

FINAL REPORT  
OF THE  
ENVIRONMENTAL HEALTH POLICY STUDY  
ADVISORY COMMITTEE

Revised March 12, 1980

Presented to  
George R. Pettersen, M.D., Commissioner  
Minnesota Department of Health



REPORT OF THE ENVIRONMENTAL HEALTH POLICY STUDY  
ADVISORY COMMITTEE

---

A JOINT PROJECT OF  
THE MINNESOTA DEPARTMENT OF HEALTH  
AND THE  
ASSOCIATION OF MINNESOTA COUNTIES

Roger L. DeRoos, Ph.D., Director  
Director of Environmental Health  
Minnesota Department of Health

James C. Shipman, Executive Director  
Association of Minnesota Counties

Project Staff

C. Thomas Rice, Project Director  
Consultant to the Minnesota Counties  
Research Foundation

John Schnickel, CHS Consulting Sanitarian  
Department of Health Liaison

ENVIRONMENTAL HEALTH POLICY STUDY

ADVISORY COMMITTEE

Calvin Condon, Chairman  
County Commissioner  
Waseca County

Vernon Haglund  
County Commissioner  
Wabasha County

Lee Luebbe  
County Commissioner  
Winona County

David Stevens  
County Commissioner  
Blue Earth County

Al Loehr  
Mayor  
City of St. Cloud

\*Tom Heenan  
Health Director  
Cities of Crystal, Brooklyn  
Park, and Brooklyn Center

\*David Velde  
City Sanitarian  
City of Edina Health Department

Mary Bruns  
Administrator  
Lincoln, Lyon, Murray, and  
Pipestone Counties  
Community Health Services

\*Daryl Franklin  
Director  
City of Austin-Mower County  
Planning Department

\*Luther Nelson  
Director of Environment and Energy  
Hennepin County

Richard Rasmussen, M.D., M.P.H.  
County Public Health Officer  
Medical Consultant  
Kandiyohi County

\*Dale Schroeder  
Environmental Health Director  
St. Louis County Health Department

Ruth Schuder  
Director  
Itasca County Health Department

\*Douglas Wood  
Environmental Health Specialist  
Ramsey County Community Health  
Services

\*Robert Hamilton, ex-officio  
Regional Program Administrator  
Minnesota Pollution Control Agency

\*Joseph Sizer, ex-officio  
Director of Environmental Planning  
Minnesota State Planning Agency

\*John Schnickel, ex-officio  
CHS Consulting Sanitarian  
Minnesota Department of Health

\*Also Member of Technical Work Group



## CONTENTS

I. INTRODUCTION AND PROJECT BACKGROUND	
Contents of the Report-----	1
Project Background-----	2
The Work Process-----	3
Implementing the Report-----	7
II. ENVIRONMENTAL HEALTH SERVICE DELIVERY IN MINNESOTA	
State Government Services-----	12
Local Government Services-----	22
III. ANALYSIS OF MAJOR PROBLEMS	
Public Awareness-----	35
Environmental Threats-----	36
Management Problems-----	41
IV. GOALS AND RECOMMENDATIONS	
Goals and Alternative Structures-----	46
Recommendations-----	48
APPENDIX A-----SUMMARY WORK PROGRAM-----	68
APPENDIX B-----ENVIRONMENTAL HEALTH LAWS AND RULES-----	69
APPENDIX C-----1979 ENVIRONMENTAL HEALTH PROGRAM BUDGETS-CHS AGENCIES-	79
APPENDIX D-----COUNTY ENVIRONMENTAL HEALTH SERVICES, NOVEMBER, 1979---	81
APPENDIX E AND E-1-----COUNTY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY, OUTSTATE COUNTIES AND CITIES, 1979-----	88
APPENDIX F-----COUNTY AND CITY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY, METROPOLITAN COUNTIES, 1979-----	95
APPENDIX G-----REPORT OF THE ENVIRONMENTAL HEALTH TASK FORCE, MINNESOTA PUBLIC HEALTH ASSOCIATION, 1978-----	96
APPENDIX H-----MANPOWER REQUIREMENTS FOR SOLID AND HAZARDOUS WASTE SUR- VEILLANCE AND PLANNING-----	117
APPENDIX I-----RELATED POLICIES OF THE ASSOCIATION OF MINNESOTA COUNTIES AND THE LEAGUE OF MINNESOTA CITIES-----	118



## I. INTRODUCTION AND PROJECT BACKGROUND

This report of the Environmental Health Policy Study Advisory Committee contains recommendations to the Commissioner of the Minnesota Department of Health for improving the delivery of environmental health services by Minnesota's local governments. The report is the major product of a joint six-month study effort undertaken by the Committee, the Minnesota Counties Research Foundation, and staff of the Department of Health.

