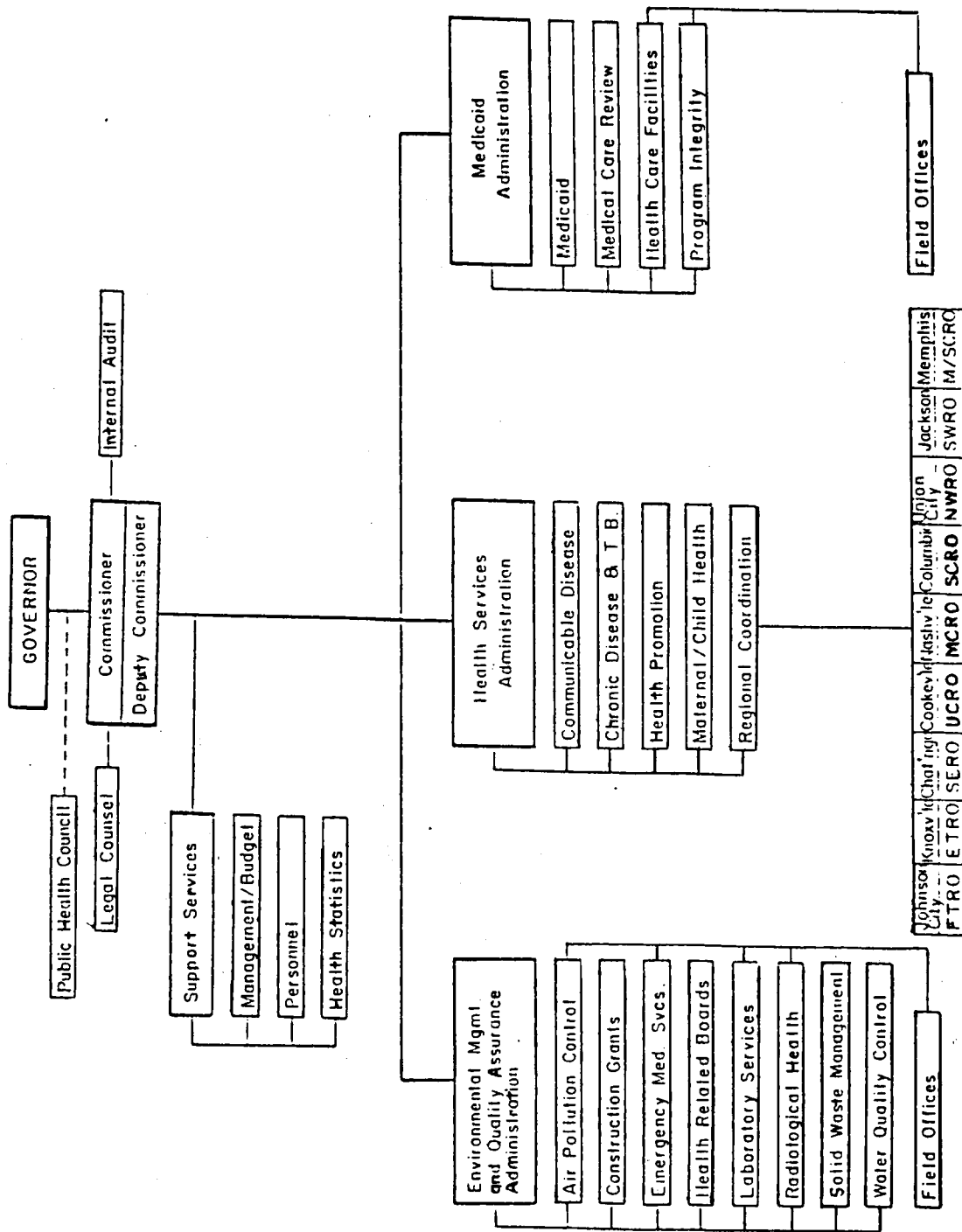


Figure C-1. Tennessee Department of Public Health.

