Who's in Charge?

50-State Profile of Environmental Health and Protection Services

Organization, Programs, Functions/Activities and State Budgets

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(Includes Appendix IA - ID)

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IDENTIFICATION OF STATE ENVIRONMENTAL SERVICES
A Profile of the State Infrastructure for Environmental Health and Protection

A Final Report* Prepared for
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A summary of the final report entitled “The Environmental Web” is contained in a separate document.

*Some of the numbers in charts and tables in this report have been updated from the summary report.

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EXECUTIVE SUMMARY

This report presents the findings of an examination of the state level organization of environmental health and protection services. The project was initiated and supported by the Bureau of Health Professions, Public Health Branch of the Health Resources and Services Administration (HRSA), U.S. Public Health Service. The goal of the project was to conduct a descriptive analysis of the structure, functions, and funding of state environmental health and protection services, and to examine the impact of the major federal environmental statutes on the organization of the state infrastructure.

The enormity of the task required the development of a "common ground" upon which the data collection and analysis approach could be built. The project aimed to identify key organizational features which are common to all of the states despite the enormous diversity of organizational structures. A five step approach was developed, with each step examining a key organizational issue and addressing related questions. Following is a summary of the major findings.

Responsibility and Authority

- **The investigation revealed a complex "Environmental Web" (Web) of organizations responsible for environmental health and protection.** On the federal level a dozen major agencies, each with numerous programs, share responsibilities. On the state level there is similar complexity, with literally hundreds of different agencies and organizations responsible for the implementation of environmental programs.
- **The trend toward decreasing the environmental responsibilities of state health agencies continues.** Public Health Departments remain the lead agency for environmental health and protection services in only eight states.
- **Primary responsibility for environmental protection becomes the domain of state environmental regulatory agencies.** The most predominant organizational approach is the media specific EPA model, now used in twenty-two states.
- **The organization of environmental health and protection is very dynamic in nature.** Driven by legislative and political mandates, changing budgets, and ever increasing public concern, states are constantly reorganizing their agency structures.
- **With the changing face of environmental health and protection services comes the realization that the majority of state environmental health professionals no longer work in traditional public health agencies.** This fundamental shift presents a growing challenge to schools of public health and others in the public health community who must assure that environmental health professionals have me necessary training to address public health issues in environmental regulation and decision making.

The Federal Laws and the State Infrastructure

- **The federal statutes clearly are a driving force in the organization of the state environmental infrastructure.** Much of the state capacity for environmental services has been mandated, shaped, and funded through these laws.
- **Unfortunately, there is no uniformity in the way states are organized to implement the major federal environmental statutes.** Throughout the nation there are hundreds of state agencies with responsibilities for the ten major environmental laws. This is undoubtedly a major contributor to the fragmentation of environmental health and protection services noted in The Future of Public Health and an impediment to the development of a cohesive national strategy to address environmental health issues.
- **The media specific approach of the major laws (air, water, waste) has contributed to the trend toward mini-EPAs and away from traditional public health agency leadership at the state level.** While these laws may have enhanced state capacities, they may have also forced a narrower state focus toward the regulatory aspects of environmental protection and away from the broader public health aspects.

The Programs of Environmental Health and Protection

- **The programmatic structure of state environmental agencies mirrors the federal EPA and follows the media specific approach of the major environmental laws.** The major programs in these agencies are regulatory in nature.
- **Although environmental agencies have assumed the lead responsibility for environmental protection in the majority of states, health departments continue to have the most diverse responsibilities for implementing environmental health and protection programs.**
- **Very few environmental agencies and virtually no labor and agricultural agencies implement traditional environmental health programs.** Epidemiology, quantitative risk assessment, and sanitation are programs administered primarily by health departments.
- **These findings indicate that the "environmental fragmentation" which was noted in the IOM report (1) may be more appropriately termed "environmental diversification".** That is, the traditional roles of health agencies in environmental health are alive and well, but ever increasing regulatory requirements have lead to a multi-agency diversification of environmental health and protection services.

The Core Functions of Environmental Health and Protection

- **The primary functions of regulatory agencies include activities related to permitting, enforcement, record keeping, remediation, standard setting, and providing laboratory support.** Although these responsibilities are diverse, they do not include public health evaluations. Of all the environmental agencies, only a very small percentage conduct epidemiological studies or health risk assessment research
- **Health agency functions are the most diverse, and their leading functions include health surveillance, environmental epidemiology, applied research, toxicology, permitting, monitoring, and enforcement.** Health agencies also play a major role in providing laboratory support, and to a lesser extent, are involved in communication, education, and training.
- **Although their role in regulatory activities has decreased, health departments are distinguished as the only agencies exhibiting a consistent organizational commitment to the public health functions of environmental epidemiology, health surveillance, and applied research.**

State Budgets for Environmental Health and Protection

- **Annually, over five and one half billion dollars annually are allocated by the states for environmental health and protection services.** 4.7 billion of this is devoted to regulatory activities, while about 1 billion supports environmental health activities.
- **Nationally, expenditures on environmental regulatory activities far outpace expenditures on environmental health.** For the years 1992 through 1994 only 20% of the total budget for environmental health and protection was spent on environmental health activities. If natural resource expenditures are included, only 8 cents from every dollar spent is directed toward environmental health activities.
- **Environmental health represents only a small portion, 3-4%, of the total state spending on health.**
- **Analysis of per capita spending by the states revealed a national average expenditure of $18.87 on environmental regulatory activities and $4.09 on environmental health activities.**

Protection of the environment and the prevention of adverse health effects from environmental hazards continue to be important national goals. The success of our national policies depends upon the capacity of the states to implement them. This project has revealed

the changing face of environmental health and protection services and shown that the federal environmental laws have shaped a dynamic multi-billion dollar state infrastructure. Although the primary goal of these laws is the protection of public health, they have done little to develop the capacity of states to evaluate environmental health risks. Future environmental progress will depend upon an improved understanding of the relationship between human health and the environment. This will require a re-evaluation of the funding disparity between regulatory and public health activities; a commitment to improving the public health training of environmental professionals; and an improved cooperation between the many health ‘and environmental agencies in the “Web” to assure that they do not lose sight of their fundamental mission - the protection of public health.

I. BACKGROUND AND INTRODUCTION

It has been 24 years since the celebration of the first Earth Day. That day marked a turning point in the national commitment to protection of the environment and awareness of environmental health issues. Spurred by an outpouring of public support, the years that followed have witnessed an unprecedented surge of federal and state legislation addressing virtually all aspects of the environment. As a result, a huge and complex infrastructure has evolved to administer these legislative mandates and implement the regulatory approaches to cleaning up and protecting the environment.

With the emergence of the U.S. Environmental Protection Agency and similar environmental agencies at the state level, the environmental responsibilities of the traditional public health agencies have decreased or changed.

Many environmental health and protection programs, which had historically been the cornerstone of this nation's public health infrastructure, were reorganized and incorporated into the emerging environmental regulatory agencies. According to the 1988 Institute of Medicine report The Future of Public Health this has resulted in *"fragmented responsibility, lack of coordination and inadequate attention to the public health dimensions of environmental issues."* (1)

The "fragmentation" of environmental responsibilities and inadequate attention to public health risks are also noted in (he following conclusion from the 1990 EPA Science Advisory Board report Reducing Risk: Setting Priorities and Strategies for Environmental Protection:

"Because most of EPA's program offices have been responsible for implementing specific laws, they have tended to view environmental problems separately... and questions of relative seriousness or urgency have remained unasked. Consequently, at EPA there has been little correlation between the relative resources dedicated to different environmental problems and the relative risks posed by these problems." (2)

Since Earth Day, trillions of dollars have been spent to clean our waters, soil and air and the annual cost of compliance with anti-pollution laws now exceeds two percent of the Gross National Product. (3) Despite the enormous national investment in environmental protection, fundamental questions concerning the effectiveness of current regulatory programs in protecting public health remain unanswered. **Has the "fragmentation" of environmental health and protection services caused these agencies to lose sight of their fundamental mission - the protection of public health?**

In order to address the issue of environmental fragmentation, it is necessary to examine the organization of the national environmental health and protection infrastructure. State agencies comprise the largest, most complex, and perhaps most essential component of this infrastructure. As explained recently by EPA Administrator Carol Browner:

"In general, it is the federal government that sets the standards designed to protect the health of the public and our air, land and water. And wherever possible, it is the state and local governments that assume responsibility for implementing and enforcing these standards." (4)

Clearly, the success of national environmental policies depends upon the capacity of the states to implement them.

A. PURPOSE OF THE PROJECT

This report presents the findings of an examination of the state level organization of environmental health and protection services. The project was initiated and supported by the Bureau of Health Professions, Public Health Branch of the Health Resources and Services Administration (HRSA), U.S. Public Health Service. The goal of the project was to conduct a descriptive analysis of the structure, functions, and funding of state environmental health and protection services, and to examine the impact of the major federal environmental statutes on the organization of the state infrastructure.

The project addresses the concerns about the fragmentation of environmental health raised in The Future of Public Health and reinforced by the 1992 report "The Future of Environmental Health" by the National Environmental Health Association (NEHA).(5) The NEHA report underscored the need to better understand the state infrastructure pointing out that: *"The nation does not have an envi-*

ronmental health and protection system, but has a confusing patchwork of often overlapping and competing agencies having different and sometimes conflicting missions and divergent priorities."

Further, the NEHA report pointed out the paucity of information on services and expenditures and called for the Public Health Service or the EPA to fund a study to identify the agencies responsible for environmental health and protection in each state. This project was initiated by HRSA in response to that recommendation.

B. DEFINING THE SCOPE OF THE PROJECT

A View of the National Environmental Health and Protection Infrastructure - The Environmental Web

Before beginning the examination of the state services it was necessary to look at the "big picture" and ask the fundamental question "Who provides environmental protection and health services?". A preliminary examination of federal and organizations was conducted drawing upon ***and*** published information and directories of federal agencies and state services. (6) The goal was to construct a macroscopic picture of the national infrastructure and identify the federal and state agencies involved in the implementation of environmental health and regulatory activities.

What emerged from this step was a complex "Environmental Web" (Web) of agencies, institutions, and legislative bodies shown in Figure 1. The Web illustrates the tremendous complexity of our national environmental health and protection infrastructure. At the same time, it demonstrates the important role of environmental health in virtually all aspects of major government activities. On the federal level the legislative, judicial, and executive branches each play a major role in the shaping of policies and implementation of environmental services.

Environmental health and protection responsibilities are a part of the mission of a dozen major departments and agencies. From Defense to Housing and Urban Development, Energy to EPA, agencies with widely differing missions, separate and diverse regulatory mandates, and a plethora of organizational structures form the core of the federal efforts.

On the state level there is an equally complex picture of actors implementing an even broader number of ever changing federal and state mandates. The state agencies presented in Figure 1 do not represent an actual state organization, presentation of the types of agencies found to be involved in environmental services in the states. In many ways, the states mirror the complexity of the federal bureaucracy but are 50 times more diverse. While federal mandates obviously influence state organization, the state Web is further complicated by the dynamic influences of state laws, policies, budget cycles, and political changes in the Statehouse. Even during the course of the project several states were in the throes of major agency reorganization.

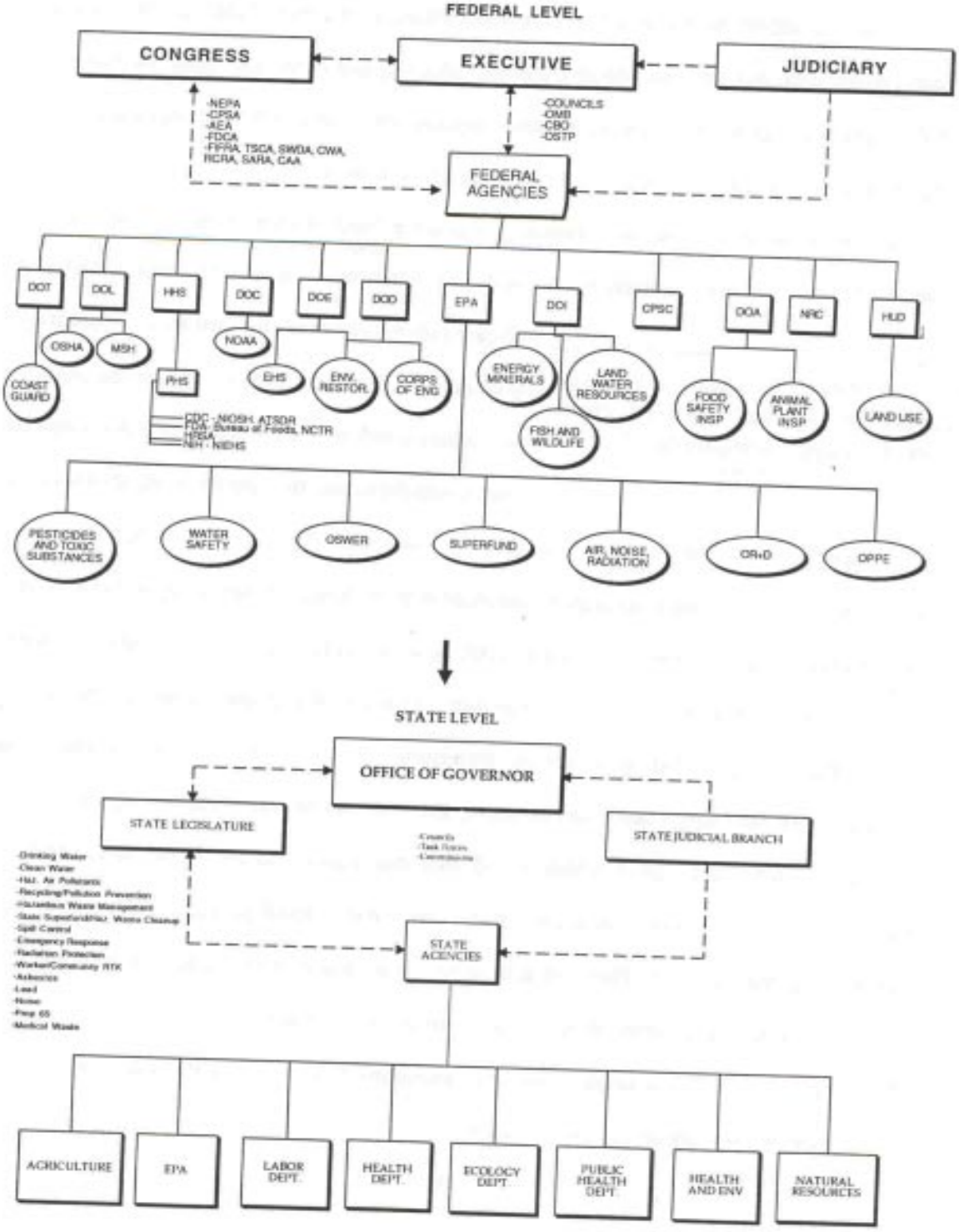
The Web provided an important foundation for this project by demonstrating the complexity of the project task. In one sense, the Web can be interpreted as support for the findings of the IOM report which stated that our nation suffers from "environmental fragmentation," the result of dividing responsibility for environmental programs among hundreds of federal and state agencies. However, it is perhaps more appropriate to interpret the Web as an illustration of the tremendous "diversification" of environmental health and protection services which have emerged as a result of the ever increasing recognition of the importance of the environment in virtually all aspects of government.

C. THE FRAMEWORK OF THE PROJECT: DEFINING THE QUESTIONS

Given the number and diversity of state organizations involved in environmental services, it would be impossible within the limited resources of this project to fully profile every aspect of the state infrastructure. The fundamental goal of the project, to identify and describe environmental health and protection services in the states, was developed by the sponsor. However, the enormity of the task required the development of a "common ground" upon which the data collection and analysis approach could be built. The "common ground" was aimed at identifying key organizational features which are common to all of the states despite the enormous diversity of organizational structures.

A five step approach was developed, with each step examining a key organizational issue and addressing related questions. Table 1 lists the five components of the project and the related questions

FIGURE 1


FEDERAL LEVEL
CONGRESS
EXECUTIVE
JUDICIARY
-NEPA
-CPSA
-AEA
-FDCA
-FFRA, TSCA, SWDA, CWA, RCRA, SARA, CAA
-COUNCILS
-OMB
-CBO
-OSTP
FEDERAL AGENCIES
DOT
DOL
HHS
DOC
DOE
DOD
EPA
DOI
CPSC
DOA
NRC
HUD
OSHA
MSH
NOAA
EHS
ENV. RESTOR.
CORPS OF ENG.
ENERGY MINERALS
LAND WATER RESOURCES
FISH AND WILDLIFE
FOOD SAFETY INSP.
ANIMAL PLANT INSP.
LAND USE
COAST GUARD
PHS
CDC - NIOSH, ATSDR
FDA - Bureau of Foods, NCTR
HPSA
NIH - NIEHS
PESTICIDES AND TOXIC SUBSTANCES
WATER SAFETY
OSWER
SUPERFUND
AIR, NOISE, RADIATION
OR+D
OPPE
STATE LEVEL
OFFICE OF GOVERNOR
STATE LEGISLATURE
STATE JUDICIAL BRANCH
-Drinking Water
-Clean Water
-Haz. Air Pollutants
-Recycling/Pollution Prevention
-Hazardous Waste Management
-State Superfund/Haz. Waste Cleanup
-Spill Control
-Emergency Response
-Radiation Protection
-Worker/Community RTK
-Asbestos
-Lead
-Noise
-Prop 65
-Medical Waste
STATE AGENCIES
AGRICULTURE
EPA
LABOR DEPT.
HEALTH DEPT.
ECOLOGY DEPT.
PUBLIC HEALTH DEPT.
HEALTH AND ENV
NATURAL RESOURCES

developed to identify the "common ground" and shape a step-wise investigation of the state infrastructure.

Table 1: THE FRAMEWORK OF THE PROJECT

1. **Responsibility and Authority**
   Who's in charge? What agencies are leading the state efforts in environmental health and protection?
2. **The Federal Laws and the State Infrastructure**
   How are the states organized to implement the major federal environmental laws? What agencies are responsible for the implementation of these laws?
3. **The Programs of Environmental Health and Protection**
   What are the major program areas which shape the state environmental health and protection infrastructure? In which agencies are these programs located?
4. **The Core Functions of Environmental Health and Protection**
   What are the core functions of environmental health and protection at the state level? What agencies are performing these functions? Do the functions of state health agencies differ from those of environmental agencies?
5. **State Budgets for Environmental Health and Protection**
   How do state budgets reflect the priorities of environmental health and protection services? How do expenditures for regulatory functions compare with expenditures for public health functions?

D. THE ADVISORY COMMITTEE

An expert advisory committee was convened at the onset to guide the project. The advisory committee played a major role in designing the investigation and determining the laws, programs, and functions which were included. The committee also reviewed the preliminary findings and assisted in shaping the presentation of the results. Included were representatives from the federal and state environmental and health agencies and others from the academic and private sectors representing a blend of the many disciplines of environmental health and protection. The members of the advisory committee and their affiliations are listed in Appendix I(A).

II. METHODS

A. DATA COLLECTION

Organizational charts, program descriptions, and budget information related to environmental health and protection services were requested from each state. Given the complexity of state organizations, the data collection process was, as expected, tedious and time-consuming and lasted over 12 months (from November 1992 to December 1993). Several steps were necessary to obtain the desired information from all of the states. The following is a summary of the data collection steps.

Identifying the Agencies

State Executive Directories (6) were utilized by the project staff to outline the preliminary structure of the 50 states. Agencies and state personnel with possible environmental health and protection roles were extracted from the directories to develop the initial list of state contacts.

Initial Phone Requests

More than 200 telephone calls were made to the identified state agency contacts. State organizational charts, program descriptions and budget details were requested. Typically, four or five phone calls were placed to every state. A list of data received

from each state is included in Appendix I(B).

Letters to the Office of the Governor

For the 26 states which did not respond to the initial phone requests, letters requesting the required information were sent to the offices of governors. These letters were addressed to the Chief of Staff or environmental liaison. In each case, follow up phone calls were also made.

Follow Up Falls Call to State Health Agencies

To refine the environmental health budget information needed to conduct the budget analysis, it was necessary to place additional calls to state environmental and health agencies in 39 states. This need arose because environmental health activities and programs are generally housed within larger divisions of state environmental and/or health departments and it proved difficult to extract the budget information specific to environmental health.

The overall response rate was much higher than initially expected. All of the 50 states responded to requests for information, however the format and quality of the data varied tremendously from state to state. There is no uniform format for state organizational or budgetary information, and the tremendous variation in the quality and completeness of the data ultimately proved to be the biggest limiting factor in the analyses. Data from 48 states was applicable for use in this study.

Another major impediment to the project was the fact that there is no clear focal point for information regarding the organization and funding of environmental services in most states. Indeed, finding the right person who knows "who does what" was perhaps the most daunting aspect of the project. **While the Governors' offices finally proved to be the most reliable information source, it often took up to ten telephone calls to multiple personnel in order to obtain basic information about agencies.**

B. DATA BASES AND DATA QUALITY

Three different kinds of data were collected from the states: organizational charts, program descriptions, and budget information. This information was used to construct two databases which describe the national picture: one on organizational infrastructure, and the other on state budgets for environmental health and protection activities.

1. The State Infrastructure Database

A total of 177 organizational charts of varying detail were received from the states. Of these organizational charts, 32 were state executive charts, 37 of agricultural agencies, 36 of environmental agencies, 39 of health agencies, and 33 of labor agencies. Report summaries providing a description of environmental health and protection programs were also received from a number of states. Appendix I(B) lists the states from which organizational charts were received.

Using the information received, spread sheets were created for each state to summarize organizational structures and environmental health and protection functions. The spread sheets include information on state departments/agencies, divisions, offices/bureaus, programs, and functions/activities related to environmental health and protection. The spread sheets can be found in Appendix I(E).

2. The Budget Database

Budget information applicable to this study, including executive budget summaries, state appropriations data, financial reports, and budget highlights, was available from 48 states. In general, budgetary data were collected and summarized for four state agencies: environment, health, labor, and agriculture. Because of the focus of this project, a more diligent effort was made to obtain data on environmental and health agencies, while data from labor and agricultural departments was generally less comprehensive. As a result, only budgetary information from health and environmental agencies is

included in the budgetary analysis. Summary tables of budgetary information used in the analytical portion of this report are included in Appendix I(E).

III. RESULTS AND FINDINGS
A. RESPONSIBILITIES AND AUTHORITY

Who's in charge? What agencies are leading the state efforts in environmental health and protection?

1. General Structural Trend Analysis

To evaluate the question raised by the IOM report of the diminishing role of health agencies, we identified the number of states whose health agencies have the lead role in the implementation of environmental services. To do this, it was necessary to identify which agency in each state was responsible for implementation of environmental services. From our findings, models were defined for the major structural trends identified. The analysis revealed three major types of agencies that have the lead role in environmental health and safety. Examples of these models are shown in Figures 2,3 and 4. Figure 2 exhibits the Environmental Pollution Control model, herein termed the "EPC" model. In states with this structure, the primary environmental agency implements environmental services.

Management and conservation of natural resources is often combined with pollution control activities in state environmental agencies. A typical organizational structure for this type of agency is shown in Figure 3. This is the Environmental and Natural Resource model, herein termed the "EN" model.

The third model identified, the Health and Environment model, exists in state whose health department has the lead role in implementation of environmental services. Such an approach may or may not include responsibility for the management of natural resources. This approach has been termed the "HE/HEN" model and an example of this type of agency is provided in Figure 4.

2. Findings

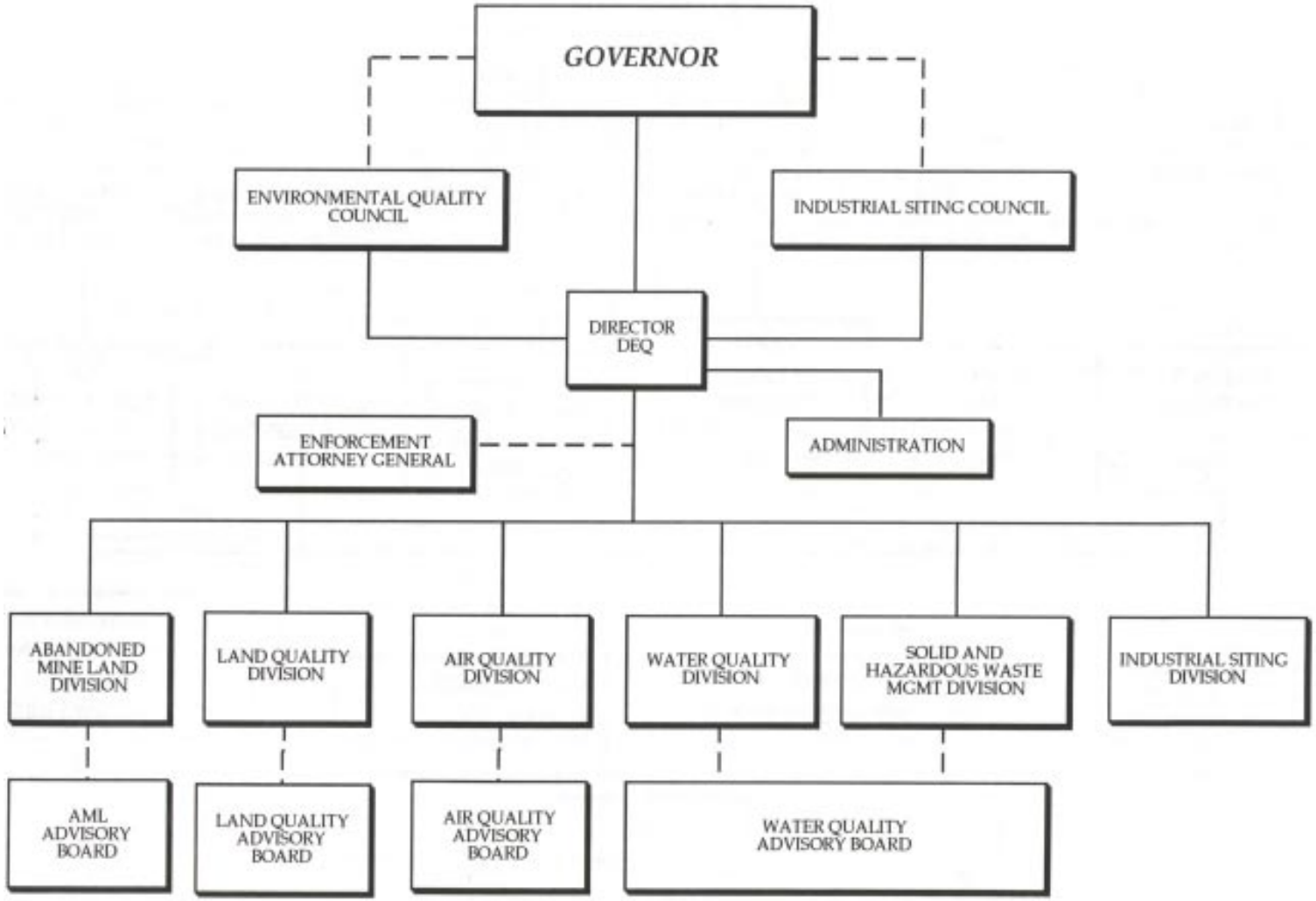
Only eight states - Colorado, Hawaii, Idaho, Kansas, Montana, North Carolina, North Dakota, and South Carolina, have health departments as the lead agency responsible for environmental services. Forty-one of the states now have an environmental agency with primary responsibility for environmental services. Figure 5 is a map of the United States identifying the organizational model used by each state for environmental services.

