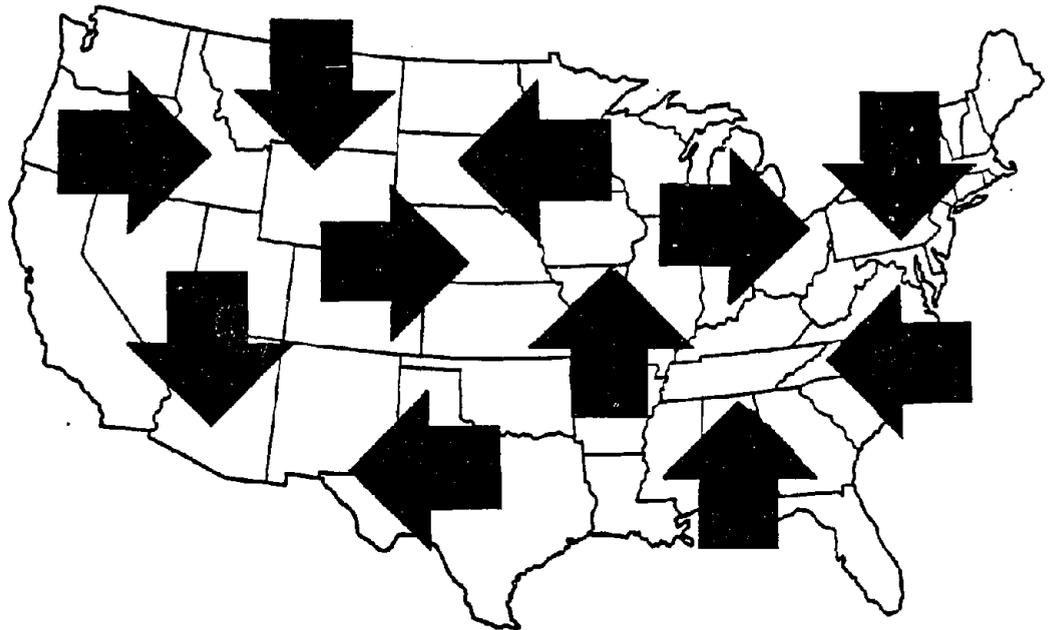


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Assurance of Hazardous Waste Capacity

Guidance to State Officials



Assistance in fulfilling the
requirements of CERCLA 104(c)(9)

OSWER DIR. # 9010.00

**Assurance of Hazardous Waste Capacity:
Guidance to State Officials**

**Assistance in Fulfilling
the Requirements of CERCLA 104(c)(9)**

**Office of Solid Waste and Emergency Response
U.S. Environmental Protection Agency
Washington, D.C. 20460**

December 1988

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Chapter I. INTRODUCTION AND OVERVIEW OF THE CAPACITY ASSURANCE PROCESS

This document supplies guidance to state officials on providing assurances required by Section 104(c)(9) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA" or "Superfund"). This section of CERCLA requires states in which remedial actions may be taken to provide assurances, prior to EPA taking or funding such actions, of the availability of hazardous waste treatment or disposal facilities which have adequate capacity to manage the hazardous wastes expected to be generated within the state over twenty years. These assurances must be provided in a contract or cooperative agreement entered into between the state and the Administrator. After October 17, 1989, no Superfund remedial actions can be provided unless the state first enters into such a contract or cooperative agreement providing assurances that the Administrator deems adequate.

This Guidance Document reflects EPA's current understanding of the statutory requirements and describes how EPA currently suggests that states implement these requirements. In addition, the guidance provides substantial information to states, including suggested language for the contracts and cooperative agreements to be signed, instructions on the preparation of state Capacity Assurance Plans (CAPs) that can form a basis for the assurances, and a model for the interstate agreements or regional agreement or authority required when addressing access to capacity in other states.

A. Language of the Statutory Provision

Section 104(c)(9) of CERCLA provides:

"Siting.--Effective 3 years after enactment of the Superfund Amendments and Reauthorization Act of 1986, the President shall not provide any remedial actions pursuant to this section unless the State in which the release occurs first enters into a contract or cooperative agreement with the President providing assurances deemed adequate by the President that the State will assure the availability of hazardous waste treatment or disposal facilities which--

- (A) have adequate capacity for the destruction, treatment, or secure disposition of all hazardous wastes that are reasonably expected to be generated within the State during the 20-year period following the date of such contract or cooperative agreement and to be disposed of, treated, or destroyed,
- (B) are within the State or outside the State in accordance with an interstate agreement or regional agreement or authority,
- (C) are acceptable to the President, and
- (D) are in compliance with the requirements of subtitle C of the Solid Waste Disposal Act."

B. Legislative History of the Provision

When enacting Section 104(c)(9) of CERCLA, Congress was concerned that certain states, because of political pressures and public opposition, were not able to create and to permit sufficient facilities within their borders to treat and securely dispose of (or manage) the amounts of wastes produced in those states.

Superfund money should not be spent in States that are taking insufficient steps to avoid the creation of future Superfund sites. Pressures from local citizens place the political system in an extremely vulnerable position. Local officials have to respond to the fears of local citizens. The broader social need for safe hazardous waste management facilities often has not been strongly represented in the siting process. A common result has been that facilities have not been sited, and there has been no significant increase in hazardous waste capacity over the past several years. . . . Unfortunately, when RCRA was first passed, Congress failed to anticipate the intensity of public opposition to new and expanded waste management facilities. While everyone wants hazardous waste managed safely, hardly anyone wishes it managed near them. This is the NIMBY syndrome (not in my backyard). Yet, if the [Resource Conservation and Recovery Act (RCRA)] and Superfund programs are to work -- if public health and the environment are to be protected -- the necessary sites must be made available.

S. Rep. No. 11, 99th Cong., 1st Sess., at 22, 23 (1985). Congress believed that some states were not moving aggressively to create facilities needed to manage hazardous wastes and that this inaction could lead to the creation of additional Superfund sites, even though some wastes might be managed at facilities available in other states. This problem would be exacerbated if the costs of interstate waste management were to rise or if states were to take actions that directly or indirectly impeded interstate waste movement. Although any hazardous waste management facilities created would be regulated in an environmentally safe manner under RCRA, existing statutory and regulator authorities did not adequately address the need to develop and to assure access to such facilities within and among the various states.

Congress therefore required, as a condition for EPA taking or providing funding for CERCLA remedial actions, that states provide assurances that capacity to manage the wastes generated within their borders would exist and would be available for twenty years from the date that such actions occurred.

[E]ffective three years after enactment, a State shall not receive Superfund money for remedial actions unless the State provides assurances that there will be adequate capacity and access to facilities in compliance with the hazardous waste regulatory program under subtitle C of the Solid Waste Disposal Act for the treatment or disposal of all that state's hazardous wastes for the next twenty years.

Id. at 21. These assurances must address "all hazardous wastes generated within the state, not only Superfund wastes generated by response or remedial actions undertaken within the State." H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess. 194

(1986). Through the development of state policies and siting programs, states could plan for the rational, short-term use of existing facilities as well as for the long-term availability of facilities. *Id.* at 22. In this way, wastes generated within the state would be assured of access to permitted facilities that would properly manage the waste, reducing the likelihood that additional Superfund sites would develop.

Congress modeled the assurance language of Section 104(c)(9) after the language of Section 104(c)(3). Section 104(c)(3) requires, as a condition for providing remedial actions, that states provide assurances that a particular disposal site will be available for the waste generated in the remedial action, that the state will pay for future operation and maintenance of the site, and that the state will share the costs of taking the action. Congress placed the requirement to provide assurances of the availability of capacity for twenty years on states generating the waste, rather than on states possessing management capacity (i.e., receiving wastes generated within the state and in other states). Congress did not, however, require the provision or development of needed capacity within the state that generated the hazardous waste. *Id.* Instead, Congress provided that generating states could assure access to management capacity available outside of the state through interstate agreements or regional agreements or authorities. Such agreements could include interstate compacts guaranteeing a generating (or "exporting") state access to facilities in another (or "importing") state, contracts with private facilities, and state or local ownership and operation of facilities. *Id.* (In fact, all states import and export some quantities of waste; all states desiring remedial action funds qualify for exporting state status, as well as for importing state status in regard to other exporting states.)

Congress required exporting states to provide assurances and to obtain interstate agreements, because political pressures encourage states to export their wastes to other states rather than to create available capacity, either through reducing the generation of hazardous wastes within the state or through siting new management facilities. By requiring (as a condition for remedial actions) agreements between states regarding future access to available interstate capacity, Congress counterbalanced these political pressures in exporting states with the political pressures in importing states that might oppose continued receipt of such exports. An importing state might refuse to enter into an agreement with an exporting state, requiring the exporting state to create available capacity through waste reduction or through siting new facilities, or to enter into an agreement with another importing state to manage these wastes. In either case, access to the additional capacity needed to manage the wastes would be assured.

The statutory provision also addresses an additional aspect of the public opposition to siting: public opposition to the creation and permitting of facilities that manage wastes generated in other states is greater than opposition to facilities designed to manage wastes generated within the same state or locality. By requiring that generating states provide the assurances of access to capacity for their own wastes, Congress placed responsibility on the states most able to create and to permit additional capacity. Although Congress recognized that some states already had accepted the difficult political task of siting facilities needed to manage the hazardous wastes

generated by industry within those states, Congress did not dictate a single means for achieving the task, such as establishing siting approval boards, preempting local zoning, or authorizing state ownership or operation. Instead, Congress indicated that the states "must provide assurances that their legislative program can work and will be used." Id. at 23.

Congress did, however, provide guidance for states in developing successful siting programs that would provide the assurances that creation of and access to capacity would occur. Siting programs should recognize three "key principles": sound technical analyses of sites selected for facilities; public participation in and education during the process of facility planning, site selection, and site approval; and insulating decisionmaking from local veto powers exercised on the basis of community political considerations. Id. at 23-24.

C. Provisions of Section 104(c)(9)

There are essentially six features to the provisions of Section 104(c)(9) each of which is described in greater detail below. First, the section becomes effective three years after enactment, or on October 17, 1989. Second, the Administrator cannot provide any remedial actions pursuant to Section 104 after that date unless specific assurances first are provided. Third, the state in which the release occurs must provide these assurances in a contract or cooperative agreement entered into with the Administrator. Fourth, the assurances provided must be deemed adequate by the Administrator. Fifth, the state must assure the availability of treatment or disposal facilities that are in compliance with Subtitle C of RCRA; are acceptable to the President; and have adequate capacity to treat, destroy, or securely dispose of all hazardous wastes reasonably projected to be generated within the state for twenty years. Finally, availability of facilities that are outside the state must be assured in accordance with an interstate agreement or regional agreement or authority.

1. Effective Date

EPA cannot enter into contracts or cooperative agreements with states to provide remedial actions after October 17, 1989 unless the assurances required under Section 104(c)(9) are provided. Contracts and cooperative agreements entered into prior to October 17, 1989 need not be revised to provide these assurances.

2. Remedial Actions

EPA cannot provide remedial actions pursuant to Section 104 after October 17, 1989 unless, the assurances are provided. EPA currently believes that providing remedial actions refers to construction activities pursuant to an approved remedy.

3. Contract or Cooperative Agreement Providing Assurance

EPA normally provides remedial actions within states through State Superfund Contracts and through Cooperative Agreements. These agreements are used to obtain the assurances required by the statute in a federal-lead remedial

action or to obtain these assurances and to provide funds to the state for a state-lead remedial action.

Section 104(c)(9) contemplates that states will enter into such contracts and cooperative agreements with the Administrator, which will provide specific assurances regarding the availability of facilities for twenty years from the date of signature. Congress did not provide specific language regarding these assurances, but did require that the Administrator deem the assurances adequate. As a result, EPA has provided the following language that can be included in the contract or cooperative agreement and that will provide assurances. EPA will evaluate the adequacy of any assurances on a case-by-case basis.

Pursuant to Section 104(c)(9) of CERCLA, the State is required to assure the availability of hazardous waste treatment or disposal facilities which have adequate capacity for the destruction, treatment, or secure disposition of all hazardous wastes that are reasonably expected to be generated within the State during the twenty-year period following the date of this agreement. The State has submitted to EPA its plans for assuring access to facilities within the State and/or outside the State in accordance with an interstate agreement or regional agreement or authority, and has committed in writing to taking the actions described in these planning documents. These documents and the written commitment are incorporated by reference into this agreement. The State's commitment to taking these actions constitutes the assurance required by Section 104(c)(9).

This language reflects the Administrator's current understanding of the legislative intent, described in detail below, that states must understand what wastes will be generated within their state and must plan to assure the availability of facilities to manage those wastes, within the state and/or outside the state in accordance with an interstate agreement or regional agreement or authority. The assurances provided in the contract or cooperative agreement, therefore, are based upon the state's commitment to taking the actions necessary to provide access to facilities pursuant to its planning documents and in accordance with its interstate agreements. These commitments can be included in the interstate agreement document suggested below. EPA can enforce the commitments incorporated by reference into the contracts or cooperative agreements through the EPA assistance regulations, including 40 C.F.R. Part 31.

4, 5, and 6. Adequacy of Assurances, Nature of the Assurances, and Interstate Agreements or Regional Agreements or Authorities

Section 104(c)(9) requires that the assurances of availability of facilities be deemed adequate by the Administrator. The legislative history to the section provides little guidance regarding how the Administrator is to exercise this substantial discretion when implementing this provision of the statute. Based upon the analysis of the statutory language and legislative history, however, EPA has provided in this Guidance Document factors to consider when providing assurances.

