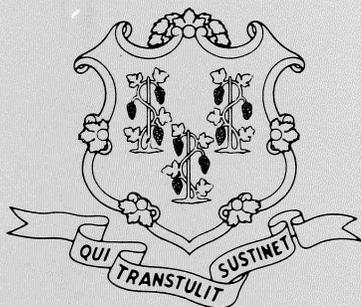


Hazardous Waste Management In Connecticut

Connecticut
General Assembly



LEGISLATIVE
PROGRAM REVIEW
AND
INVESTIGATIONS
COMMITTEE

JANUARY 1988

CONNECTICUT GENERAL ASSEMBLY

LEGISLATIVE PROGRAM REVIEW AND INVESTIGATIONS COMMITTEE

The Legislative Program Review and Investigations Committee is a joint, bipartisan, statutory committee of the Connecticut General Assembly. It was established in 1972 as the Legislative Program Review Committee to evaluate the efficiency and effectiveness of selected state programs and to recommend improvements where indicated. In 1975 the General Assembly expanded the committee's function to include investigations and changed its name to the Legislative Program Review and Investigations Committee. During the 1977 session, the committee's mandate was again expanded by the Executive Reorganization Act to include "Sunset" performance reviews of nearly 100 agencies, boards, and commissions, commencing on January 1, 1979.

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HAZARDOUS WASTE MANAGEMENT
IN
CONNECTICUT

LEGISLATIVE PROGRAM REVIEW AND INVESTIGATIONS COMMITTEE
PERFORMANCE AUDIT

JANUARY 1988

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HAZARDOUS WASTE MANAGEMENT IN CONNECTICUT

EXECUTIVE SUMMARY

The Legislative Program Review and Investigations Committee (LPR&IC) performance audit of hazardous waste management in Connecticut reviewed the adequacy and effectiveness of efforts to: 1) regulate currently produced waste; 2) identify and clean up historic waste sites; and 3) plan and set strategies for meeting future waste management needs. The committee's review revealed that the state program currently contains the components necessary for a comprehensive approach to protecting the public health and the environment from the threats of uncontrolled hazardous waste. However, the effectiveness of the state's hazardous waste management program has been seriously impeded by limited resources.

Implementation of the state's hazardous waste regulatory program has been further hampered by deficient information systems, weak management controls, and policy conflicts with the U.S. Environmental Protection Agency (EPA). Statewide planning efforts have been hindered by a lack of complete, reliable data for assessing future needs and developing strategies to promote safe and appropriate hazardous waste management. Connecticut additionally has been slow to develop and institute incentives to encourage waste reduction and recycling, a top goal of government programs to manage hazardous waste.

During the course of committee's study, several impediments to effective hazardous waste management were addressed. Both state and federal funding levels for regulatory activities have been significantly increased. With more staff, the Hazardous Waste Management Section of the Department of Environmental Protection (DEP) should be able to monitor the compliance of a larger proportion of the regulated community, meet facility permitting deadlines, and address the substantial number of outstanding regulatory violations. The major policy conflicts between the federal and state environmental agencies concerning administration of the hazardous waste regulatory program mandated under the federal Resource Conservation and Recovery Act (RCRA) also have been resolved.

The most significant impediment to Connecticut's efforts to identify and clean up historic hazardous waste sites was alleviated during the 1987 Connecticut legislative session. Until the current fiscal year, virtually no state resources had been provided for this purpose, resulting in slow progress in discovering and solving the problems of uncontrolled hazardous waste. Public Act 87-561, in combination with Special Act 87-77, however, established a \$10 million state "superfund" program for discovering, assessing, and cleaning up hazardous waste disposal sites.

While additional resources will have a positive impact on program performance, the program review committee believes the management capability of the DEP Hazardous Waste Management Section must be strengthened if regulatory and clean-up goals are to be met. The lack of an integrated, computerized information system that provides a compliance profile of each member of the regulated community and accurate, up-to-date statistics on individual and section performance has contributed to backlogs and delays. Furthermore, inadequate automated data have resulted in inefficient use of limited staff resources.

A primary committee recommendation, therefore, concerns the establishment of a management information system that promotes regular assessment of performance, efficient use of existing resources, and accurate identification of future resource needs. Another recommendation intended to improve DEP management calls for an annual strategic plan of operations for the Hazardous Waste Management Section. Program review committee recommendations concerning regulatory activities also address specific measures to enhance compliance monitoring and enforcement functions. Although it was considered too early to judge the impact of the new state superfund program, the committee's report includes an assessment of the current status of hazardous waste discovery and clean-up activities.

The final area covered by the committee review was the planning functions carried out by the Connecticut Hazardous Waste Management Service, a quasi-public agency responsible for promoting the appropriate management of hazardous waste. Overall, the committee found that the service met its planning mandate and initiated several nonregulatory strategies for meeting state hazardous waste management goals. Several areas for improvement in planning were noted and recommendations for expanding the data and analysis used to prepare hazardous waste management needs assessments are proposed. In addition, the committee recommends the adoption of tax changes and the consideration of additional strategies that will promote minimization of hazardous waste in Connecticut. The specific recommendations of the program review committee are summarized below.

Recommendations Summary

To improve the state's hazardous waste management program, the Legislative Program Review and Investigations Committee recommends that:

- o DEP establish by December 1989 a computerized management information system that integrates and expands automated data on all Hazardous Waste Management Section activities and provides section management with performance assessment data;
- o DEP hire a consultant to plan, develop, and implement this information system with a plan to

evaluate section needs and estimate system costs to be completed by October 1988;

- o the Hazardous Waste Management Section annually develop a formal plan of operations that sets goals and objectives and specifies strategies and timetables for meeting them;
- o environmental protection and public works officials insure a final decision on the relocation of DEP personnel is reached by July 1988;
- o the section's new information system include an easily accessible profile of each member of the regulated community that details the types and amounts of waste handled, a history of inspection, permit, and enforcement activities, and a summary of its regulatory status;
- o the section establish a method for systematically identifying all handlers subject to regulation;
- o the section establish a system for tracking the handling of complaints that includes, at a minimum, the nature of the complaint, the location of alleged improper action, the date the complaint was received, assigned, and investigated, the staff responsible for the investigation, the type of complainant, the action taken as a result of the investigation, and the final outcome of any action taken;
- o by January 1989, the section: 1) compile and analyze inspector workload data and set standards regarding the number and type of inspections field staff will be expected to perform on an annual basis, and 2) accurately identify the regulatory status and site inspection requirements of each regulated hazardous waste handler in Connecticut;
- o the section immediately take steps to identify all significant generators and facilities that have never been inspected and ensure that a site visit is conducted at all such facilities by January 1990;
- o a program of delegated authority be established for the DEP hazardous waste management regulatory program;
- o the section ensure that: 1) all outstanding administrative enforcement actions from federal fiscal years 1982 through 1985 be resolved by the end of federal fiscal year 1990, and 2)

administrative enforcement activity is current and on schedule by that date;

- o the section develop and implement a system for prioritizing all administrative enforcement actions;
- o the section expand and update its enforcement data to include the date a violation is discovered, the source of information that led to the discovery of the violation, the classification of the violator, the type of violation, the classification of the violation, and the date and status of the most recent section contact with the violator and the action taken;
- o the Connecticut Hazardous Waste Management Service use alternative indicators of industrial growth, such as industry shipments, that better reflect hazardous waste production;
- o the service analyze the status of waste reduction and recycling efforts within the hazardous waste industry and use the results of this analysis to adjust projections regarding future hazardous waste generation;
- o state statutes be amended to provide that the state hazardous waste management plan prepared by the Connecticut Hazardous Waste Management Service be updated at least every five years;
- o the service and the Department of Economic Development 1) jointly study what types of financial assistance programs and funding levels are required to promote waste minimization and the use of preferred waste management techniques and 2) submit initial recommendations concerning new hazardous waste management financial assistance programs to the General Assembly by January 1, 1989;
- o state statutes be amended to extend the hazardous waste generation tax to waste that is handled at the site of generation as well as waste that is shipped off-site for treatment, storage, or disposal; and
- o the service develop and submit to the General Assembly by January 1989 a proposal for a new hazardous waste generation tax structure that is based on the state's hierarchy of preferred hazardous waste management practices.

CHAPTER I. INTRODUCTION

I. INTRODUCTION

In February 1987, the Legislative Program Review and Investigations Committee (LPR&IC) voted to conduct a performance audit of hazardous waste management in Connecticut. The scope of the 10-month study included state efforts to regulate currently produced waste, to identify and clean up historic waste disposal problems, and to plan for appropriate management of hazardous waste in the future. Two main issues were addressed: 1) the effectiveness of regulatory and clean-up activities carried out by the state Department of Environmental Protection (DEP); and 2) the adequacy of plans and strategies for managing hazardous waste in the future.

Review of the state's regulatory effort focused on DEP implementation of the federally mandated Resource Conservation and Recovery Act (RCRA) program for several reasons. Connecticut's RCRA program, the heart of state hazardous waste regulation, had been continually criticized by the U.S. Environmental Protection Agency (EPA) for both policy and resource deficiencies. In addition, the Department of Environmental Protection, unlike agencies in most other states, had not been granted final authorization to administer the RCRA regulatory program.

Growing public concern over the health and environmental risks posed by improper disposal practices led the committee to assess the impact of DEP activities to solve problems of poor management of hazardous waste in the past. Connecticut's participation in the federal Superfund program as well as state-initiated site discovery and clean-up actions were examined.

Legislative interest in Connecticut's ability to address future hazardous waste management issues prompted the committee's evaluation of current state plans and strategies. The statewide planning function, which is carried out by the Connecticut Hazardous Waste Management Service, therefore, was reviewed in detail. The performance audit also sought to determine how well existing nonregulatory strategies for promoting appropriate management of hazardous waste, such as technical assistance programs and taxes on waste generation, were working.

Methods

To review the state hazardous waste management program, the committee used a variety of information sources and research methods. Reports on hazardous waste management by federal and state agencies and private environmental and scientific groups were consulted for background information. Federal and state statutes and regulations were researched regarding hazardous waste management policies and requirements. To develop comparative information, all states were sent questionnaires regarding the organization, structure, staffing, and performance of their hazardous waste management programs.

Federal grant documents and state budget materials were analyzed to determine trends and patterns in program resources within Connecticut. Interviews were conducted with officials and staff of the Department of Environmental Protection, the Connecticut Hazardous Waste Management Service and the U.S. Environmental Protection Agency to obtain information on hazardous waste management policies and procedures.

Files, records, and reports on activities conducted by the DEP Hazardous Waste Management Section were examined to identify workloads, processing times, and other performance measures. Section staff were surveyed regarding their duties, backgrounds, and opinions on matters such as working conditions. The committee staff also accompanied DEP personnel on hazardous waste management field inspections.

To better understand the state planning process, program review staff attended meetings and workshops of the Hazardous Waste Management Service held from March through September of 1987. The service's planning documents and data also were examined in detail.

Hazardous waste handlers and their associations were contacted, and the committee staff toured several regulated sites. Two public hearings were held by the Legislative Program Review and Investigations Committee to hear testimony from citizens, members of the regulated community, and program officials.

Report Organization

The committee's is organized into four chapters: I. Introduction; II. Background; III. Activities; and IV. Findings and Recommendations. Following the discussion of the study scope and research methodology in Chapter I is an overview of hazardous waste management at the federal and state levels in Chapter II. Chapter II also outlines the structure, staffing and funding levels of the two state agencies with primary responsibility for hazardous waste management functions in Connecticut.

Chapter III describes activities carried out in regard to each of the three major hazardous waste management program components--regulation, discovery and clean up, and planning. An assessment of the problems revealed by the performance audit and the Legislative Program Review and Investigation Committee's proposals for program improvements are presented in Chapter IV.

Additional background information on federal legislative provisions for managing hazardous waste and on the types and amounts of waste handled in Connecticut are provided in two appendices. Another appendix contains a glossary of technical terms used in the report.

CHAPTER II. BACKGROUND

II. BACKGROUND

Government programs concerning hazardous waste management have developed at the national and state levels. An overview of the major federal initiatives to manage hazardous waste and Connecticut's current hazardous waste management program is provided below. The organization and resources of the two state agencies primarily responsible for hazardous waste management in Connecticut--the DEP Hazardous Waste Management Section and the Connecticut Hazardous Waste Management Service--are also described in detail.

Program Overview

Hazardous waste management encompasses efforts to reduce and recycle as well as properly treat, store, and dispose of hazardous wastes. Hazardous waste management also includes activities to discover and clean up uncontrolled hazardous waste sites. Government regulation of hazardous waste management was prompted by scientific evidence that showed certain chemical and industrial wastes at business sites and ordinary landfills could pose serious and long-lasting human health and environmental risks if improperly managed.

Hazardous waste under government regulatory programs has been defined to include certain solid wastes that, because of their toxic, ignitable, corrosive, or reactive properties, can threaten the environment (e.g., contaminate drinking water) and the public health (e.g., cause cancer or birth defects). Ironically, some of the wastes regulated as hazardous in the 1980s are residues of treatment processes mandated under water and air pollution control programs established in the 1960s and 1970s. Nuclear waste, while presenting health and environmental risks, is not included in current hazardous waste regulatory definitions since it is subject to previously established, separate statutory controls.

Federal initiatives. The first nationwide effort to regulate hazardous waste management was the Resource Conservation and Recovery Act of 1976. This act, which was substantially amended in 1984, established a mandatory federal program aimed at preventing hazardous waste problems by regulating generation, transportation, treatment, storage, and disposal of industrial and commercial hazardous wastes.

The RCRA program is an outgrowth of earlier solid waste management and pollution control programs enacted by Congress and administered by the U.S. Environmental Protection Agency and the states. As with earlier federal regulatory programs, it was intended that EPA provide funding and administrative authority to state agencies to carry out RCRA regulatory activities; the federal agency's role would be to establish operating policies and procedures and to monitor state performance.

According to EPA, the RCRA program, which was designed to regulate hazardous waste from "cradle to grave," is the most complex environmental program it administers. There are several categories of businesses that are regulated and each category is subject to differing design, operation, and maintenance requirements concerning the handling of hazardous waste.

The regulated community under the RCRA program includes generators, facilities, and transporters. Generators are any businesses that produce regulated waste. Small quantity generators (legally defined as producing more than 220 pounds but less than 2,200 pounds during a month), however, are subject to less stringent waste handling requirements, and some businesses (those generating less than 220 pounds during a month) are exempt from RCRA regulation at present.

Facilities include commercial enterprises that treat, store, and/or dispose of hazardous waste produced by others as well as generators that treat, store, or dispose of their own waste. Businesses that only provide hazardous waste transportation services for others as well as generators or facilities that haul their own hazardous waste are categorized as transporters under RCRA.

Among the major RCRA requirements is the use of a uniform manifest (shipping document) system that permits the tracking of hazardous waste from generation through ultimate disposal. All regulated handlers must use the RCRA manifest system. All businesses subject to RCRA are additionally required to obtain a U.S. Environmental Protection Agency identification number and to report changes in their status (e.g., no longer handle hazardous waste, generate only small quantities of waste).

Under federal law only facilities must be permitted in order to operate. Facilities, particularly land disposal facilities, are the most heavily regulated handlers under RCRA. For example, facilities are required to meet substantial financial responsibility standards (e.g, liability insurance), and land disposal facilities have to implement extensive monitoring systems to check for possible groundwater contamination from the hazardous wastes they handle. A detailed description of the regulatory requirements and other provisions of RCRA is provided in Appendix B.

In response to public concern over the health and environmental threats presented by uncontrolled hazardous waste sites such as Love Canal, Congress created the federal Superfund program. The Superfund program, established by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was extended and expanded in 1986 through the passage of the Superfund Amendments and Reauthorization Act (SARA).

The federal Superfund program is essentially reactive; the intent is to: 1) identify and assess improperly managed hazardous waste sites (i.e., historic disposal sites and sites created by accidental releases or illegal activities); and 2) finance clean up of conditions at the worst hazardous waste sites in the nation. A summary of the legislative provisions of both CERCLA and SARA is included in Appendix B.

State initiatives. Like the federal government, Connecticut's effort to manage hazardous waste includes activities to regulate waste currently produced and to discover and clean up historic waste disposal. The state's hazardous waste management program further includes planning activities to address future management needs, a component not covered by federal mandates.

Much of Connecticut's effort to regulate hazardous waste currently produced in this state has been in response to the federal Resource Conservation and Recovery Act. The Connecticut Department of Environmental Protection began developing the state's RCRA regulations and procedures in 1979; actual program operation began in 1980. Through the RCRA program, the department currently regulates over 3,000 handlers of hazardous waste. This number includes approximately 1,200 businesses that generate large quantities of hazardous waste, 1,100 small quantity generators, 350 facilities that treat, store, and/or dispose of hazardous waste, and over 300 hazardous waste transporters.

Under state statute, DEP regulates several types of waste (e.g., waste oils, PCBs) not subject to federal RCRA requirements and operates a permitting program for transporters of federal and state regulated hazardous wastes. Another state-initiated component of DEP's regulatory effort is a program for promoting safe disposal of household hazardous wastes that was established in 1986.

Connecticut also recently adopted legal mechanisms designed to promote appropriate management of hazardous waste. Legislation enacted in 1985 (P.A. 85-568) and amended in 1987 (P.A. 87-475) requires anyone transferring ownership of industrial properties where certain types and amounts of hazardous waste have been handled to certify to the buyer and DEP that any such wastes on site are under control or will be cleaned up in accordance with a state-approved schedule. The transferor, or "negative declaration" act as it is sometimes called, has resulted in the discovery of several unknown waste sites and prompted clean ups of hazardous waste by a number of property owners.

A second legal mechanism, Connecticut's "superlien" law, was enacted in 1984 (P.A. 84-535) and also amended in 1987 (P.A. 87-475). Under this law, the environmental protection commissioner is given a priority lien for an amount up to the total clean-up cost against the property of a person who causes a damaging spill. Although the department has not had occasion to use its "superlien" authority, agency staff believes it provides

businesses with an incentive for good hazardous waste management practices; for example, a hazardous waste handler may find it difficult to obtain bank financing unless proper management practices are in place to minimize the risk of spills subject to a state superlien.

Until recently, many of the activities to discover and clean up uncontrolled hazardous waste sites in Connecticut were carried out through state participation in the federal Superfund program. Connecticut's most significant discovery activity predated the federal program, however. In 1979, the legislature required the environmental protection department to compile a comprehensive inventory of hazardous waste disposal sites within Connecticut (P.A. 79-605).

Prior to enactment of the federal Superfund, the state had also created a revolving fund, the Emergency Spill Response Fund, for use by DEP in financing clean ups of oil and chemical spills (P.A. 79-605). The purpose of the state's spill fund has since been expanded to specifically include financing of clean-up costs at hazardous waste sites as well as hazardous waste spills. In addition, the fund can be used for municipal grants for providing potable water to residents whose drinking water has been contaminated by hazardous waste or other pollutants. Some of the revenues of the Emergency Spill Response Fund come from a state tax on generators of hazardous waste instituted in 1982 (P.A. 82-320).

In the 1987 legislative session, Connecticut initiated its own state superfund program to supplement federal activities. Public Act 87-561 authorizes the Department of Environmental Protection to establish an ongoing program for the discovery and clean up of hazardous waste sites within the state. A \$10 million fund for financing clean-up costs at state and federal superfund sites was also created (Special Act 87-77).

A totally state-initiated component of Connecticut's hazardous waste management effort is the planning function carried out by the Hazardous Waste Management Service. The service is a quasi-public agency created by the legislature in 1983 to promote the appropriate management of hazardous waste generated within the state. The service is required, among other things, to prepare the state's hazardous waste management plan and provide businesses with technical assistance on hazardous waste management. The service is also authorized to determine preferred sites for new treatment, storage, or disposal facilities and to own and operate a facility if the private sector cannot meet hazardous waste management needs.

Related to the planning process for new facilities is the state's statutory process for siting new hazardous waste facilities that treat, store, or dispose of wastes. Like planning, siting has been an activity left to state rather than federal mandate. Since 1980, the construction or major

modification of a hazardous waste facility in this state has been subject to the siting and approval process of the Connecticut Siting Council.

Department of Environmental Protection

The DEP Hazardous Waste Management Section administers Connecticut's federal Superfund and RCRA programs as well as state regulatory activities for certain wastes not included under federal law, such as waste oils and PCBs. The section also provides state grants and technical assistance to municipalities for household hazardous waste collection projects. In addition, the section oversees compliance with the state's transferor and superlien laws and has primary responsibility for Connecticut's new state superfund program.

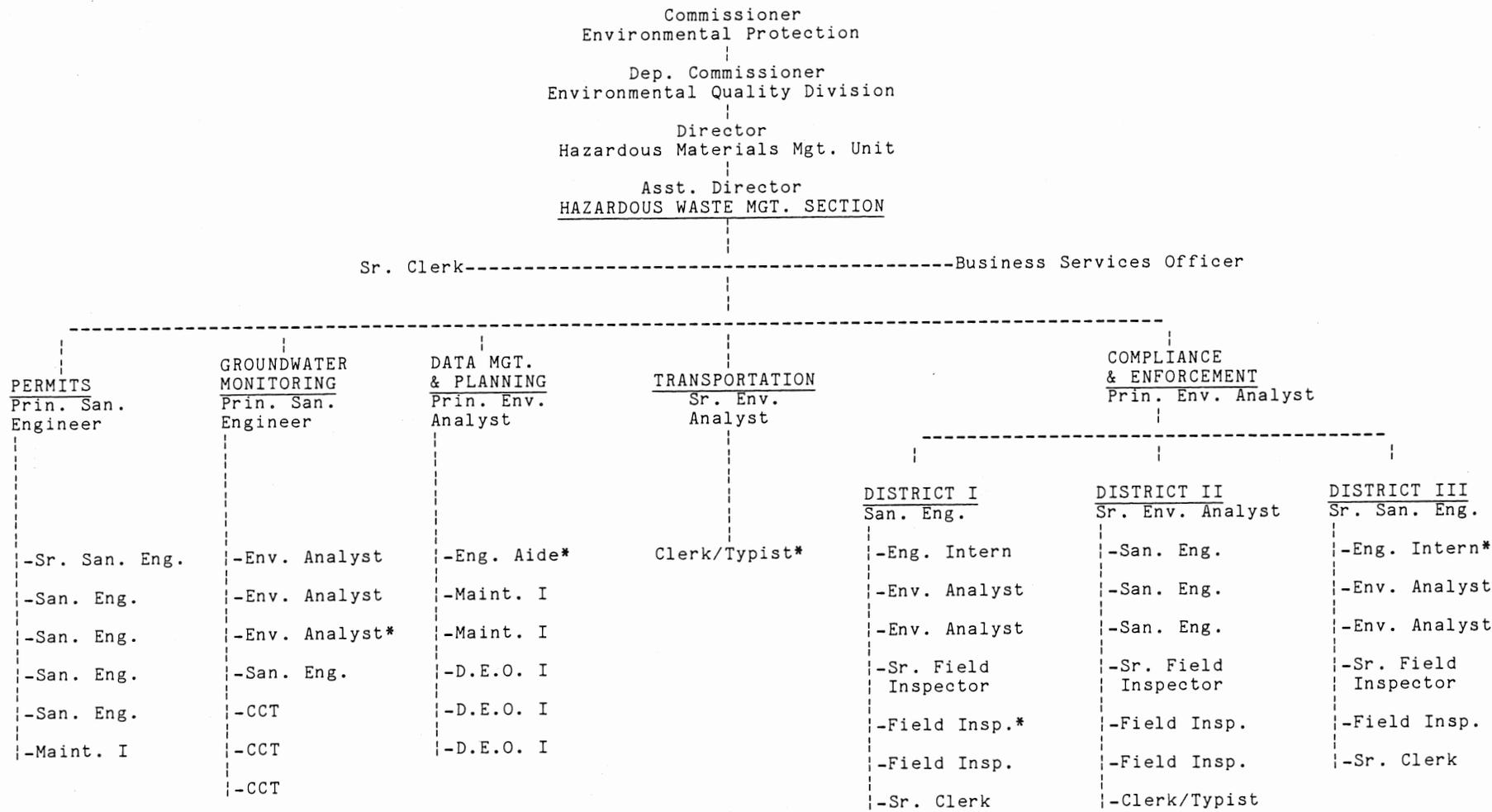
Organization and staffing. The section is part of the Hazardous Materials Management Unit of the Environmental Quality Division of DEP. At the time of the committee's review, the Hazardous Waste Management Section had 48 funded positions, 36 of which were financed through federal RCRA grants, while 12 were state General Fund positions. Figure II-1 presents the structure and staffing of the section as of June 1987.