States which follow the Environmental Pollution Control model predominate as the type of agency with the lead responsibility for environmental services. There are twenty-two states which follow the "EPC" model. Nineteen states were found to follow the Environmental Natural Resource "EN" model. West Virginia is the only state whose implementation does not follow one of the identified models. In this state, the labor, environmental services does not follow one of the identified models. In this state, the labor, environmental and natural resource departments are combined under one agency, wherein environmental health services are implemented.

It should be noted that the state model may not necessarily influence the actual functions and activities of the agencies. For example, specific program (i.e., clean water or waste management) may operate autonomously. Therefore, despite the differences in overall state agency structures, actual programs may be quite similar from state to state.

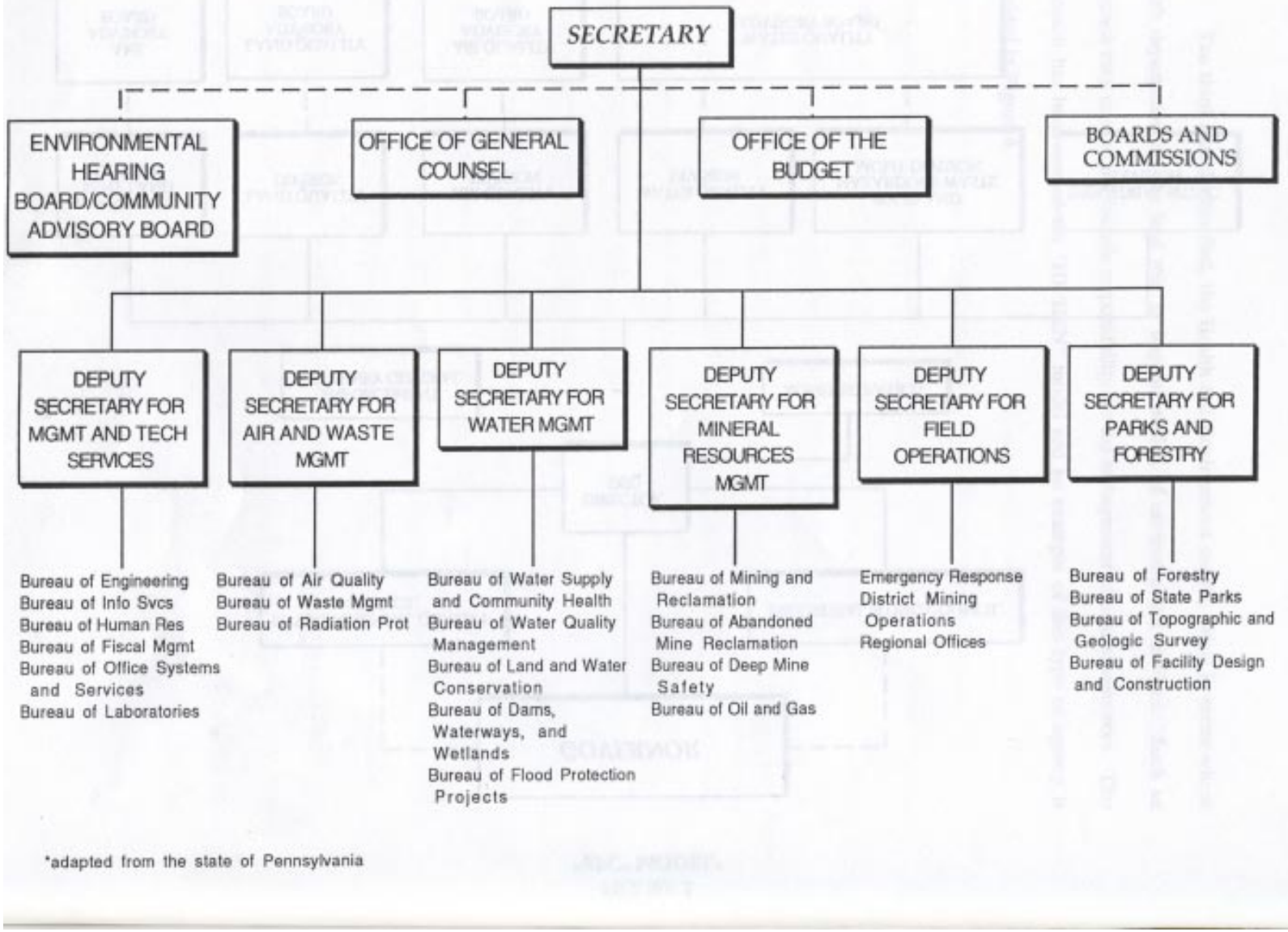
During the data collection phase of the project, it became apparent that state environmental and health agency structures are very dynamic. Changing budgets, regulatory mandates, and political administrations drive a seemingly constant restructuring of these agencies. This often results in a change in the agency with the lead responsibility for environmental services. For example, South Carolina, currently a Health and Environment (HE/HEN) model state, is reorganizing to emulate the Environmental Pollution Control (EPC) model. Since the transition was still in progress at the completion of data collection, the original Health and Environmental model was retained for South Carolina in the

FIGURE 2
"EPC" MODEL*



*adapted from the state of Wyoming

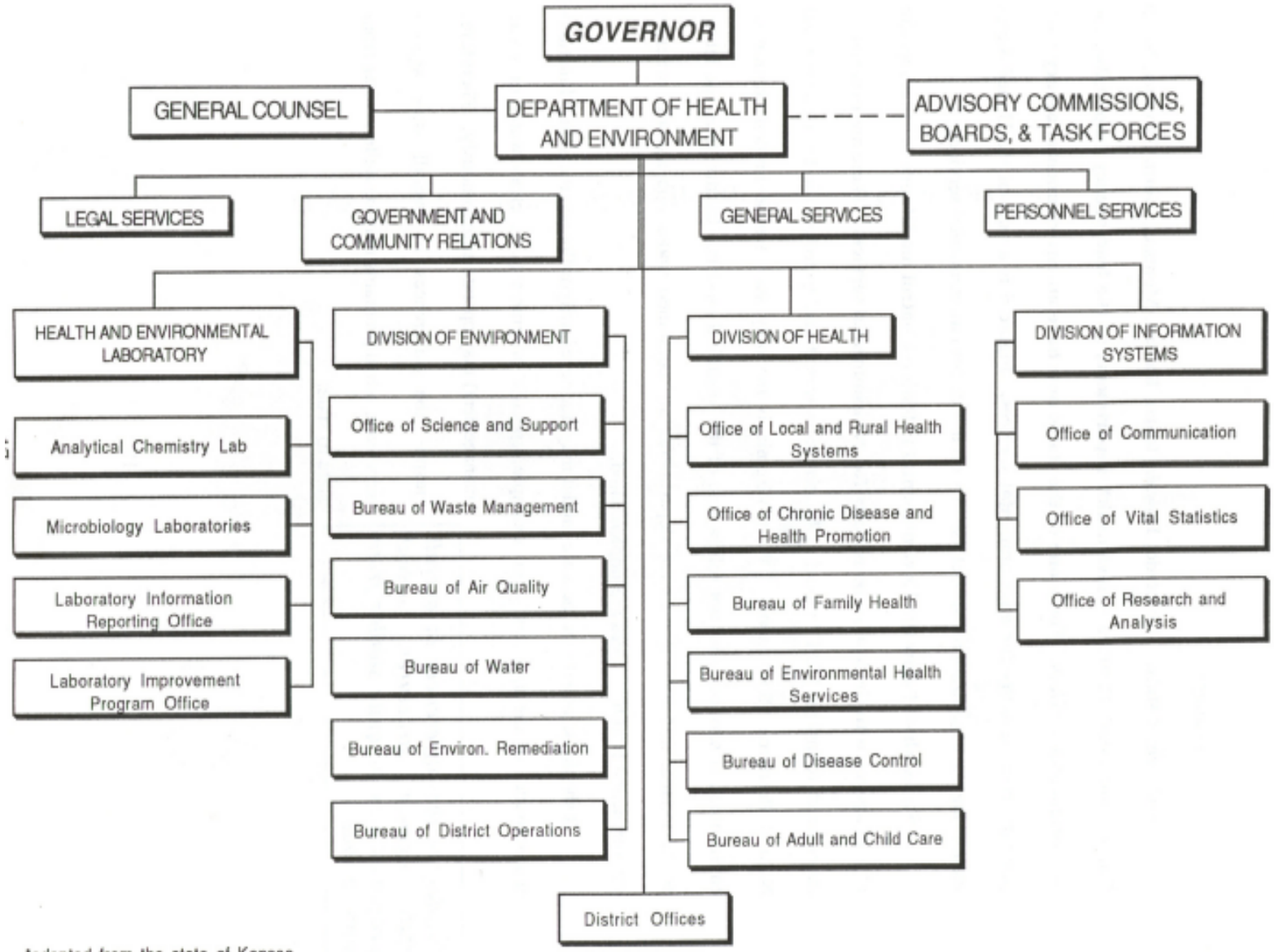
FIGURE 3
"EN" MODEL*



*adapted from the state of Pennsylvania

FIGURE 4

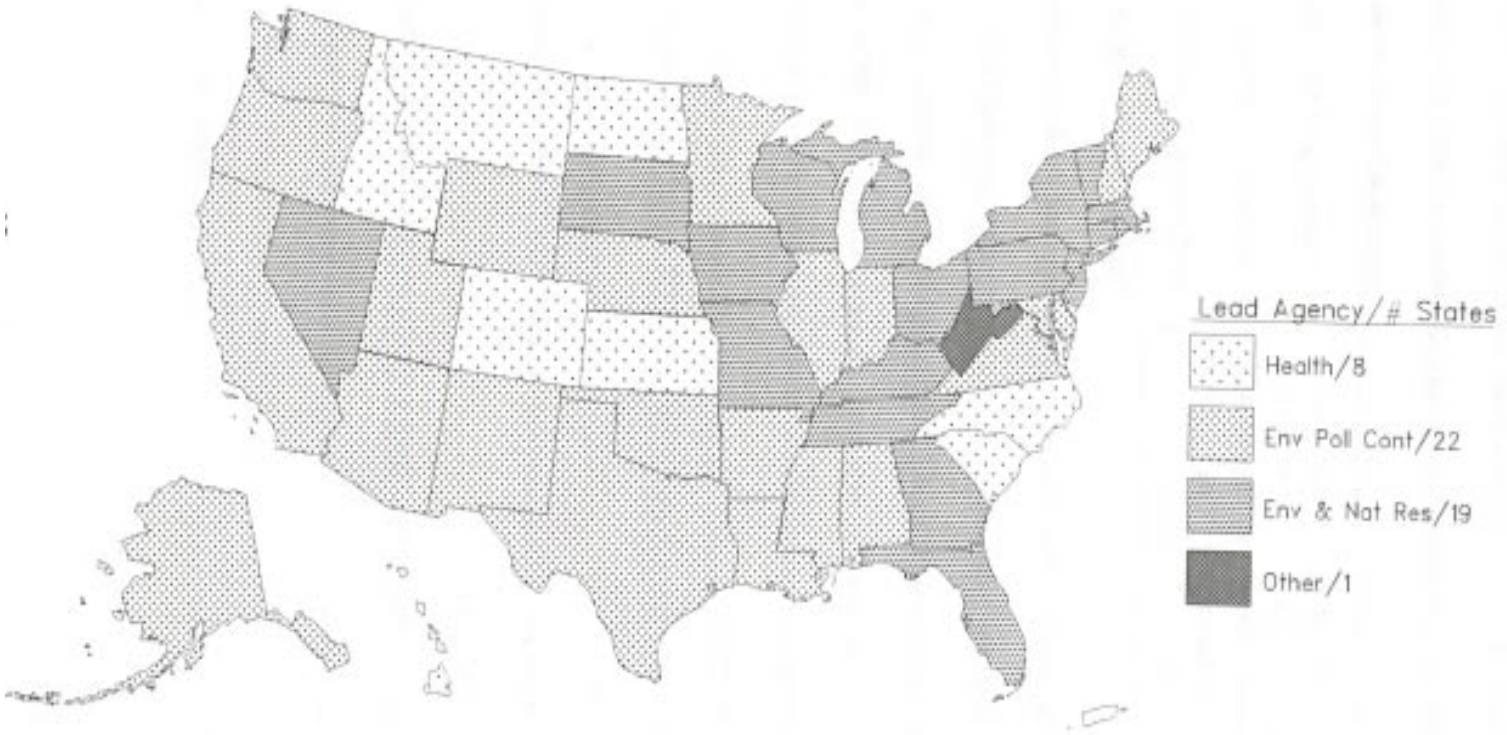
"HE/HEN" MODEL*



*adapted from the state of Kansas

Figure 5

Lead Agencies for Environmental Health and Protection Services



data analysis. Several other states also underwent structural changes during the study period which modified the implementation of environmental health programs. Following are states whose models changed during this project:

- Florida restructured from an "EPC" model to an Environmental and Natural Resource model.
- Oklahoma, which previously followed the Health and Environment structure, adopted the "EPC" model
- Minnesota changed from a Health and Environment agency lead to the "EPC' model.

3. Conclusions

- **The trend toward decreasing environmental responsibilities for state health agencies continues.** Public Health Departments remain the lead agency for environmental health and protection services in only eight states.

- Although **no two states are organized alike**, there are essentially three different models which the states follow for implementation of their environmental services: the Environmental Pollution Control model "EPC", the Environment and Natural Resources model "EN", and the Health and Environment model "HE/HEN". With the exception of West Virginia, which has a "superagency" structure that includes both labor, health and environment, all of the states follow one of three models.

- **The Environmental Pollution Control model is the most predominant organizational approach**, now used in twenty-two states. This demonstrates the increasing trend toward mine-EPAs in the states, as was recognized by Rabe in 1986. (7)

- The organization of environmental health and protection is very dynamic in nature. Driven by legislative and political mandates, changing budgets, and ever increasing public concern**, states are constantly reorganizing their agency structures.** At the time of the analysis South Carolina was in the process of restructuring its environmental services agency lead from a Health department to the Environmental Pollution Control model. In addition, during the course of the project both Oklahoma and Minnesota completed their transitions from agencies with a Health lead to agencies with an "EPC" structure.

- With the changing fact of environmental health and protection services comes the realization that the majority of state environmental health professionals no longer work in traditional public health agencies. This fundamental shift presents a growing challenge to the schools of public health and others in the public health community to assure that environmental health professionals have the necessary training to address public health issues in environmental regulation and decision making.

B. THE FEDERAL LAWS AND THE STATE INFRASTRUCTURE

How are the states organized to implement the major federal environmental laws? What agencies are responsible for the implementation of these laws?

1. The Federal Statutes

During the course of the project, it became obvious that state programs to address environmental health and protection are largely dictated by federal mandates. Just as the federal EPA has been organized to respond to and administer the major federal environmental laws, the state infrastructure has also been influenced by these statutes. As the enforcers of many of the national laws, state agencies have been driven to reflect the federal laws in their organizational structure.

Table 2 lists the federal laws which were identified to be the key drivers in structuring the

environmental health and protection agencies, and have been chosen by consensus among the Advisory Committee members for inclusion in this analysis. These laws provide the national framework for environmental regulatory programs.

Table 2: MAJOR FEDERAL ENVIRONMENTAL STATUTES EXAMINED

1. Clean Air Act (CAA)
2. Clean Water Act (CWA)
3. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA)
4. Federal Insecticide, Fungicide, and Rodenticide Act (FIPRA)
5. Resource Conservation and Recovery Act (RCRA)
6. Safe Drinking Water Act (SDWA)
7. Toxic Substance Control Act (TSCA)
8. Food, Drug, and Cosmetic Act (FDCA)
9. Federal Mine Safety and Health Act (MSHA)
10. Occupational Safety and Health Act (OSHAct)

2. Federal Environmental Statute Analysis

This analysis examined the state agencies responsible for the implementation of the federal statutes. An examination of the major statutes indicated that these laws delegate a wide range of responsibilities to the states but do not specify which state agency is responsible for their implementation. Therefore, there is no uniformity in the way that states are organized to implement the nation's federal-state relationship defined in the major statutes is included in Appendix I(D).

In most cases, statutorial information was provided in state budget information and state program summaries. Where such information was not available, state implementation of a federal statute was based on the nature of state environmental health and protection programs. For example, the state agency managing air quality programs is assumed to be carrying out that state's federal CAA mandates. For a small proportion of the states the approach was somewhat subjective; therefore, these numbers should not be considered exact counts, but rather are indicative of organizational trends on the state level. State specific information on the implementation of federal statutes evaluated in this study is presented in Appendix I(E).

3. Findings

Table 3 provides a summary of the number and type of state agencies which implement the ten identified federal statutes. Superfund has the most far reaching impact on states with 72 state agencies responsible for implementation of CERCLA or portions of the Act. In contrast, only 12 state agencies, all Labor agencies, implement MSHA.

Figures 6 through 10 graphically depict the number of environmental statutes implemented by agency type. Overall, every state has at least one agency involved in the implementation of CAA, CWA, CERCLA, SDWA, RCRA, and OSHA. Not all states implement MSHA, FEPRA TSCA, and FDCA independently from the federal programs.

The data show that hundreds of agencies carry out the mandates of the federal environmental laws. Figure 7 shows that the media oriented laws - air, water, and waste - are primarily the responsibility of similarly oriented environmental agencies. As shown in Figure 8, state health agencies exhibit a wider range of responsibilities to implement the Acts, and have the major role for implementation of ATSDR Cooperative Agreements (under CERCLA), portions of the SDWA, and portions of TSCA, primarily relating to asbestos issues. Agricultural agencies have a more limited role in implementing the federal environmental statutes, and Figure 9 shows that the primary role of these agencies is the implementation of FIFRA and, to a more limited extent, FDCA. Figure 10 depicts the role of labor agencies in the implementation of federal environmental statutes. Their focus is primarily on the imple-

Table 3: NUMBER AND TYPE OF STATE AGENCIES RESPONSIBLE FOR IMPLEMENTATION OF FEDERAL ENVIRONMENTAL STATUTES

AGENCY	AGRICULTURE	ENVIRONMENT	HEALTH	LABOR	TOTAL
CAA	0	41	10	1	52
CWA	1	41	11	1	54
CERCLA	0	36	33	3	72
FIFRA	37	4	5	0	46
RCRA	0	41	11	2	54
SDWA	3	38	25	1	67
TSCA	0	12	23	3	38
FDCA	15	1	13	0	29
MSHA	0	0	0	12	12
OSHA	1	1	15	39	56