### Contents of the Report

Committee findings and recommendations are described in four sections of the report:

- a discussion of the background of the study and how project work was conducted,
- a description of the existing environmental health delivery system,
- an analysis of major problems within the existing system,
- a description of proposed goals and actions designed to improve environmental health services throughout the state.

The report proposes the establishment of a program of state financial support supplementing the existing community health services subsidy, which would encourage the development of basic environmental health services in each of Minnesota's 87 counties. The program would provide, on a permissive basis, interim funding support over an eight-year period as new user fee systems were phased-in to support most local government service costs.

In undertaking this study, the Committee attempted to focus on the needs and roles of both counties and cities. However, the nature of the major problems identified by the Committee and existing service patterns addressing those problems has resulted in findings and recommendations possessing a distinctly county-government focus. Problems of on-site sewage system and individual water supply system control exist primarily in unincorporated areas within the jurisdiction of county government. Outside of the two urban core counties, problems of food and lodging sanitation must generally be addressed on a county-wide or multi-county basis. Although problems of solid and hazardous waste management are of vital interest to both cities and counties, most disposal sites are located in unincorporated areas and most service systems serve several jurisdictions. Thus, counties must assume a major role in planning and surveillance activities.

As the analyses and recommendations in the report will demonstrate, environmental health problems can effectively and economically be resolved only by a high level of cooperation between counties, cities, and townships. It is critical that the report not be perceived as a "county program" and that the future system roles and responsibilities of city government be carefully identified through improved intergovernmental communications and working relationships.

#### Project Background

The study effort described in the report emerged after almost two years of discussion and planning by staff of the Association of Minnesota Counties and the Minnesota Department of Health. Under the provisions of the Community Health Services (CHS) Act, which became law in 1976, counties were provided with funds

on a permissive, block-grant basis to upgrade and initiate a broad range of public health services. Eligible activities included both personal health services, which had been provided for some years by most counties, and environmental health services, which had developed to a far lesser extent at the local level. Although the CHS Program has been implemented in 83 counties and has generally been well received by both counties and cities, many believe that the program has not adequately recognized the peculiar requirements of environmental health service development. Thus, service improvements in this area have not been initiated as rapidly as in the personal health service area. Both the Association and the Department of Health believed that a special analysis dealing with methods of improving environmental health service delivery should be undertaken.

Pursuant to this consensus, the Association, through its sister service organization, the Minnesota Counties Research Foundation, was asked to prepare a concept paper describing possible approaches to an environmental health policy and program analysis. In the spring of 1979, the Foundation's concept paper was accepted by the Department, and by late summer specific contractual terms for undertaking the proposed analysis were finalized. These terms provided that consulting assistance for the project would come from staff of the Foundation.

#### The Work Process

Following extensive planning sessions during August and September, the focus of the proposed study was agreed upon and a detailed six-month work program was prepared. It had been determined that an ad hoc advisory committee consisting of elected officials and environmental health professionals should be formed to oversee the project. In late October, the Commissioner

of the Department of Health requested 17 individuals representing a broad range of abilities and interests to serve on the advisory committee. The Minnesota Department of Agriculture and the Minnesota Department of Natural Resources, which were not represented on the Committee, were requested to assign staff liaisons to work with the project consultant. To guide the work of the Committee, the Commissioner issued a charge which set forth objectives to be addressed and anticipated products of the Committee's work.

The membership of the Committee is listed on the inside front cover. The Commissioner's charge to the Committee is shown on page 5. A summary of the project work program can be found in Appendix A.

Following organization and formation of the Advisory Committee, a work group of the Committee, consisting of nine professionals, was established in order to give special attention to the technical aspects of the project. The charge to this work group is shown on page 6.

The full Committee and the technical work group each held four meetings between November and February to review and critique staff reports and to provide policy guidance for development of Committee recommendations. Several working papers and draft reports were prepared by project staff during the course of the study. Copies of these reports were distributed to the Committee and 20 interested individuals and organizations, including senior staff of the Department of Health and staff of the Minnesota Department of Natural Resources, the Minnesota Department of Agriculture, and the Minnesota Pollution Control Agency.

