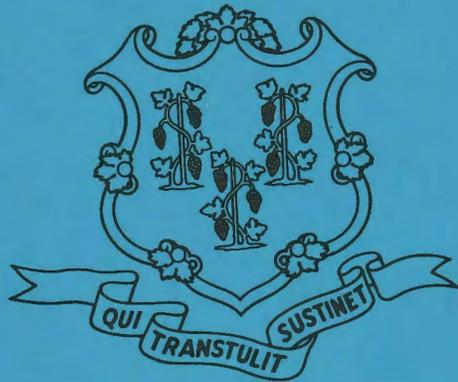


Connecticut General Assembly



**Legislative Program Review
and Investigations Committee**

**SOLID WASTE MANAGEMENT
IN CONNECTICUT**

May 1979

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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SOLID WASTE MANAGEMENT
IN CONNECTICUT

May, 1979

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LEGISLATIVE PROGRAM REVIEW AND INVESTIGATIONS COMMITTEE

Solid Waste Management in Connecticut

SUMMARY

CHAPTER I. PURPOSE AND SCOPE

The purpose of this review is to determine the adequacy of Connecticut's approach to managing its solid waste problems; whether laws need to be strengthened or modified; and whether appropriate controls exist to assure accountability over CRRA operations (p. 3).

The study focuses on the planning, permitting, technical assistance and enforcement functions of the Solid Waste Management Unit (SWMU) of DEP. Also examined are the administrative mandates of the Connecticut Resources Recovery Authority (CRRA). Particular importance is placed upon the progress of CRRA in implementing the state's plan for resource recovery systems (p. 3).

CHAPTER II. OVERVIEW OF SOLID WASTE MANAGEMENT

Connecticut generates over 6,000 tons of mixed municipal waste per day or over six pounds per person per day. Over 50 Connecticut communities dispose their solid waste outside of their municipal boundaries. This represents a six-fold increase in ten years. Within the next five years there will be over 5.6 million tons of solid waste generated in Connecticut without a known tipping area. Yet there will be only an estimated 2.4 million tons of uncommitted capacity at existing DEP permitted landfills (pp. 6-7).

Responsibility for solid waste disposal rests primarily with each municipality. State regulation of solid waste planning, facility permit review and enforcement exists under the Solid Waste Management Act (Chapter 361a). Though the Connecticut Resources Recovery Authority does not have regulatory powers, it assists municipalities seeking regional alternatives to landfill disposal (p. 6).

In 1978, the General Assembly enacted legislation (P.A. 78-67) which was intended to limit DEP's regulatory power in two areas. The LPR&IC is concerned about what effect this legislation will have on DEP's regulatory programs (pp. 11-12).

The first provision requires DEP to provide the user of any solid waste facility with "reasonable alternative facilities"

prior to the closure of any landfill operation. This requirement could substantially limit DEP's enforcement authority (p. 12).

Secondly, Public Act 78-67 permits any local "governing board to regulate, through zoning, land usage for solid waste disposal." As a result some municipalities tried to utilize their zoning power either to prohibit landfill sitings within their boundaries or to prohibit the disposal of waste which originates from another municipality. With more than 50 Connecticut communities disposing of wastes beyond their geographic boundaries, such legislation has the potential of restricting suitable regional approaches to solid waste disposal (p. 12).

In 1973, the General Assembly created the Connecticut Resources Recovery Authority--the nation's first quasi-public agency charged with implementing a statewide solid waste management plan. The Solid Waste Management Services Act, which established the CRRA, set forth the state's basic policy and goals regarding waste disposal and resource recovery (p. 16).

CRRA policy is formulated by a ten member Board of Directors. The Committee makes several recommendations concerning the composition of the Board (pp. 16-18).

CHAPTER III. LANDFILLS

In recent years, federal and state policies have been adopted which articulate a commitment to preserve and enhance the natural environment. This has necessitated refocussing solid waste management from a disposal problem handled exclusively at the local level to include environmental problems identified as state concerns. While the responsibility for the disposal of solid waste remains with the municipalities, planning and regulation have become important activities at the state level (p. 21).

Some municipalities criticize DEP as over-zealous in its regulatory activities citing the lack of Departmental initiative in developing solid waste management solutions. This conflict has resulted in widespread reluctance to expand the role of DEP to facilitator.

Following lengthy discussions, the LPR&IC concluded that DEP is the appropriate body to lead solid waste management planning, regulating and enforcing activities. Permitting and landfill site development, while coordinated activities, are more appropriately placed with proposed Regional Boards and CRRA (p. 25).

A siting policy provides and ensures siting of landfills where they are most appropriate and most needed. The LPR&IC finds that a comprehensive siting policy is a necessary prerequisite to establishing a systematic approach to landfill siting. Therefore, the Committee recommends that the Commissioner of Environmental Protection establish immediately an Ad Hoc Committee on Siting Policy. The Ad Hoc Committee's recommendations will be submitted to the Commissioner no later than December 1, 1979. Based upon these recommendations, the Commissioner will adopt a siting policy in the form of administrative regulations by February 1, 1980. The siting policy will be used in reviewing landfill permit applications (pp. 26-27).

State planning. With the establishment of the DEP in 1971, responsibility for the preparation of a 20 year plan "for each solid waste planning region of the state" was delegated to the Commissioner. The Plan, completed in 1973, placed a heavy reliance upon the development of ten major resource recovery facilities. The Plan's innovative and overly optimistic projections resulted in an implementation program which is now regarded as both unrealistic and obsolete (p. 27).

As a result, the Committee makes several recommendations concerning the State Plan. Specifically, the Committee recommends:

- additional planning staff and public participation component (p. 29);
- required biennial State Plan review (p. 29);
and
- limited utilization of local plans (p. 30).

Closure of unsuitable sites. The Commissioner of Environmental Protection issues closing orders to landfills which have physically exhausted their capacity or have documented evidence of ground or surface water pollution. Of the thirteen sites ordered to close since 1972, seven continue to operate while alternative disposal methods are reviewed. Five other operators voluntarily closed their sites, and one operator who failed in an appeal has been ordered closed by the court (pp. 35-36).

Despite limited staff and legal action against violators, the SWMU has been perceived as an uneven and sometimes heavy handed enforcer. This was a contributing factor in the enactment of Public Act 78-67, a portion of which requires DEP "to provide reasonable alternative facilities for the users" of any landfill before it issues an order to close (p. 36).

Given the reluctance of municipalities in the past, it appears unlikely that "reasonable alternative facilities" will be provided voluntarily by landfill "rich" municipalities. This statutory responsibility is made even more difficult, if not impossible, in light of the absence of new permitted landfills during the past two years (p. 36).

The LPR&IC finds that the Department of Environmental Protection's enforcement authority has been severely curtailed by the passage of Public Act 78-67. Therefore, the Committee recommends that section 19-524b of the general statutes be amended to require DEP to provide technical assistance to any solid waste facility operator upon the issuance of any closing order. However, the Department would not be required to provide the solid waste facility with a reasonable alternative prior to the issuance of a closing order (p. 37).

Regional solutions. The Committee also makes recommendations which would assure establishment of new regional landfills. These recommendations, consistent with regional approaches in the Solid Waste Management Act and the federal RCRA, involve all of the Solid Waste Management participants in the landfill permit decision-making process (p. 37).

Although the development of a siting policy will eliminate some of the permit uncertainty which presently faces proposed landfill developers, it does not guarantee that the most appropriate landfill sites will be nominated for permitting. Recognizing the need for DEP to initiate the identification of suitable sites in priority-need regions, the LPR&IC recommends that the DEP prepare an inventory of potential landfill sites (p. 38).

In addition, the Committee makes a series of recommendations aimed at developing regional landfill alternatives. First, the Committee recommends the establishment of Regional Solid Waste Management Boards (pp. 38-39).

Second, the Committee recommends that CRRA initiate the development of landfill services in those areas of the state which are designated for priority development in the State Plan (p. 39).

Third, a specific landfill development structure is proposed in which landfill permit decisions would be made by the Regional Solid Waste Management Boards (p. 39).

Finally, a series of procedural changes in the Solid Waste Management Act are recommended (p. 40).

Remaining obstacle. Public Act 78-67 also permits any local "governing board to regulate through zoning, land usage for solid waste disposal." Subsequently, some local officials now interpret their legal authority to include banning the importation of solid wastes within their municipal boundaries. This interpretation could effectively reduce the ability of a private regional landfill developer to contract with municipalities (p. 41).

Given the critical nature of Connecticut's solid waste disposal capacities, the LPR&IC recommends that section 19-524b(c) of the general statutes be amended to preserve the state's authority to regulate and permit solid waste facilities, provided that such state standards do not interfere with those aspects of solid waste handling or disposal which are solely local in nature (p. 42).

CHAPTER IV. CRRA'S BRIDGEPORT PROJECT

A major purpose of this study is to describe and evaluate CRRA's policies and programs for implementing a statewide solid waste management strategy. However, a significant shortcoming of this report is the inability of the Committee and its staff to evaluate certain technical information which relates to resource recovery systems.

Complex and detailed legal, financial and engineering decisions have been made by the Authority with regard to the development of its first resource recovery system in Bridgeport. Not only does the LPR&IC lack the expertise required to evaluate those decisions, but it also is unwilling to "second guess" decisions made years ago in light of information which has only recently become available (p. 44).

Financing and contractual arrangements. The Bridgeport system is financed by Series A bonds totaling \$53 million issued by the Authority on September 15, 1976.

Section 19-524ee of the general statutes authorizes the CRRA to create and maintain a special capital reserve fund (SCRF). The SCRF amount is equal to the maximum amount of debt service payable in any given year (\$5,022,588) (p. 46).

According to the Bond Resolution (section 511) and the Authority's enabling legislation (C.G.S. 17-524ee), additional security is provided bondholders by the state whenever the SCRF falls below its required minimum (p. 47).

Based upon an analysis of the Bond Resolution, the Bridgeport contract and CRRA's enabling legislation, the Committee finds that the State of Connecticut would be required to refill and replenish, on a yearly basis if necessary, any depletion in the Authority's special capital reserve fund in the following limited circumstances:

- (1) Failure of the contractor to meet any debt service payments due up to the date of actual commercial operation.
- (2) Failure of any or all municipalities to pay established user fees for operation of the system.

Finally, the Committee finds that the contractual arrangements concerning the payment of debt service by the contractor prior to commercial operation date provides the state with a reasonable degree of financial protection. Because of the legal and technical uncertainty of the Bridgeport project, the Committee did not make any finding concerning the degree of financial protection for the state subsequent to commercial operation (p. 52).

Bridgeport technology. Given the fact that the Bridgeport project will be the first large scale commercial operation of a dust refuse derived fuel (RDF), and given the fact that the only small scale demonstration plant owned by the contractor exploded in 1977, the Committee sought to determine what technical risks were associated with the project's ECO-FUEL process (p. 56).

Based upon its analysis of published or public data, the Committee finds that there has been insufficient testing and commercial production and burning of the ECO-FUEL process. Therefore, to dissipate the technical risk associated with resource recovery development, the Committee recommends that the Authority's future projects not utilize a process based upon the production of a dust refuse derived fuel until the Bridgeport facility operating record is strong or until there is evidence of success in similar RDF plants (pp. 60-61).

Other contract problems. In reviewing the contract documents which relate to the construction of the Bridgeport resource recovery system the Committee found other major shortcomings. Specifically, the Committee makes recommendations concerning:

- the ability of participating municipalities to meet minimum solid waste contractual commitments (p.66);
- the installation of a glass separation subsystem (pp. 66-67); and
- the Authority's payment in lieu of taxes dispute with the City of Bridgeport (p.68).

CHAPTER V. CRRA ADMINISTRATION

Accountability. Because of CRRA's unusual quasi-governmental status, the Committee sought to examine those areas in which the Authority could be held more accountable to the legislature and the public, but at the same time allow the Authority flexibility with the private sector (p. 69).

The Committee makes specific recommendations concerning the:

- adoption of an affirmative action plan (p. 70);
- adoption of annual operating forecasts (p. 71);
- the review of potential conflicts of interest (p. 73);
- promulgation of formal procurement policies (p. 75); and
- adoption of municipal contract procedures (p. 77).

Project planning. The Authority presently plans to construct a major resource recovery facility in each of the following three regions:

- Bridgeport;
- Hartford; and
- New Haven.

These facilities are expected to service 60% of the state's solid waste needs. However, considerable difficulty has been experienced in developing the Bridgeport project, and the Authority's commitment to a second project appears confused (p. 77).

In order to plan and define appropriately its project development process, the Committee recommends that the Authority amend its existing operating plan to reflect various concerns listed in this report (p. 79).

Furthermore, in order to avoid any additional project delay, the Committee recommends that CRRA take administrative action to assure that the request for proposal prepared for the second project not be reopened to additional contractors unless the Authority can clearly demonstrate the financial and/or technical need to expand the selection process (p.82).

Refocusing CRRA planning. Given the fact that the three proposed major resource recovery facilities will service only 60% of the state's solid waste stream, the Committee has found a need for the Authority to redirect its planning and service goals. Chapter III of this report made recommendations which would direct CRRA to provide regional landfill services to those priority areas designated by the State Plan (p. 83).

In addition the Committee has recommended that the Authority develop a model source separation program which can serve as a basis for reducing the state's solid waste stream (p. 83).

The Committee finds that where large scale facilities are not feasible, small scale facilities provide a desirable alternative to landfills despite higher operating costs. Therefore, the Committee recommends that CRRA provide leadership and initiative in developing small scale facilities. Furthermore, the Committee recommends that regional small scale projects be supported through DEP's grant mechanism (p. 85).

CHAPTER VI. HAZARDOUS WASTE MANAGEMENT

Hazardous wastes are the dangerous residues of our highly industrialized and technology-based society. They may be solids, liquids, gases or sludges; almost all are toxic. RCRA, the federal hazardous waste management program, was enacted to regulate these wastes from "the cradle to the grave" (p. 86).

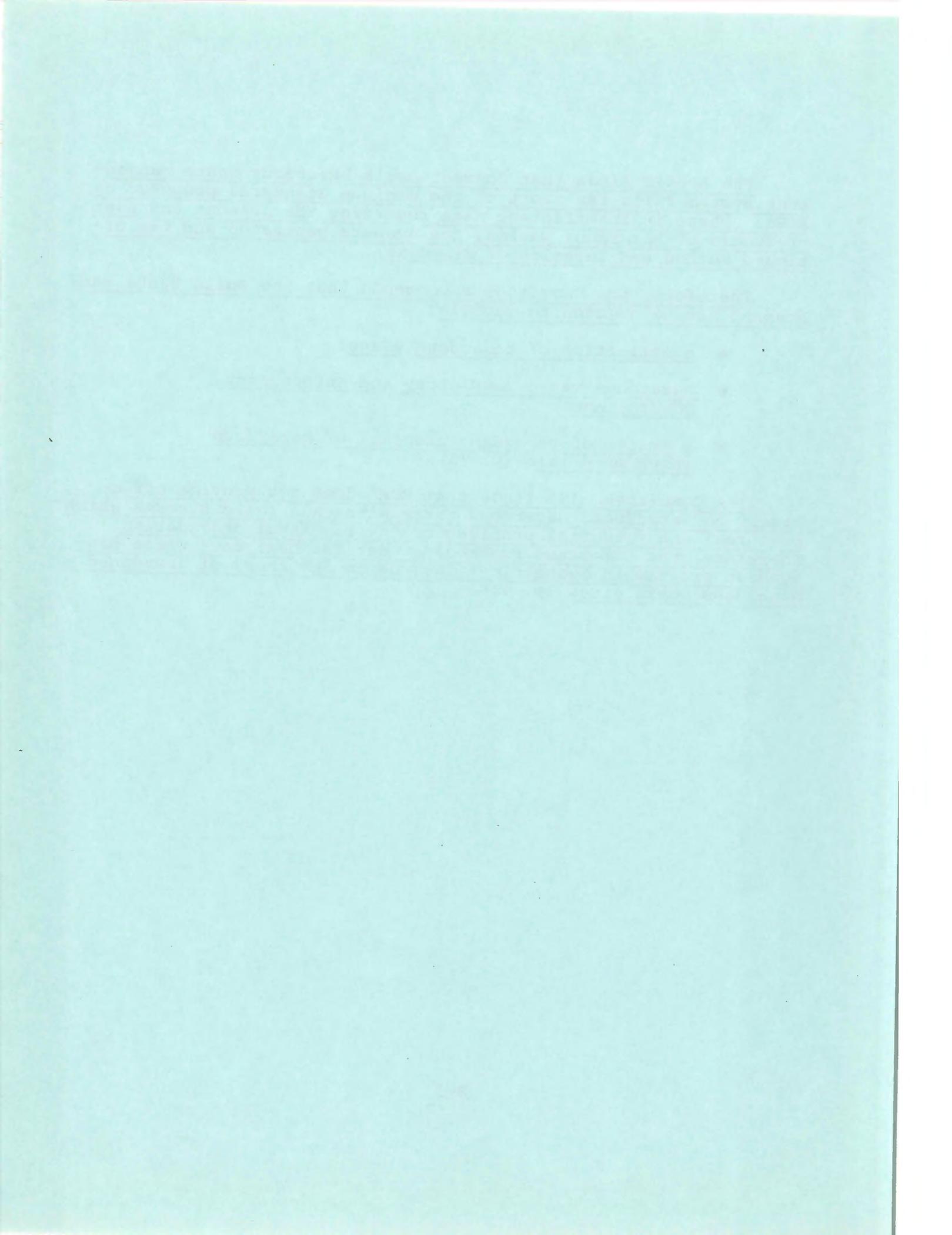
State programs for managing hazardous waste have been limited to date. For example, no statutory reference is made to hazardous wastes in the state Solid Waste Management Act. Departmental regulations for solid waste management, however, do define hazardous wastes in general terms (pp. 87-88).

The LPR&IC finds that Connecticut's hazardous waste management system falls far short of the minimum standards proposed by RCRA. There is insufficient data regarding the present and past producers of hazardous wastes, the amounts generated and the ultimate method and location of disposal.

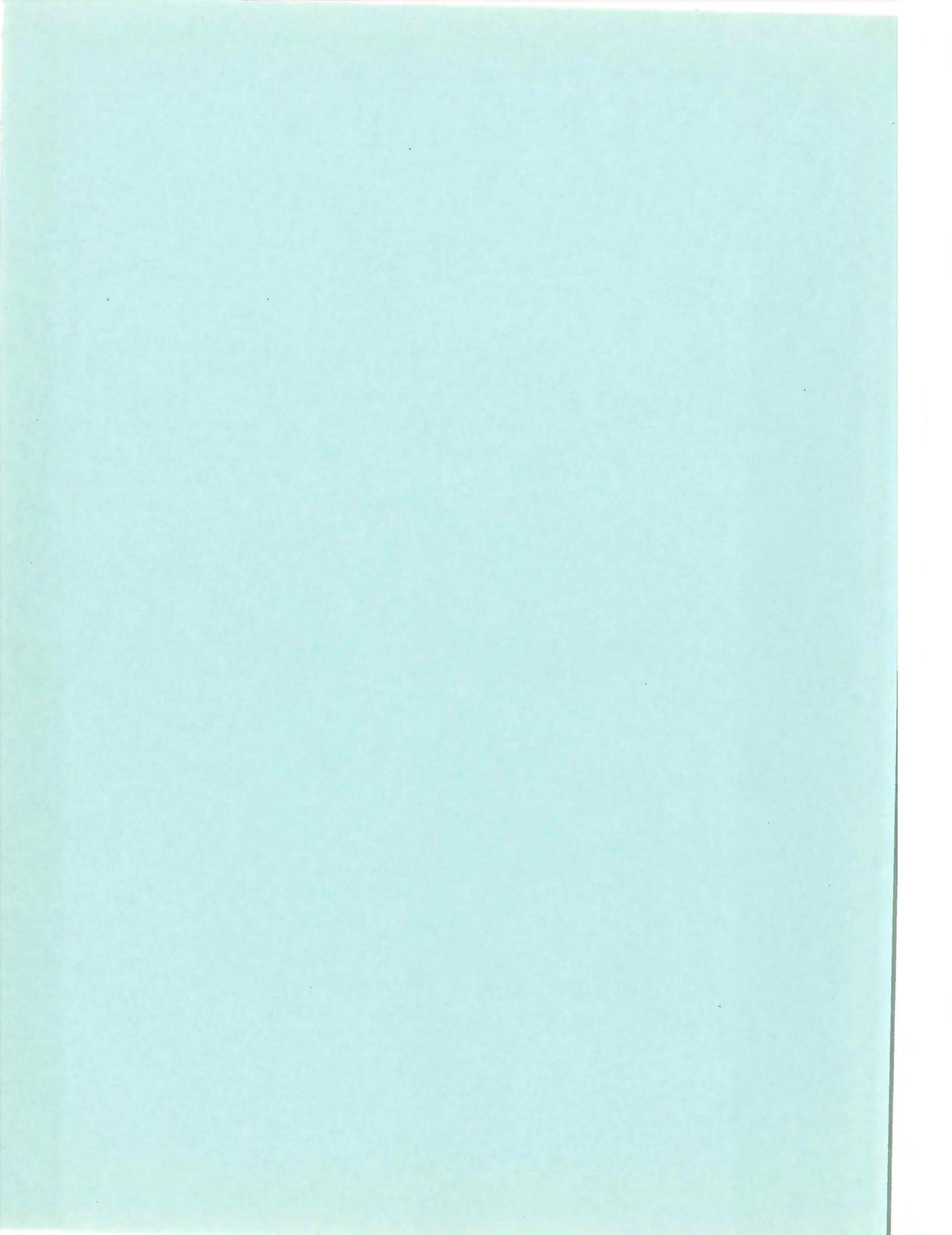
Therefore, the Committee recommends that the Solid Waste Management Act be amended to include:

- a definition of hazardous waste;
- hazardous waste regulatory and enforcement powers; and
- a system of recording disposal of hazardous waste materials (p. 90).

The Committee also finds that RCRA does not provide effectively for abandoned hazardous waste sites and waste streams which pose real and potential problems of environmental degradation. Therefore, the Committee recommends that the hazardous waste management program in Connecticut include an inventory of abandoned hazardous waste sites (p. 90).







CHAPTER ONE

PURPOSE AND SCOPE

Introduction

Purpose

Scope

Sources

Major Findings and Recommendations

Organization of the Report

Acknowledgments

CHAPTER I

PURPOSE AND SCOPE

Introduction

Solid waste regulation, planning, and enforcement in Connecticut are divided among various state, regional and local entities. While the coordination of the many phases and entities of solid waste management is both complex and tenuous, Connecticut law does mandate the distribution of responsibilities for solid waste activities.

Under the state law every municipality must make provisions for the safe and sanitary disposal of the solid wastes¹ generated within its borders. A municipality may operate its own facility, or it may contract with a private corporation, another municipality, or the quasi-public Connecticut Resources Recovery Authority (CRRA). The Department of Environmental Protection (DEP) is statutorily required to regulate the chosen method of waste disposal through permitting and enforcement.

The Department of Environmental Protection also has statutory responsibility for solid waste management planning. Implementation of solid waste plans and programs, however, is the responsibility of the self-supporting CRRA.²

Coordination of the multi-leveled planning process is encouraged by first, the mandate that CRRA adopt an annual operating plan which is considered in the State Plan and second, the requirement that regional and local plans conform to the State Plan.

In 1973 the first State Plan for managing solid waste disposal was prepared by General Electric. Implementation of the G. E. Plan has been limited to date largely because of its overly optimistic appraisal of the short-term viability of constructing resource recovery facilities. The Plan projected construction of

¹ Solid waste means any unwanted or discarded materials including solid, liquid, semi-solid or contained gaseous material.

² While DEP is an implementor of the State Plan with regard to technical assistance, permitting, and enforcement; CRRA is considered the implementor for purposes of providing state solid waste management services and facilities.

ten facilities by 1985. Construction of Connecticut's first resource recovery plant was to be completed in Bridgeport during 1976. By 1993 all landfills, except bulky wastes and residue sites were to be eliminated. However, technological difficulties and construction delays have forced postponement of operation at Bridgeport until early 1980 and the number of resource recovery facilities to be built in Connecticut has been reduced from ten to three. Between 1973 and 1978, eighteen other resource recovery facilities have been constructed nationwide.

A number of factors have contributed to Connecticut's delay. Resource recovery technology has not proceeded at the rate anticipated in the original State Plan. In addition, the Authority is charged by law to be self-supporting. However, in order to obtain financing, the Authority depends on voluntary commitments of solid waste from municipalities. Finally, landfill capacities have proved to be greater than projected by the State Plan. It is now apparent that Connecticut will continue to rely on landfills over the next five years and that at least a portion of the state will remain dependent upon landfills thereafter.

Meanwhile landfill problems have intensified, though not to the extent the G. E. Plan anticipated. More and more landfills have become overloaded and pollution problems continue. The problem is compounded by local opposition to new site selections, competition for prime sites with other, more accepted, land uses and DEP's reluctance to grant permits for new sites.

In the absence of new facilities, many municipalities are faced with unsatisfactory alternatives. One choice is to contract for disposing wastes at one of the few large, privately owned regional landfills where long-distance hauling and negotiated "tipping" fees result in sharply increased costs. Another alternative is to continue operation of the existing landfill in noncompliance with DEP regulations and orders. DEP, already hesitant to order the closing of a municipal landfill given the increased cost of new solutions to waste disposal, is now statutorily limited from ordering the closing of a landfill unless a "reasonable alternative has been provided" (P.A. 78-67).

Clearly the need to develop a strategy for solving solid waste management problems is confronting Connecticut policymakers. Such a strategy must be able to achieve the following:

- Coordinate the planning and regulatory function of DEP with the implementation role of CRRA;

- Delegate responsibilities where jurisdiction is unclear or where overlaps exist between CRRA and DEP;
- Comply with the federal mandate of the Resources Conservation and Recovery Act of 1976; and
- Resolve the inherent conflicts among the various participants--both service utilizers (residents) and service providers (municipalities, CRRA, and private contractors).

Purpose

The purpose of this review is to determine the adequacy of Connecticut's approach to managing its solid waste problems; whether laws need to be strengthened or modified; and whether appropriate controls exist to assure accountability over CRRA's operations. The review was authorized by the Legislative Program Review and Investigations Committee on March 2, 1978 at the request of the Committee on Environment.

Scope

This study focuses on the planning, permitting, technical assistance and enforcement functions of the Solid Waste Management Unit (SWMU) of DEP. Also examined are the statutory and administrative mandates of the Connecticut Resources Recovery Authority. Particular importance is placed upon the progress of CRRA in implementing the state's plan for resource recovery systems.

Sources

Information for this report was gathered from a wide variety of sources. Documents from federal, state, and private agencies, as well as current literature in the field of solid waste management practices were reviewed. More than 70 interviews were conducted with DEP, and other state agency officials; CRRA Board of Directors and staff, citizen groups, and contractors associated with the Bridgeport resource recovery system.

The Committee held a public hearing on February 6, 1979 and received testimony from state and municipal officials and citizens concerned with the solid waste management crisis. The Committee also conducted a survey of all 169 municipalities, and over 20 private landfill operators in order to evaluate the

technical assistance provided by DEP. LPR&IC staff members made site visits to the Bridgeport resource recovery facility and to various landfill operations.

Major Findings and Recommendations

When the legislature created the Connecticut Resources Recovery Authority in 1973, a consultant recommended that 10 resource recovery facilities could service the entire state and that the use of landfills could be minimized. Today, however, the state is faced with a critical landfill shortage and existing plans for three resource recovery facilities do not meet this need.

Given the fact that an estimated 92 Connecticut communities will require additional landfill capacity by 1983, the Committee recommends the immediate development of a landfill siting policy. In addition, the Committee recommends that the Department of Environmental Protection develop a state-wide inventory of public and private lands which conform to a well planned siting policy. Also recommended is a new landfill permit mechanism which assures continuation of critical local and regional decisionmaking.

The Committee also examined the activities of the Connecticut Resources Recovery Authority. Because large scale resource recovery facilities can be expected to service only 60% of the solid waste generated in the state, the Committee recommends that the Authority redirect its efforts to include small scale technology projects and source separation programs. In addition, the Authority should provide landfill services to those areas of the state which will not be served by a major resource recovery project.

The Committee makes more than two dozen additional recommendations in this report aimed at improving the delivery of solid waste management services in Connecticut.

Organization of the Report

Chapter II provides an overview of solid waste management in Connecticut, the creation of DEP and CRRA, their mandates, staffs and budget. Chapter III examines landfill related issues and DEP's administration of a solid waste regulatory and enforcement program. Chapter IV reviews CRRA's major activity to date, i.e. construction of the Bridgeport resource recovery system. Chapter V addresses CRRA administrative issues. Finally, Chapter VI describes the problems related to the regulation of sources of hazardous waste in Connecticut.