Again, the Administrator cannot enter into contracts or cooperative agreements unless the assurances are deemed adequate, and refusal to enter into such a contract or cooperative agreement is one means for the Administrator to express an evaluation of adequacy. The contracts or cooperative agreements must address all hazardous waste generated within the state for twenty years, and must assure availability of access to facilities that are in compliance with Subtitle C of RCRA, acceptable to the President, have adequate capacity to destroy, treat, or dispose of the generated wastes, and, if outside the state, are in accordance with an interstate agreement or regional agreement or authority.

a. Understanding of the System

Section 104(c)(9)(A) requires states to assure availability of facilities for wastes that are "reasonably expected to be generated within the state during the 20-year period" Further, Congress recognized that effective siting programs should provide sound technical analyses of potential sites and include up-front planning for development of facilities. To be able to assure availability of capacity for twenty years, states should understand what wastes will be generated and should plan what facilities will be available to manage these wastes.

To understand waste generation, states should understand the effects of waste minimization in reducing the need for access to treatment, destruction, and disposal facilities. In the 1984 Hazardous Waste and Solid Waste Amendments to RCRA, Congress expressed a clear preference for reducing or eliminating the generation of hazardous waste over managing such wastes at treatment, storage, or disposal facilities.

The Congress hereby declares that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored or disposed of so as to minimize the present and future threat to human health and the environment.

RCRA Section 1003(b), 42 U.S.C. Section 6902(b).

Waste reduction can yield significant benefits to states by reducing the pressure on capacity, slowing the increase in waste management costs, reducing liability, and improving the quality of human health and the environment. EPA believes that, in general, preventing waste generation is easier to achieve than siting and permitting of facilities to manage wastes that are generated. Thus, plans for management of future waste generation may be more credible when they contain sound analyses of and provisions for waste minimization than when they contain only analyses of siting and permitting of management facilities. EPA expects that states will include waste minimization analyses when describing future waste management, regardless of whether capacity shortfalls are projected.

Planning for twenty years of waste generation is not a simple task, particularly when the states will not, in most cases, own the wastes or directly control their generation or disposition. This Guidance Document therefore provides for use by states a system for analyzing existing data on waste

generation and capacity use, and for projecting waste generation within the state, including the effects of waste reduction or elimination, and disposition of these wastes, including the export of wastes to facilities in other states.

The data and projection system is designed to address all hazardous wastes generated within the state, including wastes that are difficult to project or wastes generated on a non-recurrent basis, after taking into account the effects of future regulatory actions and waste minimization efforts. The system also is designed to address availability of Subtitle C facilities and to distinguish between capacity that is commercially available and capacity that is only available to facility owners ("captive" or "onsite" capacity). The system also will account for reduction of capacity at available facilities by wastes other than the hazardous wastes projected to be generated within the state, including imported wastes.

The system does not at this time address any criteria of acceptability to the Administrator. EPA believes that, if employed properly, this system can provide states with a reasonable understanding of the wastes projected to be generated within their borders for twenty years, and can provide a framework which will form a basis for assuring the availability of capacity to manage those wastes. EPA recognizes that long-term projections will be less accurate than short-term projections. This system is provided solely as guidance for states, which should exercise their judgement when conducting planning and analyses regarding sources of data and methods of data evaluation and projection.

In addition, technical and administrative assistance has been and will continue to be made available to states, through the EPA regional offices, to address planning and interstate dialogue. EPA anticipates that every two years, as better data become available through the Biennial Report administered under RCRA and as information about effects of planning activities undertaken is obtained, states using this system will update their plans.

b. Provision of a Plan

Once a state understands the quantities of waste for which the state must assure the availability of facilities, after taking into account waste minimization efforts, and has analyzed the availability and capacity of facilities within the state to treat, destroy, or securely dispose of these quantities, the state will know whether additional facilities, whether within the state or outside the state, need to be made available to manage these quantities. The state can then take additional steps to reduce or eliminate the quantities of waste to be generated, can plan for the creation and permitting of needed capacity, or can enter into interstate agreements or regional agreements or authorities to assure access to out-of-state facilities (which is discussed below). Again, twenty-year planning is no simple exercise, particularly when addressing such complicated and politically sensitive issues as permitting new facilities to manage hazardous wastes or removing disincentives to development of waste-reducing technologies.

This Guidance Document therefore provides for use by states planning information that can address access to facilities and the need to create and to

permit new facilities if access to additional capacity is needed. This planning information builds upon the understanding of waste generation and projected availability of capacity that the state may develop by using the data and projections system contained in the Guidance Document. It also accounts for the potential effects of additional waste minimization and export activities.

Once a state has evaluated the capacity that it will need to create within the state to manage its wastes, after considering waste minimization and obtaining interstate agreement, the state can evaluate its abilities to site and to permit facilities that will provide this capacity, in cooperation with industry and with the public. In evaluating these abilities, the state should consider regulatory, economic, and other impediments to creating needed capacity that may exist or may develop during the relevant period. Examples of such impediments might include local veto powers over siting of facilities, tax policies, siting or permitting processes that do not set a time limit for decisionmaking, capital costs of constructing certain treatment methods that cannot economically be recovered, etc.

c. Interstate Agreements

Section 104(c)(9)(B) requires that assurances relying upon the availability of facilities outside the state must be in accordance with an interstate agreement or regional agreement or authority. Congress did not require one particular form of interstate agreement, but contemplated that states would address the problems attendant upon exporting such wastes through these agreements. Interstate agreements would demonstrate that states were working cooperatively to create or to assure access to facilities, rather than bowing to political pressures to export or to restrict the import of wastes expected to be generated. Cooperative planning for future waste management thus would help to avoid creation of Superfund sites among these states.

States can provide their assurances by demonstrating agreement with other states regarding cooperative planning actions. This should include reasonable agreement on applicable interstate waste flow characteristics and quantities. Thus, states should agree on baseyear and projected exports and imports between and among states and that "captive" and/or "commercial" capacity will exist or will be created and permitted to manage those waste flows.

One form of interstate agreement is provided below. This agreement can demonstrate agreement on interstate waste flow characteristics and quantities, when submitted to EPA accompanied by planning information that can be compared with similar submissions from other states. Projected export and import quantities and availability of capacity to manage those quantities must correspond in the planning information submitted by states for this agreement to demonstrate "interstate agreement." States may choose to enter into agreements to assure access to facilities in bilateral or multilateral documents signed between or among states. Clearly, such agreements will reflect substantial interstate dialogue regarding actual and projected waste flows. Further, discussions among states are likely to raise distributional and equity concerns.

The agreement provided below can also serve as the document providing the state's commitment to undertake the activities described in its planning information. EPA anticipates that this agreement would be signed every two years, as the state updates its data and planning documents.

INTERSTATE AGREEMENT

Pursuant to the requirements of Section 104(c)(9) of Comprehensive Environmental Response, Compensation, and Liability Act, as amended; and

In recognition of the fact that this State generates, manages, exports, and imports hazardous wastes as described in the accompanying data, projection, and planning documents; and

In accordance with and reliance upon similar commitments and documentation provided by other State governments:

The [insert title of the State, Commonwealth, or Territory] hereby agrees to and commits that

1. The government of this [State, Commonwealth, or Territory] understands, has projected, and has planned for the hazardous waste generation and management practices to be undertaken within this State, as documented in the accompanying planning documents, which are incorporated by reference here, and

2. The government of this [State, Commonwealth, or Territory] hereby commits to carry out the activities described in these incorporated planning documents.

Nothing in this agreement shall be construed to affect the existing obligations of the States in a manner that would subject this agreement to the purview of Article I, Clause 3, Section 10 of the United States Constitution.

[signature]
[Governor or Authorized Designee]

Chapter II. INSTRUCTIONS FOR SUBMITTING CAPACITY ASSURANCE PLANNING DOCUMENTS AND INTERSTATE AGREEMENTS

A. Submission of Materials to EPA

All materials supporting the assurances should be transmitted to EPA for review. An original and ten (10) copies of these materials (collectively referred to as "capacity assurances plans," or "CAPs") should be sent to the address appearing below.

U.S. Environmental Protection Agency
Office of Solid Waste & Emergency Response
Mail Code OS-110
401 M Street, S.W.
Washington, D.C. 20460

ATTN: Capacity Assurance Plan Enclosed

CAPs should be collated into a single document consisting of four discrete subparts, and should be accompanied by any relevant interstate agreement and transmitted with a cover letter. EPA expects that the Governor of each state will submit the CAP for that state to EPA on or before October 17, 1989. A suggested transmittal letter appears below.

Dear Administrator:

Section 104(c)(9) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, requires as a condition for providing remedial actions that states assure the availability of treatment and disposal facilities that have the capacity to treat, destroy, or securely dispose of the wastes generated within their borders for twenty years. The accompanying materials provide a basis for you to evaluate the assurances of the [State, Commonwealth, Territory], to be contained in a contract or cooperative agreement that will incorporate these materials by reference.

The attached planning documents demonstrate that:

- o the [State, Commonwealth, Territory] understands and has documented and projected for twenty years the generation of hazardous wastes within the borders of the [State, Commonwealth, Territory], and understands and has documented and projected the disposition of these wastes, including export of these wastes to other states; and
- o the [State, Commonwealth, Territory] has considered and described the effects of waste minimization on such generation and has distinguished the availability of any commercial, captive, and onsite facilities; and

- o the [State, Commonwealth, Territory] has developed plans that assure access to facilities that will be needed to treat, destroy, or securely dispose of these wastes, including plans to create and to permit new or expanded facilities, and has described regulations, economic considerations, and other impediments to achieving these plans.

Because this [State, Commonwealth, Territory], in providing the required assurances, will rely upon facilities that are located in other states, the accompanying materials include an interstate agreement, as required by Section 104(c)(9)(B). This document reflects agreement with other states regarding access to needed facilities and commits this [State, Commonwealth, Territory] to taking the actions described in the planning materials.

I hereby transmit these materials, which will form the basis for the assurances required of this [State, Commonwealth, Territory] under Section 104(c)(9).

Sincerely yours,

[Governor]
[State, Commonwealth, Territory]

The four subparts of the CAP, described in successive chapters below, should contain the following information:

- 1) information describing in detail past (baseyear) waste generation and treatment, destruction, and/or disposal capacity available at facilities within and/or outside the state;
- 2) documentation of any waste minimization efforts that exist or will be undertaken by the state and/or industry within the state, and detailed information regarding how any waste minimization efforts will be taken into account in the projections of waste generation;
- 3) projections of generation and of available capacity at facilities within and/or outside the state to treat, destroy, or securely dispose of wastes, including assessment of capacity shortfalls; and
- 4) descriptions of plans to create and to permit facilities if access to additional facilities may be needed, and descriptions of regulatory, economic, or other barriers that might prevent or impede the creation and permitting described in the previous section.

B. EPA Administrative Assistance

Through the regional offices, EPA will provide administrative assistance to states, to assist in preparation of their planning materials and to foster

interstate communication and cooperation. Such assistance will include convening interstate and regional workgroups, acting as a facilitator, and providing access to regional import and export data and to data manipulation services. This support already is available in all EPA regions. Several state pilot projects also have been completed, the results of which will be made available to all states to aid states in preparing their materials.

C. EPA Technical Assistance

In order for a state to provide assurances, it should understand the treatment and/or disposal practices for hazardous waste generated within its borders. EPA recognizes that an adequate analysis requires substantial technical information and expertise in managing data. EPA also realizes that states will vary in the sophistication of their data management systems and that states currently use different data collection and management systems. To help states to complete the CAPs described below, EPA has provided three forms of technical assistance. First, EPA will distribute a Technical Reference Manual ("TRM"), which will describe methods for manipulating existing data into the formats described below.

The TRM describes methods for converting data derived from biennial reports (and detailed according to 700 RCRA waste codes) into information in seventeen (17) generation categories. The TRM also will provide methods for associating the seventeen generation categories to fifteen (15) treatment categories. Finally, the TRM will provide methods for converting available capacity data (to be supplied by EPA) into the management categories. (The capacity data will be provided to states under separate cover, and will include descriptions of facility status, i.e., commercial, captive, or onsite.)

The TRM contains information on: (1) Output Formats (presenting the output formats that can be used in each state's CAP); (2) High Option Methodology (converting data reported in the "new" Biennial Report format into the output formats); (3) Low Option Methodology (converting data reported in the "old" Biennial Report format into output formats); (4) SARA Waste Types (converting EPA waste code and constituent concentration information provided in Biennial Report into SARA waste types); (5) SARA Management Categories (classifying treatment, recovery, and disposal systems according to seventeen management categories); (6) Management Capacity Data (explaining capacity data needed for the CAPs and data to be provided by EPA in the State Reports); and (7) Comparisons (comparing current utilization rates for each management category with the current maximum capacity for each management category).

EPA plans to provide to states individualized reports describing hazardous waste management capacity in that state based on the Agency's recent Treatment, Storage, Disposal, and Recycling (TSDR) Survey. This data will assist states in reporting consistent and relatively accurate baseline information on waste management capacity. Recognizing that the TSDR survey is for 1986, states are encouraged to check these data for accuracy prior to use in baseyear calculations. Any corrections should be documented with a simple narrative discussion of changes. Data on capacity available in later years can be used to check projections from baseyear data.