As Figure II-1 shows, an assistant director aided by two support staff managed the section's five program areas: 1) permits, 2) groundwater monitoring, 3) data management and planning, 4) transporters, and 5) enforcement and compliance. In terms of section functions, the bulk of the staff resources (44 percent) were devoted to compliance and enforcement activities. Management of the section comprised only 6 percent of staff resources while the groundwater monitoring, data management, and permit functions were each allocated between 15 and 17 percent of the section's total personnel. Remaining staff resources (4 percent) were assigned to transporter permitting activities, although this program's personnel also coordinate household hazardous waste projects.

At the time of the committee's review, almost half (44 percent) of the section staff were professional level employees -- engineers or environmental analysts. Nearly one-third (32 percent) were technical staff (field inspectors and maintainers) or professional trainees (Connecticut Career Trainees, engineer aides/interns) and the remainder (23 percent) were management and support staff.

The Hazardous Waste Management Section is now being reorganized due to the staff and responsibilities that were added in the current fiscal year. The anticipated section structure is depicted in Figure II-2. As the figure indicates, the only major organizational change is the new site remediation component that incorporates the groundwater monitoring and transferor program

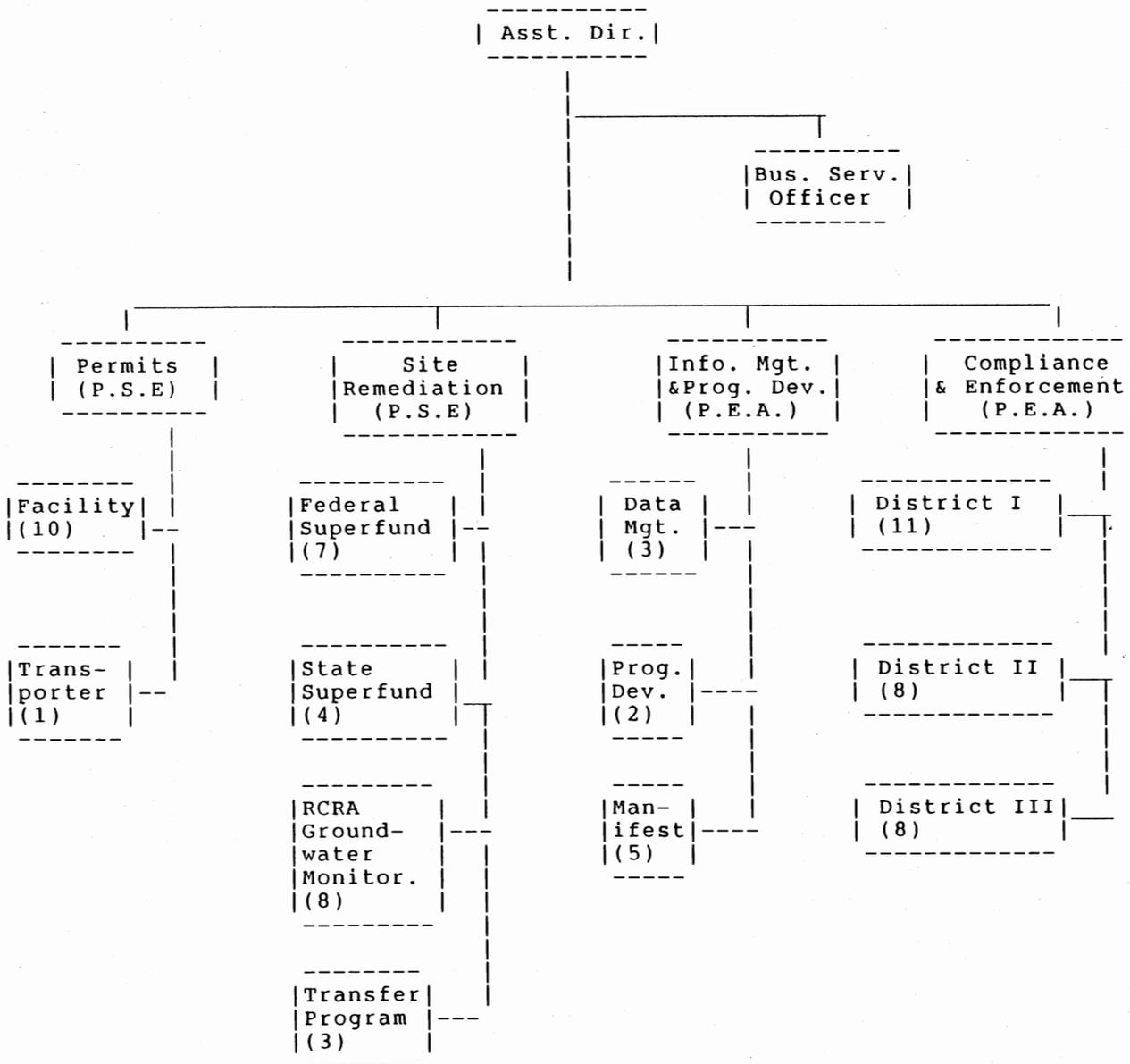
Figure II-1. Organization and Staffing: Hazardous Waste Management Section, June 1987.



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Source: DEP Hazardous Waste Management Section.

Figure II-2. Hazardous Waste Management Section: Proposed Organization.



P.S.E. = Principal Sanitary Engineer
 P.E.A. = Principal Environmental Analyst
 (number) = number of staff positions

Source: DEP Hazardous Waste Management Section.

staff with new staff for the federal and state superfund programs. One other revision is the combining of the permit and transporter regulation functions under one supervisor.

Under the new organization, the greatest proportion of staff resources is still devoted to compliance and enforcement activities (37 percent), while management staffing remains minimal (3 percent). The new site remediation function comprises about one-third (30 percent) of staff resources, with the two new superfund components accounting for 15 percent of total section staffing. Composition of the section in terms of types of positions and staff backgrounds also remains generally the same as before.

Funding. Funding to carry out the section's programs comes from federal grants and state General Fund appropriations. Funding levels and sources for state fiscal years 1983 through 1987 are shown in Table II-1. The amounts include federal RCRA-related grants and General Fund expenditures. A small one-time appropriation from the Emergency Spill Response Fund is not reflected in the table. During the time period covered by the table the state did not apply for or receive funding from the U.S. EPA for carrying out federal Superfund administrative activities.

Table II-1. DEP Hazardous Waste Management Section Funding Levels (Estimated): State FY 19 83 to FY 1987.

FY	FEDERAL ¹		STATE ²		TOTAL	
	Funding	Staff	Funding	Staff	Funding	Staff
83	\$ 644,350	15	\$145,000	7	\$ 789,350	22
84	\$ 858,000	16	\$215,000	10	\$1,073,000	26
85	\$ 912,669	19	\$311,000	12	\$1,223,669	31
86	\$1,345,083	32	\$306,000	12	\$1,651,083	44
87	\$1,395,200	33	\$320,000	12	\$1,715,200	45

1. Approximate federal RCRA-related grant funds expended; staff positions filled for majority of fiscal year.
2. Approximate state General Funds expended; staff positions filled for majority of fiscal year.

Source: Department of Environmental Protection.

The majority of the section's funding through FY 87, as Table II-1 shows, was provided by federal RCRA grants, both the basic 75-25 percent matching grants and some 100 percent specific purpose RCRA grants. For each year that federal funding has been

available, the state has only allocated the minimum amount required to match RCRA authorizations for Connecticut. In the most recently completed fiscal year, General Fund expenditures accounted for less than 20 percent of the Hazardous Waste Management Section's budget.

The minimal financial support Connecticut has appropriated for the RCRA program has been a source of continuing EPA criticism. Although the section has been able to meet most of its specific workload commitments under federal grant agreements, EPA officials note that state support to strengthen RCRA enforcement and compliance efforts or to expand regulatory activities has been lacking. In fact, in order to meet its grant commitments, the section has had to rely on employee overtime that totals the equivalent of two workyears.

Connecticut's reliance on federal funding for its hazardous waste regulatory program has also meant that priorities are set by EPA. Although the Hazardous Waste Management Section develops its own permitting and enforcement strategies, national RCRA implementation plans and EPA regional office grant guidance documents must be followed. Issues section management believes to be priorities in Connecticut that are not addressed by EPA plans and grants must be pursued with state funded staff and other resources. Until the current fiscal year, only two of the section's staff were General Fund personnel not required for RCRA matching and, therefore, available to work on state determined priorities.

As noted above, the section experienced significant staffing changes in FY 88. In the Department of Environmental Protection state budget approved for the present fiscal year, the legislature provided the section with 10 new positions. Four of the new General Fund staff were designated for the newly created state superfund program, while six were allotted to the RCRA program. The section also applied for and received its first U.S. EPA grant to fund seven new staff positions to carry out federal superfund activities in Connecticut.

Money was also appropriated for several authorized but previously unfunded positions within the section. In total, section staffing increased by 28 state and federal funded positions. When filled, the size of the section will be increased 58 percent to a total of 76 funded positions. At this level, the section's staff size will have more than tripled over a period of five years.

Administrative authorization. Although the Hazardous Waste Management Section continues to operate the RCRA program in Connecticut, administrative authority reverted to EPA in January 1986, when the state failed to obtain final authorization approval. Connecticut is one of only eight states that has not

been approved to fully administer the RCRA program. Since reversion, RCRA activities have been jointly managed by the section and the EPA Region I office.

The lack of final authorization has not affected federal funding for Connecticut's program. The EPA Regional Office does not have sufficient resources to actually conduct activities if the state's RCRA grant funding were eliminated. The primary problem is that joint program management increases processing times, creates some duplication of effort, and reduces the state's ability to plan as well as make regulatory decisions.

The major issues in EPA's decision against final authorization for Connecticut concerned staff resources, state enforcement policies and practices, and state standards for closing land disposal facilities. Most of the problems EPA cited have been addressed in accordance with a formal letter of intent signed by the federal and state agencies in April 1986.

The EPA Region I office has recently conducted a review of the Connecticut RCRA program that will be the basis for a decision on final authorization. The Hazardous Waste Management Section has submitted its comments on the review findings to the regional office. A final recommendation on authorization will be prepared by the EPA regional office and made available for public comment sometime during 1988.

The Connecticut Hazardous Waste Management Service

The Connecticut Hazardous Waste Management Service was created by the legislature in 1983 to promote and encourage the appropriate management of hazardous waste in the state. In 1987, the agency was also given certain management planning and siting responsibilities for low-level radioactive waste (P.A. 87-540). The primary responsibility of the service, however, is to prepare a state hazardous waste management plan and a regularly updated report on hazardous waste generation and management needs in Connecticut.

The agency is specifically mandated to prepare an inventory of preferred areas for new treatment, storage, and disposal facilities and is authorized to own and operate one or more facilities if private facilities are not meeting state needs. Another function of the Connecticut Hazardous Waste Management Service is to provide financial and technical assistance on hazardous waste management to business and industry as well as municipalities and public agencies.

Organization. The service is a quasi-public agency headed by a board of directors, whose six members represent the general public, the scientific community, and the business community. The permanent full-time staff of the service includes an executive director, who also serves as chairperson of the board, an

administrator, and a secretary. During the current fiscal year, the service also hired a full-time manager for its new technical assistance program.

The service makes extensive use of consultants to carry out its functions. Consulting firms have been hired to conduct major research projects and several independent consultants are used to meet the agency's ongoing data collection and analysis needs. Periodically, temporary staff have also been used to perform data entry functions. Task forces comprised of service board members, state agency officials and staff, and private citizens have also been formed from time to time for research purposes.

Resources. The service receives most of its funding from the General Fund in the form of grants from DEP and appropriations for special purposes (e.g., to establish a technical assistance program). Operating monies for the service have also been appropriated from the Emergency Spill Response Fund. Revenues additionally include interest income. Funding levels from state FY 84, the agency's first year of operation, through the current fiscal year are summarized in Table II-2. At present, the service's annual budget totals about \$400,000.

Approximately 60 percent of the current budget is allocated for administrative expenses, while 40 percent is designated for funding service projects. Administrative costs include permanent staff salaries, compensation for board members (directors receive \$100 per diem plus travel expenses), and other operating expenses (i.e., rent, equipment, supplies, etc.). Costs for service projects in FY 88, such as updating the state hazardous waste management needs assessment, preparing an inventory of preferred sites for treatment, storage, and disposal facilities, and establishing an industry technical assistance program primarily include consultant fees. About 2 percent (\$10,000) of this year's budget will be used to establish a liability fund for the agency's directors and officers.

Table II- 2. Connecticut Hazardous Waste Management Service Funding Levels, FY 84 - FY 88.

	<u>Actual FY 84</u>	<u>Actual FY 85</u>	<u>Actual FY 86</u>	<u>Estimated FY 87</u>	<u>Estimated FY 88</u>
<u>Revenues</u>					
Emergency Spill Response Fund	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
DEP Grant(s)	0	270,000	327,000	132,800	233,100
Interest Income	2,729	13,349	19,284	12,000	12,000
Other Income (e.g., carry over funding)	0	1,304	1,653	224,000	75,000
Total	<u>\$82,729</u>	<u>\$364,653</u>	<u>\$428,137</u>	<u>\$448,800</u>	<u>\$400,100</u>
<u>Expenditures</u>					
Total	<u>\$38,694</u>	<u>\$350,979</u>	<u>\$249,886</u>	<u>\$380,000</u>	
Excess Revenues Over Expenditures	\$44,035	\$13,674	\$178,251	\$68,800	

Source: Connecticut Hazardous Waste Management Services; independent financial audits and internal budget documents.

CHAPTER III. ACTIVITIES

III. ACTIVITIES

Connecticut's hazardous waste management program is comprised of three components: regulation of currently produced waste; discovery and clean up of historic and uncontrolled waste sites; and planning to address future waste management issues. The primary activities undertaken to implement each program component are described in this chapter.

Regulation of Currently Produced Waste

Although Connecticut has adopted many of its own regulatory provisions concerning the management of hazardous waste, the major regulatory activities carried out by the state are mandated by the federal RCRA program. These activities currently include: 1) issuing operating permits to hazardous waste treatment, storage, and disposal facilities; 2) reviewing and approving closure plans from facilities that intend to cease operating; 3) monitoring compliance by all regulatees with reporting, recordkeeping, and waste handling requirements; and 4) taking enforcement actions when violations of requirements are detected.

Permitting. Facilities that treat, store, and dispose of hazardous waste are required to obtain permits to ensure their physical plant and waste management practices meet certain minimum standards. The permit staff of the Hazardous Waste Management Section have primary responsibility for reviewing permit applications and issuing operating permits to facilities. The basic steps in the section's permit process include: 1) reviewing materials submitted; 2) reaching a preliminary decision; 3) holding a hearing to obtain public comment on the permit and the agency's preliminary decision; 4) reviewing and responding to public comment; 5) preparing the final permit document; and 6) issuing the final permit.

Although there are 218 facilities in Connecticut currently subject to permitting requirements, the section estimates that only about one-third will ultimately be permitted. Most hazardous waste facilities in the state have closed or intend to cease their treatment, storage, or disposal operations rather than apply for a permit. Only one of the permit candidates at present is a proposed facility seeking new operating authority; the remainder are interim status facilities that must submit applications for a final permit in accordance with federal statutory deadlines, or cease operating.

To date, the Hazardous Waste Management Section has issued four permits, all of which authorize operation of commercial treatment, storage, and disposal facilities. One reason so few permits have been approved is that the process is very time

consuming. Even processing time goals set by EPA allow from 120 to 485 work days to issue a permit, depending on the type of facility.

Approving plans. To ensure that facilities intending to close down their treatment, storage, or disposal operations do not leave behind any hazardous waste or site conditions that could cause future problems, plans for proper closure must be developed and implemented. The permit staff are also responsible for reviewing and approving facility closure plans. However, the section's groundwater monitoring staff assists with the review of land disposal facility closure plans.

The closure plan process involves the same basic steps as the permit process but generally takes a shorter time to complete. The processing time goals established by EPA for closure plan approval range from 55 to 120 work-days, depending on the type of facility involved. This is because the plans usually contain less information to review than a permit application. Also, the closure plan process does not require the step of writing a permit document. As of September 30, 1987, the Hazardous Waste Management Section had approved 69 closure plans.

Identifying regulatees. Under federal and state law, businesses are required to determine if they are subject to hazardous waste management regulation. If so, they must notify the U.S. Environmental Protection Agency and obtain a unique identification number. The self-notification requirement is the Hazardous Waste Management Section's principal means of determining who is subject to hazardous waste statutes and regulations.

The section has, in previous years, also researched telephone directories, trade association journals, and public complaints to identify notifiers. Another source of information for detecting regulatees was the recently completed inventory of hazardous waste disposal sites mandated by Public Act 79-605. In the process of conducting investigations at nearly 6,000 sites where it was suspected hazardous materials had been used or wastes had been stored, the section uncovered handlers who should have notified and obtained EPA identification numbers.

Once a regulated handler has been identified, the Hazardous Waste Management Section uses two major methods to monitor compliance with federal and state hazardous waste management statutes and regulations. The first method is to review information routinely required from hazardous waste handlers, such as manifests, groundwater monitoring reports, and proof that insurance and financial requirements have been met. The second method makes use of information gathered during field inspections of hazardous waste sites and handlers.

Paperwork compliance monitoring. Generators, facilities, and transporters that notify the section of their regulated status must routinely submit a variety of reports and documents that indicate compliance with required hazardous waste practices. Much of the section's compliance monitoring is accomplished through the review of such paperwork.

One type of document reviewed is the manifest document that must be used by shippers and receivers of hazardous waste. By law, copies of manifest forms must be submitted to the Hazardous Waste Management Section. Data from manifests, which waste handlers have been submitting since 1983, are entered into a computerized database and analyzed to ensure that the amounts of waste shipped match the amounts received at treatment, storage, and disposal facilities.

Data management staff of the section are responsible for computerizing the manifest data and investigating any discrepancies discovered. Information indicating a generator, transporter, or facility is not in compliance with administrative requirements (e.g., does not have an EPA identification number or is not permitted) is also examined. Possible violations revealed by the analysis of manifest data may be referred to other section staff for a field inspection and/or enforcement action.

Quarterly reports submitted by land disposal facilities subject to groundwater monitoring requirements are reviewed by the section's groundwater monitoring staff for completeness, and to check if sampling and analysis are being carried out as required. The data provided by the reports are also reviewed for indications of on-site contamination problems. Groundwater monitoring staff may schedule the facility for a site visit and/or initiate enforcement action if serious violations are detected.

Another important monitoring function concerns checking each facility's compliance with financial requirements and liability insurance coverage, a responsibility of section permit staff. Documentation submitted by facilities on these requirements is reviewed to determine, among other things, if the amounts of coverage are adequate and policies are current. The permit staff can initiate enforcement action if violations are detected.

On-site compliance monitoring. The primary method by which the section detects non-compliance is through site visits and field inspections. Permit, groundwater monitoring, and sometimes enforcement personnel periodically visit handlers to check compliance. However, the majority of compliance monitoring field work is done by the section's field inspectors, whose numbers recently increased from 8 to 12. The most common types of inspections carried out by these personnel are described below.

Two types of field inspections, the Comprehensive Monitoring Evaluations (CME) and the Compliance Evaluation Inspections (CEI) are required to fulfill RCRA grant agreements. The Comprehensive

Monitoring Evaluation is an all-inclusive examination of a land disposal facility's RCRA compliance and includes: a tour of the physical plant; a review of the facility's records; and extensive sampling of groundwater to determine if the facility is causing contamination. The groundwater monitoring staff are responsible for conducting the CME but concentrate only on the sampling portions of the inspection. The field inspectors monitor all other aspects of a facility's RCRA compliance. All land disposal facilities must undergo a CME once every three years.

Compliance Evaluation Inspections are carried out by field inspectors to ensure generators and all types of facilities adhere to applicable RCRA administrative and waste handling requirements. At land disposal facilities, inspectors also check if internal groundwater monitoring records are complete and groundwater monitoring systems operational. It is the section's policy to conduct CEIs at all land disposal facilities not scheduled for a Comprehensive Monitoring Evaluation.

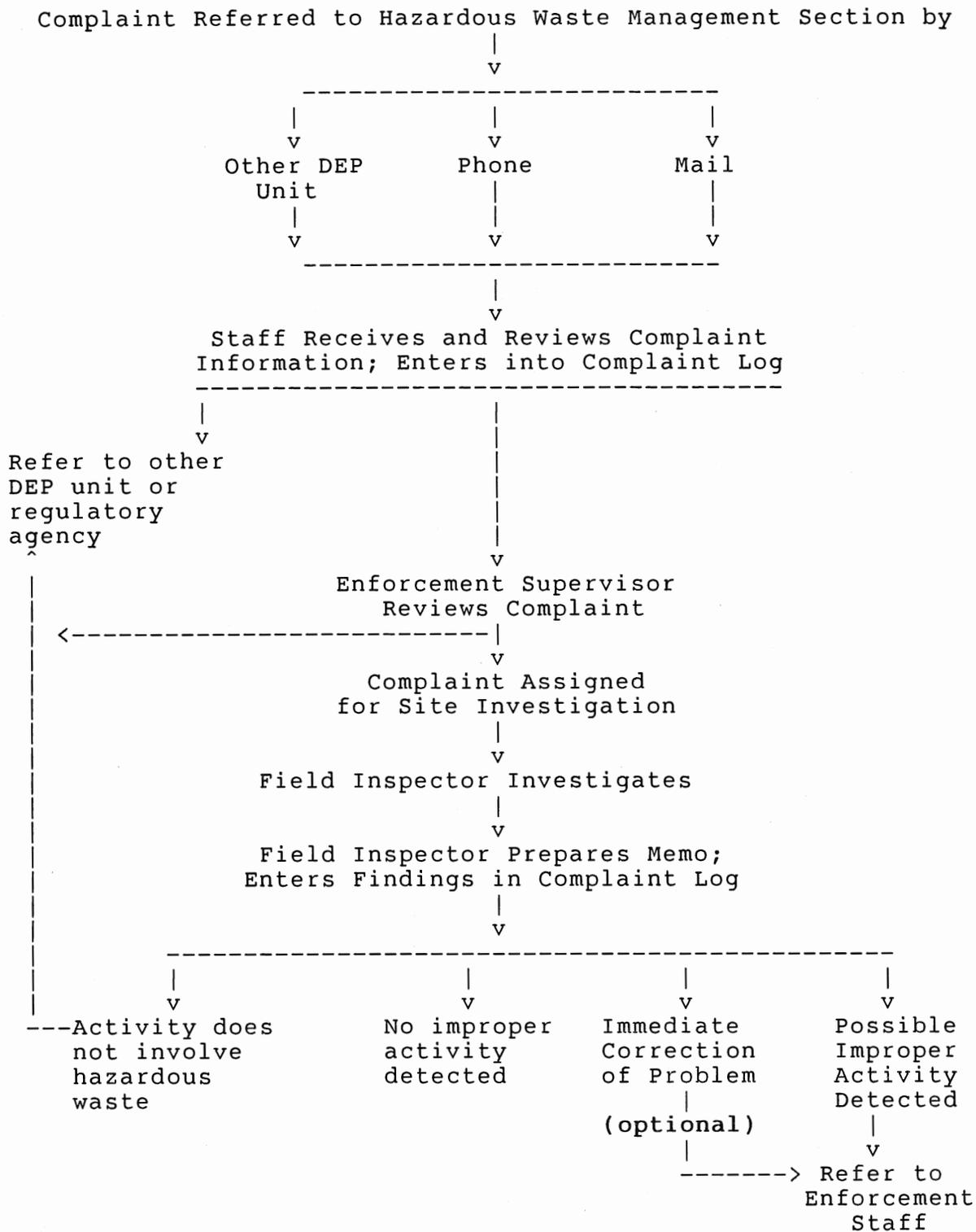
Compliance follow-up inspections are conducted at facilities that violated RCRA requirements and have been subjected to enforcement action. The section's field staff visit the facilities to ascertain if violations have been corrected in accordance with administrative orders or judicial decisions.