Appendices follow containing more detailed information on a variety of issues. Appendix I-1 is a glossary of solid waste management terms, and Appendix I-2 contains "agency responses" to this report from the Commissioner of Environmental Protection, the President of the Connecticut Resources Recovery Authority, and the Solid Waste Management Advisory Council.

Acknowledgments

The Legislative Program Review and Investigations Committee and its staff wish to thank DEP Commissioner Stanley J. Pac, CRRA President Russell L. Brenneman, and many others in both agencies for their exceptional cooperation and candor. In addition, we wish to express our appreciation to the many persons throughout the state who gave freely of their time to assist in this study. Finally, the Committee gives special thanks to its Secretary, Mary Lou Gilchrist and its Stenographer, Lillian B. Crovo, for their patience, care and endurance in preparing this report.

CHAPTER TWO

OVERVIEW OF SOLID WASTE MANAGEMENT

Background

Connecticut's Statutory Mandates

Department of Health

Department of Environmental Protection

Public Act 78-67

Connecticut Resources Recovery Authority

Organizational Overview: SWMU

Staffing and budget

Organizational Overview: CRRA

Board of Directors

CHAPTER II

OVERVIEW OF SOLID WASTE MANAGEMENT

Responsibility for solid waste disposal rests primarily with each municipality (C.G.S. 19-524n). However, landfill disposal areas and operating practices are regulated on both the state and federal levels. Federal regulation exists under the Resource Conservation and Recovery Act of 1976 (RCRA). State regulation of solid waste planning, facility permit review and enforcement exists under the Solid Waste Management Act (Chapter 361a). Though the Connecticut Resources Recovery Act does not have regulatory powers, it assists municipalities seeking regional alternatives to landfill disposal (P.A. 73-459).

Municipalities receive technical assistance from DEP's Solid Waste Management Unit for planning, site surveys, operator training and assistance and source separation programs. The costs of providing solid waste management is also primarily a local responsibility.¹ However, the Department of Environmental Protection has a financial grant program for the development of regional solid waste plans, design and construction of solid waste facilities and landfill equipment. No state funds are available to assist municipalities for current landfill operating expenses. Federal financial participation is limited to subsidizing the state's regulatory program.

Given the fragmented roles and responsibilities for solid waste management and the limited financial assistance from state and federal government, the availability of reasonable landfill alternatives remain remote.

Background

Approximately 80-90% of all solid waste generated in the United States is disposed in landfills. Connecticut generates over 6,000 tons of mixed municipal waste per day or over six pounds per person per day. Virtually all of this waste is disposed in 172 public and private landfill sites. Over 50 Connecticut communities dispose their solid waste outside of their

¹ The actual costs associated with solid waste disposal in Connecticut is undetermined. A 1978 Office of Legislative Research survey of eight Hartford area communities estimated that disposal costs ranged from \$2.65 to \$19.17 per ton. Collection costs ranged from \$7.71 to \$32.20 per ton of solid waste.

municipal boundaries (See Figure II-1). This represents a six fold increase in ten years. Within the next five years there will be over 5.6 million tons of solid waste generated in Connecticut without a known tipping area. Yet there will be only an estimated 2.4 million tons of uncommitted capacity at existing DEP permitted landfills (See Figure II-2).¹ Finally, there are no commercial facilities available for the disposal of hazardous wastes in New England.

Because of local opposition to landfills and lack of suitable land, many cities and states are reviewing alternative methods of waste management. Poorly operated landfills are associated with significant health and environmental problems and virtually all landfills produce contaminated water called leachate.² This leachate has the potential of contaminating ground and surface waters or a public water supply.

A major alternative available to landfill users is resource recovery. Resource recovery is the recovery and reuse of waste materials or the conversion of energy from solid waste. More than twenty states have enacted legislation which encourages the utilization of resource recovery systems. In 1977, only 7% of the nation's solid waste stream was recycled or recovered, primarily through paper, glass, or aluminum source separation programs.

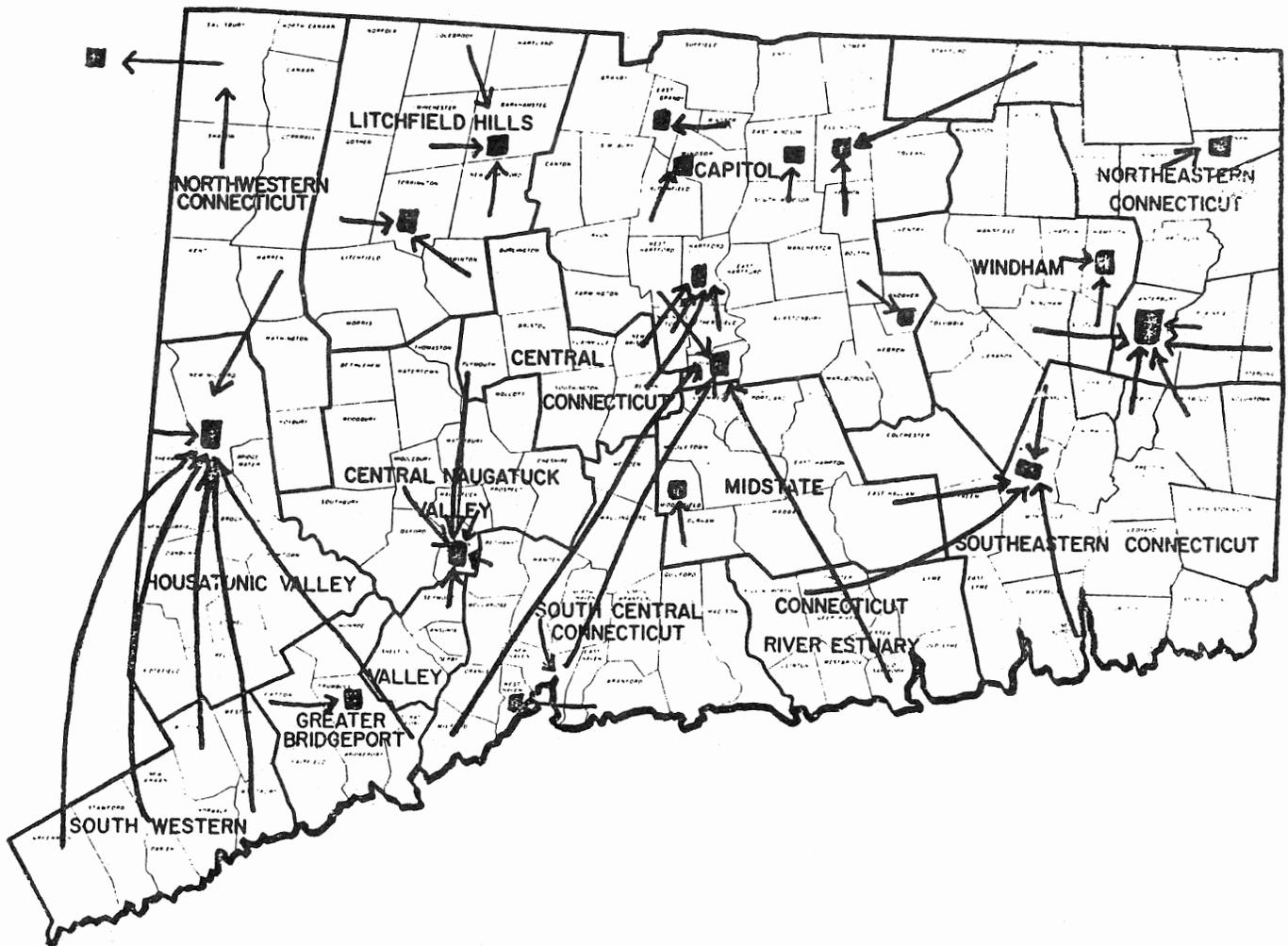
Furthermore, only one percent of the nation's waste is converted to energy. Denmark currently converts 60% of its waste into energy. Whereas, resource recovery has been successful in Europe,³ only 18 facilities have been contracted for or are in operation in the United States today.

¹ See Solid Waste Disposal Capacity State of Connecticut 1979-1983, Fuss and O'Neil, Consulting Engineers, December, 1978.

² Leachate is a liquid which is comprised of chemicals produced by solid wastes combined with water which infiltrates a disposal site. Natural resource factors, including the type and the amount of soil under the site and the extent of adjacent or nearby underground water sources (aquifers) can minimize or eliminate pollution to the groundwater.

³ The primary reasons for the earlier development of resource recovery systems in Europe were a greater scarcity of suitable landfill sites and increased energy costs.

Figure II-1. Towns Transporting Their Solid Waste to Other Communities.¹



¹ As of October, 1978.

Source: Council on Environmental Quality.

Finally, the Resource Conservation and Recovery Act of 1976 established a policy of direct federal involvement in solid waste management. Incentives for adoption of conforming state programs are provided through federal financial and technical assistance.

Connecticut's Statutory Mandate

Department of Health. In 1959, only nine Connecticut municipalities operated a sanitary landfill.¹ An additional 112 cities and towns operated open-face, burning dumps which were not regulated by any state agency. In 1965, the State Department of Health was authorized (C.G.S. 25-26) to regulate all refuse disposal areas in the state. On June 7, 1966, the Public Health Code was amended to prohibit the use of open-face burning dumps. Municipalities were further required to use the sanitary landfill method of solid waste disposal.

Department of Environmental Protection. Section 22a-1, of the Connecticut General Statutes, the Department's policy on the environment, designates the role of the state

to conserve, improve and protect its natural resources and environment and to control air, land and water pollution in order to enhance the health, safety and welfare of the people of the state.

To implement this policy, the Commissioner of Environmental Protection was authorized in 1971 to

...administer and enforce the planning and implementation requirements of this chapter (361a). He shall examine all existing or proposed solid waste facilities and provide for their planning, design, construction and operation in a manner which ensures against pollution of the waters of the state, prevents

¹ A "sanitary landfill" is defined by the American Society of Civil Engineers as, "a method of disposing of refuse on the land without creating nuisances or hazards to public health or safety, by utilizing the principles of engineering to confine the refuse to the smallest practical area, to reduce it to the smallest practical volume and to cover it with a layer of earth at the conclusion of each day's operation, or at such more frequent intervals as may be necessary." If solid waste must be disposed of on the land, a sanitary landfill is the only environmentally acceptable means. (Solid Waste Dictionary, National Wildlife Federation, 1979).

the harboring of vectors, prevents fire and explosion and minimizes the emission of objectionable odors, dust or other air pollutants so that health, safety, and welfare of the people of the state shall be safeguarded and enhanced and the natural resources of the environment of the state may be conserved, improved and protected.

In addition, the statutes mandate the Commissioner of Environmental Protection to:

- order the alteration, extension, limitation, closure or replacement of such facilities... provided before ordering the closure of any solid waste facility, said commissioner shall provide reasonable alternative facilities for users of such facility;
- approve all plans for the design, construction, and operation of any solid waste facility, provided, nothing shall be construed to limit the right of any local governing body to regulate, through zoning, land usage for solid waste disposal;
- be responsible for the preparation of a solid waste management plan for each solid waste planning region of the state;
- certify the qualifications of all solid waste facility operators;
- approve all municipal solid waste contracts that involve transportation and disposal outside the boundaries of the municipality in which the waste was generated; and
- make grants to municipal and regional authorities for the planning, design and construction of solid waste and volume reduction plants, and improvements to solid waste facilities.

Public Act 78-67. In 1978, the General Assembly enacted legislation (P.A. 78-67) which was intended to limit DEP's regulatory power in two areas. The Legislative Program Review and Investigations Committee is concerned about the substantive

effect this legislation will have on DEP's regulatory programs. Considerable confusion continues to exist between municipal authorities and DEP officials concerning the proper interpretation of these provisions.

The first provision requires DEP to provide the user of any solid waste facility with "reasonable alternative facilities" prior to the closure of any landfill operation. This requirement could substantially limit DEP's enforcement authority. To date, one private landfill has been ordered closed under this provision. As a result, the private operator is challenging DEP's interpretation of a reasonable alternative facility as overly restrictive. DEP's enforcement program and the effects of this legislative restriction are discussed more fully in Chapter III.

Secondly, Public Act 78-67 permits any local "governing board to regulate, through zoning, land usage for solid waste disposal." This provision was enacted following a controversial and complicated permit authorization to a private contractor in Colchester by DEP. DEP's authority was subsequently upheld by a Superior Court decision, Colchester v. Reduction Associates. The court ruled that DEP's legislation preempted solid waste management regulation. Therefore, municipalities were precluded from enacting or enforcing zoning regulations which could conflict with the state's regulatory powers.¹

P.A. 78-67 attempted to retain local authority over such decisions. However, some municipalities tried to utilize their zoning power either to prohibit landfill siting within their boundaries or to prohibit the disposal of waste which originates from another municipality. With more than 50 Connecticut communities disposing of wastes beyond their geographic boundaries, such legislation has the potential of restricting suitable regional approaches to solid waste disposal.

Connecticut Resources Recovery Authority. In 1973, the General Assembly created the Connecticut Resources Recovery Authority--the nation's first quasi-public agency charged with implementing a statewide solid waste management plan.

The Solid Waste Management Services Act, which established the CRRA, set forth the state's basic policy and goals regarding waste disposal and resources recovery:

¹ DEP had granted a permit modification to the contractor to dispose of unbaled waste in a landfill site which the town had zoned and permitted only for the disposal of baled waste.

- that maximum resources recovery from solid waste and maximum recycling and reuse of resources to protect, preserve and enhance the environment;
- that solid waste disposal and resources recovery facilities are to be implemented either by the State of Connecticut or under state auspices;
- that appropriate governmental structure and support are to be provided so that effective state systems and facilities for solid waste management and large-scale resources recovery may be developed;
- that private industry is to be utilized to the maximum extent feasible to perform planning, design, management, construction, operation, manufacturing and marketing functions related to solid waste disposal and resources recovery;
- that solid waste disposal services shall be provided for municipal and regional authorities and private persons in the state, at reasonable cost, in accordance with the statewide solid waste management plan and that any revenues received from the operation of state systems and facilities shall be redistributed to the users of such services; and
- that the authority shall have responsibility for implementing solid waste disposal and resources recovery systems and facilities and solid waste management services where necessary and desirable throughout the state in accordance with the state solid waste management plan.

The CRRA's powers, functions, and duties regarding contracts, fiscal arrangements, bonding, and condemnation are articulated in Chapter 361b, the Solid Waste Management Services Act. In addition, the legislation authorizes the establishment of the Connecticut Solid Waste Management Advisory Council (see p. 19).

Before reviewing the major activities undertaken by CRRA, the following information concerning the Authority's enabling legislation should be understood:

- CRRA is a quasi-public agency which is independent of the three branches of Connecticut government. The Authority's only powers are those prescribed by the Solid Waste Management Services Act.
- Current CRRA operating expenses are not supported through state appropriations.
- CRRA projects are capitalized through revenue bonds issued by the Authority. Bonds are paid through user fees and revenues derived from the sale of recovered products. Each CRRA project must be found capable of self-sufficiency before any borrowing can be initiated.
- CRRA has no regulatory authority. Municipal participation in any regional or statewide CRRA project is voluntary.
- CRRA policy is formulated by a ten member Board of Directors.
- CRRA staff is statutorily limited to a maximum of 30 persons.

Organizational Overview: Solid Waste Management Unit

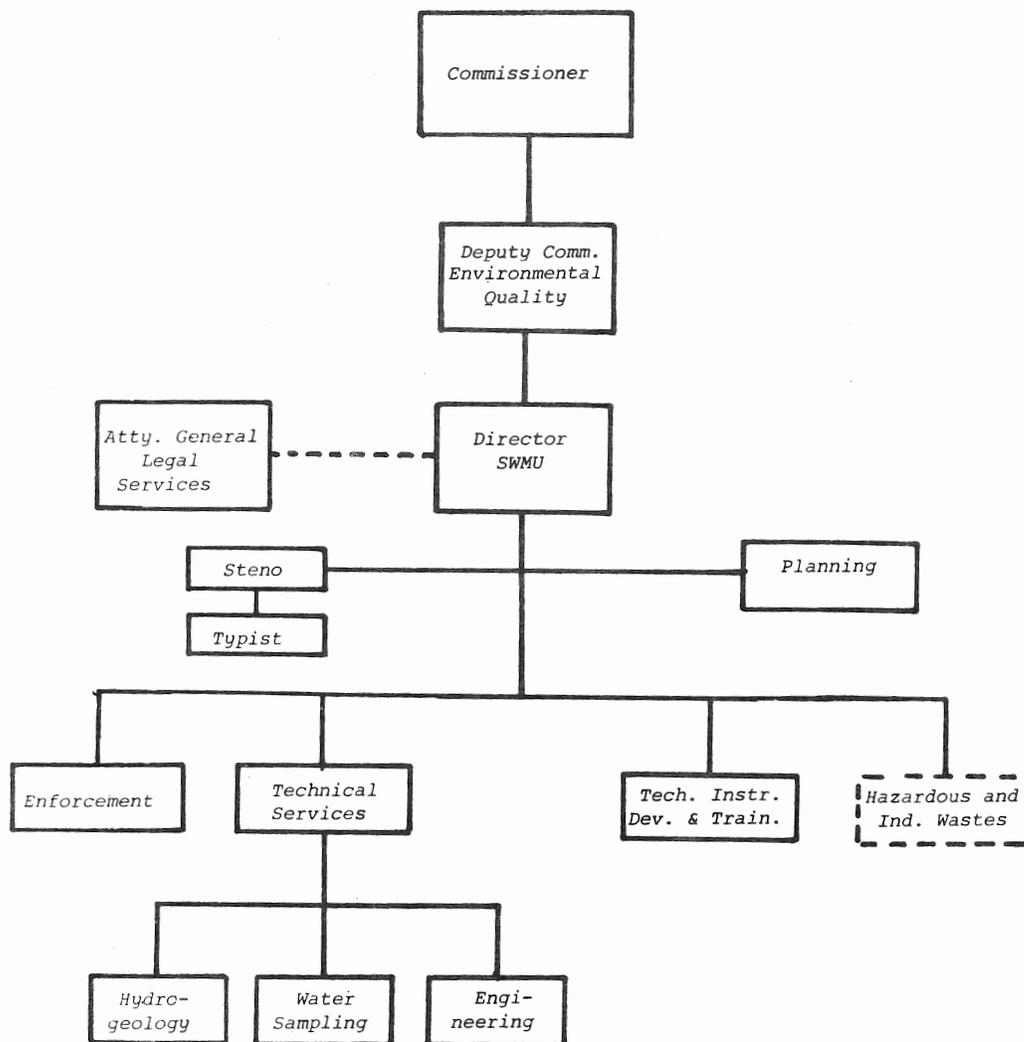
In 1971 the General Assembly established the State Department of Environmental Protection (P.A. 71-872). The new Department was primarily a consolidation of existing environmental agencies and offices operating in the Department of Agriculture and Natural Resources and the Department of Health. Presently, DEP is organized into two major divisions: Division of Conservation and Preservation and the Division of Environmental Quality.¹ The Solid Waste Management Unit is within the Division of Environmental Quality.

Staffing and budget. The Director of the Solid Waste Management Unit is responsible for the following three major functions (see Figure II-3):

¹ For a further examination of DEP's organizational structure see this Committee's report entitled "An Investigation of the Department of Environmental Protection," December 21, 1976.

- planning (state and local solid waste management plans);
- technical services (permit processing and technical assistance to municipalities and private operators); and
- enforcement.

Figure II-3. SWMU Table of Organization.



Source: Department of Environmental Protection.

The Solid Waste Management Unit (SWMU) currently employs twenty-two full-time professional staff persons and three federally funded part-time persons. The Unit's budget in FY 78 was \$501,720. Approximately 40% of this amount was federally funded.

The FY 79 Solid Waste Management Unit's budget is estimated at \$461,567.00, excluding projected expenditures for the hazardous and industrial waste program. A separate Hazardous and Industrial Materials Management Unit was created recently with federal funds (Resource Conservation and Recovery Act) at a level of \$179,100. Four SWMU employees who had been responsible for hazardous and industrial wastes (prior to 1979) have been transferred to the new unit. Four additional professional employees will be hired on federal funds.

Organizational Overview: Connecticut Resources Recovery Authority

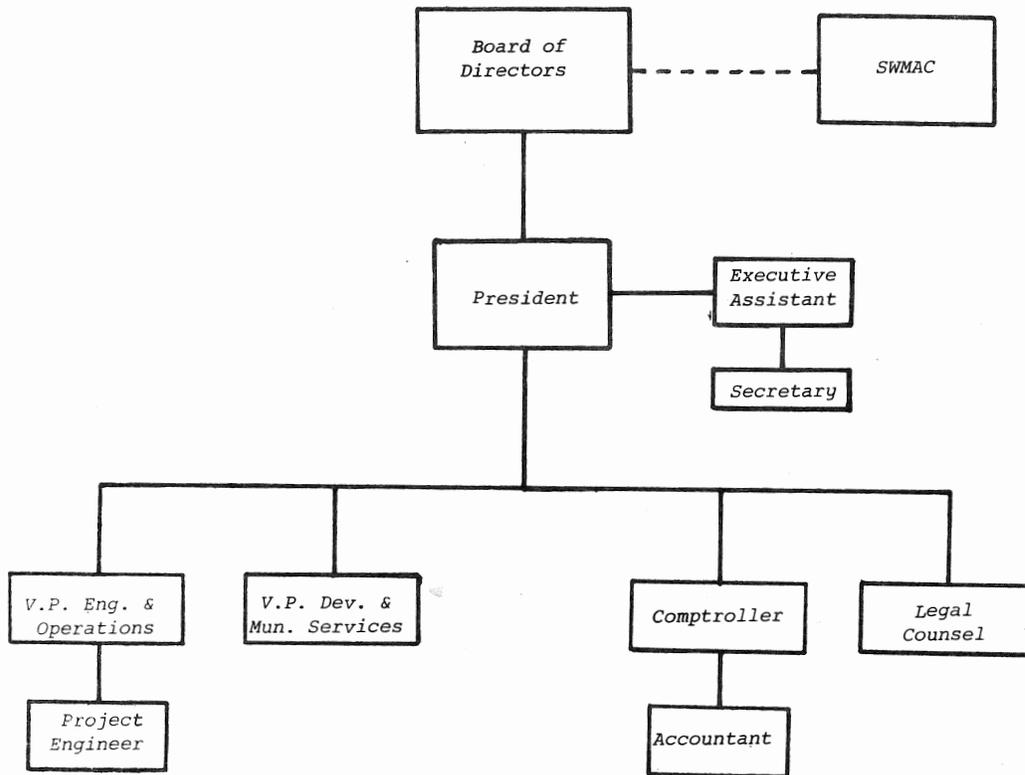
Board of Directors. CRRA policy is formulated by a ten member board of directors. Membership includes:

- four appointed by the Governor with the advice and consent of the General Assembly;
- three ex-officio, voting members consisting of the Commissioners of Environmental Protection, Transportation, and the Secretary of Policy and Management;
- one senator appointed by the President Pro Tempore of the Senate;
- one representative appointed by the Speaker of the House; and
- one ex-officio, non-voting member, the chairman of the Connecticut Solid Waste Management Advisory Council.

Of the four members appointed by the Governor, two must be municipal officials. The remaining two gubernatorial appointments are public members who have experience in "municipal or corporate finance or business or industry." CRRA's chairman is designated by the Governor. The chairman, with the approval of the Board, appoints a President who is the chief executive officer of the Authority.

Connecticut General Statutes section 19-524x authorizes CRRA to "employ a staff not to exceed thirty personnel." The Authority establishes the duties, qualifications and compensation of all staff. Present CRRA staff include seven professional and two clerical positions (see Figure II-4). Personnel costs for FY 79 are estimated at \$275,000.

Figure II-4. CRRA Table of Organization



Source: Connecticut Resources Recovery Authority.

The Committee found the following three problem areas in the composition of the Board of Directors.

First, the Committee reviewed attendance and participation by Board members and found that attendance averaged 73%. However, this rate does not reflect actual attendance by official Board members because substitute delegates have been voting with authorization since 1975. Some substitute members are unfamiliar with the complexity of CRRA operations and hinder continuity in CRRA policy making decisions. Discounting the use of substitutes, actual CRRA member attendance has averaged only 59% since 1975.

Recognizing the problem created by the use of delegates, the Authority revised and limited its policy on the appointment of delegates on March 1, 1979.

The Committee finds that there is a need to delegate limited directorship responsibilities and that the manner recently outlined by the Authority is generally adequate. However, the Committee recommends that the use of delegates should be limited in the following manner:

1. No more than one individual shall be designated as a delegate by any one Director during any fiscal year.
2. Any person named a delegate by the Commissioners of Transportation, Environmental Protection, or Office of Policy and Management shall have a high level policy making role within the Department represented.
3. Any person named a delegate by a legislative member shall be a member of the joint legislative committee having jurisdiction over environmental matters (see recommendation p. 19).

A second issue of Committee concern is the appointment of legislative members to the Authority. At the present time the Board of Directors consists of one senator appointed by the President Pro Tempore of the senate and one representative appointed by the Speaker of the House.

The Committee believes that legislative membership is required because of the General Assembly's oversight responsibility. Unfortunately, the present method of legislative

appointment does not assure direct oversight by the Environment Committee which has jurisdiction over legislation affecting the Authority. The lack of formal communication between the Authority and the General Assembly's Environment Committee has been a concern throughout this review.

Section 19-524u of the general statutes requires CRRA to submit quarterly reports to the Governor and annual reports to the General Assembly. While the Authority has fulfilled its reporting requirements to the Governor, the LPR&IC finds that it has failed to report to the General Assembly for fiscal years 1975, 1976, and 1977. The Committee further finds that more consistent oversight of CRRA could be achieved through the appointment of legislative members who have an ability to review CRRA activities in conjunction with DEP programs. Therefore, the Legislative Program Review and Investigations Committee recommends that Section 19-524t of the general statutes be amended to provide the appointment of two legislative Directors to the Authority who, at the time of their appointment, are members of the joint legislative committee having jurisdiction over environmental matters. One Director appointed must be a co-chairman of said committee. The second Director so appointed must be a Ranking Minority member of said committee having jurisdiction over environmental matters. The two Directors must be appointed in a manner that assures representation from both chambers of the General Assembly.

A third issue concerning CRRA board membership has been repeated attempts to make the chairman of the Solid Waste Management Advisory Council (SWMAC) a voting member of the Board of Directors. As previously noted, the SWMAC chairman presently serves as a non-voting ex officio member of the Board.

The SWMAC is a thirty-one member board composed of representatives of regional planning agencies, business and industry, and the general public. The Council reviews solid waste management problems and programs in the state and makes comments and recommendations to the Authority. In addition, the SWMAC is required to review CRRA's annual operating plan.

CRRA's Board of Directors has consistently endorsed legislation which would provide the SWMAC with voting membership on the Authority. The Board has noted that the SWMAC has demonstrated a high degree of expertise in solid waste issues and has contributed greatly in formulating CRRA policy. Despite this support, legislation which would provide the SWMAC with voting membership on CRRA has failed twice. However, in 1979 the General

Assembly enacted legislation (P.A. 79-198) providing voting membership on CRRA by the Chairman of the Solid Waste Management Advisory Council. The Committee believes that this action was appropriate given the diversity of environmental, business and other interests which are represented by the Council.

CHAPTER THREE

LANDFILLS

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CHAPTER III

LANDFILLS

Overview

In recent years, federal and state policies have been adopted which articulate a commitment to preserve and enhance the natural environment. This has necessitated refocusing solid waste management from a disposal problem handled exclusively at the local level to include environmental problems identified as state concerns. While the responsibility for the disposal of solid waste remains with the municipalities, planning and regulation have become important activities at the state level.

Although land disposal continues as the primary means of solid waste disposal, changes have occurred during the past decade. Importantly, open face dumps, where refuse was burned daily, have been outlawed and replaced by sanitary landfills where spreading, compacting and covering of solid waste with earth is required. Some of these landfills are entirely new; others are on site conversions of former open face dumps. Also significant is the increased state regulation of solid waste facilities which originated in the Department of Health during the 1960's but was transferred to and strengthened by the Department of Environmental Protection when it was established in 1971.

The 1971 Solid Waste Management Act empowered the Commissioner of DEP to grant permits for new or expanded sites if environmental criteria are met.¹ The Department also attempts to permit older sites which meet minimum environmental standards. However, because many of these older sites are non-conforming, only 53% of the mixed waste landfill sites are permitted. (See Table III-1)

¹ It should be noted that although permitted landfills are less likely to create water pollution problems for those landfills permitted prior to 1971, the environmental standards were less stringent. Of the 25 Connecticut sites identified in the United States Geological Survey inventory of potentially water-polluting landfills, 13 were permitted sites.

Table III-1. Permitted Mixed Waste Sites - 1978.