FIGURE 6 - NUMBER OF STATE AGENCIES IMPLEMENTING FEDERAL ENVIRONMENTAL STATUTES

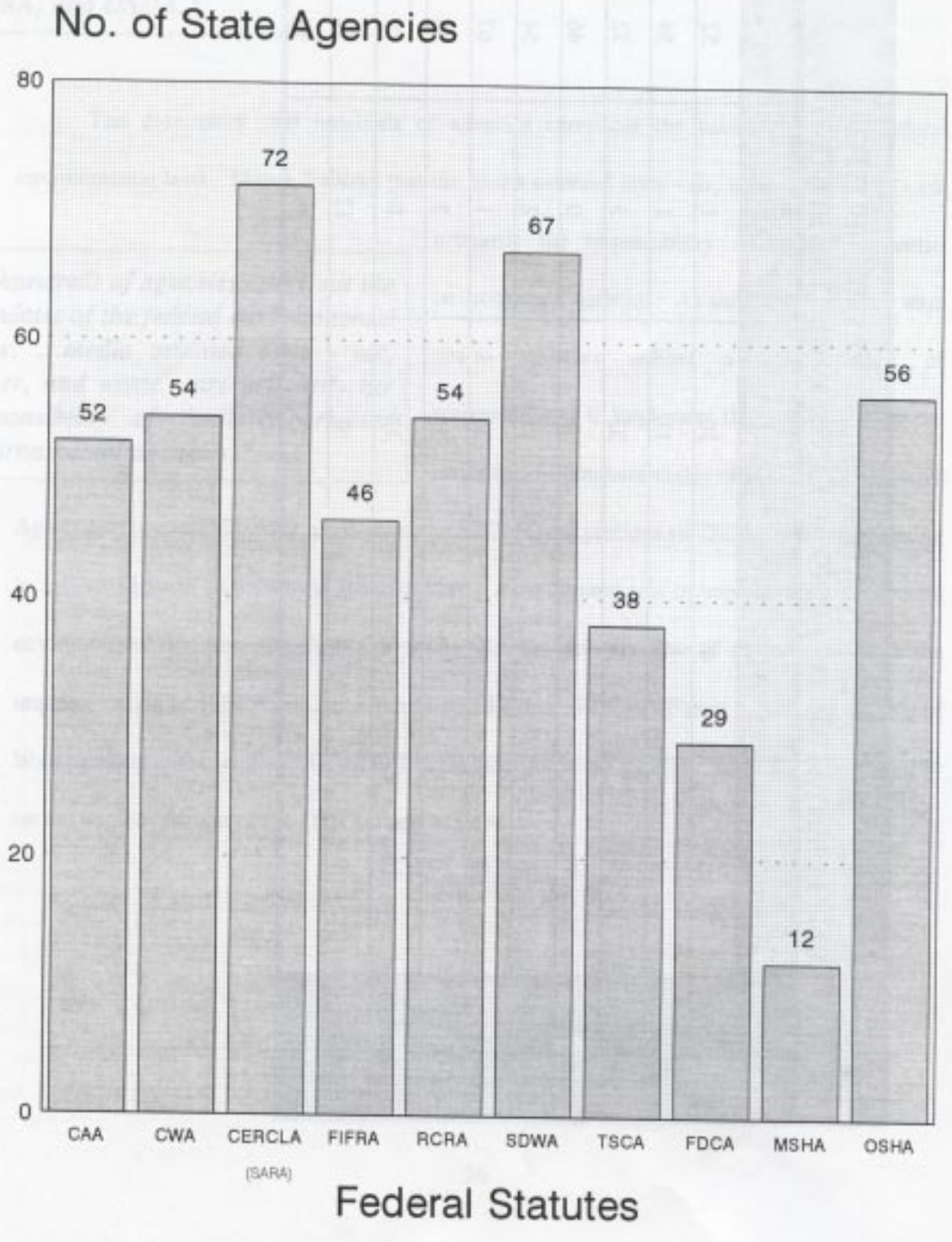


FIGURE 7 - NUMBER OF STATE ENVIRONMENTAL AGENCIES IMPLEMENTING FEDERAL ENVIRONMENTAL STATUTES

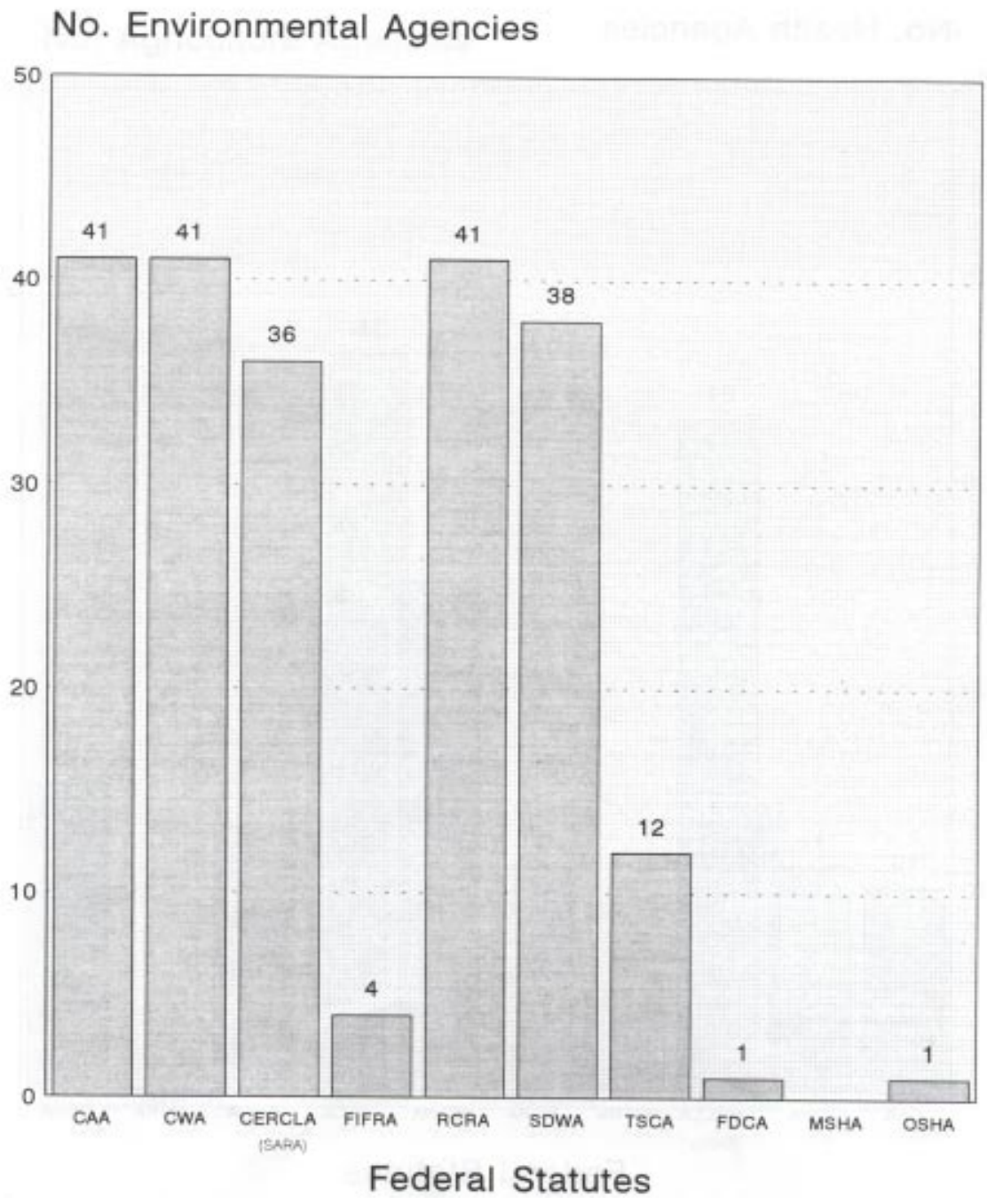


FIGURE 8 - NUMBER OF STATE HEALTH AGENCIES IMPLEMENTING FEDERAL ENVIRONMENTAL STATUTES

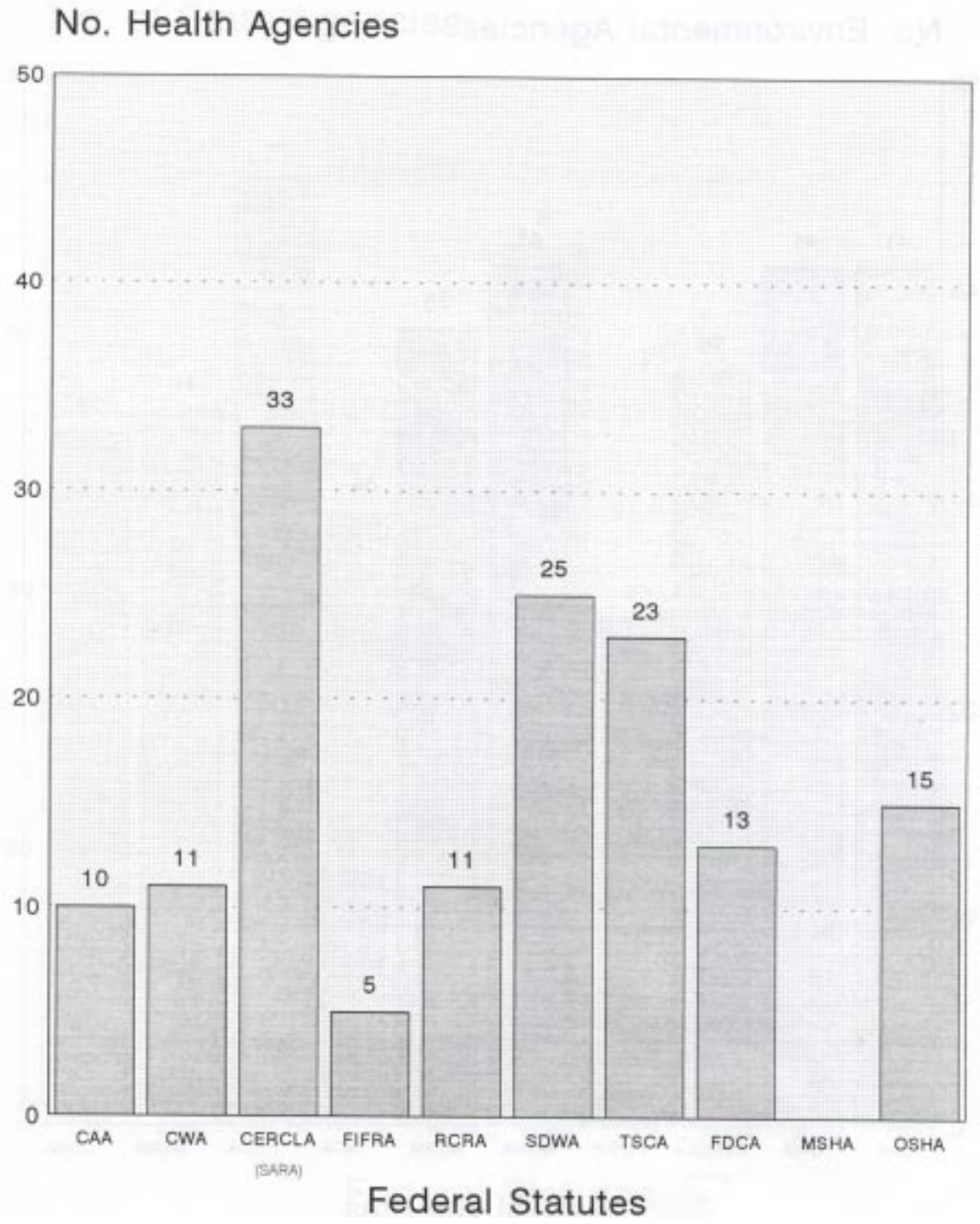


FIGURE 9 - NUMBER OF STATE AGRICULTURAL AGENCIES IMPLEMENTING FEDERAL ENVIRONMENTAL STATUTES

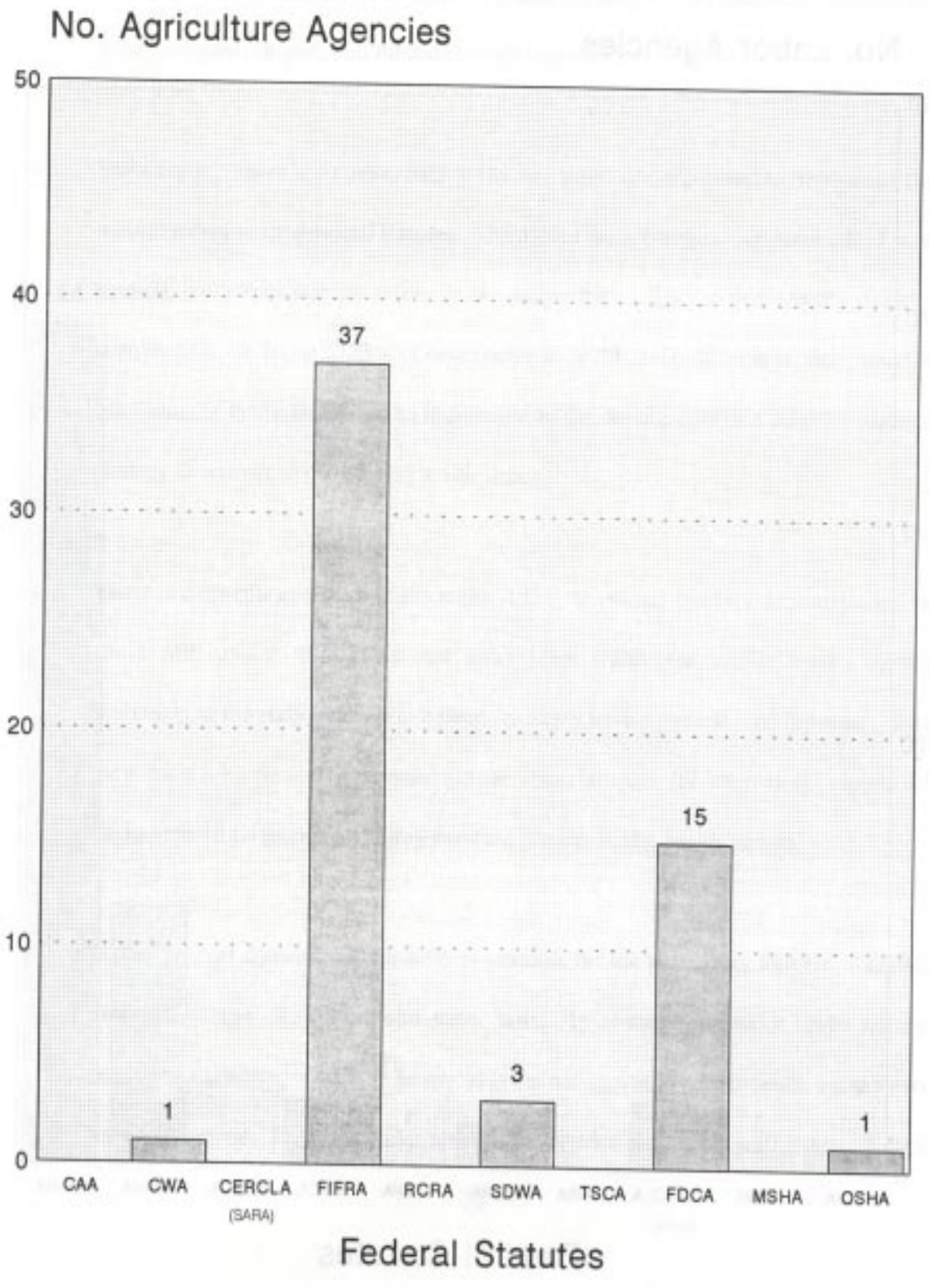
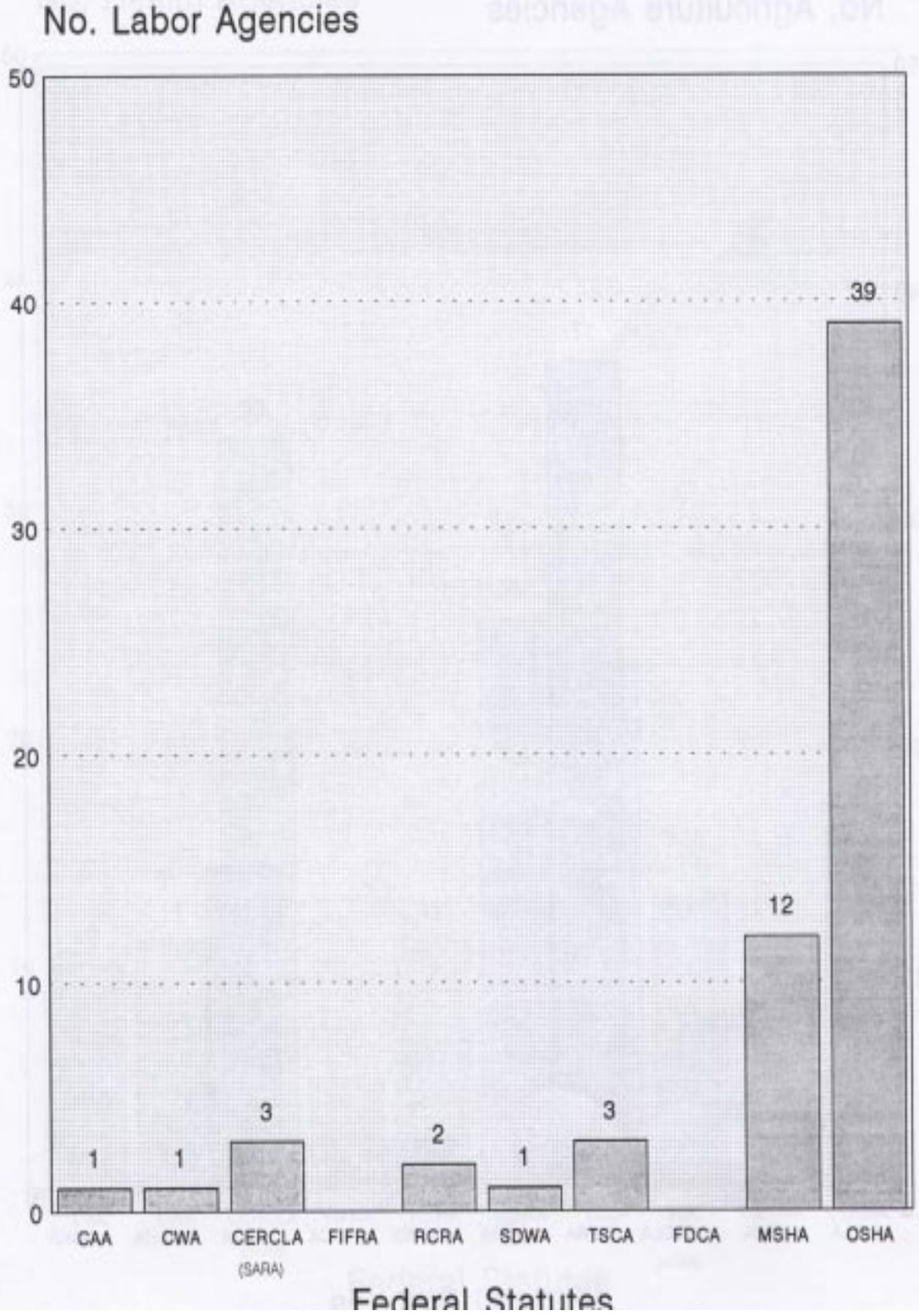


FIGURE 10 - NUMBER OF STATE LABOR AGENCIES IMPLEMENTING FEDERAL ENVIRONMENTAL STATUTES



mentation of the OSHAct and MSHA.

4. Conclusions

- **The federal statutes are clearly a driving force in the organization of the state environmental infrastructure.** Much of the state capacity for environmental services has been mandated, shaped, and funded through these laws.

- Unfortunately, **there is no uniformity in the way states are organized to implement the major federal environmental statutes.** Throughout the nation there are hundreds of state agencies with responsibilities for the ten major laws. This is undoubtedly a major contributor to the fragmentation of environmental health and protection services noted in The Future of Public Health and an impediment to the development of a cohesive national strategy to address environmental health issues.

- **The media specific approach of the major laws (air, water, waste) has contributed to the trend toward mini-EPAs and away from traditional public health agency leadership at the state level.** While these laws may have enhanced state capacities, they may have also forced a narrower state focus toward the regulatory aspects of environmental protection and away from the broader public health aspects.

- **Environmental agencies are primarily responsible for the regulatory and enforcement activities of the air, water, and waste laws**. In contrast, the major health agency environmental activity appears to be related to the non-regulatory public health assessments under Superfund. Health agencies also have a broader range of overall responsibilities related to the major statutes than any of the other types of agencies. State labor agencies generally have lead responsibilities for OSHAct and MSHA, while agriculture agencies lead the implementation of FIFRA and FDCA.
- The diversity and sheer number of agencies involved in environmental health and protection indicates the **need for a reevaluation of current approaches to the training and education of environmental professionals.** This is particularly true of traditional approaches which targeted public health agencies to build state capacities in environmental health.

C. THE PROGRAMS OF ENVIRONMENTAL HEALTH AND PROTECTION

What are the major program areas which shape the state environmental health and protection infrastructure? Which agencies administer these programs?

1. The Programs

Although many state environmental health and protection programs stem from federal legislation, there are also many components of state environmental health and protection efforts which are not derived from the statutory mandates. Such programs may be established by state law (i.e., state safe drinking water laws), may be a response to non-regulatory federal guidelines (i.e., lead and radon), or represent traditional public health functions at the state level, (i.e., epidemiology and sanitation). To profile the state infrastructure it was necessary to define the programs which shape the state efforts and identify those agencies responsible for their administration.

2. Environmental Health and Protection Program Analysis

State organizational charts, program summaries, and budgets were examined to explore the range of state services and develop a representative list of state environmental programs. This list was compared to a listing of the scope of environmental health and protection services developed by Gordon (8) and refined with the assistance of the Advisory Committee. A total of 16 state environmental health and protection programs were defined to represent the majority of *the* types of programs con-

ducted by state agencies. These programs are listed in Table 4 and a definition for each is provided in Appendix I(C).

A categorical analysis was conducted to contrast the role of the different state agencies in the administration of these programs. A description of these programs and the state specific information on each are presented in Appendix I(C) and I(E), respectively.

3. Findings

Table 5 summarizes the number and type of state agencies which implement environmental health and protection programs. This table indicates **a clear difference in the programmatic focus of the four types of agencies.** Health agencies clearly have the broadest program responsibilities while Environmental agency programs mirror the media based environmental regulatory approach of the federal statutes.

Figure 11 graphically depicts the environmental health and protection programs found in the state environmental agencies. These agency programs are dominated by the media-specific statutorily driven mandates for air, water, and waste management . Figure 12 shows that health agencies have a more robust array of programs and they are largely responsible for programs in epidemiology, quantitative risk assessment, radon protection, sanitation, water protection, and ATSDR Cooperative Agreements.

As shown in Figure 13, Agricultural agencies have limited program coverage, with their major focus on food safety and consumer services. As anticipated, Labor department programs focus on occupational safety and health as is evident in Figure 14.

In evaluating the distribution of programs it is important not only to ask “who does what?”, but also “who doesn’t do what?”. In this case the results indicate that environmental agencies do not have programs which are considered the core programs of environmental health in traditional public health agencies. For example, few environmental agencies have programmatic capacities in epidemiology, risk assessment, sanitation, or food safety. Therefore, despite the leadership role of environmental agencies in the regulatory aspects of environmental protection, health departments continue to have primary responsibility for the public health aspects of environmental services. In fact, the findings indicate that the role of health agencies has not decreased, but perhaps has been overshadowed by the large regulatory programs of environmental agencies.

Perhaps a general word of caution in interpreting these findings is appropriate. Prom this analysis it is not possible to evaluate the quality or extent of services provided. Thus, there may be tremendous variation from state to state in overall commitment to these issues.

4. Conclusions

- **The programmatic structure of environmental agencies mirrors the federal EPA and follows the media specific approach of the major environmental laws.** The major programs in these agencies are regulatory in nature.
- **Although environmental agencies have assumed the lead responsibility for environmental protection in the majority of states, health departments continue to have the most diverse responsibilities for implementing environmental health and protection programs.**
- **Very few environmental agencies and virtually no labor and agricultural agencies implement traditional environmental health programs.** Epidemiology, quantitative risk assessment, and sanitation are clearly programs administered primarily by health departments.
- **These findings indicate that the “environmental fragmentation” which was noted in the IOM report (1) may be more appropriately termed “environmental diversification”.** That is, the traditional roles of health agencies in environmental health are alive and well, but ever increasing regulatory requirements have lead to a multi-agency diversification of environmental health and protection services.

Table 5:	NUMBER OF ENVIRONMENTAL HEALTH AND SERVICES PROGRAMS BY TYPE OF STATE AGENCY				
AGENCY	AGRICULTURE	ENVIRONMENT	HEALTH	LABOR	TOTAL
AIR	0	41	9	1	51
ASB	0	12	19	5	36
ATS	0	1	28	0	29
OSH	3	3	19	36	61
WST	0	41	14	1	56
WTR	7	41	29	1	78
EPI	0	3	41	0	44
FCS	39	1	21	0	61
IAQ	0	1	7	1	9
Pb	0	1	13	0	14
PP	1	21	1	1	24
QRA	0	9	38	0	47
RAD	0	9	33	3	45
RDN	0	1	12	0	13
SAN	1	1	29	0	31
TXC	2	14	19	3	38

AIR	Air Pollution Prevention Programs	IAQ	Indoor Air Quality
ASB	Asbestos	Pb	Lead Screening and Abatement
ATS	ATSDR Cooperative Agreements	PP	Pollution Prevention
OSH	Occupational Safety and Health/Industrial Hygiene	QRA	Quantitative Risk Assessment
WST	Waste Management Programs	RAD	Radiation Health
WTR	Water Pollution and Management Programs	RDN	Radon
EPI	Environmental Epidemiology	SAN	Sanitation
FCS	Food Safety and Consumer Services	TXC	Toxic Substance Related Programs