During the study period, four project progress reports appeared in the County News, the official publication of the Association of Minnesota Counties. Efforts were also made to brief interested organizations on project progress and obtain as much feedback as possible. Briefing and feedback sessions were

## CHARGE TO ADVISORY COMMITTEE

This charge to the Statewide Environmental Health Study Advisory Committee is designed to provide a general focus for the work of the Committee and to enhance its contribution to the study effort.

Purpose of the Committee. The purpose of the Committee is to assist Minnesota Department of Health staff and the study consultants in developing recommendations to the Commissioner of Health concerning:

- 1) A framework for delivery of environmental health services by local governments.
- 2) The resources which will be required during the next 15 to 20 years to address environmental health problems in Minnesota.

Committee Objectives. In its work, the Committee will seek to attain the following objectives:

- 1) Development of a working definition for "environmental health problems and services" to guide the study.
- 2) Ensure that critical local government concerns regarding the structure of environmental health delivery systems and inter-governmental relationships are incorporated in the study.
- 3) Development of recommendations to the Commissioner of Health as described above. It is expected that these recommendations will address at least the following: service delivery standards, future roles for the state and local governments, intergovernmental and interagency relationships, future costs, and revenue sources.
- 4) Ensure that public and private agencies and organizations throughout the state which are interested in environmental health policy development have an opportunity to participate in the study.

Committee Work Activities. In order to effectively address the purposes and objectives stated above, it is expected that the Committee will undertake the following work:

- 1) Review the present status of environmental health problems and services in Minnesota, with the assistance of background materials and personal experience.
- 2) Assist study consultants in defining current environmental health problems, utilizing personal experience and study outputs.
- 3) Suggest future environmental health initiatives and critically review findings and recommendations prepared by study staff.
- 4) To the extent possible, communicate study purposes and findings to interested agencies and organizations.

CHARGE TO TECHNICAL WORK GROUP

The technical work group supports the purposes and objectives of the study Advisory Committee by:

- A. Suggesting approaches to study tasks.
- B. Reviewing and critiquing, from a technical perspective, study outputs.
- C. Interpreting for project staff technical problems and standards involved in designing improved delivery systems and organizational structures.
- D. Participating in Advisory Committee meetings.

held with the Environment and Energy Study Committee of the Association of Minnesota Counties, the state Community Health Services Advisory Committee, the County Planning and Zoning Administrators Association, the Minnesota Environmental Health Association, Metropolitan Inter-County Council staff, League of Minnesota Cities staff, community health administrators representing six counties, and planning - zoning and sanitation staff representing 19 counties. In all, staff members or county commissioners from a total of 46 counties had an opportunity for face-to-face discussion with project staff during the project data collection and analysis process.

#### Implementing the Report

Presentation of the Advisory Committee's findings and recommendations is expected to provide the basis for several types of actions and further decision-making:

- the report will be presented as the final product resulting from the Commissioner of Health's charge to the Advisory Committee. It is expected that the Commissioner will request that appropriate department staff and advisory committees review the report and convey their reactions to him for further action.
- the report will be referred to major public interest and professional organizations with a stake in environmental management, including the Association of Minnesota Counties, the League of Minnesota Cities, the Minnesota Public Health Association, the Minnesota Environmental Health Association, and the Minnesota Medical Association. It is expected that these organizations will review the report and develop an organizational policy position on its recommendations.

- it is expected that several organizations, such as the Association of Minnesota Counties, may develop specific 1981 legislative initiatives based on the report's recommendations.
- the report will be provided to each county and major city in the state. The findings of the report are expected to provide the basis for individual county organization and service delivery decisions.
- the report's findings have identified several areas in which local government could benefit by specific forms of technical assistance and training as new environmental health initiatives are undertaken. It is believed that the report can provide the basis for the development of these necessary tools.
- those state agencies which, in addition to the Department of Health, currently play a significant role in environmental health policy-making and service delivery, are expected to review the report and consider actions which may be necessary to improve state operations and foster local government operations.

The work of the ad hoc project advisory committee will end with the submission of the final project report. However, it is expected, as contemplated in the Commissioner's charge, that individual committee members, through the organizations and professions which they represent, will act as catalysts to achieve full consideration and timely action on the Committee's recommendations.