EPA also will provide to states computer software that can facilitate performing calculations described in the TRM. These programs will be designed to use a common software system. States with computerized processing of Biennial Report data should ensure that their Biennial Report data are arranged in a standard format consistent with the specifications of the Biennial Report Data System (BIRDS). Once state data are so arranged, these states can use software provided by EPA for preparing tables.

Chapter III. REPORTING THE STATUS OF GENERATION, IMPORTS, EXPORTS, AND MANAGEMENT CAPACITY

A. Purpose

This chapter asks each state to demonstrate an understanding of its hazardous waste generation, treatment, and disposal system. A strong technical knowledge of the state's hazardous waste management and tracking information systems, including data needed to meet federal reporting requirements, is required. The key data, from which further analyses and projections will be developed, are:

- o The type and quantity of hazardous waste generated within the state from continuous industrial processes as well as one-time events, such as "batch" cleanups and RCRA and CERCLA corrective actions.
- o The type and quantity of hazardous waste shipped out-of-state.
- o The type and quantity of hazardous waste received from other states.
- o The facilities available within the state to treat, destroy, or securely dispose of hazardous waste and other wastes that consume such capacity.

The information developed in this chapter will serve as a baseline for analyzing current and future waste generation and disposal patterns. For example, information developed on the unused capacity available at in-state facilities will be useful when assessing future capacity needs. Similarly, patterns of waste imports and exports can be used to project future behavior.

B. General Instructions

This chapter provides guidance to states reporting information on current waste generation, handling, and disposition. Persons responsible for compiling this information should consult the separate Technical Reference Manual for more detailed instructions on sources of data, data manipulation, and translation of raw data into the reporting formats provided in this chapter.

The following tables should be completed for inclusion in the Capacity Assurance Plan (CAP):

- o Table III-1, summarizing baseyear in-state generation according to 17 broad groupings or categories of hazardous waste.
- o Table III-2, reporting waste exports by state and management practice.
- o Table III-3, reporting waste imports by state and management practice.
- o Table III-4, reporting total demand on in-State waste management facilities. State generated waste less exports plus imports is

presented by hazardous waste type and SARA management category. Tables III-4A, B, and C divide the demand by captive, commercial, and on-site TSD facilities.

- o Table III-5, compares maximum baseyear hazardous waste management capacity with hazardous waste management demand or capacity utilized to develop baseyear available capacity values by management category. Tables III-5A, B, and C separate total management capacity by captive, commercial, and on-site TSD facilities.

More detailed calculations from which these tables are compiled such as those used to calculate generation status (i.e., primary/secondary and recurrent/one-time) against capacity or subsets of these tables need not be submitted, but should be retained as EPA may wish to review these materials.

The individual or individuals responsible for completing this chapter should be thoroughly familiar with both state and federal hazardous waste reporting systems. In almost all states, these individuals will be part of the state's hazardous waste program office. In some states, the hazardous waste program will be distinct from the state's equivalent to EPA's Superfund program. In these states, the state's equivalent and/or the EPA regional Superfund office should be consulted to obtain information concerning site cleanups.

C. Reporting Waste Generation (Demand)

1. Biennial Report Data

Most states now report the generation of hazardous waste by EPA waste code. More than 700 waste codes comprise EPA's list of regulated industrial wastes. For purposes of capacity assurance planning, all waste streams should be grouped into seventeen waste groups (hereinafter referred to as "SARA waste types".) These codes were designed to permit the attribution of a treatment, destruction, or disposal method (also described according to generic type) to the waste generated. Because these codes represent aggregated data, they may not reflect the particular management option selected for a particular waste stream.

States using the new 1987 Biennial Report forms should use the appropriate tables and procedures described in the Technical Reference Manual to convert from EPA waste codes into SARA waste types. This conversion method employs data on waste stream characteristics in conjunction with EPA waste code designations, to perform a relatively precise mapping.

States using the old Biennial Report forms should use a different set of tables and procedures presented in the Technical Reference Manual to convert EPA waste codes into the SARA waste types. Because less is known about the waste stream characteristics, these conversions are less precise. The procedures include use of a default profile of waste characteristics based on national data and professional judgement.

2. Waste Streams To Be Reported

Waste streams to be reported include, but are not limited to, hazardous wastes generated and handled through: Superfund and other corrective action authorities; onsite NPDES processes; onsite treatment and discharge to municipal treatment works; direct discharge to publicly owned treatment works without treatment; onsite recycling; and treatment, recycling, and disposal in regulated and permitted units. Waste streams that do not need to be reported as federal hazardous waste include other hazardous wastes (such as wastes considered hazardous by the state that would not be hazardous under federal regulations appearing at 40 CFR Part 261, see the definitions section at the end of this chapter, and Superfund hazardous substances that are not hazardous wastes) and non-hazardous waste streams. These streams must be evaluated, however, to the extent that they have used or will use Subtitle C capacity and thus have reduced or will reduce the capacity available to manage federal hazardous wastes. Table III-5 reflects the accounting for these quantities.

3. Sources of Data To Report Waste Generation

States may use the 1987 Biennial Report or the equivalent data elements collected in state reports to estimate 1987 calendar year generation by SARA waste types. Equivalent sources of data include state surveys of generators, facility inventories, state-modified Biennial Report forms, and waste manifest reports.

4. Establishing A Baseyear

The EPA requests that states use 1987 as the baseyear to report waste generation. However, if a state has more accurate data for 1985 or 1986 and judges that these data more precisely represent waste generation in their state (because, for example, the state spent considerable resources to collect and analyze that data), they should present these figures and identify the alternate baseyear. In order to compare generation data with capacity data, and to demonstrate agreement with other states' data, projections, and plans, however, states may need to estimate or project waste generation and available capacity to 1987 even if the data was obtained for a different baseyear. Adjustments made between years should be documented.

5. Units to Report Waste Generation

All waste quantities should be reported in tons (short tons) per year. Waste expressed in volumetric terms, such as gallons, should be multiplied by the density of the waste in question (tons per gallon, for example) to yield the most accurate conversion into tons. Those states using the new Biennial Report forms will find density information for each waste stream in form GM of Package B, Section III, Question D. In the absence of exact density characteristics, states may use default values presented in the Technical Reference Manual to convert from volume into tons.

Reporting Waste Management (Supply)

To the extent possible, States should use in-state data to develop hazardous waste management and capacity information. To assist states in confirmation of this data or where this data does not exist, EPA is prepared to make available data based on the TSDR survey that analyzes 1986 capacity. The 1986 data from the TSDR survey will consist of non-confidential business information that summarizes capacity at TSDR facilities. States may also obtain a fuller, more complete set of the confidential business information by following procedures required for clearance. There are clear advantages to states obtaining clearance for confidential business information, because a number of commercial facilities have claimed information to be confidential and because confidential business information clearance will likely be required for states that wish to obtain a complete perspective of national hazardous waste capacity. EPA recognizes that the capacity dataset from the TSDR survey has been developed for 1986, which is not the baseyear (1987) and expects that states will adjust the TSDR data as appropriate.

E. Instructions For All Tables

1. Generation of Waste

States should describe waste quantities for each of the SARA waste types in each of the tables described below. The Technical Reference Manual describes analytical methodologies used to complete each table from raw data. These conversions include a high option (for use with "new" Biennial Report data) and a low option (for use with "old" Biennial Report data), which can be combined if state data is not capable of supporting the high option for all data manipulations.

a. Instructions For Table III-1 Table III-1 asks states to summarize total in-state generation of one-time and recurrent streams of hazardous waste. Recurrent wastes include both primary and secondary streams attributable to on-going industrial activity. One-time wastes include those that result from isolated events such as equipment cleaning or decommissioning, site cleanup, or disposal of off-specification products. States using the new Biennial Report forms will possess a data set that separates recurrent from one-time waste generation. States using the old Biennial Report forms, which do not directly support such an analysis, should estimate one-time generation to the best of their ability.

Total generation is comprised of primary generation (waste by-products of manufacturing processes and hazardous waste generated by the treatment of nonhazardous waste) and secondary generation (waste by-products of hazardous waste treatment processes). States that employ EPA's capacity assurance software will be able to further to sort one-time and recurrent hazardous waste streams by primary and secondary generation.

b. Instructions for Table III-2: Table III-2 summarizes the waste exported by management category and state.

c. Instructions for Table III-3: Table III-3 summarizes waste imported by management category and state. Further, states should note that Tables III-2 and III-3 allow direct comparisons of plans submitted by other states, and thus will assist states in achieving import and export flow and capacity agreement.

d. Table III-4: Table III-4 provides the linkage between waste type and SARA management categories. This linkage is based upon state based information or the defaults provided in the Technical Reference Manual. Tables III-4A through III-4C repeat this linkage for captive, commercial and onsite TSDFs, respectively.

2. Waste Management (Supply)

a. Table III-5: This table includes grand total in-state capacity for waste management. This information is subdivided in Tables III-5A, B, and C by captive, commercial, and on-site TSD facilities.

The data elements in these tables include the maximum capacity that was available at the beginning of the baseyear (1987), the capacity that was used by federal hazardous, other hazardous, and non-hazardous waste during the baseyear (1987), and the unused capacity or remaining capacity that was available for use in the baseyear (1987). States should note that capacity may be described in two ways: total capacity available over time (such as the volume of a landfill); and capacity available in a given year (such as the possible throughput for an incinerator).

This table provides a common starting point from which all states can work when producing their 1987 baseline. States should note that the information provided from the TSDR survey includes as captive capacity limited access commercial facilities. States should understand that limited access facilities should be evaluated to determine whether they should be considered captive facilities for purposes of projecting demands for capacity. These facilities may not be capable of providing capacity for demand similar to other commercial facilities. States should also recognize that the TSDR Survey information will not contain capacity data for non-TSDR capacity (see below for definition).

States may wish to compare their 1987 utilization values derived from their generation and management data with the 1986 utilization data from the TSDR Survey data set.

b. Instructions for III-5A through III-5C: Tables 5A through 5C are the central tables in the development of a state's CAP. Table III-5A should describe only waste quantities managed at captive facilities. Table III-5B should describe only waste quantities managed at commercial facilities. Table III-5C should describe only waste quantities managed at in-state onsite facilities.

The purpose of these comparisons is to enable states to identify potential limitations on available capacity by determining how much unused capacity existed during the baseyear. States should provide for use of facilities by generators of federal hazardous waste, other hazardous, and

nonhazardous waste when calculating the available management capacity. States should consult the Technical Reference Manual for additional information on making the comparisons of maximum capacity with utilization.

Finally, states should recognize that commercial status of facilities is hierarchical. Demand for onsite and captive facilities should not result in capacity shortfalls (revealed by a negative value in the available capacity column). Instead, such negative quantities will merely add to the demand for commercial capacity and thus should revise or should be added in a separate table with the commercial table to reflect true commercial demand, use and available capacity. It is for this reason that separate analyses are provided.

F. Definitions Section

Captive Management Facility. A facility that manages waste generated under the same ownership at a different location. [This differs from the definition used in the EPA provided state report data, which includes as captive those facilities that manage wastes from a limited number of generators.]

Commercial Management Facility. A facility that manages waste generated at a different location not under the same ownership.

Commercial Status. The appropriate disposition for a waste based upon management at a particular type of facility. Facilities include commercial, captive, and onsite facilities (collectively referred to as all treatment, storage, disposal and recovery (or all-TSDR), and non-TSDR facilities. Commercial status categories help keep track of where generated wastes are capable of being managed.

Equivalent State Data. This phrase refers to common state data, derived from official surveys or manifests, that use the RCRA waste codes to report generation and capacity information. This data is similar to that collected under the old Biennial Report.

Exempt Processes. Included in onsite and non-TSDR management, exempt processes refer to processes that are exempt from regulation under RCRA. Exempt processes can represent substantial capacity for treatment and for secure disposition of hazardous wastes.

Federal Hazardous Waste. Waste regulated as hazardous within the state that are hazardous wastes under 40 CFR part 261.

Generation Status. The type of waste generated, by the general form of activity producing the waste. Generation status includes primary recurrent, secondary recurrent, primary one-time, and secondary one-time waste.

Maximum Capacity. The maximum amount of waste that can undergo treatment, disposal, or recovery that a unit or facility can manage within a single reporting year, given all physical restrictions and permit conditions and legal restrictions.

New Biennial Report. This refers to the revised EPA reporting system, issued for the 1987 reporting cycle. New information required by the 1987 Biennial Report includes data on waste stream constituents, details on a state's waste minimization activities, and facility capacity information.

Non-hazardous wastes. Wastes that are not federal or other hazardous wastes.

Non-TSDR Management Facility. A "facility" that manages waste where no permitted or interim status treatment, storage, or disposal occurs. Non-TSDR capacity represents only exempt processes.

Old Biennial Report. This refers to the current official EPA reporting system, last used by all states in 1985. Data requested from the states included quantities of waste generated and amounts of waste treated, stored, or disposed. The same data are still required for the 1987 reporting cycle as minimum requirements.

Onsite Management Facility. A facility that manages wastes generated under the same ownership at the same site where permitted or interim status treatment, storage, or disposal occur. Onsite capacity can include exempt processes at permitted or interim status facilities.

One-time Generation. The generation of hazardous waste that results from non-recurrent events, such as Superfund cleanups or other corrective actions, equipment or decommissioning, disposal of off-specification products, etc.

Other Hazardous Waste. Wastes that are considered hazardous within the state but that would not be hazardous wastes under 40 CFR Part 261. Other hazardous wastes can include Superfund hazardous substances that are not federal hazardous wastes, PCB wastes, wastes regulated by a state hazardous waste program that is broader in scope than the federal program, etc.