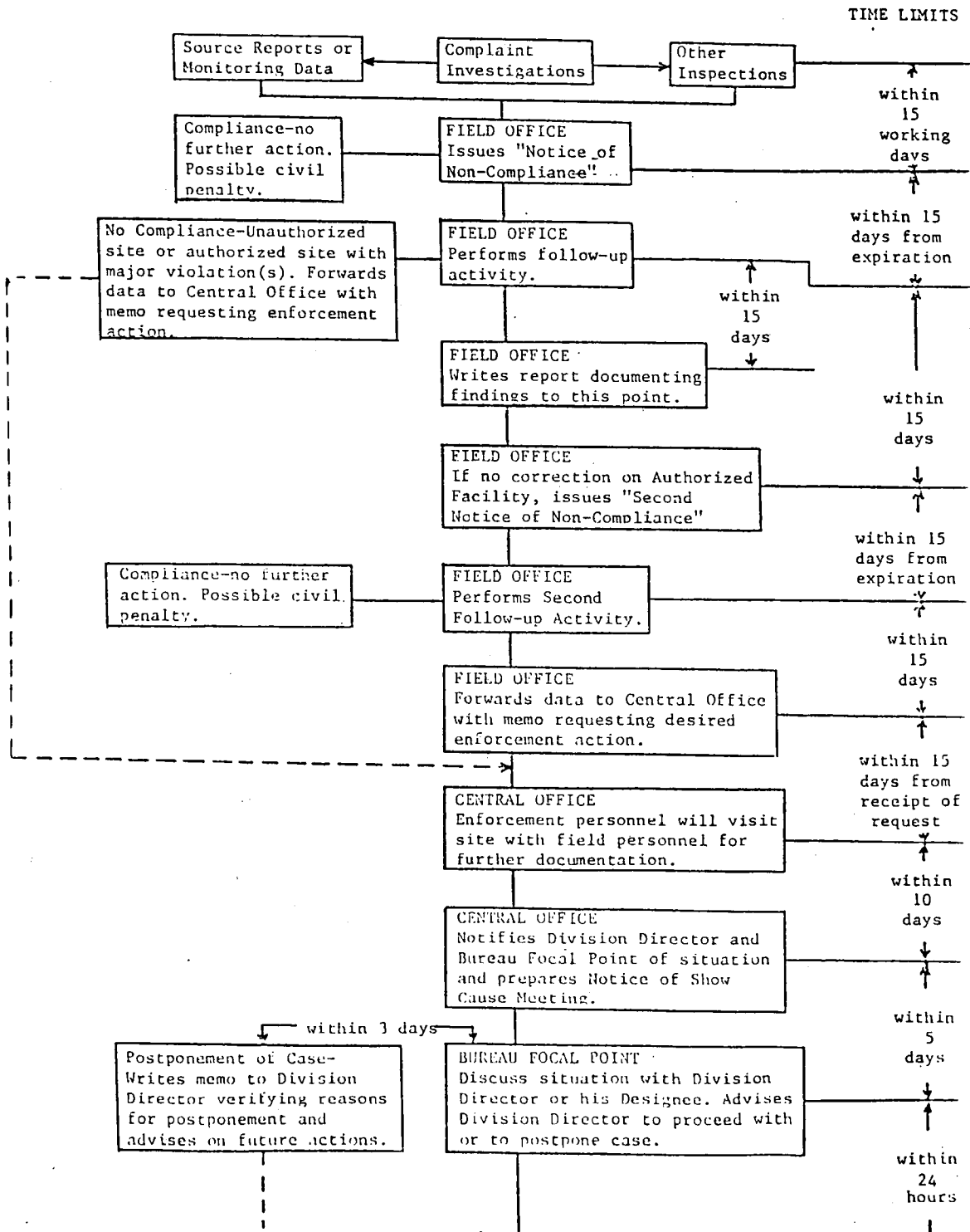


Figure C-2. Normal enforcement procedures for authorized and unauthorized facilities--flow diagram/time limits.

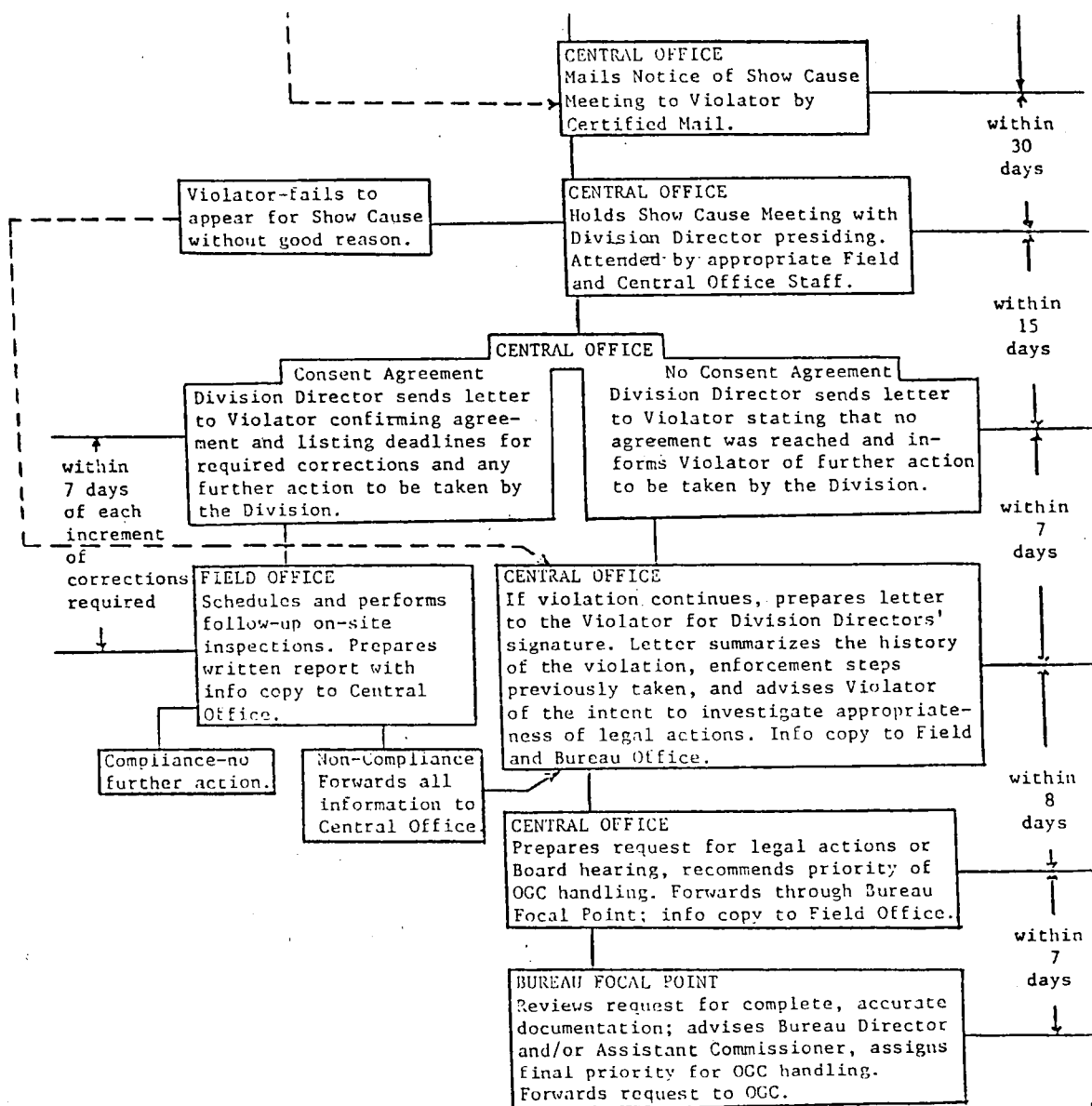


Figure C-2 (continued).