<u>Ownership</u>	<u># Permitted</u>	<u>% Permitted</u>
Private	16	85
Municipal	<u>49</u>	<u>50</u>
Total	65	53

Source: Solid Waste Management Unit, Department of Environmental Protection.

Two other changes in land disposal should be noted. First, although mixed-waste sites remain predominant (Table III-2), the number of sites which receive bulky waste¹ only has increased sharply. Similarly, the number of large, privately owned regional sites which contract for services with municipalities has expanded. The reasons for this are explained below.

Table III-2. Landfills - 1977 and 1978.

	<u>1977</u>	<u>1978</u>
Mixed waste sites	122	121
Bulky waste sites	34	42
Industrial sites	5 ¹	5 ¹
State institutions and parks	<u>4</u>	<u>4</u>
Total	165	172

¹ Known and routinely inspected but assumed to be many more not known to DEP. (See Chapter VI)

Source: Solid Waste Management Unit, Department of Environmental Protection.

¹ A solid waste facility which permits disposal of large and/or bulky items such as construction or demolition wastes, appliances, furniture and tree stumps.

Predicted landfill shortage. The most recent State Solid Waste Management Plan, written in 1973, predicted acute landfill capacity shortages during the next decade unless new solutions were developed. In view of this, the Plan proposed construction of ten resource recovery facilities to replace existing landfills. Although the Plan has not been implemented, the predicted critical shortages have not occurred. This does not mean shortages do not exist. Rather, the crisis has been delayed by passage of P.A. 78-67 which prohibits DEP closure of a landfill unless a "reasonable alternative" has been provided. It is important to note that although non-closure alleviates a municipality's immediate disposal problem, it also increases the likelihood of environmental degradation and does not provide a long term solution.

A second factor which has averted the crisis is the on-site expansion of landfills where additional land is available and conditions are adequate for permitting. In some instances, the expanded sites have been limited to bulky waste which require less restrictive environmental standards.

Finally, improved management practices at some landfills have enabled more efficient use of the site and therefore have extended the viable life of the site.

In addition to the absence of operant, resource recovery facilities, a variety of conditions has intensified the precarious situation faced in many municipalities today. These include: (1) the increased amount of solid waste generated and an absence of source separation programs to reduce the waste stream, and (2) the recent void in new site permit issuance resulting from a decline in applications and denial of two of the three most recently submitted.¹

Local Alternatives

When a municipality is faced with the decision to seek additional landfill capacity, several options may be available. The most favored alternative is the expansion of the existing municipal facility because it offers the lowest site development cost and generates the least local opposition. Construction of a separate bulky waste site is also a viable alternative to on site expansion because of the relative ease

¹ The permit applications were for private regional landfills in Seymour and Windham submitted during 1977-1978.

in obtaining a permit and the usual absence of local opposition. The third option, selection of a new mixed waste site which meets environmental standards, incurs expensive acquisition and engineering costs, is likely to generate widespread neighborhood opposition, and faces uncertain permit approval. In fact and regardless of cost, suitable sites do not exist in every municipality (see Appendix III-1).

The fourth option, not always available, is contracting with a private regional landfill operator. Of the 20 regional sites (Table III-3), only eight are municipally owned. This reflects the general municipal reluctance to become involved in solid waste management as a business.¹ Although the number of private regional operators increased between 1973 and 1977, permit applications have ceased. This cessation follows denial of the Seymour and Windham applications. Both applications are, at the time of this writing, in litigation.

Table III-3. Ownership and Service Area of Mixed Waste Sites - September, 1978.

<u>Ownership</u>	<u># Regional Site</u>	<u># Single Municipality</u>	<u># Municipalities Served</u>
Private	10	7 ¹	48
Municipal	8	92	112
District	<u>2</u>	<u>0</u>	<u>6</u>
Total	20	99	166 ²

¹ Does not include two which are inactive.

² Several towns dispose out-of-state.

Source: Solid Waste Management Unit, Department of Environmental Protection.

¹ A notable exception is the City of Hartford which contracts with other municipalities to accept their solid waste.

Future regional landfills. The regional landfill alternative has been selected by more than 50 municipalities to date. Others have rejected this solution on the basis of cost¹ which includes a wide ranging negotiated tipping fee, fees for transportation to the regional site and, usually, construction of a local transfer station.² It is anticipated that a portion of the estimated 92 municipalities needing new sites before 1983³ will select the regional landfill alternative, as other options become less viable or more costly. The frequency at which this occurs will depend upon the uncommitted capacity and geographic location of regional landfills. Development and implementation of the proposed strategy outlined below will enhance the viability of the regional landfill option.

Siting Policy

The responsibility for solid waste management is a shared responsibility between the DEP and municipalities. However, each municipality is mandated to provide for the disposal of solid waste generated within its borders (C.G.S. 19-524n(a)). The DEP is mandated to regulate solid waste disposal through permitting and enforcement. Some municipalities criticize DEP as over-zealous in its regulatory activities citing the lack of Departmental initiative in developing solid waste management solutions. This conflict has resulted in widespread reluctance to expand the role of DEP to facilitator.

Following lengthy discussions, the LPR&IC concluded that DEP is the appropriate body to lead solid waste management planning, regulating and enforcing activities. Permitting and site development, while necessarily coordinated activities, are more appropriately placed with proposed Regional Boards and CRRA (see recommendations pp. 38-41).

A siting policy provides and ensures siting of landfills where they are most appropriate and most needed. The permitting

¹ Interestingly, however, few municipalities are aware of the actual cost of a town-operated sanitary landfill since employees and equipment are often interchanged with other public works responsibilities.

² Any facility which serves as a point for the collection and transfer of solid waste to another facility.

³ According to projections in the Fuss and O'Neil Report, p.2.

of new landfills in needed areas of the state would allow DEP to order closure of exhausted or polluting landfills without jeopardizing a municipality's ability to dispose its solid waste. The developer assumes a higher degree of risk since there is no assurance that the Commissioner will issue a permit even if the application is supported by the aforementioned DEP staff. In fact, this occurred with the denial of the Seymour and Windham applications. The Department is also placed at a disadvantage because it is unable to direct site development where new landfills are needed and most appropriate.

The LPR&IC finds that a comprehensive siting policy is a necessary prerequisite to establishing a systematic approach to landfill siting. The policy should include geographical suitability, proximity to underground water supplies, location of drainage basins, impact on surface water, transportation routes, zoning and existing land uses. Recognizing the difficulty of developing specific criteria, the LPR&IC concluded that the siting policy should reflect input from a diversity of expert sources. At the same time, the LPR&IC agreed that there must be a single authority to adopt the siting policy and that the DEP is the most appropriate body to assume this responsibility.

Therefore, the LPR&IC recommends that the Commissioner of Environmental Protection establish immediately an Ad Hoc Committee on Siting Policy. The Committee would be comprised of the Commissioner as ex officio and designees from the following: Department of Health, Department of Transportation, CRRA, Council on Environmental Quality, Solid Waste Management Advisory Council, Connecticut Industrial Waste Management and Recovery Task Force, (DEP) Solid Waste Management Unit, (DEP) Office of Water Compliance, (DEP) Hazardous Materials Management Unit, one municipality with a population greater than 50,000, one municipality with a population of 20,000 to 50,000, one municipality with a population less than 20,000, two members of the Environment Committee (one majority and one minority), and two members of the Committee on Planning and Development (one majority and one minority). Members would be appointed by the chief administrative officer of the involved agency except for the municipal representatives who would be appointed by the Commissioner. Legislative members would be appointed by the co-chairmen of the designated committees. Staff would be provided by DEP's Natural Resource Center which has already initiated a preliminary study.

The Ad Hoc Committee's recommendations will be submitted to the Commissioner no later than December 1, 1979. Based on

these recommendations, the Commissioner will adopt a siting policy in the form of administrative regulations pursuant to the Uniform Administrative Procedure Act (UAPA). The proposed regulations will be developed by February 1, 1980, following public hearings and legislative review, both required steps in the regulation-making process. The siting policy (as reflected by the administrative regulations) will be used in reviewing permit applications. (See recommendation p.39).

State Planning

The 1973 State Plan. With establishment of the DEP in 1971, responsibility for preparation of a 20 year plan "for each solid waste planning region of the state" was delegated to the Commissioner (Section 19-524e). The Plan¹, completed in 1973, was based on: (1) the need for a systematic approach to replace obsolete landfills with ten resource recovery facilities by 1983; (2) recognition of CRRA as the principal implementor of the plan, and (3) allocation of solid waste management between state, regional and local levels of government.

The Plan's innovative and overly optimistic projections resulted in an implementation program which is now regarded as both unrealistic and obsolete. Importantly, it is now recognized that landfilling will remain the primary disposal method for a majority of Connecticut municipalities although a revised program of resource recovery facilities in the three major cities would service approximately 60% of the state's waste stream.

State Plan update. The LPR&IC finds that the 1973 State Plan impedes implementation of a realistic program for solid waste management in Connecticut. Although much of the background data remains relevant, refocusing and revision of the Plan are needed to reflect a more comprehensive approach to solid waste management including both large and small resource recovery and landfills. The Plan should identify those priority regions in need of new landfills. Furthermore, the Plan must meet the requirements for solid waste management under the federal Resource Conservation and Recovery Act (RCRA) in order to ensure continuation of federal funding (see p.42).

¹ Usually referred to as "The G.E. Plan" reflecting the project's consultant, General Electric.

Specifically, the Plan should also include:

- an inventory of all "open dumps"¹ according to RCRA criteria and quantification of the daily waste stream;
- an inventory of all sanitary landfills, the waste stream deposited and projected life expectancy;
- designation of landfills for interim and long term use;
- a schedule for closing all "open dumps";
- a schedule for closing exhausted or projected-exhausted landfills; and
- designation of all regions with a priority need for new landfills.

To date, preliminary revisions have been undertaken by DEP's Solid Waste Management Unit. In addition, CRRA contracted for a study which quantified the waste stream by municipality and projected capacities in permitted landfills through 1983.² CRRA has also indicated³ its intent to collaborate with DEP in updating the Plan and has applied for a DEP grant for this purpose.

¹ RCRA's definition of an "open dump" does not necessarily coincide with popular definition. For instance, under proposed regulations, proximity to an airport would qualify the landfill as an open dump. The explanation is that RCRA regards it important to keep gulls away from airports for safety reasons and recognizes that gulls frequently inhabit landfills.

² Fuss and O'Neil, Solid Waste Disposal Capacity, State of Connecticut. It should be noted that the retention of a solid waste planning consultant is an example of CRRA's flexible procurement policy. This policy has permitted the Authority to identify quickly the need to provide interim and long term landfill facilities.

³ This intention was set forth in CRRA's 1978 Operating Plan which is statutorily mandated.

The LPR&IC finds that additional staff and coordination will be necessary for timely completion and realistic implementation of the Plan. Therefore, the LPR&IC recommends that the Department of Environmental Protection undertake the following administrative action to update the state's solid waste management plan.

1. Assignment of one staff member from the DEP Planner's Unit to the Solid Waste Management Unit for a period of at least six months.
2. Approval of CRRA's grant to provide planning assistance according to Section 17-524w of the general statutes.
3. Development of a public participation component of the State Plan update under the direction of DEP's Information and Education Section.

State Plan review. The statutes (C.G.S. 19-524w) enable the Commissioner to update the State Plan and CRRA to revise the "solid waste management system" portion of the Plan. To date, this option has been exercised on only two occasions by CRRA.¹ Similarly, RCRA requires that each conforming State Plan contain an amendment provision.

The LPR&IC finds that non-mandatory review of the plan contributed to its present obsolete status. To assure that the Plan remains relevant in the future, the LPR&IC recommends that Section 19-524e of the general statutes be amended to require that the State Plan be updated by DEP no less frequently than biennially. In addition, the Solid Waste Management Advisory Council will be required to review and comment upon the State Plan.

Local plans. The Solid Waste Management Act mandated each municipality to submit a proposed local solid waste management plan to DEP by January, 1975. However, the legislative intent--local involvement which would lead to regional solutions has not occurred. To date, only 30 local plans have been approved. Furthermore, there is little evidence to suggest that an approved plan guarantees improved solid waste

¹ The first amendment revised the service area for the Bridgeport facility. The second amendment clarified the Authority's intent to develop only three major resource recovery facilities.

management planning. Indeed, many of these plans are merely extracts of outdated regional plans¹ which conformed to the State Plan, now obsolete.

Given the costs and difficulty in preparing local and regional solid waste plans, the Committee finds that the responsibility for solid waste management planning should rest with the Department of Environmental Protection. Therefore, the LPR&IC recommends that the Department review and consider, for inclusion into the updated State Plan, those local and regional plans which have been submitted to date. Finally, the Committee recommends that Chapter 361a of the general statutes be amended to delete the requirement for submission of local and regional solid waste plans.

Utilization of Existing Sites

Over the years, municipal budgets have reflected steady increases in the cost of solid waste disposal. Nevertheless, for those municipalities relying on older municipal landfills, the costs remain relatively low. Usually, when a municipality contracts with a regional landfill operator, costs are increased. Transportation to an out-of-town landfill, transfer station construction costs and negotiated fees require a larger financial commitment than operating an existing landfill.

However, as municipal landfill costs increase and the availability of sites decreases, regional solutions often become more viable and, in some instances, inevitable. As this will occur with increasing frequency in the future, it is anticipated that regional facilities will replace municipal landfills as dominant service providers.

The immediate need, however, is to enable existing environmentally-adequate but capacity-short landfills to operate until a regional facilities network is established. Specifically involved are many of the 92 municipalities with an "unaccounted

¹ Nine regional plans, serving 122 municipalities, were funded with more than \$500,000 in grants. It should be noted that the Auditors of Public Accounts, State of Connecticut, "Report on DEP for the Fiscal Years Ended June 30, 1974, 1975 and 1976" criticized DEP for providing 100% funding of these regional plans in view of the 70% statutory maximum. DEP defends its position as necessary to assure "approved regional plans" cited in 19-524b(e).

for waste stream"¹ by 1983. The LPR&IC believes that development of town-wide source separation programs and adoption of improved engineering and management practices have the potential for extending the life of these fills by reducing the waste stream and upgrading landfill efficiency. Each alternative is discussed below.

Technical assistance: management practices. The SWMU offers technical assistance to municipalities to develop source separation programs and to all landfill operators to improve landfill operation techniques. Staffing for both programs, however, is limited. One part-time staff member is responsible for source separation and one staff member directs operator training² and on site training-experimentation programs.

Based upon the results of an LPR&IC survey (See Appendix III-2), the Committee found that the Solid Waste Management Unit has provided a high level of timely technical assistance to the operators of Connecticut's solid waste facilities. However, it is known that the initiation of technical assistance was not based on priorities determined by the Department. Rather, the Department responds to requests from individual municipalities and/or operators. Thus, the LPR&IC finds that there is no assurance that acute disposal capacity shortages will be remedied by the SWMU.

To maximize utilization of SWMU technical staff, the LPR&IC recommends that:

1. The operator assistance program be targeted at those disposal areas designated in the State Plan for interim or long term use.
2. Development of performance standards become a goal of the SWMU. Performance standards will allow the flexibility necessary to achieve more efficient landfill operations. In addition, adequate enforcement of these standards should assure that environmental damage at landfills is minimized.

¹ Fuss & O'Neil, p.2.

² This includes a statutorily mandated biennial certification program for all operators as well as on site instruction in improved operating methods.

Source separation. Of all the technical assistance available from the Solid Waste Management Unit, source separation has been the least utilized. Few towns have responded to the SWMU's offer to assist in the development of local source separation programs, and no special effort has been directed towards those municipalities with acute landfill problems. Recently, CRRA initiated its involvement by submitting a grant proposal to be funded jointly by the DEP and U.S. Department of Energy. The three-phased two-year proposal includes the planning, implementation and operation of two demonstration glass and tin can source separation projects. Unlike many source separation programs, CRRA's proposal addresses both supply and demand consideration.

In order to develop models for source separation programs, the LPR&IC recommends that a demonstration source separation program based on CRRA's proposal be funded by DEP. The decision to make CRRA program developer recognizes the Authority's experience in negotiating contracts, a critical factor in successful implementation. The LPR&IC also recommends that DEP's grant conditions require CRRA to coordinate its programs with representatives from the National Association of Recycling Industries so that private sector interests will be considered.

Financial assistance. The grants program, funded with \$14 million of authorized bonding since 1971, provides construction and equipment grants to municipalities and regional authorities.¹ Although financial incentives to regionalize are built into the distribution formula (see Table III 4), single municipality grants have predominated (see Table III-5).

The extent to which this is due to the Department's reluctance to prioritize grant applications in favor of regional applications cannot be determined. However, the fact that grants have been approved on a first-come, first-served basis may have contributed to continuance of non-permitted² or polluting³ landfills.

¹ Although the statutes also allow operating grants, none has been approved, demonstrating the reluctance to fund current expenditures from bonding monies.

² It should be noted that because all regional landfill contracts since 1971 must be approved by the Commissioner, most regional landfills are permitted.

³ The one possible exception to approving a grant application occurred when a municipality was under enforcement orders. Correction of the violation was required prior to approval according to DEP sources.

Table III-4. Grant Distribution Formula.

<u>Type of Grant</u>	<u>Maximum Regional</u>	<u>Maximum-Single Municipality</u>
Planning	70%	10%
Construction or Equipment	65% + 5% ¹	25% + 5% ¹
Operating	50¢ per capita	25¢ per capita

¹ This additional amount is available if site also handles bulky wastes.

Source: Solid Waste Management Unit, Department of Environmental Protection.

Table III-5. Grants for Solid Waste Facilities.¹

<u>Type of Grant</u>	<u>Regional</u>		<u>Municipal</u>	
	<u>#</u>	<u>Total</u>	<u>#</u>	<u>Total</u>
Planning, Design & Construction	7	\$1,873,501	34	\$5,368,122
Landfill Equipment	11	331,201	92	996,642

¹ Does not include grants for Regional Plans.

Source: Solid Waste Management Unit, Department of Environmental Protection, May 1979.

As a result of routine approval of grant applications, only \$1.7 million of the \$14 million authorized bonding remains with outstanding applications in excess of \$3.5 million. The Solid Waste Management Unit has recently recognized the need to prioritize grant applications. The importance of this action is highlighted by the relatively large amount of funding (over \$3 million) requested for three small scale resource recovery facilities.

The LPR&IC finds that the grant mechanism has not been successful in encouraging regional solutions despite the intent of the legislation. Therefore, the Committee recommends that the following action be taken:

1. Section 17-5241 and Section 17-524m of the general statutes be amended to limit grant funding to facilities which serve more than one municipality and are designated for interim or long term use in the State Plan. These provisions should not apply to individual municipalities which apply for source separation project grants.
2. The DEP should rank, on a priority basis, all grant applications prior to submission to the Bond Commission. Eligible regional projects should include small scale technologies.
3. An additional \$6 million in bonding funds should be made available to DEP for construction and equipment grants.

All of the recommendations in this section are necessary interim measures to extend the life of secure landfills and encourage regionalization wherever possible. While the recommendations have long term application as well, the immediate landfill shortfall confronting many municipalities presents a sense of urgency. The recommendations in the two following sections address the need to improve or close landfills which are polluting or are exhausted.

Correction of Landfill Violations

Staffing. For purposes of enforcement, the Solid Waste Management Unit has divided the state into three enforcement regions. Each is staffed by a field officer who performs "routine inspection and surveillance follow up, complaint investigation, assistance in water sampling, and data gathering."¹ In addition, according to the Unit's organizational structure, each region should be staffed with an environmental analyst who performs more technical enforcement functions such as "on site assistance to communities, testify(ies) in legal actions and review(s) and enforce(s) engineering plans and permits."²

The LPR&IC finds that lack of a full technical support staff in at least two regions of the state has restricted the effectiveness of the enforcement program and has necessitated that the

¹ Memo of February 16, 1978 from Thomas Pregman, Senior Environmental Analyst to Charles Kurker, Director of Solid Waste Management Unit.

² Ibid.

enforcement program's administrator assume the environmental analyst's role in one region. Therefore, the LPR&IC recommends that two additional environmental analysts positions be authorized to provide one technical analyst within each of the state's three enforcement regions. This should enable the Department to monitor, review and enforce efficiently DEP permits.

Enforcement process. The SWMU's enforcement program involves quarterly inspections of all landfills, water monitoring and handling specific citizen complaints (see Appendix III-3 for the enforcement process).

When a violation of the permit, statute or regulation is determined, the operator is issued a Solid Waste Disposal Area Report which notes the violations and a Notice of Violation which sets a time limit for compliance and a date for reinspection. Formal Orders (Section 19-524b) are not issued by the Commissioner unless the violation fails to be remedied upon reinspection. As a matter of policy, operators are encouraged to confer and cooperate with the enforcement staff. Interestingly, this redirects staff emphasis from enforcement to technical assistance.

Judicial relief. When an enforcement order is issued, the operator can seek judicial relief or take immediate corrective action. Alternately, the operator may continue operation in violation of the order. There is no provision in the Solid Waste Management Act which provides for judicial enforcement of orders which have not been administratively appealed to the Commissioner by the landfill operator or for the levying of civil fines. Of the 96 enforcement orders issued since 1972, 37 remain outstanding. According to the SWMU, 12 need immediate legal action; those remaining are in the process of compliance.

The LPR&IC finds that there is a need to provide specifically for injunctive relief whenever a solid waste order of the Department has been issued and violated. Therefore, the Legislative Program Review and Investigations Committee recommends that Section 19-524b of the general statutes be amended to permit the Commissioner to seek injunctive and other judicial relief including the levying of fines whenever a Departmental Order has been violated.

Closure of Unsuitable Sites

The Commissioner also issues closing orders to landfills which have physically exhausted their capacity or have documented

evidence of ground or surface water pollution. Of the thirteen sites ordered to close since 1972, seven continue to operate while alternative disposal methods are reviewed. Five other operators voluntarily closed their sites, and one operator who failed in an appeal has been ordered closed by the court.

P.A. 78-67. Despite limited staff and legal action against violators, the SWMU has been perceived as an uneven and sometimes heavy handed enforcer. This was a contributing factor in the enactment of Public Act 78-67, a portion of which requires DEP "to provide reasonable alternative facilities for the users" of any landfill before it issues an order to close (C.G.S. 19-524b). Although only one closing order has been issued since the enactment of this statute, the SWMU remains uncertain as to what constitutes a "reasonable alternative facility." Must the Unit actually locate an alternative or new landfill site? Must it find another community or landfill which will voluntarily accept more waste? Or must the Department merely provide closing landfill operators with a listing of alternative sites, regardless of the increased cost of operation or availability?

Given the reluctance of municipalities in the past, it appears unlikely that "reasonable alternative facilities" will be provided voluntarily by landfill "rich" municipalities. This statutory responsibility is made even more difficult, if not impossible, in light of the absence of new permitted landfills during the past two years.

The "reasonable alternative" mandate also conflicts with federal law.¹ Under these provisions, Connecticut must prepare an inventory of "open dumps" which will include all disposal areas which do not meet the federal regulatory definition of a sanitary landfill. The effective date is five years following issuance of the federal regulations scheduled for July, 1979. In addition, the state must provide a "schedule of compliance... including an enforceable sequence of actions or operations leading to compliance."²

The SWMU estimates that no more than 15% of the state's existing landfills will meet the proposed federal standards. Approximately 45% will require minor modifications. Issuance of enforcement or closure orders will be necessary for the remaining 40%. In order to comply with federal requirements,

¹ Resource Conservation and Recovery Act (RCRA).

² Section 4005.

the State Plan must include provisions for closing and upgrading nonconforming sanitary landfills and must establish such state regulatory powers as may be necessary to implement the plan."¹

The LPR&IC finds that the Department of Environmental Protection's enforcement authority has been severely curtailed by the passage of Public Act 78-67. The Committee finds that the Department must be given the authority to close, according to clearly defined closing criteria, those landfills which are endangering the state's ground or surface waters or have exceeded their capacity to properly dispose of waste. Finally, the Committee finds that the present enactment jeopardizes the state's federal financial participation under the Resource Conservation and Recovery Act.

Therefore, the LPR&IC recommends that Section 19-524b of the general statutes be amended to require the Department of Environmental Protection to provide technical assistance to any solid waste facility operator upon the issuance of any closing order. Such technical assistance shall be provided to assist the facility operator in seeking reasonable and environmentally sound solid waste disposal alternatives. However, the Department would not be required to provide the solid waste facility operator with a reasonable alternative prior to the issuance of a closing order.

Finally, the Commissioner shall be required to promulgate administrative regulations, pursuant to Chapter 54, which clearly define the environmental conditions upon which a closing order may be based. Such regulations shall be consistent with Chapter 361a and Chapter 361b of the general statutes.

Regional Solutions

Recommendations in the previous sections have been limited to improvement of existing facilities and planning of new facilities. In this section, recommendations to assure establishment of new landfills are prescribed. These recommendations, consistent with the regional approaches suggested in the Solid Waste Management Act and the federal RCRA, involve all of the solid waste management participants in the decisionmaking process. Participants include the DEP, CRRA and proposed Regional Boards which will be comprised of municipally appointed members. Although primary responsibility rests with the Boards, DEP and CRRA also are integral in the implementation process.

¹ Section 4003.

During the LPR&IC deliberations on this study, consensus emerged that municipal involvement in the decisionmaking process is important since it is the municipalities which are responsible for providing for solid waste disposal. The LPR&IC recognized the need to eliminate the potential for domination of parochial interests and at the same time establish coordination with statewide SWM planning. The recommended mechanisms to assure successful implementation are described below.

Site inventory. Prerequisite to developing regional structures is the adoption of a Departmental landfill siting policy (see recommendation p. 26) according to specific technical criteria. Although the siting policy will eliminate some of the permit uncertainty which presently faces proposed landfill developers, it does not guarantee that the most appropriate landfill sites will be nominated for permitting. Recognizing the need for the DEP to initiate the identification of suitable sites in priority-need regions, the LPR&IC recommends that the DEP prepare a inventory of potential landfill sites in conformance with the siting policy within nine months of adoption. These sites grouped by region would be submitted to Regional Boards (see following recommendation) for comment and additions. Further, the Regional Boards would be required to prepare regional site specific plans within one year following their establishment.

Regional Boards. Although regional solutions to solid waste management problems are generally regarded as the best, if not only alternative, the record of regional cooperation in Connecticut to date is not one of success. To a large degree, the failure may be explained by the absence of decisionmaking at the regional level. While this typifies the opposition to regionalization in Connecticut, it also reflects the first hand experience of some municipalities during the early 1970's. At that time, informal meetings of adjacent municipalities failed to result in the development of mutually acceptable landfill sites. Harsh dissension predictably came from the municipality in which the preferred site was located. As a result, the regional landfill concept was not pursued.

Recognizing the "not-in-my-town" sentiment, the LPR&IC's Regional Board proposal acknowledges that the need for municipal input must be tempered by a collective sense of regional responsibility coordinated with state priorities.

Therefore, the LPR&IC recommends that Chapter 361a of the general statutes be amended to require the establishment of Regional Solid Waste Management Boards. The Regional Boards,

created by legislation, would become effective immediately upon enactment. Composition of the Boards, each chaired by the Commissioner of DEP (ex officio), or designees, would be comprised of voting and non-voting members. Voting members would include one representative from each municipality in the region. Non-voting members would include the Commissioner, or designee, staff from the regional planning agency(ies) and a designee from CRRA. Regional geographical boundaries would be defined by the DEP based on waste shed designations, area solid waste disposal capacities and needs and political boundaries.

Permit provisions. Completion of the joint DEP-Regional Board site inventories should stimulate interest among public and private developers since there is reasonable assurance that the necessary permits would be granted. Given the fact that the Connecticut Resources Recovery Authority is authorized to provide regional solid waste disposal and landfill services (C.G.S. 19-524u), the LPR&IC recommends that the Authority initiate the development of landfill services in those areas of the state which are designated for priority development in the State Plan.

Successful landfill developers must receive construction, discharge and operating permits. The LPR&IC recommends that the construction permit, obtained simultaneously with the discharge permit, be the first stage of the permit process. Application for the construction permit would be submitted to the Regional Board. A public hearing would be required within 30 days. Following the hearing, a decision to approve or deny would be rendered by the Board within 60 days. If the Board voted approval, the Commissioner would be required to issue the construction permit unless, following an administrative hearing, the Commissioner determined by clear and convincing evidence that the site does not meet the criteria specified in the siting policy regulations. The Commissioner could require additional environmental and public health conditions to be attached to the permit. In the event that the Regional Board disagreed with the Commissioner's decision, the Board or a single municipality would have legal standing to appeal the decision to the Superior Court.

The authority to issue any water discharge permit which is required under the provisions of Section 25-54i would be delegated by the Commissioner to the appropriate Regional Boards.