Primary Generation. The generation of hazardous waste from production processes or from treatment of nonhazardous waste.

Recurrent Generation. The generation of hazardous waste from continuous or frequently occurring processes or events, such as industrial production processes.

Remaining Capacity. The amount of unused capacity that could have been used during a year. It represents, for any given year, the maximum capacity available at the start of the year minus the capacity utilized during the year, i.e., unused capacity.

SARA Management Categories. SARA management categories were created to cover the full range of hazardous waste management practices in the country. Fuel blending is not covered in the SARA management categories because this capacity is believed to be adequate or easily developed and because blended fuels are accounted for by incineration, energy recovery and other practices. Storage is not covered in the SARA management categories because it does not provide for treatment, destruction, or secure disposition of wastes. The type of system used to manage a hazardous waste is the basis for classifying waste volumes under particular SARA management categories. The SARA management categories are defined as follows:

1. Metals Recovery - Any system used to recover metals from a hazardous waste stream for reuse. Systems found under this category include:
 - o Secondary smelting
 - o Retorting
 - o Electrolytic metals recovery
 - o Ion exchange
 - o Reverse osmosis

- o Acid leaching
 - o Other metals recovery
2. Solvent Recovery - Any system used to recover solvents from a hazardous waste stream for reuse. Systems found under this category include:
- o Fractionation/distillation
 - o Thin film evaporation
 - o Solvent extraction
 - o Phase separation
 - o Other solvent recovery
3. Other Recovery - Any system used to reclaim constituents from a waste stream for reuse that does not fall under the above-mentioned categories. This is the catchall recovery category. Systems found under this category include:
- o Nonsolvent organic recovery
 - o Acid regeneration
4. Incineration - Liquids - Any system used to destroy liquid hazardous waste streams by combustion. Systems found under this category include:
- o Liquid injection incinerators
 - o Rotary kilns with liquid injection
 - o Two-stage incinerators
 - o Fixed hearth incinerators
 - o Multiple hearth incinerators
 - o Fluidized bed incinerators
 - o Pyrolytic destructors
5. Incineration - sludges/solids - Any system used to destroy sludges and/or solid hazardous wastes by combustion. Systems found under this category include:
- o Rotary kilns
 - o Two-stage incinerators
 - o Fixed hearth incinerators
 - o Multiple hearth incinerators
 - o Fluidized bed incinerators
 - o Infrared incinerators
 - o Pyrolytic destructors
6. Energy Recovery - Any system that burns hazardous waste for its fuel value. Note that this category does not distinguish between liquids and sludges/solids as does incineration. Capacity to burn liquids in kilns dominates this category at the national level because sludges/solids are not often burned in kilns and because industrial furnaces and boilers burn at comparatively lower volumes. Systems found under this category include:

- o Cement, aggregate, and asphalt kilns
 - o Blast furnaces
 - o Coke ovens
 - o Sulfur recovery furnaces
 - o Smelting furnaces
 - o Other industrial furnaces
 - o Industrial boilers
 - o Other reuse-as-fuel units
7. Aqueous Inorganic Treatment - Any system used to remove or destroy inorganic constituents from an aqueous hazardous waste stream. Note that this category does not include neutralization (pH control). Neutralization is categorized under "other treatment" to prevent its large capacity from dominating over the capacity of systems such as chemical precipitation. Systems found under this category include:
- o Chromium reduction
 - o Chemical precipitation
 - o Cyanide oxidation
 - o General oxidation
 - o Ion exchange
 - o Reverse osmosis
 - o Other aqueous inorganic treatment
8. Aqueous Organic Treatment - Any system used to remove or destroy organic constituents from an aqueous waste stream. Systems found under this category include:
- o Biological treatment
 - o Carbon adsorption
 - o Air stripping
 - o Steam stripping
 - o Wet air oxidation
 - o Other aqueous organic treatment
9. Other Treatment - Any system used to treat hazardous waste streams that does not fall under categories 1 through 8, 10, and 11. This is the catchall treatment category. Any "other treatment" processes that are part of a wastewater treatment system treating hazardous waste do not fall under this category. Such sludge treatment capacity is included in the treatment system capacity reported under categories 1 through 8, 10, and 11. Neutralization capacity is expected to dominate this category. Systems found under this category include:
- o Neutralization
 - o Settling/clarification
 - o Equalization
 - o Denitrification
 - o Gas incineration
 - o Other treatment

10. Sludge Treatment - Any system used to treat hazardous waste sludges except stabilization. Any sludge treatment processes that are part of a wastewater treatment system treating hazardous waste do not fall under this category. Such sludge treatment capacity is included in the aqueous treatment system capacity reported under categories 7 and 8. Only systems that treatment sludges generated from nonhazardous waste treatment and "stand-alone" processes are included in this category. Systems found under this category include:
 - o Sludge dewatering
 - o Addition of excess lime or caustic to increase alkalinity
 - o Absorption/adsorption to render nonliquid
11. Stabilization - Any system that chemically or physically reduces the mobility of hazardous constituents by binding the hazardous constituents into a solid mass with low permeability that resist leaching. This does not include addition of adsorbates to render a waste stream nonliquid or lime/caustic addition to increase alkalinity (refer to Category 10). Systems found under this category include:
 - o Cement-based stabilization
 - o Pozzolanic-based stabilization
 - o Asphaltic stabilization
 - o Thermo-plastic stabilization
 - o Other stabilization
12. Land Treatment - Also called land application or land farming. This management practice is considered to be land disposal under the Hazardous and Solid Waste Amendments of 1984 (HSWA).
13. Landfill - Also includes surface impoundments closed as landfills (disposal impoundments).
14. Deep Well Injection - A type of underground injection beneath the deepest stratum containing an underground source of drinking water defined in the regulations pursuant to the Safe Drinking Water Act as Class I wells (40 CFR Section 144.6A). This management practice is considered to be land disposal under HSWA.
15. Other Disposal - Used as a catchall category for disposal operations such as ocean dumping or depositing wastes in salt mines.

SARA Waste Types. These are broad waste groupings designed for aggregation of hazardous waste quantities. The 17 waste types are to be used to classify waste by physical/chemical form and hazardous constituents. The SARA waste types are defined as follows:

1. Contaminated Sand, Soil, and Clay (not to include spent filter media)- Waste that is primarily soil contaminated with hazardous waste.
2. Halogenated Solvents - Any liquid waste (a "liquid" contains less than 3 percent total suspended solids) that contains an organic constituent in the F001-F005 definitions, has greater than 90 percent organic content, as well as greater than 0.1 percent halogen content (halogen content refers to organic halogen content as opposed to inorganic halogen salts such as sodium chloride). To be included in this category are solvents whose halogen content has not been determined.
3. Nonhalogenated Solvent - Any liquid waste that contains an organic constituent in the F001-F005 definitions, has greater than 90 percent organic content, and less than 0.1 percent halogen content.
4. Halogenated Organic Liquids - Any liquid waste that does not contain a constituent listed in the F001-F005 definition, has greater than 90 percent organic content, and greater than 0.1 percent halogen content.
5. Nonhalogenated Organic Liquids - Any liquid waste that does not contain a constituent in the F001-F005 definitions, has greater than 90 percent organic content, and contains less than 0.1 percent halogen content.
6. Organic Liquids, Unspecified - Any liquid waste for which nothing is known except that its organic content is thought to be greater than 90 percent.
7. Mixed Organic/Inorganic Liquids - Any liquid waste that has an organic content between 1 and 90 percent (regardless of halogen or solvent concentration).
8. Inorganic Liquids With Organic - Any liquid waste that has an organic concentration up to 1 percent, but no metals exceeding 1 ppm.
9. Inorganic Liquids With Metals - Any inorganic liquid waste that contains RCRA-regulated metals in excess of 1 ppm, and not thought to contain any organic beyond trace amounts.
10. Inorganic Liquids, NEC - Any inorganic liquid with either unknown constituents, reactive constituents such as cyanide or sulfide, or both metals in excess of 1 ppm and organic up to 1 percent.
11. Halogenated Organic Sludges/Solids - Any waste that has greater than 3 percent total suspended solids, is greater than 90 percent organic compound, and has greater than 0.1 percent halogen content.
12. Nonhalogenated Organic Sludges/Solids - Any waste that has greater than 3 percent total suspended solids is greater than 90 percent organic compound, and has less than 0.1 percent halogen content.

13. Organic Sludges/Solids, Unspecified - Any waste for which nothing is known except that it is believed to have greater than 3 percent total suspended solids and to have 90 percent or greater organic content.
14. Mixed Organic/Inorganic Sludges/Solids - Any waste with greater than 3 percent total suspended solids and with an organic content of between 1 percent and 90 percent.
15. Inorganic Sludges/Solids With Metals - Any waste with at least 3 percent total suspended solids, at least 10 ppm or RCRA-regulated metals, and not thought to contain organic beyond trace amounts.
16. Inorganic Sludges/Solids, NEC - Any waste with total suspended solids of 3 percent or greater and other characteristics are unknown, reactive due to cyanide or sulfide, or contains both metals in excess of 10 ppm and organic up to 1 percent.
17. Other Wastes - Any waste that is explosive or highly reactive, contaminated with dioxins, hazardous and mixed with PCBs or radioactive waste, lab packs, or containerized gases. Also, state hazardous waste that is not already covered under RCRA and any waste where not enough characteristics are known to place it in any of the NEC categories.

Secondary Generation. The generation of hazardous waste from the management of hazardous waste (i.e., a residual from hazardous waste management).

System. One or more processes used together to treat, recycle, or dispose of a waste stream.

Utilized Capacity. The actual amount of waste managed by a treatment, storage, disposal, or recovery system within a single year.

Table III-1. Summary of In-State Generation by Waste Type in Baseyear (1987) (Tons/Year)

Waste Type	Recurrent Generation	One-time Generation	Total Generation
1. Contaminated Soil			
2. Halogenated Solvents			
3. Nonhalogenated Solvents			
4. Halogenated Organic Liquids			
5. Nonhalogenated Organic Liquids			
6. Organic Liquids, NEC ¹			
7. Mixed Organic/Inorganic Liquids			
8. Halogenated Organic Solids/Sludges			
10. Nonhalogenated Organic Solids/Sludges			
11. Organic Solids/Sludges, NEC ¹			
12. Inorganic Liquids with Metals			
13. Inorganic Liquids, NEC ¹			
14. Inorganic Solids/Sludges with Metals			
15. Inorganic Solids/Sludges, NEC ¹			
16. Mixed Inorganic/Organic Solids/Sludges			
17. Other Wastes, NEC ¹			
TOTAL			

¹Not elsewhere classified.

Table III-2. Summary of Waste Quantities Exported in Baseyear (1987)
by SARA Management Category and Importing State (tons/year)

SARA MANAGEMENT CATEGORIES	
Importing State	Metal recovery
	Solvents recovery
	Other recovery
	Incineration - Liquids
	Incineration - Sludges/Solids
	Energy recovery
	Aqueous inorganic treatment
	Aqueous organic treatment
	Other treatment
	Sludge treatment
	Stabilization
	Land treatment
	Landfill
	Deep-well injection
	Other disposal
Total	

Table III-3. Summary of Waste Quantities Imported in Baseyear (1987)
by SARA Management Category and Exporting State (tons/year)

SARA MANAGEMENT CATEGORIES	
Exporting State	
	Metals recovery
	Solvents recovery
	Other recovery
	Incineration - Liquids
	Incineration - Sludges/Solids
	Energy recovery
	Aqueous inorganic treatment
	Aqueous organic treatment
	Other treatment
	Sludge treatment
	Stabilization
	Land treatment
	Landfill
	Deep-well injection
	Other disposal
Total	

Table III-4. Baseyear (1987) Waste Managed In-State by Waste Type and SARA Management Categories for All Facilities

WASTE TYPES	SARA MANAGEMENT CATEGORIES															
	Exempt Treatment at non-TSDs	Metals recovery	Solvents recovery	Other recovery	Incineration - Liquids	Incineration - Sludge/Solids	Energy recovery	Aqueous inorganic treatment	Aqueous organic treatment	Other treatment	Sludge treatment	Stabilization	Land treatment	Landfill	Deep-well injection	Other disposal
Contaminated soil																
Halogenated solvents																
Nonhalogenated solvents																
Halogenated organic liquids																
Nonhalogenated organic liquids																
Organic liquids, NEC																
Mixed organic/inorganic liquids																
Inorganic liquids with organics																
Inorganic liquids with metals																
Inorganic liquids, NEC																
Halogenated organic sludges/solids																
Nonhalogenated organic sludges/solids																
Organic sludges/solids, NEC																
Mixed organic/inorganic sludges/solids																
Inorganic sludges/solids with metals																
Inorganic sludges/solids, NEC																
Other wastes, NEC																
TOTAL																

Table III-4A. Baseyear (1987) Waste Managed In-State by Waste Type and SARA Management Categories at Captive Facilities