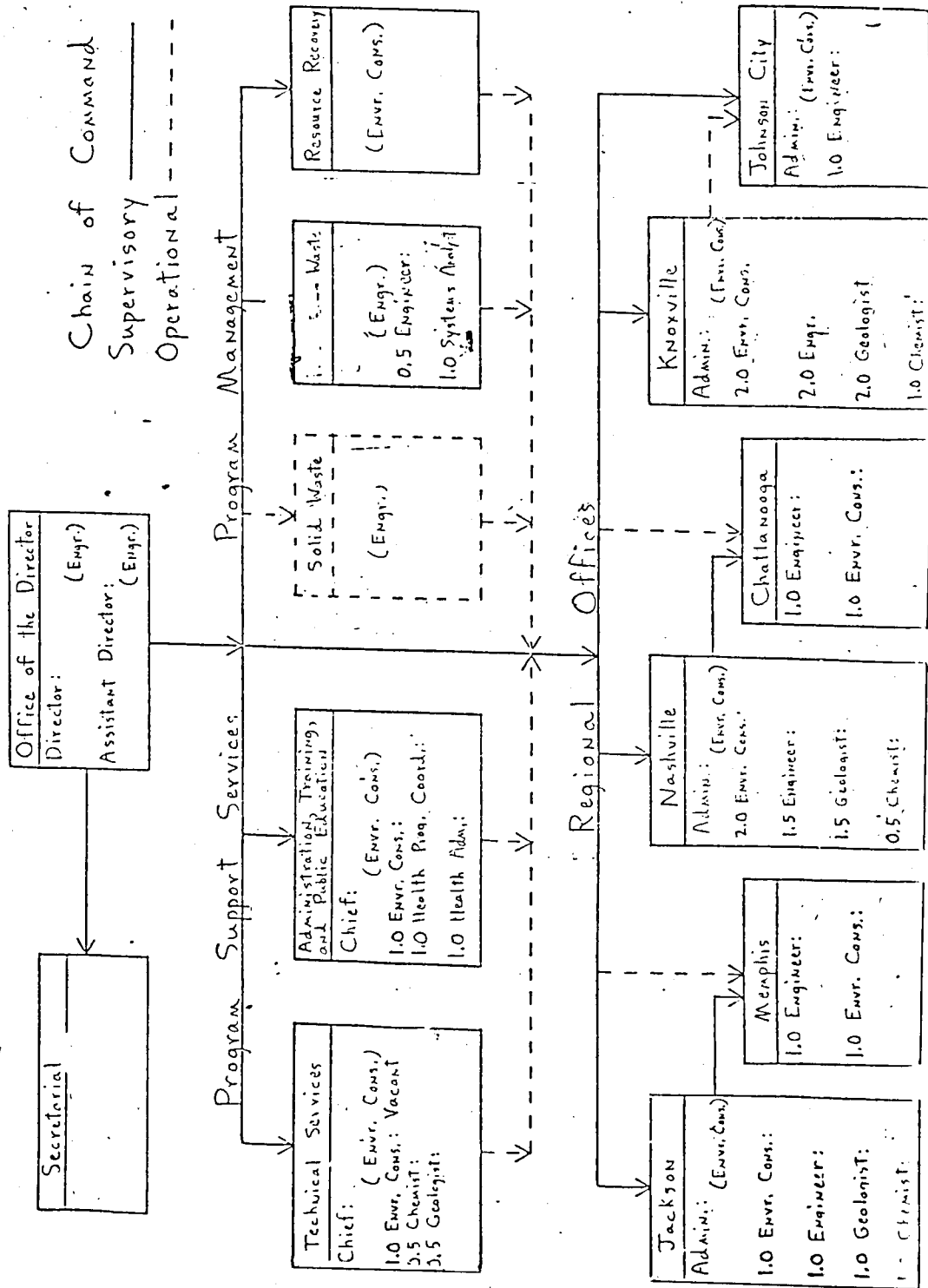


Figure C-3. Division of Solid Waste Management prior to 1982.