FIGURE 11 - NUMBER OF STATE ENVIRONMENTAL AGENCIES RESPONSIBLE FOR ENVIRONMENTAL HEALTH AND PROTECTION PROGRAMS

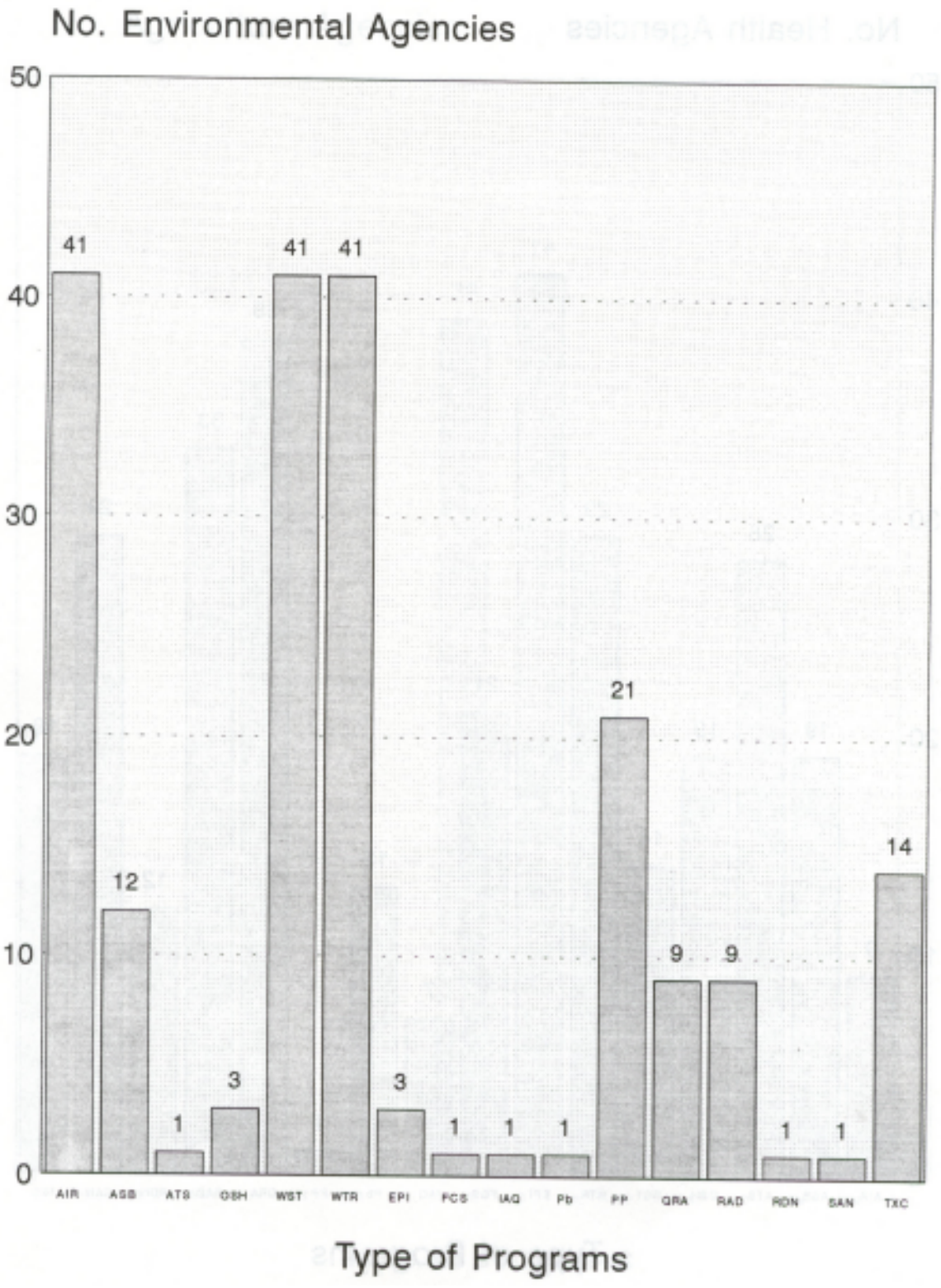


FIGURE 12 - NUMBER OF STATE HEALTH AGENCIES
RESPONSIBLE FOR ENVIRONMENTAL HEALTH AND PROTECTION PROGRAMS

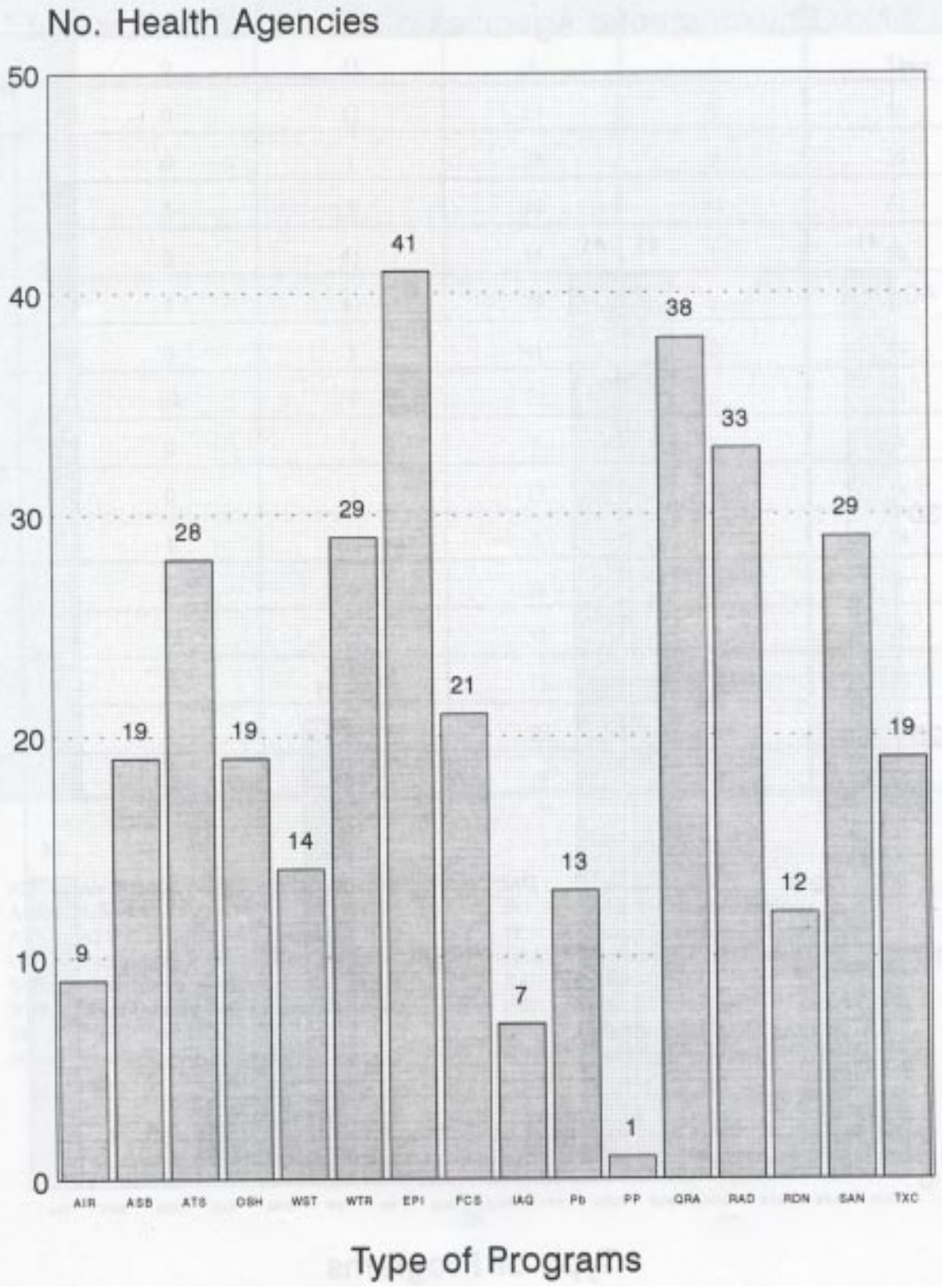


FIGURE 13 - NUMBER OF STATE AGRICULTURE AGENCIES
RESPONSIBLE FOR ENVIRONMENTAL HEALTH AND PROTECTION PROGRAMS

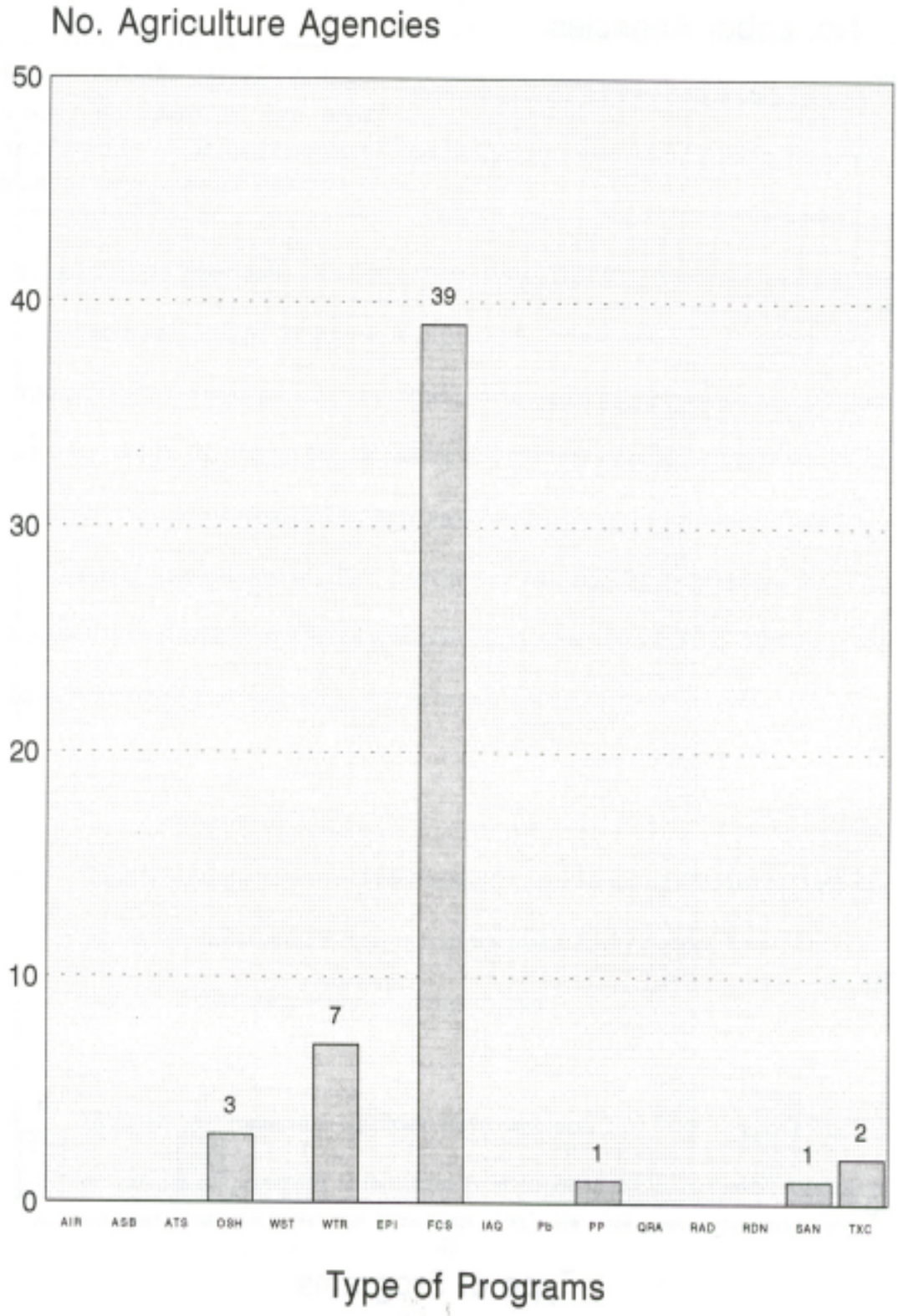
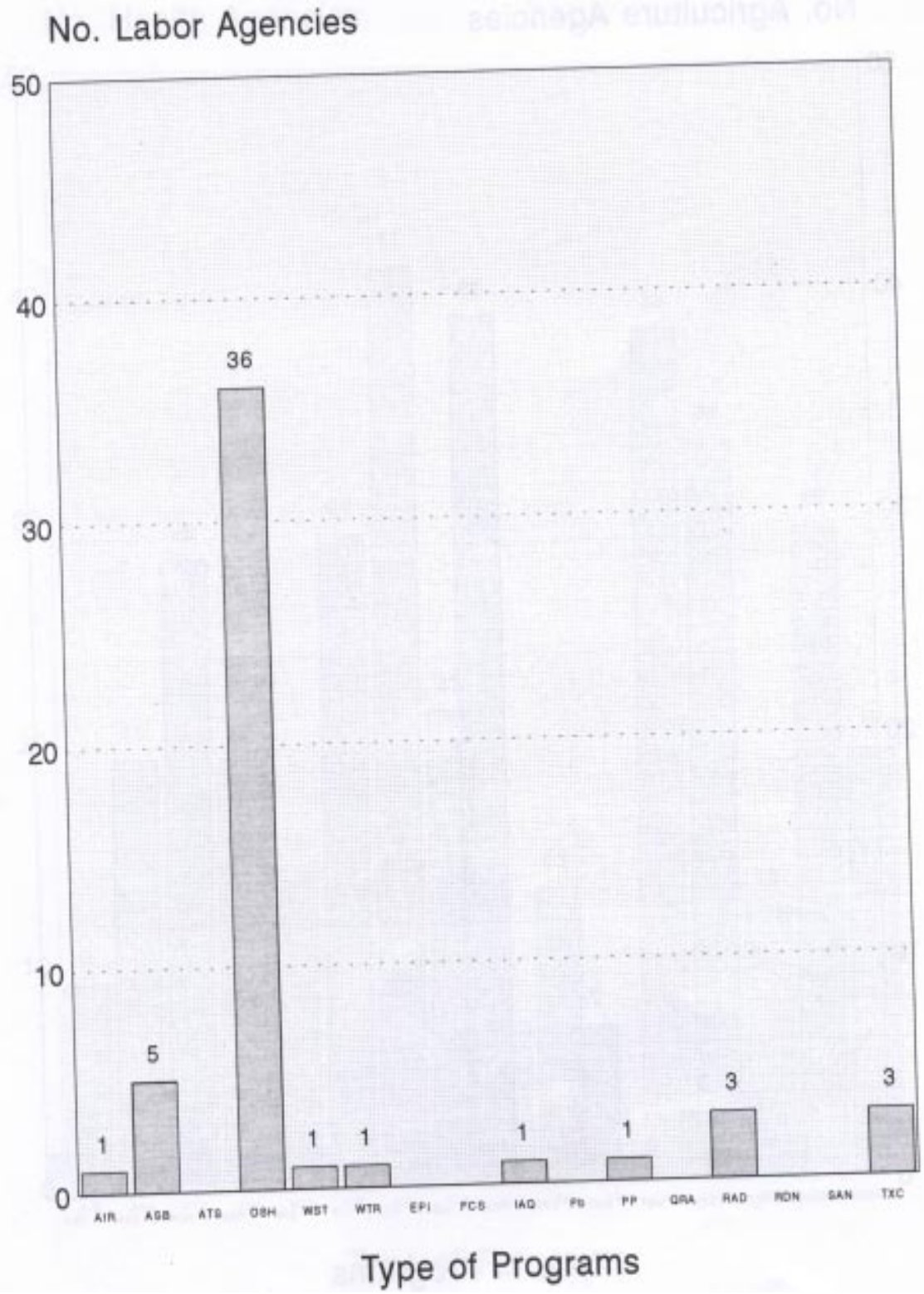


FIGURE 14 - NUMBER OF STATE LABOR AGENCIES
RESPONSIBLE FOR ENVIRONMENTAL HEALTH AND PROTECTION PROGRAMS



D. THE CORE FUNCTIONS OF ENVIRONMENTAL HEALTH AND PROTECTION

What are the core functions of environmental health and protection at the state level? What agencies are performing these functions? Do the functions of state health agencies differ from those of environmental agencies?

1. Defining The Core Functions

Just what do environmental health and protection agencies do? Determining the core functions of environmental programs was recognized as another approach to finding a common ground among the multitude of diverse state agencies. After an evaluation of the literature, extensive discussion with the advisory group and other experts in the field, and a preliminary evaluation of descriptions of federal and state agencies, a list of core functions was developed. The list proved to be dichotomous. One group of functions is clearly regulatory in nature (i.e., enforcement and permitting), while the other consists of functions which might best be described as traditional non-regulatory public health activities (i.e., epidemiology and education). Table 6 lists groupings of core functions and activities in each category.

2. Core Environmental Health and Protection Function Analysis

To evaluate the state agencies which carry out the defined functions, descriptive summaries in state information brochures, available budget details, and detailed reports of state agency functions and programs, were reviewed. Discussions were also held with representatives from the state agencies. In cases where specific descriptions of environmental health and protection programs were not available, it was assumed that the functions carried out by the agency are for regulatory purposes only. For example, when available information indicated that an environmental health laboratory existed, it was assumed that the laboratory functions primarily to support regulatory activities. This information has been coded into a Dbase file which is located in Appendix II. Table 7 contains a summary of the number of core functions carried out by the different state agencies.

Table 6 THE CORE FUNCTIONS OF ENVIRONMENTAL HEALTH AND PROTECTION

Regulatory Functions

1. Permitting, Monitoring, Enforcement, Registration, and Licensing.
2. Recordkeeping, Reporting, and Developing Inventories.
3. Remediation and Emergency Response.
4. Laboratory Support.
5. Standard Setting. Litigation, and Administration.

Public Health Functions

6. Health Surveillance and Epidemiology
7. Health Risk Assessment, Toxicology, and Applied Research
8. Communication, Education, Training, and Consultation

3. Findings

As is evidenced in Figure 15, among state environmental, health, agricultural, and labor agencies, **there are 163 agencies which carry out the defined environmental health and safety functions in the states. Of these agencies, the majority carry out functions which are mandated by the federal regulations,** such as sampling, permitting, enforcement, monitoring, registering, certifying, and licensing. Far fewer agencies (only 43 in the case of health surveillance and epidemiology) perform functions which are typically considered of public health nature.

Figure 16 shows that state environmental agencies are primarily involved in carrying out regu-

latory functions such as permitting and recordkeeping. For example, 41 agencies list permitting, monitoring, enforcement, registering, and licensing among their functions. In contrast, only a limited number of the environmental agencies serve public health functions: 20 list communication and education, 10 list applied research/toxicology, and only 3 list epidemiology and surveillance among their functions. The profile of functions of state health agencies indicates their continued vital role in environmental health services, despite the growing regulatory responsibilities of state environmental agencies.

Functions of state health agencies are graphically depicted in Figure 17. It is evident that the health agency functions are wide in scope and have a public health focus. There are 40 health agencies which list health surveillance and environmental epidemiology among their functions, 38 which conduct health risk assessment, toxicology and applied research, and 25 which list communication and training among their functions. Health departments also play an active role in permitting, monitoring, enforcement and providing laboratory support.

Among the functions listed by agricultural agencies, permitting, monitoring, enforcement and registration are the most common and are listed by 45 agencies (see Figure 18). Thirty agricultural departments list laboratory support among their primary functions, but only one lists remediation and emergency response and none list health surveillance or toxicology/applied research.

As shown in Figure 19, labor departments also have a limited number of functions. Forty-one list their primary roles as permitting, monitoring, and enforcement, and 34 list communication, education, training, and consultation, while none list health surveillance or toxicology among their functions.

4. Conclusions

- **The primary functions of regulatory agencies include activities related to permitting, enforcement, record keeping, remediation, standard setting, and providing laboratory support.** Although these responsibilities are diverse, they do not include public health evaluations. Of all environmental agencies, only a very small percentage conduct epidemiological studies or carry out applied health risk assessment research.
- **Health agency functions are the most diverse** and their leading functions include health surveillance, environmental epidemiology, applied research, toxicology, permitting, monitoring, and enforcement. Health agencies also play a major role in providing laboratory support, and to a somewhat lesser extent, are involved in communication, education, and training.
- **Agricultural agencies have a limited number of functions as defined in this analysis,** primarily consisting of permitting, monitoring, enforcement, and laboratory support. Public health functions are very limited, with only a small number of agricultural agencies listing education, training, and consultation among their activities.
- **Labor agencies also serve only a limited role in the defined functions.** Permitting, monitoring, and enforcement are listed by 41 labor agencies functions, and 34 list communication, education, training, and consultation.
- Although their role in regulatory activities has decreased, **health departments are distinguished as the only agencies exhibiting a consistent organizational commitment to the public health functions of environmental epidemiology, health surveillance, and applied research.**

E. STATE BUDGETS FOR ENVIRONMENTAL HEALTH AND PROTECTION

How do state budgets reflect the priorities of environmental health and protection services? How do expenditures for regulatory functions compare with expenditures for public health functions?

1. General Approach and Data Limitations

Unlike the state infrastructural analyses where interagency boundaries were drawn to categorize state agencies by type, such as environment or health, the budget analysis attempted to determine state expenditures on environmental health and protection regardless of agency boundaries. This de-

Table 7: NUMBER OF CORE ENVIRONMENTAL HEALTH AND PROTECTION FUNCTIONS IMPLEMENTED BY STATE AGENCIES

Core Functions	Environmental Agencies	Health Agencies	Agriculture Agencies	Labor Agencies
Permitting, Monitoring, Enforcement, Registration, Licensing	41	35	45	41
Recordkeeping, Reporting, Developing Inventories	35	17	4	8
Remediation and Emergency Response	32	14	1	3
Laboratory Support	26	31	30	3
Standard Setting, Litigation, Administration	34	13	4	7
Health Surveillance, Epidemiology	3	40	0	0
Health Risk Assessment, Toxicology, Applied Research	10	38	0	0
Communication, Education, Training, Consultation	20	25	11	34

FIGURE 15 - NUMBER OF STATE AGENCIES WITH CORE ENVIRONMENTAL HEALTH AND PROTECTION FUNCTIONS

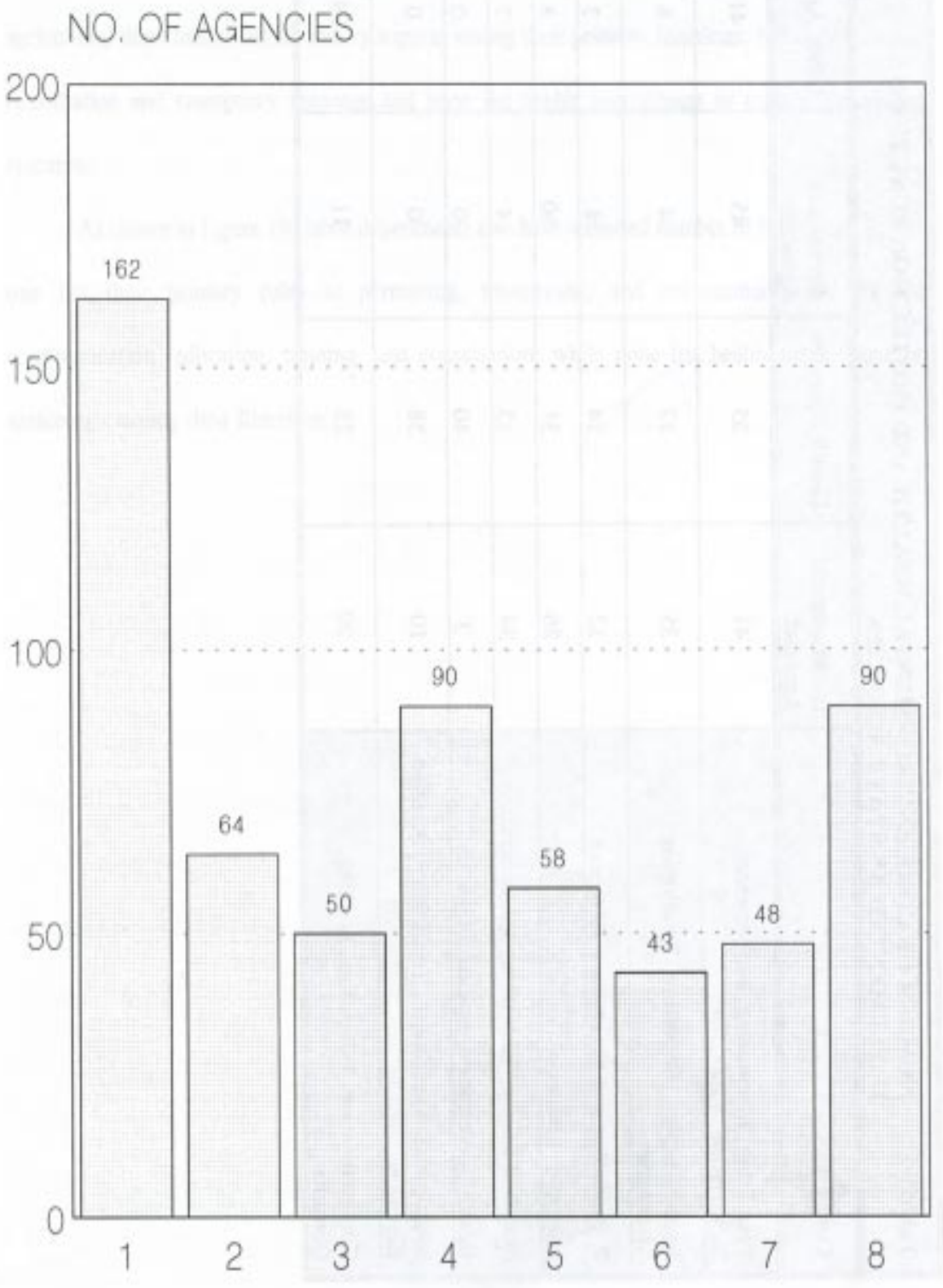


FIGURE 16 - NUMBER OF STATE ENVIRONMENTAL AGENCIES WITH CORE ENVIRONMENTAL HEALTH AND PROTECTION FUNCTIONS

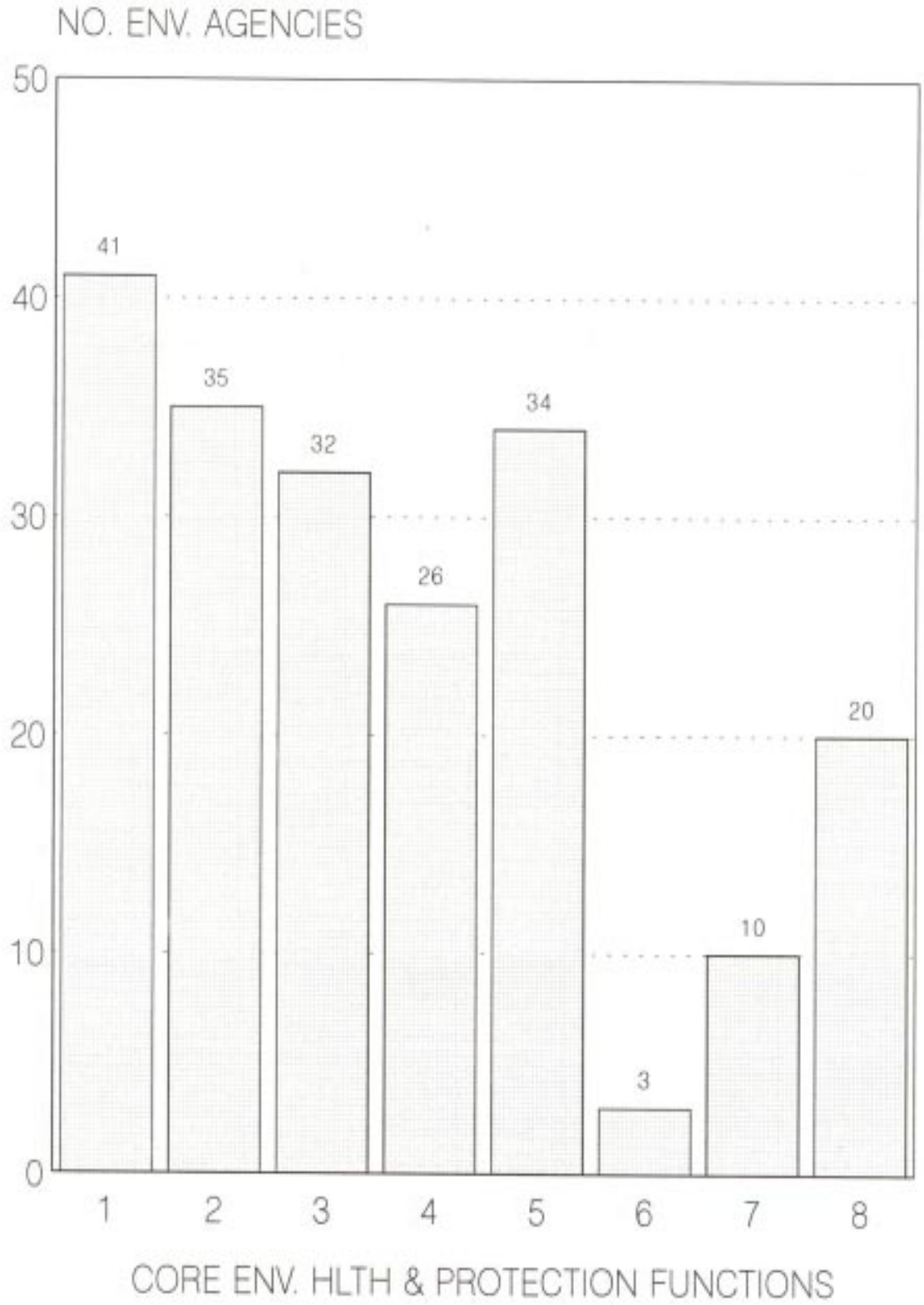


FIGURE 17 - NUMBER OF STATE HEALTH AGENCIES WITH CORE ENVIRONMENTAL HEALTH AND PROTECTION FUNCTIONS

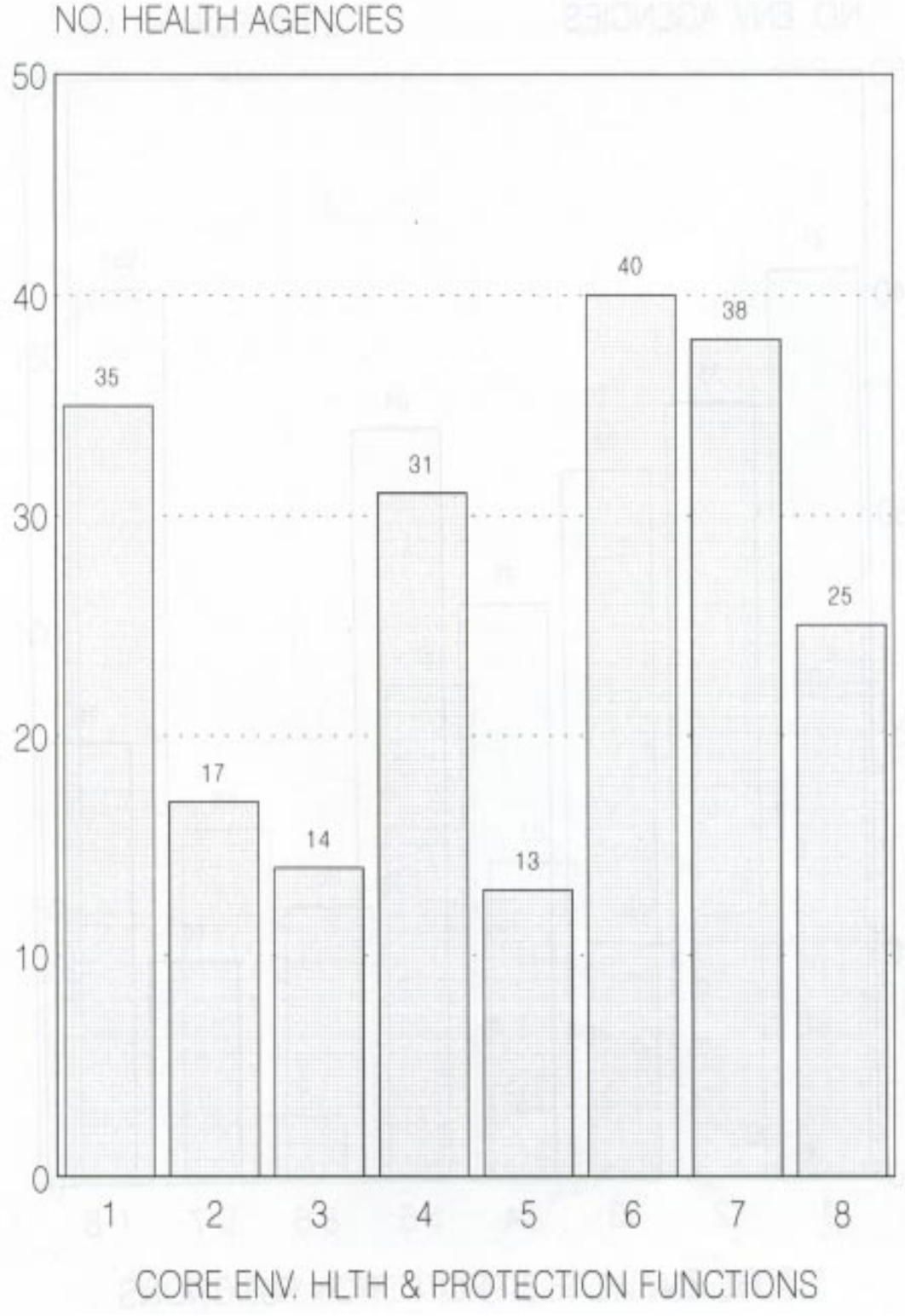


FIGURE 18 - NUMBER OF STATE AGRICULTURE AGENCIES WITH CORE ENVIRONMENTAL HEALTH AND PROTECTION FUNCTIONS

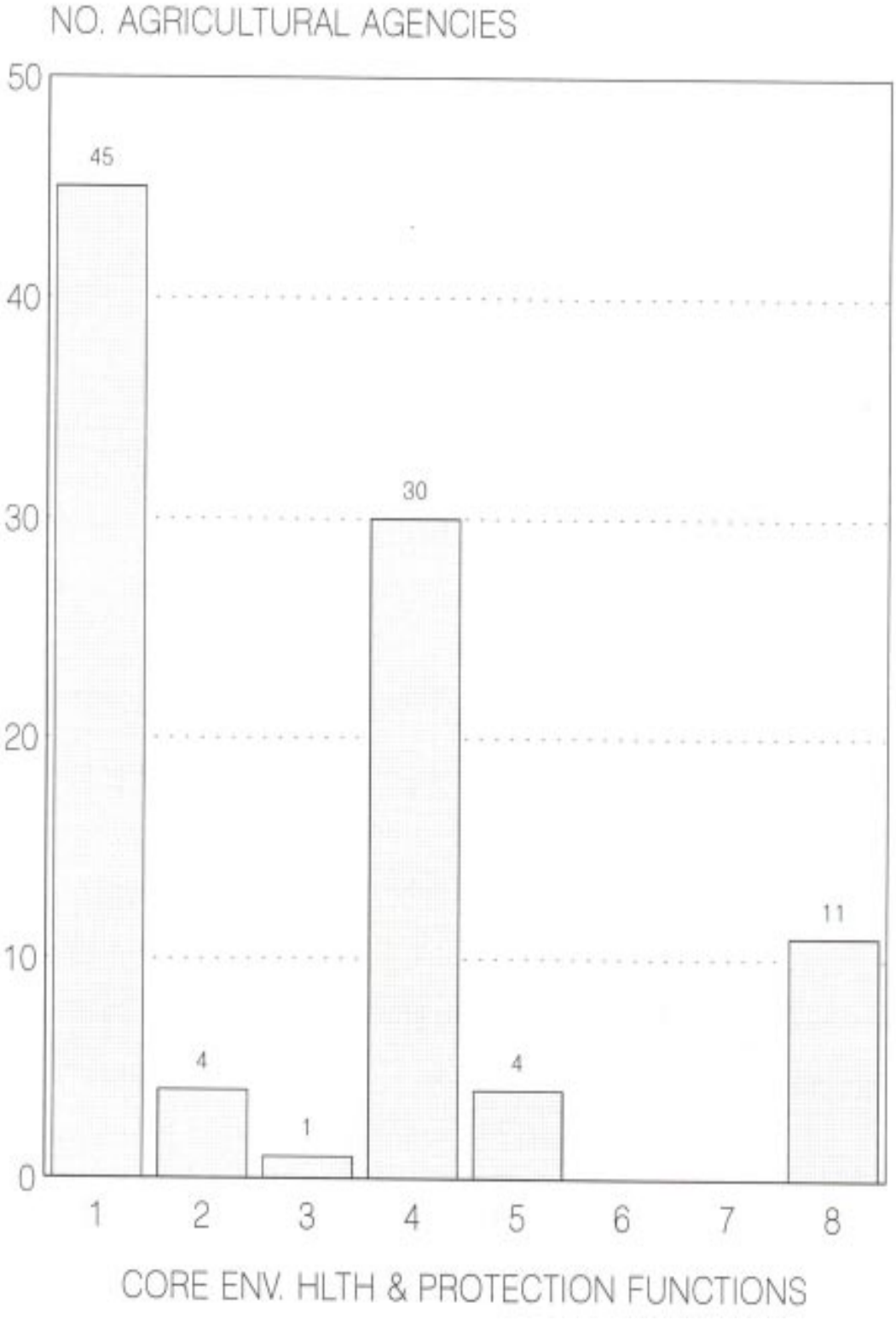
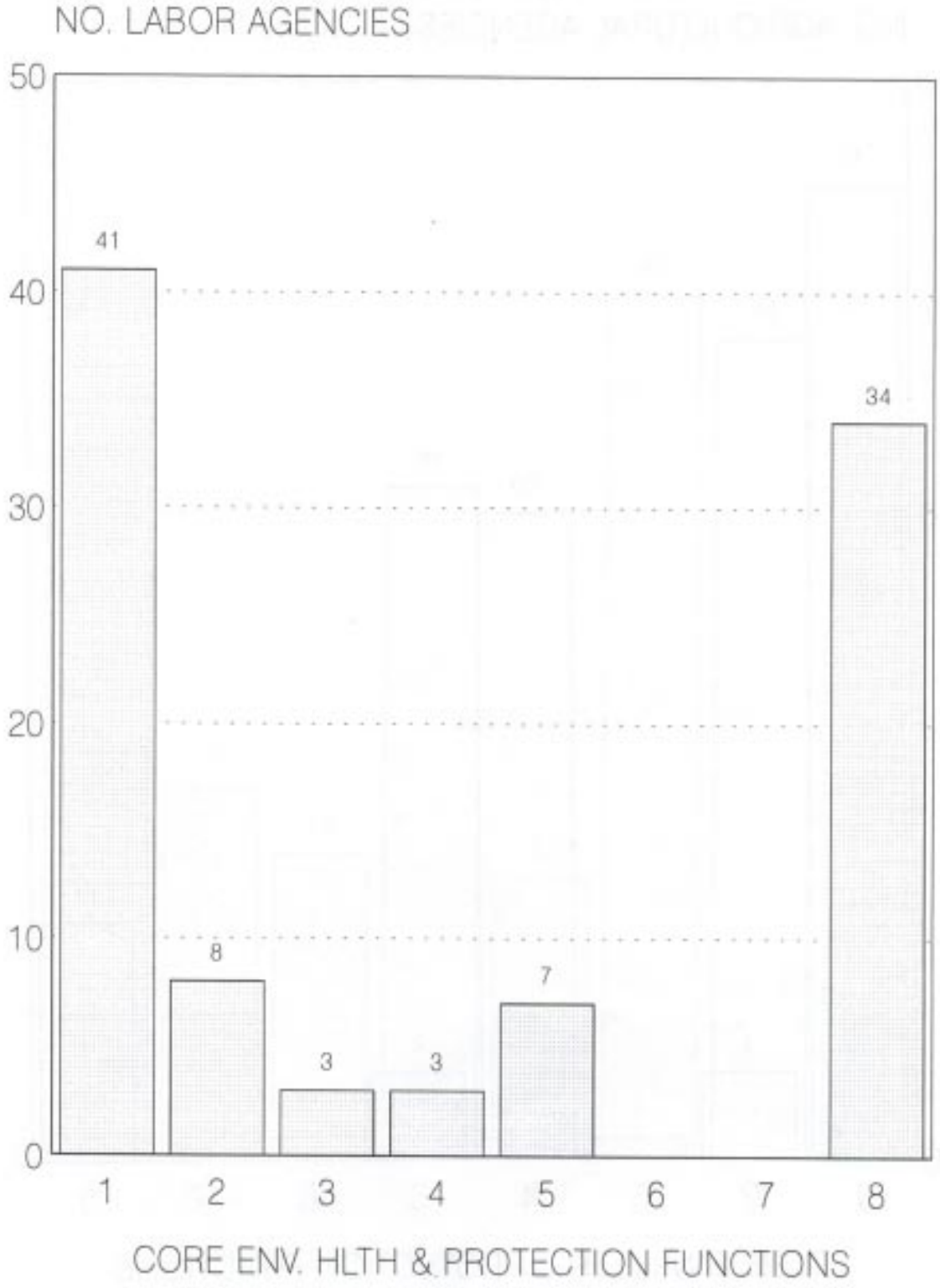