WASTE TYPES	SARA MANAGEMENT CATEGORIES														
	Metals recovery	Solvents recovery	Other recovery	Incineration - Liquids	Incineration - Sludges/Solids	Energy recovery	Aqueous inorganic treatment	Aqueous organic treatment	Other treatment	Sludge treatment	Stabilization	Land treatment	Landfill	Deep-well injection	Other disposal
Contaminated soil															
Halogenated solvents															
Nonhalogenated solvents															
Halogenated organic liquids															
Nonhalogenated organic liquids															
Organic liquids, NEC															
Mixed organic/inorganic liquids															
Inorganic liquids with organics															
Inorganic liquids with metals															
Inorganic liquids, NEC															
Halogenated organic sludges/solids															
Nonhalogenated organic sludges/solids															
Organic sludges/solids, NEC															
Mixed organic/inorganic sludges/solids															
Inorganic sludges/solids with metals															
Inorganic sludges/solids, NEC															
Other wastes, NEC															
TOTAL															

Table III-4B. Baseyear (1987) In-State Waste Managed by Waste Type and SARA Management Categories at Commercial Facilities

WASTE TYPES	SARA MANAGEMENT CATEGORIES														
	Metals recovery	Solvents recovery	Other recovery	Incineration - Liquids	Incineration - Sludges/Solids	Energy recovery	Aqueous inorganic treatment	Aqueous organic treatment	Other treatment	Sludge treatment	Stabilization	Land treatment	Landfill	Deep-well injection	Other disposal
Contaminated soil															
Halogenated solvents															
Nonhalogenated solvents															
Halogenated organic liquids															
Nonhalogenated organic liquids															
Organic liquids, NEC															
Mixed organic/inorganic liquids															
Inorganic liquids with organics															
Inorganic liquids with metals															
Inorganic liquids, NEC															
Halogenated organic sludges/solids															
Nonhalogenated organic sludges/solids															
Organic sludges/solids, NEC															
Mixed organic/inorganic sludges/solids															
Inorganic sludges/solids with metals															
Inorganic sludges/solids, NEC															
Other wastes, NEC															
TOTAL															

Table III-4C. Baseyear (1987) Waste Managed In-State by Waste Type and SARA Management Categories at Onsite Facilities

WASTE TYPES	SARA MANAGEMENT CATEGORIES														
	Metals recovery	Solvents recovery	Other recovery	Incineration - Liquids	Incineration - Sludge/Solids	Energy recovery	Aqueous inorganic treatment	Aqueous organic treatment	Other treatment	Sludge treatment	Stabilization	Land treatment	Landfill	Deep-well injection	Other disposal
Contaminated soil															
Halogenated solvents															
Nonhalogenated solvents															
Halogenated organic liquids															
Nonhalogenated organic liquids															
Organic liquids, NEC															
Mixed organic/inorganic liquids															
Inorganic liquids with organics															
Inorganic liquids with metals															
Inorganic liquids, NEC															
Halogenated organic sludges/solids															
Nonhalogenated organic sludges/solids															
Organic sludges/solids, NEC															
Mixed organic/inorganic sludges/solids															
Inorganic sludges/solids with metals															
Inorganic sludges/solids, NEC															
Other wastes, NEC															
TOTAL															

Table III-5. Comparison of Maximum Hazardous Waste Management Capacity with Utilized Capacity for all TSDs

SARA Management Category	Baseyear (1987) Maximum Capacity	Baseyear (1987) Management Demand			Remaining Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous Total	
Metals recovery					
Solvents recovery					
Other recovery					
Incineration liquids					
Incineration solids/sludges					
Energy recovery					
Aqueous inorganic treatment					
Aqueous organic treatment					
Other treatment					
Sludge treatment					
Stabilization					
Land treatment					
Landfill					
Deepwell injection					
Other disposal					

Table III-5A. Comparison of Maximum Hazardous Waste Management Capacity with Utilized Capacity for Captive Facilities

SARA Management Category	Baseyear (1987) Maximum Capacity	Baseyear (1987) Management Demand			Total	Remaining Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous		
Metals recovery						
Solvents recovery						
Other recovery						
Incineration liquids						
Incineration solids/sludges						
Energy recovery						
Aqueous inorganic treatment						
Aqueous organic treatment						
Other treatment						
Sludge treatment						
Stabilization						
Land treatment						
Landfill						
Deepwell injection						
Other disposal						

Table III-58. Comparison of Maximum Hazardous Waste Management Capacity with Utilized Capacity for Commercial Facilities

SARA Management Category	Baseyear (1987) Maximum Capacity	Baseyear (1987) Management Demand			Total	Remaining Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous		
Metals recovery						
Solvents recovery						
Other recovery						
Incineration liquids						
Incineration solids/sludges						
Energy recovery						
Aqueous inorganic treatment						
Aqueous organic treatment						
Other treatment						
Sludge treatment						
Stabilization						
Land treatment						
Landfill						
Deepwell injection						
Other disposal						

Table III-5C. Comparison of Maximum Hazardous Waste Management Capacity with Utilized Capacity for Onsite Facilities

SARA Management Category	Baseyear (1987) Maximum Capacity	Baseyear (1987) Management Demand			Total	Remaining Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous		
Metals recovery						
Solvents recovery						
Other recovery						
Incineration liquids						
Incineration solids/sludges						
Energy recovery						
Aqueous inorganic treatment						
Aqueous organic treatment						
Other treatment						
Sludge treatment						
Stabilization						
Land treatment						
Landfill						
Deepwell injection						
Other disposal						

Chapter IV. STATE WASTE MINIMIZATION ACTIVITIES

A. Purpose

The purpose of this chapter is to obtain information on each state's use of waste minimization in the capacity assurance process. (For the definition of waste minimization, see the definitions section at the end of the chapter.) The Agency believes a waste minimization program is a key step toward sound hazardous waste management, and that states should vigorously pursue waste minimization when addressing waste management. States may not be aware of existing waste minimization activities being conducted by industry, and may wish to claim waste reductions from such activities when addressing projected generation. Again, EPA believes that management plans that include waste minimization analyses may be more credible than plans lacking such analyses, and the Agency expects all plans to address waste reduction and elimination.

States should supply information on any legislative authority that exists for current or potential waste minimization efforts. This information can be provided by completing Form I. States that analyze and project that waste minimization will reduce generation, and thus will assist in assuring the availability of adequate management capacity for generated wastes, should supply documentation on ongoing and planned waste minimization efforts. These states should describe the overall strategy of their programs, and how they have accounted for waste minimization in their waste generation projections.

B. General Instructions

All states should complete Form I, which is described below.

Form I: Legislative Authority. This form requests information on the present legislative authority for a waste minimization program, its structure, funding, staffing, and any anticipated legislative or programmatic changes.

States using waste minimization to assure availability of capacity should also complete Forms II and III, and should explain and document the quantitative adjustments that will be made to the projections of demand (which are described in Chapter V). EPA expects state plans to include this information, including effects of minimization that will result even without encouragement from active state waste reduction programs. In explaining these adjustments, states should assess whether their adjustments may duplicate waste minimization effects already included in the economic projection factors employed. Table IV-I is a summary table of waste minimization effects anticipated for the projection years. This table summarizes the detailed analyses of adjustments to projections. (A glossary of the terms used to describe the waste minimization program components is contained in the Definitions Section at the end of the chapter.)

Form II: Waste Minimization Analysis. This form requests detailed information on the anticipated effect of state and industrial waste reduction efforts, the technical bases for the estimates, and measures of effectiveness.

Form III: Description of Program. This form requests detailed information on the elements of the state's waste reduction program.

In completing the forms described above, states should consider the following:

- 1) the reliability of the waste minimization estimates (e.g., an assessment of the bases for the estimates);
- 2) the adequacy of the resources within the states that are committed to implementing its waste minimization strategy, and whether these resources can achieve the quantities of reduction projected; and
- 3) the existence and feasibility of a plan to implement waste reduction activities within the state.

Form I: LEGISLATIVE AUTHORITY

All states should fill out this form. States should copy and complete the form and include it and any additional necessary documentation. Please attach additional information if more space is needed to answer any question.

Name of Respondent _____
Telephone Number _____
Address _____

1. Does legislative authority exist to implement a waste minimization program in your state? If authority exists through general broad authority, please answer yes and cite the authority if known.

_____ Yes _____ No

1a. If yes, what are the titles of the legislation and when was it enacted?

1b. Is future legislation anticipated, and when does the state plan to have it enacted?

2. Indicate which of the following waste minimization program components are specifically in use or authorized in your state:

<u>In Use</u>	<u>Authorized</u>	
_____	_____	Technical Assistance
_____	_____	Economic Incentives
_____	_____	Waste Exchange
_____	_____	Research and Development
_____	_____	Regulatory Requirements
_____	_____	Education

_____ All programs are authorized under a broad legislative enactment

_____ Other _____

3. In your state, are there any pending statutes, or regulations relating to waste minimization that are expected to be enacted within the next two years?

_____ Yes _____ No

3a. Please briefly describe the anticipated changes and their expected impacts on waste minimization in your state.

4. What administrative agency or agencies implement(s) your state's waste minimization program (list all applicable agencies and the waste minimization component they are responsible for).

Agency	Component
_____	_____
_____	_____
_____	_____

5. What is the amount of funding received from the following sources (in thousands of dollars) for your waste minimization program?

_____ General revenues

_____ Dedicated taxes (e.g., waste end, feedstock)

_____ Tipping fees

_____ Federal Grants

_____ Other _____

6. Please estimate the number of person-years of staff supported by the state working on waste minimization.

_____ State professionals on staff

_____ Consultants

_____ Other _____

Form II: WASTE MINIMIZATION ANALYSIS

States that incorporate waste minimization estimates in their capacity projections should complete this form. States should copy and complete the form and include it and any additional necessary documentation (in particular, tables of quantitative estimates for each year in which waste will be minimized and thus less capacity will be used as a result). Please attach additional information if more space is needed to answer any question.

Name of Respondent _____

Telephone Number _____

Address _____

1. Please estimate the amount of waste expected to be reduced (in tons) by waste minimization for each of the SARA waste types for projection years 1989, 1995, and 2009. These estimates should be easy to incorporate into your waste projections and should build on the analyses described in Chapter III. They should not include anticipated changes in production rates, but should show only those reductions based on waste minimization efforts. States should explain how they have avoided duplication of reductions (from waste minimization) that already may be included in economic projection factors. Please summarize these estimates in Table IV-1. [Waste minimization projections for intermediate years used to evaluate capacity utilization need not be included].

2. Please briefly describe the basis of your technical estimates. A list of bibliographic references and a short narrative describing how they were used is sufficient. Examples of appropriate material that might be used to develop waste minimization estimates include:
 - State surveys of waste generation trends.
 - Waste minimization plans prepared by industry in your state (Please describe or include these plans).
 - Reports from Advisory Councils on the potential effects of waste minimization for the state.
 - Reports from Federal Agencies and Trade and Technical Associations estimating trends in waste minimization applicable to the industries in your state.

- Engineering studies and analysis of potential waste stream changes applicable to industries in your state.
- Programs conducted by non-state agencies such as non-profit organizations that affect the industries in your state.

3. How do you measure the effectiveness of your program (such as by checking whether estimates were realized)? Please elaborate on your method.

- No other measures besides that obtained from EPA's Biennial Report
- Number of information requests handled
- Number of industries/plants participating
- Savings to industry (cost ratios)
- Change in waste quantity generated
- Change in ratios of waste generated per unit product
- Other _____

4. How will you acquire this information?

- By examining waste minimization program records
- By conducting industry surveys
- New EPA Biennial Report
- By examining state regulatory files
- Other _____

5. Briefly describe your communication strategy with the industrial community.

6. In addition to your waste reduction estimates, are there any other activities in your state (announced programs by one or more key industries to reduce waste, pending legislation or regulations, component implementation schedule) that might be useful in evaluating your waste minimization projections?

Date	Activity
_____	_____
_____	_____
_____	_____

Form III: DESCRIPTIONS OF PROGRAM

States that incorporate waste minimization estimates in their capacity projections should complete this form. This section requests information on the specific components of your waste minimization program described in Form I, Question 2. Please complete the sections that are applicable to your state program. Questions on different waste minimization components are presented separately so that they may be distributed to different program officials if necessary. States should copy and complete the form and include it and any additional documentation. Please attach additional information if more space is needed to answer any question.

Form III includes the following:

- III-a Technical Assistance
- III-b Economic Incentives
- III-c Waste Exchange
- III-d Research and Development
- III-e Regulatory Requirements
- III-f Education

Respondents to each set of questions in this form should attach their name and telephone number should additional information be required.

Name of Respondent _____

Telephone Number _____

Address _____

1. Please indicate the approximate emphasis that your state places on the following waste minimization components as a percent of your waste minimization budget.

<u>Component</u>	<u>Approximate Percent of Budget</u>
Technical Assistance	_____
Economic Incentives	_____
Waste Exchange	_____
Research and Development	_____
Regulatory Requirements	_____
Education	_____
Other	_____
Total	100%

III-a TECHNICAL ASSISTANCE

1. Indicate which of the following Technical Assistance components are currently in use or proposed for use in your waste minimization program.

Technical Assistance

<u>On-going</u>	<u>Proposed</u> (Date Anticipated)	
_____	_____	Onsite assistance
_____	_____	Information clearinghouse/Library
_____	_____	Technical workshops
_____	_____	Feasibility studies
_____	_____	Other _____

2. For Technical Assistance, please provide the following information for existing programs or proposed programs:

2a. Describe the specific target of the Technical Assistance program (e.g., waste streams, industry categories, or both).

2b. Why did you choose to implement this program?

2c. What problems to implementing the Technical Assistance program do you anticipate or have you experienced?

2d. What quantities of waste do you expect to reduce through Technical Assistance? [Please provide quantities and dates that correspond to the analyses in Form II, Question 1.]