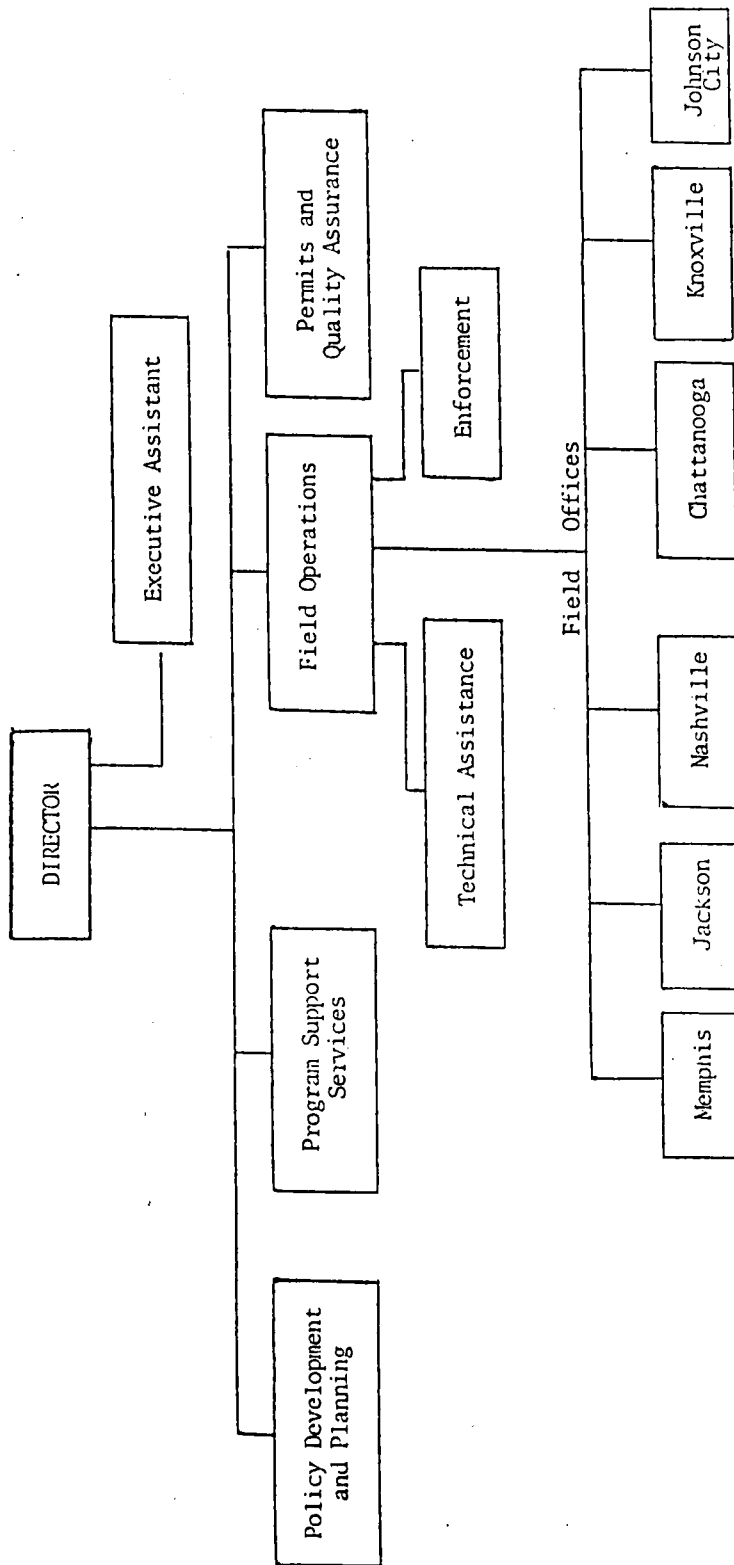
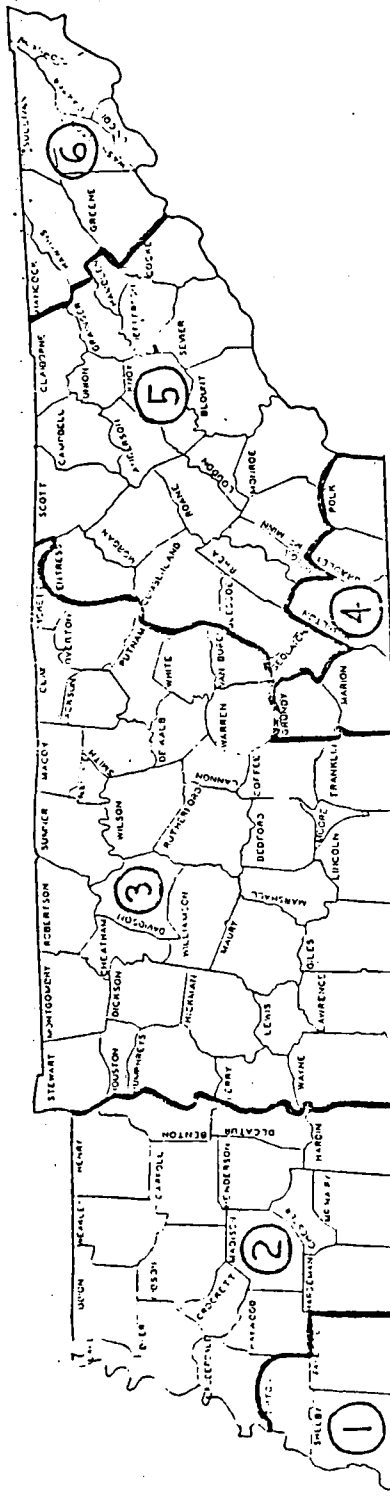


Figure C-4. Current organization of the DSM.



- | | | |
|--|---|---|
| (1) Division of Solid Waste Management
Memphis Liaison Office
814 Jefferson Avenue
Memphis, TN 38105
(901)529-6695 | (3) Division of Solid Waste Management
6th Floor, TERRA Building
150 Ninth Avenue North
Nashville, TN 37203
(615)741-0633 | (5) Division of Solid Waste Management
1522 Cherokee Trail
Knoxville, TN 37920
(615)546-9221 |
| (2) Division of Solid Waste Management
295 Summar Avenue
Jackson, TN 38301
(901)424-9200 | (4) Division of Solid Waste Management
2501 Milne Avenue
Chattanooga, TN 37406
(615)624-9921 | (6) Division of Solid Waste Management
P.O. Box 1787
Johnson City, TN 37601 |

Figure C-5. Current field offices of the DSM.

APPENDIX D

A COMPARISON OF ANSWERS GIVEN IN THE QUESTIONNAIRE
REGARDING THE INTERGOVERNMENTAL RESPONSE TO
RCRA FROM THE STATES OF FLORIDA,
KENTUCKY, NORTH CAROLINA
AND TENNESSEE

1 A. What state is responsible for nonhazardous solid waste programs?

Florida - The Department of Environmental Regulation Solid Waste Section

Kentucky - The Department of Natural Resources and Environmental Protection

North Carolina - The Department of Human Resources, Division of Health Services,
Environmental Health Section, Solid and Hazardous Waste
Management Branch

Tennessee - The Department of Public Health, Division of Solid Waste Management

1 B. In the nonhazardous solid waste areas, please designate what is state and what is local responsibility. (L=Local, S=State)

	Florida	Kentucky	North Carolina	Tennessee
On-Site Storage	L	L	L/S	L
Collection	L	L	L/S	L
Transportation	L	L	L/S	L
Processing/Resource Recovery	L	L/S	S	S
Disposal	L/S	S	S	S

2. Please briefly describe state involvement in these nonhazardous waste activities.

	Florida	Kentucky	N.Carolina	Tennessee
On-Site Storage	Recommends guidelines	Offers limited technical assistance	Develop Model ordinance for local health departments	None
Collection	Recommends guidelines	None	Develop model ordinance for local	None
Transportation	Recommends guidelines	None	Develop model ordinance for local	None
Processing/Resource Recovery	Sets criteria for programs	Grants permits through state regulations	Grants permits and monitors	Permits Facilities
Disposal	Sets permit requirements, enforces criteria	Permits facilities and enforces criteria	Grants permits, monitors, and enforces regulations	Permits Facilities and site

3. EPA has cut back the amount of funding to states for nonhazardous solid waste programs, how does the state plan to fund these state programs?