## II. ENVIRONMENTAL HEALTH SERVICE DELIVERY IN MINNESOTA

Environmental health services in Minnesota are delivered within a loosely organized system dominated by four major state agencies, cities within the two core metropolitan counties, and city and county government in outstate urban areas. The complexity of that system, which includes services of the Federal Government, is shown by Figure 1, page 10. This section describes the system in two subsections dealing with organization and service at the state level and the local government level. Appendices B through F contain detailed data concerning environmental health laws and rules, environmental health budgets of local governments, and local government services and manpower.

For purposes of the study, the term "environmental health problems" was defined as *physical, chemical, and biological factors which act, or may potentially act, as agents to cause or aggravate disease or injury, or in other ways affect human health.*

The term "environmental health services" was defined as *those services which address environmental health problems, including surveillance and enforcement for: food protection, hazardous substances and product safety, water supply sanitation, sewage disposal, water pollution control, solid and hazardous waste management, occupational safety and health, radiation control, air pollution control, noise pollution control, vector control, institutional sanitation, recreational sanitation, including swimming pool sanitation and safety, housing safety and sanitation, and general nuisance control.*

Figure 1. ENVIRONMENTAL HEALTH SERVICES IN WASHINGTON COUNTY  
 FEDERAL, STATE, AND LOCAL ROLES <sup>1</sup>

Local Government is Primary Provider

Agencies Providing Service

Local Government is Primary Provider

Food Protection

USDA - interstate meat and poultry  
 USFDA - interstate food  
 MDA - inspect food industry  
 MDE - inspect schools  
 MDH - inspect public eating and drinking places

Hazardous Waste

HPCA  
 MDOT  
 Metro Council - planning  
 W. Co. Engr. - planning  
 MDH - consultation

Water, Air, and Noise Pollution

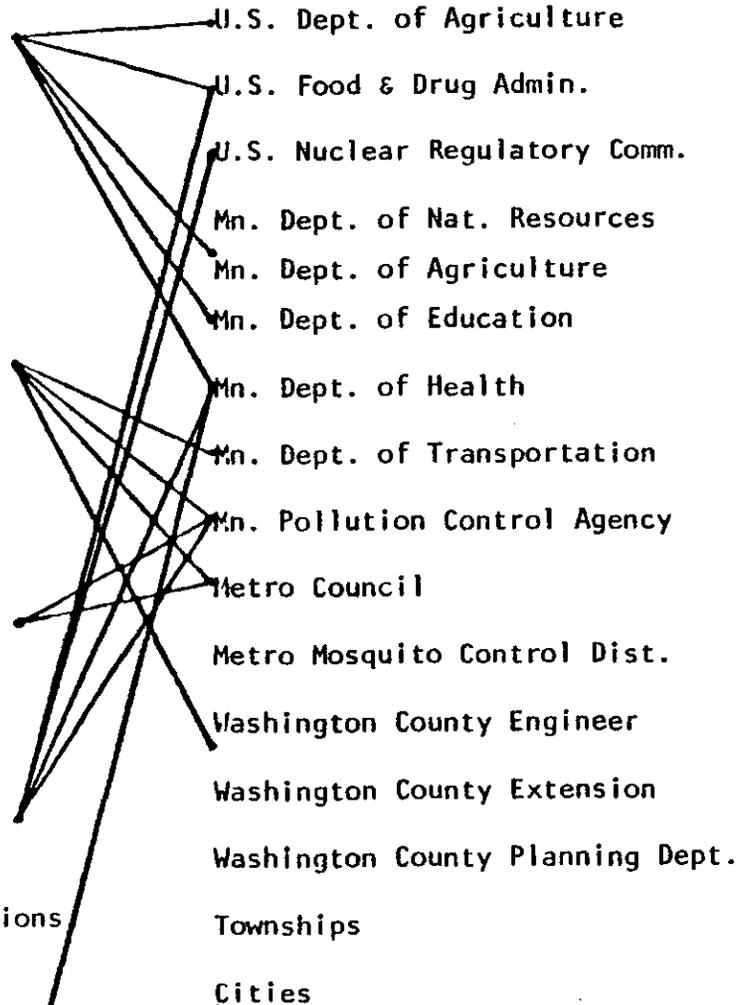
MPCA - permits and enforcement  
 Metro Council - planning

Radiation Control

USFDA - product controls  
 URNRC - nuclear plants  
 MDH - industry and institutions  
 MPCA - nuclear plants