FIGURE 19 - NUMBER OF STATE LABOR AGENCIES WITH CORE ENVIRONMENTAL HEALTH AND PROTECTION FUNCTIONS



parts from previous efforts which collected budget information primarily from public health agencies. (9) Thus, where possible, state agency budgets were dissected to extract the portion of each agency budget which was allocated for environmental regulatory activities and the portion allocated for environmental health activities.

Environmental regulatory and environmental health activities were defined to be consistent with the core environmental health activities defined under the scope of the project. In general, environmental regulatory activities were broadly defined as those carried out under federally mandated programs, such as air pollution control, water pollution control, and municipal and hazardous waste disposal. Environmental health activities were broadly defined as health assessment, toxics programs, sanitation, surveillance, and environmental epidemiology. It is recognized that some federally mandated programs have elements that can be classified as health related activities; however, through discussions with state agency personnel it was found that the funding focuses on the regulatory aspects of these activities.

Because of the difficulty in determining which state resources are dedicated to environmental regulatory programs and which are dedicated to environmental health programs, subjective evaluations were sometimes necessary to complete this analysis.

State health department budgets proved to be particularly difficult to analyze because they often included environmental health among other public health activities. The most common difficulty was interpretation of the amount of money spent in laboratories for environmental health and environmental regulatory activities. While most public health labs perform some environmental health related activities (e.g. lead analysis), much of the public health laboratory activity may relate to infectious disease evaluations such as AIDS/HIV, STDs, and TB, or regulatory compliance sampling such as

Table 8: BUDGETARY OVERESTIMATES
States with Known Oversestimates of Environmental Health Budgets

Arizona Disease Prevention budget includes AIDS, Chronic Diseases, the Cancer Registry and all epidemiology.

Delaware Community Health budget includes monies for Communicable Disease, Quality Assurance, and Prevention, in addition to programs which are define as environmental health activities.

Illinois Health Protection includes funding for vaccinations, HTV testing, and licensing and enforcement for Migrant Labor Camps, Adult Campgrounds, and Youth Camps.

Iowa Environmental Health Programs budget includes funding for product safety.

Michigan Migrant Labor Housing is included in the budget for environmental health activities.

Missouri Funding for Vaccinations, Newborn Screening, and STD programs are included in the environmental health budget.

Oregon Emergency Medical Services are included in the budget for environmental health activities.

Wisconsin The environmental health budget includes funding for Physician Education, Mobile Home Park inspections, and Hotel Inspections.

water quality monitoring. Because of the difficulty of separating out funding for specific lab activities, total state funding for laboratories was included as expenditures on environmental health where available. The estimated expenditures on environmental health are thus an overestimate of actual state expenditures on environmental health. Table 8 lists states where environmental health budgets are known to be overestimated.

Because of combined budgeting for environmental protection and natural resource programs in some states whose structures are based on the "EN" model, environmental regulatory spending could not be extracted based on the information that was received. In such cases, the budget expenditures are not included in the analysis because of the gross overestimation which would result. For example, expenditures on environmental regulation in Pennsylvania and New Jersey include funding for programs which have been defined as Natural Resource programs in this project (i.e., Fish, Wildlife and Forestry programs for NJ and waterways, flood protection, water/soil conservation for PA). Therefore, budget figures for these states are not included in the analysis of expenditures on environmental regulatory activities.

Two states, North Dakota and Oklahoma, were excluded from budgetary analysis for several reasons. Budgetary information available for North Dakota did not provide a detail breakdown of environmental health and protection programs; therefore, it was not possible determine the amount of funds dedicated to environmental health and environmental regulate programs. Budget information available for Oklahoma was based only on state general funds and lacked program specific information. As a result, data on Oklahoma's environmental health and environmental regulatory expenditures were excluded from the analysis.

In a limited number of cases, missing budgetary figures were estimated from data available for other fiscal years. This was performed where a clear trend in the spending could be identified, and the available data was considered reliable. The estimation was performed to increase the number of states evaluated for a given fiscal year, in order to more clearly identify a national trend for environmental health and environmental regulatory expenditures. Estimations were carried out in the following cases:

- During the course of the data collection, Florida changed its structure from an "EPC" model state to the "EN" model. Therefore, data available for fiscal year 1994 (FY 94) included expenditures for Environmental Regulation and Natural Resource programs. Using data from fiscal year 1992 (FY 92), prior to the agency's structural change, an estimate of the breakdown was calculated. Only the data for environmental regulatory spending was utilized in this analysis.
- For Arkansas, based on discussions with the Health Department, expenditures on environmental health in FY 94 were estimated to have increased 5 % from the FY 93 figures.
- Oregon and Wyoming provided biannual budget information. Therefore, the figures provided were divided by two to estimate the expenditures in the individual fiscal years.

Because the data available for regulatory activities and health activities were not necessarily available for all states during the same fiscal years, the total number of states included in the analysis varies from year to year.

2. Analysis and Findings

a. Trends

Total dollars spent on environmental health and protection were examined to determine if there is a trend in expenditure from fiscal years 1992 to 1994, and to compare spending on environmental health and environmental regulation. The following analyses were conducted:

- Changes in state expenditures on environmental health and regulations from fiscal year 1992 to 1993 and from fiscal year 1993 to 1994 were evaluated and are graphically depicted in Figures 20 and 21.
- Expenditures on environmental health as a percent of total combined state dollars spent on environmental health and protection were calculated and are shown in Figure 22.
- Expenditures on environmental health as a percent of total public health expenditures were evalu-

ated and are shown in Figure 23. This estimate was derived by comparing budgets for environmental health to total health department budgets. These estimates should be interpreted with caution, since state organizations differ widely and may or may not include programs such as Medicaid or other health care services.

- Expenditures on environmental health were evaluated as a percent of state environmental regulation and natural resource expenditures and is shown in Figure 24.

b. Findings

Spending for environmental services continues to grow. As shown in Figures 20 and 21, large increases in total funding allocated to environmental regulatory activities and environmental health activities were witnessed between fiscal years 1992 and 1993. Over this time period, there was a 16% increase in environmental regulatory dollars and 27% increase in environmental health dollars. However, such increases were not seen between fiscal years 1993and 1994. The changes in expenditures were small, a 1.5% increase for environmental regulatory spending and a 1.2% decrease in environmental health spending.

Over the three year study period, fiscal years 1992-1994, state expenditures on environmental health comprised 19-20% of the total expenditures on environmental regulation and environmental health programs. The ratio of state spending on environmental regulatory programs to environmental health programs was approximately 4 to 1 as shown in Figure 22.

State expenditures on environmental health as a percent of expenditures on health/public health ranged from 3% to 4% for the three year study period. In essence, of every dollar spent on health/public health programs, only 3-4 cents were dedicated to environmental health activities.

The actual percent of spending on environmental health activities is less than this estimate because total state expenditures for health care were not available for all states, and in these cases, only public health expenditures were included. Additionally, spending on environmental health is overestimated as previously mentioned, because funding for laboratories was included, even though most estimates of laboratory funding included funding for non-environmental sample analysis (i.e., testing for infectious diseases). These results are graphically depicted in Figure 23.

As a percent of state expenditures on environmental regulatory and natural resource programs, environmental health expenditures ranged from 6% to 8% over the three year study period. Thus, for every dollar spent on environmental regulations and natural resources, only approximately 6 to 8 cents was spent on environmental health activities as shown in Figure 24.

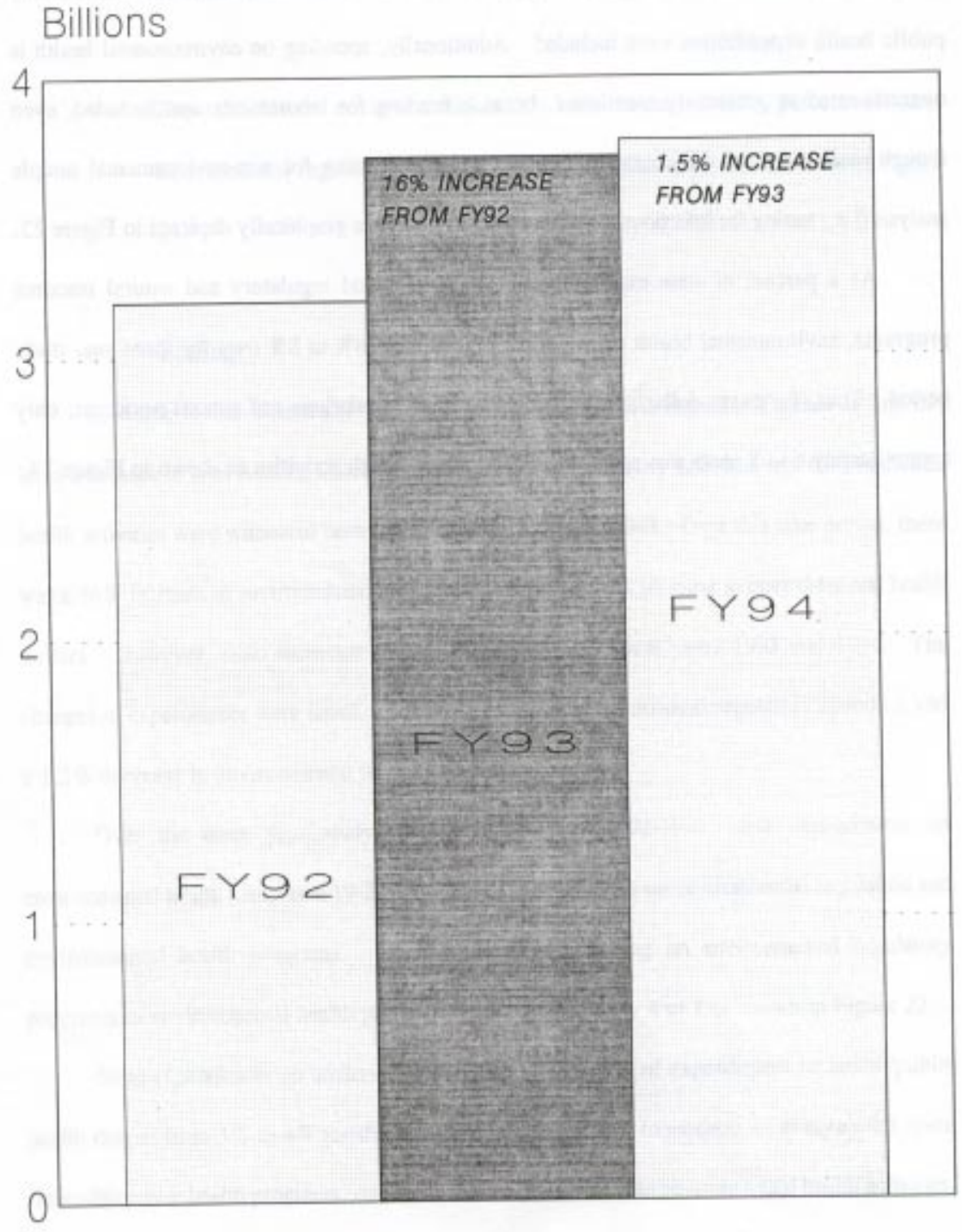
3. Per Capita

State budget information was further analyzed to estimate per capita expenditures on environmental regulatory and environmental health activities. Per capita calculations were based on 1991 population census data. State per capita expenditures on environmental health and environmental regulatory activities were averaged for the three year study period (fiscal years 1992-1994). This 3-year average was used to rank state budgetary commitment to environmental health and environmental regulatory programs. State per capita spending on environmental activities was also compared to state poverty ranking to determine if there is any observable correlation between the two indicators. State poverty ranking was based on the percent of families below the poverty level from the 1989 census data.

a. Findings

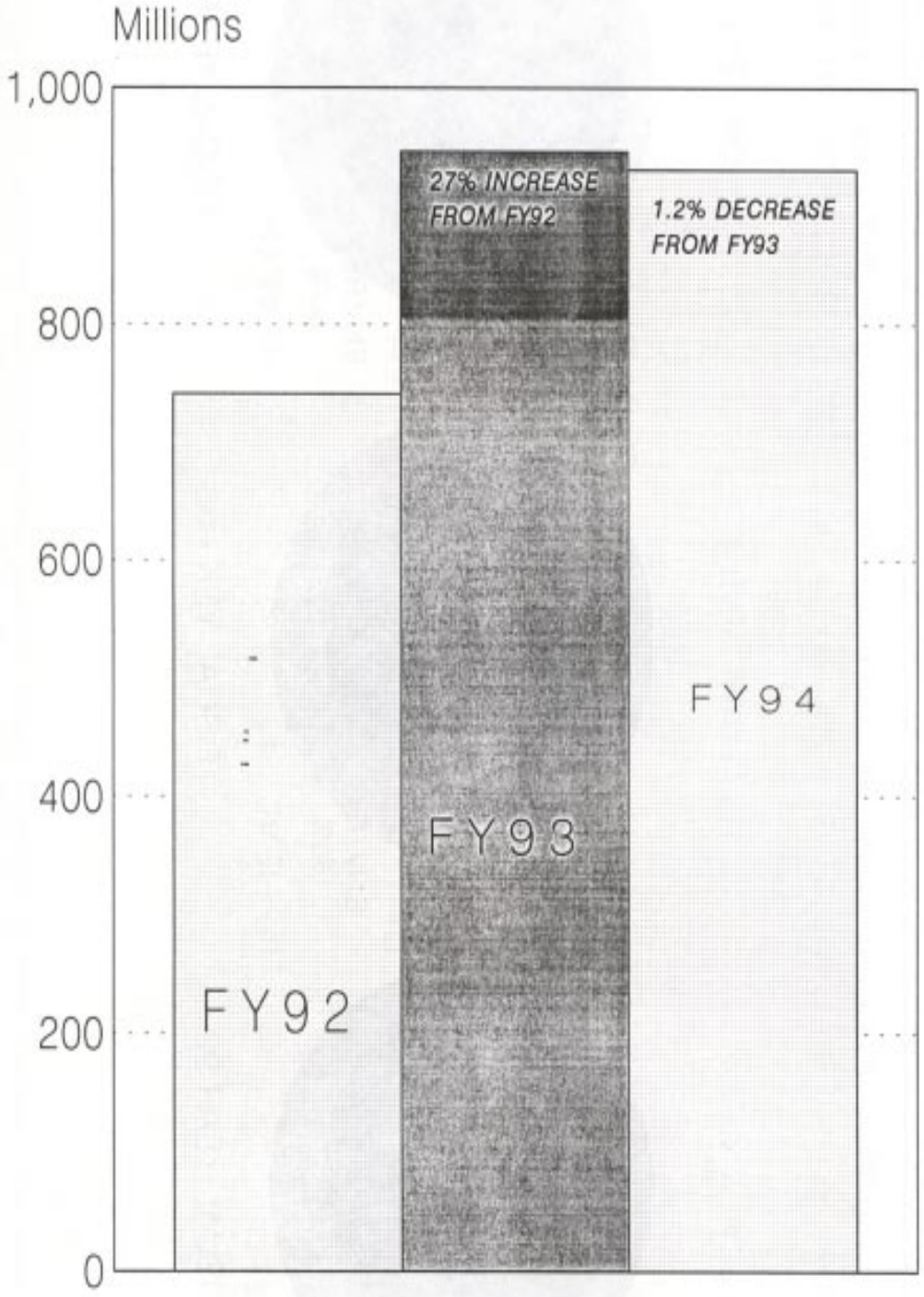
The national average per capita expenditure on environmental regulatory activities is $18.87. Per capita spending on environmental regulatory activities in states in the highest quartile ranges from $29.93 to $78.93. States in this quartile include Arkansas, Delaware, Idaho, Illinois, Maine, Missouri, New Hampshire, New Jersey, Oregon, Rhode Island, West Virginia, and Wyoming as shown in Figure 25 and Table 9. Per capita expenditures on environmental regulatory activities in the lowest quartile

FIGURE 20 - TREND OF STATE EXPENDITURES ON ENVIRONMENTAL REGULATORY ACTIVITIES
CHANGES FROM FY92 TO FY93 AND FY93 TO FY94



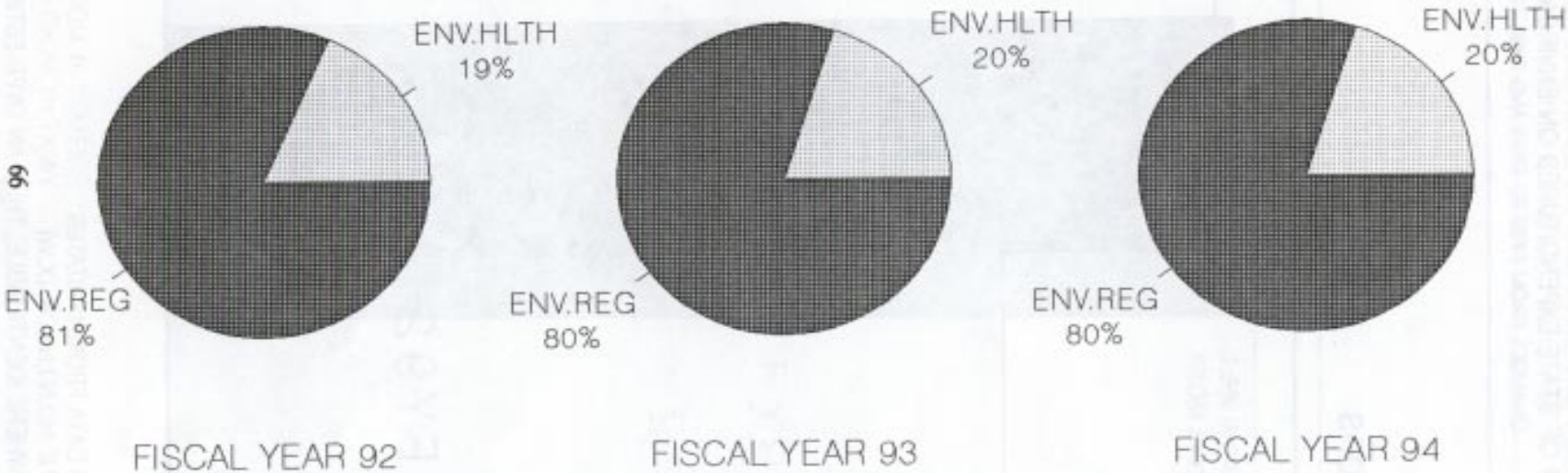
EXPENDITURES BASED ON DATA FROM 40 STATES
MISSING STATES: ME,MA,ND,NJ,NY,OK,PA,TN,TX,WY

FIGURE 21 - TREND OF STATE EXPENDITURES ON ENVIRONMENTAL HEALTH ACTIVITIES
CHANGES FROM FY92 TO FY93 AND FY93 TO FY94



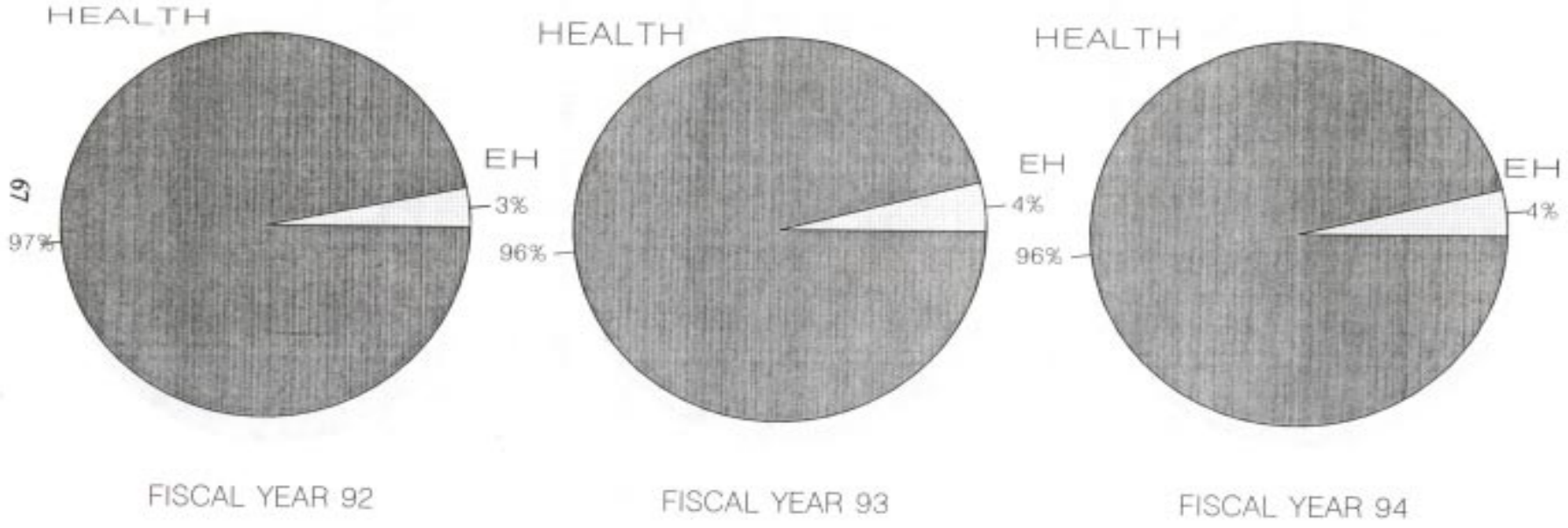
EXPENDITURES BASED ON DATA FROM 41 STATES
MISSING STATES: GA,MA,NE,ND,NJ,NY,OK,TX,WI
LAB DOLLARS INCLUDED WHERE IDENTIFIABLE, THUS AN OVER-ESTIMATE

FIGURE 22 - STATE EXPENDITURES ON ENV. HEALTH ACTIVITIES AS A % OF TOTAL ENVIRONMENTAL HEALTH AND PROTECTION EXPENDITURES



TOTAL ENV.HLTH & PROTECTION = ENV.REG+ENV.HLTH DOLLARS.
FY 92 INCLUDES DATA FROM 40 STATES, FY 93 - 41 STATES AND FY 94 - 39 STATES.
WHERE IDENTIFIABLE, ENV.HLTH $ INCLUDE LAB $, THUS OVERESTIMATED.