Other provisions include:

- If the Board is deadlocked or fails to act on a permit within 60 days, authority reverts to the Commissioner of DEP.
- Any permit application which is denied by the Board could be appealed to the Superior Court.
- Any Regional Board located in a priority area which fails to permit a regional facility within three years of designation by the Commissioner, or as such date is extended by the Commissioner, shall cease to exist. All permit authority previously exercised by the Board shall revert to the Commissioner of DEP.

The final provision provides incentives for the Regional Boards to assume the difficult responsibility of recommending a site within the municipal boundaries of at least one participant.

The LPR&IC further recommends that the Commissioner be responsible for the following:

- construction permits¹ for all other solid waste facilities;
- all operating permits (see recommendation following); and
- all permit variances and modifications (see following recommendation).

In the course of this study, several procedural shortcomings in the existing permitting process were brought to the attention of the LPR&IC. Without exception, each of these limitations increased the frustration encountered by opponents of the controversial private regional site in Colchester. First, permit modification of the required balers² was made without a public hearing. Second, site construction was incomplete prior to operation.

¹ Transfer stations and volume reduction facilities including small and large scale resource recovery, incinerators and shredders.

² A method of reducing the volume of solid waste through compaction and/or shredding.

Third, the ability of the developers to assume the heavy financial burden of site development was not a specific criterion in Departmental regulations. As a result, the Colchester Balefill site as originally permitted by DEP never materialized. In order to prevent similar occurrences in the future, the LPR&IC recommends that:

- (1) Chapter 361a of the general statutes be amended to require a public hearing for all solid waste facility permits, variances, and significant modifications.
- (2) Chapter 361a of the general statutes be amended to require each solid waste facility owner to obtain a certificate to operate such a facility. Certificates to operate will be issued whenever the Commissioner has determined that the facility complies with all conditions imposed by the construction permit.
- (3) Department regulations be amended to authorize the denial of any permit if it is determined that the facility operator does not have adequate financial resources to meet all obligations and permit conditions imposed.

Remaining obstacles. P.A. 78-67 was enacted as a result of a Superior Court decision (Colchester v. Reduction Associates, Inc.) which held that the state solid waste law preempted local zoning ordinances when it conflicted with the policy of state regulation in permitting landfill facilities. As a result, permitting procedures were amended to include the stipulation that nothing in this chapter or in chapter 361b shall be construed to limit the right of any local governing body to regulate, through zoning, land usage for solid waste disposal."¹ Subsequently, some local officials now interpret their legal authority to include banning the importation of solid wastes within their boundaries. This could effectively reduce the ability of a private regional landfill developer to contract with municipalities.

A recent ruling by the U.S. Supreme Court found unconstitutional a state statute which banned the importation of waste (City of Philadelphia v. New Jersey). While states are prohibited from imposing anti-importation bans on solid waste, municipalities believe that they may impose importation bans across local boundaries. Because P.A. 78-67 has not been judicially

¹ Section 19-524b.

interpreted, its impact upon the state's regional solid waste policy is unclear. The Solid Waste Management Unit believes that the "wording of Public Act 78-67 does not allow zoning boards to ban refuse from other towns."

According to the SWMU, "Section 8-2 of the C.G.S. concerning local zoning, regulations allow controls on land usage only, not including who will be allowed to utilize the land. In other words, an area's zoning classification will allow a landfill or will not allow a landfill; but regulations cannot go so far as to say who can use it and where the refuse will come from." The Unit suggests that a test case in court would either clarify the law or determine its constitutionality. Previous Connecticut court decisions have invalidated local ordinances which prohibit the importation of waste generated beyond its boundaries (see Town of Rocky Hill v. Department of Environmental Protection (1978) and Yaworski v. Town of Canterbury (1959)).

In addition to the problem associated with an anti-importation ban, at least one municipality has banned the development of any privately operated landfill. According to the SWMU, this particular community has suitable land for a landfill facility and had a willing private operator. However, a proposed amendment to the zoning regulations which would have permitted the siting of a landfill was defeated.

Finally, Public Act 78-67 directly contradicts the intent of the federal planning requirements under RCRA. The EPA has recently proposed regulations concerning the development of state solid waste plans which should provide for "regional cooperation and policies for free and unrestricted movement of solid waste across state and local boundaries." (Federal Register, Vol. 43, No. 167, August 28, 1978, Sec. 256.41(h)).

Given the critical nature of Connecticut's solid waste disposal capacities, the LPR&IC recommends that Section 19-524b(c) of the general statutes be amended to preserve the state's authority to regulate and permit solid waste facilities, provided that such state standards do not interfere with those aspects of solid waste handling or disposal which are solely local in nature and which the Commissioner determines are not of state-wide concern. Issues left for local determination could include: frequency of solid waste collection, means of collection, levels of local service, employment of facility operators, site plans and transportation routes.

Adoption of the recommendations set forth in this chapter would enable utilization of a network of sanitary landfills which would meet the state's needs where large or small scale resource recovery is not feasible (see Chapters IV and V). Success will depend on a strong leadership role shared by DEP and the municipalities and effective coordination with CRRA.

CHAPTER FOUR

CRRA'S BRIDGEPORT PROJECT

Limitations of This Study
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CHAPTER IV

CRRA's Bridgeport Project

The original state solid waste management plan, prepared by General Electric in 1973 envisioned a system of ten resource recovery plants for Connecticut by 1985. By 1974, the Connecticut Resources Recovery Authority reduced its estimate of needed resource recovery plants to seven. Given the economic and technological uncertainties of resource recovery, the current CRRA operating plan calls for the construction of only three resource recovery plants: Bridgeport, Hartford and New Haven.

This chapter will review the progress CRRA has made in constructing the state's first resource recovery plant in Bridgeport. In addition, Appendix IV-1 presents an overview and national perspective on resource recovery development. Appendix IV-2 contains a detailed description of the contractor selection process for the Bridgeport project.

Limitations of This Study

A major purpose of this study is to describe and evaluate CRRA's policies and programs for implementing a statewide solid waste management strategy. However, a significant shortcoming of this report is the inability of the Committee and its staff to evaluate certain technical information which relates to resource recovery systems.

Complex and detailed legal, financial and engineering decisions have been made by the Authority with regard to the development of the Bridgeport project. Not only does the LPR&IC lack the expertise required to evaluate those decisions, but it was also unwilling to "second guess" decisions made years ago in light of information which has only recently become available. For example, the Committee's staff was unable to review the technological aspects of the Bridgeport project and the competing technologies which existed at the time the plant was first authorized. In addition, the Authority's contractual and financial arrangements alone could be the subject of an exhaustive review.

A final concern of the Committee in reviewing CRRA was to ascertain the degree of risk which is associated in the planning, design, and construction of resource recovery facilities. As a result the Committee has attempted to identify those areas in which it believes that the state or the Authority is taking reasonable risks and to identify those risks which could be shared to a greater extent among the various participants of a resource recovery facility.

Given these constraints, the Committee directed its staff to review and evaluate CRRA's statutory mandate and its effectiveness in implementing a solid waste management strategy, and to determine those areas requiring legislative or administrative action.

Introduction to Bridgeport Project

The Bridgeport project consists of the main processing facility, designed to recover materials and energy from solid waste which is brought to it from six transfer stations in the nine participating towns.

The project is financed from revenue bonds which are to be repaid from revenue derived from the sale of recovered materials and from user fees paid by the municipalities. User fees are established by a contractual formula. The communities have pledged a minimum commitment to the plant of 1,200 tons per day. The cost of this service (user fee) is \$12.96 per ton, escalated by the Consumer Price Index (1974 base year). User fees are decreased whenever the municipalities deliver in excess of 1,500 tons per day, up to the plant's maximum capacity of 1,800 tons per day. In addition, a contractual provision allows for potential reductions in the user fee based upon revenue from the sale of fuel produced at the facility.

Contract arrangements are between the Authority and the participating municipalities; between the Authority and the contractor;¹ and between the Authority and the purchasers of the refuse derived fuel produced at the facility.

The contracts called for a March 1, 1978 completion date for the project. This obligation was not met, however, and CRRA's latest budget anticipated a July 1, 1979 commercial operation date. As of May 1979, however, the Authority's consulting engineer estimates the actual completion date to be early 1980. For purposes of this report, "completion" refers to the commercial operation date, which is the date the consulting engineer certifies the plant as operational according to contract specifications and testing.

Financing and Contractual Arrangements

Bond financing. Section 19-524ee of the general statutes, empowers CRRA to issue up to \$250 million in revenue bonds. There are two major limitations to the Authority's power to issue revenue bonds. First, no bonds may be issued to

¹ Contractor refers to the partnership arrangement (joint venture) between Combustion Equipment Associates (CEA) and Occidental Petroleum Corporation (OXY).

pay project costs unless the Authority has determined that revenues derived from the project will be sufficient

- to pay principal and interest;
- to maintain any reserve funds required;
- to pay the cost of maintaining and insuring the project; and
- to pay any other required project costs.

Second, CRRA may not issue bonds without the approval of the State Treasurer.

The Bridgeport system is financed by Series A bonds totaling \$53 million issued by the Authority on September 15, 1976. The net interest cost on these bonds is 6.6%. The underwriter for the project was the First Boston Corporation. Proceeds from the bond sale are indicated in Table IV-1.

The Greater Bridgeport System Bonds have received an AA rating from the Standard and Poor's Corporation and an A-1 rating from Moody's Investors Service, Inc. Bond proceeds are administered by the project's trustee, the Hartford National Bank and Trust Company.

Table IV-1. Bond Proceeds.

Payment for system	\$35,993,494
Deposit in Debt Service Fund	5,395,808
Deposit in Special Capital Reserve Fund	5,022,588
Repayment of Short-term Debt	5,259,700
Bond Issuance Costs	<u>1,328,410</u>
 Principal Amount of Series A Bonds	 <u>\$53,000,000</u>

Source: Connecticut Resources Recovery Authority.

Special capital reserve fund. Section 19-524ee of the general statutes authorizes the CRRA to create and maintain a special capital reserve fund (SCRF). In conformance with this section and "in order to better secure the bonds and to make such

marketable"¹ the Authority has placed \$5,022,588 of bond proceeds into a SCRF. The SCRF amount is equal to the maximum amount of debt service payable in any given year. The fund is maintained throughout the term of the bond issue.

This fund is important to bond investors for two reasons. First, the bonds are secured by a pledge of (a) the revenues derived by the Authority in owning and operating the system; (b) amounts in funds established by the resolution, including the special capital reserve fund to which, under certain circumstances described below, amounts are to be paid from the state general fund pursuant to the Act; and (c) any rights and interest of the Authority to receive money² (see Section 501, Bond Resolution).

Second, if at any time any debt service payment becomes due and payment has not been provided for, the bond trustee is authorized to withdraw from the SCRF a sufficient amount to meet such debt service payment (see Section 511, Bond Resolution).

Therefore, the special capital reserve fund provides an important state pledge of security for debt service payments.

According to the Bond Resolution (Section 511) and the CRRA's enabling legislation (C.G.S. 17-524ee), additional security is provided by the state whenever the SCRF falls below its required minimum, "there is deemed to be appropriated from the state general fund such sums, if any, as shall be certified by the chairman of the Authority to the Secretary of the Office of Policy and Management and Treasurer of the State, as necessary to restore each such special capital reserve fund to the amount equal to the required minimum...and such amounts shall be allotted to and paid to the Authority (C.G.S. 17-524ee)." Bond Counsel has interpreted this language to mean that the fund is to be automatically replenished when depleted without further legislative approval. Finally, Section 1102 of the Bond Resolution provides that it would be considered an event of default on the bonds if the state or the Authority did not assure the refunding of the SCRF.

It should be noted that the same SCRF requirements exist with the Connecticut Housing Finance Authority (CHFA). Neither CRRA nor CHFA has certified any deficiency in any special capital

¹ Section 729(b), Bond Resolution.

² Preliminary official statement, Greater Bridgeport System Bonds, Series A, First Boston Corporation, September 15, 1976.

reserve fund to date. However, given the technical and financial risks associated with resources recovery in general, the Committee explored those circumstances in which state funds could be utilized for the payment of debt service on the Bridgeport bonds. In addition, the Committee sought to determine those contractual arrangements which would insulate the state from financial liability, should operating or technical problems occur at the Bridgeport facility either prior to or after commercial operation. In addressing these hypothetical situations, the reader should not conclude that either the Committee, or the Bridgeport system's participants, believe that any of these "worst cases" will occur.

Precommercial operation date. The issue has been raised frequently as to what the state's liability would be, should the Bridgeport system fail to be certified by the consulting engineer.

Section 208 of the Construction Agreement provides that the contractor must pay the bond trustee for all debt service payments due after March 1, 1978 (scheduled commercial operation date). These debt service payments must continue until the system is ready for commercial operation as certified by the consulting engineer. Under this contractual provision the contractor has already made debt service payments of over \$2.3 million to the bond trustee. Pages 61-68 discuss the costs associated with this delay and those contractual requirements which permit the joint venture to recover, under limited circumstances, amounts paid on debt service. The contractor is presently liable for (and paying) debt service costs approaching \$13,000 per day.

Should the contractor fail to make debt service payments prior to the actual commercial operation date, the Authority, in addition to seeking an appropriate legal remedy against the joint venture, is authorized to deplete all monies on deposit with the bond trustee which relate to the construction of the system. In addition, the bond trustee could utilize the \$5.0 million of bond proceeds allocated to the SCRF. Should these funds be expended on debt service payments, the state would be required under Section 511 of the Bond Resolution to refill the SCRF to its minimum amount. Failure of the state to do so, would constitute an act of default (Section 1102, Bond Resolution). Should the Authority recover money damages for the failure of the joint venture to meet debt service payments prior to commercial operation, CRRRA would be required to (see Section 19-524ee) repay the state any monies expended to refill the SCRF. It should be noted that in the Construction Agreement, both CEA and Occidental have made an "absolute and unconditional" guarantee to discharge all contractual obligations (Section 1.02).

A second "worst case" construction situation is the right of the participating municipalities to withdraw from the system if commercial operation is not achieved by January 1, 1980. On or before January 1, 1980, a municipality must notify the Authority of its intent to withdraw from the system. The municipality must also receive approval from DEP for an alternate plan of waste disposal. Finally, the withdrawal must be approved by a majority vote of representatives of all participating towns. Given the contractual limitations and the desire of the communities to participate in the system, municipal termination appears to be unlikely. While no municipality has indicated a desire to terminate its contractual commitment, the delays in commercial operation have placed additional costs upon the Authority and the municipalities. The costs associated with the delays in commercial operation are discussed on pages 61-68 of this chapter.

Postcommercial operation date. The issue has also been raised as to what the state's liability would be, should the Bridgeport system fail to operate following the system's certification (commercial operation date). The remainder of this section explores the various contractual relationships among the system's participants which address this issue.

There are a variety of "worst case" situations that could develop with the Bridgeport system following commercial operation which are beyond the direct control of the participants involved, such as condemnation, casualty, or economic frustration. These and other situations have been provided a specific contractual remedy and are discussed in the next section of this report.

This section explores situations in which the contractor is in default, either wilfully or as the result of an inability to perform its contractual duties. This issue can best be understood by reviewing the Municipal Agreements (CRRA and the participating municipalities) and the Operation and Marketing Agreement (CRRA and the joint venture).

The agreement between CRRA and each participating municipality becomes effective upon commercial operation. The Municipal Agreement requires the municipalities to deliver their solid wastes to the system according to established minimum and maximum tonnages. In addition, the municipalities are required to make service payments to the Authority. The user fee, during normal operation, is calculated according to a contractual formula so as to assure that it will equal the amount of debt service on the bonds plus the operating charge payable to the joint venture by the Authority.

Neither the Operation and Marketing agreement (O&M) nor the Municipal Agreements become operative until commercial operation. Under the O&M agreement, the company is required for a "term of twenty-three years after Commercial Operation Date to operate the System, to accept at the System all specified solid waste delivered by or on behalf of the Municipalities up to a maximum 1,800 tons per day on average, and to produce therefrom Recovered Products containing the specifications and recovery yields" detailed in the contract.¹

It should be noted that CEA and Occidental each "unconditionally and irrevocably guarantees" to the Authority the "full and prompt performance of each and all the covenants and agreements required (see Section 101 guarantees, O&M agreement, Sections 104, 205 O&M agreement). The joint venture is required to pay all costs, other than debt service and, such costs must be paid whether or not the system is operable (Section 202 O&M agreement).

The municipalities have made pledges similar to those of the joint venture. Each municipality has pledged the full faith and credit of the municipality for payment of user fees (Section 506 Municipal Agreement).

According to Legal Counsel of the Authority, "failure of the company to comply with these provisions would give the Authority the right to call upon the guarantors to correct the default or to pay the Authority damages. The Authority would also have the right to step in and operate the system. The effect of a default under either of these hypothetical "worst cases" is to put at the Authority's disposal, through the operation of guarantees, the entire net worth of CEA and Occidental."

Assuming that the municipalities continued to deliver their waste to the system and to pay required user fees, and assuming that the system continued to accept the waste, whether or not the system were operating, the special capital reserve fund would not be tapped for debt service payments.²

However, the Committee finds that other contract provisions require municipalities to pay additional service fees to operate

¹ Preliminary Official Statement, Greater Bridgeport System Bonds, August 23, 1976, The First Boston Corporation, p. 17.

² Even though the system may not be technically operating, the contractor would still be required to accept the waste and dispose of it by an alternate method, e.g., landfill.

the system should an event of "uncontrollable force" occur. An event of uncontrollable force, for purposes of increasing user fees charged to municipalities, is defined as:

- any material interruption, suspension or interference with the operation of the System resulting from the act or neglect of the Company and not consented to by the Authority and any breach by the Company of the Operation and Marketing Agreement affecting directly or indirectly the obligations of the Authority or the Municipality under the Service Contract; and
- any fires, floods, Acts of God, strikes, labor disputes, labor shortages, inability to secure materials, riots, thefts, accidents, acts or failure to act of Government, including changes in law relating to the construction, operation and maintenance of the System and marketing of Recovered Products, failure to obtain licenses, or any other cause whatsoever, similar to those enumerated above, which may delay or prevent the performance by the Authority under the Service Contract or the Company under the Operation and Marketing Agreement.

Article IV of the Municipal Agreements governs service payments which are payable in the event of an uncontrollable force. According to the Authority, the purpose of this provision is to "protect the municipalities in that it establishes a maximum charge regardless of the costs incurred by the joint venture."¹ Sufficient revenues must be derived to cover the Authority's costs of operation plus debt service. Section 717 of the Municipal Agreement permits the Authority (during an act or event of uncontrollable force) to establish user fees up to a maximum of 190% of the user fee during normal operations.

After certification of the system's commercial operation, the bonds issued by the Authority are first secured by a pledge of the revenues (user fees) derived by the Authority from the ownership and operation of the system. Should there be a default of service payments by the municipalities, the Authority is

¹ Letter to Co-chairmen, LPR&IC, from Russell L. Brenneman, President, Connecticut Resources Recovery Authority, February 14, 1979, p. 2.

provided a remedy for the payment of user fees. (Section 505 M/A.) As already noted, such obligations are secured by the full faith and credit of each municipality.

Under these circumstances, it is conceivable that the bond trustee (given insufficient revenues) could tap the special capital reserve fund for payment of debt service. However, the Authority would be required under Section 19-524ee of the General Statutes to reimburse the state's general fund for any monies deposited in the SCRF by the state. According to the Authority, "it is more proper to analogize the appropriation to a loan." Reimbursement in this case could only result through the initiation and successful litigation of a suit between the Authority and any defaulting municipality.

Based upon the analysis provided in the preceding discussion, the Legislative Program Review and Investigations Committee finds that the State of Connecticut would be required to refill and replenish, on a yearly basis if necessary, any depletion in the Authority's special capital reserve fund in the following limited circumstances:

(1) Precommercial operation date. Failure of the joint venture to meet any debt service payments due after the scheduled commercial operation date (March 1, 1978) and up to the date of actual commercial operation, as certified by the consulting engineer (estimated date, January, 1980).

(2) Postcommercial operation date. Failure of any or all municipalities to pay established user fees for operation of the system which would be required to meet debt service payments and the Authority's cost of operation.

In addition, should the contractor fail to fulfill his contractual obligations either prior to or after the commercial operation date, the Committee finds that the contractor's liability is unconditionally guaranteed, jointly and severally, by Occidental Petroleum Corporation and Combustion Equipment Associates, Inc.

Finally, the Committee finds that the contractual arrangements concerning the payment of debt service by the joint venture prior to the commercial operation date provide the state with a reasonable degree of financial protection. Because of the legal and technical uncertainty of the Bridgeport project, the Committee did not make any finding concerning the degree of financial protection for the state subsequent to commercial operation.

Financing future projects. Planning the method of financing for a resource recovery plant is one of the most important decisions the Authority must make. The Bridgeport system is financed by revenue bonds in which project revenues are pledged to guarantee repayment of the debt. In addition, Connecticut has provided an additional security feature through the creation of the special capital reserve fund. Other methods of financing resource recovery facilities have included general obligation (GO) bonding and private capital financing. In GO bonding, the capital market does not evaluate the technical and marketing risk associated with the project (as it does with revenue bonds). Rather, the credit worthiness of the public entity, derived from its ability to levy taxes, is examined. Private financing would usually include an equity contribution from private contractors and additional private market bond financing. To date the federal government has committed only limited funds for resource recovery projects, i.e., demonstration and pilot programs. Primary responsibility for obtaining resource recovery financing rests with the states, municipalities, and private enterprise. According to the EPA, the "data show that no single pattern or model has been established in financing, procuring, or managing resource recovery systems. Almost all facilities have been financed by tax exempt, long term obligations, however."¹

General obligation bonding carries the lowest interest rate of any debt instrument. However, the liability for debt service rests solely with the public instrumentality.

An important issue in this review was the method by which CRRA projects are capitalized. The Authority has recommended that revenue bonding be coupled with general obligation bonding to finance future projects. Depending upon the interest rate charged, CRRA estimates the user fee for a 2,500 ton per day facility with a twenty-three year financing period, could be reduced by \$2.76 to \$3.61 per ton if 30% of project costs were funded through general obligation bonds (due to the lower risk and lower interest rates on GO bonds).

While state subsidy of CRRA projects would yield financial benefits to participating towns, the Legislative Program Review and Investigations Committee believes that such a subsidy would place an unreasonable financial risk on the state and would violate the legislative intent that resource recovery projects be self-sufficient. The Committee therefore reviewed financing

¹ Fourth Report to Congress, "Resource Recovery and Waste Reduction," E.P.A. 1977, p. 59.

alternatives which would allocate the financial risk more evenly within the private sector.

One suggestion which the Committee feels should be pursued further is to require the private contractor to assume partial or total liability for long-term financing of a resource recovery facility. According to CEA, "one cannot make a general assumption that bonds from a public authority, merely by virtue of their low coupon rate, will result in a lower tipping fee." Assuming a valid credit risk and assuming that the same amount of funds would be available for construction, CEA has concluded that private financing could result in a lower yearly debt service payment than public (CRRRA) financing. The validity of this position is primarily dependent upon the applicable interest rate charged the private entity. However, the most attractive feature of this proposal (in addition to the possibility of reducing the user fee) is the fact that the financial risk is shifted fully to the private sector, eliminating the special capital reserve fund and all state liability. Unfortunately few contractors are prepared to assume such a risk. American Can's Milwaukee project is the most notable exception. American Can did finance that project at a cost of \$18 million by taxable debt. However, according to the EPA, American Can has since stated "that it would not finance future projects in a similar fashion, and was only willing to use taxable debt to insure that the Milwaukee Plant, their first showcase project, would be built in a timely fashion."

According to the EPA, in addition to Milwaukee, a 650 ton-per-day facility in New Orleans was also financed by a private contractor. Finally, CEA anticipates construction of a 3,000 ton-per-day facility in Newark, New Jersey at a cost of \$70 million which is to be financed by the company.¹ While these financing experiences are limited, the Committee finds that the Authority could seek a more flexible financing mechanism for its second project which in turn could reduce the state's financial risk. The Committee recognizes, however, that the special capital reserve fund provides additional investor security and, consequently, the most attractive interest rate payable on Authority issued bonds.

¹ Generally, direct cost and tonnage comparisons between CRRRA's Bridgeport project and the Newark project are not valid measures. For example, the Bridgeport project's construction cost is attributable to construction of transfer stations and the establishment of an internal transportation system which are not project costs of the Newark facility. In addition, the Bridgeport system includes full storage and conversion equipment for burning the RDF. These costs are also not reflected in a comparison to the Newark facility.

In order to minimize the risk of state liability in financing resource recovery projects, the Legislative Program Review and Investigations Committee recommends that the Request for Proposal for the Authority's second project contain specific provisions requiring the presentation of alternative financing mechanisms including a total or partial equity contribution by the proposed contractor. In reviewing and evaluating such proposals, the Authority shall attempt to obtain the lowest possible service charge consistent with the requirements of the system and one that minimizes the state's financial risk in the project.

The Committee also sought to determine what effect, if any, the SCRF has upon the marketability and interest rate charged on CRRA revenue bonds. Opinions were solicited from a variety of financial analysts. While there was general consensus that a SCRF could reduce the cost of financing by as much as one and one-half to two percent, there was little agreement as to whether a SCRF is needed to successfully market resource recovery revenue bonds. Some analysts believed that bond marketability is primarily determined by each project's technology, contractor selection, and contract provisions. However, other analysts believed that the establishment of a SCRF provides a necessary degree of investor security and thereby assures the marketability of a revenue bond issuance. Because of these conflicting opinions, the Committee makes no recommendations concerning the Authority's use of the SCRF.

Other contractual provisions. In addition to the complex issues which could arise from a failure of the system, the Committee examined other contractual responsibilities of the Authority and the contractor given the following certain specified acts or events:

- casualty to the system;
- condemnation of the system;
- economic frustration of the system; and
- force majeure.

Each of these situations is described and summarized in Appendix IV-3. In addition, the table reviews the nature of the contractual liability upon either the joint venture, the Authority or both.

Bridgeport Technology

The purpose of this section of the report is to review the resource recovery technology to be used at the Bridgeport project.

The project calls for the production and co-firing with oil of a dust refuse derived fuel called ECO-FUEL II.¹

A principal finding of a Congressional committee in 1978 was that waterwall incineration was the only proven resource recovery technology. Other findings concluded that RDF processes were considered developmental and more costly than originally expected. Particular technical problems were found with the co-firing of RDF with other fuels. As a result, markets for the sale of RDF appear limited.

Given these findings, and given the fact that the Bridgeport project will be the first large scale commercial operation of a dust RDF, and given the fact that the only small scale demonstration plant owned by CEA exploded on November 11, 1977, the Committee sought to determine what technical risks were associated with the project. It should be noted that the Committee has not made any independent technical analysis of the ECO-FUEL process. Rather, all information has been derived from published or public data. ECO-FUEL and the embrittling agents used to produce it are patented and proprietary interests owned by CEA and the Arthur D. Little Company (ADL).

Production testing of ECO-FUEL. In May, 1972, CEA and ADL entered into a long-term agreement for the development of solid waste treatment processes. The joint research project first developed ECO-FUEL I, a shredded fuel. Additional testing led to the development of ECO-FUEL II. Production testing of ECO-FUEL II began in 1974 and continued through September, 1975 at ADL's pilot plant in Cambridge, Massachusetts. During this time, 18 tons of ECO-FUEL were produced. In the interim, CEA had begun conversion of a ECO-I line in East Bridgewater, Massachusetts which would produce the new fuel and process waste at a rate of 800 tons per day. This plant was in "start up testing" at the time CRRA selected the CEA process.

CRRA's consulting engineer recognized at the time that "there had been no extended commercial operation of the ECO-FUEL II process." The consulting engineer concluded: "Assuming successful demonstration of fuel production and co-firing with oil, including the application of experience that will be gained, prior to Commercial Operation Date, in producing and using ECO-FUEL II, the engineering risks in construction, start-up and operation of

¹ ECO-FUEL II is a registered trademark of CEA (Combustion Equipment Associates).

the Bridgeport System are minimal."¹ The scale up from the pilot plant to the East Bridgewater demonstration plant was 140 times.

A scheduled testing program to confirm the reliability of producing ECO-FUEL at the East Bridgewater plant in 1977 was not undertaken. On November 11, 1977, an explosion occurred at the plant at the end of a normal run of operations. One worker was killed and three others were injured. While the explosion was dust related, the exact cause of ignition has not been determined. After a series of investigations by federal, state and local officials the plant was ordered closed. The Massachusetts Environmental Quality Engineering Department issued violations to CEA for their failure to obtain necessary regulatory permits.

Legal action instituted by the Massachusetts Attorney General led to the signing of a consent decree whereby CEA acknowledged that it had constructed the ECO process line without state plan approval. According to a regional director of the Massachusetts solid waste program, CEA also paid a civil fine of \$10,000.