Lodging and Recreation Sanitation

MDH - inspect and license facilities  
 Cities - inspect swimming pools



Water Supply Sanitation

MDH - well construction supervision, public water inspection  
 W. Co. Png. - private water sample tests

Sewage Disposal

MDH - review public use plans  
 DNR - flood plain, shoreland standards  
 MPCA - system standards  
 W. Co. Png. - shoreland zoning  
 Townships - ordinances  
 Cities - ordinances

Vector Control

MMCD - spray for mosquitos  
 W. Co. Extension - rat bait  
 Townships - ordinances  
 Cities - ordinances

Nuisance Control

W. Co. Engr. - limited enforcement  
 Cities - ordinances

Housing Sanitation and Safety

Cities - housing codes

<sup>1</sup> Does not include occupational safety and health roles of Minnesota Department of Labor and Industry and MDH.

This definition is broad enough to encompass problems addressed and services provided by a number of state and local government agencies and several professional and technical disciplines, including health, urban planning, engineering, and public administration. The definition is intended to embrace all environmental development factors which impact on human health. It does not include those environmental maintenance services which primarily or exclusively focus on natural resource, wildlife, or socio-economic problems.

The study scope was further narrowed as follows:

1. Those system elements to which local governments have the closest relationship are emphasized for the most part. This would thus exclude:
  - hazardous substances (materials harmful to human health)
  - product safety
  - occupational safety and health
  - radiation control
2. Emphasis is placed on those elements of state government service delivery which impact on local government or the local community, including direct service delivery (such as food inspection), planning (such as community health services planning), and regulation (such as on-site sewage disposal system regulations).
3. Problems of direct service delivery are emphasized, rather than planning. However, the linkage between service delivery and planning is addressed.

4. Although the study embraces both city and county government service delivery, because of a) the relatively low level of county government service system development in the major problem areas identified by the advisory committee, and b) the leadership role given to county government in the Community Health Services Act, county problems received greater emphasis.

#### State Government Services

A number of state agencies in Minnesota have responsibility for providing environmental health services. This section describes the programs of the four major providers: Health (MDH), Pollution Control (MPCA), Natural Resources (DNR), and Agriculture. These agencies, together with the State Planning Agency, share leadership for setting environmental health policy, providing direct services, and supervising or coordinating local government environmental health activities. This section focuses on those agency activities which directly involve local communities. Descriptions of each agency's services are followed by four one-page "profiles" outlining agency services, budgets, and organizational linkages to local government.

State government environmental health activities are diverse and complex. Agency responsibilities have generally emerged from pragmatic and specific policy concerns (MPCA) or are rooted in traditional public interest group or professional linkages (Agriculture, DNR, and MDH). Although policy coordination is provided by the State Planning Agency, and many day-to-day interagency operational relationships are governed by memoranda of understanding, the individual agencies possess a high degree of autonomy in most activities, including intergovernmental relationships with local

government. At present, there does not appear to be any strong movement toward integrating either service delivery or organization of the four agencies.

Within the Minnesota Department of Health, the Environmental Health Division is one of four divisions in the Bureau of Health Services. The mission of the division is to protect public health and safety through programs of environmental control. The division accomplishes this by performing two principal tasks. The first involves the setting of health and sanitation standards for certain establishments and businesses and then inspecting them for compliance. This includes hotels, resorts, restaurants, camps, water well contractors, mobile home parks, plumbers, water treatment plant operators, and sources of radiation.

The second task of the division is health risk assessment and technical assistance, including: special studies on health effects of certain materials; laboratory testing services for chemicals, radioactive materials, or bacteria found in soil, water, air, or the work environment; and consultation to local government, other state agencies, and individuals.

The division employs 148 persons. Four advisory councils: Plumbing Code, Water Conditioning, Water and Waste, Water Treatment and Water Well Construction, assist the division in its work.

The Environmental Health Division is headed by a Director, who supervises seven sections:

- The Hotels, Resorts, and Restaurants Section develops standards for the licensure of hotels, resorts, restaurants, children's camps, mobile home parks, recreational camping areas, and beverage establishments.