Inspections are also performed in response to public complaints received by the section alleging illegal or improper hazardous waste management practices. Several instances of criminal activity have come to the section's attention through investigation of public complaints. The program review committee's examination of section files found at least 18 of the 60 cases referred to the chief state's attorney's office as of September 1987 were based upon allegations in a citizen complaint; at least 5 of these referrals resulted in the imposition of criminal fines.

On average, the department annually receives 200 communications from private citizens, local officials, and company employees alleging improper waste handling activity. Complaints are also forwarded to the section by other DEP regulatory units. Persons contacting the section with information may remain anonymous if they so desire. The section's field inspectors investigate complaints by visiting the site of the suspected activity. If, after a site visit, the complaint's allegations are substantiated, the field inspectors refer the information to section enforcement staff for enforcement response. Figure III-1 illustrates how complaints are received and processed by the section.

Hazardous Waste Management Section staff may also engage in a number of other types of field visits. For example, the offices of a waste hauler may be inspected to determine if the transporter possesses the required state permit. Nonnotifier inspections may be performed at businesses that have not obtained an EPA

Figure III-1. Hazardous Waste Management Section Complaint Process.



Source: Legislative Program Review and Investigations Committee Analysis.

identification number, but appear to be engaging in some type of regulated hazardous waste activity. Another type of inspection, carried out until 1985, were field visits related to the DEP hazardous waste disposal site inventory project.

Information about field inspections conducted by the Hazardous Waste Management Section staff during federal fiscal years 1985 through 1987 is summarized in Table III-1. As the table indicates, there were more inspections conducted than there were sites visited. This is because some sites are inspected for more than one purpose during a year. For example, a facility that has been scheduled for a Comprehensive Monitoring Evaluation may be inspected at a different time during the year as the result of a complaint.

Table III-1. Number of Field Inspections Conducted by the Hazardous Waste Management Section, FFY 85 Through 87.

<u>Type</u>	<u>Number Conducted</u>		
	<u>FFY 85</u>	<u>FFY 86</u>	<u>FFY 87</u>
Comprehensive Monitoring Evaluation	33	21	18
Compliance Evaluation Inspection			
Land Disposal Facility	45	59	38
Other Facility	84	98	73
Generator	116	82	95
Compliance Follow-up Inspections	190	201	170
Complaint Inspections	164	139	182
Other (e.g., sampling only, transporter, nonnotifiers, inventory-related, transfer program notifications)	211	81	170
Total Inspections (all purposes)	843	681	746
Estimated Number Sites Visited (All Purposes)	643	642	555

Source: Department of Environmental Protection, Hazardous Waste Management Section.

The number of inspections conducted varies year to year. One influence is the fact that many land disposal facilities are closing out their hazardous waste handling operations or adopting other handling practices. Thus, there are fewer numbers of Comprehensive Monitoring Evaluations being conducted each year. The number of complaint investigations is affected by the number of complaints received that require a site visit by the section. The amount of compliance follow-up inspections is similarly dependent upon the degree of compliance with enforcement actions initiated in previous years.

Inspection procedures vary according to the type of inspection being conducted. Each inspection places emphasis on a particular aspect of Connecticut's hazardous waste management program. However, the steps carried out during a Compliance Evaluation Inspection, described below, are representative of the section's field inspection procedures.

A routine Compliance Evaluation Inspection involves a number of steps. Shortly before the actual inspection takes place, the field inspector reviews the section's files containing the handler's records, especially the notes prepared by the last inspector to visit the facility, if there has been a previous site visit. These notes include the findings of the previous inspection, if any, and provide a summary of the engineering or manufacturing processes used by the company. This information presents the field inspector with advance notice of the types of wastes likely to be produced by the company.

The inspection begins with a meeting between the business' key hazardous waste employee and the DEP field inspector. At this point, the details of any previous inspection are discussed to determine if there have been any substantial modifications to the business' operations that may affect the types of waste generated or handled. The handler's records will be reviewed as to the following applicable administrative requirements:

- o written indications that plant employees have received training in hazardous waste handling;
- o the occurrence of regular self-inspections of waste management practices; and
- o the accuracy and completeness of hazardous waste manifests.

The introductory discussion and record review is followed by a tour of the site. The field inspector examines not only apparent indicators of hazardous waste activity, but also surveys the site to ascertain if earlier descriptions of operations conform to what is actually in sight. If there is a discrepancy, it is possible there is a waste stream that has not been accounted for.

Additional subjects for examination include, but are not limited to: storage practices; proper labeling of hazardous waste on storage drums; and proper maintenance of groundwater monitoring wells, if any. Limited samples of wastes, suspected wastes, soils, and surrounding waters (called "grab samples") may also be taken by the field inspectors for possible future use in civil and/or criminal proceedings, if improper handling activity is suspected.

At the conclusion of the inspection, the field inspector discusses the findings in an exit interview. Then a debriefing memo is prepared for internal use and written summary of the inspection results is entered in the section's company files.

Enforcement. Information on possible noncompliance gathered through paperwork reviews and field inspections is considered during the section's monthly enforcement agenda meetings. Violations detected by permits and groundwater monitoring staff in the course of their permitting and plan approval duties are also discussed along with the handling of pending cases and appropriate enforcement responses.

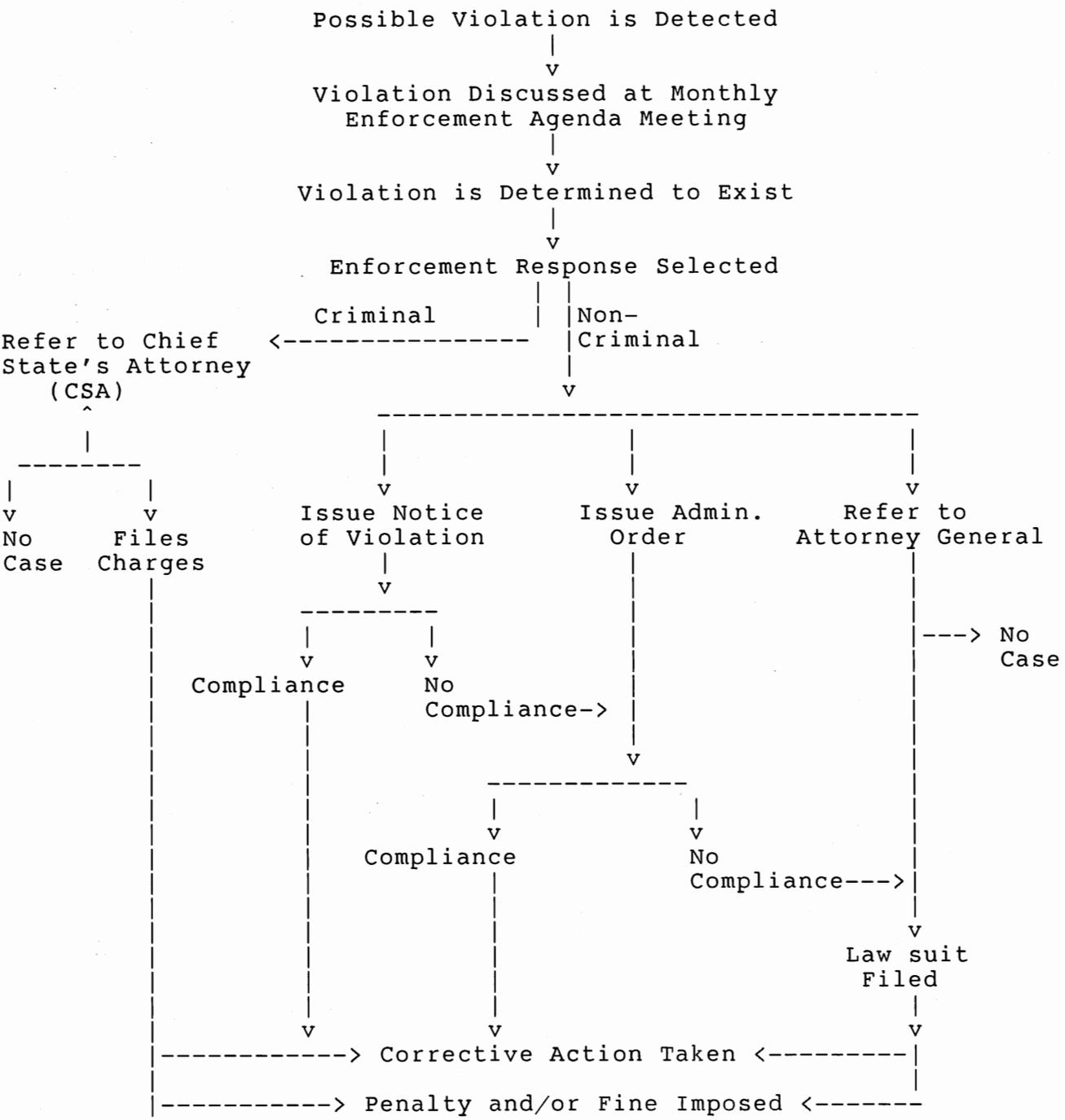
Enforcement strategies for any detected violation are guided by the section's written enforcement response policy, document incorporating federal and state statutes and EPA policies regarding improper hazardous waste activities. Under the policy, a range of enforcement options are available depending on the type of violation and the history of the violator. The section's enforcement process is outlined in Figure III-2.

As Figure III-2 illustrates, enforcement staff may seek compliance internally or externally. Internal or administrative action involves the issuance of a notice of violation or an administrative order. External or legal options include referring the case to the state attorney general, the chief state's attorney, or both for judicial resolution.

The enforcement response policy also allows for escalation of the section's enforcement remedy if the handler fails to comply with the initial action. Failure to comply with a notice of violation can lead to issuance of an administrative order, which in turn can result in a referral to the Attorney General's Office if there is noncompliance with the order.

The Hazardous Waste Management Section is formalizing civil penalty regulations, that will eliminate the need to refer many hazardous waste cases to the attorney general's office to obtain monetary damages. As of December 1987, DEP was completing its final draft of the regulations for submission to the attorney general and the legislature's Regulations Review Committee for approval. It is anticipated the regulations will take effect by June 30, 1988.

Figure III-2. Hazardous Waste Management Section Enforcement Process.



Source: Legislative Program Review and Investigations Committee Analysis.

The ability to conduct administrative hearings and assess civil penalties is expected to have a positive impact on the department's ability to address noncompliance. At the present time, actions involving the imposition of civil penalties must be referred to the attorney general. The availability of administrative hearings and the ability to assess penalties, will allow DEP to impose fines in accordance with its own recommendations rather than being dependent upon outside agencies.

Figure III-3 shows the number of enforcement actions initiated each federal fiscal year, categorized by type of enforcement response. As the graph indicates, between October 1980 and September 30, 1987, the Hazardous Waste Management Section initiated 1,023 enforcement actions.

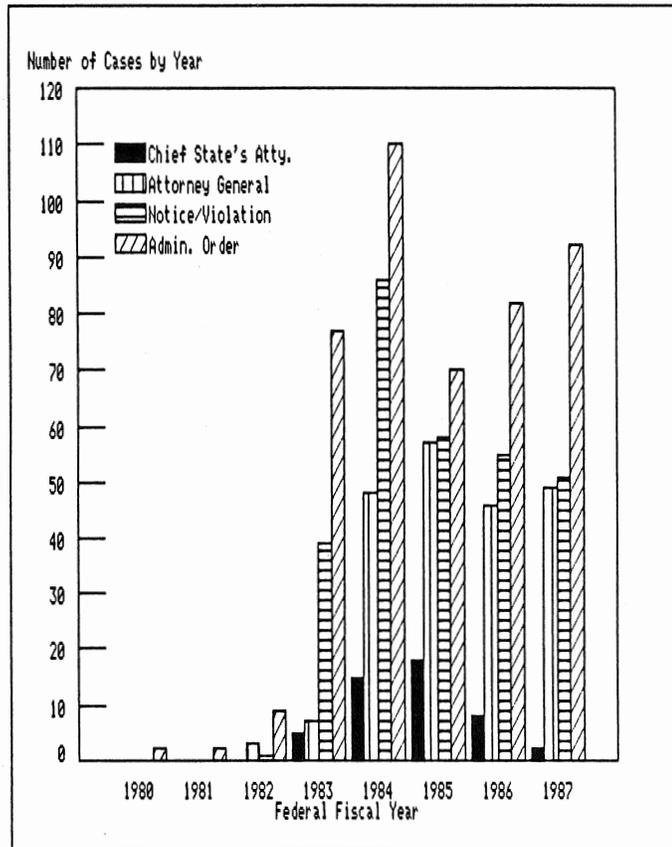
Between FFY 80 and the end of FFY 83, the department initiated less than 15 percent (145 cases) of all hazardous waste enforcement actions. This was due to the small number of field inspectors and enforcement staff engaged in hazardous waste management activities prior to FFY 83. Approximately two-thirds of the section's entire enforcement effort (653 cases) was initiated during federal fiscal years 1984 to 1986. Increased staffing and field inspection and enforcement activities were the major factors in this growth.

An added factor was the business community's unfamiliarity with the hazardous waste management regulations and procedures in the early years of the program. As discussed previously, the hazardous waste legislation led to the development of an extremely complex body of regulations. Violations by handlers, therefore, were common and frequently detected by regulatory staff.

Figure III-4 presents enforcement actions taken by type. According to the figure, a majority of the section's enforcement activity consists of administrative actions. Twenty-nine percent of all enforcement activity was through the issuance of notices of violation and 44 percent through administrative orders. Only 28 percent of the section's enforcement activity was referred to outside agencies for civil and/or criminal prosecution. Therefore, the selection of an enforcement response, the action's handling, and its ultimate disposition are subjects directly within the authority of the Hazardous Waste Management Section in 72 percent of all cases commenced since October 1980.

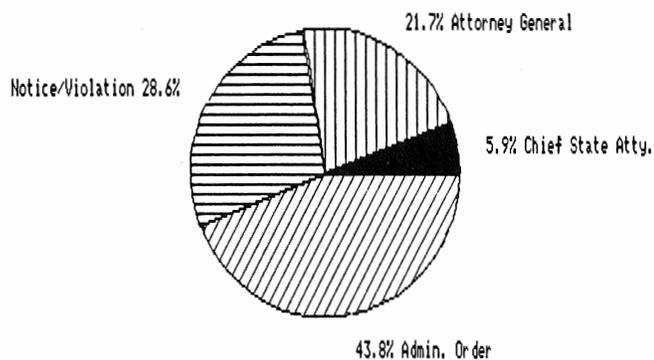
As noted earlier, when a handler fails to comply with the terms of the administrative action, the section may refer the case to the attorney general or the chief state's attorney and seek judicial resolution of the dispute. From 1980 to 1987, only 47 administrative actions were referred to the attorney general's office and just one was referred to the chief state's attorney.

Figure III-3. Total Enforcement Actions by Federal Fiscal Year.



Source: Legislative Program Review and Investigations Committee Analysis of Hazardous Waste Management Section Data.

Figure III-4. Percentage of Enforcement Actions by Type.



Source: Legislative Program Review and Investigations Committee Analysis of Hazardous Waste Management Section Data.

Penalties and fines. Table III-2 presents data on penalties and fines assessed through litigation by the offices of attorney general and chief state's attorney by federal fiscal year. The figures given for the Attorney General's Office are the amounts reported to the section as actually collected and deposited in the Emergency Spill Response Fund. The numbers given for the chief state's attorney's office, however, represent only the total fines assessed. In addition to these monetary penalties, a conviction in one case led to a jail sentence.

As the table shows, from October 1980 to September 30, 1987, just under \$1 million in penalties and fines have been levied against violators in 75 cases. Statistics on the amount of penalties assessed or collected during FFY 87 are not included as complete information was not yet available. The \$1 million reported as either assessed or collected includes a \$250,000 fine assessed in one criminal case initiated in FFY 84. Not including this one action, on a case by case basis, the amounts assessed or collected per case have ranged from a low of \$400 to a high of just under \$80,000.

Table III-2. Penalties Assessed or Collected (Federal Fiscal Years 1980 - 1986).

	<u>Attorney General</u>		<u>Chief State's Attorney</u>	
	Penalties Collected	Number of Cases	Penalties Assessed	Number of Cases
FFY 86	\$ 21,000	6	\$ 34,000	4
FFY 85	\$ 177,483	25	\$ 62,100	5
FFY 84	\$ 36,035	8	\$ 290,000	7
FFY 83	\$ 31,500	5	\$ 187,500	7
FFY 82	\$ 76,700	3	\$ 0	0
FFY 81	\$ 0	0	\$ 0	0
FFY 80	\$ 0	0	\$ 0	0
Cases with Date Missing	\$ 20,500	5	\$ 0	0
TOTAL	\$ 363,218	52	\$ 573,600	23

Source: Department of Environmental Protection, Hazardous Waste Management Section.

Discovery and Clean Up of Past Problems

Unlike the state's regulatory activities, which focus on properly managing currently produced hazardous waste, discovery and clean-up activities are aimed at correcting problems at uncontrolled hazardous waste sites. Uncontrolled sites include locations where hazardous waste has been illegally dumped or accidentally released as well as historic treatment, storage, or disposal facilities that operated prior to regulation.

Connecticut's major efforts to address the health and environmental problems posed by past mismanagement of hazardous waste include compilation of a state mandated inventory of disposal sites, participation in the federal Superfund program, and the establishment of a state financed "superfund" program. A description of each of these activities is provided below.

State site inventory. The most significant activity to discover uncontrolled hazardous waste sites in Connecticut was mandated by Public Act 79-605. The act required the Department of Environmental Protection to compile an inventory of hazardous waste disposal sites and determine the types and amounts of waste present at each site by January 1981. Although the statutory deadline was not met, a report containing the inventory was presented to the General Assembly in January 1987. Connecticut is one of the few states in the nation to have completed a hazardous waste disposal site inventory. Most of the inventory work was conducted by Hazardous Waste Management Section employees in addition to their regular duties.

During the inventory's field evaluation process, which lasted from 1980 through 1985, nearly 6,000 potential sites were investigated. The sites were identified through a review of various state and federal records, a survey of municipal officials, and information from public complaints and routine DEP inspections. During 1986, data obtained from the field work were evaluated. Sites where no or insignificant amounts of hazardous waste were present or there was no potable water supply impact were eliminated from the final inventory list.

The final DEP inventory published in January 1987 contained 567 sites including 94 that are hazardous waste storage and disposal facilities subject to RCRA. None of the sites were found to present an imminent danger to public health or the environment. At the time the inventory report was released, follow-up evaluations to fully assess health and environmental impact had been initiated at nearly half (275) of the sites, and clean up had been completed at 49. The department estimated remedial action would be required at 518 sites.

Federal Superfund. Until recently, the Boston regional office of the U.S. Environmental Protection Agency had primary administrative responsibility for federal Superfund activities in Connecticut. Most of the Hazardous Waste Management Section's participation was limited to reviewing materials the EPA regional office and private contractors have developed concerning the state's eight federal Superfund sites. No staff within the Hazardous Waste Management Section was assigned full time to federal Superfund activities; primary responsibility for review, comment, and liaison work with EPA staff rested with the section head.

The department recently applied for and received an EPA grant to hire seven additional staff (six professional, one administrative) for future federal Superfund activities. Federal funding for this level of staffing is guaranteed through 1991. The new staff will evaluate and refer sites for inclusion in the federal program. They may also conduct some of the technical assessment studies for determining appropriate remedial actions at sites where clean-up costs will be paid for by federal Superfund monies.

To be eligible for financial participation in the federal Superfund program, a hazardous waste site must meet the criteria for inclusion on the National Priority List. (See Appendix A for a description of the Superfund process and criteria.) At present, six Connecticut hazardous waste disposal sites are included on the federal priority list and two additional sites have been proposed. However, DEP requested that one of these later sites be withdrawn because it is believed the clean-up problems can be better handled with state resources. Conditions at the other proposed site are being re-evaluated since some waste materials were been removed and the remaining problems may not merit Superfund status. A brief description of each Connecticut Superfund site and its status as of June 1987 is presented in Figure III-5.

As Figure III-5 indicates, remedial action (e.g., waste removal, some site clean up, installation of treatment systems) had been initiated at two sites and nearly completed at one. Studies to determine appropriate remedial action were in progress at three, and a decision on remedial action had been made at another site. As noted above, the two proposed sites may be withdrawn from the federal Superfund program.

As of July 1987, funds expended or committed by EPA and responsible parties to conduct studies and provide corrective actions at five sites totalled approximately \$5.8 million. A breakdown of these costs is provided in Table III-3 below.

No state funding has been required in regard to these activities. However, DEP and the responsible party for the Laurel Park site (Uniroyal) signed an agreement to share the costs of

Figure III-5. Summary of Federal Superfund Sites in Connecticut.