III-b ECONOMIC INCENTIVES

1. Indicate which of the following Economic Incentives components are currently in use or proposed for use in your waste minimization program.

Economic Incentives

<u>On-going</u>	<u>Proposed</u> (Date Anticipated)	
_____	_____	Awards/matching grants
_____	_____	Taxes/Fees (e.g., waste-end, front-end, point-of-use)
_____	_____	Low-interest loans
_____	_____	Tax credits
_____	_____	Other _____

2. For Economic Incentives, please provide the following information for existing or proposed programs:

2a. Indicate the number of grants provided in the baseyear as part of this component.

2b. What is the current (or projected) annual budget for grants provided in your waste minimization program as part of Economic Incentives (in thousands of dollars)?

2c. If taxes or fees are imposed, describe the tax (\$ per ton, for example) and the amount of revenues generated by the tax in the most recent state fiscal year.

2d. Why did you choose to implement this program?

2e. How effective have each of your economic incentives been in minimizing wastes?

2f. What quantities of waste do you expect to reduce through economic incentives? [Please provide quantities and dates that correspond to the analyses in Form II, Question 1.]

III-c WASTE EXCHANGE

1. Indicate which of the following Waste Exchange components are currently in use or proposed for use in your waste minimization program.

Waste Exchange

<u>On-going</u>	<u>Proposed</u> (Date Anticipated)	
_____	_____	State-promoted
_____	_____	State-managed
_____	_____	State-financed
_____	_____	Regional or multi-state effort
_____	_____	Other _____

2. For Waste Exchange, please provide the following information for existing programs or proposed programs:
- 2a. What is the current (or projected) annual contribution to the Waste Exchange (in thousands of dollars) that you participate in?
- 2b. What is the name of the Waste Exchange that you participate in?
- 2c. Which states participate in this Waste Exchange (Please list)?
- 2d. Describe the specific target of the Waste Exchange program (e.g., waste streams, industry categories, or both).
- 2e. Why did you choose to implement this program?
- 2f. What problems to implementing the Waste Exchange program do you anticipate or have you experienced?

2g. What quantities of waste do you expect to reduce through waste exchange? [Please provide quantities and dates that correspond to the analyses in Form II, Question 1.]

III-d RESEARCH and DEVELOPMENT

1. Indicate which of the following Research and Development components are currently in use or proposed for use in your waste minimization program.

Research and Development

<u>On-going</u>	<u>Proposed</u> (Date Anticipated)	
_____	_____	Options development/feasibility studies
_____	_____	Pilot scale or demonstration projects
_____	_____	Economic or policy analysis
_____	_____	Manuals for audits or technology implementation
_____	_____	Other _____

2. For Research and Development, please provide the following information for existing programs or proposed programs:

- 2a. What is the current (or projected) annual budget for Research and Development (in thousands of dollars)?
- 2b. Describe the specific target of the Research and Development program (e.g., waste streams, industry categories, or both).
- 2c. Why did you choose to implement this program?
- 2d. What problems to implementing the Research and Development program do you anticipate or have you experienced?
- 2e. What quantities of waste to you expect to reduce through research and development? [Please provide quantities and dates that correspond to the analyses in Form II, Question 1.]

III-e REGULATORY REQUIREMENTS

1. Indicate which of the following Regulatory Requirement components are currently in use or proposed for use in your waste minimization program.

Regulatory Requirements

<u>On-going</u>	<u>Proposed</u> (Date Anticipated)	
_____	_____	Reporting requirements
_____	_____	Reduction standards
_____	_____	Design or operating standards (e.g., required chemical substitutions)
_____	_____	Management standards (e.g., mandatory waste reduction audits, listing on waste exchanges)
_____	_____	Other _____

2. For Regulatory Requirements, please provide the following information for existing programs or proposed programs:
- 2a. Describe the specific target of the Regulatory Requirements program (e.g., waste streams, industry categories, or both).
- 2b. Why did you choose to implement this program?
- 2c. What problems to implementing the Regulatory Requirements program do you anticipate or have you experienced?
- 2d. What quantities of waste to you expect to reduce through regulatory requirements? [Please provide quantities and dates that correspond to the analyses in Form II, Question 1.]

III-f EDUCATION

1. Indicate which of the following Education components are currently in use or proposed for use in your waste minimization program.

Education

<u>On-going</u>	<u>Proposed</u> (Dated Anticipated)	
_____	_____	Governor's or other award programs
_____	_____	Public education (e.g., seminars, workshops, pamphlets)
_____	_____	Outreach
_____	_____	Feasibility studies
_____	_____	Other _____

2. For education, please provide the following information for existing programs or proposed programs:
- 2a. Describe the specific target of the education program (e.g., waste streams, industry categories, or both).
- 2b. Why did you choose to implement this program?
- 2c. What problems to implementing the education program do you anticipate or have you experienced?
- 2d. What quantities of waste to you expect to reduce through education? [Please provide quantities and dates that correspond to the analyses in Form II, Question 1.]

C. Definitions Section

Economic Incentives

1. Awards/Matching Grants. Direct payments from the state to hazardous waste generators or others engaged in waste minimization activities. May be structured to encourage various types of waste minimization activities, to assist specific types of firms, or to focus on particular waste streams.

2. Taxes/Fees. A means by which states create an economic incentive for waste minimization. Front-end taxes can be imposed at or near the beginning of the commercial chain of production, throughout the distribution network, and at the point of consumption of selected chemicals and substances. Waste-end taxes may be levied on the generation, transportation, storage, treatment, or disposal of wastes.

3. Low-Interest Loans. Financial assistance that enables firms to reduce the cost of financing investments in processes and technologies that reduce wastes. Usually directed to both small and mid-sized hazardous waste generators who may be unable to obtain commercial credit at an affordable price.

4. Tax Credits. A direct reduction in the tax liability of the firm, generally rewarding only capital investments.

Education

1. Governor's or Other Award Programs. A low-cost means to recognize and honor companies and institutions that have demonstrated outstanding achievement in hazardous waste management.

2. Public Education/Outreach. Promotional activities designed to keep the public informed of the need for a commitment to hazardous waste minimization. Targeted in general to citizen groups, trade associations, and professional organizations.

Recycling. The use or reuse of a waste as an effective substitute for a commercial product, or as an ingredient or feedstock in an industrial process. It also refers to the reclamation of useful constituent fractions within a waste material or removal of contaminants from a waste to allow it to be reused. As used here, recycling implies use, reuse, or reclamation of a waste either on site or off site after it is generated by a particular process.

Regulatory requirements

1. Reporting Requirements. Requests by the government for generator information sufficient to determine the effectiveness of waste minimization programs. In some cases the companies involved in waste minimization are required to submit their plan as a part of a permit application to the regulating authority for an evaluation of adequacy.

2. Reduction Standards. Specific targets for reduction over time in the quantity and/or toxicity of certain waste streams.

3. Design or Operating Standards. Limitations or criteria applied to process design and manufacturing operations, usually specific to particular industries and/or waste streams, to minimize waste generation.

4. Management Standards. Directed to encourage waste minimization. Includes good management practice standards, which may include mandatory audits or listing of wastes on a waste exchange.

Research and development. Involves applied hazardous waste research, development, and demonstration projects and may include feasibility studies, pilot- and bench-scale demonstration projects, and economic and policy analyses. Usually funded by government and in some cases the private sector, these projects are typically undertaken by universities and other academic institutions.

Source reduction. The reduction or elimination of waste at the source, usually within a process. Source reduction measures include process modifications, feedstock substitutions, improvements in feedstock purity, housekeeping and management practices, increases in the efficiency of machinery, and recycling within a process. Source reduction implies any action that reduces the amount of waste exiting from a process.

Technical assistance

1. Onsite Assistance. Comprehensive technical assistance to aid industry in reducing the volume or toxicity of wastes generated. May include consultation on industrial and waste management practices and waste minimization options.

2. Information Clearinghouse/Library. A data base (electronic or hardcopy) made available to managers involved in waste minimization. Clearinghouses provide access to documents, references, and telephone assistance.

3. Technical Workshops. Information dissemination programs designed to keep industry and others up-to-date on waste minimization programs, technology, and activities, and on appropriate regulatory information.

4. Feasibility Studies. Technical assistance, provided off-site, consisting of general process analyses and engineering studies. May be based on information gathered from similar industries or previous onsite technical assistance. Project results are usually helpful in solving select manufacturing or institutional problems.

Waste exchanges. Waste generated by one company are provided or sold to another company that can use the waste material in their operation. Recipient companies usually use the waste untreated or subject it to a minimal amount of treatment prior to reuse.

Waste minimization. The reduction, to the extent feasible, of hazardous waste that is generated or subsequently treated, stored, or disposed. Waste minimization includes any source reduction or recycling activity undertaken by a generator that results in: (1) the reduction of total volume or quantity of hazardous waste; (2) the reduction of toxicity of hazardous waste; or (3) both, as long as the reduction is consistent with the goal of minimizing present and future threats to human health and the environment. [In some circumstances, waste minimization may not reduce the demand for treatment, destruction, or disposal capacity, e.g., when treatment generates larger volumes of less toxic, but still hazardous, waste that also must be securely disposed.]

Table IV-1. Summary of Estimated Reductions of all Generated Wastes due to Waste Minimization (tons)
(as calculated in projection section)

Waste Types	Projection Years		
	1989	1995	2009
1. Contaminated Soil			
2. Halogenated Solvents			
3. Nonhalogenated Solvents			
4. Halogenated Organic Liquids			
5. Nonhalogenated Organic Liquids			
6. Organic Liquids, MEC ^a			
7. Mixed Organic/Inorganic Liquids			
8. Halogenated Organic Solids/Sludges			
9. Nonhalogenated Organic Solids/Sludges			
10. Organic Solids/Sludges, MEC ^a			
11. Inorganic Liquids with Metals			
12. Inorganic Liquids, MEC ^a			
13. Inorganic Solids/Sludges with Metals			
14. Inorganic Solids/Sludges, MEC ^a			
15. Mixed Inorganic/Organic Solids/Sludges			
16. Other Wastes, MEC ^a			
17. TOTAL			

^a MEC=Not Elsewhere Classified

Chapter V. PROJECTING HAZARDOUS WASTE GENERATION AND THE DEMAND FOR MANAGEMENT CAPACITY

A. Purpose

This chapter outlines procedures for states to use when projecting hazardous waste generation and the demand it represents for waste management capacity. Projected demand is then compared to projected capacities for each of the waste management categories presented in Chapter III. The result is an estimate of projected capacity needs for each waste management category. It is expected that tables similar to Tables III-1 through III-5 will be completed for each of the projection years.

States should project waste generated within their borders in 1989, 1995, and 2009. The 1989 projection year corresponds to the current waste management situation and to the next biennial reporting year. The 1995 projection will present a near-term estimate of demand for waste management after most of the current hazardous waste regulations, the land disposal restrictions in particular, take effect. The law specifies that states assure adequate waste management capacity for 20 years, hence the projection of year 2009 values. (States may also need to project intermediate years to account for exports and for reductions in capacity of facilities during the intervening periods).

The methods contained in this chapter reflect procedures commonly used to project waste generation. The Agency recognizes the inherent uncertainty of projections and the limitations of all procedures. For this reason, the Agency does not endorse any one system; for consistency, however, states are expected to choose the approach discussed at the outset of each of the following sections. States that do not use this approach should explain their use of alternative projection methods. In any event, all projections should adhere to the following general guidelines:

- o Projections should take into account economic expansion or contraction and its effect on the quantity of waste generated by sources within the state.
- o Projections of waste minimization, based on the documentation described in Chapter IV, should be accounted for, but not should not duplicate the economic effects.
- o Projections should account for non-recurrent wastes (from equipment decommissioning or replacement, materials or product disposal, materials or product spills, closure actions, remedial or corrective actions, or other non-routine sources) as well as waste generated from continuous industrial processes; projections also should account for differences between primary and secondary generation.
- o Projections should address the potential effect of regulatory change on future waste generation and management options.

EPA recognizes that each aspect of these guidelines represents a difficult exercise in projecting uncertain future quantities. Nevertheless, states should

make their best efforts to account for all relevant considerations and to document all assumptions that inform their analyses.

B. General Instructions

For each of the projection years, states should summarize their projections of waste quantities using the same series of tables used in Chapter III. Once waste generation projections have been finalized, adjustments for imports and exports should be made. The resultant volumes of waste should then be distributed as demand to on-site and off-site facilities.

The following sections of Chapter V provide general instructions on projecting waste from continuous industrial processes using common economic indicators and procedures; and projecting waste generated intermittently (i.e., one-time generation), such as that resulting from RCRA and CERCLA cleanups. States should coordinate their efforts with other state offices responsible for projecting and/or tracking state industrial activity or revenues. Waste generation should be based on the same economic forecast information used to project general business activity in the state or region; if different information is used, the reasons for such use should be thoroughly documented. In projecting economic effects, states should address and document the following:

- o the underlying economic assumptions used in the projections reflect existing or official projections of state economic activity unless otherwise and substantially justified by the state;
- o the projections account for all waste producing industries and possible changes in the economic behavior of these industries;
- o the projections account for non-recurrent wastes (e.g., CERCLA or RCRA remedial or corrective actions);
- o the projections correctly incorporate and do not duplicate the predicted effects of waste minimization;
- o the projections document all assumptions regarding waste imports and exports; and
- o the projection methodology chosen does not vary from that used by other states unless reasons for such variation are documented and justified; comparability of projection methods is important in establishing meaningful interstate dialogue on the issue of future waste flows between and among states and on the availability of capacity to manage those flows.