FIGURE 23 - STATE EXPENDITURES ON ENV. HEALTH ACTIVITIES AS A % OF ALL HEALTH AND PUBLIC HEALTH EXPENDITURES

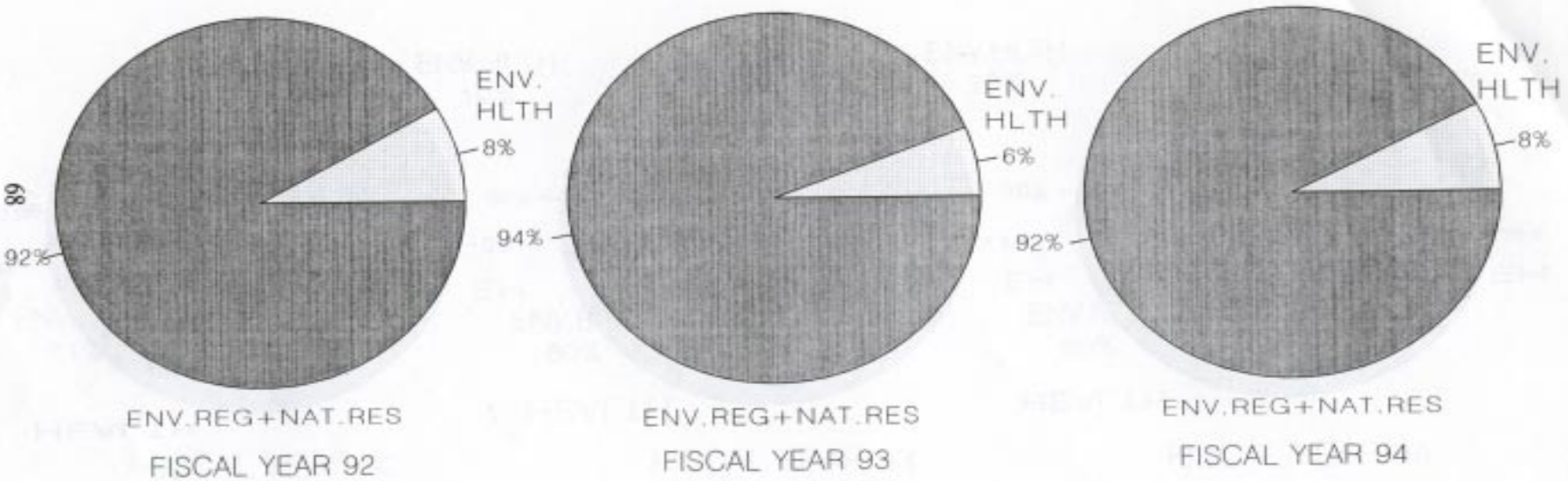


FISCAL YEAR 92 FISCAL YEAR 93 FISCAL YEAR 94

HLTH DOLLARS UNDER-ESTIMATED AS SOME STATES HAD ONLY PUBLIC HLTH DOLLARS INCLUDED.
ENV.HLTH DOLLARS OVER-ESTIMATED AS SOME STATES HAD LAB DOLLARS INCLUDED

FY94: AL,AZ,AK,CA,CO,CT,DE,GA,ID,IL,IN,KS,KY,LA,MD,MI,MN,MO,MS,MT,NC,NV,NM,NH,OH,OR,PA,RI,SD,TN,VA
FY92: AL,AZ,AK,CA,CO,DE,ID,IL,IN,IOWA,KS,KY,LA,ME,MD,MN,MO,MS,MT,NV,NH,NM,OH,OR,PA,RI,SD; FY93 AL, AZ,AK,CA,CO,CT,DE,GA,ID,IL,IN,KS,KY,LA,MD, MI,MN,MO,MS,MT,NC,NE,NV,NH,NM,NY,OH,OR,PA,RI,SD,TN,VA

FIGURE 24 - STATE EXPENDITURES ON ENV. HEALTH ACTIVITIES AS A % OF ALL ENVIRONMENTAL AND NATURAL RESOURCE EXPENDITURES



ALL EXPENDITURES = ENV.REG+NAT.RES+ENV.HLTH
FY92 INCLUDES: CO,DE,IL,KY,MO,MS,MT,NC,NV,NM,RI,SD,MD,MI. FY93: DE,FL,GA,IL,KY,MD,MI,MO,MS,MT,NC, NV,NM,PA,RI,SD,TN,VA,VT,WV. FY94: CO,DE,FL,GA,IL,KY,MD,MI,MO,MS,MT,NC,NV,NJ,NY,PA,RI,SD,TN,TX,VA,WV.

ranged from $3.06 to $10.22 and include Arizona, Colorado, Georgia, Hawaii, Indiana, Iowa, Mississippi, North Carolina, Ohio, South Carolina, South Dakota, and Texas.

For environmental health activities, the national per capita expenditure is $4.09 with the highest quartile ranging from $5.64 to $38.47 as shown in Figure 26 and Table 10. States in this quartile include Alaska, California, Colorado, Delaware, Hawaii, Idaho, Kentucky, Minnesota, Montana, Oregon, and Rhode Island. The lowest quartile of per capita expenditures on environmental health activities ranges from $0.22 to $1.55 and includes Alabama, Florida, Iowa, Indiana, New Jersey, New York, Ohio, Pennsylvania, South Dakota, Tennessee, West Virginia, and Wyoming.

States rankings based on a 3-year average per capita expenditures on environmental health and regulatory activities are listed in Table 11. This analysis found no correlation between per capita spending on environment health and per capita spending on environmental regulatory activities; that is, high ranking on environmental regulatory spending does not result in high ranking on environmental health spending. There are only 4 states that ranked in the top ten in both ranking categories - Delaware, Idaho, Oregon, and Rhode Island. When these rankings were compared with state poverty ranking based on the percentage of families below poverty no association was found.

The ratio of state per capita expenditures on environmental health activities and environmental regulatory activities was also calculated for each state. Because data was not available for North Dakota, Oklahoma, Texas and Wisconsin, ratios could not be calculated for these states. Of the remaining 46 states, ratios ranged from .01 to 1.05, with a national average of .22. The majority of states (33) have ratios less than or equal to .30. In a small number of states the ratios indicate that less than 5 % of the combined spending is allocated to environmental health activities. These results are shown in Table 11.

4. Total Expenditure

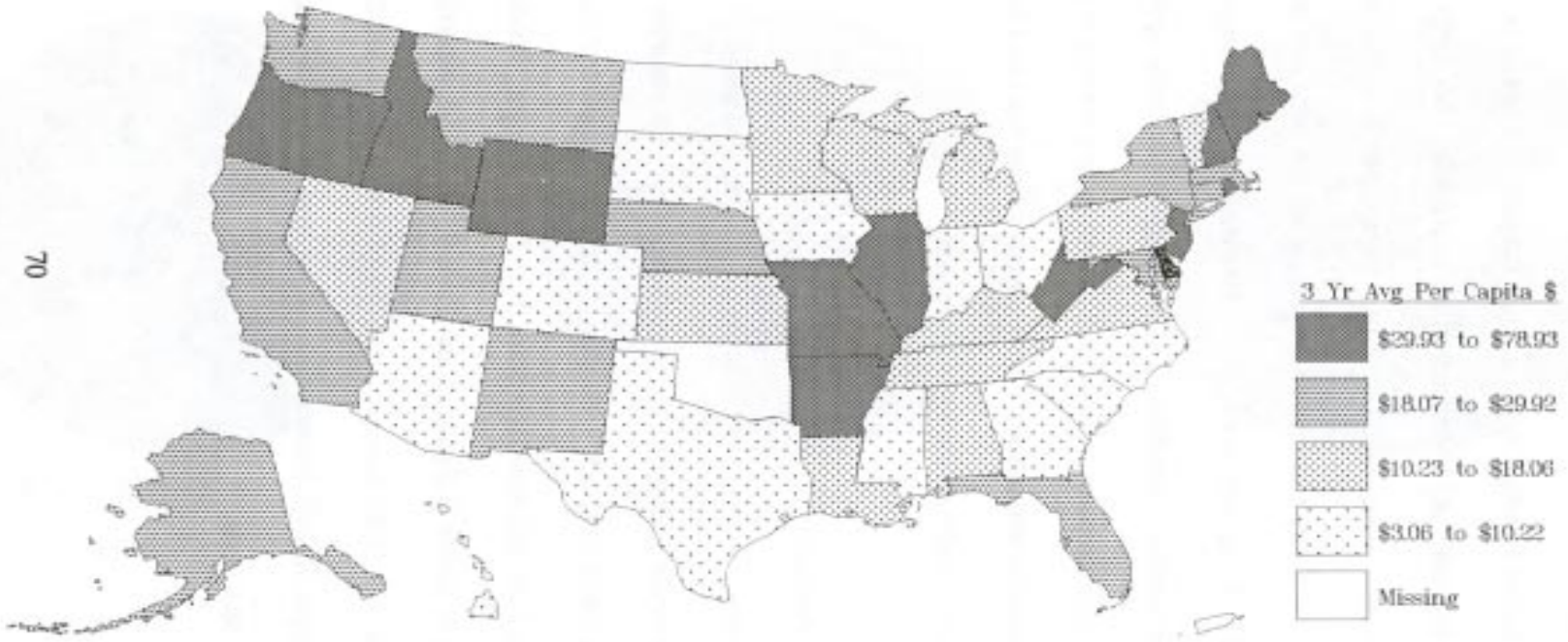
The total annual spending for environmental regulatory activity was reported for 48 states, and total annual spending for environmental health was reported for 46 states. Each state total annual spending was based on the average of the three fiscal years, FY92, FY93, and FY94. These totals were used to develop the national per capita estimates for environmental regulatory and environmental health activities. Multiplying these estimates by the total U.S. population yields an estimate of total annual expenditure by the states. For environmental regulatory activity the total is approximately $4.7 billion. This figure is consistent with a previous estimate by EPA.(3) The estimate for total annual expenditure on environmental health is $1 billion. This yields a grand total of $5.7 billion spent annually for state environmental health and protection services.

4. Conclusions

- **Annually, over five and one half billion dollars were reported to be spent by the states for environmental health and protection services.** 4.7 billion is devoted to regulatory activities, while about I billion supports environmental health activities.
- **Nationally, expenditures on environmental regulatory activities far outpace expenditures on environmental health.** For the years 1992 through 1994 only twenty percent of the total budget for environmental health and protection was spent on environmental health activities. If natural resource expenditures are included, only 8 cents from every dollar spent is directed toward environmental health activities.
- **Analysis of per capita** spending **by the** states revealed a national average expenditure of $18.87 per year on environmental regulatory activities and $4.09 per year on environmental health activities.
- **While national expenditures on environmental regulatory activities outpace expenditures on environmental health by a 4 to 1 margin, there** is **a wide variation from state to state.** Alaska and Hawaii have approximately equal spending for the two activities, while in a number of states the amount of funding committed to environmental health represents less than five percent of the total environmental regulatory spending.
- **Environmental health represents only a small portion, 3-4%, of the estimated total state spend-**

FIGURE 25

3 YEAR AVERAGE PER CAPITA EXPENDITURES ON ENVIRONMENTAL REGULATION



Per Capita expenditures for the following states based on two years of data:

MA, NY, TN, WY.

Per capita expenditures for Maine based on data for FY92

Table 9: RANGE OF AVERAGE PER CAPITA EXPENDITURES ON ENVIRONMENTAL REGULATION FY 92-94

GROUP	PER CAPITA EXPENDITURES ($) RANGE	# OF STATES	STATES
Highest Quartile	29.93 - 78.93	12	AR, DE, ID, IL, ME, MO, NH, NJ, OR, RI, WV, WY
Third Quartile	18.07 - 29.92	12	AK, CA, CT, FL, MA, MD, MT, NE, NM, NY, UT, WA
Second Quartile	10.23 - 18.06	12	AL, KS, KY, LA, MI, MN, NV, PA, TN, VA, VT, WI
Lowest Quartile	3.06 - 10.22	12	AZ, CO, GA, HI, IA, IN, MS, NC, OH, SC, SD, TX
Missing	Missing data	2	ND, OK

Table 11: RANKING OF STATES BASED ON EXPENDITURES FOR ENVIR. HEALTH AND ENVIR. REG. ACTIVITIES					
STATE	Ranking of Env. Reg. Spending	Ranking of Env. Hlth. Spending	3-Yr Avg. Env. Reg. Spending (Y)	3-Yr Avg Env Health Spending (X)	X / Y
ALABAMA	33	39	$12.46	$0.93	.07
ALASKA[1]	16	2	$20.01	$19.89	.99
ARIZONA	48	28	$3.06	$2.48	.81
ARKANSAS	6	20	$38.80	$3.86	.10
CALIFORNIA	23	3	$18.48	$12.01	.65
COLORADO	45	8	$7.18	$7.21	1.0
CONNECTICUT	14	21	$23.20	$3.58	.15
DELAWARE[1]	4	1	$47.06	$38.47	.82
FLORIDA	17	38	$20.00	$1.10	.05
GEORGIA[1]	47	26	$3.31	$2.91	.88
HAWAII	41	7	$7.75	$8.16	1.05
IDAHO	10	5	$31.66	$9.63	.30
ILLINOIS	3	17	$68.55	$4.49	.07
INDIANA	37	43	$10.07	$0.75	.07
IOWA	46	44	$4.35	$0.70	.16
KANSAS	30	27	$13.29	$2.54	.19
KENTUCKY	36	11	$10.23	$6.23	.61
LOUISIANA	27	15	$16.34	$4.96	.30
MAINE[4]	11	13	$30.10	$5.37	.18
MARYLAND	19	12	$19.73	$5.63	.29
MASS[1,3]	20	30	$19.59	$2.22	.11
MICHIGAN	35	23	$10.30	$3.49	.34
MINNESOTA	25	10	$17.36	$6.76	.39
MISSISSIPPI	42	22	$7.71	$3.52	.46
MISSOURI	9	25	$31.83	$3.08	.10

[1]missing one fiscal year of environmental health data
[2]missing two fiscal years of environmental health data
[3]missing one fiscal year of environmental regulatory data
[4]missing two fiscal years of environmental regulatory data

Table 11: RANKING OF STATES BASED ON EXPENDITURES FOR ENVIR. HEALTH AND ENVIR. REG. ACTIVITIES

STATE	Ranking of Env. Reg. Spending	Ranking of Env. Hlth. Spending	3-Yr Avg. Env. Reg. Spending (Y)	3-Yr Avg Env Health Spending (X)	X / Y
MONTANA	21	4	$19.16	$11.30	.59
NEBRASKA[1]	13	31	$25.50	$2.21	.09
NEVADA	34	33	$11.71	$2.10	.18
NEW HAMPSHIRE	7	18	$33.40	$4.02	.12
NEW JERSEY[4]	12	40	$29.93	$0.87	.03
NEW MEXICO	24	14	$18.07	$5.28	.29
NEW YORK[2,3]	22	45	$18.57	$0.27	.01
N. CAROLINA[1]	40	34	$8.08	$1.56	.19
N. DAKOTA	not available	not available	not available	not available	
OHIO	39	41	$8.46	$0.79	.09
OKLAHOMA	not available	not available	not available	not available	
OREGON	5	9	$40.27	$7.00	.17
PENNSYLVANIA	31	36	$13.16	$1.30	.10
RHODE ISLAND	8	6	$32.45	$8.58	.26
S. CAROLINA	43	24	$7.69	$3.30	.43
S. DAKOTA	38	42	$9.54	$0.77	.08
TENNESSEE[3]	29	46	$15.29	$0.22	.01
TEXAS	44	not available	$7.23	not available	
UTAH	15	16	$21.48	$4.52	.21
VERMONT	26	29	$17.02	$2.25	.13
VIRGINIA	32	19	$13.06	$3.91	.30
WASHINGTON	18	32	$19.98	$2.13	.11
WEST VIRGINIA	1	35	$78.93	$1.38	.02
WISCONSIN	28	not available	$15.89	not available	
WYOMING[3]	2	37	$71.99	$1.19	.02

[1]missing one fiscal year of environmental health data
[2]missing two fiscal years of environmental health data
[3]missing one fiscal year of environmental regulatory data
[4]missing two fiscal years of environmental regulatory data

ing on health.

- **The disproportionately small amount of funding for public health activities can be traced to the regulatory focus of the federal environmental statutes.** These laws have driven the funding toward regulatory activities such as permitting, monitoring, and remediation, while failing to support the public health activities of epidemiology, surveillance, and education.

IV. DISCUSSION/CONCLUSION

The goal of this project was to develop a profile of state environmental health and protection services. While it was recognized from the start that this would not be an easy task, the complexity of state environmental infrastructure and the associated challenges of data collection could never have been anticipated. The complex "Web" which emerged from the investigation revealed a tremendous diversity of agencies on both the federal and state levels with major responsibilities in environmental protection.

This "Web" presented a considerable challenge for data collection **- no two states are organizationally alike.** In addition, there is no uniform reporting of information concerning organizational structure, programmatic activities, or budgets. Data collection was further confounded by the seemingly **constant organizational flux** at the state level. What we have reported today may literally be gone tomorrow. The dynamic nature of the states should be kept in mind when interpreting the findings. While the overall national trends are clear, the reader is cautioned against over-interpretation of information on individual states. This is particularly true concerning budget information. This report presents a cross-sectional view of the state infrastructure. More accurate tracking of state activities would require an ongoing effort to document organizational change.

The findings of this project could be interpreted by some as proof positive of the "environmental fragmentation" pointed out in The Future of Public Health. There are now only eight states in which the public health agency has the lead responsibility for environmental programs, and hundreds of state agencies with differing missions are implementing the national environmental laws. However, a more appropriate interpretation may be that the results are indicative of "environmental diversification". That is, the results portray a tremendous growth in environmental health and protection services which have evolved to include virtually all branches of federal and state government. While health departments may no longer have the lead for environmental regulatory programs, **the role of public health agencies in surveillance, epidemiology, and education is alive and well.**

This vast infrastructure has developed over the past two decades as a response to the enormous public concern for the environment. Although the national laws have molded an impressive bureaucracy with vast regulatory authorities, they have done little to bolster state capacities to address fundamental questions concerning human health and the environment. This lack of focus on human health is reflected in the disparity in spending between environmental regulatory activities and public health.

The budgetary analysis demonstrates the enormous financial commitment of the states to environmental health and protection-services. The total national state expenditure was estimated to exceed five and one half billion dollars annually, and continues to grow. Although there is wide variation from state to state, most of the money spent on environmental services is directed toward regulatory activities and not toward public health. Nationally, for the years 1992 through 1994, only twenty percent of the total budget for environmental health and protection was spent on environmental health activities. If natural resource expenditures are included, only 8 cents from every dollar spent is directed toward environmental health activities. In a number of states, the amount of funding committed to environmental health represents less than five percent of the total environmental regulatory spending.

Recently, there have been a number of bills introduced in the Congress to promote a comparative risk based approach to setting the nation's environmental priorities. These bills reflect growing concern about the spiraling costs of environmental regulations and call for improved approaches to measuring and comparing environmental health risks. The results of this project indicate that state environmental agencies may currently be ill equipped to undertake a health risk based approach to environmental protection. Only a small percentage of these agencies have the capacity to conduct epidemiological evaluations or carry out applied health risk assessment research. Implementing such an approach would **require** close cooperation between public health and environmental agencies, and **a national commitment to strengthening state capabilities to evaluate environmental health risks.**

This project has illustrated the changing face of environmental health and protection services. Public health agencies are no longer the focal point of the state infrastructure. Throughout the nation a growing multiplicity of agencies share responsibility for safeguarding the environment. With this change comes the recognition that the majority of environmental professionals do not work in traditional public health agencies. Most likely these workers have little or no training in the core public health sciences. New approaches to training and education are necessary to counteract "environmental fragmentation" and assure appropriate attention to the public health aspects of environmental issues. Schools of Public Health must recognize the multi-disciplinary nature of environmental protection and upgrade their curricula to meet contemporary needs. Similarly, continuing education efforts must go beyond traditional health agencies and reach out to all of the agencies which comprise the "Web".

Protection of the environment and the prevention of adverse health effects from environmental hazards continue to be important national goals. The success of our national policies depend upon the capacity of the states to implement them. This project has shown that the federal environmental laws have shaped a dynamic multi-billion dollar state infrastructure. Although the primary goal of these laws is the protection of public health, they have done little to develop the capacity of states to evaluate environmental health risks. Future environmental progress will depend upon an improved understanding of the relationship between human health and the environment. This will require a re-evaluation of the funding disparity between regulatory and public health activities; a commitment to improving the public health training of environmental professionals; and an improved cooperation between the many health and environmental agencies in the complex "Environmental Web" to assure that they do not lose sight of their fundamental mission -the protection of public health.

GLOSSARY OF ACRONYMS

ATSDR	Agency for Toxic Substances and Disease Registry; mandated under CERCLA to carry out health risk assessments at Superfund sites
CAA	Clean Air Act
CWA	Clean Water Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980; also known as "Superfund"
EN	Environment and Natural Resource model; states where the environmental and natural resource agency has the primary responsibility for implementation of environmental services
EPA	United States Environmental Protection Agency
EPC	Environmental Pollution Control model; defined in this report as a state whose environmental services are primarily administered by the state's leading pollution control agency
FDCA	Food, Drug, and Cosmetic Act
FEPRA	Federal Insecticide, Fungicide, and Rodenticide Act
HE/HEN	Health and Environment/Health, Environment, and Natural Resource model; states whose health department has the lead role in implementation of environmental services
HRSA	Health Resources and Services Administration
IOM	Institute of Medicine
MSHA	Mine Safety and Health Act
NEHA	National Environmental Health Association
OSHA	Occupational Safety and Health Act
RCRA	Resource Conservation and Recovery Act; Major federal legislation that deals with tracking of solid wastes in the U.S.
SARA	Superfund Amendments and Reauthorization Act; 1986 Reauthorization of CERCLA
SDWA	Safe Drinking Water Act
TSCA	Toxic Substance Control Act; major federal legislation which regulates the introduction of new chemical manufacture.

REFERENCES

1. Institute of Medicine. 1988. *The Future of Public Health.* National Academy Press: Washington, D.C.
2. United States Environmental Protection Agency. 1990. *Reducing Risk: Setting Priorities and Strategies/or Environmental Protection.* Washington, D.C.
3. United States Environmental Protection Agency. 1990. *Environmental Investments: The Cost of A Clean Environment.* An Annual Report of the Council of Economic Advisors. Washington, D.C.
4. Browner, Carol M. "Partners in Protecting the Public" in *The Washington Post.* May 29, 1994.
5. The Committee on the Future of Environmental Health. 1992. *The Future of Environmental Health.* National Environmental Health Association.
6. Ruane, Rosalie, ed. *State Executive Directories.* Nov'92 - Feb'93, Mar'93 - June'93, and July '93 - Oct '93. Washington, D.C.; Carrol Publishing Company.
7. Rabe, Barry G. 1986. *Fragmentation and Integration in State Environmental Management.* Conservation Foundation: Washington, D.C.
8. Gordon, Larry J. 1993. "The Future of Environmental Health and the Need for Public Health Leadership". National Environmental Health Association Annual Meeting, Orlando, Florida.
9. Public Health Foundation. 1991. *Public Health Agencies: An Inventory of Programs and Block Grant Expenditures.* Public Health Foundation: Washington D.C.

APPENDIX I(A)
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APPENDIX I-B: LIST OF INFORMATION RECEIVED FROM STATES (Page 1)

STATE	EXEC.	AG.	ENV.	HLTH	LABOR	BUDGET DATA SOURCES	OTHER DATA SOURCES
Alabama			X			93-94 EXEC. BUDGET REPORT	ADPH Finance Report; ADEM Environmental Update
Alaska	X			X		FY94 EXEC. BUDGET	ALASKA DEPT. OF ENV.CONS.12/92 GOALS AND SUMMARY OF PROGRAMS ALASKA'S HEALTH AND WELFARE ANNUAL REPORT 1993
Arizona	X	X	X	X	X	FY 93 APPROPRIATION REPORT	Arizona Capitol Times
Arkansas	X	X	X	X	X	1993 ANNUAL REPORT, DEPT OF LABOR	Arkansas Bienial Budget 1991-93-Dept Finance, Admin.
California	X	X		X	X	93-94 GOV.BUDGET SUMMARY	
Colorado	X	X			X	92-93 APPROP.RPT.& HLTH BUDGET	Annual Report 91-2 Dept of Ag; Ofc of Env. Approp. 88-93
Conn.	X	X	X	X	X	93-94 GOV.BUDGETY SUMMARY	
Delaware		X	x(air)	X		FY 93 RECOMMEND BUDGET FINANCIAL SUMMARY LETTER FROM DEPT OF HLTH AND SOC SVCS	Financial Summary Fiscal Year 1994
Florida	X	X		X		10YR SUMMARY OF APPROP.DATA 83-84--92-93 FAX - STATE DEPT OF HEALTH	
Georgia	X	X	X	X	X	FY 93 and FY 94 BUDGET REPORTS	Budget Report 92
Hawaii		X		X	X	FY 94 BUDGET SUMMARY	Dept of Hlth Annual Report; Dept of Ag. Annual Report 92
Idaho	X	X		X		FY 94 EXEC. BUDGET	Dept of Ag. 20th Annual Report (91-92); Exec.Budget Detail 92-9
Illinois						FY 92 STATE BUDGET DETAILS	Dept of Ag. 1991 Annual Report; Illinois EPA Progress Report 92 Annual Report 92; Dept of Labor Annual Report; EPA Four Year St
Indiana			X	X	X	FY 93 LIST OF APPROPRIATIONS FAX - DEPT OF CONS&ENV; PHONE CALL - DEPT OF HLTH	Indiana State Dept of Health 1992
Iowa	X	X	X	X	X	FY 92 COMPREHENSIVE ANNUAL REPORT FAX - DEPT OF PUBLIC HEALTH	
Kansas	X	X	X	X		FY94 BUDGET REPORT	The Agency (Excerpts for Ag, Human Resources, Hlth&Env.) FY92 The Governors Economic & Demographic Report
Kentucky	X	X	X			FY 93 ECONOMIC & DEMOGRAPHIC REPORT	Budget of the Commonwealth 92-94
Louisiana	X		X		X	FY 93 EXEC. BUDGET	Louisiana TRI 1991; DEQ Corporate Response Challenge 91.
Maine	X	X	X	X	X	FY92 ANNUAL REPORT; HEALTH SUMMARY BUDGET FOR 94-95 FAX - DEPT OF HUMAN SERVICES	
Maryland	X	X	X	X	X	FY 94 BUDGET HIGHLIGHTS	Fiscal Digest FY93
Mass	X	X	X	X	X		

APPENDIX I-B: LIST OF INFORMATION RECEIVED FROM STATES (page 2)

STATE	EXEC.	AG	ENV	HLTH	LABOR	BUDGET DATA SOURCES	OTHER DATA SOURCES
Michigan	X	X	X	X	X	FY94 & 95 EXEC. BUDGET	LABOR PROGRAM SUMMARY
Minnesota	X	X	X	X	X	FY95 EXEC. BUDGET; POLICY DIRECTIONS IN ENV. HLTH	1992; ENV. SVS PROJECT DRAFT 1993
Mississppi	X	X	X			FY 94 PROPOSED BUDGET	Dept of Ag. & Commerce 91-92 Annual Report
Missouri	X	X	X	X	X	FY92-FY94 IND.DEPT.BUDGETS FROM OFC OF ADMIN	FY94 BUDGET REQUEST FOR DNR; FY93 EXEC. BUDGET
Montana		X	X	X	X	94/95 EXEC. BUDGET	
Nebraska		X	X	X	X	1992 DEQ ANNUAL REPORT TO LEGISLATURE; HEALTH BUDGET INFORMATION OVER PHONE 5/20/93 DEPT OF LABOR BIENNUAL BUDGET 93-95; DEPT OF AG BIENNIUM BUDGET REQUEST FY 93-4, 94-5 FAX - DEPT OF ENVIR QUALITY	DOH PROGRAM SUMMARY AND FY93 BUDGET; A GUIDE TO THE NEBRASKA DEPT OF HEALTH; 93-94&94-95 BIENNUM BUDGET REQUEST DEPT OF AG.; STATE LABOR LAWS - FED OSHA
Nevada	X	X	X	X	X	FY 93-94 & 94-95 EXEC BUDGET IN BRIEF; FY 92 BIENNIAL REPORT; LTR FROM DEPT HUMAN RESOURCES; LTR FROM DEPT CONSERV & NAT RES	
New Hampshire	X	X	X	X	X	FY95 EXEC.BUDGET SUMMARY; GOVERNORS EXEC BUDGET	SUMARY FY95; CAPITOL BUDGET 93; COMPREHENSIVE ANNUAL FINANCIAL RE 1992; SUPPLEMENTAL BUDGETARY FINANCIAL DATA 1992
New Jersey	X		X	X	X	E.H.&LABOR SUMMARY REPORT&BUDGET DETAILS;	7/22/93 PUB.ENV.ED.IN NJ;NJPEP&E 92 ANNUAL REPORT; AN.RPT TO NJ
New Mexico	X					FY 94 BUDGET IN BRIEF & EXEC.BUDGET	
New York		X	X	X	X	FACT SHEETS; 93-94 EXEC BUDGET; FAX - DEPT OF HLTH	ANNUAL REPORT
No.Carolina	X	X		X	X	93-95 PERFORMANCE BUDGETS FOR HEALTH AND ENV.	PRIMER TO PERFORMANCE BUDGET 93-95
No. Dakota				X		93-95 BUDGET SUMMARY; 93-95 EXEC BUDGET FAX - DEPT OF HEALTH	DEPT OF HEALTH BIENNIAL REPORT 89-91
Ohio	X					DEPT BUDGET SUMMARIES; EXEC. BUDGET BRIEFING DOC. FY94-95; FAX - DEPT OF HEALTH	
Oklahoma	X	X	X	X	X	FY 91 COMPREHENSIVE ANNUAL FIN. REPORT	TRANSITION ACTIVITIES DIRECTED BY OEQAct
Oregon		X	X	X		SCHEDULE V-EXPENDITURES FROM EXEC. DEPT (FY89	-91,91-93,93-95); 6/93 DOH.R. SUMMARY;DEQ STRATEGIC PLAN PERMIT DOA BIENNIAL REPORT 91-93
Penn.		X	X	X	X	FY 94 EXEC. BUDGET	STATISTICAL SUMMARY 91-92 DEPT OF AG.
Rhode Island			X	X	X	FY94 BUDGET PROGRAM SUPPLEMENT	
So.Carolina	X	X		X	X	FY 94 BUDGET RECOMMENDATIONS	DEPT OF AG ANNUAL REPORT 91-92
So.Dakota	X	X	X	X	X	FY 94 GOV. BUDGET; FAX - DEPT OF HEALTH	