- The Occupational Health Section conducts investigations of work places for detection of excessive dust, gases, noise, heat, or toxic materials that may be hazardous to human health.
- The Health Risk Assessment Section, in conjunction with the Analytic Laboratory Section, studies the health risks involved when people are exposed to physical, chemical, or biological agents in the environment. The results of these studies are used to develop guidelines and regulations for protecting Minnesotans against environmental hazards.
- The Water Supply and General Engineering Section monitors, inspects, and tests all community drinking water supplies to ensure their safety; licenses plumbers, water conditioning contractors and installers, and water well contractors; and certifies water treatment plant operators. In addition, the section inspects plumbing installations and private wells and furnishes advice on water supplies and water treatment.
- The Environmental Field Services section performs many of the inspections required by water and food related activities in the division. This responsibility is shared with local governments throughout the state. In addition, the section works with local health departments by providing technical assistance and consultation on environmental programs. MDH staff is responsible for inspecting approximately 12,000 food and lodging facilities, while local governments inspect approximately 6,000 facilities.

- The Radiation Control Section monitors the use of radiation equipment to minimize danger to the public. The section inspects all radiation equipment used in the state, including x-ray machines, to prevent unnecessary radiation exposure. The section also responds to radiation emergencies and conducts radiation monitoring near nuclear plants.

The Minnesota Pollution Control Agency is responsible for developing and implementing programs designed to enforce environmental quality standards. These responsibilities include environmental monitoring and standard setting for air and water quality and solid waste management. The agency structure includes a nine-member citizen board, five regional offices, and, in FY 1979, a staff of approximately 290. For that same year, the agency's estimated expenditures were \$11.6 million, including \$3.5 million in federal funds.

The MPCA's three primary operating responsibilities include implementation of programs delegated by the Federal government:

- (1) Water Pollution Control involves the prevention, control, and abatement of water pollution. The agency administers several special programs, such as the National Pollutant Discharge Elimination System, which involve the issuance of 1,400 permits annually for the discharge of wastewater. The agency certifies operators of wastewater treatment facilities and provides yearly training courses for operators.

For environmental planning purposes, the agency monitors surface and ground waters to determine quality and the impact of wastewater discharges. Special water quality surveys and investigations are conducted to measure the quality of the state's waters.

In FY 1980, the agency is to assume major responsibility for the management of the municipal grants program as provided for in the Clean Water Act of 1977. A municipal pretreatment program is also to be implemented to reduce the amount of untreatable industrial wastes discharged into municipal sewers.

Finally, MPCA is responsible for administering wastewater construction grants-in-aid to ensure the proper construction of these facilities. State matching grants are provided to support the cost of planning and constructing public wastewater treatment facilities. In FY 1980, approximately 80 political subdivisions and 15 municipalities will accept state matching grants.

- (2) Air Quality is assessed through the operation of a state-wide air monitoring network of 75 permanent sites which provide continuous information about air pollution levels. This program also administers and enforces air quality standards, regulations, and Federal Clean Air Act requirements for the 1,400 emission sources with state permits.

Environmental noise standards, regulations, and enforcement monitoring procedures are developed through this program. Particular emphasis has been placed on developing local community noise abatement programs and achieving statewide compliance with ambient noise standards for transportation sources such as highways and airports.

- (3) The Solid Waste Management program assures that land disposal of wastes is conducted in an environmentally sound manner and encourages energy and resource recovery operations as an alternative to traditional solid and hazardous waste disposal practices.

Permits are issued for sanitary landfills, feedlots, resource recovery facilities, and hazardous waste processing and disposal facilities.

The solid waste management regulatory program is currently under major review. New studies are also being conducted on solid waste management practices. MPCA, in conjunction with the State Planning Agency, the Energy Agency, and the Legislature is developing a state strategy for the reduction, recovery, and disposal of wastes.

The Minnesota Department of Natural Resources provides a broad range of services designed to protect and conserve lands, waters, timber, minerals, fish, wildlife, and other natural resources. The flood plain management, shoreland management, and wild and scenic rivers programs set minimum state standards for local ordinances which govern development in flood plain areas and along lakes and streams. The shorelands management program, which mandates local government water pollution control efforts, has had a major impact on the development of county on-site sewage system regulatory services. The groundwater hydrology program conducts special studies and provides technical or planning assistance to local governments. The staff complement for these three programs in FY 1979 was 21 full-time professional positions.

The department is organized into six operating divisions: Enforcement, Fish and Wildlife, Forestry, Minerals, Parks and Recreation, and Waters. Two boards, the Soil and Water Conservation Board and the Minnesota Environmental Education Board, are also attached to the department. There are six regional offices across the state which represent the major operating divisions.