The plant resumed operations in September, 1978. However, its operation remains under court order until additional problems, related to noise are resolved by CEA. Pending resolution of this matter the plant operates on a "test basis." Other than a land-fill violation in Massachusetts (unrelated to the production of ECO-FUEL), CEA has no other environmental orders outstanding.

According to CRRRA and its consulting engineer, all known safety precautions have been undertaken to prevent risk of injury at the Bridgeport plant. In addition, modifications have been made to the plant's structure to assure that explosions are properly vented so as to prevent failure of the entire system.

Given the nature of the dust resource recovery process, explosions are almost certain to occur. Such explosions are not unique to resource recovery systems and are inherent in any industrial dust process. Table IV-2 contains a partial listing of various industrial dusts and compares their explosion severity.

In addition, explosions are likely to occur given the shredding involved in solid waste processing. For example, a major shredder explosion occurred in Ansonia, Connecticut in 1977. In three years of operation, the facility experienced thirteen explosions, twelve of which were of undetermined cause. In one review of forty-eight municipal solid waste shredding operations,

¹ Engineering Report, Burns and Roe, August 23, 1976, p. A-29.

Table IV-2. Partial List of Industrial Dusts.

<u>Type of Dust</u>	<u>Max. Press.</u> <u>psig</u>	<u>Max. P/ t</u> <u>psi/sec.</u>	<u>Explosion</u> <u>Severity</u>
Pittsburgh Coal Dust	83	2300	1.00
Eco-Fuel II	91	2667	1.27
Wheat flour	97	2800	1.4
Phenol formaldehyde resin	77	3500	1.4
Polyethylene, hi-press.	81	4000	1.7
Sugar, Powdered	109	5000	2.8
Wood Floor, White Pine	113	5500	3.2
Cellulose, flock, fine cut	112	7000	4.1
Corn starch, commercial	106	7500	4.2
Aluminum, flake, A 422	127	20000+	13.3+

Source: Connecticut Resources Recovery Authority

only ten facilities had not reported an explosion. This occurred, despite the fact that thirty-nine of the facilities had installed some method of explosion protection.

Because of the East Bridgewater explosion, the Authority re-scheduled a production test for completion before May 19, 1978. However, this revised production test was not conducted until February 13, 1979. According to CRRA, the East Bridgewater plant operated continuously for a twenty-hour period except for a single eight minute interruption. CRRA's consulting engineer is presently preparing a report which will analyze the operating capabilities of the Massachusetts plant. The Authority has withheld payment of \$500,000 in bond proceeds pending successful completion of this production testing.

Burn testing of ECO-FUEL. Approximately 980 pounds of ECO-FUEL are produced from each ton of solid waste processed at the East Bridgewater facility. This fuel has the equivalent heating value of fifty gallons of oil. According to CEA, ECO-FUEL has a net heat efficiency¹ of 83% (EPA estimate is 80%). As noted in Table IV-3 dust RDF is considered to be the most efficient energy recovery process.

¹ Heating efficiency refers to the ratio of energy produced as compared to the raw energy input of municipal solid waste.

Table IV-3. Resource Recovery Energy Efficiency.

Process	Net Fuel Produced	Total Amount Available as Steam
	(Expressed as percent of heat value of incoming solid waste)	
Water Wall Combustion	—	59
Fluff RDF	70	49
Dust RDF	80	63
Wet RDF	76	48
Purox Gasifier	64	58
Monsanto Gasifier	78	42
Torrax Gasifier	84	58
Oxy Pyrolysis	26	23
Biological Gasification*		
With use of residue	29	42
Without use of residue	16	14
Brayton Cycle/combined cycle		19 plus
Waste Fired Gas Turbine		12 directly as electricity
*Includes energy recovered from sewage sludge.		

Source: United States Environmental Protection Agency.

On February 3, 1975 a letter agreement¹ was prepared between the Authority and United Illuminating concerning the construction and modification of two existing boilers at UI's power station in Bridgeport. These boilers, upon modification, would be used to burn ECO-FUEL (co-fired with oil) supplied from the Bridgeport facility.

This conversion program was intended to proceed in two stages, both of unspecified duration. The first stage was intended to be performed prior to commercial operation date in June, 1977. Because of construction delays and the East Bridge-water explosion this test burn has not been conducted. If test results from this first stage demonstrate that burning of the

¹ A formal contract detailing the respective rights and obligations of the parties has not been executed to date.

fuel is technically feasible¹, UI will proceed with the second testing phase. Conversion costs to date have totaled \$4.0 million (the contractor originally had estimated that such costs would approximate \$1.5 million).

The second stage is assumed to consist of a long-term, full-scale operation of the two burning units following commercial operation. Prices of fuel delivered to UI will be discounted 25-50% below the price of an equivalent (in BTU value) amount of oil.

While the test burning at UI originally scheduled for 1977 has not taken place, CEA has performed other test burns of ECO-FUEL. It should be noted that there has not been any demonstrated long-term commercial burning of ECO-FUEL at co-firing rates (40-50%) similar to those anticipated in Bridgeport. Test burns cited by the contractor are not valid comparisons with UI for two major reasons. First, to date ECO-FUEL has been co-fired with only 10-20% oil; whereas, the UI contract anticipates 40-50%. An emissions test for the co-firing of ECO-FUEL at a private utility in Waterbury was recently undertaken by CEA. These tests co-fired ECO-FUEL at levels of only 5% and 10%. According to UI, co-firing rates of 30-40% would be required to make the burning of fuel economically feasible. Secondly, none of the facilities which have burned ECO-FUEL has undergone the extensive modifications as have UI's two boilers in Bridgeport. As a result, the consulting engineer has indicated that the only accurate test of ECO-FUEL will occur at Bridgeport, once conversion is completed. Given the delays associated with the project, the test burn of ECO-FUEL is now scheduled to be completed by July, 1979. Only after this test burning at the UI facility will the Authority be able to determine the technical capabilities of the fuel, its environmental impact, its corrosive effects, and whether or not it is marketable.

Based upon the preceding analysis, the Committee finds that there has been insufficient testing and commercial production and burning of the ECO-FUEL process. While the Authority, its consulting engineers and the joint venture fully expect that such testing and commercial operation will prove successful, the Committee recommends that the Authority take appropriate action to assure that future projects utilize proven and reliable technologies. Therefore, to dissipate the technical risk associated with

¹ According to the consulting engineer, no long-term operating data exists for this application. Particularly uncertain are the long-term corrosive effects of burning ECO-FUEL. If burning presents a substantial risk to the power station equipment which might require replacement of any major item, United Illuminating is relieved from purchasing any ECO-FUEL.

resource recovery development, the Legislative Program Review and Investigations Committee recommends that the Authority's future projects not utilize a process based upon the production of a dust refuse derived fuel until the Bridgeport facility operating record is strong or until there is evidence of success in similar RDF plants.

Delays in Commercial Operation

Garrett Research was originally selected as the contractor for Bridgeport in May, 1974, with completion of the Bridgeport facility scheduled for late 1976. Contract negotiations with Garrett (and subsequent renegotiations with the CEA-OXY joint venture) took twenty months (until March 31, 1976) rather than six months as originally planned, and projected a commercial operation date of March 1, 1978.

Reasons for the delay are varied and will be the subject of arbitration between the Authority and CEA-OXY (see discussion of force majeure below). According to CRRA, a delay of six months resulted from the joint venture's failure to begin construction following the execution of the formal contract. Rather, the Company waited until the bonds were sold to finance the project and the Company was given approximately \$12 million in bond proceeds. The joint venture argues that a four month delay resulted from a carpenter's strike in Bridgeport and delays in steel acquisitions related to the Johnstown flood. In addition, the Company believes other delays are the direct results of the severe winter weather experienced in 1977 and 1978.

Other possible reasons for the delay relate to the unrealistic expectation of constructing a major facility in only twenty-three months. Some sources have indicated that three years is a more realistic construction time for such a project. Given the costs and complex legal issues related to these delays, CRRA does not accept any of the delays as warranted.

Debt service payments to bondholders. According to Section 208 of the Construction Agreement, the contractor is required to pay to the bond trustee amounts equal to the "Debt service for each day from the Scheduled Commercial Operation Date to the Commercial Operation Date." If the contractor can demonstrate that the delays are excusable, i.e. "force majeure,"¹ it is entitled

¹ Section 101, Construction Agreement, "Force Majeure" shall mean any act or event beyond the reasonable control of the contractor which materially and adversely affects the construction of the System or the facility....

to be reimbursed for such debt service payments from any excess revenues¹ paid to the Authority pursuant to the Operation and Marketing Agreement.

As a result of these contractual provisions, the contractor became responsible for the debt service payments to bondholders on March 1, 1978, the scheduled operation date. The total amount due to the bondholder's from March 1, 1978 to July 1, 1979 (CRRA's projected commercial operation date) is \$5.2 million. The contractor's liability from March 1, 1978 to November 15, 1978 was \$9,170 per day, and \$12,750 per day from November 16, 1978 to November 15, 1979.

The contractor has indicated that it will make claims of force majeure for the time delays in constructing the facility. According to Section 404 of the Construction Contract "Any and all disputes and differences pertaining to or arising out of this agreement shall finally be settled by arbitration...." The decision of a three member arbitration panel will be final upon the parties. In addition, the contractor and the Authority are required to continue their contractual obligations during the arbitration process.

While it is difficult to assess what actual impact the "force majeure" claims will have on the municipalities, the Committee has developed an estimate based upon the maximum loss to the municipalities would be \$3.73 per ton. The estimate assumes that the Contractor submits a claim of \$5.2 million which is arbitrated totally in its favor. Hence, the Authority would be required to repay the contractor through excess revenues derived if the plant operates in excess of 1,500 tons per day. The contract provides for sharing excess revenues which, in effect, reduces user fees. If the plant were operating at its maximum capacity of 1,800 tons per day and the force majeure claims were to be repaid out of excess revenues derived in one contract year, each municipality would lose \$3.73 per ton in reduced user fees. This would be the municipality's share of reduced user fee which is lost as a result of the force majeure claim.

It should be noted that the contractor has made two payments to the bond trustee according to Section 208 of the Construction

¹ Section 101, Operation and Marketing Agreement: "Excess Revenues" for any contract year shall mean the portion of the Net Revenues for such contract year in excess of the Minimum Revenues for such contract year.

Agreement. Payments of \$678,624 on May 5, 1978, and \$1,650,704 on November 15, 1978 have been made by the contractor.

Project development costs.¹ Approximately \$5.3 million of bond proceeds were used to fund the Authority's Development and Financing Account through the scheduled commercial operation date, March 1, 1978. As a result of the delays of the project, the development fund has expired. However certain development costs related to construction of the system continue. Because of the delay in the project, revenues derived from investment income of the bond proceeds began to be shared with the Authority on March 1, 1978. This increased income is approximately \$30,000 per month. According to CRRA these funds are sufficient to meet actual development costs associated with the delay. Based upon a projected sixteen month delay (to July 1, 1979), expenses for development of the Bridgeport system have increased by \$231,000.

There are also administrative costs related to CRRA's supervision of the project's construction. Assuming 50% of staff time is devoted to the Bridgeport project, this cost would amount to \$120,000 per year or \$160,000 for the estimated sixteen month delay period. Had the plant been operating as scheduled, the Authority would have received an Administrative Fee to cover such expenses.

More important than the direct costs associated with the delay is the unknown cost of CRRA's board and staff activities which have been diverted from the development of second and third facilities. The Authority's preoccupation with the Bridgeport project, has in the Committee's opinion contributed to the slowness of implementing a statewide solid waste management strategy.

Fixed cost contract. The joint venture has agreed to construct the complete Bridgeport system for a specified price. Original contract negotiations called for an open ended price based upon cost. However, several months of additional renegotiations by the Authority led to the fixed contract price provision (section 209, Construction Agreement). According to the construction agreement, the company has agreed to construct the system for an amount which is the lesser of (a) \$47 million or (b) the sum of the net proceeds from the Bonds. These net proceeds amounted to approximately \$36.0 million.

It appears that this additional delay associated with re-negotiating the Bridgeport contract has been beneficial to the

¹ Costs of project supervision such as system security, engineering and legal consultants.

Authority. Through April, 1979, the Company has submitted purchase orders and construction payments of \$49.6 million as follows:

Main Facility	\$37.1 million
Transfer Stations	6.9 "
UI Conversion	4.6 "
Transportation and Other	<u>1.0</u> "
Total	\$49.6 million

While these figures tend to indicate that the joint venture is losing money on the project, this cannot be determined conclusively for the following reasons:

- First, there has been no independent audit of the purchase orders;
- Second, CEA purchases include orders from companies which are subsidiaries and, therefore, may have built in profit margins; and
- Third, the joint venture may take advantage of investment tax credits on the project.¹

Interim service. Through December 31, 1999, the Authority has the right to dispose of solid waste at the SCA Services, Inc. landfill in New Milford. The joint venture is required to dispose of residue from the Bridgeport facility; ash from the United Illuminating Power Station; and solid waste not processed at the facility. The joint venture may use the SCA landfill for these purposes. It is estimated that such residual disposal would not exceed 260 tons per day following commercial operation.

The SCA landfill has an estimated capacity of 3 million tons of unprocessed waste. DEP has granted a permit for disposal of 1.5 million tons covering 74 acres of a total 147 acre site. The landfill has an estimated life expectancy of 15 years based upon current commitments.

¹ Approximately one-third of all CEA revenues are derived from its Environmental Systems Division which includes resource recovery construction. Approximately 43% of all operating profits are derived from this division. According to a Business Week article (January 30, 1978), it was estimated that approximately 30¢ of CEA's 1977 36¢ increase in earnings per share were derived from investment tax credits associated with the Bridgeport facility.

The Construction Agreement (section 208) requires the contractor, in the event of delay in commercial operation, to accept and dispose of the solid waste delivered to the system at a charge of \$12.50 per ton (adjusted by the Consumer Price Index). According to the Agreement, municipalities were given until May 1, 1976 to accept interim disposal service pending commercial operation. Four municipalities elected to use these services which began accepting waste on December 23, 1976 for disposal in New Milford. Based upon an agreement with CRRRA, SCA receives from the contractor \$7.19 (adjusted by the Consumer Price Index) for each ton of waste disposed at the site. The present adjusted fee received by SCA is \$9.25 per ton. The contractor presently receives \$17.00 for interim service disposal provided the towns of Darien, Greenwich, Stratford, and Westport. These payments closely approximate the user fee of \$16.38 which would be charged to the municipal participants had the plant been commercially operable. Based upon a projected commercial operation date of December 1, 1979, these four towns will have expended as much as \$175,000 in excess user fees as a result of interim services.¹

These losses may not prove to be as great as estimated because there is uncertainty as to whether these towns will be able to achieve their minimum contractual commitment by the time the facility is certified as commercially operable. These four municipalities are required to deliver a minimum commitment of 161,800 tons of municipal solid waste to the facility yearly. Based upon interim service provided in 1978, these towns only delivered 112,424 tons of MSW. In addition, the four towns did deliver an additional 58,093 tons of waste which was classified as bulky waste. Some of this waste may have been improperly classified and could be included in the MSW figures. However, even assuming all of the bulky waste could be classified as MSW, the four towns are only exceeding their minimum commitments by approximately 9,000 tons per year. If these disposal figures continue through commercial operation date, some towns may be paying an effective user fee as high as \$21.00 per ton, since the user fee is a fixed minimum of \$14,256 per day, which for the minimum commitment of 1,200 tons per day equals \$12.96 per ton. If municipalities cannot meet this commitment, they must pay the minimum daily fee nevertheless, which raises the actual cost per ton.

¹ This figure assumes that the municipalities will deliver a volume of waste, which equals the average of the combined minimum and maximum contractual commitment.

Based upon an evaluation of actual 1978 interim service tonnage figures, the LPR&IC finds that as many as four participating municipalities may not be able to fulfill their minimum contractual commitments upon commercial operation of the Bridgeport facility. The Committee recommends that CRRA immediately undertake a review to determine more accurately the ability of all participating municipalities to fulfill their minimum contractual commitments.

Glass separation subsystem. The main processing facility at Bridgeport is approximately 90% complete. However, the glass separation subsystem which was intended to recover glass from the waste stream has not been installed by the joint venture. The Consulting Engineer to the Authority has indicated that he cannot and will not certify the system as commercially operable until all contractual commitments, including the glass separation system, are completed.

A dispute has arisen between CEA and OXY as to whether the construction of a glass separation system is technically feasible or economically justified. According to a Congressional report, recovered resources of glass and aluminum "have yet to prove themselves." It was originally estimated that 60% of the glass entering the system would be recovered. The quality of the recovered glass for commercial resale is also uncertain. The estimated project cost associated with the subsystem is \$3.1 million.

The contractor was to have prepared an alternative contractual proposal for the Authority's consideration by February 24, 1979. However, this proposal has yet to be presented. In February, 1979, the contractor formally requested a delay in completing the glass separation system.

Given the uncertainty associated with the contractor's responsibility relative to the glass separation system¹ and the need for this issue to be resolved to certify the commercial operation of the facility, the LPR&IC recommends that the Authority take immediate formal action to:

(1) assure that the joint venture fulfill its existing contractual obligations relative to the glass separation system; or alternately, the Authority should

¹ It should be noted that in order to protect the power station equipment which will burn the fuel, the glass element of the waste stream must be removed. The present design of the facility calls for the separation of glass prior to the production of ECO-FUEL. However, if no glass recovery system is installed, this glass residue will have to be landfilled rather than recovered as a marketable product.

(2) negotiate with the joint venture to amend the existing contract to assure a technically reliable alternate method of glass removal at a cost less than that anticipated in the original contract.

Payments in lieu of taxes. Section 19-524cc of the general statutes authorizes a payment in lieu of taxes to the community which "hosts" a solid waste facility. Since 1976, this payment has been based upon an amount negotiated between the Authority and the host community.¹

On June 10, 1976, the Authority and the City of Bridgeport entered into such a contract. The Authority paid Bridgeport \$26,300 in lieu of taxes for 1976. After July 1, 1976 the City agreed to assess the facility at a value of \$135,680 regardless of improvements. For fiscal years 1976 through the commercial operation date, (COD) payment in lieu of taxes would equal the assessed value (\$135,680) times the applicable mill rate. In accordance with section 219 of the Construction Agreement, these tax payments have been made by the contractor.

A dispute has arisen between the City and the Authority since representations had been made that upon COD, the City would be entitled to negotiate for a payment in lieu of taxes more commensurate with the value of the property. Given the fact that the project has been delayed nearly two years, the City feels it has been denied substantial anticipated revenues. Negotiations are currently underway between the Authority and the City to resolve this issue. Representatives of the City indicated to this Committee that if the issue is not resolved satisfactorily, Bridgeport will exercise its right to withdraw from the project on January 1, 1980. The City claims that payment in lieu of taxes on the property should be made in the amount of \$1.7 million annually. These payments will be required of the contractor until the plant operates at a capacity of 1,500 tons per day.² However, after 1,500 tons per day, these costs are "passed through" to the participating municipalities as part of the operating charge and revenue sharing formula. Therefore, the disputed payment in lieu of taxes issue can be expected to have a negative effect upon user fees.

¹ According to section 19-524cc of the general statutes, the Authority is not required to pay taxes or assessments on any project. However, the Authority may provide for payments in lieu of taxes.

² This is because the contractor has guaranteed a user fee of \$12.96 per ton (escalated to the C.P.I.) to the system's participants provided minimum commitments are met.

Section 12-19a of the general statutes provides a statutory formula for payment in lieu of taxes to be made by the state to municipalities in which state owned facilities are located. Applying this formula, CRRA estimates that the amount due Bridgeport would approach \$690,000 per year.

Given the unresolved dispute concerning payments in lieu of taxes to the City of Bridgeport, the Legislative Program Review and Investigations Committee recommends that future CRRA contracts with municipalities contain provisions which provide for payment in lieu of taxes to communities which host resource recovery facilities and that such payments be based upon previously established criteria.

CHAPTER FIVE

CRRA ADMINISTRATION

- Accountability
 - Personnel
 - Operating expenses
 - Ethics
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 - Small scale energy recovery facilities
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CHAPTER V

CRRA ADMINISTRATION

In addition to examining CRRA's Bridgeport project, the Committee sought to review and strengthen, where necessary, the administration of the Authority. This chapter reviews ways the Authority can be held more accountable to both the legislature and the public. The chapter also reviews the Authority's service strategies and plans to develop a second major resource recovery facility.

Accountability

A major function of the Legislative Program Review and Investigations Committee is to conduct oversight to assure efficiency and economy of operations in state agencies. The Connecticut Resources Recovery Authority differs from a state agency in that it was created as an independent corporate body by the legislature for specified purposes. The Authority was intended to operate outside the regular "restrictions" of state government and to be self-sufficient.

Because of CRRA's unusual quasi-governmental status, the Committee sought to examine those areas in which the Authority could be held more accountable to the legislature and the public, but at the same time allow the Authority flexibility with the private sector.

Personnel. The Authority's staff is not subject to Title 5 of the general statutes dealing with State Employees. As a result, CRRA employees are not eligible to receive state employee benefits, (Chapter 64a), disability compensation (Chapter 65), and state retirement benefits (Chapter 66); nor is the staff subject to the merit classification system (Chapter 67) or provisions of collective bargaining (Chapter 68).

The pay plan and classification grades of Authority staff members are approved by the Board of Directors. Minimum professional staff salaries range according to job title from \$21,100 to \$34,285.

On March 1, 1979, the Authority formally revised its personnel rules and regulations and identified a specific table of organization and staffing, a classification plan, a pay plan, a method for appointment and discharge, hours of work, leave of absence, holidays, and a discipline and benefit plan.

CRRA personnel rules are generally consistent with requirements of state service. One notable exception to the personnel policies is the failure of the Authority to meaningfully address its nondiscrimination responsibilities. While the policy does contain a brief two-sentence nondiscrimination clause, it does not assure that any affirmative action goals will be pursued. The Authority is not required under Section 4-61s of the general statutes to file an affirmative action plan with the Commission on Human Rights and Opportunities (CHRO). However, the Committee finds that the Authority should address its nondiscrimination responsibilities more comprehensively and recommends that the Authority prepare an annual affirmative action plan which should be adopted as part of its formal personnel policy.

Operating expenses. The current operating expenses (General Fund) of CRRA are met through short-term financing. The Authority currently has a \$2.5 million note outstanding. The Authority's operating expenses consist of:

- administrative expenses;
- project development costs; and
- debt service on notes.

Administrative costs are "ultimately" to be paid off by fees generated from ongoing CRRA projects. Project development costs (engineering consultant, legal and financial services) are reimbursed once the project receives long-term financing through the sale of revenue bonds. Therefore, all CRRA projects are "temporarily" financed from its current operating expenses.

Projected current operating expenses for FY 1979 are as follows:

Administrative Expenses	\$366,960
Project Development Costs	420,000
Debt Service (Short-Term Notes)	<u>118,750</u>
Total	\$905,710

Because CRRA projects have not developed as quickly as originally planned, the Authority has accumulated an operating deficit of \$1.1 million through FY 1978. This deficit is expected to increase by nearly 50% during FY 1979 (\$1.5 million). Actual deferred project costs during FY 1978 amounted to \$460,159. Approximately \$165,000 of this amount reflects project costs associated with developing a Central/Capitol Resource

Recovery plant. Because no plans presently exist for completing this project, it appears that CRRA will be forced to absorb these development costs (in the form of a continuing deficit) over the short-term.

The Committee reviewed the issue as to whether the Authority's method of short-term borrowing for current expenses and repaying the principal plus interest from project revenues was contributing to an unnecessarily high user fee for the Bridgeport system. An analysis of the Authority's financing, however, revealed that only about 18.6¢ of the \$16.38 charged per ton (based upon 1200 tons per day) is due to the debt service payments for short-term notes. According to a long-range operating forecast prepared by CRRA staff, the Authority can expect its first operating surplus in 1985.

The Legislative Program Review and Investigations Committee finds that the Authority's method of financing operating expenses currently does not have a significant impact on the debt service payments required of municipal participants in CRRA projects.

Therefore, the Committee recommends that the CRRA submit, as part of its annual report to the General Assembly, an updated long-range operating forecast indicating a plan of project implementation and estimated annual operating surplus or deficit and estimated cumulative operating surplus or deficit. Over time, the Legislature and this Committee, through its compliance reviews, will be able to evaluate the Authority's ability to operate on a self-sufficient basis.¹

Ethics. The Authority, to date, has established only a limited policy governing potential conflict of interest among directors and staff. The Authority has determined that it is not subject to the provisions of Chapter 10, Codes of Ethics which was adopted in 1977 by the General Assembly.

According to the Authority's legal counsel "Conduct guides are contained in the Authority's Procurement Policy and Procedures. Section V of that document prohibits any official, employee or member of the Board from having 'any interest in

¹ It should be noted that Section 19-524v authorizes financial audits of CRRA activities by the Auditors of Public Accounts. One such audit was completed for fiscal years 1974-1976 and a second audit is currently underway.

Authority contracts'...Section VI of the policy statement empowers the Chairman of the Authority to terminate any contract if he finds, after notice and hearing, that any gratuity was offered to an officer or employee of the Authority with a view toward securing the contract or favorable treatment in its administration."

On February 1, 1979, the Governor directed the Chairman of the State Ethics Commission to obtain a statement of financial interests from the President of CRRA and the members of the Authority. On February 23, 1979, the State Ethics Commission informed the Directors and President of CRRA that they would be subject to the requirements of the state Code of Ethics. The Authority rebutted that it is not an executive agency within the executive branch and the Chairman of the Authority refused the Ethics Commission's request for financial disclosure. As a result, the Commission issued an advisory opinion on May 9, 1979 stating that CRRA was not subject to Code of Ethics provisions.

A second part of the Code of Ethics requires registration of lobbyists who "communicate with any official in the legislative or executive branch of government for the purpose of influencing any legislative or administrative action." Here again, the Authority has taken the position that the Code of Ethics governing the conduct of lobbyists "is inapplicable to the Authority," because the Authority is not in the executive branch. A public interest group challenged this determination but the Ethics Commission found that such persons are not subject to the Code of Ethics provisions.

Given the nature of both public and private dealings undertaken by the Authority, the Committee finds a need to protect the public from any possible conflicts of interest or appearances of impropriety which may be associated with the Authority. For example, in 1974, one Authority staff member married an executive officer of SCA Services, Inc. SCA Services, at the time, was in direct competition for contract awards from the Authority. This information was submitted by the Authority to the then existing Joint Legislative Ethics Committee. However, no complaint was filed.

More recently, another potential conflict of interest situation has surfaced. On March 1, 1979, it was revealed by an Authority Board member that he has contractual dealings with Combustion Engineering, one of four firms competing for selection as the contractor for a second resources recovery plant. In addition, this Board member serves as chairperson of the Authority's Procurement Committee.

Given the unresolved conflicts of interest situations which have occurred in the Authority's dealings, the Committee finds a need that such instances be reviewed independently by the State Ethics Commission. Therefore, the LPR&IC recommends that the Board of Directors, staff of the Authority, and persons communicating with the Authority who may influence CRRA administrative action be subject to the provisions of the State Code of Ethics (Chapter 10).

Public records and meetings. According to Chapter 3 of the general statutes the Authority is a "political subdivision" of the state and is therefore subject to the Freedom of Information Act (FOIA). Records and files of the Authority are generally available for public inspection. In addition, the Authority conducts its monthly and special meetings in public unless specifically exempted by the Act.

Given the nature of the Authority's business, many records are not subject to disclosure. For example, the following types of records are exempt from disclosure under the Act (C.G.S. 1-19(b)):

- records pertaining to strategy and negotiations with respect to pending claims and litigation;
- trade secrets, commercially valuable plans, formulas or processes;
- commercial or financial information given in confidence;
- contents of real estate appraisals, engineering or feasibility estimates relative to the acquisition of property or to prospective construction contracts; and
- communications privileged by the attorney-client relationship.

In addition, a substantial number of CRRA meetings may be conducted in executive session. For example, discussion of the records listed above, strategies and negotiations relative to pending claims, and discussions concerning site selection, purchase and construction of facilities may be conducted in an executive or closed session.

Because the Authority relies so heavily upon contractual relationships and work products protected by the attorney-client relationship, and because companies involved with the Authority present information of a confidential and proprietary nature, the Legislative Program Review and Investigations Committee finds that non-disclosure often appears appropriate. Further, the LPR&IC Committee believes that the administrative and judicial remedies provided in the Freedom of Information Act are sufficient to protect the public interests.

Procurement. The procurement process for developing resource recovery projects is more complex than that of a typical public works project.

Specific problems associated with contractor selection, CRRA's development process, and delays associated with system procurement are described further in Chapter IV of this report. This section reviews the CRRA procurement policy and recommends improvements where necessary.