APPENDIX I-B: LIST OF INFORMATION RECEIVED FROM STATES (Page 3)

STATE	EXEC.	AG.	ENV.	HLTH	LABOR	BUDGET DATA SOURCES	OTHER DATA SOURCES
Tennessee	X	X	X	X	X	FY 94 BUDGET SUPPLEMENT; FAX - DEPT OF HEALTH	
Texas		X	X	X		TNRCC-REQUEST FOR LEGIS. APPROP. FY94&95	TACB-BIENNIAL REPORT 9/90-8/92; TACB BULLETIN NO.2-1993; ORG.CHART; TWC-1992 ANNUAL REPORT; ORG.CHART. ENV.&CONS. HLTH PROTECTION - DOH 2/93 PUBLICATION
Utah	X	X	X	X	X	FY93-94 APPROP.RPT;FY93 BUDGET SUMM.	STATE ORGANIZATION CHARTS
Vermont			X	X	X	BUDGET FOR LABOR AND DNR; FAX -	D OF HEALTH PROGRAM SUMMARY
Virginia	X					FY 93 EXEC. BUDGET	
Washington		X	X			93-95 GOVERNOR'S OPERATING BUDGET HIGHLIGHTS FAX - BUDGET SUMMARY DEPT OF HLTH & DEPT ECOLOGY	93-95 Governor's Capital Budget Summary DEPT. OF ECOLOGY BROCHURE AND TEL DIRECTORY
W.Virginia						FY 94 EXEC BUDGET; FAX - DEPT OF HEALTH	
Wisconsin		X	X	X	X	1992 ANNUAL FISCAL REPORT & APPENDIX; 93-95 BUDGETIN BRIEF; FY94&FY95 SUMMARY GOV'S BUDGET; 93-95 EXEC BUDGET; BUDGET SCHEDULE 93-94; MAY 93 DEPT OF AG.TRADE/CONSUMER PROTECTION-SUM.DEPT PROGRAMS	
Wyoming		X	X	X	X	1992 ANNUAL REPORT FOR DEPT. OF HEALTH 93-94 APPROP.&AUTHORIZATION FROM DEPT OF ADMIN	DIV. OF OCC.SAFETY & HLTH SUMMARY; DEQ FY92 ANNUAL REPORT DOA FY92 ANNUAL REPORT DOA FY92 ANNUAL REPORT'

PROGRAM LIST

State environmental health and protection programs were categorized into sixteen major types. Where available, programs were identified based on program names and program descriptions. Following are examples of state programs/names that were typically included under these broad categories:

Air Pollution Control
Ambient Air/Source Sampling Program
Air Quality Management
Air Permits
Air Resources Board
Mobile Sources
Stationary Sources
AirToxics

Asbestos
Asbestos Workers/Contractor License
Asbestos Abatement
Asbestos Programs
AHERA
Asbestos Control
Asbestos School Inspection
Asbestos Control and Licensing

Agency for Toxic Disease Registry Cooperative Agreements
ATSDR-Health Risk Assessment, Surveillance

Occupational Safety Health. Industrial Hygiene
Worker Health and Safety Programs
Health and Technical Services
Consultation/Training/Education
Occupational Disease Surveillance
Workplace Safety
Industrial Hygiene
Occupational Health

Solid and Hazardous Waste Management
RCRA Compliance
Solid Waste Management
Hazardous Waste Management
Permit/Compliance Programs

Water Pollution and Drinking Water Management
Permit/Compliance
UST
Water Quality Management
Aquifer Protection
Clean Water Programs

Drinking Water Quality

Environmental Epidemiology and Health Surveillance
Environmental Epidemiology
Health Data Assessments
Reproductive and Cancer Health
Assessment Air Toxicology and Epidemiology
Birth Defect Monitoring
Environmental Health Investigation Programs
Center for Health Statistics
Epidemiology Research center
Cancer Registry

Food Safety and Consumer Services
Seafood Inspection
Meat/Poultry and Dairy Programs
Food and Drug
Consumer Affairs (food sampling for pesticide residues)
Consumer Product Safety
Food and Consumer Safety
Food Safety
Safe Food Supply
Consumer Health Protection

Indoor Air Quality
Indoor Air Assessment
Indoor Air Consultation

Lead Screening and Abatement
Childhood Lead Poisoning
Lead Exposure Programs
Lead Poisoning Programs
Childhood Lead Screening

Pollution Prevention
Pollution Prevention
Recycling

Quantitative Risk Assessment
Health Risk Assessment
Toxicology
Risk Assessment

Radiation Health
Radiation Control Programs
Radiological Health
Rocky Flat Program
Noise/Radiation
Radiation

Industrial Radiation control

Radon
Indoor Radon
Radon
Radon Activity Coordination
Environmental Radiation

Sanitation
Environmental Sanitation Vector Control Sanitation

Toxic Substance Related Programs
Pesticide Program
Environmental Monitoring and Pesticide Management
Medical Toxicology
Toxic Substance Evaluation
PCBs
PCBs Inspection
Pesticide Exposure Evaluation
Miscellaneous Toxic and Hazardous Substances
Chromium Operations

APPENDIX I (D)
LEGISLATIVE SUMMARIES

- Comprehensive Environmental Response, Compensation and Liability Act and the Superfund Amendments and Reauthorization Act
- Clean Air Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Occupational Safety and Health Act
- The Safe Drinking Water Act
- Toxic Substance Control Act

Federal & State Relationship:

THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT and THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT

Introduction

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was enacted in order to provide funding for the hazardous waste dump site dilemma. In broad terms, CERCLA's scheme consists of identification of particularly menacing hazardous waste dump sites, characterization of the sites' wastes, determination of the nature and extent of environmental releases from the sites, and development of cleanup techniques and plans. The federal government has several options under the Act in order to ensure recovery of expended monies. The federal government can assign liability for the waster an those deemed culpable can assume cleanup responsibilities. However, if the federal government initiates cleanup on its own then it can recover such costs from those judged responsible for the waste.

Summary of Key Provisions

§101 Definitions: Provides definitions of pertinent terms used throughout CERCLA including "hazardous substance" (§101(14)) and "release" (§101(22)).

§103 Notification Requirements: Provides for reporting of releases of hazardous substances to the National Response Center.

§104 Response Authorities: Provides authorization to the President to undertake removals or remediations consistent with the National Contingency Plan to respond to actual or potential releases of hazardous substances.

§105 National Contingency plan (NCP)' Requires establishment of the National Priorities List (NPL) of facilities presenting the greatest danger to health, welfare or the environment based on the hazard ranking system (HRS) and revision of the NCP.

§106 Abatement Actions: Authorizes issuance of administrative orders requiring the abatement of actual or potential releases that may create imminent and substantial endangennent to health, welfare or the environment.

§107 Liability- Provides liability of (i) current owners and operators of facilities where hazardous waste substances are released or threatened to be released; (ii) owners and operators of facilities at the time the substances were disposed; (iii) persons who arranged for transportation or disposal or treatment of such substances; and (iv) persons who accepted such substances for transport for disposal

or treatment for (A) all costs of removal or remedial action incurred by the federal government not inconsistent with the NCP; (B) any other necessary costs of response incurred by any person consistent with the NCP; (C) damages for injury to natural resources; and (D) costs of health assessments.

Superfund: Authorizes $8.5 billion Superfund for 1986-1991 and $5.1 billion Superfund for 1991-1996.

§116 Cleanup Schedules: Establishes schedules for evaluating and listing sites on the NPL, commencement of remedial investigation and feasibility studies (RI/FS) and commencement of remedial action.

§121 Cleanup Standards: Establishes preference for remedial actions that permanently and significantly reduce the volume, toxicity or mobility of hazardous substances. Requires selection of remedial actions that are protective of health and environment and are cost effective, using permanent solutions to the maximum extent practicable. Requires the cleanups to attain a level of clean based on any "legally applicable or relevant and appropriate standard, requirement, criteria or limitation" contained under any federal environmental law or more stringent state law.

§122 Settlements: Sets standards for settlements with potentially responsible parties (PRPs).

Federal-State Relationship

The National Contingency Plan (NCP) requires the State to play an integral role in the Superfund scheme.

The affected State, before any remediation is taken, is required to: (1) enter into a contract or cooperative agreement with the federal government specifying each parties' responsibilities for the cleanup and (2) provide assurances that the State will share int he cost of remedial action, provide an off-site hazardous waste disposal facility, and if necessary, provide all future operation and maintenance of the remedial action. *See* CERCLA §104(c) (3).

CERCLA also grants states other specific rights and responsibilities. The federal government must consult with the affected State before selecting appropriate remedial action. CERCLA § 104 (c) (2). The State may submit sites for inclusion on the NPL. CERCLA fl05(a) (8) (B). Additionally, the State can act as a trustee for damage to natural resources within the affected State and an independent federal cause of action to recover for such damages is created. CERCLA §107(f).

Health Provisions

Section 104(i) establishes the Agency for Toxic Substances and Disease Registry (ATSDR) within the Public Health Service. ATSDR activities include epidemiologic and laboratory studies, health assessments, preparation of toxicologic profiles, development and maintenance of a registry of persons exposed to hazardous substances to allow long-term health studies, and diagnostic services not otherwise available to determine whether persons in populations exposed to hazardous substances in connection with a release or a suspected release are suffering from long-latency diseases. Additionally, ATSDR is to create a list, in order of priority, of at least 100 hazardous substances which are most commonly found at NPL facilities and are determined to pose the most significant potential threat to human health.

Funding

CERCLA provides a liability approach for controlling waste management. The liability scheme provides a means for financing the cleanup of environmental damage and also creates an incentive for investment in prevention in order to avoid future liability.

Sections 11 l(a) and 11 l(p) (1) of CERCLA authorizes appropriations for more than $8.5 billion for 1986 to 1991 and more than $5.1 billion for 1991 to 1996 for the Superfund which is to be used for response costs.

For the activities of the Agency for Toxic Substances and Disease Registry (ATSDR) as described in §104(i), §lll(m) authorizes not less than $50 million for 1987 and 1988, not less than $55 million for 1989, and not less than $60 million for 1990 to 1994.

Conclusion

The federal government oversees the Superfund program and demands State cooperation. Remedial action progress is hampered by insufficient funding of states' hazardous substance response funds. Affected states are unable to cover their shared response costs for their NPL sites.

Federal & State Relationship:
THE CLEAN AIR ACT

Introduction

Air pollution is a health problem which does not recognize local, State or Federal boundaries. The Clean Air Act and its 1990 Amendments (CAA or the Act) were enacted in order to create a uniform national program to prevent air pollution "so as to promote public health and welfare and the productive capacity of its population!;.]" CAA § 101(b)(l). The Act itself is highly complex and approaches air pollution prevention from several varying directions. The Federal - State relationship is delineated in § 110 which establishes the State Implementation Plan (SIP) scheme. The health priorities and the means to achieve those priorities are determined on the national level and the States then are given responsibility for implementation of the nationally determined air pollution prevention program. A brief summary of the key provisions of the Act are contained below followed by a more detailed description of the SIP process.

Summary of Key CAA Provisions

§108: The Environmental Protection Agency (EPA) is required to identify criteria air pollutants which "may reasonably be anticipated to endanger public health or welfare."

§109: EPA is required to adopt nationally uniform ambient air quality standards (NAAQS) for criteria air pollutants. The primary standards are set at a level to protect public health and the secondary standards are set at a level to protect public-welfare" with an adequate margin of safety and reflecting effects on sensitive populations." Cost is not a factor in these determinations.

§110: States are required to develop and submit to EPA for approval State Implementation Plans (SIPs) specifying measures to assure that the air quality within their State meets the NAAQS. *See infra* for further discussion.

§111: EPA is required to establish New Source Performance Standards (NSPS) specifying nationally uniform, technology-based standards for major new stationary sources or air pollution.

§112: To reduce hazardous air pollutants, EPA is required to establish technology-based standards reflecting "maximum achievable control technology" (MACT) for major sources by designated industrial categories. Standards are required for an initial list of 189 pollutants and are required for substances that cause "adverse human health effects." Additional regulation is possible if it is found to be necessary to protect human health with an "ample margin of safety."

Part C §§(l60-169A): Regions in compliance with the NAAQS are subject to regulations in order to Prevent Significant Deterioration (PSD) of air quality, limiting the total amount of additional pollution allowable. The purpose of the PSD provision is to avoid forcing new emission sources it pristine areas, leaving no region unpolluted. All major new sources in PSD areas must obtain a permit, use Best Available Control Technology (BACT) and show that the added pollution will not exceed the allowable increment for that region. Additional requirements may be specified for new and existing sources that impair visibility in national parks or other federal lands where the Secretary of the Interior finds that visibility has a substantial value. Sources which commenced operation after August 7, 1962 may have to install Best Available Retrofit Technology (BART). In the 1990 Amendments, additional research was authorized with a study process for the Grand Canyon National Park and other areas where EPA finds interstate transport of air pollutants is contributing to visibility impairment.

PartD §§H71-178): Regions may be incompliance with some but not all of the NAAQS. SIPs in nonattainment areas are required to mandate the use of Reasonably Available Control a Technology (RACT) for all existing sources and must prohibit the construction and operation of new or modified major stationary sources without a permit. Additionally, these permits must comply with the Lowest Achievable Emission Rate (LAER) and it must be shown that its additional emissions will **be** more than offset by reductions from another source within the region.

Title II (S§§202-216): EPA is required to establish nationally uniform emission standards for automobiles and light trucks that must be met by manufacturers within strict deadlines. California was given flexibility to impose more stringent standards. Additionally, EPA was given the authority to regulate fuels and fuel additives.

Title IV: EPA is to create a system of marketable allowances for sulfur dioxide emissions from power plants and major industrial sources to reduce acid precipitation.

Title V: Permits for stationary sources arc required with State administration and Federal oversight. The permit regulations apply to new sources, to any major sources under any provision of the Act, "affected sources" under the acid precipitation provisions, and sources subject to new air toxins provisions. The permits must set forth emission limits, monitoring requirements and any other conditions that arc applicable to the source. Permits may shield a source from conditions that are not so included which may have important enforcement consequences.

S304: Citizen suits are authorized against violators of emissions standards and against the EPA Administrator for failure to perform nondiscrctionary duties.

§307: Judicial review of nationally applicable EPA actions **is** located exclusively in the U.S. Court of Appeals for the District of Columbia.

Primary Enforcement Responsibility: SIPs

Each State prepares a State Implementation Plan (SIP) for achieving compliance with ambient air quality standards in each air quality region contained in that State. The State creates the SIP under the State Administrative Procedure Act, probably with public notice and opportunity for a hearing. The SIP, in general, should include:

(1) emission limitations for stationary sources;
(2) transportation control plans to cut pollution from cars and trucks;
(3) Land use control plans to ensure that the citing of new facilities does not threaten attainment;
(4) "other measures" that the State deems necessary; and,
(5) necessary source ambient monitoring, enforcement, and staffing.

The SIP is submitted to EPA for review and approval. Approval is based on the requirements that are specified in §110 of the CAA. EPA promulgates the SIP as a federal rule according to the rulemaking process outlined in the federal Administrative Procedure Act, requiring public notice and opportunity for a hearing. This procedure allows EPA to enforce the SIP directly in the approved State. If the SIP is deficient in some manner, EPA is required to promulgate necessary modifications. Unlike the Federal/State relationship under the Safe Drinking Water Act, primary responsibility for implementing the SIP always is retained by the State.

Conclusion

Although the State is given flexibility in creation of its SIP, there probably is considerable federal pressure for national uniformity in all of the State Implementation Plans. All references in the statute to State involvement is either directed at the State, political subdivision thereof, Governor of the State, the State agency, State (regulatory) authority, or State air pollution control agencies. However, information regarding processes, procedures and methods to reduce or control pollutants in transportation shall be made "available to appropriate Federal, State, and local environmental and transportation agencies[.]" *See* CAA §108(f)(l), 42 U.S.C.A. §7408(f)(l).

Federal & State Relationship:
THE FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

Introduction

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is a risk-benefit balancing statute which governs regulation of pesticides. The Act prohibits the marketing of pesticides which are not registered with the Environmental Protection Agency (EPA). Before a new pesticide may be registered with EPA, EPA must review information about the risks and benefits of the product. FIFRA was amended in 1988 to address the problems of the slow pace of reregistration and cancellation proceedings of existing products and the enforcement disincentive created by the requirement that EPA reimburse pesticide manufacturers and users for the costs of canceled or suspended products. The amendments provided a schedule for EPA to complete reregistration of 600 older active ingredients and require manufacturers to pay fees to help finance the reregistration process. Additionally, only end users of canceled products will be reimbursed and manufacturers of canceled pesticides must assume responsibility for its storage and disposal.

Summary of Key Provisions

§2 Definitions: Provides definitions of pertinent terms used throughout FIFRA including "active ingredient" (§2(a)), "pesticide" (§2(u)) and "unreasonable adverse effects on the environment" (§2 (b)).

§3 Registration of Pesticides: Requires registration with EPA of all pesticides prior to marketing. Establishes procedures for pesticide classification and registration. These procedures include a data requirement of submission of tests and results which the application is based or citation to data in public literature or previously submitted to EPA. Establishes criteria for EPA approval of registration. §(c) (5).

§4 Reregistration of a Registered Pesticide: Requires reregistration of approximately 600 older active ingredients, pesticides registered before 11/1/84 unless there is no outstanding data requirement and meet the present FIFRA requirements. Permits EPA to charge the manufacturers a fee for this process. §(i).

§5 Experimental Use Permit: Authorizes issuance of temporary permits in order for manufacturers to collect necessary data needed for registration. EPA may specify studies to be conducted to determine whether use of a new pesticide may cause unreasonable adverse effects on the environment.

§Administrative Review and Suspension: Registration lapses after 5 years and registrant must request a continuance. Such request must include any additional information about the pesticide's unreasonable adverse effects on the environment. Specifies procedures ^or EPA to cancel a pesticide registration if FTFRA requirements are not met or the pesticide generally causes an unreasonable adverse effect on the environment. EPA must consider the impact of the proposed action on production and prices of agricultural commodities, retail food prices, and otherwise on the agricultural commodities, retail food prices, and otherwise on the agricultural economy. §6(b).

§7 Registration of Establishments: Any producer of an active ingredient or pesticide subject to FIFRA must register with the EPA and must submit yearly reports on types and amounts of pesticide or active ingredient currently producing, produced during last year, and sold or distributed during last year.

§8 Recordkeeping: Authorizes EPA to require producers, registrants, and applicants to maintain appropriate records concerning their operations and pesticides and devices produced for effective enforcement of FIFRA.

§11 Applicators and Use of Restricted Use Pesticides: Any applicator of restricted use pesticides must be certified by either an EPA or an EPA-approved State applicator certification program. A State must submit to EPA for approval a State applicator certification plan if the State wants to certify applicators. §11 (a) (2).

§13 EPA Enforcement Options: Authorizes EPA to issue either a stop sale, use, removal, or seizure order for various FIFRA violations.

§17 Imports and Exports: Pesticides intended solely for export must only meet FIFRA's re-

quirements concerning proper storage, disposal, and transportation. The manufacturer must notify the importing country if the pesticide cannot be registered in the United States.

§18 Exemption of Federal and State Agencies: Authorizes exemption of any Federal or State agency from any FIFRA provision if EPA determines in consultation with the Secretary of Agriculture and the State Governor that emergency conditions necessitate such an exemption.

§19 Storage. Disposal. Transportation and Recall: Authorizes EPA to required registrants and applicants to submit plans for safe storage and disposal of excess pesticide and provide evidence of sufficient financial and other resources to carry out a recall plan and provide for disposition of the pesticide in case of suspension or cancellation.

S20 Research and Monitoring: Requires that EPA conduct research as necessary to carry out the provisions of FIFRA, including a National Monitoring Plan. §20(b), (c).

§22 Delegation and Cooperation: To ensure national uniformity in FIFRA regulations, EPA may cooperate with the Department of Agriculture and any other appropriate Federal or State agency in carrying out FIFRA.

§23 State Cooperation. Aid. and Training: EPA may enter into cooperative agreements with States in order to aid the State in State enforcement of FIFRA.

§25 State Primary Enforcement Responsibility: A State may apply for primary enforcement responsibility if the State can show that it has adopted adequate pesticide laws and regulations, adopted and is implementing adequate enforcement procedures, and will keep such records and make reports to demonstrate compliance with the primacy criteria. In the event the State does not have primacy, EPA has primary enforcement responsibility within that State.

Federal-State Relationship

The Federal State relationship is embodied in several different provisions of FEFRA. The state primary enforcement responsibility criteria as seen in other major federal environmental statutes also is applicable under different FEFRA provisions. Other FIFRA provisions require EPA and State cooperation.

Section 3(c) (5), the FIFRA provision outlining the criteria for EPA to evaluate registration applications, grants a presumption that EPA will waive the data requirement pertaining to efficacy of the pesticide within a State if that State has found the pesticide to be efficacious.

Section 5(f) permits EPA to authorize a State to issue experimental use permits if that State meets the same requirements as the State primary enforcement responsibility plan.

Section ll(a) (2), pertaining to restricted use pesticides and applicators, permits States with an appropriate State certification plan, to conduct a program of certification of pesticide applicators. Such plans are subject to EPA approval and must demonstrate that a State agency is designated to administer the program, that the agency has the legal authority and appropriate personnel to carry out the plan, assurance that adequate funds will be devoted to support the program, provides that the agency will report to EPA in order for EPA to oversee the program, and the program conforms to federal standards.

Section 18 allows EPA to exempt a State agency from FIFRA provisions in emergency circumstances.

EPA is to conduct its pesticide container study and its National Monitoring Plan in cooperation with State agencies. *See* §19(g) (1) (B) and 20(b) - (c), respectively.

Section 23 allows EPA to enter into a cooperative agreement with a State in order to: (1) allow the State to aid in enforcement through use of State personnel or facilities, to train State personnel or facilities, to train State personnel to aid in enforcement, and to assist the State in enforcement through grants-in-aid; (2) to assist the State in developing and administering a State program to train and certify applicators or to encourage the training of certified applicators; and, (3) to use State services to inform and educate pesticide users about FIFRA regulations.

Section 24 allows States to regulate the sale and use of federally-registered pesticides to the extent not prohibited by FIFRA. Additionally, no State can impose different or additional labeling or packaging requirements from the requirements of FIFRA. Additional uses may approved so long as not previously denied by EPA. A State cannot issue a registration for a food or feed pesticide.

pesticide's unreasonable adverse effects on the environment. Specifies procedures ^or EPA to

cancel a pesticide registration if FTFRA requirements are not met or the pesticide generally causes an unreasonable adverse effect on the environment. EPA must consider the impact of the proposed action on production and prices of agricultural commodities, retail food prices, and otherwise on the agricultural commodities, retail food prices, and otherwise on the agricultural economy. §6(b).

§7 Registration of Establishments: Any producer of an active ingredient or pesticide subject to FIFRA must register with the EPA and must submit yearly reports on types and amounts of pesticide or active ingredient currently producing, produced during last year, and sold or distributed during last year.

§8 Recordkeeping: Authorizes EPA to require producers, registrants, and applicants to maintain appropriate records concerning their operations and pesticides and devices produced for effective enforcement of FIFRA.

§11 Applicators and Use of Restricted Use Pesticides: Any applicator of restricted use pesticides must be certified by either an EPA or an EPA-approved State applicator certification program. A State must submit to EPA for approval a State applicator certification plan if the State wants to certify applicators. §11 (a) (2).

§13 EPA Enforcement Options: Authorizes EPA to issue either a stop sale, use, removal, or seizure order for various FIFRA violations.

§17 Imports and Exports: Pesticides intended solely for export must only meet FIFRA's requirements concerning proper storage, disposal, and transportation. The manufacturer must notify the importing country if the pesticide cannot be registered in the United States.

§18 Exemption of Federal and State Agencies: Authorizes exemption of any Federal or State agency from any FIFRA provision if EPA determines in consultation with the Secretary of Agriculture and the State Governor that emergency conditions necessitate such an exemption.

§19 Storage. Disposal. Transportation and Recall: Authorizes EPA to required registrants and applicants to submit plans for safe storage and disposal of excess pesticide and provide evidence of sufficient financial and other resources to carry out a recall plan and provide for disposition of the pesticide in case of suspension or cancellation.

§20 Research and Monitoring: Requires that EPA conduct research as necessary to carry out the provisions of FIFRA, including a National Monitoring Plan. §20(b), (c).

§22 Delegation and Cooperation: To ensure national uniformity in FIFRA regulations, EPA may cooperate with the Department of Agriculture and any other appropriate Federal or State agency in carrying out FIFRA.

§23 State Cooperation. Aid. and Training: EPA may enter into cooperative agreements with States in order to aid the State in State enforcement of FIFRA.

Section 26 outlines the requirements for States to gain primary enforcement responsibility for pesticide use violations. The State must submit to EPA for approval a plan which demonstrates that the State has adopted adequate pesticide laws and regulations, has adopted and is implementing adequate procedures for enforcement of the State Laws and the State will report to EPA in order for EPA to oversee the plan. If a State already has entered into a cooperative agreement with EPA for enforcement under section 23 than the State has primacy. If EPA notifies a primacy State of a FIFRA violation and that State fails to take proper action within 30 days then EPA can take action against the violator and EPA can rescind in whole or in part the State's primacy. *See* §27.

Health Provisions

FIFRA is a risk-benefit balancing statute: "unreasonable adverse effects on the environment... means any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide." §2(bb).