	Florida	Kentucky	N.Carolina	Tennessee
State Appropriation from General Assembly	X	X	X	X
Assess Fees		Technical Review of applications*	Plans to assess permitting fee for disposal facilities in the future	Will explore
State No Longer Funds Programs				
Other				

* Municipalities exempt

4. Briefly describe the concept of the type of working relationship your state has had with EPA or the federal government in the area of nonhazardous solid waste management since RCRA.

Florida - Generally good relationship, although EPA has been more interested in achieving federal objectives than in helping the state achieve its objectives. Often, these objectives were divergent.

Kentucky - Good, however, EPA required the state to become involved in areas the state would not have chosen to without federal funds such as the state plan and open dump inventory.

N.Carolina - Since EPA funding eliminated, there has not been much discussion on solid nonhazardous waste with EPA.

Tennessee - Somewhat strained. EPA wanted to reinvent the program. The state program was good as it was.

5. How could EPA improve this relationship?

Florida - By following through on EPA initiated projects, especially continuing funding for them.

Kentucky - Provide more funding

N.Carolina - Fund program again

Tennessee - By recognizing the value of existing programs

6. Has the working relationship between the state and local governments in the area of nonhazardous solid waste management been successful? If so, why, or if not, why not?

Florida - No. The state has not had the technical and financial capability to be proactive in its relationship with local governments.

Kentucky - Yes. Have cooperative field staff representing state government.

N. Carolina - Yes. the state has developed model city and county ordinance to improve transportation, and storage management of waste. The state respects local government funding problems and tries not to push down work without money to go with it.

Tennessee - Yes. Approximately 97 percent of the population in the state has access to a permitted solid waste facility because of program initiated by the state government and implemented by local government.

7. What state agency, if any, is responsible for handling hazardous waste activities in the state?

Florida - Department of Environmental Regulation, Solid Waste Section

Kentucky - Department of Natural Resources and Environmental Protection

N. Carolina- Department of Human Resources, Division of Health Services,
Environmental Health Section, Solid and Hazardous Waste
Management Branch

Tennessee - Department of Public Health, Division of Solid Waste Management

8. Does the state plan to develop state hazardous waste regulations? yes no
If so, what agency will be responsible for enforcing the regulations?

Florida - Yes, same as #7

Kentucky - Yes, same as #7

N. Carolina - Yes, same as #7

Tennessee - Yes, same as #7

9. Please check areas that the state has had difficulty in getting approval from EPA in order to have state regulations approved.

	Florida*	Kentucky	N.Carolina*	Tennessee
Notification of generation				
Identification of hazardous waste		X		
Storage Short-term Long-term				
Transportation				
Treatment				
Disposal				
Other	Public Participation		Public Participation	Inspection of on-site disposal

*Adopted EPA regulations by reference/no problems stated

10. How is the state funding hazardous waste programs?

	Florida	Kentucky	N. Carolina	Tennessee
State Appropriation from General Assembly	X	X	X	X
Fees, please specify		Review applications		Generator, transporter, treatment and disposal facilities
Federal Grant	90%	Less than 50%	X	Approximately 75%
Other				

11. When did the state begin developing hazardous waste regulations? When are they to be approved by EPA?

Florida - 1981, Fall 1982

Kentucky - 1979, July 1982

N.Carolina - 1976, Fall 1982

Tennessee - 1978, 1982

12. Briefly describe what have been the areas of conflict between the state and EPA in hazardous waste management?

Florida - Permitting procedures - Florida's Administrative Procedures Act is different from RCRA; especially public participation requirements, i.e., Section 7004 (b) of RCRA (45 day notice period and radio spots)

Kentucky - Agreeing on what state regulations had to be in order to be "substantially equivalent" to federal regulations

N.Carolina - Concern of EPA legal staff for wordings for minor points

Tennessee - Question of substantial equivalence, and generator inspection

13. What could be changed to make the federal and state hazardous waste management more efficient?

- Florida - Less stringent guidelines in using federal RCRA grant money on uncontrolled (possible superfund) sites; less strict interpretation of substantial equivalence
- Kentucky - EPA should keep with the role of oversight and guidance, not regulation
- N.Carolina - Fund program at adequate level, create public awareness of health problems
- Tennessee - Possibly less emphasis on exact wording of regulations as long as content is the same

14. How have local governments been involved in hazardous waste management?

- Florida - given the opportunity to review all proposed hazardous waste legislation and rules
- Kentucky - participate in public hearings on rules and regulations
- N.Carolina - participate in inspection of small generators and can develop local ordinances
- Tennessee - participate in public hearings on rules and regulations

15. If the state assumes the responsibility for regulating hazardous waste management, how will local governments be involved in the siting of hazardous waste facilities?

- Florida - Local governments are involved in the siting mechanism and have the opportunity to review all permit applications in their area.
- Kentucky - 1980 State Legislature enacted law to allow the local fiscal court (City Council, County Court) the authority to veto the siting of a hazardous waste facility. So far, this law has not been challenged.
- N. Carolina - Local governments can develop ordinances to regulate the development of the area surrounding a hazardous waste facility
- Tennessee - Local governments can participate in public hearings regarding any proposed hazardous waste facility.