<u>Site/Problem</u>	<u>Town</u>	<u>Date Discovered</u>	<u>Date NPL Listed</u>	<u>Status June 87</u>
Beacon Heights; private landfill/open dump; GW contamination by industrial chemicals/sludges	Beacon Falls	11/1/79	9/8/83	assessment studies completed; remedial action decided; some RPs settled and agreed to finance remediation
Kellog-Deering; public water supply site; chemical contamination; source unknown	Norwalk	5/1/80	9/2/84	assessment studies completed; remedial action partially completed; searching for RPs to recover costs
Laurel Park; private landfill; GW contamination by industrial chemicals	Naugatuck	12/1/80	9/8/83	top priority site in CT; RP partially completed assessment studies; RP and DEP signed agreement to share costs of extending public water supply
Nutmeg Valley Rd; small industrial park; metal-related wastes contaminated neighboring wells; possible GW contamination	Wolcott	1/1/81	(proposed 1/23/87)	no superfund action; DEP requesting not NPL list; town received ESRF grant to extend public water supply
Old Southington Landfill; municipal landfill; contamination nearby town well surface waters	Southington	1/1/80	9/24/84	town = RP and conducting assessment studies
Revere Textile; textile mill site; drums of haz. waste on site; possible contamination GW and adjacent river	Sterling	1/1/81	(proposed 6/10/86)	owner completed removal (drains, soil) activities; studying to consider delisting (little potential for contamination)
SRS; waste recycle/storage facility (currently applying for RCRA recycle permit); contamination of adjacent municipal well and GW	Southington	7/1/79	9/8/83	remedial action partially implemented by RP
Yaworski Waste Lagoon; private landfill/waste lagoon; site & GW contamination; possible wetlands, river, aquifer impact	Canterbury	2/1/80	9/8/83	lagoon closed by DEP in 1983; assessment studies in progress; expect remedial action decision fall 1987; searching for RPs

Note: RP = responsible party GW = groundwater

Source: U.S. EPA Superfund Site Summaries

extending the public water supply to households affected by groundwater contamination from the site. In addition, the town of Wolcott was awarded a grant from the state's Emergency Spill Response Fund to extend the public water supply to homes affected by the Nutmeg Valley Road site.

Table III-3. Funding for Activities at Connecticut Federal Superfund Sites as of June 1987 (dollar amounts in thousands).

<u>Purpose</u>	<u>Funding Source</u>		<u>Total Funding</u>
	<u>EPA</u>	<u>Responsible Party</u>	
Studies	\$2,001.	\$ 800.	\$2,801.
Corrective Actions	<u>0.</u>	<u>3,000.</u>	<u>3,000.</u>
<u>Total Funding</u>	\$2,011.	\$3,800.	\$5,801.

Source: EPA Superfund Site Summaries.

State Superfund. The findings of the DEP inventory report prompted legislation during the 1987 session that establish a \$10 million fund finance clean-up costs at hazardous waste disposal sites. Under P.A. 87-561, the new state superfund law, the DEP commissioner is further required to establish a program for identifying, assessing, and cleaning up uncontrolled hazardous waste sites in Connecticut. The department also received funding for four new General Fund staff positions to administer the program during FY 88. Among the major statutory requirements for the program are:

- o maintenance of a site inventory that includes all sites listed in the department's current inventory;
- o assessment of all currently inventoried sites by June 30, 1991, and within 48 months of discovery for newly inventoried sites;
- o prioritization of site assessment based on quantity and characteristics of the wastes present, the potential for health and environmental harm, and any other appropriate factors;

- o establishment of a toll-free telephone line to receive anonymous information from the public leading to site discovery;
- o provision of remedial action for all assessed sites; and
- o submission of an annual report on state superfund activities to the General Assembly's environment committee.

The legislation further specifies that site assessments must include, at a minimum, testing or engineering reports, determination of a site's owners and responsible parties, and evaluation of the site based on the federal Superfund scoring method.

To finance remedial action under the program, the DEP commissioner is authorized to refer sites for inclusion in the federal Superfund program or pursue funding from state sources such as the Emergency Spill Response Fund or the newly created state hazardous waste superfund.

Use of state funds, however, is limited to situations where the health and environmental threats of the site are unacceptable and either the responsible party cannot be determined or the responsible party is not timely in providing remedial action. If the latter occurs, the commissioner is required to seek through civil action reimbursement of remedial action costs and, in certain cases, damages from the responsible party. The DEP commissioner is also permitted to use up to \$5 million of the state superfund current authorization to pay for Connecticut's share of remedial action costs at federal Superfund sites.

Current status. Under Public Act 87-561 a variety of functions must be performed and certain deadlines met. The implementation status of the major provisions of the state superfund program is summarized below:

1) Program development: As noted above, staffing within the Hazardous Waste Management Section for discovery and clean-up activities now totals 11 positions. The section anticipates that all positions will be filled by early 1988. A training program for the new staff has also been initiated and will continue through early 1988.

The section has established a schedule for promulgating regulations to guide the use of state funds for clean-up activities. Final approval of the regulations required by the state superfund law is expected by September 1988, pending the action of the legislature's Regulations Review Committee. The first annual report on the state's superfund program was submitted to the legislature's environment committee as required in October 1987.

An automated system for recording and tracking site discovery and clean-up activities is currently being developed by the section. Section staff have also been reorganized so that all personnel with site discovery and remediation responsibilities will be overseen by the same supervisor.

2) Site identification: As described earlier, the Hazardous Waste Management Section completed a systematic inventory of potential clean-up sites in Connecticut that identified 518 such sites. Since the inventory was completed in January 1987, an additional 31 potential clean-up sites have been discovered through the state's transfer program, routine inspections, citizen complaints, and referrals from other DEP units. The section is maintaining a hazardous waste disposal site inventory in accordance with statutory provisions.

As required by the state superfund program law, the Department of Environmental Protection is planning to operate a toll-free telephone line for receiving anonymous information from the public regarding uncontrolled hazardous waste problems. The "superfund hot-line" is scheduled to be established by early 1988.

3) Site assessment: Public Act 87-561 required that criteria be established for prioritizing initial assessments of all potential clean-up sites identified through the state inventory process. The Hazardous Waste Management Section established site assessment criteria as mandated, and all sites inventoried as of January 1987 have been prioritized for initial evaluation. Assessments are now being conducted in accordance with the section's prioritized list.

As of October 1987, preliminary assessments had been completed at nearly 60 percent (305) of the 518 potential clean-up sites identified through the inventory process. Another 213 sites must be evaluated by June 30, 1991, a statutory deadline imposed by P.A. 87-561. According to the department's recent state superfund annual report, this deadline will be met with current staffing levels.

4) Site remediation: Site remediation refers to clean-up activities that reduce or eliminate potential health and environmental risks at sites where hazardous waste has been improperly managed. Site remediation may also include conducting detailed studies of the feasibility of alternative clean-up approaches or investigations and legal proceedings to find parties responsible for hazardous waste disposal sites.

Unlike the site assessment process, there is no statutory deadline for completing remedial activities at all identified sites, and no specific schedule has been established by the section at present. To date, remediation efforts have been

completed at 51 of the 549 identified hazardous waste disposal sites in Connecticut.

Full implementation of the section's remedial action function is not anticipated before FY 89 as efforts are being focused on completing site assessments and searches for responsible parties. A request for additional site remediation staff to expand these functions in the upcoming fiscal year has been submitted to the legislature for consideration.

State funding available for remediation of hazardous waste disposal sites totals \$17.5 million at present. This amount includes the \$10 million state superfund, the \$2 million in bond funds available for the state's share of clean-up costs at sites financed through the federal Superfund, and the \$5.5 million now in the Emergency Spill Response Fund. According to the department's first annual state superfund report, current funding levels will be sufficient for completing several clean-up projects at sites with no known responsible parties. The section is evaluating which sites on the inventory list will be selected for remediation with state funds during the current fiscal year.

Planning for Future Hazardous Waste Management

Activities conducted to address hazardous waste in the future are another component of Connecticut's hazardous waste management program. Unlike either the regulatory or the discovery and clean up activities discussed earlier, efforts to develop strategies for meeting future management needs have been initiated by the state rather than the federal government. Planning activities, which are carried out by the Connecticut Hazardous Waste Management Service, are discussed below. An overview of the current Connecticut waste generation and management situation based on information compiled by the service is provided in Appendix C.

Planning. Statewide planning for the appropriate management of hazardous waste generated in Connecticut is the primary responsibility of the Hazardous Waste Management Service. By law, the service must prepare and periodically update an estimate of the types and volumes of waste generated and the treatment, storage, and disposal capacity and capability needed in Connecticut. The service's first needs assessment report was submitted to the General Assembly as required in July 1985. An update is currently being prepared.

State statute also required the service to prepare a plan for the management of hazardous waste generated in Connecticut. As mandated, the state's first and current hazardous waste management plan, was issued in January 1986. This plan, based on 1983 waste generation and management data, contains an analysis of waste generated and management methods used at present, and 20-year projections regarding waste management needs. The basic findings were:

- o Connecticut generators have been able to find sufficient capacity to handle their waste;
- o the volume of waste generated is projected to remain constant over the next 20 years; and
- o waste management costs are escalating and management options are decreasing.

A significant portion of the service's planning effort is devoted to ensuring the data used for planning are as accurate and complete as possible. The service has developed a computerized database on Connecticut hazardous waste generation and management based on information that comes from the generator and facility reports submitted to DEP under RCRA requirements. While the Hazardous Waste Management Section sends and receives the report forms, completed reports are forwarded to the service for editing and analysis. In fact, the service prepares most of the section's summary of generator and facility reports, which must be submitted to the U.S. Environmental Protection Agency biennially.

Although the biennial report data are the best available on state waste generation and management, the service has encountered several problems regarding the quality of the data reported. One problem appears to be the complexity of the report form, which results in reporting errors by generators and facilities. To address this, the service is participating in a national task force studying report form improvements.

In an effort to check the accuracy of its database, the service also compares generator/facility report statistics with information obtained through the manifest system administered by DEP. Comparisons have revealed errors and omissions in both data sources. Hazardous Waste Management Section staff are following up on manifest data corrections. In addition, current manifest forms as well as the nationwide manifest tracking system are being reviewed by a national task force that includes Connecticut hazardous waste management staff. The goal of this group is to develop recommended revisions to simplify and standardize manifest forms and improve the compatibility of the manifest and biennial reporting systems.

As part of its planning activities, the service has adopted a policy that establishes a hierarchy of preferred hazardous waste management practices to guide its evaluations of future needs. The hierarchy, which has been adopted in state statute, is presented below:

1. **Waste Reduction and Recycling:** Waste reduction is the preferred management strategy because it can eliminate the environmental and health hazards

associated with hazardous waste generation, treatment, and disposal. Recycling allows reuse of a substance, or recovery of some usable portion.

2. **Waste Destruction:** The use of certain equipment or processes can totally destroy the hazardous portion of a waste. Examples include incineration and cyanide destruction.
3. **Waste Detoxification:** A variety of techniques can reduce the volume and/or hazardous nature of the waste.
4. **Long-term Waste Storage or Permanent Disposal:** This option of last resort includes landfills and above-ground vaults. The service considers this alternative to be appropriate only for those wastes not amenable to treatment or destruction. These wastes are generally the residues from other treatment processes.

The service has undertaken a number of projects to implement its plan and promote the preferred management practices. Chief among these is the creation of a technical assistance program on hazardous waste management for Connecticut businesses, industries, and communities. The goal of this program is to encourage waste reduction, recycling, and sound management practices.

Development of an inventory of preferred areas for locating in-state hazardous waste management facilities is another service effort aimed at preparing for future needs. The economic feasibility of several scenarios concerning hazardous waste land disposal facilities also was reviewed by the service. In addition, a computerized model to allow continued review of such facilities under future conditions was developed.

CHAPTER IV. FINDINGS AND RECOMMENDATIONS

IV. FINDINGS AND RECOMMENDATIONS

The Legislative Program Review and Investigations Committee found that Connecticut has established a comprehensive program for managing present, past, and future hazardous waste. The committee's review revealed, however, that efforts to regulate currently produced waste and to solve historic waste problems have been seriously impeded by limited resources. While understaffing has been a major problem, poor working conditions, inadequate information management systems, and conflicts with the U.S. Environmental Protection Agency also have contributed to backlogs, delays, and inefficient use of personnel within the DEP Hazardous Waste Management Section.

Recent staffing increases for regulatory and clean-up functions will address a number of concerns noted by the committee study. In the following findings and recommendations, the program review committee points out the need for still further staff to fully implement these functions but concentrates on strengthening management of the Hazardous Waste Management Section. A primary goal of many committee proposals is to insure that systems are in place to monitor performance, manage data, and develop annual plans so that personnel and other resources will be used as efficiently and effectively as possible.

Several specific changes in the section's permitting, compliance monitoring, and enforcement activities are also recommended to enhance the effectiveness of the state's regulatory effort. The Legislative Program Review and Investigations Committee found it too soon to judge the state's revamped discovery and clean-up program, but the program's current status and future implications are discussed in this chapter.

Finally, the program review committee found that state planning and strategies for meeting long-range hazardous waste management goals need to be refined. Planning recommendations presented below focus on improving the forecasting of future needs. The committee also sought to increase the impact of strategies for promoting appropriate management of hazardous waste by recommending expansion and revision of existing financial assistance as well as tax programs.

Management Issues

The Hazardous Waste Management Section of the Department of Environmental Protection is responsible for administering federal and state regulatory programs concerning hazardous waste management as well as conducting discovery and clean-up activities. The committee found that the section has achieved only partial success in implementing these programs. Deficiencies

in performance were evident even within areas given the highest priority by section management.

For example, the section's highest priority has been carrying out activities required under EPA grant commitments, since federal grants provide the bulk of the section's funding. In general, the section has met and often exceeded its federal grant commitments regarding inspections and facility closure plan approvals over the past three fiscal years. Permitting commitments, however, have seldom been fully achieved. In addition, while the section has issued final permits to the state's 4 major commercial facilities, an estimated 66 facilities remain to be permitted by a federal statutory deadline of November 1992.

Monitoring compliance by the regulated community through field inspections is another high priority of the section. The section's inspection procedures are highly rated by the EPA. The committee also found that current inspection strategies provide for regular field visits of the state's major facilities and generators (e.g., land disposal facilities, commercial facilities, incinerators, and large volume handlers). Field inspectors also promptly follow-up nearly all hazardous waste complaints received from the public. However, as many as 70 percent of the estimated 1,550 facilities and large generators in Connecticut have not been subject to a comprehensive hazardous waste field inspection within the past three years.

Both federal and state policies emphasize a strong enforcement program for addressing hazardous waste management violations. According to the most recent data available from U.S. EPA, in federal FY 86, Connecticut issued more notices of violations and administrative orders to hazardous waste facilities than any other state in Region I (New England). To enforce compliance, the section has taken administrative action against nearly 700 violators of hazardous waste regulations between 1980 and mid-1987. While many violations have been detected by the section, the committee found that a large proportion of administrative enforcement actions remain outstanding several years after issuance; 46 percent of the 405 notices of violation and administrative orders initiated between October 1, 1982 and September 30, 1985, have not been resolved (i.e., compliance achieved or a penalty imposed).

Section performance in regard to discovery and clean-up activities, an area of great public concern, has also been mixed. The section completed a comprehensive inventory of hazardous waste disposal sites, although not within the required time frame. State statute mandated completion of the inventory in 1981; due to inadequate staff resources, the inventory process was not finished until January 1987. Furthermore, no staff positions had been funded specifically for site assessment and clean-up activities until the current fiscal year. Progress in assessing and cleaning up the sites identified through the inventory process or the federal Superfund program, therefore, has been slow. As of

October 1987, only 60 percent of the 518 inventoried potential clean-up sites had been assessed and only 10 percent cleaned up.

The uneven record of performance outlined above is the result of a number of management and administrative factors. These include minimal resources, conflicts with U.S. EPA over enforcement and land disposal facility policies, inadequate automated data and information systems, and poor working conditions. Committee findings on each of these obstacles to effective management and recommended remedies for improving section performance are discussed below.

Resources. Many deficiencies in section performance are directly attributable to inadequate staffing levels, a problem since the hazardous waste management program began operating in 1980. This situation has changed significantly for the current fiscal year. A total of 28 new federal and state positions have been funded within the Hazardous Wastes Management Section. The number of field inspectors increased from 8 to 12, and the number of staff for discovery and clean-up efforts has gone from 1 part-time to 11 full-time positions.

Positions were also added to the permit, groundwater monitoring, and information management activity areas as well as to the state-mandated program for monitoring waste management at hazardous waste establishments undergoing a transfer of ownership. The program review committee believes the nearly 60 percent increase in section staffing should result in more inspections being conducted, better follow-up on violators, improved permit processing, and substantial progress in the assessment and clean up of historic hazardous waste disposal sites.

Program goals regarding field inspections as well as discovery and clean-up efforts, however, cannot be met without additional increases. Staffing needs for these activities are discussed in detail later in this chapter. Furthermore, as the program expands, even more staff will be needed in the future. For example, with augmented field staff, the numbers of detected violations should increase as will the number of enforcement staff required to process them. The committee's recommendations on performance monitoring and planning discussed below will aid in identifying and justifying the need for new positions within the Hazardous Waste Management Section.

Federal authorization. DEP and federal officials have been negotiating the conditions that must be met for the state to be approved to run the RCRA program since administrative authority formally reverted to the U.S. EPA in January 1986. Connecticut is one of eight states that has not received final authorization to administer the federal RCRA program. As noted in a previous chapter, federal funding has not been affected by the lack of authorization, and the Hazardous Waste Management Section continues to carry out the day-to-day regulatory activities.

Since reversion, however, permit and closure plan processing has been subject to EPA review and approval. Policy matters, such as the interpretation of regulations, also have been deferred by the department to the EPA regional office. This has both prolonged decision making and created uncertainty among the regulated community, especially land disposal facility owners, as to the standards and requirements they must meet now and in the future. In addition, considerable Hazardous Waste Management Section staff time has been devoted to responding to EPA data requests and implementing changes in policies and procedures to conform with federal requirements.

As of November 1987, most deficiencies EPA cited in Connecticut's operation of the RCRA program had been addressed. Staff resources have been added, and the state's enforcement policy and facility closure standards have been made consistent with federal regulations and policies. The fact that policy conflicts and procedural and resource issues have, for the most part, been resolved, has reduced the time spent by section management and line staff on projects required for authorization.

Extended decision-making and processing times will continue, however, until Connecticut has final authority over its RCRA program. A decision on final authorization is now dependent upon the outcome of the regional office's review of the section's performance over the past federal fiscal year and an evaluation of the state's compliance with policies concerning timely and appropriate enforcement action. Even if the EPA review is favorable, the earliest a final authorization decision can become effective is the spring of 1988.

Information system. The influx of new staff, while positive, will not address the section's information management deficiencies. The Legislative Program Review and Investigations Committee found two major weaknesses in the section's information management:

- 1) existing program data for monitoring and enforcing compliance of the regulatory community are incomplete, fragmented, and not easily accessible to line staff or supervisors; and
- 2) the data necessary for management to assess overall section performance, identify problem areas and resource needs, and set goals and objectives are not systematically collected or compiled.

The size and complexity of state and federal hazardous waste regulatory programs demands automated information management systems. A nationwide RCRA program information system operated by the U.S. Environmental Protection Agency was established to produce program and performance monitoring data. The Hazardous Waste Management Section devotes considerable staff time to collecting, sending, checking, and editing data for the EPA

system. The system, however, proved unworkable and is now being totally revamped.

Since the national system does not meet its information management needs, the section established at least a dozen major automated databases on four types of equipment (hardware) that use different operating systems (software). Much of the data collected and compiled by the section, as a result, cannot be easily integrated because they are contained in incompatible computer systems.

Moreover, many of these automated databases are of limited use since they cannot determine processing times, staff workloads, or total types of activities. The committee also found that updating and editing of the numerous section databases vary. Computerized permit information may not be updated for several months, for example, while the database on administrative enforcement actions is kept current. Information is incomplete in many of the existing databases, and inconsistencies, while mostly minor (company names varied, activity dates differed, etc.), were frequently found.

In addition, information on a number of functions carried out by the section has yet to be automated. Tracking of clean-up site inventory information is handled manually at present. The section has no computerized inventory of all handlers subject to federal and state hazardous waste management regulation and cannot access via computer the automated Connecticut RCRA notifier information maintained by U.S. EPA Region I. Instead, the section's staff relies on periodic EPA computer print-outs for basic information on the status of the state's regulated community.

Existing databases and recordkeeping do not produce information needed by section management. Workload statistics, processing times, and other measures of staff productivity are essentially unavailable. The section was unable to provide, without extensive research, information on overall section performance such as the proportion of the regulated community that has been inspected, is in full compliance, or has been subject to enforcement action and returned to compliance.

The lack of complete, accurate, and accessible program and management information reduces regulatory effectiveness, leads to inefficient use of staff resources, and has contributed to the backlogs and delays experienced by the Hazardous Waste Management Section.

Therefore, the Legislative Program Review and Investigations Committee recommends that a computerized management information system that integrates and expands automated data on all activities of the section and provides section management with performance assessment data be established by December 1989. It is further recommended that the Department of Environmental Protection hire a consultant to plan, develop, and implement this

information system. A plan evaluating the section's needs and estimating the cost of the system required to meet these needs should be completed by October 1988.

The section staff recognize the deficiencies of current information management but admit they lack the expertise to develop alternatives. In working with the EPA Region I office to resolve data reporting and retrieval problems with the RCRA program, the section staff also have identified many of the same weaknesses noted by the program review committee. One of the outcomes of EPA and section efforts is a proposal to develop, with the assistance of a consultant, a coordinated database for RCRA program activities that will be compatible with the new national information system. EPA grant funding for this purpose may be available.

If federal funding is received for information management improvements, a number of the problems cited by the program review committee can be corrected. However, it is not clear if the system under discussion with EPA would cover the entire scope of section responsibilities (e.g., solely state mandated regulatory activities, clean-up efforts, etc.) or even if a federal grant will be provided. Thus, it may be necessary to rely, at least partially, on state appropriations to implement the committee recommendation.

The Legislative Program Review and Investigations Committee believes that without an adequate management information system, Connecticut's regulatory and clean-up efforts will continue to experience only partial success. Effective management controls provided through such a system are even more important now with the enormous growth of the Hazardous Waste Management Section.

Annual plan. The Hazardous Waste Management Section lacks a formal plan to guide its many activities. While the federal grant process requires the setting of work outputs (e.g., number of inspections conducted) and person years needed for high priority RCRA activities, it does not address all activities carried out by the section. In response to federal requirements, the section has written multi-year strategies for enforcement and permitting activities. Again, these strategies address only a portion of the section's duties and have not been revised since they were prepared three and four years ago.

The lack of a formal operating plan that sets annual goals and outlines the resources, strategies, and time frames necessary to achieve them has contributed to the section's uneven regulatory performance. It is also a reason for the section initiating activities but not following through on them. For example, development of civil penalty regulations, rated a high priority, has been in progress since 1983, and the final regulations are only now being prepared for consideration by the legislature's Regulations Review Committee.

Furthermore, the section has been aware of the large number of outstanding enforcement actions but only recently discussed strategies for addressing the backlog of administrative cases open as many as five years. In its enforcement strategy, the section notes its goal of inspecting all major handlers semiannually, but the resources necessary to achieve this or other compliance and enforcement goals are not outlined.

The program review committee recognizes that available resources and federal priorities dictate much of the section's yearly activity. However, these factors do not negate the need for internal planning to assure the efficient use of personnel to meet both state and federal hazardous waste management goals.

Therefore, the Legislative Program Review and Investigations Committee recommends that the Hazardous Waste Management Section annually develop a formal plan of operations that sets goals and objectives and specifies the strategies and timetables for meeting them.

The need for improved planning has been recognized by the section management. In the past, the section head and supervisory staff have discussed priorities and annual work goals. Until the current fiscal year, not even the goals covered in these discussions have been prepared in written form. Through a formal planning process, the section is better able to set priorities and establish realistic goals to motivate and evaluate all staff.