Registration applicants must show through tests and results or citation to data in public literature that its pesticide will perform its intended function without any unreasonable adverse effects on the environment. *See* §§3(c) (1) (D), 3(c) (5) (C), (D), and 4(e) (A) - (H). EPA may initiate proceedings to suspend or cancel a registration if it believes that a pesticide generally causes unreasonable adverse effects on the environment. §6(b) - (c). Additionally, registrants must inform EPA any time after registration of any additional factual information concerning unreasonable adverse effects on the environ-

ment. §6(a).

EPA has the authority to specify studies to be conducted in order to determine whether a new chemical or combination of chemicals might cause unreasonable adverse effects on the environment when issuing an experimental use permit. §5(d).

EPA is to conduct a pesticide container study in order to study options concerning reuse of containers, limiting pesticide residue from containers and use of bulk facilities. §19(g).

EPA must create a National Monitoring Plan. §20(b). Additionally, EPA is to monitor air, soil, water, man, plants, and animals for incidental pesticide exposure and their relationship to human and environmental effects. §20(c).

EPA, in coordination and cooperation with the Department of Agriculture, is to develop and improve the safe use and effectiveness of methods to combat and control pests of agricultural products, including integrated pest management. §28.

Funding

EPA is authorized to charge fees for the reregistration of pesticides that existed prior to 11/1/84. *See* §4(i). Registrants are to pay collectively, apportioned by market share, fees ranging from $50,000 to $150,000 for the reregistration of pesticides. Only $2,000,000 per year of the fund created by these fees can be used for EPA to obtain sufficient personnel and resources to assure expedited processing and review of the reregistration applications.

Except for cooperative agreements with States for enforcement of FIFRA and to train and certify applicators, the following amounts are authorized for appropriations: $83,000,000 for 1989 with no more than $13,735,500 going for research; $95,000,000 for 1990 with no more than $14,343,600 going for research; and $95,000,000 for 1991 with **no** more than $14,978,200 going for research. §31.

Conclusion

FIFRA measures unreasonable risk to man or the environment from a pesticide in terms of the economic, social, and environmental costs and benefits of pesticide use. Additionally, FIFRA employs the State primary enforcement responsibility structure, similar to the other major federal environmental laws, in order to implement applicator certification programs and FIFRA regulation enforcement. This Federal-State relationship places a large burden for enforcement on a State if it chooses to apply for primacy.

Federal & State Relationship:

THE OCCUPATIONAL SAFETY AND HEALTH ACT

Introduction

The Occupational Safety and Health Act of 1970 (OSHA) is a feasibility-limited approach to risk management. The two components of OSHA are technological and economic. The Act requires protection against certain health risks to the extent feasible. The current state of technology is a significant determinant in ascertaining the limits of feasibility. Technology is required to the point where it becomes impractical to reduce emissions any further. Therefore, the level of control is based on the capabilities of technology instead of the degree of risk or the results of risk-benefit balancing. Risk is used as the threshold criteria in determining the necessity of regulation.

The Occupational Safety and Health Administration need not rely upon technology that is in wide-use within an industry. The Administration can force technology. In United Steelworkers of America V.Marshall. §647 F.2d 1198 (D.C. Cir. 1980), cert. denied §453 U.S. 913 1981), the United States Court of Appeals for the District of Columbia ruled that the Administration must show "a reasonable possibility that the typical firm will be able to develop and install engineering and work practice controls that can meet the PEL [Permissible Exposure Limit] in most of its operations." §647 F.2d at 1272. This burden can be met either through technology already in use or technology that is conceived and "reasonably capable of experimental refinement and considered feasible even if the most technologically advanced plants only have been able to achieve the PEL in some operations for some of the time. Id. at §1265. This standard has been modified to allow less stringent standards for smaller firms that may find it too expensive to comply with the PEL despite the possible effect of encouragement of formation of smaller firms.

Summary of Key Provisions

§652 Definitions: Provides definitions of pertinent terms used throughout OSHA including "occupational safety and health standard" (§652(8)).

§654 Duties **of** Employers and Employees: Each employer shall provide to each of its employees employment and a place of employment which is "free from recognized hazards that arc causing or likely to cause death or serious physical harm." §654(a)(l).

All citations are to 29 United States Code Annotated.

$655 Standards: EPA shall regulate toxic materials or harmful physical agents to adequately assure, to the extent feasible based on the best available evidence, "that no employee will suffer material impairment of health or functional capacity" even if that employee has regular exposure to the hazard over his working life.

§656 Administration: Establishes a National Advisory Committee on Occupational Safety and Health, consisting of 12 members drawn from management, labor, occupational safety and occupational health professionals, to advise, consult and make recommendations to the Secretary of Health and Human Services on matters relating to OSHA. Allows creation of advisory committees to assist with standard-setting. Advisory committees are to consist of Health and Human Services designees, and an equal number of persons representing employers' viewpoint and workers' viewpoint as well as 1 or more representative of the health and safety agencies of the States.

§657 Inspections. Investigation & Recordkeeping: Each employer is required to maintain records of his activities relating to OSHA for the purposes of enforcement and for development of information regarding causes and prevention of occupational accidents and illnesses.

§667 State Jurisdiction and Plans: A State may apply for primary enforcement responsibility if the State can show that it has adopted adequate occupational safety and health laws and regulations, adopted and is implementing adequate enforcement procedures, and keeps such records and makes reports to demonstrate compliance with the primacy criteria. In the event the State does not have primacy, the Occupational Safety and Health administration has primary enforcement responsibility within that State.

Federal-State Relationship

Section 667 outlines the requirements for States to gain primary enforcement responsibility for occupational health and safety regulation violations. The State must submit to the Occupational Safety and Health Administration for approval a plan which demonstrates that the State has adequate health and safety laws and regulations, has adopted and is implementing adequate procedures for enforcement including right of entry and inspections, and the State will report to the Occupational Safety and Health Administration as required. Assurances of adequate legal authority and adequate funding must also be given. Additionally, the State must establish and maintain an effective and comprehensive occupational safety and health program, equivalent to the approved plan, applicable to all public employees of the State and its political subdivisions.

Section 656 permits the creation of advisory committees consisting of Health and Human Services designees, and an equal number of persons representing employers' viewpoint and workers* viewpoint as well as 1 or more representatives of the heath and safety agencies of the States. §656(b). Therefore, at least one State representative is assisting the Occupational Safety and Health Administration with each standard-setting issue under OSHA.

Health Provisions

The Occupational Safety and Health act of 1970 (OSHA) is a feasibility-limited approach to risk management. The two components of OSHA are technological and economic. In establishing standards for toxic materials or harmful physical agents, the Occupational Safety and Health Administration:

> *. . . shall set the standard which most adequately assumes, to the extent feasible, on the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.* §655(b)(5).

These standards arc to be based upon research, demonstrations, experiments, latest available scientific data in the field, feasibility of the standards, and experience garnered under OSHA and other health and safety laws. See supra Introduction.

Variances are allowed if the employer is participating in an experiment approved by the Occupational Safety and Health Administration or the Department of Health and Human Services that is designed to demonstrate or validate new and improved technology to safeguard health and safety of workers. §455 (6)(C).

Labels or other warnings shall be used to apprise employees to all hazards to which they are exposed including relevant symptoms and appropriate emergency treatment as well as appropriate precautionary measures. Precautionary measures may include protective equipment and control **or** technological procedures. Additionally, the employer must monitor or measure employee exposure as necessary for the protection of the employee. §655(b)(7).

Medical examinations of employees may be required at cost to the employer in order to most effectively determine whether health of the employees is adversely affected by exposure to the hazard in question. To the extent that the examination is in the nature of research, it may be furnished at the expense of the Department of Health and Human Services. §644(b)(7).

The Occupational Safety and Health Administration is authorized to provide emergency temporary standards when it is concluded that employees are in grave danger from exposure to substances or agents determined to be toxic or physically harmful or from new hazards and the emergency standard is necessary to protect employees from such danger. §455(c)(l).

Additionally, priority for standard setting shall be established with consideration of the urgency of need for mandatory safety and health standards for particular industries, trades, crafts, occupations, businesses, workplaces or work environments. §655(g)

Employers also shall be required to maintain records in order to facilitate enforcement of OSHA and in order to develop information regarding causes and prevention of occupational accidents and illnesses, §657(c) (1), including accurate records and periodic reporting of work-related deaths, inju-

ries, or illnesses. For example, medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job need to be reported. §657(c) (2). Additionally, the employer must maintain adequate records of employee exposure to potentially toxic materials or harmful physical agents as required by OSHA. Employees must be notified of exposure levels if they so request or if the exposure levels exceed OSHA regulation.

Funding

No funding mechanisms are included in OSHA.

Conclusion

OSHA relies on the same federal-state relationship as seen under other federal environmental Laws - primary enforcement responsibility. Under OSHA's primacy structure, the State must also assure that the federal regulations will apply equally to State employees and its political subdivisions. Additionally, States' needs are voiced during the standard-setting phase as at lease one State Health and Safety Agency representative must be a part of a standard-setting advisory committee. *See* §656.

Federal & State Relationship:
THE SAFE DRINKING WATER ACT

Introduction

The goal of the Safe Drinking Water Act (SDWA) is to protect human health through the assurance of the quality of drinking water and through the preservation of underground sources of drinking water. Several different approaches are used to achieve this result: (1) requirement of maximum contaminant levels (MCLs) in drinking water; (2) prohibition on use of lead pipes, solder, or flux in plumbing; (3) implementation of underground injection control (UIC) programs; (4) implementation of the sole source aquifer demonstration program; (5) establishment of the wellhead protection areas program; (6) power for the Environmental Protection Agency (EPA) to respond to emergencies; (7) establishment of training programs; and, (8) technical and financial assistance to those affected by this Act.

Primary Enforcement Responsibility

Through the concept of primary enforcement responsibility (primacy), the SDWA creates an intricate Federal/State interaction for implementation and enforcement of the Act's various provisions. The entity with primacy is responsible for implementing and enforcing the SDWA within a State. Each State must apply to the EPA for primacy. The criteria for gaining primary is established by federal regulation as determined by EPA. EPA retains primacy if the State does not meet the criteria. Additionally, dual primacy is permitted. A State can qualify for primacy for several components of the SDWA but not all of the Act. EPA then is responsible for implementing and enforcing the components of the SDWA for which the State does not have primacy. The extent of power associated with State primacy is questionable. If a State does not address a SDWA violation within 30 days of notification by EPA, then EPA can take direct enforcement action against the violator through an administrative order or civil action. *See* SDWA §300g-3(a)(l)(B), 42 U.S.C.A. §1414(a)(l)(B) (national drinking water regulations) and SDWA §1423(a)(l). 42 U.S.C.A. §300h-2(a)(l) (UIC program).

Primacy is required separately for the national drinking water regulations and the UIC program. For primacy over the national drinking water regulations, SDWA §1412,42 U.S.C.A. §300g-l, a State must: (1) adopt drinking water regulations no less stringent than the federal requirements; (2) adopt and implement adequate procedures for the enforcement of the State regulations including EPA required monitoring and inspection; (3) keep records and reports as required by EPA to achieve (1) and (2); and, (4)adopt and implement an adequate plan for provision of safe water in emergencies. SDWA §1413(a), 42 U.S.C.A. §300g-2. The UIC program, SDWA §1421, 42 U.S.C.A. §300h, has separate primacy requirements. The State must apply for primacy with a showing that: (1) it has adopted and will implement a UIC program which meets the federal requirements and (2) it keeps EPA required records and reports. SDWA §1422, 42 U.S.C.A. §300h-l. Under the UIC program there is specific proviso for EPA, to the extent feasible, to avoid unnecessary interruption of similar State programs already in existence. *See* SDWA §1421(3)(B), 42 U.S.C.A. §300h(3)(B).

The SDWA does not specifically mandate a particular State agency to implement and enforce the Act in order for a State to gain primacy. However, the Act does precisely mandate how the various provisions will be implemented and enforced by all States without consideration of the present individual State infrastructures.

Appropriations

Appropriations are mentioned in various parts of the SDWA. If a State does not enforce the lead free pipe requirements, the EPA can withhold up to five percent of federal funds that are made available under the public water systems supervision programs. *See* SDWA §1441(a), 42 U.S.C.A. §30Qj-2(a).

State governors can apply directly or jointly with an entity to EPA for certain areas to participate in the sole source aquifer demonstration program. SDWA §1427(c), 42 U.S.C.A. §300h-6(c).

After EPA enters into a cooperative agreement with the applicant, EPA can grant to the applicant on a matching basis 50 percent of the costs of implementing the plan and up to 50 percent of the costs of developing the plan - not to exceed $4,000,000 for any one aquifer in any one fiscal year. The SDWA authorized to be appropriated to carry out this program, no more than the following amounts:

Fiscal year	Amount (no more than)
1987	$10,000,000
1988	$15,000,000
1989	$17,500,000
1990	$17,500,000
1991	$17,500,000

See *SDWA §1427(n), 43 U.S.C.A. §300h-6(n).*

The Governor or governor's designee of each State must adopt and submit to the EPA a program to protect wellhead areas within the State. See SDWA §1428(a), 42 U.S.C.A. §300h-7(a). If the State program is approved, EPA will make grants for not less than 50 or more than 90 percent of the costs incurred by a State in developing and implementing each State wellhead protection program. For these grants, no more than the following amounts were authorized to be appropriated:

Fiscal year	Amount (no more than)
1987	$20,000,000
1988	$20,000,000
1989	$20,000,000
1990	$20,000,000
1991	$20,000,000

See SDWA §1428(k), 42 U.S.C.A. §300h-7(k).

Section 1442 of the Act, 42 U.S.C.A. Section 30QJ-1, allows EPA to conduct research, provide technical assistance, provide information, and assist in training of personnel. The following amounts were authorized to carry out this section (except for emergency assistance and research):

Fiscal year ending in:	Amount
1975	$15,000,000
1976	25,000,000
1977	35,000,000
1978	17,000,000
1979	17,000,000
1980	21,405,000
1981	30,000,000
1982	30,000,000

Additionally, no more than the following amounts were authorized to carry out this section (except for technical assistance to small systems, emergency assistance and research):

Fiscal year	Amount (no more than)
1987	$35,600,000
1988	$35,600,000
1989	$38,020,000
1990	$38,020,000
1991	$38,020,000

See SDWA §1442(f), 42 U.S.C.A. §30Qj-l(f). The EPA is authorized to provide technical assistance and make grants to the States in emergency circumstances. *See* SDWA §1442(a)(2)(B), 42 U.S.C.A. §30Qj-l(a)(2)(B). For fiscal years 1978 through 1982, $8,000.000 was authorized to be appropriated to carry out emergency assistance. Additionally, no more than the following amounts were authorized to be appropriated:

Fiscal year	Amount (no more than)
1987	$7,650,000
1988	$7,650,000
1989	$8,050,000
1990	$8,050,000
1991	$8,050,000

See SDWA §1442 (f), 42 U.S.C.A. §30Qj-l(f).

Appropriations also were authorized for the EPA to provide technical assistance to small public water systems to enable those systems to achieve and maintain compliance with national drinking water regulations in the following amounts:

Fiscal year	Amount
1987	$10,000,000
1988	$10,000,000
1989	$10,000,000
1990	$10,000,000
1991	$10,000,000

See SDWA §1442(g), 42 U.S.C.A. §30Qj-l(g).

The EPA can make grants to primacy States to carry out public water system supervision programs for implementation and enforcement of the national drinking water regulations. SDWA §1443, 42 U.S.C.A. §300j-2. The following amounts were authorized for these grants:

Fiscal year ending in:	Amount
1976	$15,000,000
1977	$25,000,000
1978	$35,000,000
1979	$45,000,000
1980	$29,450,000
1981	$32,000,000
1982	$34,000,000

Fiscal year	Amount(no more than)
1987	$37,200,000
1988	$37,200,000
1989	$40,150,000
1990	$40,150,000
1991	$40,150,000

See SDWA §30Qj-2(a)(7), 42 U.S.C.A. §30Qj-2(a)(7).

Grants also are available to aid primacy State adoption and enforcement of underground water source protection programs (the UIC program). SDWA §1443(b), 42 U.S.C.A. §300j-2(b). The following amounts were authorized to be appropriated for these grants:

Fiscal year ending in:	Amount
1976	$5,000,000
1977	$7,500,000
1978	$10,000,000
1979	$10,000,000
1980	$7,795,000
1981	$18,000,000
1982	$21,000,000

Fiscal year	Amount (no more than)
1987	$19,700,000
1988	$19,700,000
1989	$20,850,000
1990	$20,850,000
1991	$20,850,000

See SDWA §1443(b)(5), 42 U.S.C.A. §30Qj-2(b)(5).

Grants are available for special study and demonstration projects. SDWA §1444(a), 42 U.S.C.A. §30Qj-3(a). Projects involving construction or modification of any facilities for any public water systems need approval by the State agency charged with responsibility for safe drinking water or if there is ho such State agency then by the State health authority. SDWA §1444(b)(2), 42 U.S.C.A. §30Qj-3(b)(2). The following amounts were authorized to be appropriated:

Fiscal year ending in:	Amount
1975	$7,500,000
1976	$7,500,000
1978	$10,000,000

See SDWA §1444(c), 42 U.S.C.A. §30Qj-3(c). Additionally, the EPA during fiscal years ending in 1975 and 1976 could guarantee private loans to small public water systems, for the purpose of enabling such systems to meet the national primary drinking water regulations, with the aggregate not to exceed $50,000,000. SDWA §1444(d), 42 U.S.C.A. §30Qj-3(c). Grants to public sector agencies were also available for demonstration projects through the Environmental Research, Development, and Demonstration Authorization Act of 1978. For these grants, $25,000,000 was authorized to be appropriated for fiscal year 1978. 42 U.S.C.A. §300j-3a(c).

Any person who is subject to the SDWA can be required by EPA to establish and maintain

records, make reports, conduct monitoring, and provide information in order to determine compliance with the federal regulations. SDWA §1554(a), 42 U.S.C.A. §30Qj-4(a). For fiscal year ending in 1987, $30,000,000 was authorized to be appropriated to carry out these

provisions, such funds to remain available until expended. SDWA §1445(a)(8), 42 U.S.C.A. ***§300j-4(a)(8).***

The SDWA also requires each State to assist local educational agencies in testing for, and remedying, lead contamination in drinking water from drinking water coolers and other sources. The following funds were authorized for these grants:

Fiscal year	Amount (no more than)
1989	$30,000,000
1990	30,000,000
1991	30,000,000

Conclusion

The SDWA does not directly require creation of a specific State agency to carry out the requirements of the Act. However, it does establish certain requirements for a State to gain primary enforcement responsibility and grants to the State are tied to a State gaining primacy, Since the Act mandates the structure of implementation and enforcement of the drinking water regulations, individual State infrastructures are overlooked.

Federal & State Relationship:
THE TOXIC SUBSTANCE CONTROL ACT

Introduction

The Toxic Substance Control Act (TSCA) was enacted in order to develop adequate data, on the effects of chemical substances and mixtures on human health and the environment because Chemical manufacturers and processors are required to evaluate chemicals because humans and the environment are increasingly exposed to larger and larger numbers of chemical substances and mixtures. The development of data is necessary in order to protect against unreasonable risk of injury to health or the environment caused by chemical substances and mixtures. However, the Administrator of the Environmental Protection Agency (EPA) must consider the environmental, economic, and social impact of any action taken under TSCA. See §TSCA 2(c). Additionally, response to such information can occur under TSCA only if there is no other adequate federal statute to address the unreasonable risk.

Summary of Key Provisions

SUBCHAPTER I CONTROL OF TOXIC SUBSTANCES

§3 Definitions: Provides definitions of pertinent terms used throughout TSCA including "chemical substance" §(3(2)) and "mixture" §(3(3)) as well as "health and safety study" §(3(6)) and "standards for the development of test data" §(3(12)).

§4 Testing of Chemical Substances and Mixtures: If EPA determines that a chemical substance or mixture ("chemical") is or may present an unreasonable risk to human health or the environment and there is insufficient knowledge about the chemical then the EPA shall require health and safety testing of the chemical in order to make such determination.

§5 Manufacturing and Processing Notices: The manufacturer or processor of a new chemical or a chemical to be put to a significant new use must provide notice of their intentions to EPA 90 days before beginning manufacturing or processing of the chemical and must show that the chemical will not present an unreasonable risk of injury to health or the environment.

§6 Regulation of Hazardous Chemical Substances and Mixtures: If EPA determines that a chemical presents or will present an unreasonable risk of injury to human health or the environment then EPA may prohibit or limit the manufacturing, processing, or distribution in commerce of the chemical. Additionally, EPA may require notice to affected parties, require warning labels of the unreasonable risk, or require the manufacturer or processor to replace or repurchase the chemical if the notified party so desires.

§7 Imminent Hazards: EPA may seize or request relief of notification, recall, replacement or repurchase or any combination thereof in an appropriate civil action to address an imminently hazardous chemical.

§8 Reporting and Retention of Information: EPA shall require manufacturers and processors Of chemicals to maintain reports on such activities that are to be submitted to EPA. EPA shall compile, update, and publish a list of each chemical manufactured or processed in the United States and such list shall include chemicals in which reports and notice and required under TSCA. TSCA §8(b).

§9 Relationship to Other Federal Laws: If EPA believes that a chemical presents an unreasonable risk of injury to health or the environment then such risk shall be addressed under TSCA only if there is no other federal law administered by any federal department or agency that can adequately address the presented risk.

§10 Research. Development. Collection. Dissemination. and Utilization of Data: EPA in concert with the Department of Health and Human Services shall compile all relevant TSCA data, create a system so such information is readily accessible, research screening and monitoring techniques, and establish and promote training workshops on screening and monitoring techniques.

SUBCHAPTER II. §201-216 ASBESTOS HAZARD EMERGENCY RESPQNSB: EPA shall regulate the inspection, proper removal, surveillance, operation and maintenance of asbestos from schools under the authority of local education agencies. Each local education agency must develop management plans for asbestos in their schools and such plans are to be overseen by the State Governor or the

Governor's duty appointed representative.

SUBCHAPTER III. §S301-311 INDOOR RADON ABATEMENT: EPA shall update its Citizen's Guide on Radon, develop model construction standards and techniques for controlling radon levels within new buildings, provide technical assistance and grant assistance to States for their radon programs, and fund regional radon training centers.

Federal-State Relationship

Subchapter I of TSCA, Control of Toxic Substances, does not seem to be a significant burden on State infrastructures. §10(d) requires the development in cooperation with local, State, and Federal agencies of monitoring techniques and instruments for the detection of toxic chemicals in a reliable, economical manner and under diverse conditions. §10(g) requires the establishment and coordination of a system of exchange among Federal, State, and local authorities of toxic chemical research and Federal, State, and local authorities of toxic chemical research and development results. §28 allows EPA to make grants to States for the establishment and operation of a program to eliminate or prevent an unreasonable risk of injury to health or environment within a State so long as EPA is not able or is unlikely to take action under TSCA to address the risk.

Subchapter II of TSCA, Asbestos Hazard Emergency Response, places a huge burden on local education agencies and the State government. Each local education agency must develop an asbestos management plan which must include inspection status, response measures for any friable asbestos-containing material, status of building after response measures complete, and a plan for reinspection, long-term surveillance, and long-term operations and maintenance. Each contractor used throughout this process must be accredited according to EPA regulations. *See* §203(i). Each plan must be submitted to the State Governor who is required to assure that each plan meets EPA's standards. Additionally, the Governor must submit status reports to EPA. *See* §205.

Subchapter III of TSCA, Indoor Radon Abatement, does not impose a significant burden on State infrastructures. §305 allows EPA to provide technical assistance to States to aid with their radon programs upon request. §306 establishes a grant program to assist State Radon Programs upon application. Grant preference is given to States with efforts to accept the model construction standards and techniques to control radon levels within new buildings. *See* §306(d).

Health Provisions

Before EPA can take response action for a toxic substance or mixture ("chemical"), it must make several findings. EPA must find (A) either (i) that a chemical substance is or may present an unreasonable risk of injury to health or the environment or (ii) that a chemical substance or mixture will be produced in substantial quantities and will either enter the environment in substantial quantities or humans will be significantly exposed. Additionally, EPA must determine (B) that there is insufficient data and experience on the chemical's effects on health and the environment and testing will be helpful in obtaining such information. EPA then can require testing of the chemical. *See* §4(a). Health and the environment effects testing may include, but is not limited to, carcinogenesis, mutagenesis, teratogenesis, behavioral disorders, cumulative or synergistic effects. Methodologies that may be prescribed include epidemiologic studies, serial hierarchical tests, in vitro tests, and whole animal tests. *See* §4(b)(2)(A).

Section 10 of TSCA requires EPA in concert with the Department of Health and Human Services to conduct research, development, and monitoring of toxic chemicals as necessary to implement Subchapter I. It requires the creation of data systems: (1) for the collection and dissemination of information submitted under Subchapter I to other Federal departments and agencies and (2) systematized retrieval of lexicological and scientific data that would be useful for implementation of TSCA. Additionally, research to improve screening techniques and instruments for detection of toxic chemicals shall be conducted.

Under Subchapter III, relating to asbestos, EPA is required to carry out a study of asbestos-containing material in public buildings assessing the condition of such material, the chance of exposure by the building occupants, whether the buildings should be subject to the school buildings asbestos

response action requirements and whether existing federal law adequately protects humans from asbestos exposure. *See* §213.

Under Subchapter in**,** relating to indoor radon, EPA is to create model construction standards and techniques for the control of radon levels in new buildings. *See* §304. EPA is to conduct studies to determine the extent of radon contamination in school buildings and federally-owned department or agency buildings. *See* §307 and §309 respectively.

Funding

Under Subchapter I, relating to toxic substances, EPA may make grants to States to assist in the establishment and operation of programs to eliminate or prevent unreasonable risks to health and the environment within the State posed by a toxic chemical when EPA is unlikely **or** unable to address such risk. *See* §28.

Under Subchapter H, relating to asbestos, EPA may make grants to experienced nonprofit organizations to establish and/or operate asbestos training programs. Not more than $5,000,000 for each fiscal year 1991 through 1995 is authorized to be appropriated. *See* §216.

Under Subchapter HI, relating to radon, EPA is to establish a radon proficiency rating program and training seminar. Not more than $1,500,000 is authorized to be appropriated for this program, however, EPA is permitted to charge a user fee, except from and State or local government, to cover its operating costs. *See* §305(e). For the updated radon citizen's guide and the development of the model construction standards and techniques for controlling radon levels within new buildings, not more than $3,000,000 is authorized to be appropriated for 1989 through 1991. *See* §305(f). For the grant assistance to States for radon programs, not more than $10,000,000 is authorized to be appropriated for the grants and such sums as is necessary for the program's administration is authorized to be appropriated for 1989 through 1991. *See* §306(j). For diagnostic and remedial efforts to reduce radon levels in EPA-selected high-risk school buildings, not more than $500,000 is authorized to be appropriated. *See* §307(a)(6) and *(b).* For the study of radon in schools, not more than $1,000,000 is authorized to be appropriated. For grants to establish and operate regional radon training center, not more than $1,000,000 is authorized to be appropriated for 1989 through 1991.

Conclusion

Subchapter I relating to control of toxic substances is wholly administered on the federal level. Subchapter III relating to control of indoor radon contamination also is not a terrible burden on State infrastructure although it does tie grant preference for State radon programs to States with efforts to adopt EPA's model construction standards and techniques to control indoor radon. Subchapter IIrelating to asbestos response action in school buildings is the most burdensome on State government and by EPA. The local educational agency must address possible asbestos contamination in each school under its authority.