APPENDIX E



TENNESSEE STATE PLANNING OFFICE
1800 JAMES K. POLK STATE OFFICE BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37219
(615) 741-1676

MEMORANDUM

TO: Steve Norris

FROM: Saralee W. Terry *SWT*

RE: Proposed Hickman County Hazardous Waste Landfill and Related Solid Waste Problems

DATE: June 12, 1981

A. Summary of Hickman County

1. During November and December of 1980, drilling rigs were sighted in a rural section of Hickman County between Watson and Aetna.
2. On March 9, 1981 an announcement was made at the local Lions Club meeting saying Geologic Associates, Inc., a Franklin, Tennessee engineering firm had been scouting for locations for Waste Resources, Inc. At that time, the public was aware that a site had been selected by these two companies and was located in Hickman County. Waste Resources is a Philadelphia - based firm that operates eight hazardous waste sites across the nation.
3. In March and April HALT was formed (Hickman Against Lethal Trash). Citizens concerned about the possible harmful effects of a hazardous waste landfill organized to protest the possible location of the facility there. (See attached organization chart and fact sheet). Over 3,000 signatures were signed on petitions against the landfill.
4. In May, the two owners of the site became involved in a lawsuit. Julius Doochin, who has gained a sore reputation with environmentalists because of previous problems at strip mining operations he owns, asked Chancellor Riley Darnell to rule that his partner in MMF Land Company, Abe Rapoport, did not have the right to grant an option on 1,700 acres near Centerville. Rapoport's affidavit maintains that the property has been divided and that Rapoport did not violate the partnership agreement.

Steve Norris
Page Two
June 12, 1981

5. On June 3, Geologic Associates, Inc. announced they had decided not to exercise their option on 1,700 acres in Hickman County to be developed as a hazardous waste site. L. E. Wilson, Jr., Vice President, said until the court determined whether or not Rapoport could give them a clear title to the land, it would be best for them not to exercise their option on the land. Wilson would not comment on whether or not Geologic Associates would apply for a permit if the court rules in Rapoport's favor. There is still a possibility that Geologic Associates and Waste Management, Inc. will try to locate a hazardous waste site in Hickman County depending on the court decision.