Working conditions. The Hazardous Waste Management Section, along with several other units of the DEP Environmental Quality Division, is housed at 122 Washington Street, a building whose deficiencies have been well-documented in previous program review committee reports. This location presents a major obstacle to a number of improvements in section operations.

The building lacks both the space and mechanical systems to permit the expansion of staff or automated data systems. At present, there is not even room for the additional discovery and clean-up personnel authorized during the latest budget process. Productivity is diminished by crowded, unpleasant working conditions and inadequate space for storing files and equipment. About 60 percent of the section staff responding to a program review committee survey cited current working conditions as the primary factor interfering with their ability to do their job effectively.

For several years, DEP administrators and Department of Public Works staff have been pursuing plans for the relocation of all environmental protection personnel to one site. During the committee review, a specific proposal for permanently relocating the department was considered, but no final decision was reached.

The severely negative impact of inadequate working conditions on the effectiveness of the state's hazardous waste management program as well as other environmental protection programs demands that the issue of DEP relocation be resolved. There is no reasonable explanation for the extensive delays in obtaining suitable office space for the department.

The Legislative Program Review and Investigations Committee, therefore, recommends that environmental protection and public works officials insure a final decision on the relocation of Department of Environmental Protection personnel is reached by July 1988.

An additional consequence of the uncertain status of DEP office locations is the inability of the commissioner to implement reorganization plans. The commissioner indicated during an interview with program review committee staff that several structural issues raised by the committee audit would be addressed through reorganization. The committee found the scope of managerial responsibilities and the supervisory span of control varied widely among the Hazardous Waste Management Section and other components of the Environmental Quality Division.

Furthermore, while the section has grown in terms of staff and responsibilities to be one of the larger DEP units, the number of manager positions has remained constant. Efforts to resolve these and other structural issues of the department, however, cannot be undertaken until it is known where the DEP staff will eventually be located.

Information for Regulatory Activities

The major regulatory activities conducted by the Hazardous Waste Management Section are permitting of facilities, compliance monitoring of hazardous waste handlers, and enforcement of regulatory standards. Committee findings concerning the effectiveness of each of these functions follow. An overall finding, however, is that assessment of compliance, detection of noncompliance, and processing of permits, closure plans, and enforcement actions are severely hampered by inadequate information systems.

The committee's recommendation to integrate and expand the section's automated data will have a direct impact on the performance of regulatory functions. The new system will make it easier and more efficient for section staff to establish work schedules and track the enormous amounts of paperwork submitted by hundreds of hazardous waste handlers as part of the compliance monitoring and permitting processes.

However, the Legislative Program Review and Investigations Committee further recommends that the new information system specifically include an easily accessible profile of each member

of the regulated community that details: the types and amounts of waste handled; a history of inspection, permit, and enforcement actions; and a summary of its regulatory status.

At present, to determine if an individual handler is adhering to the vast array of requirements for reporting, recordkeeping, and management practices, DEP personnel must check a number of different automated and hard copy files. For example, three separate listings of enforcement actions must be searched to determine if a handler is subject to administrative, civil, or criminal proceedings. Past inspection schedules and company files must be researched to ascertain if a handler has ever been subject to a field inspection. To determine a handler's regulatory designation (e.g., generator, facility, transporter, etc.) and the amounts and types of waste handled, staff need to: examine printouts from EPA; review the company's annual or biennial report; and should crosscheck the current listings of self-reported changes in status (e.g., gone out of business, changed ownership, stopped handling hazardous waste, etc.).

Fragmented regulatory compliance recordkeeping not only increases the time staff spend researching paperwork on handlers, but also the chances violations will go undetected or will not be promptly addressed. An automated handler profile should reduce staff research time and improve detection of noncompliance.

Permit and Closure Activities

A critical aspect of hazardous waste regulation is the permitting of facilities that treat, store, and/or dispose of hazardous waste to ensure they meet strict design, operations, and maintenance standards. To protect the public health and environment from waste management problems left behind after a facility closes, federal and state law also requires that facilities meet certain waste management and site maintenance standards prior to shutting down. Permitting activities, therefore, include review and approval of applications for treatment, storage, and disposal operations as well as plans for ceasing such operations.

The program review committee found that the majority of facilities in Connecticut continue to operate under "interim status," a designation granted to hazardous waste handlers when the federal RCRA legislation was enacted in 1976. Permit and closure requirements apply at present to 216 interim status hazardous waste treatment, storage, and/or disposal facilities. Federal law requires that interim status facilities be issued final permits or cease their operations by November 1992.

Progress on issuing final operating permits has been slow, primarily because of understaffing and the fact that the majority of the state's major facilities are land disposal operations, the most complex and time-consuming handlers to process. Policy

conflicts with EPA over land disposal facility closure standards have also delayed processing of permit applications as well as closure plans. To date, the Hazardous Waste Management Section has issued 4 Connecticut facilities final permits to operate; an additional 66 facilities have been approved for closure. Over the next five years, therefore, the section must take action regarding 70 percent of the permit/closure candidates in the state.

The section's scheduled workload through 1992 includes: issuing final permits to 66 facilities; processing status changes (i.e., verifying that the facility only generates and no longer treats or stores hazardous waste or no longer handles hazardous waste at all) for an additional 48 storage and treatment facilities; and approving closure plans for 32 land disposal facilities. In addition, the section intends to process one permit for a new facility in Connecticut (an incinerator that provides an alternative to land disposal of one handler's hazardous waste) by October 1989.

The section expects to meet this workload with a staff of 13, including 2 new positions to be added during the current fiscal year. With increased staffing and resolution of policy conflicts with EPA, the committee believes this schedule can be achieved. However, resources available for activities other than this top priority, such as transporter permits, will continue to be severely limited.

Data management improvements recommended earlier should also improve permit and closure efficiency by aiding staff in the tracking of processing steps and deadlines. Better information systems, along with stronger performance monitoring mechanisms, should address several additional permit and closure concerns raised by the audit. For example, the program review committee noted nine instances between 1982 and 1985 where permit staff had not followed closure procedures; facilities were allowed to implement closure plans before their plans had been formally approved.

The point of approving closure plans is to ensure that facilities identify and use the best steps possible for preventing hazardous waste problems during and after closure. Although the unauthorized closures were later found to be adequate, improper management practices could have been employed and releases of hazardous waste could have occurred. This situation indicates the impact of weak management controls within the section. Committee recommendations to improve performance monitoring will aid managers in seeing that internal procedures are followed in the future.

The committee also found, as the section acknowledged, that permit and closure recordkeeping is incomplete. Permit staff, without searching individual files, were unable to provide information on: facility compliance with financial insurance and assurance requirements; numbers and types of enforcement actions

taken in regard to deficient permit applications and closure plans; or the inspection status of interim status facilities. The lack of such basic compliance monitoring information raises questions about the effectiveness of permit and closure activities. The Legislative Program Review and Investigations Committee believes these deficiencies highlight the need to implement recommendations for stronger management controls as well as adequate data systems.

Compliance Monitoring

Compliance monitoring is intended to assess the regulatory status of hazardous waste handlers and detect noncompliance. A strong compliance monitoring program, therefore, can prevent handlers from using waste management methods that may prove harmful to the public health and the environment. Two important components of such a program are: 1) a process for insuring that all handlers subject to regulation are identified; and 2) a variety of mechanisms, including public complaints, internal record review, and field inspections, to regularly assess compliance and detect violators. As discussed below, the Legislative Program Review and Investigations Committee found deficiencies in the section's compliance monitoring methods.

Identifying potential regulatees. Connecticut currently has no method for routinely identifying nonnotifying handlers subject to hazardous waste management statutes and regulations. At present, the systematic identification of new regulatees and nonnotifiers is a low priority as Hazardous Waste Management Section officials believe that all the major handlers have been identified. As described earlier, the section has relied primarily upon public complaints and internal records review as a means of uncovering nonnotifiers.

Because the section does not have a system for routinely identifying potential regulatees, it cannot be certain if all companies subject to RCRA have self-notified or have been identified. For example, certain businesses, categorized as small quantity generators, are subject to RCRA regulation and must notify the section of their hazardous waste activities. Although the section estimates that there are between 5,000 and 7,000 small quantity generators statewide, only about 1,300 have met statutory self-notification requirements to date. In addition, large generators and other handlers of hazardous waste continue to be identified through citizen complaints and analysis of hazardous waste manifests. Therefore, the extent of hazardous waste statutory and regulatory compliance in Connecticut can be accurately measured only regarding companies that have notified DEP of their waste handling activities.

The committee believes every effort should be made to continue identifying potential regulatees. The likelihood of environmental harm is lessened when a nonnotifier is discovered before it has violated the hazardous waste statutes. More

rigorous activity in this area will not only lessen the possibility of violations, but will also reduce the chances for the creation of uncontrolled hazardous waste sites.

Therefore, the Legislative Program Review and Investigations Committee recommends that the Hazardous Waste Management Section establish a method for systematically identifying all handlers subject to regulation.

A source of information on hazardous waste handlers that the section has yet to investigate is business tax filings from the Department of Revenue Services. Certificates of incorporation and business and partnership filings with the secretary of state could be used to identify new hazardous waste businesses that are entering the Connecticut marketplace. Data from other state agencies such as the Department of Labor, other DEP regulatory sections, and local governments are another possibility. Systematic review of these sources of information would assure that the section's inventory of notifiers is as complete as possible.

Complaint process. The committee examined the log sheets for all 218 complaints received by the Hazardous Waste Management Section between July 1985 and June 1986 to ascertain how the section tracks progress on complaint investigations, the promptness with which the section investigates complaint allegations, and to analyze the ultimate result of the investigations. Of the 218 complaints studied, 39 had been immediately referred to other DEP sections because they did not concern hazardous waste handling activities; therefore, they were not included in this analysis. As a result, the total number of complaints requiring investigation, and consequently examined by the committee was 179.

Once a complaint has been received, the section's own internal guidelines set a response time of four days or less for a field investigation. To determine whether field inspection staff met the four-day standard, the time interval between the date the complaint was received and the date of the investigation was examined. Of the 131 complaints for which data were complete, the median response time was 4 days; only 12 complaints required more than 30 days for investigation. The majority of complaints are being investigated promptly and within section deadlines. Recent increases in the section's field inspector staffing should result in improved response times for all complaints.

It was further discovered that while the section's complaint log sheets provide adequate documentation on the initial handling, the log sheets seldom include any information concerning the result of the investigation. Out of the 179 complaints investigated by the section's field inspectors in federal FY 86, the log sheets of 133 failed to provide any follow-up information; only 2 stated the final resolution of the complaint. Information obtained from sources other than the complaint log sheets showed at least two of the complaints received during this time period

resulted in a criminal prosecution and the assessment of a penalty.

The failure to note necessary data in the complaint log makes it difficult for section management to evaluate the impact of citizen complaints as a deterrent against noncompliance. More importantly, supervisors cannot ascertain from the logs whether complaints have been handled appropriately.

The committee's analysis showed that the section has not implemented a system that captures the data needed to track how the complaints are handled. To improve monitoring of the complaint process,

the Legislative Program Review and Investigations Committee recommends that the Hazardous Waste Management Section establish a system for tracking the handling of complaints. At a minimum, the system should ensure that supervisory staff will be able to analyze:

- o the nature of the complaint;
- o the location of the alleged improper activity;
- o the date the complaint was received, assigned, and investigated;
- o the staff responsible for the investigation;
- o the type of complainant (anonymous or known, employee or neighbor, etc.)
- o the action taken as a result of the complaint investigation; and
- o the final outcome of any action taken.

Field inspections. The best method for determining the compliance status of regulated hazardous waste handlers is through site inspections. The committee found that while major hazardous waste handlers in Connecticut are routinely inspected by field staff of the Hazardous Waste Management Section, there are a number of handlers that have never been visited by section personnel. The committee also found that accurate data on the inspection status of the regulated community have not been compiled by the section.

Initial research conducted by section staff in late 1986 indicated that the files of only about 400 of the over 2,000 regulated handlers inventoried at that time contained documentation of any type of field visit. Since the section noted this information was not complete or accurate, the committee conducted its own review of inspection data to determine the

number and type of sites subject to a full RCRA inspection over the past three years.

An examination of section inspection schedules for federal fiscal years 1985 through 1987 found approximately 440 different handlers had undergone some type of comprehensive compliance evaluation during this three-year period. In general, major facilities such as land disposal facilities subject to groundwater monitoring requirements, commercially operated facilities, incinerator facilities, and facilities and generators that handle the most significant volumes or types of waste were inspected annually as required by section policy. A number of minor generators and facilities, many of which had not been visited by section staff previously, were formally inspected at least once. However, the sites contained on the section inspection schedules represent only about 13 percent of the 3,346 Connecticut hazardous waste handlers included in the EPA notifiers list as of July 1987.

Some of these Connecticut notifiers may have been visited by field inspectors in prior years or for other purposes (e.g., to verify a status change, follow-up on a public complaint, check on compliance with an enforcement action, or as part of the clean-up site inventory process). The committee also recognizes that many Connecticut notifiers, perhaps up to 1,300, are small quantity generators. Small quantity generators, because they pose less threat to health and the environment and until recently have been exempt from most hazardous waste regulation, have been a low priority for field inspections. Even excluding small quantity generators from consideration, however, as many as 100 facilities and 1,000 large generators have not been subject to a comprehensive field inspection within the past three years.

It is clear that the current compliance status of a large proportion of the regulated community is uncertain since it has never or not recently been verified by a site visit. The section now has 12 field inspector positions for all compliance monitoring site work. Unless there are significant increases in staff resources, it is not possible for the section to conduct routine inspections of all regulated handlers on a regular basis and carry out other field work such as following up on public complaints and checking on enforcement compliance.

The committee believes that additional field staff resources are needed, particularly to insure regular compliance monitoring of all significant facilities and generators. However, the specific number of positions required for this purpose could not be developed since the section has not established performance standards for field inspectors, and total inspector workload statistics are not compiled.

In addition, the section has not accurately determined which handlers included in the state notifier list are significant generators and facilities, which are small quantity generators, or which companies no longer handle hazardous waste or have gone out

of business. Furthermore, the inspection status of each member of the regulated community is unknown. Thus, neither the section's current inspection capability nor future on-site compliance monitoring needs can be determined.

As a first step to expanding on-site compliance monitoring efforts, the Legislative Program Review and Investigations Committee recommends that the Hazardous Waste Management Section by January 1989: 1) compile and analyze inspector workload data and set standards regarding the number and type of inspections field staff will be expected to perform on an annual basis; and 2) accurately identify the regulatory status and site inspection requirements of each regulated hazardous waste handler in Connecticut.

Through these two activities, the section will be better able to document additional field inspection needs and use existing staff more efficiently and effectively.

The Legislative Program Review and Investigations Committee additionally recommends that the section immediately take steps to identify all significant generators and facilities that have never been inspected and ensure that a site visit is conducted at all such facilities by January 1990.

Achieving these goals will ensure that all handlers posing the greatest threat to public health and the environment have been inspected by section personnel at least once. The committee believes this is a minimum requirement for an effective regulatory program.

It should be possible to accomplish this task with existing field inspection resources. According to section estimates, about 900 generators and facilities currently handle significant amounts of hazardous waste. Based on the committee's analysis of inspection schedules, approximately 400 large handlers have been inspected over the past three years, so the potential number of significant generators and facilities that have never been inspected is estimated at 500. If all 500 sites require a site visit, each of the 12 field staff would have to complete, on average, 21 generator/facility compliance inspections each year over the next two years to meet the committee deadline. Since the least experienced field inspector in the section conducted 26 compliance inspections in addition to other field inspection work last year, this workload appears to be reasonable.

The section can also augment field inspection resources through the department's delegation program. Legislation enacted in 1983 allows the DEP commissioner to delegate inspection and enforcement authority regarding a variety of environmental programs including hazardous waste to regional and local government agencies. Under statute, participation is voluntary, and the scope of delegated authority must be outlined in regulation.

Delegated authority is now being used in the air and water compliance programs to expand compliance monitoring efforts. Staff of 11 local health districts were recently authorized to investigate air and/or water pollution problems and report results to DEP. Air and water compliance unit staff can take enforcement action to correct violations based on the local staff reports.

The Legislative Program Review and Investigations Committee recommends that a program of delegated authority be established for the hazardous waste management regulatory program.

If the current delegated agents would consent to accept responsibility for investigating hazardous waste compliance, a program could be legally established in as little as six months. It would only be necessary to amend existing regulations to include hazardous waste management regulation within the scope of delegated authority.

Considerable training of local staff on hazardous waste regulations, which are more complex than those of either air or water pollution programs, would be required. It is also likely that some additional funding of local expenses would be necessary. The total budget of the current program, however, is only \$150,000, and, in effect, purchases the services of nearly 50 local staff, including health directors and sanitarians, in 34 towns.

The potential benefits of a delegated authority program for hazardous waste management are many. On-site inspection of the regulated community could be increased without adding field staff to the section. In towns with delegated authority, citizen complaints would be investigated locally, freeing up section field inspectors and reducing department response times to serious violations.

The delegation program also provides the opportunity of using municipal staff to help identify and monitor the many small quantity generators throughout the state. It is estimated that there are up to 14,000 businesses that produce small volumes of hazardous waste in the state, and from 5,000 to 7,000 may be subject to RCRA regulatory requirements. (Certain very small producers remain exempt from federal and state regulation.) As noted above, only about 1,300 small quantity generators are included in the state's current notifier list. Municipal staff, familiar with local business and industry, would be a valuable resource for assisting the department in detecting nonnotifiers. Furthermore, local officials with delegated inspection authority could periodically check the compliance status of small quantity generators in their towns.

Enforcement

Although the section has initiated a large number of enforcement actions upon the discovery of noncompliance, the committee found that a significant number of cases remain unresolved after several years. As of August 1987, only 406 (44 percent) of the 927 cases initiated had been resolved (i.e., in compliance or penalty imposed). In conducting its analysis, the committee only considered cases on the basis of their origin. Therefore, an enforcement action that began as an administrative order, and was later referred to the Attorney General's Office was examined as an order but not also as a civil referral. Table IV-1 presents information on resolved and unresolved cases by the type of action taken since the hazardous waste management regulatory program began operating in 1980.

Table IV-1. Status of Hazardous Waste Management Section Enforcement Actions as of August, 1987.

	<u>Total Cases</u>	<u>Number Open</u>	<u>Percent Open</u>	<u>Number Resolved</u>	<u>Percent Resolved</u>
CSA referrals	60	0	0%	60	100%
AG referrals	165	112	68%	53	32%
Notices of Violation	288	183	64%	105	36%
Administrative Orders	414	225	54%	189	46%
TOTAL	927	520	56%	407	44%

Key: CSA = Chief State's Attorney; AG = Attorney General

Source: Legislative Program Review and Investigations Committee Analysis of Hazardous Waste Management Section Data.

While judicial calendar schedules may partially explain prolonged processing times in cases referred for civil or criminal prosecution, 56 percent of all cases handled exclusively by the section (i.e., administratively) remained unresolved. The committee's analysis of unresolved cases concentrated on administrative enforcement activity because, unlike civil and criminal cases, the section maintains direct control over the action.

Table IV-2 presents the number of unresolved administrative cases by federal fiscal year in which the action was commenced. The table does not include administrative actions that were later referred for judicial resolution. Though premature to consider

Table IV-2. Number of Actions Currently Unresolved by Year Issued (as of August 1987).

	<u>Notices of Violation</u>			<u>Administrative Orders</u>			<u>All Administrative Actions</u>	
	<u>Total Issued</u>	<u>No. Open</u>	<u>% of Total Issued</u>	<u>Total Issued</u>	<u>No. Open</u>	<u>% of Total Issued</u>	<u>Total Issued</u>	<u>% Open of Total Issued</u>
FFY 80	0	0	0%	2	0	0%	2	0%
FFY 81	0	0	0%	2	0	0%	2	0%
FFY 82	1	1	100%	8	0	0%	9	11%
FFY 83	35	23	66%	68	23	34%	103	45%
FFY 84	83	46	55%	96	36	38%	179	43%
FFY 85	58	26	45%	59	24	41%	117	43%
SUBTOTAL:	177	96	54%	235	83	35%	412	43%
FFY 86	55	35	64%	81	63	78%	136	72%
FFY 87	46	45	98%	54	51	94%	100	96%
# Cases with Missing Dates:	(4)	(3)		(12)	(4)		(16)	
TOTAL:	282	179	63%	382	201	53%	664	57%

Source: Legislative Program Review and Investigations Committee Analysis of Hazardous Waste Management Section Data.

cases initiated during FFY 86 and FFY 87, as shown in Table IV-2, over 40 percent (179) of all administrative actions commenced between FFY 80 and FFY 85 remain unresolved. Eighty-three of the administrative orders (35 percent), and 96 (54 percent) notices of violation, issued during that same time period, are still classified as open.

An examination of a random sample of the section's administrative case load failed to reveal any single rationale for the continued status of these cases as unresolved. The committee selected and examined 30 random files from the list of violators provided by the section. Only three contained documentation explaining the cause for the delays in meeting the section's compliance deadlines. These reasons included: a delay on the part of the enforcement staff handling the action; a reorganization of the company cited; and an inability on the part of the handler to obtain liability insurance.

In addition, it was discovered that file organization was often haphazard. Despite a recent effort by the section to reorganize its major facility records, in the files reviewed, documents were filed without regard for subject matter, missing, or inconclusive regarding case status (e.g., compliance occurring on schedule, late, etc.). The committee believes that the current state of the section's filing system makes it difficult for staff to track facility status and insure that cases are handled promptly and appropriately.

The lack of integrated, automated regulatory data noted earlier compounds the problems found during the enforcement file review. The section's computerized information on enforcement actions is maintained in several databases that cannot be cross-referenced. To review a company's compliance history, it is necessary for enforcement staff to check no fewer than four separate computer printouts, and the information they contain is not always complete or current.

The lack of file organization is an obvious hindrance to any effort to obtain an overall picture of the status of an administrative action and results in the inefficient use of staff time in searching records. The deficiencies in the computerized data add to the overall data management problems in that they frustrate the potential benefits these data may provide for analysis of past section performance and future policy planning. The section is just now beginning to expand the information contained on computer to assist it in evaluating its performance against its internal enforcement policies and standards.

Finally, the committee believes that the section's efforts to respond to EPA criticisms regarding its handling of enforcement actions taken since October 1986 has resulted in previously initiated cases being overlooked. The effort expended by the section to aggressively pursue comparatively recent violations has hindered its ability to resolve older outstanding cases.

The Legislative Program Review and Investigations Committee maintains that it is vital that historic violations be resolved to minimize potential environmental damage. Due to the length of time that has elapsed since many companies were scheduled to comply with administrative actions, it is imperative that the section begin to address past violations that have not been resolved. In addition, the large backlog of outstanding cases hinders the ability of the section to aggressively pursue new violations for fear of overburdening existing staff resources.

The Legislative Program Review and Investigations Committee recommends that the Hazardous Waste Management Section ensure that: 1) all outstanding administrative enforcement actions from federal fiscal years 1982 to 1985 are resolved by the end of federal fiscal year 1990; and 2) administrative enforcement activity is current and on schedule by that date. In addition, it is recommended that the Hazardous Waste Management Section develop and implement a system for prioritizing all administrative enforcement actions.