CRRA's procurement policy is governed generally by provisions contained in the Solid Waste Management Services Act and a formally adopted "Procurement Policy and Procedures" manual. Appendix V-1 describes the various statutory and administrative procurement policies under which CRRA must operate and which are similar to those used in a business setting. Discretion and flexibility in decisionmaking are readily apparent in the CRRA policy. This procurement policy is considerably different than the capital project requirements of a state agency (see Appendix V-2. Analysis of state agency procurement policies is beyond the scope of this study. However, it is important to note the basic differences between CRRA and state agency procurement policies.

Whereas the CRRA procurement process generally can be quickly implemented, the state agency process is considerably more time consuming because it involves review or approval by several other executive agencies. In addition to the executive and legislative review process which is required before a capital project can be funded, delays may occur at several junctures. First, approximately 326 to 587 days is spent on state agency initiated project design and construction oversight. Second, a processing delay of up to 347 calendar days can occur if a state agency leases space. Third, the Department of Administrative Services is responsible for the bidding on all agency building contracts.

The Committee concluded that CRRA retain autonomous decisionmaking because diffusion of this responsibility would be counterproductive to the policy of the Solid Waste Management

Services Act. However, in reviewing CRRA's procurement policy, the Committee notes that in 1977 the Authority delegated certain procurement decisions to a three member Procurement Committee. This policy was adopted on a less than majority vote and there was no opportunity for public comment and review.

The Committee finds that the promulgation of procurement policies and procedures should be public record and not modified without an opportunity for review by the public and interested parties. The Committee further finds that procurement decisions should not be delegated to any committee of the Board and that all decisions requiring Board approval be, in fact, made by the full Board.

Therefore, the Legislative Program Review and Investigations Committee recommends that Chapter 361b of the general statutes be amended to require the CRRA to promulgate guidelines for the adoption, amendment, or repeal of any procurement procedure. Such guidelines shall (1) provide notice to the public of the Authority's intent to adopt, amend, or repeal any procurement procedure; (2) afford the public and interested parties the opportunity to submit oral and written comments; and (3) require a public hearing prior to the final promulgation of any procurement procedure if requested by twenty-five persons, by a governmental subdivision or agency, or by an association having not less than twenty-five members; and (4) provide for the adoption, amendment, or repeal of procurement policies on an emergency basis for a limited period of time and under limited circumstances as defined by the Authority. No guideline adopted in the manner prescribed above shall contain any provision which delegates to any committee or subcommittee the power to make procurement decisions on behalf of the full membership of the Authority. The procedure described above is similar but less restrictive to that required of a state agency in promulgating administrative regulations under the Uniform Administrative Procedure Act (UAPA).

Adoption of municipal contract procedures. The Committee examined CRRA's existing legislative mandate (C.G.S. 19-524hh) to adopt procedures governing contract negotiations and contracting processes prior to contracting with any municipality. The Authority adopted guidelines detailing the type of joint municipal/CRRA participation "required on the development process." However, procedures were not adopted concerning "contract negotiations and contracting processes." CRRA's failure to adopt such guidelines concerns the Committee, since a dispute exists between a municipality which is under contract with CRRA (Westport) and that of two communities negotiating to contract

with the Authority (Norwalk and Weston).

Existing contracts commit a total of 1,200 tons of solid waste to the Bridgeport facility per day. Operation of the plant at a capacity greater than 1,500 tons per day would have the effect of reducing each municipality's disposal service fee. For example, the present "tipping fee" for the Bridgeport system is \$16.38 per ton. This is based upon a guaranteed charge of \$12.96 per ton, adjusted by the Consumer Price Index (1974 base year). If the municipalities deliver the maximum 1,800 tons per day to the plant, the current user fee¹ would be reduced to \$13.06. This figure does not reflect additional reductions in the tipping fee which could result from the sale of the recovered products.

The importance of assuring additional municipal waste commitments to the system is demonstrated by the above example. However, problems have arisen, particularly concerning the participation of the city of Norwalk and the town of Weston. If these communities joined the system they would transport their waste to the existing transfer station located in Westport.

The Westport transfer station (which is owned by the Authority) has a capacity to accept 554 tons of waste per day. Present usage by the town of Westport approximates 75 tons per day. Westport has indicated an unwillingness to permit further use of the transfer station. Norwalk's solid waste is estimated at 250 tons per day. Weston's solid waste is estimated at 16 tons per day.

The reasons cited for Westport's refusal are twofold. First, representations allegedly were made by the Bridgeport contractor and CRRA that the Westport transfer station would service the town of Westport only. Second, while the transfer station has the equipment capacity to process 540 tons per day, its present storage capacity is only half that amount with a permitted capacity of 266 tons per day.

According to the SWMU, a transfer station permit is issued on the basis of equipment, storage, and traffic capacity. The SWMU believes that the equipment capacity of the station is 600 tons per day. Additional traffic simulation would be required

¹ User fee =
$$\frac{\text{Debt Service + Operating Charge - Minimum Revenues}}{\text{Aggregate Minimum Commitment}}$$

(Section 301, Municipal Contract)

to determine the station's maximum traffic capacity. Finally, the storage capacity is 266 tons per day. According to the SWMU, the station cannot accept additional waste unless modifications are made. The Authority believes it can provide the necessary design changes so that the station could accept Norwalk's and Weston's waste.

It should also be noted that there is no provision in the municipal agreements which directly address the use of transfer stations. Rather, the Authority has assumed that transfer stations, such as the one located in Trumbull, would accept waste from more than one municipality.

The Committee finds that the Authority has not adopted (as required by Section 19-524hh) "specific procedures for resolving impasses, disputes, or other controversies that may arise during contract negotiations" with municipalities. For example, the participation of Norwalk and Weston could have a significant economic impact by reducing the municipal user fee for the Bridgeport project. The Legislative Program Review and Investigations Committee recommends that the Connecticut Resources Recovery Authority adopt procedures governing municipal contracting processes in accordance with Section 19-524hh of the general statutes.

In addition, the Committee recommends that the Authority apply for DEP approval to process additional wastes from Norwalk and Weston at the Westport transfer station. Should the Authority obtain DEP approval to process these additional wastes, the Authority should take legal action, if necessary, to assure the participation of these municipalities into the Bridgeport system.

Project Planning

The Authority presently plans to construct a major resource recovery facility in each of the following three regions:

- Bridgeport,
- Hartford, and
- New Haven.

These facilities are expected to service 60% of the state's solid waste needs. However, considerable difficulty has been experienced in developing the Bridgeport project, and the Authority's commitment to a second project appears confused.

Second project planning and development. Since its creation in 1973, CRRA has expended a considerable amount of staff

and other resources to the development of a second project. According to CRRA's 1974 Annual Report, Combustion Equipment Associates had been "selected by the CRRA to build and operate the second facility in the system which will be located on the old incinerator site in Berlin." This project has been referred to as the Central Capitol project. A third plant, the South Central project, was being considered at the time for New Haven. This project had progressed to the point where formal RFP's were issued to five companies.

Despite CRRA's decision to proceed with CEA, it was determined that waste commitments were insufficient to provide an acceptable user fee at either location. Therefore, the Authority negotiated and sought revised proposals for a combined South Central/Capitol project on November 7, 1975. At the time, the location of the second project (New Haven or Berlin) was left for each company to consider in its proposal. On April 27, 1976, the Authority received its consultant's evaluation of the contract finalists (Carrier Corporation, Combustion Engineering, OXY/CEA, Wheelobrotor-Frye). The consultant concluded that the Authority had available two "viable proposals and that their systems would operate satisfactorily as required" by the RFP (Combustion Engineering and Wheelobrotor-Frye).

These proposals went through an inactive period until December 21, 1976. At this time, the Authority held a meeting with communities in an attempt to define more clearly CRRA's decision areas. Still being considered at this meeting was the possible development of a

- (1) Central Capitol project;
- (2) a South Central project;
- (3) a Combined South Central/Capitol project;
- (4) a South Central/Housatonic project; and
- (5) any other feasible combination of municipalities.

A major purpose of the meeting was to obtain municipal commitments to a second project at an estimated user charge prior to formal contractor selection. The Authority established a March 1, 1977 deadline for obtaining the necessary municipal commitments. Based upon these needs, the Authority would proceed with a second project. On May 20, 1977, the Authority announced that thirty-one towns had adopted resolutions authorizing negotiations with CRRA which could lead to the development

of a second project for the Central/Capitol region.

While the municipal commitment deadline was essentially met, all other timetables projected by the Authority in December, 1976 were not.

In a January, 1978 report to the Environment Committee, the Authority noted that four firms had qualified for the "second project" which was now to be located in Hartford.

- Combustion Engineering;
- CEA/OXY;
- Wheelabrator-Frye; and
- Envirotech Process Equipment.

The Authority also stated that one of its five management goals for 1978 was the "final definition of a second project and selection of a contractor or contractors." To date, these second project goals remain unmet.

The Committee finds that CRRA has failed to plan and define appropriately its project development process. Section 19-52w of the general statutes requires CRRA to adopt by a two-thirds vote an annual operating plan. According to the Authority's counsel, "Prior to the current fiscal year, the Authority did not prepare a formal operating plan." The failure of the Authority to adopt an annual operating plan apparently has contributed to these planning weaknesses.

Therefore, the LPR&IC recommends that the Authority's existing operating plan be amended to reflect, at a minimum, the concerns listed below:

- how a project is organized;
- what municipalities have made service commitments;
- what additional service commitments are required;
- establishing goals and timetables for contractor selection, location of facilities, and technologies to be used; and
- identifying any project development problems which remain to be resolved or may cause a delay in implementation.

The operating plan should address how these decisions will be made, and most importantly when they will be made. Promulgation of an annual operating plan, in compliance with Section 19-524w, would have assisted the public, the municipalities, and the General Assembly in evaluating CRRA's programs and policies.

Status of the Hartford project.¹ In July, 1977, CRRA solicited statements of interest from prospective participants in the Authority's Hartford project. Twelve firms expressed such an interest. The Authority then issued a "Request for Approach" to those firms found to be prequalified. In November, 1977 formal presentations were made to the Authority and its consulting engineer (Bechtel Co.) by five firms. Subsequently, the Authority found the firms of CEA/OXY, Wheelobraytor-Frye, Envirotech, and Combustion Engineering qualified as finalists.

On May 30, 1978, the Authority adopted the following recommendations:

(1) The Authority should proceed forthwith with the development of a major resource recovery system to serve municipalities situated in central Connecticut or sufficiently nearby to make economic use of the facility for waste disposal.

(2) The project should be pursued in association with the Metropolitan District Commission, with roles and relationships of the parties to be generally described in the discussion paper attached to these minutes as Exhibit A entitled, "Possible Roles of CRRA, MDC and Prime Contractor in a Proposed Central Connecticut Resources Recovery System."

(3) The location of the main facility shall be at South Meadow in the City of Hartford at the facilities of the Metropolitan District Commission or the Hartford Electric Light Company, or both.

(4) The Authority's consulting engineer for the second project, Bechtel, should be instructed immediately to prepare a study containing recommendations to maximize the utilization of the South Meadow location with particular emphasis on obtaining the greatest return for recovered materials and energy in order to produce the lowest net user cost to the participating towns.

¹ For discussion purposes, the second project will be referred to as the Hartford project.

(5) The technology employed shall provide for co-disposal of municipal sewage sludge.

On September 1, 1978, Bechtel submitted an engineering report which supported the development of a major resource recovery facility at the South Meadow location. The facility is expected to serve 22 towns and accept a total waste stream of 2,500 tons per day. The total estimated capital investment is \$130 million.

On March 9, 1979, the Authority and the Metropolitan District Commission entered into a "Joint Planning Agreement" for the purposes of developing a resource recovery project in the Hartford area. This agreement addresses only the planning requirements of the project through the selection of a second consulting engineer¹ and a contractor for the system. Subsequent agreements will be required concerning the retention of municipal service agreements and minimum waste commitments; construction of the project; and commercial operation of the system. While the Authority recently met its projected date for selection of a new consulting engineer, it has not established a deadline for contractor selection.

According to a project schedule submitted to the federal Department of Energy (DOE), the Authority had anticipated a contractor selection by March 1, 1979. Following selection of a contractor, the Authority anticipates that obtaining the formal municipal commitments will take six months. Construction time is estimated at 30 months. Testing for commercial operation and shakedown will take approximately 12 additional months. Operation of the facility is expected for a total period of 25 years.

While these long-term goals have been established for the project's completion, the Legislative Program Review and Investigations Committee is concerned that the Authority is unwilling to commit itself to a deadline for contractor selection, a short-term goal. It is also unclear what effect the substitution of a new consulting engineer will have on the timetable proposed. Finally, the Authority has not stated whether it will submit RFP's to the existing four finalists or whether it will "reopen" the RFP process to other companies.

¹ A second consulting engineer has been retained by MDC to work with CRRA's existing consultant on areas concerning the co-disposal of MSW and sludge.

According to information supplied to the DOE, the Authority projected completion of the RFP preparation process within three months. Review and evaluation was estimated to take an additional two months.

Based upon CRRA's own projected timetable, the Committee believes that the selection of a second project contractor should be accomplished by October 30, 1979 (or five months following selection of a consulting engineer).

Given the difficulty in attaining past project goals, the Committee believes that the development of a comprehensive operating plan (see recommendation p.79) will assist the Authority in meeting its second project goals.

However, in order to avoid any additional project delay, the LPR&IC recommends that the CRRA take administrative action to assure that the request for proposal prepared for the second project not be reopened to additional contractors unless the Authority can clearly demonstrate the financial and/or technical need to expand the selection process.

The Committee also notes three other problems which may delay attainment of the project's proposed timetable. First, a zoning change from the City of Hartford is required prior to the construction of a facility on the South Meadows site. Second, the MDC does not presently possess the legal authority to enter into an agreement for the construction and operation of a resource recovery facility. Finally, any proposed project at the South Meadows location would require an emissions "exemption" from the requirements of the proposed state air quality implementation plan. The resolution of these problem areas should be addressed by the Authority's annual operating plan.

Refocusing CRRA Planning

Major resource recovery facilities. This chapter has primarily focused on CRRA's past and present activities developing major resource recovery facilities for the Bridgeport and Hartford areas. In addition, the Authority has begun what it terms "early planning for the third project."

The Authority has applied for a \$1 million planning grant from the U. S. Environmental Protection Agency to develop a New Haven project. The EPA has notified CRRA that it has been selected for a grant, but the amount of the award has not been established. The grant application requests funding for the development of a major resource recovery facility; a feasibility study for a small scale facility should the region lack

sufficient waste commitments; and funding for a source separation program for the City of New Haven. Despite CRRA's past inability to develop a New Haven project, the Committee believes that the Authority's present planning approach will prove more effective. For the first time, the Authority has acquired federal funds which will enable it to offset project development costs. More importantly, the Authority has provided an alternative implementation plan (i.e. small scale technology) should there be insufficient solid waste commitments for the project. Also unprecedented, the Authority is now planning a project, the South Central System, which will encourage source separation as a priority project component. This system is expected to be financed during FY 1982 and should become operational during FY 1986.

A major problem cited by local officials participating in the Bridgeport project has been the lack of clear CRRA responsibility project supervision. CRRA's grant proposals for the development of the second and third projects do provide the appointment of project directors who will be directly accountable for each project's development. However, additional staffing changes may be necessary to provide required project supervision.

Landfill services and source separation. Given the fact that the three proposed major facilities will service only 60% of the state's solid waste stream, the Committee has found a need for the Authority to redirect its planning and service goals. Chapter III of this report made recommendations which would direct CRRA to provide regional interim and long-term landfill services to those priority areas designated by the State Plan. In addition, the Committee has recommended that the Authority develop a model community source separation program which can serve as a basis for reducing the state's solid waste stream. Both of these programs would be eligible for grants made available by the Department of Environmental Protection.

Small scale energy recovery facilities. Low technology recovery systems (maximum 200-300 tons daily) provide a partial alternative to landfilling where a relatively small waste-stream precludes a large scale facility. A variety of small scale technologies exist, although only modular combustion units, originally developed for private industry, have proved successful over the long term. As a result, it is modular incineration which is regarded in the forefront of small scale energy resource recovery facilities. Other advantages include:

- ease of siting the facility as compared with landfills in regard to environmental and political factors;
- a relatively short construction stage as compared with large scale facilities since the modular units are prefabricated and assembled on site;
- ease of obtaining an air compliance discharge permit since facility location is usually outside the heavily urbanized, and pollution-laden areas.

Until recently, the higher operating costs relative to other disposal methods, have limited the economic viability for small modular incineration. However, higher energy prices have increased the revenues received from the sale of the steam energy, which has effectively lowered the operating cost. EPA estimates the usual net operating cost of \$22 to \$28 per ton. Other disadvantages include:

- operating costs remain higher than landfilling;
- the economics of scale assumed at larger studies are not available;
- close proximity to the user which necessitates a long-term commitment by the user; and
- site location, determined by the user, which narrows the suitable geographic area.

Three proposals for modular units are known to CRRA and DEP. A feasibility study¹, funded by DEP and the town of Windham, has recently been completed for a proposed 70-ton-per-day energy recovery project. The city has submitted a grant request of \$1.7 million. The town of Clinton has also applied for a \$500,000 DEP construction grant for a similar, but smaller project. In addition, the town of Simsbury is considering conversion of an unused sludge incinerator with a 200-300 ton per day capacity. Although each project has an industrial user interested in purchasing the energy, operating costs remain substantially higher than the method of disposal

¹ Camp, Dresser and McKee, Inc., "Regional Solid Waste Energy Recovery Project," 1979.

now used by the towns. None of these proposals was developed with the assistance of CRRA or originally planned as regional projects.

If DEP were to provide construction grants to CRRA and municipalities for regional projects, operating costs could be reduced. The amount of these grants (25%-65% of the construction cost) would result in larger financial commitments than those previously awarded by DEP. This reflects the relatively high capital outlays associated with such projects.

The LPR&IC finds that where large scale facilities are not feasible, small scale facilities provide a desirable alternative to landfills, despite higher operating costs. They provide long-range solutions with minimal environmental degradation.

Recognizing the implementation role of CRRA, the LPR&IC recommends that the Authority provide leadership and initiative in developing small scale facilities. Furthermore, where the proposed facility serves a regional population and is located in a designated priority area, the LPR&IC recommends that DEP provide financial support through the grant mechanism. Finally, the LPR&IC recommends that additional bonding be used for funding of regional small energy recovery facilities (see recommendation Chapter III).

The LPR&IC notes the apparent inconsistency of providing state grants to small scale facilities but not to large scale resource recovery plants. However, the Committee recognizes that without financial incentives, small scale facilities are not likely to be built in the near future.

Conclusion

It is clear to the Committee that the goal of total resources recovery may never be realized because of technological and financial restraints. The state and the Authority must develop a balanced mix of services which addresses regional needs. These, services, in addition to major resource recovery systems, must include small scale technologies, source separation and secure regional landfills.

CHAPTER SIX

HAZARDOUS WASTE MANAGEMENT

Federal Requirements of RCRA
Connecticut's Hazardous Waste Management Program

CHAPTER VI

HAZARDOUS WASTE MANAGEMENT

Hazardous wastes are the dangerous residues of our highly industrialized and technology-based society. They may be solids, liquids, gases or sludges; almost all are toxic. Subtitle C of RCRA, the federal hazardous waste management program, was enacted to regulate these wastes from "the cradle to the grave." This process involves identifying those wastes which are hazardous and assuring systematic tracking at all stages-- generation, handling, storage, transportation and ultimate burial. RCRA's present focus is on generators of hazardous wastes. Federal funding is not available for clean-up operations of abandoned sites and no provision has been made to attempt a costly inventory of these sites.

The regulatory task facing the administrators of EPA and the states with conforming state regulations is compounded by limited knowledge about the amount and producers of hazardous wastes and the extent of potential environmental degradation and danger to public health.

According to the Connecticut Council on Environmental Quality, nearly one-half of New England's 1.2 million tons of hazardous wastes annually are disposed by illegal "midnight" dumping.¹ Even for those hazardous wastes that are legally disposed, adequate safeguards to public health and safety are not always provided. More than 400 hazardous waste incidents have been reported to the federal Environmental Protection Agency (EPA) and the number is increasing. In view of the haphazard manner in which episodes are discovered, it is evident that other cases are unreported. Frequently, it is only after the damage has occurred, as in the case of Love Canal near Niagara Falls, or in Plainfield, Canton or Bridgeport, that the existence of a problem becomes known. It is the intent of the federal hazardous waste management program to eliminate the occurrence of these episodes in the future.

Federal Requirements of RCRA

Prior to passage of RCRA, hazardous wastes (excluding radioactive wastes) were not the responsibility of the federal

¹ Council on Environmental Quality, Annual Report 1978, p. 44.

government. Neither were they effectively controlled at the state level. RCRA vests the EPA with authority to regulate these wastes at all stages. Subtitle C (the hazardous waste management section of RCRA) establishes the framework for regulatory action and specifies a timetable for promulgation of implementation regulations. The regulatory framework includes:

- identifying and defining hazardous waste materials (Section 3001);
- developing standards for industries which generate hazardous wastes (Section 3002), for transporters of hazardous wastes (Section 3003), and for operators of disposal facilities (Section 3004);
- issuance of permits ("manifest system") for ultimate disposal sites (Section 3005); and
- notification requirements for operators of hazardous wastes disposal areas (Section 3010).

RCRA mandated the promulgation of regulations and guidelines by April 1978, eighteen months following enactment of the legislation. During the interim, the complexities of writing these regulations became apparent and the review and hearing process was prolonged. The result is that some regulations were proposed in December 1978, but promulgation is not anticipated until January 1980. The regulations will specify the requirements for states to receive "substantially equivalent status" (Section 3006) enabling self-administration of the hazardous waste management programs. If a state does not meet those standards, the EPA is required to enforce the federal program.

State programs are eligible for "interim authorization" for a period of two years following adoption of the regulations until approximately 1982. This status is contingent upon at least a portion of the state operation being in conformance with the federal standards. "Fully authorized" programs must have demonstrated enforcement mechanisms adequate to implement the state plan. Connecticut is one of 30-40 states which are expected to receive interim authorization following promulgation of the regulations.

Connecticut's Hazardous Waste Management Program

State programs for managing hazardous wastes have been limited to date. Although a few states have passed comprehensive

management legislation, it is more usual to limit regulation to transportation or to require reporting and record keeping. Connecticut's legislation is limited to regulating transportation and storage of specified hazardous wastes--flammable liquids, liquified petroleum gas and radioactive materials. The amount of hazardous waste generated in Connecticut is unknown, although the National Wildlife Federation estimates it to be in excess of 550,000 tons annually with a 5% growth rate. In spite of this growth, no statutory reference is made to hazardous wastes in the Solid Waste Management Chapter of the statutes. Neither are special wastes mentioned in the State Plan.

Departmental regulations for solid waste management, however, do define hazardous wastes in general terms (19-524-2 (12)) and also specify that hazardous wastes "shall be excluded from the solid waste disposal area or disposed under the direction of DEP with written approval from the Commissioner." In effect, the DEP recommends treatment and/or disposal prior to land-filling. For example, the Department has issued guidelines for disposal of allowable specific wastes such as metal hydroxides, the principal sludge generated by Connecticut industries. As a result, an estimated 4.5 million gallons of metal hydroxides are disposed in municipal landfills annually. This practice will be prohibited if metal hydroxides are defined as hazardous wastes in RCRA's Section 3001.

The Department began its comprehensive approach to hazardous waste management in January 1977. Since its inception, the program has included the following areas of responsibility:

- technical assistance to generators of hazardous wastes and municipalities;
- inventory of hazardous waste generators;
- initiation of enforcement action where necessary; and
- planning and development of hazardous waste disposal facilities.

During the ensuing period, the Department has adopted goals which anticipate the basic elements that will be required under RCRA. Development of an inventory of present generators of hazardous wastes, in conjunction with a special study funded under federal "208" programs,¹ has resulted in a list

¹ Federal Water Pollution Control Act Amendments of 1972.

which includes the 150 largest generators of hazardous wastes. However, this list does not necessarily include small generators of the most potent hazardous wastes, nor does it attempt to inventory generators and sites no longer in operation. In addition, the Unit will begin to develop a manifest system coordinated with a notification system, both of which are key requirements of RCRA.

The Unit's role in facilities planning and development includes establishment of and participation in the Connecticut Industrial Waste Management and Recovery Task Force. Assisted by a \$100,000 grant from "208," the Task Force will develop management options in both the private and public sector. Recommendations will follow a determination of the types of facilities needed, based on a detailed waste stream inventory of the largest generators. Although proposed facility locations will be stated only generally, the Task Force will necessarily address site constraints, both geologic and political.

Technical assistance activities include resolving immediate disposal problems and providing information to industries, institutions and municipalities. While there were approximately 100 requests for technical assistance throughout 1978, the figure has increased to approximately 20 per month during 1979. Where disposal in sanitary landfills would not conform to Departmental guidelines, the Unit recommends alternative methods including shipment to one of three in-state treatment and processing facilities or an out-of-New England chemical waste landfill. The latter is necessary because there is no secure hazardous waste landfill in Connecticut or any other New England state.

Enforcement activities have been limited by the general authority to promulgate regulations rather than specific statutory authority for regulating hazardous wastes. As a result, recent action taken against the illegal dumping in Bridgeport and Plainfield was necessarily brought under the statutory authority of the Water Compliance Unit.

The entire hazardous waste management program for 1979 is funded by a federal grant of \$179,000. It is expected that this grant will continue at least through FY-1980. Additions of three technical staff to the present four will complete the Hazardous Materials Management Unit recently established in DEP.

With continued funding contingent upon federal approval, it can be expected that Connecticut will fulfill the federal mandate. The fact that promulgation of federal regulations has been delayed is a concern however, since Connecticut is

without specific statutory authority to control the handling and disposal of hazardous wastes which are being generated daily. The LPR&IC finds that Connecticut's hazardous waste management system falls far short of the minimum standards proposed by RCRA. There is insufficient data regarding the present and past producers of hazardous wastes, the amounts generated and the ultimate method and location of disposal.

Therefore, the LPR&IC recommends that the Solid Waste Management Act be amended to include:

- A definition of hazardous wastes based on the proposed federal Section 3001 regulations;
- Duties and powers of the Commissioner to include regulation of hazardous wastes including specific enforcement authority; and
- A system of recording the disposal of hazardous waste materials.

Enactment of this proposal would provide necessary data for identification of the quantity, sources and types of presently generated hazardous wastes, their destinations and dispositions. It would also assist the Department in developing a manifest system and the Task Force in adopting recommendations regarding facility development. Furthermore, this recommendation would provide the Department with enforcement authority, a measure which would enable greater cooperation with producers of hazardous wastes. It would also demonstrate Connecticut's intent to manage hazardous wastes, irrespective of federal regulations.

The Legislative Program Review and Investigations Committee also finds that RCRA does not provide effectively for abandoned hazardous waste sites and waste streams which pose real and potential problems of environmental degradation.

Therefore, the Legislative Program Review and Investigations Committee recommends that the hazardous waste management program in Connecticut include an inventory of abandoned hazardous waste sites. Because local officials may have knowledge or access to information concerning past disposal practices or areas, the Committee recommends that each municipality be required to inventory possible abandoned hazardous waste sites within a one year period. Funding would be authorized for the creation of a DEP technical assistance staff position to assist municipalities in this function. In addition, a policy should be formulated concerning the state's financial responsibility for

cleaning sites where there is risk to public health and the environment. The policy should preserve the state's right to seek legal action against the owners of private hazardous waste dumps.

Implementation of this recommendation would identify potential hazardous waste problem areas and would attempt to provide a solution based upon the state's financial commitment.

The 1979 session of the General Assembly is reviewing proposed hazardous waste legislation (HB-7597) which, if enacted, would substantially incorporate the recommendations made by this Committee. It is also probable that the time lag between enactment and implementation of a state hazardous waste program would result in a timetable coincident with the new federal timetable.

APPENDICES

- I-1 Glossary
- I-2 Agency Responses
- III-1 SWMU Permit Procedures
- III-2 Technical Assistance Survey
- III-3 SWMU Enforcement Process
- IV-1 National Perspective on Resource Recovery
- IV-2 Contractor Selection
- IV-3 Other Contract Provisions
- V-1 CRRRA Procurement Policy
- V-2 State Procurement Overview

Appendix I-1

Glossary

ADL - Arthur D. Little, Company

aquifer - a body of rock or consolidated deposit that contains sufficient saturated permeable materials to yield usable quantities of groundwater to wells.

BTU - British Thermal Unit

bulky waste site - a solid waste facility which permits disposal of large and or bulky items such as construction or demolition wastes, appliances, furniture and tree stumps.

CDM - Camp, Dresser, McKee (resource recovery consulting engineers)

CEA - Combustion Equipment Associates, Inc.