MINNESOTA POLLUTION CONTROL AGENCY

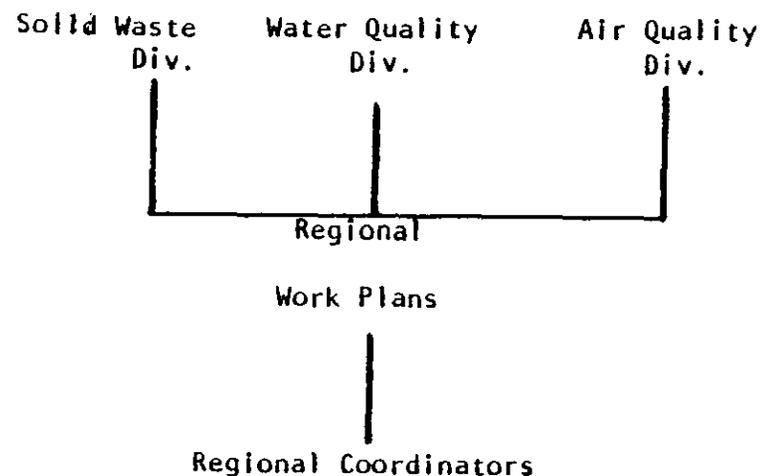
ENVIRONMENTAL HEALTH SERVICES PROFILE

E. H. RELATED SERVICES:  
 Water Pollution Control  
 Air Pollution Control  
 Solid Waste Management

BUDGET FY 80:

Water Pollution	\$3.6M
Air Pollution	\$1.7M
Solid Waste	\$825,000
Regional Support	\$458,000

ORGANIZATIONAL INTERFACE WITH LOCAL GOVERNMENT:



COMMENTS: 3 Operating Divisions provide services directly and through 5 regional offices. Primary local government contact is regional office.

-8/-

MINNESOTA DEPARTMENT OF AGRICULTURE

ENVIRONMENTAL HEALTH SERVICE PROFILE

<p>E. H. RELATED SERVICES:</p> <p>Food Inspection</p> <p>Pesticide Control</p>	<p>ORGANIZATIONAL INTERFACE WITH LOCAL GOVERNMENT:</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">Food, Meat, and Poultry Inspection Div.</td> <td style="text-align: center; width: 50%;">Agronomy Division</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">4 Field Offices (37 Inspectors)</td> <td style="text-align: center;">Pesticide Control Section (10 positions)</td> </tr> </table>	Food, Meat, and Poultry Inspection Div.	Agronomy Division			4 Field Offices (37 Inspectors)	Pesticide Control Section (10 positions)
Food, Meat, and Poultry Inspection Div.	Agronomy Division						
4 Field Offices (37 Inspectors)	Pesticide Control Section (10 positions)						
<p>BUDGET FY'80:</p> <p>Food Inspection      2M</p> <p>Pesticide Control    \$382,000</p>							
<p>COMMENTS: Food and Poultry Inspection includes consumer protection objectives as well as environmental health; pesticide control also addresses consumer protection and crop protection objectives</p>							

-19-

MINNESOTA DEPARTMENT OF HEALTH  
 ENVIRONMENTAL HEALTH SERVICES PROFILE

E.H. RELATED SERVICES <sup>2</sup>

- Food, Beverage, Lodging Control
- Water System Control
- Sewage System Control
- Radiation Control
- Occupational Safety and Health
- Laboratory Services

ORGANIZATIONAL INTERFACE

WITH LOCAL GOVERNMENT:

Environmental Health  
 Division



Field Services Section

(38 Positions in central office and  
 7 District Offices, including  
 4 CHS E.H. Consultants)

BUDGET FY 80:

Total Division	\$3.7M
Field Services	\$857,300

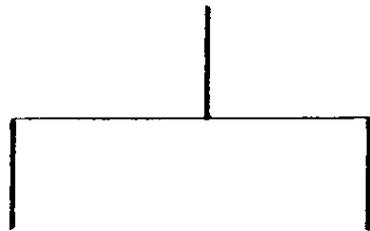
COMMENTS: Most direct services to communities are provided by 24 Field Services Section Sanitarians. Link to CHS Planning is CHS E. H. Consultants.

<sup>2</sup> The term "Environmental Health Related Services" is used in this and the following 3 profiles to denote that not all services provided under the service categories listed will fit the definition of environmental health services used in this report.