To address the cases outstanding from federal FY 80 to federal FY 85, each enforcement staff person will have to close one case per month on average through federal FY 90. In addition, the staff will have to remain current, not only on present assignments, but also on cases to be initiated in the future. At present, only cases commenced after federal FY 86 are prioritized based upon the severity of the violation and the degree of danger to the environment. By prioritizing all administrative enforcement actions, the section can ensure that any outstanding case posing a major threat to the environment is given immediate attention.

Information management improvements recommended earlier will assist the enforcement staff in efficiently tracking and reviewing enforcement activities. However, there are several specific weaknesses in the section's existing enforcement data that need correction.

The Legislative Program Review and Investigations Committee recommends that the Hazardous Waste Management Section expand and update its enforcement data to include:

- o the date a violation is discovered;
- o the source of the information that led to the discovery of the violation;
- o the classification of the violator;
- o the type of violation;
- o the classification of the violation; and

- o the date and status of the most recent section contact with the violator and the action taken.

Much of this information is already collected by the section for inclusion in EPA's nationwide automated data management system. However, the committee, the section, and EPA have all recognized this database has been ineffective in terms of data retrieval. As a result the section has been unable to access the data it has provided to EPA. The section needs to develop a data management system that will provide its field inspection and enforcement staff with abbreviated violator profiles to assist them in their compliance monitoring and enforcement efforts. Implementation of the committee's recommendation will assure the data collected are used to monitor and improve enforcement efforts.

Discovery and Clean-Up Activities

As discussed in the previous chapter, Connecticut's hazardous waste management program includes activities to discover and clean up uncontrolled hazardous waste sites that have resulted from illegal dumping, accidental releases, or inappropriate management practices in the past. The goal of these efforts is to minimize potential harm to public health and the environment posed by such sites. The Legislative Program Review and Investigations Committee found that state funding to carry out site identification, assessment, and remediation has been minimal until the current fiscal year. Progress in discovering and addressing uncontrolled hazardous waste sites, therefore, has been slow to date.

For example, the state's inventory of hazardous waste sites was mandated by the legislature in 1979 with a completion deadline of 1981. Despite requests for additional inventory staffing, the only state resources provided for this task were a one-time \$50,000 appropriation. With limited personnel, it took the DEP Hazardous Waste Management Section seven years to compile a comprehensive inventory of potential clean-up sites in the state.

Prior to fiscal year 1988, no DEP staff was assigned full time to assessment and remediation of identified clean-up sites. Evaluation and implementation of necessary corrective actions at many sites, therefore, has been delayed by a lack of personnel to conduct these functions.

Sources of funding to clean up sites were limited until the current fiscal year to the federal Superfund program, the state's Emergency Spill Response Fund, and the parties responsible for the site. Only 9 of the more than 500 clean-up sites in Connecticut are now covered by the federal Superfund; only another 13 locations may be eligible for federal financing of clean-up costs. The Emergency Spill Response Fund revenues, which have ranged from only two to five million dollars, are insufficient to finance any

major site clean-up efforts. Furthermore, the fund is also intended to pay for cleaning up emergency chemical spills and providing potable water in certain cases of groundwater contamination. With public funding limited, it has been difficult for the Department of Environmental Protection to address clean-up problems at sites with no known responsible parties.

Action taken in the 1987 legislative session to establish a state superfund program and the fact that a federal Superfund grant for staffing was received dramatically changed this situation. Hazardous Waste Management Section personnel are now devoted full-time to discovery and clean up. Sufficient funding is available to undertake state-financed clean-up activities at a number of identified hazardous waste disposal sites. The program review committee believes these changes will have a significant impact on the ability of the department to carry out an effective discovery and clean-up program.

It was too soon to review the operations or impact of the new state superfund program since staff is still being hired and procedures are still being established. It is already clear, however, that more staff and more state funding for clean-up costs will be required to address all identified hazardous waste disposal sites in a timely manner.

At present, over 500 potentially harmful hazardous waste sites have been identified, but only 60 percent had been assessed and less than 10 percent cleaned up as of October 1987. With current levels of staffing the Department of Environmental Protection anticipates that all sites inventoried to date will be assessed within two to three years. More personnel, however, will be needed to fully implement remedial action functions at the approximately 450 sites that remain unaddressed.

The department expects current state resources of clean-up funding to be adequate through September 1988, since only a limited number of state-financed remedial action projects will be initiated during the present fiscal year. It is difficult to know at this point what level of state resources will be needed to achieve clean ups at all identified sites. Clean-up costs cannot even be estimated until a site has been evaluated. Preliminary assessments remain to be done for over 40 percent of all inventoried sites. In addition, it is uncertain how many sites have no known responsible parties liable for clean-up costs. State funds cannot be expended for remediation unless a site poses an immediate health or environmental threat or a responsible party is unable or unavailable to pay for clean-up activities.

The anticipated needs for staff and funding to carry out mandated discovery and clean-up activities are required to be included in the department's statutorily mandated annual report on the state superfund program. Through this report, the legislature will be able to monitor both the progress and resource needs of the state's discovery and clean-up efforts. The information

contained in the annual report, therefore, can be used to guide legislative decisions regarding future funding levels.

Planning

Effective hazardous waste management programs include a capability for assessing needs, setting goals, and developing strategies. In Connecticut, these functions are performed primarily by the Hazardous Waste Management Service, a quasi-public agency responsible for promoting and encouraging appropriate waste management. The service is specifically mandated to prepare periodic reports on waste generation and handling methods as well as a statewide waste management plan. To implement its plan, the service has also initiated several strategies that supplement existing regulatory and economic incentives for proper waste management.

The program review committee found that the Connecticut Hazardous Waste Management Service has carried out its statutory planning duties. As required, the service issued its first report in July 1985 on current waste production, estimated future waste production, and the need for additional hazardous waste management facilities. An update of the needs assessment report, which is required at least at five-year intervals, is expected to be submitted to the General Assembly in early 1988. The service's plan for appropriate management of hazardous waste in Connecticut was issued as mandated in January 1986.

The committee's review of the data and techniques used by the service to produce the needs assessment and plan found them generally to be adequate. However, refinements are needed to improve the accuracy of planning efforts. Major gaps in information necessary to evaluate future management needs do exist. The impact of waste produced by the state's thousands of small quantity generators and waste resulting from hazardous waste clean-up activities has not been fully addressed by plans or analysis to date.

Accurate data are not available on these two potentially significant sources of hazardous waste, but the service is attempting to develop reliable estimates. The agency's 1988 update, as will future needs assessment reports, addresses waste produced by small quantity generators as well as site clean-ups. Efforts have been made to collect and analyze management needs regarding household hazardous waste. Thus, future planning by the service will be based on a more comprehensive picture of demand for hazardous waste treatment, storage, and disposal services.

In addition to data gaps, the program review committee also noted weaknesses in the service's method for forecasting hazardous waste generation. Accurate forecasting is critical to effective planning since it is the basis for decisions on what new treatment, storage, or disposal facilities may be required as well

as what strategies for appropriate management should be pursued. To estimate future waste quantities, the service has based projections on two general indicators of economic growth -- personal income and employment. The committee found that there are better indicators of growth within the hazardous waste industry. In New Jersey's most recent hazardous waste management plan, for example, projections were based on industry shipments, an indicator more closely related to industrial production than employment.

To increase the accuracy of hazardous waste forecasting, the Legislative Program Review and Investigations Committee recommends that the Connecticut Hazardous Waste Management Service use alternative indicators of industrial growth, such as industry shipments, that better reflect hazardous waste production. It is further recommended that the service analyze the status of waste reduction and recycling efforts within the hazardous waste industry. Results of this analysis should be used to adjust projections regarding future hazardous waste generation.

The service, like other state hazardous waste planning agencies, has recognized that growth indicators used to forecast future waste generation do not take into account efforts on the part of hazardous waste handlers to minimize the waste they produce. Estimates of future waste generation, therefore, should be adjusted to reflect the impact of reduction and recycling activities. The service's latest figures on future waste quantities were revised on the basis of the views of industry representatives who attended a waste projection workshop rather than a study of actual and intended waste minimization practices.

Other states, such as New Jersey and Minnesota, have conducted extensive surveys and analysis to determine both the impact of and potential for waste reduction and recycling among hazardous waste handlers. Similar efforts by the service would not only improve forecasting ability but provide a better understanding of the opportunities for minimizing the amount of hazardous waste generated in the state.

A final planning issue concerns the lack of statutory authority to periodically update the state's hazardous waste management plan. Current law merely requires the Hazardous Waste Management Service to prepare a plan by January 1, 1986. The committee staff believes it is important that the state's plan, which is intended to be a guide for achieving state hazardous waste goals, reflect changing needs, the development of new technologies, and regulatory revisions at the state and federal level.

Therefore, the Legislative Program Review and Investigations Committee recommends that the statutes be amended to provide that the state hazardous waste management plan prepared by the Connecticut Hazardous Waste Management Service be updated at least every five years.

Strategies

State and federal governments have developed a variety of strategies to achieve hazardous waste management goals. In Connecticut, strategy development is guided by the state's statutory hierarchy of waste management practices in which waste reduction and recycling is the preferred practice, while permanent disposal of waste, particularly in landfills, is viewed as an option of last resort. The ultimate goal of planning and regulatory activities in Connecticut, as in most states, is to minimize the amount of hazardous waste that is produced.

In addition to the regulatory incentives that exist to promote compliance with good waste management practices, Connecticut, like many other states, has established nonregulatory strategies for achieving hazardous waste goals. Among these strategies are:

- 1) technical assistance programs that provide information on waste management alternatives, new technologies, and sources of financial assistance, and may additionally include on-site technical advice;
- 2) financial assistance programs that provide grants and loans for development and/or implementation of improved waste management practices; and
- 3) economic policies that provide, through tax and fee structures, incentives for using preferred management methods or disincentives for producing waste or employing less desirable handling methods.

Technical assistance. The Hazardous Waste Management Service has just implemented a technical assistance program for hazardous waste handlers. Although authorized to provide technical assistance since 1984, funding for this purpose was not received by the service until the current fiscal year. The total technical assistance program budget for state FY 88 is \$95,000.

The committee found that the service's program while small is broad. It includes a computerized information clearinghouse and library of reference materials, access to a regional waste exchange that facilitates recycling of industrial wastes, and publications, workshops, and seminars on new technologies and sources of financial assistance. Additionally, the service has hired a full-time manager to oversee the program and provide some on-site technical advice to hazardous waste handlers.

Hazardous waste management technical assistance is also available through a Department of Economic Development program established in response to a recommendation from a Hazardous Waste Management Service task force. As mandated by P.A. 85-542, the economic development department provides advice and assistance to

small businesses on reduction, recycling, or processing of hazardous wastes. The act also permitted the agency to make loans under its small contractors and manufacturers loan program for certain hazardous waste management purposes. The current economic development program has an annual budget of \$40,000, which covers the cost of one staff person who acts as a technical consultant on hazardous waste management.

In the past session, the legislature also provided funding to the University of Connecticut to establish the Environmental Research Institute for Hazardous Waste. The mission of the new institute, in addition to education and research activities, is to act as a source of information on the control of hazardous wastes and materials. Some of the institute's applied research will entail working directly with hazardous waste handlers to develop cost-effective technical solutions to waste management problems.

According to national studies and the service's task force report on hazardous waste recycling, many handlers have not considered alternative management practices because they are unaware of new technologies that could apply to their businesses. The state's recently established technical assistance programs should address this problem by increasing awareness of management options, including those that promote preferred practices such as waste minimization, reduction, and recycling. Another major benefit will be the coordination function provided by the service in terms of centralizing and maintaining information on technical and financial assistance available through the public as well as the private sectors.

Financial assistance. There are several potential sources of financial assistance for hazardous waste management improvements available in Connecticut. The committee found that funding levels and eligibility criteria, however, limit the effectiveness of state financial incentives for preferred management practices. For example, the service is planning to provide matching grants to hazardous waste generators for such purposes as conducting environmental audits and studies of waste recovery and reduction options. Only \$10,000 to \$20,000 has been allocated to this program during the current fiscal year.

Theoretically, financial assistance for improving hazardous waste management practices is also available through the Connecticut Development Authority and the Department of Economic Development. The criteria of the grant and loan programs of these agencies, however, have been significantly restricted by recent federal tax changes. At present, it is uncertain whether hazardous waste management improvement projects would be eligible for most economic development financial assistance programs.

Another problem hazardous waste handlers face in obtaining loans is that their business properties, because they may be polluted by hazardous waste, generally are not acceptable as loan security. Thus, a company seeking a low interest capital

improvement loan from state development agencies must have other resources for collateral to be eligible for assistance.

The committee believes that the existing state financial assistance programs for hazardous waste handlers are inadequate to support significant changes in management practices. At present funding levels, the service's grant program is essentially a pilot program. If individual grant awards average \$1,000, only 10 to 20 of the estimated 1,200 large and 14,000 small hazardous waste generators could be served this year. Under current program criteria, the economic development programs offer little state support for efforts by business and industry to either correct problems of poor waste management practices in the past or improve waste handling in the future. Alternative mechanisms for assisting handlers with the high costs of proper waste management to achieve state goals need to be considered.

The Legislative Program Review and Investigations Committee recommends that the Connecticut Hazardous Waste Management Service and the Department of Economic Development jointly study what types of financial assistance programs and funding levels are required to promote waste minimization and the use of preferred waste management techniques. Initial recommendations concerning new hazardous waste management financial assistance programs should be submitted by these agencies to the General Assembly by January 1, 1989.

These two agencies have the expertise necessary to determine needs and develop appropriate financial assistance programs. The service, especially through its technical assistance activities, should be able to identify the types of problems handlers are facing in trying to improve waste management practices. The Department of Economic Development, through its experience in administering grant and loan programs for business and industry, should be aware of what types of assistance and levels of funding can best address hazardous waste handlers' needs.

Economic policies. Connecticut, like 38 other states, imposes a tax on the generation of hazardous waste. The tax is intended to be an incentive for minimizing the amount of waste produced and a source of revenue for hazardous waste clean ups. In state FY 87, hazardous waste tax revenues amounted to approximately \$2.5 million, with just over 1,000 handlers paying an average annual tax of about \$2,000.

The state's hazardous waste tax only applies to waste that is shipped away from the site of generation for treatment, storage, or disposal. This means that waste generated and managed on-site, which accounted for about 40 percent of all waste generated in the state in 1985, is not taxed. The committee believes that all handlers, regardless of where their waste is managed, should share the burden for clean-up costs. There is a potential for health and environmental harm from hazardous waste no matter where it is handled. In addition, the tax currently can have no impact on the

management practices of handlers who treat the waste they generate on-site.

The Legislative Program Review and Investigations Committee therefore, recommends that the statutes be amended to extend the hazardous waste generation tax to waste that is handled at the site of generation as well as waste that is shipped off-site for treatment, storage, or disposal.

A major reason the tax was not placed on all waste initially is that prior to 1985, data necessary to assess taxes on waste handled on-site were not available. Information was available, through manifest documents required under the state regulatory program, on waste shipped off-site. Data regarding waste generated and treated on-site can now be obtained through the Hazardous Waste Management Service's computerized database of generator and facility report information.

The committee also found that the current hazardous waste tax structure is not consistent with the state's policy on preferred management practices. At present, the tax rate, which is based on type of waste, is lower for metal hydroxide sludge than other waste types. The primary management method for metal hydroxide sludge is land disposal, the least preferred practice under the state hierarchy. It is recognized that land disposal is frequently the only management option for metal hydroxide sludge waste. However, the more favorable tax rate for waste that must be landfilled conflicts with the purpose of the tax as an incentive for preferred handling methods.

Other states have adopted graduated tax structures based on their waste management policies and goals. Under such structures, taxes are heaviest on waste managed with least desirable practices; waste handled through methods the state wants to encourage are taxed at lower rates. The program review committee believes Connecticut's hazardous waste tax structure should reflect and promote state goals for appropriate management.

Therefore, the Legislative Program Review and Investigations Committee recommends that the Connecticut Hazardous Waste Management Service develop and submit to the General Assembly by January 1989 a proposal for a new hazardous waste generation tax structure that is based on the state's hierarchy of preferred hazardous waste management practices.

The service through its 1985 hazardous waste recycling task force has considered the issue of a graduated tax based on treatment and disposal methods. The task force was unable to make specific recommendations for tax changes. However, in testimony before the program review committee, the service supported further study of tax incentives. With additional research, particularly regarding the experience of states with taxes based on management methods, it should be possible to develop a workable proposal for a new hazardous waste tax structure in Connecticut.

APPENDICES

APPENDIX A

GLOSSARY OF SELECTED HAZARDOUS WASTE MANAGEMENT TERMS

CERCLA - the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

"Characteristics" of Hazardous Waste - method of identifying which substances are hazardous waste based on their physical/chemical properties; the U.S. Environmental Protection Agency has established the following four hazardous waste "characteristics" that can be determined by tests:

Ignitability (ability to catch fire);

Corrosivity (ability to corrode other materials, including human tissue);

Reactivity (ability to enter into a violent chemical reaction that may involve an explosion or fumes); and

Extraction Procedure Toxicity (ability to release certain toxic constituents when leached with a mild acid).

Closure - closing a hazardous waste treatment, storage, and disposal facility; for land disposal facilities, steps include facility decontamination, cover and vegetation, groundwater monitoring system, and installation of security or fencing.

"Cradle-to-grave" - tracking the source, quantity, concentration, type, etc., of hazardous waste from its production to its ultimate storage or disposal.

Disposal - the final placement of waste.

Facility (or Hazardous Waste Facility) - all land and structures used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of both).

Generator - any person or company whose act or process produces a hazardous waste.

Groundwater - water below the land surface that collects to saturate the soil, gravel, or rock in which it is found.

Handler - any person or company that engages in regulated hazardous waste management activity including generation, transportation, treatment, storage, or disposal.

Inorganic - all substances that do not contain the element carbon, including water, metals, many acids, salts, bases, and asbestos.

Manifest - a multipart shipping form that is the basis for the RCRA system of identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transportation from generation to disposal, treatment, or storage.

Organic - substances containing carbon, an element characteristic of living organisms. Thousands of carbon-based compounds have also been synthesized in laboratories, including plastics, adhesives, and some pesticides. Organic substances can usually be destroyed by burning.

RCRA - the Resource Conservation and Recovery Act of 1976.

SARA - the Superfund Amendments and Reauthorization Act of 1986.

Storage - temporary holding of waste pending treatment or disposal.

Treatment - rendering a hazardous waste less hazardous, nonhazardous, or reduced in amount.

TSDF - treatment, storage, or disposal facility.

Waste Management Practices - a variety of methods for treating and disposing of hazardous wastes, such as:

Aqueous Treatment: chemical and physical processes used to reduce the toxicity of solutions containing water and hazardous waste; a solid or sludge residue usually results and may require disposal;

Incineration: destruction of waste by controlled burning at high temperature in an incinerator;

Landfill: disposal at a land site, usually a secure landfill that has been engineered to minimize contact of hazardous waste with groundwater and the atmosphere;

Recovery: techniques (e.g., distillation, filtration, evaporation, etc.) for recovering usable products from hazardous wastes;

Stabilization: techniques that improve the handling of hazardous wastes by changing them to their least soluble and/or toxic form (e.g., material may be added to liquid wastes to reduce the threat of toxic spills during transport); and

Surface impoundment: a natural topographic depression, man-made excavation, or diked area used for placement of liquid wastes.

APPENDIX B

Federal Hazardous Waste Management Legislation

The federal Resource Conservation and Recovery Act (RCRA) forms the legal basis for most of Connecticut's hazardous waste management regulatory program. The provisions of the RCRA program concerning the types of waste regulated, types of handlers regulated, and the requirements handlers must meet are described below. An overview of the statutory provisions of the federal Superfund program established under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) follows. A brief description of the state and federal government roles under each act is also included.

RCRA Program Provisions

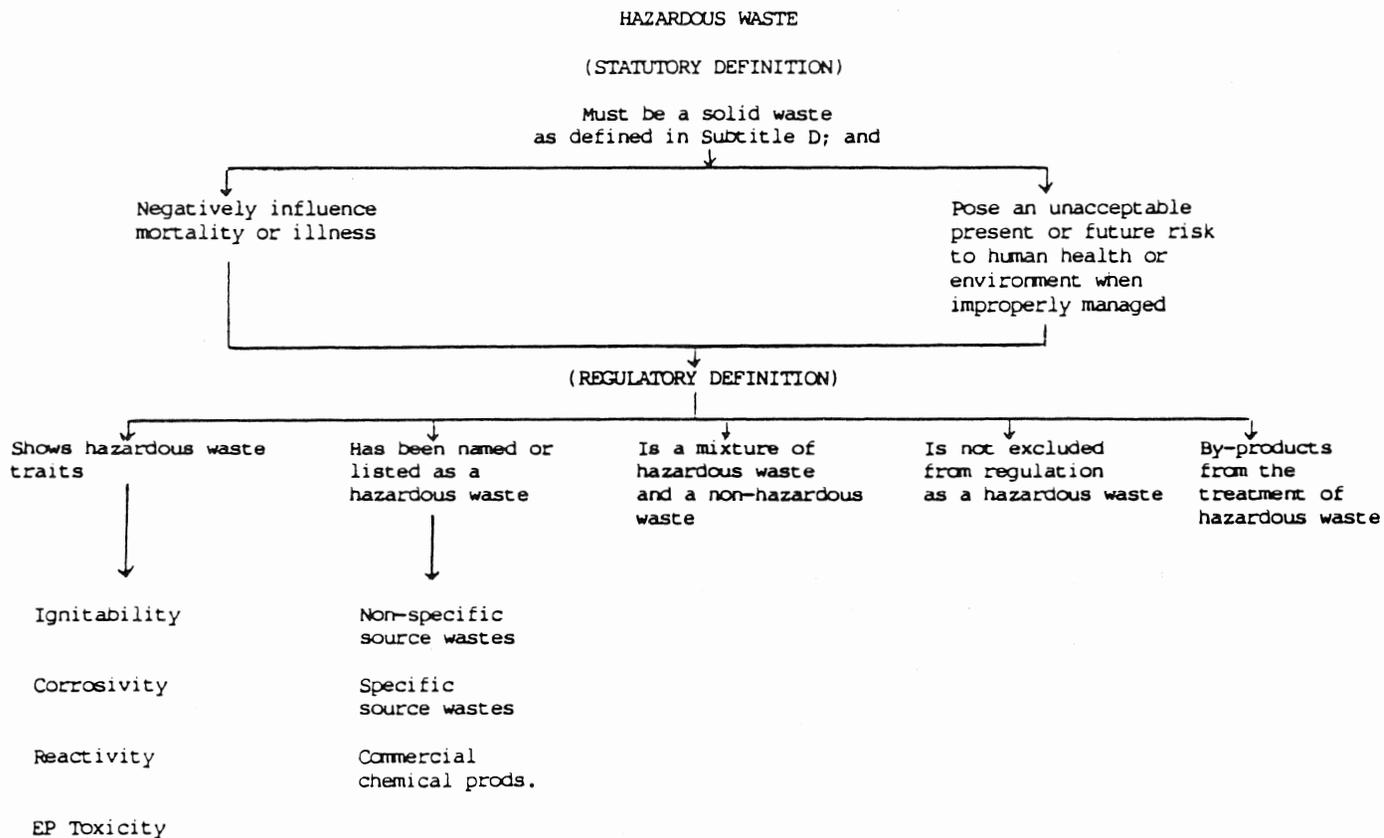
The RCRA program is the most complex environmental program the U.S. Environmental Protection Agency (EPA) administers. The Resource Conservation and Recovery Act of 1976 required the development of regulations and operating policies covering a vast array of waste types, handlers, and procedures. Amendments to RCRA enacted in 1984 significantly expanded the regulated community and set statutory deadlines for a number of previously established mandates. As a result, the program has been in a continuous state of development and modification since it began operating in 1980.