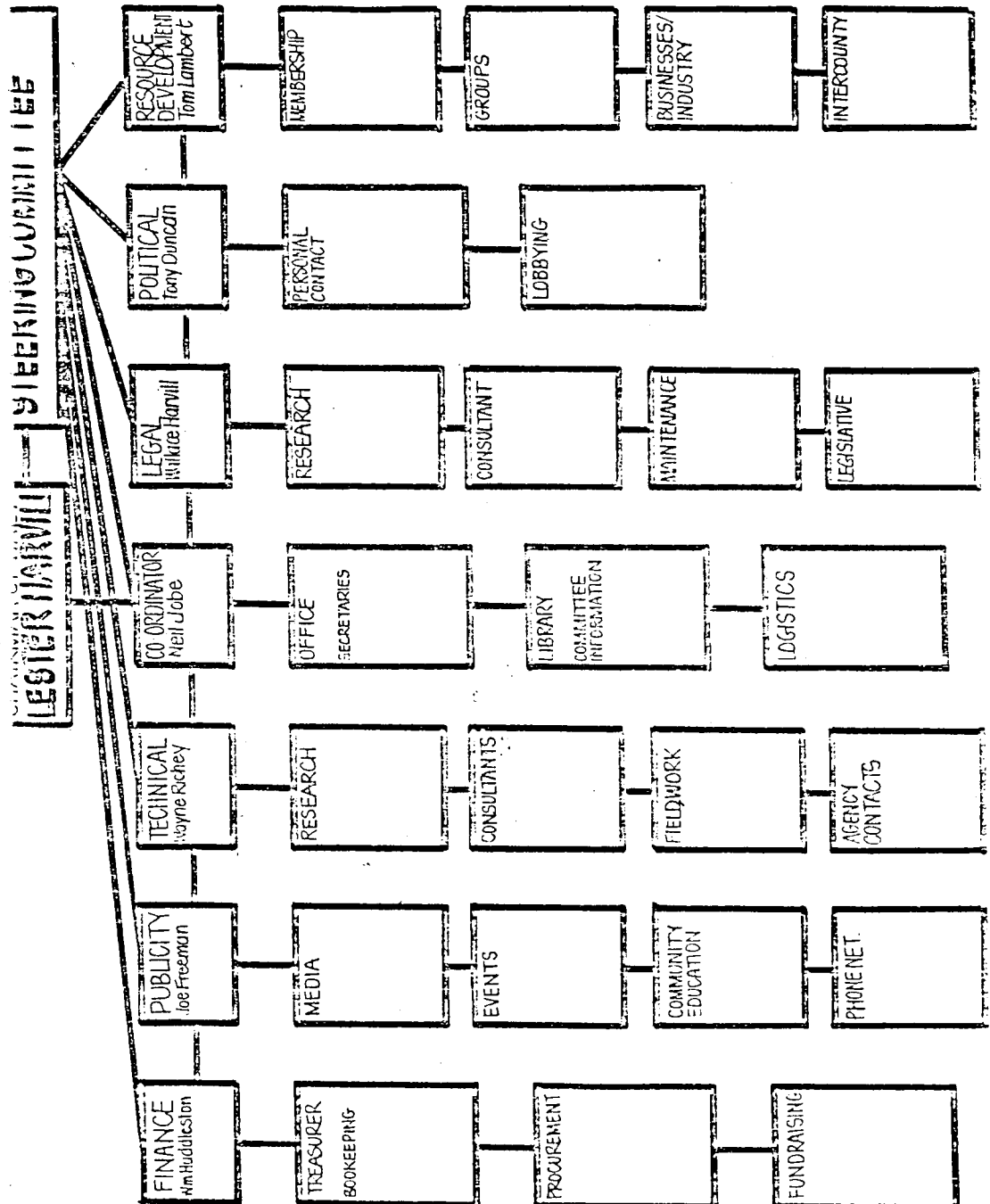
B.. Problems and Opportunities

1. If the State of Tennessee continues to encourage the location of a hazardous waste landfill, industries might not develop the incentives to treat their wastes in any other manner. Treatment possibilities such as recycling, incineration, and processing should all be tried before industries resort to landfilling their wastes. SCA has planned to locate a facility in Memphis that will process hazardous waste by recycling, treatment, and incineration. What residue that is left will be hauled to their disposal facility in Alabama. The state should encourage treatment facilities for hazardous wastes and waste exchange programs first. If landfills for such waste are not readily available, then industries will treat their wastes first.
2. There is a possibility that there may not be a site in Tennessee that is geologically safe for a hazardous waste landfill. Waste industries say these sites can be "engineered to be safe" and contain hazardous wastes. Even with all these engineering capabilities, natural soil characteristics and possible long-range effects on the groundwater must be closely examined.
3. Local opposition to the location of any hazardous waste facility, treatment or disposal, cannot be ignored. Citizens of Hickman County illustrated that locals can organize in an effective manner and not represent themselves as hysterical reactionaries. The Solid Waste Board, Economic and Community Development, Division of Solid Waste Management, and the State Planning Office, and even Governor Alexander should prepare for negative reactions from the citizens when an attempt is made in the coming year to locate a hazardous waste facility in the area. Promising rural communities items such as better roads, school, and tax bases, may not sell a hazardous waste landfill to the locals.
4. The state does not have data that is readily available to the citizens concerning the possible effects of a hazardous waste landfill. The state has always responded to environmental consequences on a case-by-case basis. Citizens are now demanding to know where in Tennessee there is a suitable site for landfills. The state can only continue to respond by saying soil characteristics, geological formations, groundwater will be closely examined in each area where permits are applied for. Dr. Bruner has asked the Division of Solid Waste Manage-

Steve Norris
Page Three
June 12, 1981

ment to organize a task force to form a policy for state government regarding groundwater problems. Representatives from the Divisions of Solid Waste Management, Environmental Sanitation, Radiological Health, Water Quality, Water Resources, Geology, and Surface Mining are on the task force. Staff from the U. S. Geological Survey and TVA - Water Resources Branch are also included. The Task Force will make policy recommendations to the Water Quality Control Board at the end of the summer regarding groundwater issues such as deep well disposal injections. Staff from the State Planning Office should be aware of the recommendations of this task force or be included since state policy could change as a result of their findings. Interdepartmental environmental problems are also to be discussed on the task force.

SWT:brs





HALT
P. O. BOX 213
CENTERVILLE, TN 37033

HAZARDOUS WASTE IS A BY-PRODUCT OF VARIOUS MANUFACTURING PROCESSES. THESE WASTES ARE A MENACE TO HUMAN HEALTH AND THE WORLD WE LIVE IN. THEY MAY ACT QUICKLY OR IT MAY TAKE YEARS FOR THEIR EFFECTS TO BE NOTICED.

THESE WASTES CAN VARIOUSLY POISON, BURN, MAIM, BLIND AND KILL PEOPLE.

TYPICAL WASTES HAVE BEEN PROVEN TO CAUSE CANCER AND BIRTH DEFECTS.

TOXIC WASTES KEEP ON BEING TOXIC. THEY DON'T GO AWAY. THE PROPOSED TOXIC WASTE DUMP FOR HICKMAN COUNTY WOULD TAKE HIGHLY TOXIC WASTES FROM TWO THIRDS OF THE COUNTRY AND BURN, TREAT OR STORE THEM AT THE SITE.

THE FOLLOWING IS A COMPILATION OF KNOWN INFORMATION THAT HAS BEEN GATHERED OVER THE PAST FEW WEEKS TO BRING YOU UP TO DATE ON EVENTS IN HICKMAN COUNTY.

1. IT BECAME KNOWN THAT A FIRM WAS RESEARCHING A SITE FOR THE PURPOSE OF LOCATING A TOXIC WASTE FACILITY IN THE COUNTY. IN A MATTER OF DAYS, SOME 1,600 CITIZENS SIGNED A PETITION IN OPPOSITION. THE COUNTY COURT OF HICKMAN COUNTY, IN SPECIAL SESSION, CONSIDERED THE MATTER AND OPPOSED IT.
2. A PRELIMINARY MEETING WAS HELD IN THE OFFICES OF GEOLOGICAL ASSOCIATES BETWEEN TWO CITIZENS OF THE COUNTY AND TWO CORPORATE OFFICERS OF GEOLOGICAL ASSOCIATES (THE DEVELOPMENT FIRM).
3. CERTAIN REPRESENTATIONS REGARDING THE WATER TABLE, SOIL CONDITIONS, THE UNIQUENESS OF THIS SITE WERE MADE BY GEOLOGICAL ASSOCIATES.
4. THESE REPRESENTATIONS WERE QUESTIONED BY THE TWO COUNTY RESIDENTS WHO FELT THE SUPPORTING DATA WAS EXTREMELY WEAK AND CONCLUSIONS DRAWN BY GEOLOGICAL ASSOCIATES POSSIBLY WERE NOT ACCURATE.
5. ON MONDAY, 4/27/81, A LARGE GROUP OF CONCERNED CITIZENS MET AT THE COUNTY COURTHOUSE IN CENTERVILLE, ORGANIZED AND ESTABLISHED COMMITTEES FOR TECHNICAL INFORMATION, PUBLICITY, ETC., FOR THE PURPOSE OF STOPPING THE PLANNING AND PLACEMENT OF THIS FACILITY ON THE PROPOSED SITE.
6. SINCE 4/27/81, MANY MEETINGS HAVE BEEN HELD, A TECHNICAL SEMINAR ON HAZARDOUS WASTE HAS BEEN ATTENDED, AND STUDIES OF THE SITE AND ON THE SURROUNDING AREA HAVE BEEN MADE AND ARE CONTINUING TO BE MADE.
7. ALL INDICATORS ON THE PARAMETERS FOR THE LOCATION OF A SAFE FACILITY THUS FAR HAVE DENIED THE SUITABILITY OF THE PARTICULAR AREA.
8. IT HAS BEEN DETERMINED:
 - A. THE SOIL HAS A HIGH DEGREE OF POROSITY, OR IN OTHER WORDS, A VERY SUBSTANTIAL "PERK" RATE.
 - B. WATER TABLE HAS BEEN ESTABLISHED WITHIN THREE (3) FEET OF THE SURFACE ON TOP OF ONE OF THE RIDGES UNDER CONSIDERATION AND WATER WELLS ARE INDICATED ON NUMEROUS OTHER PLACES WITHIN THE BOUNDS OF THE SITE.