CEQ - Council on Environmental Quality

C.O.D. - Commercial Operation Date

contractor - CEA-OXY Resource Recovery Associates

construction agreement - contract between CRRA and CEA-OXY Resource Recovery Associates concerning the construction of the Bridgeport Resource Recovery System.

CPI - Consumer Price Index

CRRA - Connecticut Resources Recovery Authority

DAS - Department of Administrative Services

debt service - the total amount of money expended for principal and interest payments, in a period of time, to maintain an issuer's outstanding debts.

DEP - Department of Environmental Protection

ECO-FUEL - a dust refuse derived fuel which is a proprietary interest and registered trademark of Combustion Equipment Associates.

Appendix I-1 (continued)

EPA - Environmental Protection Agency

force majeure - an act or event which is beyond the reasonable control of a party to a contract.

FOIA - Freedom of Information Act

G.E. Plan - the state's solid waste management plan developed under contract with the General Electric Company in 1973.

G.O. bonds - general obligation bonds which are secured by the issuer's full faith and credit (taxing power).

GBRSWC - Greater Bridgeport Regional Solid Waste Commission

hazardous waste - materials which by themselves or in combination with other materials pose a serious threat to individual health or safety.

industrial wastes - wastes generated by industrial processes and manufacturing operations, some of which may be defined as hazardous wastes.

joint venture - the business partnership arrangement between Combustion Equipment Associates and Occidental Petroleum Corporation.

leachate - liquid that has percolated through solid waste or other mediums and has extracted, dissolved or suspended materials from it.

MDC - Metropolitan District Commission

MSW - municipal solid wastes

municipal agreement - municipal solid waste management service contract entered into between CRRA and the participating municipalities of the Bridgeport Resource Recovery System.

municipal solid wastes - normal mixed household and institutional wastes privately or publicly collected and similar in composition. The disposition of these wastes is generally subject to more direct control by the municipality than any other refuse collection.

Appendix I-1 (continued)

operating and marketing agreement - contract between CRRA and CEA-OXY Resource Recovery Associates concerning the operation and marketing of recovered products at the Bridgeport Resource Recovery System.

OXY - Occidental Petroleum Corporation

pyrolysis - a resource recovery technology in which refuse is subjected to high temperatures in an oxygen-deficient atmosphere. This decomposes the waste into a gas or oil fuel.

RCRA - Resource Conservation and Recovery Act

RDF - refuse derived fuel.

resources recovery - involves the centralized processing of collected raw waste to separate out recyclable materials and to convert the remaining fixed mixed fractions into useful material or energy forms.

revenue bonds - a bond which is secured with project revenues.

RFP - Request for Proposal

sanitary landfill - a method of disposing of refuse on the land without creating nuisances or hazards to public health or safety, by utilizing the principles of engineering to confine the refuse to the smallest practical area, to reduce it to the smallest practical volume and to cover it with a layer of earth at the conclusion of each day's operation, or at such more frequent intervals as may be necessary.

SCRF - special capital reserve fund

small scale technology - the conversion of no more than 200-300 tons daily of raw waste into energy, frequently as steam manufactured in modular combustion units.

solid waste - unwanted, discarded material with insufficient liquid content to be free flowing.

source separation - reducing the amount of materials entering the waste stream by voluntary or mandatory programs to eliminate the generation of waste.

Appendix I-1 (continued)

SWMAC - Solid Waste Management Advisory Council

SWMU - Solid Waste Management Unit

transfer station - any facility which serves as a point for the collection and transfer of solid waste to another facility.

UAPA - Uniform Administrative Procedure Act

UI - United Illuminating Company

waterwall incineration - a system which generates steam in a boiler lined with waterfilled tubes using heat from burning unprocessed refuse on moving grates.

Appendix I-2

Agency Responses

It is the policy of the Legislative Program Review and Investigations Committee to submit a draft of its report to appropriate agency officials for their comment prior to Committee adoption. For this report, "agency responses" were requested and received from the Commissioner of Environmental Protection, the President of the Connecticut Resources Recovery Authority and the Chairman of the Solid Waste Management Advisory Council. These persons were asked to comment regarding any errors, omissions, or alternative interpretations of data or findings.



STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION



STATE OFFICE BUILDING HARTFORD, CONNECTICUT 06115

July 3, 1979

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMENTS ON: "SOLID WASTE MANAGEMENT IN CONNECTICUT, MAY, 1979"
A REPORT OF THE LEGISLATIVE PROGRAM REVIEW AND INVESTIGATIONS
COMMITTEE.

Of prime concern to the Department at this time is the fact that by the end of 1980, approximately thirty-six disposal areas will have to be closed because they will be filled to capacity or they have serious environmental problems. Redirecting the waste streams is a problem that must be considered now. Legislation is needed which would give the commissioner authority to require two or more municipalities to act jointly in fulfilling their obligations as required in section 19-524n of the general statutes. Section 19-524n delegates to the municipality the responsibility for providing for the safe and sanitary disposal of all solid wastes generated within its boundaries. With the present legislation, 78-67, the Commissioner is required to provide a reasonable alternative before he can order closure of a disposal area. Recent experience in court proved that determination of a reasonable alternative can seriously impede Department enforcement activities.

Apparently many people in the state feel that the Department is too strict in its enforcement activities. With the very limited capacities available at the sites, it is important that regulations be adhered to in an effort to maximize the usefulness of these sites. In addition, the Department is encouraging the establishment of source separation programs in every municipality to minimize leachate production and concentration, and maximize resource recovery.

The report indicates reluctance on the part of the Department to grant permits for new sites. There is no reluctance on the part of the Department to grant new permits for sites that are environmentally sound and conform with the Department Guidelines. There is, however, reluctance on the part of the operators, especially the municipalities, to finance the preparation of engineering reports needed to obtain permits on older sites. Staff limitations impede the department from doing the necessary follow-up work for permitting existing sites. In some cases, the Department has issued orders to get the work done so that the useful life can be maximized. Because of the difficulties encountered in obtaining local approvals to utilize land for new disposal area, there is a need for having Regional Boards and the Connecticut Resources Recovery Authority involved in the siting of new disposal areas. Regional Board involvement in facility siting would allow for consideration of such factors as traffic to and from the facility and other local concerns.

The Solid Waste Management Unit is working with the Natural Resources Center of the DEP in developing a siting policy which is dependent upon setting ground water standards. It is expected that the policy will be developed by early Spring of 1980. The Department intends to form a task force with representation from affected agencies. We feel that December 1, 1979, does not allow enough time to develop the policy.

We do not feel that a Regional Board or the CRRA should be delegated the responsibility for permitting solid waste disposal areas. This should remain with the DEP. When the siting policy has been adopted, the DEP will prepare a list of areas within which suitable landfill sites may be considered. This list will be given to the CRRA and Regional Boards for their consideration. They will nominate sites from this list which will then need more detailed engineering study prior to consideration for issuance of a permit. If the engineering and operational plan is found to be environmentally acceptable to the Department, a permit will be issued by DEP following a public hearing.

The Department supports the Committee recommendations to amend the general statutes to require a public hearing for all solid waste facility permits and significant permit modifications. The Department also supports recommendations dealing with issuance of a certificate to operate a facility and the authorization to deny a permit if it is determined that a facility operator does not have adequate financial resources to meet all obligations and permit constraints.

The fact that support of other recommendations is not specifically cited does not necessarily imply non-support of Committee recommendations.

The Department supports the Committee recommendation concerning legislative representation on the CRRA Board. It is in the interest of indispensable three way communication between the CRRA, the legislature, and the DEP, that the legislative members of the Board be members of the Environment Committee and well versed in matters of solid waste management.

There appears to be some confusion in the report concerning to what extent, if any, the state should subsidize resource recovery plants. The Department feels this point needs clarification. The Solid Waste Management Unit is presently preparing an updated grants policy.

The report expresses concern for municipalities in the Bridgeport System being unable to fulfill their minimum tonnage requirements and a study was recommended. The Department feels that efforts should be concentrated on increasing the total tonnage delivered to the plant by bringing in additional municipalities.

LEGISLATIVE PROGRAM REVIEW AND INVESTIGATIONS COMMITTEE

Report on: Solid Waste Management in Connecticut

COMMENT OF CONNECTICUT RESOURCES RECOVERY AUTHORITY

Preface

The Board of Directors of the Connecticut Resources Recovery Authority establishes policy. The findings and recommendations of the Legislative Program Review and Investigations Committee and the final report of the Committee were made available at a time when it was inappropriate for the Board to consider the report and recommendations prior to the proposed publication date. Accordingly, the comments which follow represent the reactions of the staff of the Authority and not its Board of Directors; the comments may or may not represent policy choices which will be adopted by the Board in due course.

Introduction

The salient conclusions of the report are positive and favor the continued development of resources recovery in Connecticut. This is important. In 1971 the state embarked upon the first comprehensive view by any state of waste management practices as they impacted upon land, air and water resources. It concluded that existing methods were unacceptable environmentally, socially and (in the long term) economically. We decided that we should move toward a new waste management future centered upon the recovery of resources from the waste stream. These conclusions were at the time subject to question, with some reason. Were there technologies which would "work"? Was it in fact necessary to move away from familiar techniques such as land disposal? Would the economics prove out? While many of the questions still require more authenticated answers, the report correctly concludes that resources recovery remains a reasonable and attainable goal for the management of many, if not most, of the municipal waste streams in the state.

Similarly, in 1973, when the Connecticut Resources Recovery Authority was brought into being, there was a question about the need for and value of an entirely different kind of institutional structure to create this new and different kind of waste management approach. Were such projects attainable on the basis of special revenue bonding without a general subsidy from state or municipal funds? Could municipal relationships be organized around contract rather than the fiat of the legislature? Could the regulatory and planning functions of the Department of Environmental Protection be efficiently separated from the implementing responsibilities of the new quasi-public development corporation? The report affirms the value of CRRRA as an institution and the confidence of the Committee that the Authority is an effective institution and can become even more so.

Emphasizing the need to have an updated State Solid Waste Management Plan stresses a concern of the Authority. Much of the information in and many of the policy directives of the present state plan are as valid today as they were when it was adopted. However, other elements of the plan have proved incorrect or unattainable. The shortfall between the expectations of the plan and realistically attainable objectives applying present technologies and resources within present-day economics has caused a significant amount of the stress which is clearly evident today. The need to upgrade the plan to meet achievable goals and provide a greater sense of certainty for our municipal managers is clear.

Resources Recovery as a Goal

There is no reason to abandon a waste management future centered primarily on resources recovery. There is every reason to move toward that goal. It is incontrovertible that there are valuable things in what people throw out. It is also incontrovertible that it is expensive to throw anything away, more expensive than we have realized until relatively recently. "Resources recovery" is a part of addressing those realities. Waste management begins with reducing the volume of waste, since whatever is disposed of will be expensive.

Whatever gets thrown out is grist for "resources recovery." The concept includes source separation programs to remove bottles, metals and other materials from the waste before they become part of the mixed stream. Improvement in public awareness, revision of collection practices, undergirding of intermediate processes and support for marketing of source-separated materials are important aspects of Authority concerns. We do not feel that these activities undermine the economic viability or sensibility of end-stream recovery processes. These programs are the primary administrative responsibility of municipalities which presumptively are economically benefitted by them.

The final aspect of "resources recovery" is dealing with that end-stream. That stream includes materials which may or may not have recoverable value and organic components which also may have recoverable value. It is the strong presumption of the Authority that the organic fraction, if it can be effectively separated, does in fact have a value sufficient to support the economics of recovery systems, at least at certain volumes of waste. The practicality of removing materials from the mixed waste stream for recycling into reuse should not be accepted as an abstract but should be analyzed on a project-specific basis. This presents an economic, not a philosophical, problem.

The bottom line remains that "resources recovery" is a desirable and attainable goal for the State of Connecticut. However, the process of reaching that goal clearly is more complex than planners imagined only a few years ago.

The Authority as an Institution

The report accurately reflects the potential and limitations of the Authority as an institution. The latitude which has been granted to CRRA insofar

as its contractual and financial abilities and its flexible response time (without the time and administrative constraints associated with familiar federal and state grant programs) presents an asset easily ignored but whose value has been proved by experience. This latitude is circumscribed by significant limitations, also identified in the report. These restrain the Authority in terms of siting facilities, landfills and transfer stations and financing projects other than those supported solely by their own revenues through entirely voluntary participation by municipalities.

Of particular concern is the implication in the report and recommendations that CRRA needs to be reinforced in terms of "accountability." In fact, the channel of communications between the Authority's Board of Directors and the executive department is supremely enabled by the fact that the chief executive appoints seven of the ten members of the board, with the presumptive channel of information and responsibility which that implies. Quarterly reports are rendered to the chief executive and regular reports reach the leadership of the General Assembly as well. It operates under formally adopted rules relating to procurement, personnel and ethical restraints. The notion of a "free-wheeling" agency dealing with matters of public import without oversight is unwarranted.

It should also be made clear that CRRA is not a "last resort" option for waste disposal. It was not created by the General Assembly to be that, does not hold itself out as that, and in fact it is not that. Where, within the extreme constraints as to siting, financing and the voluntary participation of other necessary participants, the Authority can provide a resources recovery opportunity for a municipality which has run out of other disposal alternatives, the Authority has every intention of providing that opportunity. But the responsibility of disposing of municipal waste remains with the municipalities, and the responsibility of regulating that disposal remains with the Department of Environmental Protection. CRRA's options are limited and should not be represented otherwise.

State Plan of Solid Waste Management

While the statute is subject to interpretation, it seems reasonably clear that the Department of Environmental Protection is responsible for promulgating the State Plan of Solid Waste Management in its updated versions. This is a process which is going forward at the present time. It is essential that this update occur because the Authority itself is constrained to adopt an annual Plan of Operations in conformity with the plan. In fact, for the 1980 fiscal year it is likely that CRRA will promulgate its own operations plan prior to the official adoption of the amendment of the existing plan.

In the view of the Authority, it is important that this plan not be merely descriptive or passive. Rather, it should identify where we are now in terms of the total solid waste management picture, define where we want to go and advocate the ways which we think we might follow to get to that objective. Having done so in a general sense, the plan should identify the roles of various participants and note timeframes in which it is desired that the process occur.

The importance of this cannot be overestimated. The citizens and municipal officials do not feel a sense of certainty about solid waste management. At the same time they know that familiar options may be foreclosed to them and that economic consequences will flow from that foreclosure.

The long-term objective of the plan certainly should continue to emphasize the development of resources recovery systems and particularly waste-to-energy projects. The plan should indicate that these projects can be of large scale (Bridgeport), very large scale (Dade County, Florida), or small scale (Auburn, Maine, and Durham, New Hampshire). Their dimension will depend primarily upon the size of the available markets (especially the energy markets) and the volume of nearby waste. The cost of transporting waste through the use of expensive and scarce motor vehicle fuels and the increasing value of energy, as well as the growing interest on the part of many potential energy markets in developing alternative sources, may render viable relatively small regional waste-to-energy systems previously considered economically unfeasible. Smaller systems also are consistent with the maxim that waste should be disposed of as close to its point of generation as it can be. This rapidly changing energy picture requires updating past analyses of potential energy markets for waste-to-energy facilities. This is a major and significant task affecting both location and scale.

Plan of Operations

The proposed plan of operations for the Authority for fiscal year 1980 is in the process of staff and Board review at the present time. While it is intended to carry out the requirements of Section 19-524w of the General Statutes, an even more important purpose is to provide public officials and citizens with a clear statement of what the Authority sees as its objectives and priorities for the coming fiscal year and to supply a management tool for the Authority staff and Board of Directors within which the budget can be organized, according to which resources can be allocated, and against which results can be measured.

The proposed plan of operations identifies seven major objectives to be pursued in fiscal year 1980. They are:

1. To achieve full commercial operation of the Greater Bridgeport System and service to participating municipalities at acceptable costs.
2. For the Mid-Connecticut System, to define the scope of the project, select site or sites of principal processing facility or facilities, select contractor and complete negotiations with selected contractor.
3. For the South Central System, to complete all steps necessary to the issuance for a Request for Proposal.
4. To proceed with at least one "smaller" scale waste-to-energy system located away from high density population centers.
5. To participate in at least one comprehensive demonstration source separation project.

6. To improve public awareness and participation in resources recovery planning and implementation.
7. To continue to improve the financial standing of the Authority.

Siting

The Authority urged the 1979 session of the Connecticut General Assembly to enact a law which would create a Solid Waste Facility Siting Council similar to the Power Facilities Evaluation Council. The proposal did not receive favorable legislative action. The Authority is pleased that the Legislative Program Review and Investigations Committee recognizes the importance of this issue since resources recovery projects, and indeed other alternative disposal options, must clearly be organized on a regional basis.

It is also plain fact that while everyone wants their garbage picked up, nobody wants it put down anywhere near them. While this issue is discerned primarily from the aspect of land disposal, it should be kept in mind that the same problem exists in regard to the siting of any component of a waste disposal system, including transfer stations and resources recovery processing plants. The familiar extremes are present between absolute municipal control and complete state authority. The report suggests an innovative process which is worthy of consideration. The position of the Authority is that whatever process is adopted by the General Assembly, the issue must be addressed or the entire concept of regional and statewide resources recovery systems will have to be abandoned.

State regulation of facility siting under present law emerges solely in the context of environmental protection. From the existing state jurisprudential standpoint, if a site is found to be acceptable environmentally, it should be permitted. The notion of a Facilities Evaluation Council recognizes the importance of other factors in the licensing procedure, such as the impact of a given permit upon the land use plan of a community, the economic effects of the permit on the community and particular property owners, the effect of proposed transportation patterns and the like. While none of these factors should individually be controlling, the permitting process should formally recognize them and include a "balancing" exercise which weighs these factors along with environmental concerns. The Power Facilities Evaluation Council encounters very similar problems, and the statutory resolution of them has proved by and large acceptable both to the citizenry and to the industries governed by that process. The Authority continues to urge serious consideration of the PFEC model for solid waste siting.

If the report of the Committee has no other effect than to make the General Assembly thoroughly sensitive to the siting problem, it will have served a good purpose because this issue is of transcendent significance. Difficult as may be the siting of a disposal facility for ordinary solid waste, the siting of higher risk chemical and industrial waste disposal facilities (which must be assured under the Federal Resource Conservation and Recovery Act of 1976) will be even more difficult and divisive. It is the earnest hope of the Authority that the General Assembly will provide as early as it conveniently can ways to deal with the siting issue.

Financing/Administration

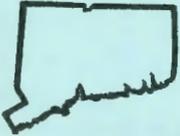
As has been noted, one element of the Plan of Operations of the Authority for Fiscal Year 1980 is to continue to improve the financial standing of the institution. In connection with this, the Authority intends to continue to reflect in its financial statements an updated, long-range operating forecast identifying a plan of project implementation and estimated operating surpluses or deficits to the end that the General Assembly will be enabled to evaluate the Authority's ability to operate on a self-sufficient basis. By doing so, the Authority intends to implement a specific recommendation of the Committee.

The issue of whether the Authority over the long term can continue to be funded as now is the case is important and can be isolated only through such forecasts and reports. Fiscal year 1980, during which the Authority may begin to receive revenues from the Greater Bridgeport System, should be an important benchmark. The two federal grants for major projects in Hartford and New Haven should be of some assistance, and the Authority will continue to seek federal grant assistance where it is appropriate.

It is expected that the present staffing level of the Authority will be insufficient to support the Plan of Operations envisioned for fiscal year 1980. It will accordingly be recommended that the staff be augmented by three full-time members, including project directors for both the Hartford and New Haven projects and a full-time public participation director. If these recommendations are adopted by the Personnel Committee and the Board of Directors, the professional staff of the Authority will increase by nearly fifty percent, an increase commensurate with the increased responsibilities and expectations which the fiscal year 1980 Plan of Operations envisions. Funded as it is, the Authority has been cautious in authorizing new staff positions, but it does not seem unreasonable to expect that comprehensive implementation of a total state solid waste management system should include not fewer than ten professionals.

Conclusion

The Authority extends its special thanks to those members of the Committee and its staff who devoted time, attention and energy to the report. The cumulative experience represented by the staff of the Authority in the development of resources recovery projects totals 49 man years, bearing in mind that the staff of the Authority presently continues to be modest. If anything has been learned about resources recovery since 1973, it is that the development process is complex, difficult, largely unexplored and laden with pitfalls. For the staff of the Committee and those members of it who took an active part in the evolution of the report to have developed the evident degree of knowledge and sensitivity in the very short time the program review was conducted is an extraordinary achievement. The perception of the "real world" problems and opportunities which the report clearly reflects does credit to the process which was followed and the people who took part in it. The Authority wishes particularly to acknowledge the thoroughness and courtesy of Staff Attorney Paul S. Rapo, Esq., and his staff.



CONNECTICUT SOLID WASTE MANAGEMENT ADVISORY COUNCIL

60 Washington Street, Suite 1305, Hartford, Connecticut 06106

(203) 549-6390

July 3, 1979

The Honorable William E. Curry, Jr.
The Honorable Astrid T. Hanzalek
Co-Chairmen
Legislative Program Review and
Investigations Committee
18 Trinity Street
Hartford, Connecticut 06115

Dear Senator Curry and Representative Hanzalek:

The Connecticut Solid Waste Management Advisory Council is established by Section 19-524 11 of the Connecticut General Statutes. The Council consists of thirty-one members, including fifteen members representing the planning regions of Connecticut; eight members representing business and industry; and eight members representing the general public, including environmental and conservation organizations and interests. The Council members, because of their different backgrounds and constituencies, often have different views on specific solid waste issues. Nevertheless, in reviewing the Report on Solid Waste Management in Connecticut prepared by your Committee, the Council members were able to agree completely and thoroughly on their response to many parts of the Report. We chose not to comment on each and every section of the Report. Rather, we devoted our attention to those issues which were of greatest concern. As Chairman, I have the task of trying to present our views in this letter.

In the first place, the Council strongly supports the need for an updated Solid Waste Management Plan. So much has changed since the promulgation of the first statewide plan that it is very important that an updated plan be completed as soon as possible. The new plan should be specific and precise, and it should give municipal officials and the citizens of Connecticut a definite direction for the future. Our Council also supports the recommendation in the Report that the plan be updated biennially. We would like to add that there ought to be adequate public participation before the plan is officially adopted. Our Council is also in full agreement with the finding that the responsibility for solid waste management planning rests with the Department of Environmental Protection. Accordingly, we also agree with the recommendation that Chapter 361a of the Connecticut General Statutes be amended to delete the requirement calling for submission of local and regional solid waste plans.

The update of the State Plan also ties in with the recommendation that Sections 19-524 1 and m be amended to limit grant funding to facilities which serve more than one municipality and are designated for interim or long-term use in the State Plan. The Council endorsed the suggestion that DEP should rank grant applications on a priority basis before submission to the Bond Commission. We feel that the ranking should be done in conformity with the State Plan and the CRRRA Plan of Operations.

The Honorable William E. Curry, Jr.
The Honorable Astrid T. Hanzalek
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July 3, 1979

What was said about the need for an updated Solid Waste Management Plan also can be said about the Plan of Operations of CRRA. Our Council agrees with the finding that CRRA needs to prepare a formal operating plan with a very specific timetable. The Council members were pleased to hear that such a plan is about to be adopted by the Authority.

The Council found it very easy to strongly support the call for so-called "small scale" resources recovery systems. Over the past few years it has become apparant that large resources recovery plants are not the only answer to Connecticut's solid waste crisis. One possible answer may be found in small scale technology. We therefore are in full support of the recommendation that CRRA provide the leadership and initiative in developing small scale facilities.

There was agreement among the Council members on the need for a new landfill siting policy. Lack of adequate landfill space is one of the crucial problems facing Connecticut. While our Council agrees with the Report on the need for a landfill siting policy, we disagree with the Legislative Committee's recommendation on how to achieve this. Our Council is strongly opposed to the establishment of any new Ad Hoc Committee on Siting Policy and the creation of Regional Solid Waste Management Boards for issuing landfill permits. The proposed system seems very cumbersome and unworkable. Instead, our Council recommends the use of the Power Facilities Evaluation Council, with appropriate legislative and regulatory changes, as the proper body for siting landfills in Connecticut.

There are also a number of other landfill related issues which our Council considered in reviewing your Report. When speaking about landfills, we recognize their continued importance, but we do not want to overemphasize them. As you will see below, we will be strongly in favor of source separation and volume reduction. Nevertheless, we must speak of landfills and the need for the state to have strong controls over them. We agree with the recommendation that a solid waste facility owner be required to obtain a certificate to operate. We strongly endorse the recommendation that the Solid Waste Management Unit of DEP be directed to develop performance standards for landfill operations. Furthermore, we feel that DEP should be given additional enforcement staff and should not have its authority eroded further by the passage of legislation such as Public Act 78-67.

The Solid Waste Management Advisory Council continues to be in support of the concepts of source separation and volume reduction. While these ideas are found, in one way or another, in various parts of the Legislative Committee's Report, it is the feeling of the Council that they should be pursued continuously. For example, the Council strongly endorsed the recommendation that CRRA be the leader in developing a source separation program. In another part of the Report the Council strongly endorsed the idea of a review of the minimum volume commitments that municipalities make in joining a CRRA facility. In line with our views on source separation we felt that towns should be encouraged to reduce waste and they should not be penalized for failing to meet a minimum volume commitment. Looking at this another way, the Council members felt that solid waste processing

The Honorable William E. Curry, Jr.
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facilities should be built with source separation and volume reduction in mind. The municipalities, in turn, should plan their volume commitments to these facilities with allowances for source separation and volume reduction. Along these lines the Council was also concerned about references in the Report to glass recovery systems. When the glass separation system of the Bridgeport facility is discussed, we feel that consideration ought to be given to source separation as a possible method of glass separation.

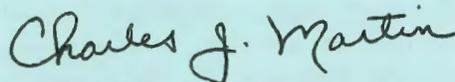
While only discussing the item briefly, the Council agreed on the need for a state hazardous waste program that would take into account the transportation, storage, treatment, exchange and disposal of hazardous waste. This is another critical state problem that is now being studied by the Connecticut Industrial Waste Management and Recovery Task Force.

There were two items of discussion on which the Council members did not reach full agreement. Some members felt that CRRA should be criticized for allegedly avoiding opportunities to obtain short term profits from the sale of recovered materials and not taking advantage of this possible source of revenues. Other Council members disagreed with this statement and noted that the revenue from the sale of recovered materials is built into the contract price for disposal at the Bridgeport resources recovery plant.

On another matter some members felt that the Council should recommend that the legislature consider requiring towns which dispose of their waste outside of their borders to diminish their refuse through cost effective recycling programs. Others disagreed with this, noting that they could not support proposed legislation that would require towns to do so without providing assistance to the towns to carry out such a new state mandate. Furthermore, there were also Council members who said recommendations of this kind should not be made until the Council has had a chance to consider their full impact.

In summary let me say again that our Council appreciates this opportunity to present comments on the Report of the Legislative Program Review and Investigations Committee. We will watch with great interest as the Report is considered by the legislature. It is an important document, and we hope that it is given serious consideration.