Many states will have the capabilities to provide detailed estimates of future waste generation amounts and their demand for management capacity. States that lack such capabilities are encouraged to develop their analytic abilities, as meaningful dialogue between states on the issue of export and import quantities and on availability of capacity of facilities is extremely important for providing assurances and for the development of interstate

agreements. A dialogue based on poor or inconsistent projections is unlikely to generate meaningful agreement.

Projections should show that the state has considered all relevant factors and is not in conflict with other official state policy on economic development. EPA recognizes that projections made for year 20 will be far less certain than those made over the short term.

C. Projecting Recurrent Waste Generation From Industrial Sources

Using 1987 generation as a baseline, states should estimate expected generation for projection years solely on the basis of economic changes. States should then make adjustments to these estimates to account for the expected effects of waste minimization as described in Chapter IV. Finally, states should adjust their projections to account for the effects of regulatory actions on the demand for waste management capacity.

1. Projecting Waste Generation Based on Economic Expansion or Contraction

Economic change is a combination of two measures: changes in economic base (reflected by the basic composition of the region's industry, including new entrants and closures) and changes in industrial output (defined as the total value of goods and services from current industrial production). The Agency does not expect states to forecast changes in their economic base, unless such changes are likely or are projected in official state economic development documents. Announced plant closures or start-ups of key industries are examples of likely changes. Absent such information, states should assume that the set of industries responsible for generating the majority of the state's hazardous waste in the base year will exist over the projection period.

The states should account for the effects of economic forces specific to each state and, ideally, to those industries currently responsible for the majority of waste generated. This involves two steps. First, states should compile a list of those industries that are responsible for generating the waste in their state. For states using EPA's new Biennial Report forms, these data are available in Form IC, Section IV (SIC code identification) and either GM or GS (waste quantities).

Second, the waste generation characteristics of these industries should be normalized to some indicator of economic output (discussed subsequently). Projections of the same economic indicator (or growth factors) then can be used to project waste from the industrial category in question. For states in which a waste category is dominated by the generation of a single industry (or by a few industries having similar growth potential), the growth factor of this industry (or industries) may be applied to the waste category as appropriate.

Ideally, industrial activity should be forecast for each 4-digit SIC (Standard Industrial Classification) code industry responsible for any generation of a state's total waste volume. There are about 450 4-digit SIC industries represented in the Office of Management and Budget's Standard Industrial Classification system. While the mix of waste generating industries

will vary from state to state, most states should find that less than 100 4-digit SIC industries will account for 95 percent to 99 percent of total state generation. In many states, particularly the smaller ones, the majority of hazardous waste quantities will be attributable to perhaps 20 industry groups.

Economic projections at the 4-digit SIC code level of detail may provide the most accurate basis for projecting changes in future waste quantities attributable to economic change. Many states, however, may not currently possess sophisticated projection models capable of tracking changes at this level of detail. States should therefore provide the most detailed analyses currently possible, and develop their analytic abilities to be able to perform more sophisticated analyses in the future.

2. Factors for Projection

Actual records of the number of product units, such as manufactured tons of steel or barrels of oil, are the most certain measures of industrial output because they capture, by definition, actual manufacturing activity within the plant. Using these measures to project future output in 70 to 100 industries, however, would likely exceed the current capabilities of state projection models. States should therefore rely upon growth in production employment, for which the Bureau of Labor Statistics publishes projections by industry, unless and until their models are capable of projecting by manufacturing activity. States may also project economic changes using the following indicators, specific to a target group of 4-digit SIC industries, which are less precise than changes in production employment or units of manufactures: total employment; production employment; value added by manufacture; value of shipments; and personal income from manufacturing (wages). Because a consistent projection method is essential if comparisons between state estimates are to be meaningful, states should use methods consistent with other states with which they have agreements.

When considering alternatives to manufacturing units or changes to production employment, states should recognize that their alternatives are not equally sensitive and may not be appropriate for the states' data base. Value of shipments, for example, is routinely reported in national aggregate statistics and at the individual plant level. But this measure does not distinguish between manufacturing and inventories as the source of shipments. Waste generation would be overestimated if waste was normalized to data that represented shipments from inventories instead of production, since actual production levels (and hence waste) in that year would be lower than shipments would indicate. In addition, the double counting associated with cross-shipments in value of shipments data may account for overestimates of plant activity.

Total employment also is routinely reported in national statistics and by individual plants, but changes in employment can misrepresent manufacturing activity if management and production employment change at different rates. In addition, waste generation estimates based on employment will be significantly overestimated if a company headquarters, representing largely management as

opposed to production labor, constitutes a significant share of total employment within a given SIC code.

Value added closely parallels manufacturing activity because this measure avoids the problem of inventories associated with value of shipments data. These data are more limited, however, at the national level and they are rarely reported by individual manufacturing establishments.

Personal income from manufacturing, or simply wages, is another good overall indicator of plant activity. Estimates of personal income from manufacturing are available in national aggregate form, by 4-digit SIC code, and by state.

While production employment is an input measure of manufacturing and not an output measure, it remains a good overall indicator insofar as it parallels manufacturing activity and is generally available at the 4-digit SIC code level regionally. It is important to account for changes in labor productivity, however, in projections of waste generation as a function of production employment. As industries automate and/or initiate waste minimization activities, the ratio of waste per production employee may change, leading to over- or under-estimates of future waste production if these adjustments are overlooked. In general, as labor productivity increases (the output per production employee rises), more waste will be created per employee in future years than in the baseline year.

3. Sources of Data

The U.S. Department of Commerce (Bureau of the Census) and the U.S. Department of Labor (Bureau of Labor Statistics) collect and publish historical data on value of shipments, value added, total employment, production employment and income from manufacturing at the 4-digit SIC code level, by state or by county. At a minimum, all states can use these data to project future trends based on trends over the past five years. Alternatively, the Bureau of Industrial Economics prepares similar projections for groups of 4-digit SIC industries for the nation as a whole in its annual publication, U.S. Industrial Outlook. States can adopt these national projections or may use and document state-specific data. The Bureau of the Census publication, County Business Patterns, provides a source of historical data on employment and sales, by industry and by county. Projections of personal income from manufacturing by SIC code and state through the year 2000 are available through the U.S. Bureau of Labor Statistics. Similar projections at the state level may be available from state agencies responsible for employment or labor trends.

Typically, a state Economic Development Office or Office of the Governor responsible for revenue projections will prepare its own forecast of industry growth. These projections may be incorporated directly into capacity assurance projections.

D. Incorporating The Effects of Waste Minimization

States may project the reduction of demand for waste management capacity as a result of waste minimization activities. Plans for implementing and

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D. Incorporating The Effects of Waste Minimization

States may project the reduction of demand for waste management capacity as a result of waste minimization activities. Plans for implementing and

accounting for such activities should be documented in Chapter IV. In that chapter, states must identify two key parameters of their waste reduction adjustments: (1) amount of reductions by waste type, and (2) a schedule over which these reductions are expected to take place. In this chapter, states should show how the factors developed in Chapter IV have been incorporated in their projections (including capacity utilization in between the projection years 1989, 1995, and 2009).

The most straightforward approach is to adjust the expected waste quantities generated in a target year by the quantity expected to be reduced through waste reduction, after assuring that the expected quantities do not already reflect waste minimization efforts. A narrative explanation of how waste reduction factors were applied should be included to support projections.

E. Incorporating the Effects of Regulatory Changes On Waste Generation

EPA anticipates that changes in regulations over the projection period will affect both waste quantities (i.e., the demand for waste management capacity) and the allowable alternatives for management. Both are expected to affect a state's ability to assure adequate capacity. This section discusses the extent to which states should include the effects of regulatory changes on projections of waste generation. A subsequent section addresses the effects of regulatory changes on capacity supply and on the allowable matching of waste types to management categories. Regulatory effects on waste generation also should be documented separately in a narrative statement.

Because of the uncertainty in projecting these effects over a 20-year period, EPA expects the states to account for regulatory changes to the maximum extent feasible. To promote consistency among states, the Agency has published and can make available to the states its Regulatory Impact Analyses (RIAs) for many rules promulgated under authority of RCRA and CERCLA, as they become available. The RIA will describe likely quantitative effects on waste generation and consequent demand for management technologies. The following is a list of rules that EPA expects to have an impact on capacity assurance and for which publication of an RIA or other economic analysis is expected by October 1, 1989:

Land Disposal Restrictions. Should affect virtually all listed and characteristic wastes and, by extension, all industries generating them. Expected to shift the management of certain waste streams away from land disposal and toward incineration and other treatment options. Also expected to stimulate waste reduction. Treatment standards must be promulgated by May 8, 1990.

New Listings. Should expand the number of waste streams under regulation; three new wood preserving and one new wood surface protection waste streams will be proposed in December of 1988, including wastewater streams, process residual streams; drippage and spent formulation streams, one new waste stream from petroleum refining to be added in 1988.

States should estimate the additions (or deletions) to regulated waste volumes attributable to the above rules and should document any additional regulatory effects considered.

F. Projection of Non-Recurrent And One-Time Only Waste Generation

Non-recurrent waste generation can result from periodic industrial operations (e.g., boiler and other process unit maintenance) and RCRA and CERCLA corrective actions and cleanups. Wastes generated from these sources, although potentially significant, are much more difficult to project than waste from continuous industrial processes. EPA recognizes that data for projecting the generation of one-time waste are generally less available and less reliable than data on recurrent waste generation. Further, failure to separate one-time from recurrent generation may lead to over-projection of waste generation.

This section describes methods that states may use to make such projections, given the limited data sources. At a minimum, states should estimate federal hazardous waste produced from the following classes of activities: site remedial actions (from federal Superfund and state clean-ups); corrective actions at RCRA facilities; underground storage tank cleanup; and site remediation as a result of real estate transfer statutes.

1. Site Remedial Actions

For many Superfund sites, estimates of the quantities of contaminated site wastes (soils and groundwater) that may require off-site treatment and disposal are available in Records of Decision (RODs). Where RODs have not yet been prepared, more limited information regarding quantities likely to be encountered at Superfund sites may be available in Remedial Investigations, Feasibility Studies, or Hazard Ranking System listings. These documents are available for review in EPA's 10 regional offices. The annual volume of wastes to be removed from these sites is largely a function of the extent of contamination (and hence of the decision to ship waste off-site or handle it onsite) and rate of expenditures for site cleanup activities. EPA recognizes that these estimates will be highly uncertain, especially for those sites without approved RODs or for state cleanup sites without comparable documentation.

Where data permit, states should prepare a list of all federal and state Superfund sites for which reliable estimates of the quantity to be handled are available and estimate a time interval over which actual remedial work will be completed. Such estimates may best be made by the state Superfund office or the EPA regional Superfund coordinator. For each site, states should prepare a list of the contaminants that predominate and match them as closely as possible to one (or more) of the SARA waste types. Much of this information should be available in site investigation and decision documents referenced above.

States should then estimate the quantity of Superfund waste expected to be handled off-site at in-state facilities versus that quantity to be exported. Superfund site-generated hazardous waste shipped off-site must be manifested like any other waste stream regulated under RCRA. An analysis of current waste manifests may be used to project future in-state handling from exported Superfund waste. States making this estimate should be fully document all

estimates, including descriptions of procedures and explanations of assumptions.

2. RCRA Corrective Action Sites At RCRA Facilities

States should assemble the following information:

- (1) From the regional EPA office or the state RCRA permitting office (depending on whether the state is authorized), compile a list of potential RCRA sites that will require corrective action (be sure to include corrective action as a condition of obtaining a Part B permit plus corrective action as a condition of closure or of orders issued under authority of RCRA Section 3008(h) or a state equivalent). In most cases, states will be unable to estimate waste quantities or waste volumes to be removed unless a Corrective Measures Study (CMS) has been prepared. The Agency recognizes that as relatively few corrective action sites have progressed to the CMS stage (several years may elapse before a potential site has been fully evaluated), states may be limited in their ability to incorporate the effects of RCRA corrective action into their analyses. In the absence of these data, states should assume that a proportion of RCRA facilities will require corrective action and document that assumption to the best of their ability.
- (2) Estimate the amount and timing of expected on-site management demand and off-site demand using methods described above for Superfund site estimates.
- (3) Estimate the proportion of off-site waste expected to be shipped to in-state facilities and that shipped out of state using information on waste manifest forms. In the absence of a historical record of shipments from RCRA corrective action sites, the states should assume that all removed material will be shipped to in-state facilities, if they currently exist and have capacity during the relevant period to manage the waste type projected to be generated. Otherwise assume that the waste will be exported and account for it in agreements, or project a shortfall.

3. Underground Storage Tanks

Corrective action requirements for releases from tanks containing petroleum or hazardous substances are similar to other corrective action requirements, even though underground storage tanks are regulated separately. Visibly contaminated soils must be removed. If residual contamination of groundwater or surrounding soils persists, additional cleanup is necessary. Actual levels of cleanup are determined on the basis of site-specific environmental risks and potential exposure. States should include estimates of hazardous waste quantities likely to be generated as a result of underground storage tank remediation. The types of data needed to support these estimates include:

- o Inventory of tanks subject to regulation

- o Statistics on leakage rates, preferably by type of tank
- o Characterization of tank inventory by contents (gasoline, solvents, other organics, inorganics)
- o Field estimates of extent of contamination. If these data are available, states should estimate quantities and timing of demand for waste management services using methods similar to those presented for estimating Superfund demand.