- C. THERE ARE NUMEROUS SPRINGS EMANATING FROM WITHIN THE CONFINES OF THIS SITE WITH WATERSHED FEEDING WADES BRANCH, HINSON BRANCH, AND BRUSHY CREEK.
- D. CAVES AND SINKHOLES ARE KNOWN IN THE IMMEDIATE AREA AND ADJOINING PROPERTIES.
9. IT IS OUR UNDERSTANDING THAT FAILURE OF ANY ONE OF THE CRITERIA TESTS MENTIONED ABOVE IS SUFFICIENT TO DISQUALIFY A SITE FROM FURTHER CONSIDERATION. HOWEVER, THIS DOES NOT SEEM TO BE THE CASE IN THIS INSTANCE.
 10. THERE HAS BEEN A MINIMUM OF COOPERATION FROM THE PROPOSED DEVELOPERS.
 11. THE COUNTY AS A WHOLE IS RAPIDLY UNITING TO HALT FURTHER CONSIDERATION OF THIS SITE.
 12. THE COUNTY COURT, CENTERVILLE TOWN COUNCIL, LIONS CLUB, KIWANIS CLUB AND OTHERS HAVE ALL INDICATED OPPOSITION TO THE FACILITY.
 13. WE ACTIVELY SOLICIT YOUR SUPPORT TO ASSIST US IN OUR CONFRONTATION.

HALT REALIZES THAT A TOXIC WASTE FACILITY IS NEEDED IN TENNESSEE. OUR SINCERE BELIEF IS THAT THE HICKMAN COUNTY SITE IS NOT SUITABLE FOR THIS TYPE OF FACILITY. THIS BELIEF IS BASED ON SOUND, TECHNICAL EVIDENCE.

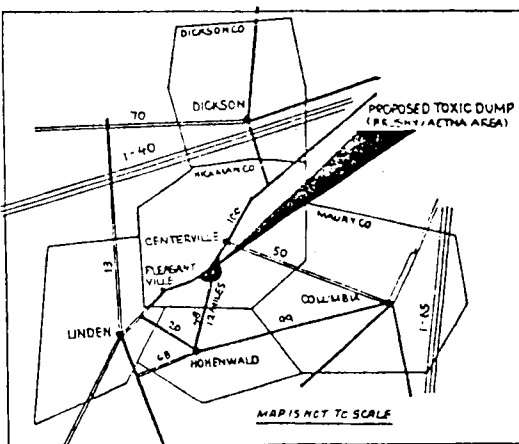
A PART FROM THE UNSUITABILITY OF THE SITE ITSELF THE FACT THAT TRUCKS CARRYING HUGE QUANTITIES OF POISONOUS WASTES WOULD HAVE TO MAKE EXTENSIVE USE OF OUR LOCAL COUNTY ROADS CONCERNS US GREATLY.

THERE IS PRESSURE TO BUILD A TOXIC WASTE FACILITY IN TENNESSEE. LET US ALL MAKE SURE THAT SUCH A FACILITY IS PUT IN AN AREA THAT IS BOTH SUITABLE AND SAFE.

THE LAND YOU LIVE ON IS AT RISK.
YOUR HEALTH IS AT RISK.
YOUR CHILDREN ARE AT RISK.

FOR FURTHER INFORMATION CONTACT ANY OF THE FOLLOWING PEOPLE.

LESTER HARVILL.....729-3706
SUE EDWARDS.....729-4328
TINY SMITH.....729-4670
TOM LAMBERT.....729-4258
TONY DUNCAN.....729-3837
SUE O'GUIN.....729-4728
DINAH BRYAN.....729-4713
JOE FREEMAN.....729-5144
WAYNE RICHEY.....729-4980
WALLACE HARVILL.....729-4659



DONATIONS FOR H.A.L.T. CAN BE MADE AT THE SECURITY BANK & TRUST OR THE FIRST NATIONAL BANK IN CENTERVILLE.

EVERYONE IS WELCOME TO JOIN H.A.L.T. MEETINGS WILL BE ANNOUNCED IN THE HICKMAN COUNTY TIMES AND ON WHLP.

VITA

Saralee Winn Terry was born in Knoxville, Tennessee on April 1, 1955. She attended public schools in Oneida, Tennessee from the first through the twelfth grades. Following high school graduation in 1973, she attended Freed-Hardeman College for two years. In 1975 she was awarded the Associate of Arts degree in Political Science. She then completed her undergraduate work at Middle Tennessee State University and received the Bachelor of Science degree in Urban Planning in 1976. Approximately six weeks of her planning courses included an internship at the Mid-Cumberland Council of Governments, Nashville.

In September, 1977, the author entered the Graduate School of Planning at The University of Tennessee, Knoxville. Her completion of classwork included a nine-month internship at the Tennessee Valley Authority. Since August 15, 1979, she has been employed by the Tennessee State Planning Office in Nashville as a Natural Resource Analyst.