The goal of RCRA is to protect human health and the environment from threats posed by improperly managed hazardous waste. To meet this goal, the act established stringent requirements for the management of hazardous waste from generation to ultimate disposal, or from "cradle to grave."

Waste definition. Under federal and state regulations, hazardous wastes are considered a subset of the solid waste classification. Therefore, if a waste cannot be categorized as a solid waste (which includes wastes in solid, semi-solid, liquid, and gaseous form), it cannot be listed as a hazardous waste. Figure 1 shows how a waste may be classified as hazardous. Determining whether a waste is hazardous is the responsibility of the handler of the waste.

The Uniform Hazardous Waste Manifest. A key component of the RCRA program is the Uniform Hazardous Waste Manifest, which is the system used to track shipments of hazardous waste from point of creation to final destination. Before wastes are shipped from the generating company, an eight-part manifest (shipping document) form is filled out, which includes the name, address, and EPA identification number of the generator, transporter, and facility to which the waste is being shipped. Companies without an EPA identification number are prohibited from engaging in hazardous waste activity.

Figure 1. Definition of Hazardous Waste.



Source: Code of Federal Regulations.

Each manifest must contain information pertaining to the wastes being shipped such as: the amount and type of waste being shipped; its characteristics; and the handling methods to be followed in case of spillage. Finally, as mandated in the 1984 amendments, each manifest form must also contain an affirmation by the generator that it is carrying out a waste minimization program.

Regulated community. The regulated community includes generators of hazardous waste, transporters, and treatment, storage, and disposal facilities (TSDF's). RCRA relies upon self-notification to identify regulated handlers. Companies must be aware, not only that they engage in hazardous waste activity, but also that they are required to provide notification of their status (e.g. generator, facility, etc.) to regulatory agencies. The Environmental Protection Agency and states are, therefore, largely dependent upon the willingness of the facilities to notify those agencies that they fall within the regulatory framework of RCRA.

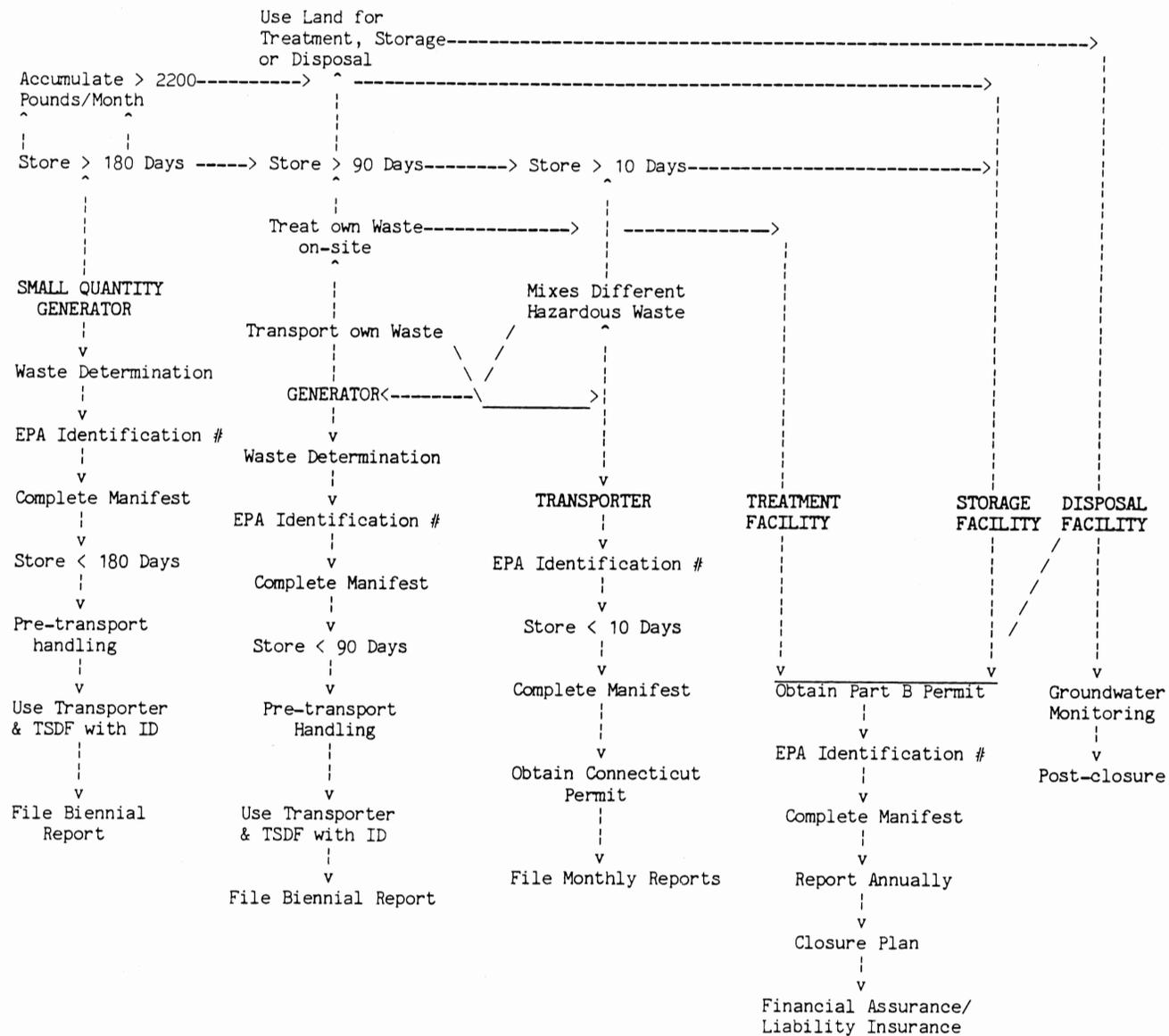
RCRA regulatory requirements vary depending on the status of the handler. Figure 2 summarizes the key regulatory provisions of the program. Definitions of each type of handler and highlights of the requirements they must meet follow.

Hazardous waste generators. Broadly speaking, a generator is a business whose processes create a hazardous waste. The statutory definition of generator also includes companies that engage in specified activities relating to hazardous waste, i.e., import, ship, or mix in one shipping container hazardous wastes.

There are three categories of generators under RCRA: 1) large quantity generators (2,200 pounds or more of hazardous waste produced each month); 2) small quantity generators (between 220 and 2,200 pounds of hazardous waste produced monthly); and 3) conditionally exempt small quantity generators (less than 220 pounds of hazardous waste created per month). The regulations to which a generator may be subject vary depending on the amount of waste produced by the facility. However, in general, generators of hazardous waste must:

- o obtain a unique identification number from EPA;
- o comply with pre-transport regulations designed to ensure safe storage of hazardous waste that is awaiting shipment to another site for treatment, storage, or disposal;
- o adhere to a system used to track waste from its shipping point of origin to the final destination that is based on manifests;
- o report biennially on the amounts and types of waste generated and their disposition; and

Figure 2. Major Regulatory Requirements Under RCRA.



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Source: Code of Federal Regulations.

- o maintain accurate records that will provide EPA and DEP officials with data regarding the amounts and types of waste generated, any shipping company used, and the ultimate disposal or treatment of the waste.

Until RCRA was amended in 1984, small quantity generators (e.g., dry cleaners, furniture manufacturers, auto repair shops, and photo-finishing stores) were exempt from most RCRA requirements. Growing awareness of the quantities of waste generated at small plants and facilities nationwide caused Congress to add these businesses to the regulated community. However, while the regulations pertaining to these businesses subject them to RCRA reporting requirements, the regulations are less stringent in order to reduce the paperwork requirements these generators may be ill-equipped to handle. Still exempt from RCRA requirements are conditionally exempt small quantity generators who produce relatively minor amounts of waste a month.

Hazardous waste transporters. A transporter is defined as a person who engages in the off-site shipment of hazardous waste. The transporter regulations apply to commercial waste haulers as well as to generators and facilities that transport their own waste. As in the case of generators, each transporter must obtain an EPA identification number and comply with the manifest system. In a number of states, including Connecticut, transporters also must obtain a state permit to ship hazardous waste.

The transporter must deliver all the wastes listed on the manifest to the specified facility. If unable to do so, the generator must be contacted for further instructions regarding the destination of the shipment. Transporters are also responsible for inadvertent discharges during transport. The transporter must notify the appropriate regulatory authorities and take immediate action to reduce any risk posed by the spill.

Hazardous waste treatment, storage, and disposal facilities. RCRA regulations distinguish between waste treatment, storage, and disposal facilities and define each type as follows:

- o treatment - - facilities that utilize techniques designed to alter the physical, chemical, or biological characteristics of wastes in order to neutralize or to reduce their toxicity;
- o storage - - facilities that hold waste for an interim period until it is treated, disposed of, or stored at another location; and
- o disposal - - facilities whose manner of handling the waste brings it into contact with the surrounding environment (e.g., landfills, incinerators, etc.).

RCRA facility requirements apply to commercial establishments that treat, store, or dispose of waste generated by others as well as to generators that treat, store, and dispose of their own waste. Thus, a business may have dual status under RCRA -- that of a generator and that of a treatment, storage, and disposal facility.

By statute, all facilities, with some exceptions, must obtain an operating permit. Facilities that were in operation at the time program regulations became effective (November 19, 1980) were allowed to continue operating under interim status authorization. The 1984 amendments to RCRA established statutory deadlines for interim status facilities to submit their applications for final permits or lose authority to operate.

All TSDFs, including interim status and final permitted facilities, must comply with a number of administrative requirements, including but not limited to:

- o recordkeeping on the types and amounts of waste handled, the businesses that generated and transported waste to the facility, and the handling methods used;
- o adherence to the manifest system;
- o waste analyses to ensure that the description of the wastes on the manifest conforms to the wastes actually received;
- o site security to prevent unauthorized visitors on the site who may come into contact with harmful pollutants; and
- o preparation of plans in the event of a facility emergency (e.g., fire or explosion) to minimize the risks that may be presented to the public and environment in the vicinity of the facility.

RCRA establishes several technical requirements covering the activities of TSDFs that are more complex than those affecting generators or transporters. The major additional requirements for TSDFs include: groundwater monitoring, procedures for closure/post-closure, and financial insurance and assurance.

Groundwater monitoring. Groundwater monitoring is a crucial component of the regulatory requirements applicable to facilities that use land as part of their treatment, storage, or disposal operations (e.g., landfills, waste piles, etc.). Continued sampling and analysis of the water under the facility allows regulators to ascertain if hazardous wastes are seeping into the subsurface water table. To operate, each land disposal facility

must submit for approval, a groundwater monitoring plan that describes how a program of sampling and analysis will be conducted. Once approved, this plan must be implemented.

A groundwater monitoring program is essentially a three part process. Once a system is installed, samples are drawn from monitoring wells and tested for the presence of hazardous waste pollutants against previously established levels. If the concentrations of hazardous wastes are significantly greater than expected, an assessment is made as to the possible degree of contamination. This assessment is used to determine the corrective action necessary to alleviate the contamination. The facilities must submit quarterly reports concerning the results of the groundwater monitoring systems.

Closure/Post-closure. Facilities intending to cease their operations must meet a number of RCRA requirements in order to close. During the period when a facility is no longer accepting waste and is processing the waste that remains, the site and the equipment must be secured. A plan on how the facility will be closed must be developed and submitted for approval. The contents of the plan, which may be modified at any time, must include: how the plant shall be closed, the estimated year of closure, and the schedule by which closure shall be achieved.

Disposal facilities that close with waste still on-site must meet additional post-closure requirements for a period of 30 years. If a facility can remove all the waste from the site and restore the area to standards of cleanliness set by federal regulations, it is not subject to RCRA's post-closure provisions. Otherwise, until the 30 years have passed, the facility must be monitored and maintained to prevent any negative environmental impact from wastes or contaminated soils remaining on site. A plan detailing how post-closure requirements will be met must be developed and submitted for approval. Post-closure plans must also include a provision for site security.

Financial requirements. RCRA also establishes financial requirements for TSDFs covering two separate areas: liability coverage in the event of injury or property damage; and closure/post-closure expenses. Owner/operators of TSDF's are legally responsible for the facility's liabilities in negligence. RCRA, therefore, requires facilities to obtain two types of liability coverage. The first is coverage for sudden accidental occurrences -- for example, an explosion or fire. A facility must be covered by at least \$1 million per occurrence with an annual aggregate of \$2 million. This financial assurance may be demonstrated by: 1) obtaining liability insurance; 2) passing a financial test; or 3) a combination of the first two.

Facilities that use the land as part of their operations must also have coverage for nonsudden accidental occurrences such as groundwater contamination due to a leaking surface impoundment. The amount of coverage for this liability must be at least three

times that required for sudden occurrences. A recent regulatory revision provides that a company no longer needs to carry liability insurance once it has removed all on-site waste in accordance with certain standards ("closed clean"). However, insurance for nonsudden accidental occurrences is still required during post-closure.

Owner/operators of TSDFs must prepare written cost estimates of closure and post-closure operations. Once the estimates have been prepared, evidence must be shown that the costs can be met by the party responsible for the facility. There are six methods by which this financial assurance can be shown: establishing a trust fund, obtaining a surety bond, a letter of credit, closure and post-closure insurance, a corporate guarantee for closure, and/or passing a financial test.

Federal Superfund Program Provisions

While RCRA is aimed at preventing inappropriate management of hazardous waste, the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 is a reactive statute. This federal Superfund legislation is concerned with the clean up of uncontrolled and/or abandoned hazardous waste sites, including historic waste disposal sites and spills from accidental releases of hazardous waste.

CERCLA has two major purposes: 1) to provide or compel the clean up of hazardous waste sites; and 2) to provide the federal and state governments with compensatory damages for response costs and for damages to the environment. The federal government's costs under Superfund are paid through the Hazardous Waste Trust Fund, which is financed through taxes on petrochemicals and other commercial chemicals. For the first five years of the program, 1980 to 1985, the amount of money appropriated for Superfund was \$1.6 billion.

Under CERCLA, the appropriate response to any site is determined by the danger posed by the site. Sites that are extremely dangerous are targeted for short-term remedial action, designed solely to alleviate the threat to public health and environment. Sites that present a lesser degree of immediate danger are assessed by EPA to determine the best course of action that will produce long-term public health and environmental benefits.

The first step under CERCLA is to identify uncontrolled hazardous waste sites. Sites are proposed for inclusion in the Superfund program in one of two ways. First, each state may present EPA with a list of sites at which activity involving hazardous waste has occurred. Secondly, businesses may notify EPA in accordance with CERCLA requirements that hazardous waste activities took place at their sites.

Not all identified uncontrolled waste sites are eligible for participation in the Superfund program. Using the Hazard Ranking System, which it developed, EPA ranks all sites identified by their degree of danger to the public and the environment. Only sites that receive a certain score under this EPA assessment process are eligible to be placed on a priorities list (the National Priorities List or NPL) and, thus, qualify for federal Superfund monies.

The assessment process for placing sites on the NPL uses scoring criteria based on factors such as:

- o potential risk to the public;
- o possible degree of hazard posed by the substances at the site;
- o degree of danger that drinking water supplies, and other elements of the food chain, will be contaminated; and
- o the potential harm to the environment.

Federal law requires that the National Priorities List be updated annually.

Once a potential site has been identified, CERCLA requires that EPA take action in accordance with the National Contingency Plan (NCP). This plan, which must be prepared by EPA, is intended to be its "blueprint" for responding to hazardous waste clean up and contains the steps for reporting, assessing, and ascertaining the action to be taken at the site.

The act provides for two basic clean-up responses when an uncontrolled hazardous waste site is discovered: removal and remediation. Removal is a short-term corrective action (e.g., taking away leaking drums, increased site security, provision of bottled water, etc.) to reduce any immediate threats posed by a site. Remediation activities are designed to provide a permanent solution to the health and environmental problems of an uncontrolled site (e.g., capping the wastes in place as a surface impoundment, removal of all contaminated soil, restoration of site to established health standards, etc.).

There are three alternatives regarding who pays for site clean-up costs authorized under the act: the responsible parties of the site may voluntarily undertake the clean up; a judicial decree may be sought to order the responsible parties to clean the site; or in the event that those parties cannot be identified or are economically unable to bear the costs of remediation, Superfund monies can be used to finance the cleanup.

A responsible party under the Superfund act is one who contributed, in some manner, to the existence of the waste site.

Proof of negligence is irrelevant in determining the responsible party to a waste site; liability under the Superfund program is without fault. It need only be shown that a party generated or transported waste to the site. Consequently, if the possibility of clean up by the responsible owner/operators does not exist due to lack of finances, liability may be imposed upon businesses that generated waste disposed of at the site, or transporters who delivered waste to the site.

Superfund reauthorization. In October 1986, the recently enacted Superfund Amendments and Reauthorization Act (SARA) took effect. The amendments to the original provisions of CERCLA extend the Superfund program through 1991, expand the scope of federal hazardous waste site clean ups, and more forcefully address problems discovered through the original program. To underscore its commitment to cleaning up abandoned hazardous waste sites, Congress increased the Superfund funding level to \$8.5 billion for the 1986 to 1991 authorization period.

As a response to concerns that EPA was not moving swiftly enough to alleviate dangers at uncontrolled hazardous waste sites, SARA established specific deadlines for assessing, inspecting, and remediating identified Superfund sites. To aid in determining the measures necessary to clean up an uncontrolled site, the Superfund amendments require EPA to identify, assess, and prioritize the degree of danger posed by the most commonly found hazardous substances at clean-up sites. SARA sets guidelines under which EPA must prioritize these substances based upon the danger they pose. Once the initial list has been completed, the list is to be periodically updated through the inclusion of other hazardous substances commonly found at Superfund sites.

A key provision pertaining to individual states concerns the formation of statewide and local emergency response commissions, to deal with inadvertent releases of hazardous substances. SARA also includes community right-to-know provisions. Each state is directed to prepare and implement emergency plans pertaining to possible releases of extremely hazardous substances. The governor of each state must appoint a state emergency response commission, which in turn designates local emergency planning districts and committees. Local companies that handle hazardous substances must notify the state commission of the presence of the substances on their premises. Additional requirements imposed on these businesses include participation in local emergency planning and an emergency notification provision in the event of an uncontrolled release of a hazardous substance. Finally, community right-to-know provisions require that information on locally stored hazardous substances be made available for public inspection.

State and Federal Roles

The provisions of RCRA and CERCLA outline specific roles for the U.S. Environmental Protection Agency and the states. Although

both RCRA and CERCLA place primary responsibility upon EPA, each act allows for significant state participation.

Under RCRA, the intended role of EPA is to establish regulations, policy, and guidance to be followed by states that have been authorized to administer the program. It was anticipated that EPA would delegate its authority to run the RCRA program to those states that established programs equivalent to the federal program.

The 1984 RCRA amendments set a deadline of January 31, 1986, for delegating final RCRA authorization to states. In states that failed to meet this deadline, authority to carry out RCRA activities reverted to the EPA regional office. As of November 1987, 42 states had received final authorization status; Connecticut and California were among the states that had not been approved.

Authorization of states to administer RCRA occurred in three phases. During Phase I, states could be delegated authority to conduct compliance and enforcement activities within the state. Under Phase II of authorization, states could conduct closure and permitting activities. If a review of the state's performance under Phase I and Phase II authorization revealed an ability to perform its RCRA duties to the satisfaction of EPA, the final authorization to administer the program could be delegated.

To obtain administrative authority, a state's statutes and regulations must be at least as stringent as federal statutes and regulations. A state program must also contain the necessary resources to carry out the federal mandate and must operate effectively. Failure by a state to meet these standards can lead to a reversion of RCRA authority.

To insure that states meet their delegated responsibilities, RCRA requires EPA to monitor state programs to ensure that quality programs are being carried out and to identify strengths and weaknesses. Performance of RCRA activities is evaluated by reviewing data states routinely submit to EPA regional offices. States are required to report on such matters as numbers and types of inspections conducted, enforcement actions taken, and the status of facility permits and closure plans.

Financial assistance for operating RCRA programs is provided to states by the U.S. Environmental Protection Agency primarily through matching grants. Basic RCRA funding grants have a requirement of a 25 percent state match; grant funding is not predicated upon state authorization. In addition to monitoring state activities to determine program effectiveness, EPA conducts annual program reviews to determine if the conditions of grant agreements are being met.

Under the Superfund program, EPA regional offices are the lead agencies for discovery, assessment of hazardous waste site

conditions, and financing of clean-up costs. State participation in financing clean-up costs is mandatory when site conditions are to be addressed with federal Superfund monies.

The federal government assumes 90 percent of such clean-up costs, and the state where the sites are located is responsible for the remaining 10 percent. If the site is state-owned, the state's match is 50 percent. In addition, states must guarantee that a suitable disposal facility exists for residues of clean-up efforts and that the site will be properly operated and maintained in the future.

States may determine their level of participation in other CERCLA activities. Roles range from merely advisory to assisting EPA by: establishing, maintaining and updating inventories of potential Superfund sites; performing assessments of the health and environmental threats of sites; locating responsible parties; or supervising clean-up activities at Superfund sites. States that perform some or all of these activities are eligible for grants from EPA that cover their staffing and administrative costs.

APPENDIX C

Generation and Management of Hazardous Waste in Connecticut

The following overview of the current status of hazardous waste generation and management in Connecticut is based on analysis of generator and facility report data from 1983 and 1985 by the Connecticut Hazardous Waste Management Service. At the time of the program review committee study, the service was updating its analysis of management needs with data submitted by Connecticut treatment, storage, and disposal facilities for calendar year 1986.

The data analyzed by the service only reflect waste generation and management practices among large handlers subject to regulation under the RCRA program. Wastes subject only to Connecticut handling requirements, such as waste oil or PCBs, are not addressed. In addition, hazardous waste produced by the state's 14,000 small quantity generators and by Connecticut households are not represented. Another potentially major source of waste not included in the database used for the service's analysis is historic hazardous waste that exists at clean-up sites.

To date, reliable estimates concerning types and amounts of waste produced by clean-up work at uncontrolled sites, households or small quantity generators have not been prepared. The service has gathered information to prepare estimates on these additional sources of hazardous waste to include in its 1988 and future needs assessments.

Wastes generated. In 1985, Connecticut generated approximately 164,100 tons of hazardous waste or about 1.5 percent of the waste produced nationwide. The majority of the state's hazardous waste is generated by metal-related manufacturing businesses (e.g., metal finishers, electroplating companies, etc.) and the chemical products industry (e.g., pharmaceutical manufacturers, producers of industrial solvents, etc.). Metal-related manufacturing was the source of 47 percent of all hazardous waste generated in 1985, while chemical manufacturing accounted for 26 percent and all other large Connecticut generators produced 17 percent.