Very truly yours,



Charles J. Martin
Chairman
Connecticut Solid Waste Management
Advisory Council

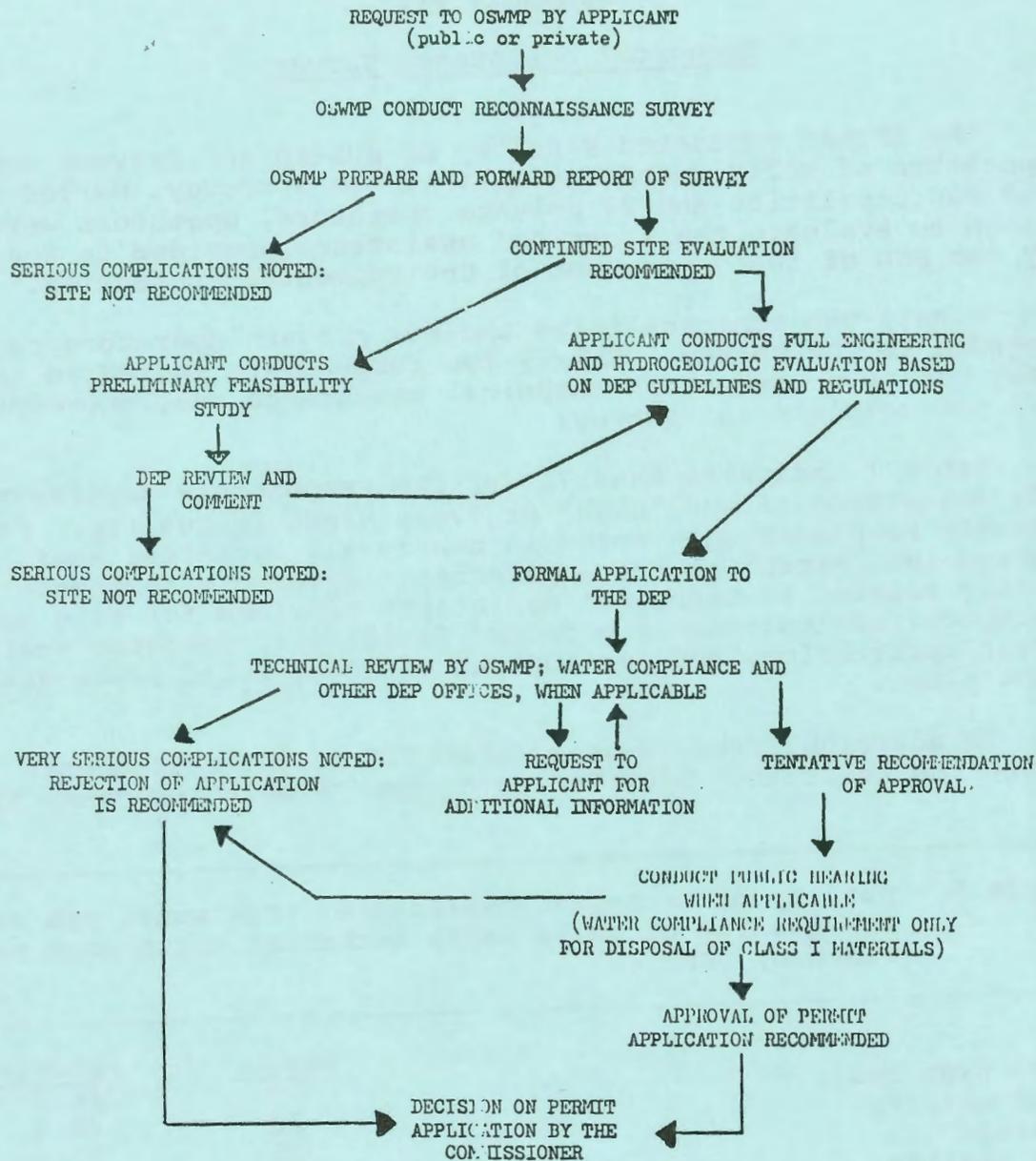
CJM/mhm

cc: Paul S. Rapo, Esq., Staff Attorney

Appendix III-1

OFFICE OF SOLID WASTE MANAGEMENT PROGRAMS

POTENTIAL SOLID WASTE DISPOSAL SITE REVIEW - PERMIT PROCEDURES



Appendix III-2

Technical Assistance Survey

The LPR&IC conducted a survey of public and private owners/operators of solid waste facilities. In a survey, mailed to 169 municipalities and 22 private operators, operators were asked to evaluate the technical assistance provided to them by the SWU of the Department of Environmental Protection.

Ninety-two municipalities and six private operators responded to the survey. Thirty-two respondents indicated that they had never requested technical assistance and, therefore, did not complete the survey.

Table 1 indicates that 71% of the respondents considered the assistance either "high" or "very high" in quality. Favorable responses were noted in nearly all technical assistance categories, except source separation. Favorable responses generally related to technical assistance provided for site surveys, technical evaluations of proposed facilities, operator training, grant application, and development of local solid waste management plans.

In addition, Table 2 shows that 71% of the respondents rated the assistance provided as either "timely" or "very timely."

Table 1. Quality of technical assistance: How would you rate the quality of solid waste technical assistance provided by DEP?

	<u>Number</u>	<u>Percent</u>
Very high quality	19	28.8
High quality	28	42.4
Average	15	22.7
Low quality	3	4.6
Very low quality	0	0.0
No response	1	1.5
TOTAL	<u>66</u>	<u>100.0</u>

Source: LPR&IC survey of municipal and private solid waste facility operators.

Appendix III-2 (continued)

Table 2. Timeliness of technical assistance: Have responses by DEP to your requests for assistance been timely or have you experienced delays in getting help?

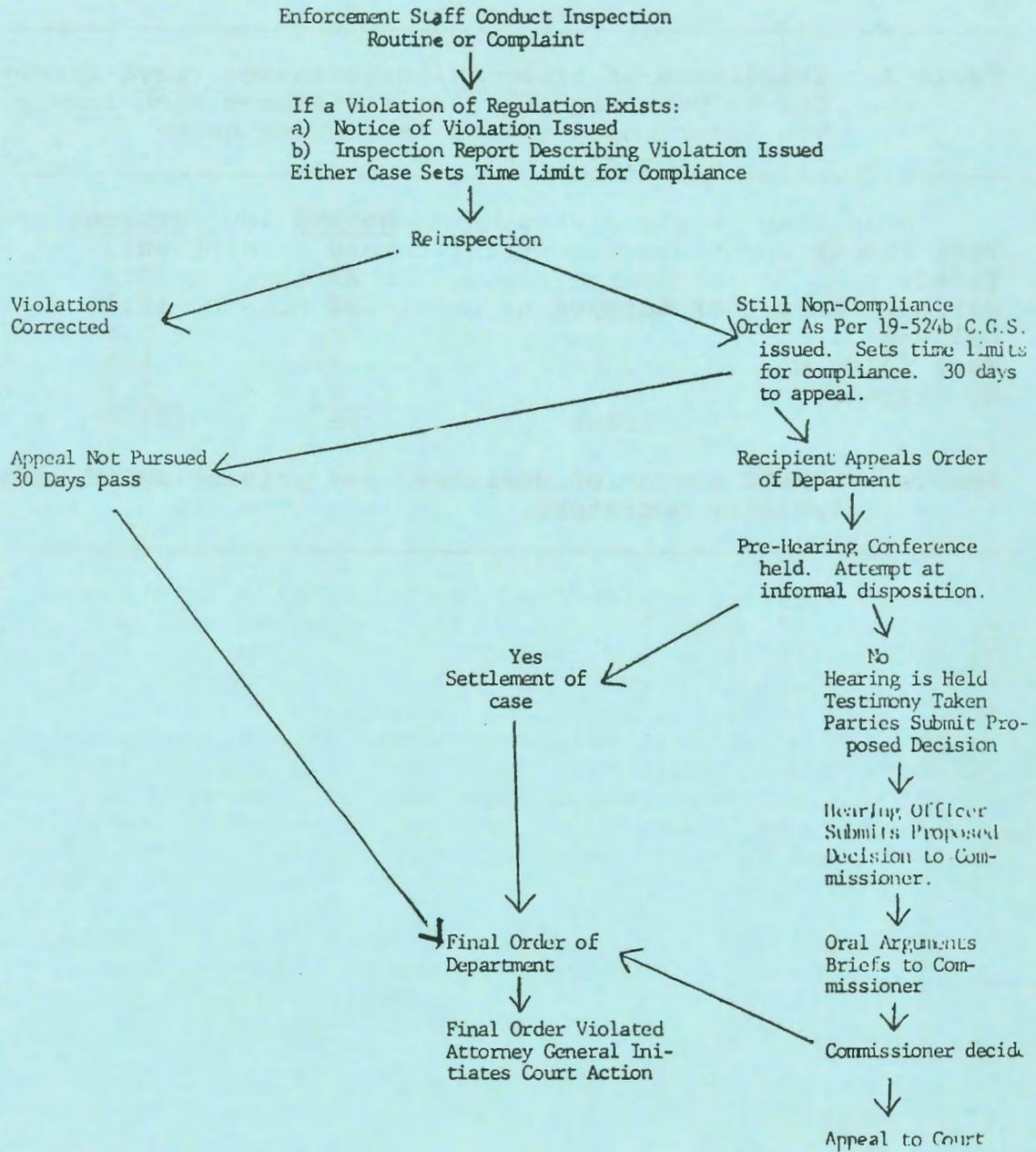
	<u>Number</u>	<u>Percent</u>
Very timely	20	30.3
Timely	27	40.9
Neither timely nor delayed	12	18.2
Delayed	5	7.6
Very delayed	1	1.5
No response	1	1.5
TOTAL	<u>66</u>	<u>100.0</u>

Source: LPR&IC survey of municipal and private solid waste facility operators.

Appendix III-3

OFFICE OF SOLID WASTE MANAGEMENT PROGRAMS

Enforcement Process



Appendix IV-1

National Perspective on Resource Recovery

Overview of State Legislation

More than twenty states have enacted legislation intended to regulate or encourage resource recovery development. According to the U.S. Environmental Protection Agency, the "data show that although no single pattern or model has been established in financing, procuring, or managing recovery systems...almost all facilities have been financed by tax-exempt, long-term debt obligations."

Connecticut was the first state to enact legislation creating a state resource recovery authority. Since 1973, three other states (Rhode Island, Wisconsin and Delaware) have created similar structures.

Two states (Maryland and New York) have established "super corporations" which have broad environmental powers to facilitate the development of resource recovery systems and other waste disposal problems. For example, the New York Environmental Facilities Corporation, established in 1970, is authorized to grant \$175 million in matching funds to local municipalities for the development and construction of solid waste facilities. Virtually all of these monies have been used to fund twenty-one resource recovery facilities. After six years of operation, the State of New York had no resource recovery facility in commercial operation.

Another approach, adopted in Michigan and Florida, is to expand the roles and responsibilities of existing executive branch agencies. Planning for resource recovery in those states is delegated to a resource recovery advisory council.

A fourth approach used by several states is a program of grants and loans which are primarily intended to assist municipalities in financing resource recovery facilities. Pennsylvania, Washington, Minnesota, Illinois and Tennessee have adopted such financial assistance programs.

Finally, at least two states (Massachusetts and California) have sought the development of resource recovery systems through the private sector. For example, California has established a bond mechanism to issue up to \$200 million to assist private firms in financing resource recovery facilities. Local governments are not eligible for these bond proceeds and must utilize a private firm as an agent.

Technology

Resource recovery "involves the centralized processing of collected raw waste to separate out recyclable materials and to convert remaining fixed mixed fractions into useful material or energy forms."¹ There are three basic technologies currently in use for the conversion of waste to energy.

The first technology is called "waterwall incineration" or "refuse-fired boiler systems." This system generates steam "in a boiler lined with waterfilled tubes, using heat from burning unprocessed refuse on moving grates."²

The second technology is generally classified as "refuse derived fuel" (RDF). This approach reclaims the fuel value of solid waste by removing "the noncombustibles through magnetic separation and air classification and reduce(s) the remaining organic fraction to a uniform size which will be acceptable for burning in existing furnaces."³

The third technology is a pyrolysis system. "After shredding and magnetic separation, refuse is pyrolyzed (subjected to high temperature in an oxygen-deficient atmosphere). This decomposes the garbage into a number of gases and oils that may be used as fuels or as raw materials for conversion into industrial chemicals."⁴

A recent congressional review has made the following principal findings with regard to the status of resource recovery technology:

- Resource recovery has been overdramatized, and is not as developed as has been reported;
- Waterwall incineration has been proven;

¹ Fourth Report to Congress, "Resource Recovery and Waste Reduction," U.S. Environmental Protection Agency, 1977, p. 45.

² White, Weld and Co., "Refuse-Energy Systems with Resource Recovery as Alternatives to Landfill," 1977, p. 10.

³ Committee on Science and Technology, U.S. House of Representatives, "The Status of Resource Recovery," 1978, p. CRS-9.

⁴ Op. cit., White, Weld and Co., p. 12.

Appendix IV-1 (continued)

- Refuse derived fuel will be more costly than previously indicated; technical problems remain with several of the separation processes;
- Pyrolysis plants are complex, expensive, and subject to frequent breakdowns, their perfection should not be anticipated in the near future.¹

These findings are discussed in Chapter IV of this report. However, the Committee wishes to acquaint the members of the General Assembly and the public with the technological limitations by which the state and Authority have been constrained.

¹ Op. cit., Committee on Science and Technology, U.S. House of Representatives, pp. CRS 7-15.

Appendix IV-2

Contractor Selection for CRRA's Bridgeport Project

Background

On November 8, 1973, the firm of Camp, Dresser, and McKee (CDM) was hired to assist CRRA in the selection of a contractor who would design, construct, and operate the Bridgeport resource recovery system. Prior to this date, the Authority had solicited informal proposals from firms interested in resource recovery operations. A selection committee composed of CRRA staff, CDM staff, DEP staff, and members of the Greater Bridgeport Regional Solid Waste Commission (GBRSWC) conducted oral interviews with representatives of these firms. In December, 1973, the Authority selected four finalists for the Bridgeport project:

- American Can Company, Greenwich, CT;
- Combustion Equipment Associates, Inc., New York, New York;
- Garrett Research and Development Co., Inc., LaVerne, California; and
- Raytheon Service Company, Burlington, Massachusetts.

Each finalist was sent a preliminary request for proposal (RFP) on January 8, 1974. A final RFP required bidders to submit details:

- a project schedule from design through full scale operation;
- a guaranteed completion date;
- architecture and site requirements;
- technical plans and specifications; and
- capital construction costs and operating costs.

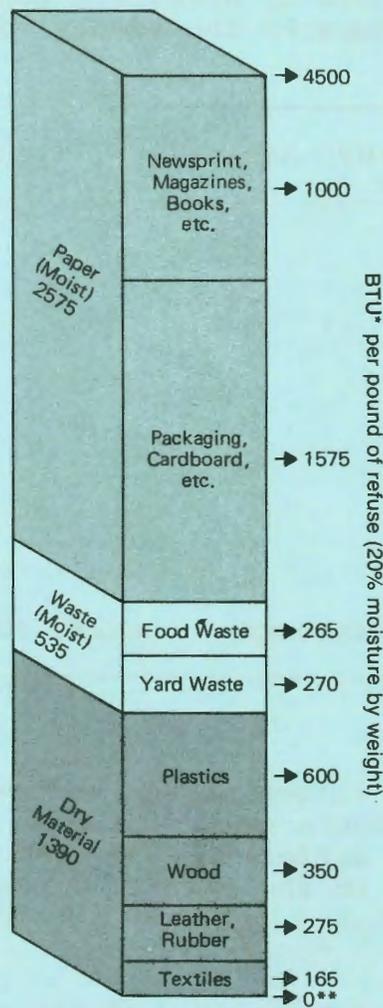
Proposed Technology

It should be noted that the technical specifications of the RFP called for the production of a refuse derived fuel

Appendix IV-2 (continued)

(RFP) which could be used as a supplemental fuel to generate electricity, as recommended in the "GE Plan." Three of the four finalists submitted proposals to produce a "fluff" RDF, which processes waste so that it will burn efficiently in suspension in a boiler furnace. At the time, this process had been demonstrated effective at an EPA pilot project in St. Louis. One company, CEA, proposed the production of a "dust"

Figure I. Typical Heat Contribution of Refuse Components.



* Low-heat value (LHV)
 ** Metal, Glass, Sand, Ash, etc.

Source: White, Weld and Co., Incorporated.

Appendix IV-2 (continued)

RDF. Dust RDFs are generally considered to have combustion properties superior to fluff RDF. However, dust RDF is expected to be more expensive to produce.

Raw refuse is considered a poor substitute for coal, oil, or natural gas, even at today's inflated fuel prices. Raw refuse has approximately one-third the heat value of coal, its closest fuel competitor (4,500 British Thermal Units (BTUs) per pound compared to 12,000 BTUs per pound for coal). Figure I shows the typical heat contribution of refuse components.

Processing raw waste into refuse derived fuel generally improves its energy value by about 67% to roughly 7,500 BTUs per pound. Table I compares the energy values of various fuels.

Table I. Comparative BTU Analysis of Typical Fuels.

<u>Fuel</u>	<u>BTU/lb.</u>
Mixed Solid Waste	4,500
RDF	7,500
Coke	12,690
Coal (anthracite)	12,680
(bituminous)	14,030
Oil (fuel)	18,500
(crude)	19,500
Gasoline	20,700
Natural Gas	22,800

Source: Connecticut Resources Recovery Authority

Proposed Costs

While the energy values of the competing RDF fuels were similar, the capital costs varied greatly. These differences were primarily due to differences in what components and sub-systems were included in the price. Table II compares the various proposals by total cost and the various components which make up the total cost.

It should be noted that none of the proposals estimated costs for the conversion of boilers at United Illuminating, which would have been necessary under any of the proposals.

Table II. Contract Bidders for Bridgeport.

<u>Company</u>	<u>Estimated Cost (millions)</u>	<u>Components</u>
American Can	\$13.1	Main Facility w/o subsystems
CEA	20.0	Main Facility w/o subsystems
Garrett	25.6	Main Facility with subsystems and transfer stations
Raytheon	26.8	Main Facility with subsystems and transfer stations

Source: LPR&IC staff analysis of Bridgeport project proposals.

Evaluation of Proposals

The deadline for proposals was April 15, 1974. The Authority and its staff, along with the First Boston Corporation reviewed all financial information provided by the four finalists. Camp, Dresser and McKee reviewed all technical requirements. CDM noted each company's data gaps and deficiencies as well as the positive aspects of each proposal. On May 6, 1974, at a joint meeting of the GERSWC and CRRA, the two groups voted to select Garrett and CEA for further investigation. According to CDM, "The intent was to initiate discussions with GR&D for the Bridgeport plant, and if unable to reach an appropriate resolution of certain issues then to enter into discussions with CEA." CDM claims that it "did not participate in either decision...and CRRA staff assumed responsibility for all engineering related to the negotiations which followed." The decision to proceed with Garrett was formalized on May 16, 1974 at an executive session meeting of the Authority. Minutes of that meeting indicate that Garrett was recommended by the Authority's staff and the Procurement Committee. The minutes also note that Garrett was to be "preliminarily selected" as the contractor for the Bridgeport system.

The reasons for the selection of Garrett cannot be directly determined. However, the RFP listed the following as criteria for evaluation:

- the probable reliability of proposed system designs based upon demonstrated capabilities of the process equipment and the Contractor;

- the total net cost to the Authority;
- the extent of proposed resource recovery from the recovery plant; and
- the amount and nature of residue generated by the plant.

According to one CRRA staff member, the selection of Garrett was based primarily upon the commitment of the company to enter into a full service contract and its commitment to total energy and materials recovery (ferrous, glass, and aluminum). In addition, the financial strength of Occidental Petroleum, Garrett's parent company, was a significant factor.

Final Contractor Selection

Following the preliminary selection of Garrett, formal negotiations for a construction and operating contract began. It was initially estimated that such negotiations would take six months. However, actual contract negotiations actually took twenty months. According to the Authority, "this delay resulted from over-estimating the ability of all parties concerned to overcome the realities of a first of its kind marriage between public and private sectors." Negotiations with Garrett were concerned primarily with the final contract price. The Authority appeared willing to withdraw from the contract if Garrett could not guarantee a fixed cost contract. In order to meet the fixed-cost proposal, Occidental (Garrett's parent firm) entered into a "joint venture" arrangement with CEA to design, construct, and operate the Bridgeport facility. On March 16, 1976, the Authority passed a resolution which terminated the prior agreements between Garrett and the Authority and substituted the joint venture as the contractor.¹ A final contract between CRRA and the joint venture was executed on March 31, 1976, which specified March 1, 1978 as the commercial operation date.

¹ Occidental chose CEA as a joint venture partner primarily because of CEA's lower cost process. This enabled the joint venture to meet the Authority's fixed contract price.

Appendix IV-3. Other Contractual Provisions Relating to the Bridgeport System.

<u>Act, Event or Occurrence</u>	<u>Contract Reference</u>	<u>Contract Liability or Responsibility</u>
1. <u>Casualty to the System</u> : Any damage or destruction of the system, whether or not the result of force majeure.	O/M Agreement Section 222	a. Company must promptly restore or replace; b. Company must use its insurance proceeds for this purpose; c. If cost of restoring, exceeds insurance proceeds, such excess to be shared equally by the company and the Authority; and d. Company's share cannot exceed \$2 million.
2. <u>Condemnation of the System</u>	O/M Agreement Section 223	a. If a <u>portion</u> of the system is condemned, and the balance can be made into an operating system, the Authority may direct the company to repair/replace; b. Capital costs for such work are derived from proceeds of condemnation; c. If proceeds are insufficient, the Authority and the contractor share equally; and d. If the entire system is condemned, or if any part cannot be made into an operating system, the company may terminate its obligations.
3. <u>Economic Frustration</u> : Purpose is to provide continued operation of the system while providing a mechanism for protecting the company against significant economic frustrations involved from events beyond the control of the parties and could not reasonably have been anticipated at the date of execution of the contracts.	Article IV O/M Agreement	a. Upon a determination and issuance of an economic frustration certificate by the company's independent auditors made at the end of the fifth, tenth, fifteenth or twentieth year of operation, that the company has incurred a cumulative net loss before taxes of at least \$3 million during three years immediately proceeding and expects losses of \$1 million in the next two following years, the company may seek the fair clause provision.

Appendix IV-3 (continued)

3. Economic Frustration: Cont.

Article IV
O/M Agreement

- b. Upon fair clause becoming operative, company may negotiate with the Authority and failing agreement, arbitration concerning adjustment of amounts payable under the O/M agreement. No adjustment can exceed the maximum provided in the municipal agreement.

4. Force Majeure: Any act or event beyond the reasonable control of the company which materially and adversely affects the operation of the System, with limitation certain specified acts.

O/M Agreement
Section 101
O/M Agreement
Plan of Operation
6.1.3.1 (See also
Preliminary Official Statement,
First Boston Corp.
p. 20.)

If Force Majeure or the cumulative effect thereof causes a net increase in the cost of operation in any year in excess of 10%, the full amount of such increase shall be added to the Operating Charge under the Operation and Marketing Agreement. If the maximum amount which can be added to the Operating Charge under the Service Contracts as a result of Force Majeure is exceeded, the balance is chargeable to the company if the increase is caused by strikes or work stoppages and to the Authority if caused by any other such act or event. Reimbursement of such excess amount is to be made from the other party's share of any Excess Revenues. See "Service Payments During the Period When an Event of Uncontrollable Force has Occurred" under "The Service Contracts".

Appendix V-1. CRRA Procurement Policy/Procedure.

<u>PROVISION</u>	<u>DESCRIPTION</u>	<u>SOURCE OF AUTHORITY</u>
1. General contract authority	Authorizes the CRRA to contract for the construction of solid waste facilities with private persons or firms pursuant to the provisions of the Solid Waste Management Services Act. Requires the Authority to promulgate procedures on purchasing and contracting.	C.G.S. 19-524y(17)
2. (a) Construction contracts over \$25,000	Contracts for construction valued at over \$25,000 must be let by open or competitive bidding. Selection of contractor on the basis of price and other factors which are in the best interests of the state.	C.G.S. 19-524y(17)(b)
(b) Construction contracts under \$25,000	Such contracts may be procured either on a sole source or open bid and approved by the Board	CRRA Procurement Policy and Procedures Sec. IV
3. (a) Contracts with private sector	Contracts may be made on an open bid or negotiated basis. If made on a negotiated basis certain restrictions apply. Contracts for a period of five years or more in duration, or any contract with an annual consideration of \$50,000 or more requires a 2/3 vote of the Board.	C.G.S. 19-524aa
(b) Long term contracts		
(c) Contracts in excess of \$50,000		
4. Professional services contracts	Authority may negotiate and enter into contracts with a single source for the contracting of specified professional services. All such contracts in excess or \$5,000 require board approval.	C.G.S. 19-524y(17)(b) CRRA P/P/P Article IV
5. Technical services contracts	Authority may contract for architectural and engineering design, system and facility management and other technical services either through pre-qualification or response to requests for proposals.	C.G.S. 19-524y(16)
6. Facility management contracts	Requires the Authority to publicize any contract award for facility management which is not accomplished through open bids. Certain appeal provisions are made.	C.G.S. 19-524y(17)(c)

Appendix V-1 (continued)

<u>PROVISION</u>	<u>DESCRIPTION</u>	<u>SOURCE OF AUTHORITY</u>
7. Purchases (a) less than \$2,500	Three competitive bids required, award to lowest responsible bidder.	CRRA P/P/P Article III
(b) more than \$2,500	Advertisement required, sealed bid process, award to lowest responsible bidder.	
8. Real property	Board must specify maximum amount to be paid. If property acquisition is greater than \$100,000, one written appraisal is required.	CRRA P/P/P Article IV
9. Transfer stations and transportation	Procured on a sole source or open bid basis. Authority must give preference to Connecticut firms "insofar as practicable."	C.G.S. 19-524y(17)(c) CRRA P/P/P/ Article IV
10. Waste handling, processing and storage equipment	Contracts in excess of \$5,000 required board approval, procured on sole source or open bid basis.	CRRA P/P/P Article IV
125	<u>DEFINITIONS: NEGOTIATED BID TYPES</u>	
Sole source bids:	Procurement without any formal process of advertising, pre-qualification or review of written proposals. It shall be used for legal or other services usually so procured or in instances where the Authority has determined that the amount or the time available or other circumstances does not make a more formal process desirable or practicable.	CRRA P/P/P Article IV
Open bid procedure:	<ol style="list-style-type: none"> 1. Prequalification <ol style="list-style-type: none"> (a) invitation to submit qualifications (b) selection of firms to make oral presentations (c) selection of firms to make final bid. 2. Requests for proposals 3. Withdrawal or modification of proposal 4. Award of contract 	CRRA P/P/P Article IV

Source: LPR&IC Staff Analysis

Appendix V-2. State Procurement Overview.

<u>PROVISION</u>	<u>DESCRIPTION</u>
1. Powers and duties	
(a) Public Works Bureau of Dept. of Administrative Services (DAS)	(a) DAS Commissioner is the sole person authorized to represent the State in its dealings with third parties for the acquisition, construction or leasing of real estate for housing the offices or equipment of all agencies of the State or for the State-owned public buildings or realty provided in this act.
(b) State Properties Review Board	(b) The Board must review real estate acquisition proposed by the Public Works Commissioner and cooperate with, advise and assist the Commissioner in carrying out his duties.
2. Procedures	
(a) State real estate needs and planning	(a) All branches of the government of the State and its departments and subsidiaries are required by this act to notify the DAS and the Board as to their real estate needs, including space and geographical location. Each of these groups must commence long range capital needs.
(b) Request, Decision and Appeal	(b) Whenever any agency board, or branch of the government of the State determines it has needs relating to the acquisition, construction or leasing of real estate, the head of the governmental unit must communicate this need to Public Works and the Board. DAS must then take this communication or request under advisement and conduct a study to determine: 1) the need for this facility; 2) the method of choice for satisfying the need; 3) the geographical areas best suited to the need; 4) the feasibility of the acquisition; and 5) any other relevant factors. The Commissioner must make a final determination whether he approves of the request and, if such approval is granted, the method and plan by which it will be accomplished. The results of this study and the Commissioner's decision must be sent to the Properties Review Board for review. If the decision is disapproved by the Board, it must inform the Commissioner along with its reasons for disapproval, and the Commissioner must inform the head of the requesting agency. The approval or disapproval of the Properties Review Board will be binding on the Commissioner and the requesting agency with regard to the acquisition of any real estate by lease or otherwise. A majority vote of the board is required to accept or reject a decision of the Commissioner. The act establishes an appeal procedure if the governmental unit requests that all or part of the decision be modified by the Commissioner, including review by the Commissioner, the Board, and the Governor.

Appendix V-2 (continued)

<u>PROVISION</u>	<u>DESCRIPTION</u>
(c) Bidding	(c) Whenever the Commissioner has established specific plans and specifications for new construction on State land or new construction for sale to the State, contracts must be made, where practicable, through a process of sealed bidding if the cost of the project will be less than \$250,000. In addition, contracts for the construction, reconstruction, alteration, remodeling, repair or demolition of any public building for state work must be by competitive bidding if its estimated cost exceeds \$250,000, rather than \$500,000 as under previous statute. If the space needs of the requesting agency are less than 5,000 square feet, the Commissioner must, whenever practicable, carry on advertising in order to allow an equal opportunity for third parties to do business with the State without regard to political affiliation, political contributions or relationships with persons in State, Federal or local government positions.
(d) Lease renewals	(d) All renewals of state leases existing when this act becomes effective are subject to the approval of the Commissioner and the State Properties Review Board under regulations to be adopted by the Commissioner and the Board.
3. Staff	Any architects, landscape architects, professional engineers or land surveyors selected by the Commissioner for employment on any project are subject to the approval of the Properties Review Board prior to their employment by the Commissioner. The expert members of the staff of the Commissioner are responsible for ensuring that sellers, lessors, and contractors strictly comply with all agreed plans, specifications, requirements and contractual terms.
127	
4. Review	
(a) Audit	(a) After the authorization of a project under this act, the public auditors of the State and the auditors or accountants of the DAS have the right to audit the books of any contractor employed by the Commissioner pursuant to this authorization. They also may audit the books of any party negotiating with the Commissioner for the acquisition of land by lease or otherwise. However, any such audit must be limited to the project authorized by the Commissioner and the Properties Review Board.
(b) Legal review	(b) The Attorney General is responsible for determining the legal sufficiency of all contracts and leases, both as to substance and as to form. The Attorney General must enforce all terms of all agreements.

Source: LPR&IC Staff Analysis