Lacking data, states should estimate amounts and document their assumptions.

4. Site Remediation from Real Estate Transaction Laws

If applicable, states should include estimates of hazardous waste generated from site remediation pursuant to state real estate transfer statutes (i.e., New Jersey's environmental statute) based on trends in past rates of generation. If such data are unavailable, states should estimate amounts and document their assumptions.

G. Total Projected Demand

States should provide the sum of all demand based upon hazardous waste generation in tables similar to those used in Chapter III. These quantities represent the total projected demand for waste management capacity distributed by SARA waste management category. The demand should consider waste minimization and regulatory and economic changes, and should be adjusted for imports and exports. The analyses of capacity demand should not violate any regulatory requirements anticipated to exist for the projection year (e.g., untreated liquids and sludges will not be directly land disposed after 1995, and thus should not be contributed to land disposal demand).

States also should estimate the demand for Subtitle C capacity imposed by non-hazardous waste and other hazardous waste. As indicated earlier, states may obtain capacity information for non-hazardous waste in 1986 from the TSDR Survey data). States should document in a separate narrative assumptions regarding the level of demand for Subtitle C capacity projected for these wastes. States can use the previously described projection methodologies for projecting and documenting demand posed by other hazardous and nonhazardous wastes.

H. Calculating Hazardous Waste Management Capacity Needs

Using the same techniques as outlined in Chapter III, tables should be prepared presenting maximum capacity; utilized capacity for federal hazardous, other hazardous, and nonhazardous waste; and the projected available capacity (i.e., net balance). These tables should be prepared for each of the projection years with the projected available capacity (i.e., net balance) figure representing the capacity excess or shortfall used for the plan developed pursuant to Chapter VI.

Chapter VI. DOCUMENTING STATE PLANS FOR INCREASING IN-STATE CAPACITY

A. Purpose

Chapter V of the Guidance Document summarizes the projected need for hazardous waste management capacity over the next twenty years, after taking into account waste minimization efforts and waste exports. Because the CAP addresses a 20-year period, states may not have adequate capacity in place today to handle all the hazardous waste generated over the next 20 years, making it necessary for states to document their procedures to assure access to needed facilities. States that show available capacity for the projection years need not present plans for addressing capacity shortfalls, as there are no shortfalls. Such states may describe emergency plans, however, to address situations where their calculations turn out to be erroneous.

States that show a shortfall of management capacity for the projection years should describe their procedures for facility siting, permitting, and expansion in Chapter VI and should commit to creating and permitting specific quantities and types of additional capacity through either new or expanded facilities in the state. These descriptions should include the dates of important interim and final siting milestones, such as site designation, permit submission, permit approval, construction start, and facility operation. States should analyze and discuss their regulations, policies, and procedures, as well as economic and other considerations, that may assist or may prevent or impede achievement of these milestones. States also should discuss how they will overcome any impediments.

Alternatively, states may be able to obtain agreement with other states (and to document such agreement) to manage these additional waste quantities by exporting the wastes, or the states may commit to additional waste minimization activities. In all cases, states must thoroughly document how the state will assure access to facilities for these wastes. States then can sign written commitments, providing assurances to EPA, that the state will undertake these documented activities.

B. General Instructions

States should respond to the questions contained in the attached forms. States should copy and complete the appropriate forms. Additional documentation should be included as needed. Creation of additional capacity should be documented fully and should address the shortfalls identified in Chapter V.

All states should complete Form I, "General Siting Description." This form requests general information on state regulations and procedures that can facilitate or impede the development of new hazardous waste capacity. It covers such items as the state's general siting process, preemption and override authorities of local and state governments, and laws that restrict the operation, location or configuration of a facility. (A glossary of the terms used in this chapter is contained in the definition section at the end of the chapter.)

States that project a capacity shortfall in any projection year, after taking into account waste minimization and waste exports, also should complete Forms II and III. Form II, "Capacity Development Plans," requests a more detailed description of topics covered under Form I. Form III, "Milestones and State Review," describes the state's plan to meet its shortfall, to which the state will commit.

Impediments to achieving the milestones include, but are not limited to, the following:

- o a state siting process that is subject to local zoning or other regulatory powers that are likely to be exercised and cannot be preempted or overruled by the state; these factors may prevent siting or permitting in anticipated locations.
- o The absence of a siting program having clearly defined steps and procedures (including ample opportunities for public review and comment) and the absence of clear time limits for permit review, comment, and approval or denial; these factors may lead to strong public opposition or to delay.
- o The enactment of legislation or promulgation of regulations that may prevent particular facilities from operating economically or at all (such as placing limits on facility size, type of waste allowed at the facility, or outright prohibition of particular waste management facilities or activities) if those limitations preclude creation or permitting of the capacity that the state has committed to develop (this would include limitations that may be agreed to by the facility developer and the host community as part of siting negotiation process).

Form I: GENERAL SITING DESCRIPTION

All states should fill out this form. States should copy and complete the form and include it and any additional needed documentation. Please attach additional information if more space is needed to answer any question.

Name of Respondent _____
Telephone Number _____
Address _____

1. Does your state have a formal hazardous waste management facility siting process in addition to the RCRA permitting process?

_____ Yes _____ No?

If Yes,

1a. What are the titles of the legislative authorities and when were they enacted?

2. Does your state have a siting agency that is distinct from the RCRA regulatory agency?

_____ Yes _____ No?

If Yes,

2a. What are the titles of the legislative authorities and when were they enacted?

3. Please describe (in a brief narrative) the procedure used to review facility applications, select sites (if applicable), review permits, and provide public comment. Please indicate the time required to complete major steps, such as the time required between permit application and approval/denial. Include an explanation of the appeals process available to the siting applicant, the host community, and siting opponents. (Where applicable, please note how a particular activity differs for expansion of existing facilities compared to siting of new facilities. If the

process is significantly different for new sitings and expansions, please prepare two separate descriptions.)

3a. If possible, please construct a flowchart showing the major steps of the siting process as described in your narrative. Where known, indicate the time necessary for an application to proceed through each required step.

4. Please describe (in a brief narrative) the outcome of siting applications since 1986.

5. The following questions address basic laws and rules that may affect the siting or expansion of new facilities. When answering the following questions, please note the relevant law or rule (if applicable) and briefly describe any special circumstances or constraints that apply.

5a. Do local governments in your state have the authority to approve RCRA permits?

Yes No?

If yes, please list the applicable regulation or authority.

5b. Do local governments in your state have the power to prohibit facility siting by the use of zoning ordinances?

Yes No?

If yes, please list the applicable regulation or authority.

5c. Does your state have the power to override local zoning authority and/or preempt local zoning powers?

Yes No?

If yes, please list the applicable regulation or authority.

5d. Does your state have the power to override and/or preempt any other local authorities that could prohibit or restrict capacity development?

Yes No?

If yes, please list the applicable regulation or authority.

5e. Are there state restrictions on the size or number of new or expanded facilities?

Yes No?

If yes, please list the applicable regulation or authority.

5f. Does the state allow facilities to be built that have greater capacity than that needed to treat in-state waste?

Yes No?

If no, please list the applicable regulation or authority.

6. The following pertain to laws and regulations that affect interstate transportation of hazardous waste.

6a. Does your state assess a fee on the generation of hazardous waste?

Yes No?

If yes, please explain.

6b. Does your state assess a fee for the treatment or disposal of hazardous waste?

Yes No?

If yes, please explain.

6c. Does your state have the power to establish differential fees on waste that is imported for treatment and/or disposal?

Yes No?

If yes, please explain.

6d. Are any limits placed on the size of the differential fee?

Yes No?

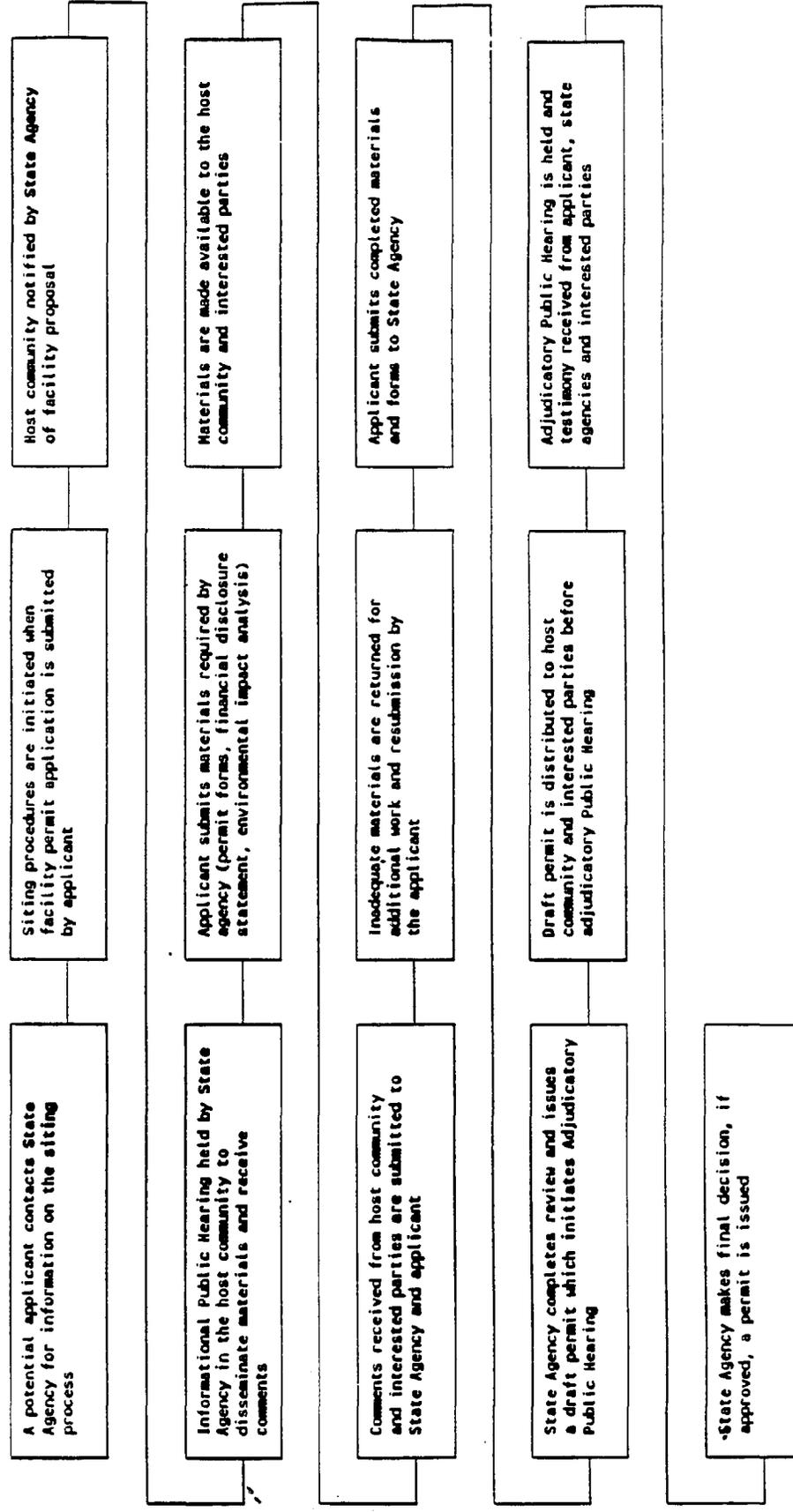
If yes, please explain.

6e. Do local or county governments have the power to establish differential fees on waste that is treated and/or disposed of in their jurisdiction?

Yes No?

If yes, please explain.

Figure 1. Siting Process Flowchart
(See Form I, Question 3a.)



Form II: CAPACITY DEVELOPMENT PLANS

States that project a capacity shortfall in any projection year should complete this form. States should copy and complete the form and include it and any additional needed documentation. Please attach additional information if more space is needed to answer any question.

Name of Respondent _____
Telephone Number _____
Address _____

1. How much new commercial facility capacity will be needed to meet the shortfall anticipated for hazardous waste management capacity? [See Chapter V.]
2. How does your State intend to develop new in-state capacity to address these shortfalls? [Please refer to the detailed description of procedures and milestones in Form III.]

_____ By siting new facilities
_____ Through the expansion of existing facilities
_____ Both
_____ Other, please explain _____

3. If you intend to meet new capacity needs by increasing waste exports beyond the 1987 levels, please explain why. Please indicate whether such plans are based on management planning efforts with other states, industries increasing exports to captive facilities, any environmental or economic considerations that restrict development of in-state capacity, or projections of current patterns.

3a. Are you participating in a multi-state hazardous waste management planning effort?

_____ Yes _____ No?

3b. Please list the participating states.

4. Does your state have siting criteria?

_____ Yes _____ No?

If Yes, please attach information describing your siting criteria and their regulatory status.

5. Are any of the following methods used in your state to select sites or encourage site development (check all that apply)?

- _____ State selection of specific site
- _____ State purchase of specific site
- _____ State inventory of suitable sites
- _____ Private nomination of site
- _____ Local nomination of site
- _____ Permit fast tracking
- _____ Other, please list:

6. How is the public allowed to participate in the siting process in order to affect the siting decision?

- _____ Adjudicatory public hearings
- _____ Informational public hearings
- _____ Local advisory committee
- _____ Local representatives on siting board
- _____ Other, please explain _____