Types of waste produced can be broadly categorized according to their chemical properties as either organic or inorganic. Whether a waste is organic or inorganic has implications for management needs. For example, most organic wastes can be eliminated by incineration, while inorganic waste generally cannot be disposed of through burning. Much of the waste produced by metal-related manufacturing is inorganic, so the management needs of these industries include recycling metals, treatment to reduce the waste volume, and land disposal for unburnable residues that remain after recycling or treatment. For chemical manufacturers,

whose wastes are primarily organic, management needs also include treatment, but incineration is an option.

Management practices. The current management practices for waste generated in Connecticut include: disposal at landfills; destruction through incineration; treatment (e.g., detoxification) to reduce the volume or hazardous nature of the waste; and methods for recovering waste materials for subsequent productive use. The proportion of Connecticut waste handled through each type of management practice in 1983 and 1985 is shown in Table 1.

Table 1. Connecticut Waste Management Practices in 1983 and 1985.

<u>Preferred Mgt. Hierarchy</u>	<u>Practices Used for CT waste</u>	<u>% 1983 Total Waste</u>	<u>% 1985 Total Waste</u>
Reduction/ Recycling	Solvent Recovery	4	3
	Metal Recovery	$\frac{1}{5}$	$\frac{3}{6}$
Thermal Destruction	Cement Kilns/ Industrial Boilers	11	22
	Incineration	$\frac{1}{12}$	$\frac{3}{25}$
Detoxification	Aqueous Treatment	41*	26
Long Term Storage/Disposal	Landfill/ Stabilization**	19	25***
	Surface Impoundment	$\frac{19}{38}$	$\frac{10}{35}$
	Other****	4	6

* Includes 17,000 tons which were doubled counted in reporting.

** Some stabilization methods, which can also be classified as detoxification or treatment, are included in this category.

*** Includes 16,700 tons that will not be generated in future due to a process change.

**** Other includes waste that was generated but not managed during the calendar year (i.e., in storage or being transferred).

Source: Connecticut Hazardous Waste Management Service.

Also shown in the table is the waste management hierarchy developed by the Hazardous Waste Management Service. As the table indicates, about one-third of Connecticut's hazardous waste is being handled through the least preferred management method -- long-term storage/disposal. However, use of more highly preferred methods, especially thermal destruction, is increasing (i.e., from 12 percent in 1983 to 25 percent in 1985).

On-site/off-site management. Connecticut hazardous waste is managed on site (at the source of generation) as well as off site, usually at commercial facilities. Table VI-2 shows the amounts of waste managed on site and off site in 1983 and 1985. Amounts managed off site within Connecticut and amounts exported to facilities in other states are also shown.

According to the table, more waste was handled off site and more was exported to other states in 1985 than in 1983. This trend may have implications concerning the availability of commercial facility services within Connecticut.

Table 2. On-site and Off-site Hazardous Waste Management in Connecticut: 1983 and 1985 (in tons)

	<u>Total Generated</u>	<u>Managed On Site</u>	<u>Managed off site</u>	
			<u>In CT</u>	<u>Out of State</u>
1985	164,100	58,800 (36%)	41,600 (25%)	63,700*(39%)
1983	188,100	100,200 (53%)	45,800 (25%)	42,100 (22%)

* Includes 16,700 tons that will not be generated in the future.

Source: Connecticut Hazardous Waste Management Service.

Management costs. Generators' decisions about management of their wastes are influenced by several factors including what is most appropriate for the types of wastes, and the cost and availability of commercial waste management services. Cost, however, is often a primary concern since proper management of hazardous waste can involve significant expense. The estimated costs, not including transportation fees, associated with the various commercial management services used by Connecticut generators in 1983 are shown in Table 3.

The service was in the process of updating commercial management cost data during the committee's review. Preliminary

analysis showed that costs are increasing. For example, the average price per ton, not including transportation expenses, to dispose of waste at landfills in the Northeastern U.S. currently is \$115. Incineration costs based on national data are significantly higher now than in 1983 and are up to 10 times landfill costs. The 1985 average cost to incinerate organic sludge and solid hazardous waste was \$900 per ton.

Availability. Availability of commercial facilities within Connecticut is a major concern of the state's hazardous waste generators dependent on off-site management. In 1987, there were 10 commercial facilities operating in the state. The management services provided included primarily aqueous treatment, some recovery methods (both for solvents and metals), and storage. Commercial services in Connecticut at present do not include an incinerator or a secure hazardous waste landfill. Thus, generators selecting these services must use out-of-state facilities or develop their own on-site capacity.

Table 3. 1983 Estimated Costs for Commercial Hazardous Waste Management Services.

<u>Management Method</u>	<u>Estimated Cost/Ton</u>	<u>Quantity Managed (Tons)</u>	<u>Est. Total Cost* Per Mgt. Method for CT generators</u>
Incineration	\$312	1,400	\$436,800
Landfill with Stabilization	100	3,200	320,000
Solvent Recovery	88	7,500	660,000
Other	80	6,400	512,000
Landfill without Stabilization	75	18,800	1,410,000
Aqueous Treatment	53	45,100	2,390,300
Metal Recovery	50	1,200	60,000
Cement Kiln	25	600	15,000
			<u>\$ 5,804,100</u>

* Not including transportation costs.

Source: Connecticut Hazardous Waste Management Services Plan 1985 - 2005 (January 1, 1986) p. 30.

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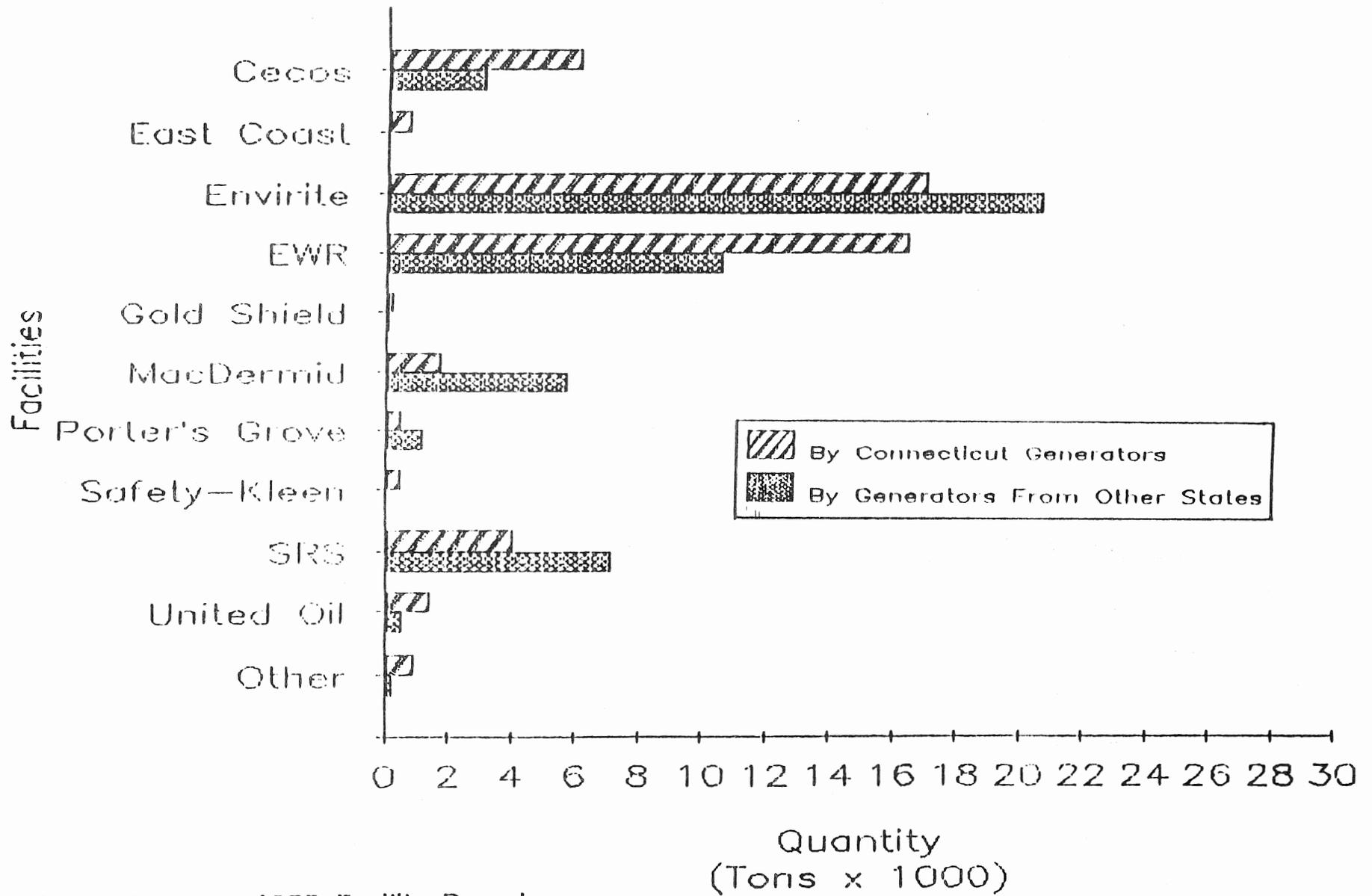
* Not including transportation costs.

Source: Connecticut Hazardous Waste Management Services Plan 1985 - 2005 (January 1, 1986) p. 30.

Connecticut commercial facilities do have more than enough capacity to meet the in-state demand for their currently offered services. In fact, commercial facilities also manage wastes imported from other states. Table 4 shows the amounts of in-state and imported wastes handled at each facility in 1985.

Even with imported wastes, however, no Connecticut commercial facility is operating at full capacity. Capacity figures were being updated by the service during the committee review. Significant changes from a 1983 analysis that showed the state's four major commercial facilities (CECOS, SRS, Envirite, and EWR) operated at between 43 and 64 percent of their total capacity were not expected, however.

TABLE 5. Use of Connecticut Commercial Facilities (1985)



Primary Source: 1985 Facility Reports
 Connecticut Hazardous Waste Management Service

1/9/87

APPENDIX D

AGENCY RESPONSE

It is the policy of the Legislative Program Review and Investigations Committee to submit a final copy of a report to the affected state agency(cies) for review and comment prior to publication. A formal agency response, if provided, is then included in the published document. The responses received from the Connecticut Hazardous Waste Management Service and the Department of Environmental Protection concerning this report follow.



Connecticut Hazardous Waste Management Service

900 Asylum Avenue Suite 360 Hartford CT 06105-1904 203-244-2007

January 29, 1988

The Honorable John Atkin
The Honorable Robert D. Bowden
Legislative Program Review and
Investigations Committee
Legislative Office Building
18 Trinity Street
Hartford, CT 06106

Dear Senator Atkin and Representative Bowden:

Thank you for the opportunity to comment on the Legislative Program Review and Investigations Committee's final draft report on hazardous waste management in Connecticut. Your staff has done an outstanding job, not only in researching this very complex area, but also in conveying the findings in an accurate, clear and concise way. I am happy to submit the following comments on behalf of the Board of Directors of the Connecticut Hazardous Waste Management Service. The comments were unanimously approved at the regular monthly meeting of the Board of Directors on January 21, 1988.

We agree that refinements in the information used to develop forecasts of hazardous waste generation in Connecticut would provide greater accuracy. However, it is important to remember that many factors must be considered in forecasting hazardous waste generation, in addition to economic activity. In fact, our panel of experts who developed the most recent projections agreed that "regulatory changes would have more of an impact on waste generation than industrial activity". Also, a linear relationship between hazardous waste generation and industrial growth, is questionable. For example, between 1983 and 1985 hazardous waste generation in the chemical industry in the U.S. declined 27.8 percent while chemical industry production increased 10 percent.

Because economics activity is one of the factors which must be considered in forecasting hazardous waste generation through the year 2005, we will continue to review various indicators of economic activity. However, we note that information on industry shipments is available on a national level only, and only to the year 1991. Therefore, we are not convinced that national information on industry shipments is a better indicator of hazardous waste production in Connecticut than Connecticut specific indicators of industrial growth, as suggested on page 59 of the draft report.

The Service will forecast hazardous waste generation and the demand for hazardous waste management facilities for a third time next year in preparation

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for the federally mandated capacity assurance. This month, we issued a report on hazardous waste generation and management with an updated hazardous waste forecast. We are committed to finding better ways to forecast hazardous waste generation in the current climate of regulatory changes, new management technologies and increases in the cost of managing hazardous waste.

Also, when we conduct the next estimate, we will be better equipped to "analyze the status of waste reduction and recycling efforts" as recommended on page 59 of the draft report.

The 1987 Connecticut biennial generator report forms, due to be completed by March 31, 1988, contain a detailed survey of waste reduction and recycling activities. This report will be completed by both large and small quantity generators, unlike the 1983 and 1985 forms. The Service will analyze the results of this survey.

We support the recommendation on page 59 that the statutes be amended to provide "that the state hazardous waste management plan prepared by the Connecticut Hazardous Waste Management Service be updated at least every five years."

We welcome the opportunity to work with the Department of Economic Development on a study of appropriate financial assistance programs for Connecticut generators of hazardous waste. This recommendation (page 62) is consistent with our mandate to promote appropriate hazardous waste management and with our new technical assistance program.

We agree that the structure of the hazardous waste generator tax should be reviewed and we look forward to participating in discussions regarding this tax. We think, however, that a more comprehensive study is warranted than that which is recommended in the report (page 63). As you know, the tax and the use of the money generated from the tax has changed somewhat over the years since it was initiated in 1982. Therefore, before the tax is extended as recommended on page 63 of the report, we also recommend that legislation be passed in this General Assembly session to create a task force to conduct a comprehensive study and make recommendations regarding the purposes of the tax, the use of the revenues, and other related issues. Any adjustments to the generator tax should be made after the study is conducted.

Finally, we would like to point out that the information on which we rely for hazardous planning has various levels of comprehensiveness. The information on the large quantity generator's and hazardous waste management facilities in Connecticut is the most comprehensive and accurate. In fact, we believe it is one of the best in the country.

In terms of the amount of hazardous waste generated, large quantity generator's produce about 80% of all the hazardous waste in Connecticut; small quantity generator's, of all sizes, produce another 10-15%; hazardous contaminated soils

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and miscellaneous one time hazardous waste generation, about 5%; and households, 1%.

The information on small quantity generators is much less comprehensive. It is based on a study conducted in 1984. This year, however, between 3,000 and 5,000 small quantity generators (those producing more than 220 pounds per month) will be required to file the same generator report as large quantity generators file. These reports will provide the service with more accurate information on hazardous waste generation by small quantity generators, information with the same level of detail as we have for larger generators.

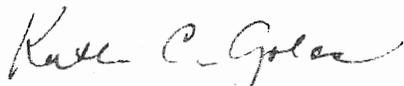
The information on households is even more limited than the current information on small quantity generator's. However, the amount produced by households is insignificant compared to the total.

I have submitted additional information to Jill Jensen of your staff which includes updated information on Connecticut hazardous waste generation and management. It is information which is found in a comprehensive report entitled "Connecticut Hazardous Waste Generation and Management: A Status Report" which was submitted to the General Assembly and the Governor today.

In summary, over time we expect the availability and accuracy of information on hazardous waste generation in Connecticut to improve, and we will continue to update our estimates of future hazardous waste generation and the demand for hazardous waste management facilities at least every five years as required by state law. We are pleased to read that "the committee's review revealed that the state program currently contains the components necessary for a comprehensive approach to protecting the public health and the environment from the threats of uncontrolled hazardous waste" and, we are proud of our contributions to Connecticut's hazardous waste management program.

Thank you again for the opportunity to comment. I look forward to discussing these issues with you.

Sincerely,



Kathleen C. Golas
Chairwoman and Executive Officer

/vmz
Attachment

cc: Gerald R. Backlund
Richard J. Heller
George R. Holeman
Summer Kaufman
Wallace C. Pringle
Barbara H. McWhirter

STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

165 CAPITOL AVENUE HARTFORD, CONNECTICUT 06106



Leslie Carothers
Commissioner

February 2, 1988

Honorable Senator John Atkin
Honorable Representative Robert D. Bowden
Co-Chairmen
Legislative Program Review and Investigations Committee
Connecticut General Assembly
18-20 Trinity Street
Hartford, CT 06106

Dear Senator Atkin and Representative Bowden:

Thank you for the opportunity to review and comment on the final draft report of the Performance Audit of the Hazardous Waste Management Section. I have limited our response to the overall recommendations presented at the beginning of the report.

In general, the report is useful and constructive. It should be recognized that the Hazardous Waste program was substantially strengthened through new State resources added in the last budget. With these resources now coming on board, it will be necessary to make organizational changes to reflect the site cleanup initiative as well as the larger size of the hazardous waste program. These changes will provide additional managerial resources for the expanded program and should improve it still further.

Data Management Systems

1. The Connecticut Hazardous Waste Management program has in place information management systems that provide complete, accurate and accessible information regarding our various program activities. We have recognized, however, the need to expand and integrate data bases. Since early 1987 the Section has been working to address this issue. Our progress to date has been slowed by limited staff resources, the need to continue to work with EPA on the national data base, and insufficient space to house needed computer equipment.

What appeared to the committee staff as a fragmented approach to data management has resulted from Connecticut's participation in the national RCRA information system operated by EPA. This national data base, which all states are required to utilize, proved unworkable and EPA is currently developing a replacement system.

Connecticut recognized the deficiencies in the federal system early on, but we did not have the option of withdrawing from the federal system, nor did we have the resources to develop a complete, but separate system. In order to carry on critical program functions, the Section developed supplemental data bases to serve our individual program needs until a new federal system was available. We have worked very closely with EPA and other Region I States to improve data management under the present system while providing input to the development of the new national data base.

Although we concur with the recommendation to design and implement a new system which integrates and expands our data management capabilities, we strongly disagree with the Committee conclusion that our present systems have "reduced regulatory effectiveness", "contributed to backlogs and delays" and "resulted in the inefficient use of staff resources".

Annual Plan

2. The Hazardous Waste Management Section annually develops a detailed work plan as part of our RCRA grant application to EPA. This plan sets very specific goals for all program activities and provides detailed estimates of staff resources committed to the various program elements. This plan covers the allocation of all federally funded staff resources as well as the required state-funded "match". Until FY 87-88, essentially all of the state funded positions in the Section were part of the "minimum state match" of the federal grant. Therefore, the detailed work plan prepared for the RCRA grant application was the formal plan of operation for the Section, setting goals and objectives and establishing schedules for meeting these commitments. We do not concur, therefore with the conclusion that there is a lack of a formal written annual plan or that it has contributed to "uneven regulatory performance".

Starting with FY '87-'88 we have 12 state-funded positions above the minimum grant match. We sought these positions with specific work output goals in mind and have generalized plans for their use. The recommendation that the HWS develop an overall plan is good management practice, and we have already initiated efforts to prepare a formal plan for this fiscal year.

Working Conditions

3. We fully agree that inadequate working conditions are having a severe negative impact on the effectiveness of Connecticut's Hazardous Waste Management program as well as other Environmental Protection programs located at 122 Washington Street. Building conditions preclude implementation of a new data management system due to inadequate space and mechanical systems, and space restrictions have delayed filling some of the new staff positions provided in the current budget. We are pursuing all available options for relieving the space problem.

Profile for Hazardous Waste Handlers

4. As noted previously, Connecticut has been an active participant in the national Hazardous Waste Data Management System (HWDMS). This system is supposed to provide an accurate profile of each member of the regulated community, including information on wastes handled, inspections, enforcement history, and permit status. Unfortunately, the HWDMS design was too complex, and almost totally inaccessible to program managers and line staff. As a result we have not had useful access to the type of facility-specific information sought.

The expanded data management system that we envision will enable the Section to integrate all existing data management functions and eliminate several stand-alone systems that were developed over the past several years to address specific program activities. The new system will provide a more accessible profile of each member of the regulated community. In addition, this system will provide the necessary interaction with the new national data base.

Identification of Handlers

5. All handlers of hazardous waste must notify the State and USEPA of their hazardous waste activities. EPA and DEP programs have relied on the self notification process to identify regulated facilities. We agree that efforts should be initiated to establish a method for systematically identifying all handlers.

Tracking System for Complaints

6. All the components of the complaint tracking system recommended by the committee have been in place since 1982. All necessary data, however, has not been recorded in the complaint log. Procedures will be revised this fiscal year to ensure that all necessary data is entered into the log in a timely manner.

Expand On-Site Compliance Monitoring of Hazardous Waste Handlers

7. As a first step to expanding on-site compliance monitoring efforts, the committee recommends that the Section: (1) evaluate inspector workload data and set standards regarding the number and type of inspection to be performed; and (2) update regulatory status and site inspection requirements of each handler.

We have already addressed the first recommendation. For the past 3 years the section has utilized a workload model to determine the number of inspections that will be undertaken each year. We have also been prioritizing the facilities to be inspected on an annual basis.

We agree that the regulatory status and site inspection requirements of each handler need to be updated. Work has already been initiated to address this recommendation, but the timeframe recommended (January, 1989) may not be realistic due to data management issues. The new national database is due to be implemented in January, 1989, and the lead time for developing Ct.'s integrated data base is longer still. To develop a truly workable system and to quality check handler data will take more time than the committee recommendation allows.

Identify and Inspect all Significant Hazardous Waste Generators and Facilities

8. We agree that all significant hazardous waste generators and facilities should be inspected. The Section will identify all significant handlers and develop a schedule to ensure that all are inspected.

Establish Program of Delegated Authority

9. We agree that a program to delegate authority should be investigated. Citizen complaints could be investigated at the local level and municipalities could help identify small quantity generators and hazardous waste handlers who have failed to notify the State of their hazardous waste activities. There are however, several program constraints that must be addressed before such a program could be implemented.

For example, as noted in the report, a considerable effort would be necessary to train and continue to update local staff on at least some elements of hazardous waste regulations. The Hazardous Waste Management regulations are much more complex than the regulations (eg. public health code) normally administered at the local level. Additionally, training in personal safety is mandatory for inspectors dealing with handlers of Hazardous Waste. The \$150,000. mentioned, spread over the 50 local staff, is \$3,000./person. At prevailing wages and fringe costs, this is only slightly more than 2 1/2 weeks/year. The training alone will take up, on average, 1 to 2 weeks per year. Increased inspection frequencies would generate a proportional increase in the number of enforcement actions and the resource implications of this expansion of field work would need to be assessed in designing the program.

Resolution of Outstanding Administrative Enforcement Actions and
Prioritization of Future Actions

10. We agree that it is important to resolve all outstanding administrative enforcement actions. In fact, the Section has already begun to address this issue. The additional staff that have been approved for the program should enable us to resolve all outstanding actions from federal fiscal years 1982 to 1985 by the end of federal fiscal year 1990 as recommended by the committee.

We also agree that we need to implement a system for prioritizing outstanding enforcement actions initiated in FY 82-85. In doing so, we can ensure that staff resources are utilized to properly address those cases which pose the most significant threat to health and the environment. All enforcement cases have been prioritized since federal fiscal year 1986.

Expand and Update Enforcement Data

11. We agree with the recommendation to expand and update our enforcement data. We are currently working with EPA to improve our data report systems. At present, all the necessary data is being collected and a new data management system is being designed to ensure prompt data retrieval and easy access.

Again, I would like to thank you for the opportunity to comment on this report. Please feel free to contact Edward Parker of the Hazardous Waste Management Section at any time in the future for information on any aspect of Connecticut's hazardous waste management programs.

Sincerely yours,



Leslie Carothers

cc: Michael L. Nauer
Jill Jensen