~00~

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL HEALTH SERVICES PROFILE

<p>E. H. RELATED SERVICES:</p> <p>(Sewage and water system control)</p> <p>Shoreland Management Standards</p> <p>Flood Plain Management Standards</p> <p>Wild and Scenic Rivers Standards</p> <p>Special Ground Water Studies</p>	<p>ORGANIZATIONAL INTERFACE WITH LOCAL GOVERNMENT:</p> <p>Division of Waters</p>  <pre> graph TD     DW[Division of Waters] --- LUM[Land Use Management]     DW --- RH[Regional Hydrologists]             </pre>
<p>BUDGET FY 80:</p> <p><u>Water Resources Management</u></p> <p>General Operations \$2M</p> <p>Ground Waters \$250,000</p> <p>(Flood Plain Mgmt 8.8 FTE, Shoreland Mgmt 6 FTE<sup>3</sup> Ground Water Hydrology 6.9 FTE)</p>	<p>Land Use Management (1 position)</p> <p>Regional Hydrologists (6 regions, 20 positions)</p>
<p>COMMENTS: Programs directly related to local government activities are not segregated in budget; above position estimates represent approximate service commitment to local government activities.</p>	

<sup>3</sup> FTE = Full-time equivalent positions - one FTE is the equivalent of one person working full-time for one year; it may consist of two or more persons working less than full-time in a particular activity, i.e., two persons working half-time.

The Minnesota Department of Agriculture provides environmental health services through the Food, Meat and Poultry Inspection Division and the Pesticide Control Section of the Agronomy Division. The food inspection program provides surveillance and inspection of facilities, equipment, and products in approximately 8,000 state licensed food, meat, and beverage establishments. Statutes and rules governing this activity are designed to ensure compliance with standards relating to quality, grades, restricted ingredients, and labeling, as well as environmental sanitation standards. The department's inspection authority overlaps that of the Department of Health and some local governments. Through a cooperative agreement with the Department of Health, Agriculture inspects those facilities whose primary business is food processing. It is estimated that 20,000 food establishment inspections will be conducted during FY 1980. The division's FY 1980 budget is \$2,059,200.

The Pesticide Control Section protects the environment and controls product quality through regulation of the sale and use of pesticides under the provisions of the Minnesota Pesticide Control Act. Activities include product sampling, routine use inspection, use investigation, registration of sales, licensing, and investigation of emergencies and incidents. Provisions of applicable federal legislation are also administered by this section. The section employs 10 professional staff members.

#### Local Government Services

Several types of information concerning local government environmental health programs in Minnesota have been collected. Appendix D contains information concerning regulatory programs and services of counties. The survey which generated this data was initiated in September of 1979, by

MDH Environmental Health Division staff and completed in February of 1980. Data has also been gathered from cities (primarily metropolitan area) with major environmental health programs. This data is not included in Appendix D. Appendices E and F contain data from a county and major city manpower and activity survey initiated by project staff in November, 1979, and completed in February, 1980. No attempt was made to gather similar data for small municipalities and townships. The primary purpose of this survey was to measure service gaps in the major problem areas identified by the advisory committee.

The relatively short project timeframe required that data completeness and accuracy be sacrificed at several points. It is believed that the manpower data for the outstate counties is quite complete and accurate. Manpower data for major outstate cities is less complete and accurate, since most of this data was gathered through a telephone survey. Manpower data for the major suburban cities is incomplete for all activity categories except food, beverage, and lodging inspections. However, of the four basic services surveyed, this activity does represent the major effort of suburban cities. The regulatory services data contained in Appendix D lacks preciseness, since detailed regulatory activity definitions were not incorporated in the survey forms.

To supplement these two major surveys, project staff documented the environmental health programs of one city and five counties. The findings of that effort are summarized below and in Table I on pages 24-26.

In addition to the service and manpower data described above, fiscal data reported to MDH under the Community Health Services Program has been assembled and is presented in Appendix C. This data shows CHS agency budgeted expenditures for environmental health services in 1979. Figure 2

Table 1. A PROFILE OF SIX LOCAL ENVIRONMENTAL HEALTH PROGRAMS

Jurisdiction/ Year Program Started	Program Scope	Responsible Organization Unit	Budget/ Prof-Tech Personnel	Ordinances Adopted	Program Current Status
City of Moorhead/'39	Food protection, lodging and swimming pool inspections, nuisance control, water supply testing, housing code enforcement, mosquito control, solid waste management.	Health Department, except housing (Community Development Department), animal control, and solid waste management (Public Works Department).	(1980) \$43,143/1.4 FTE (Health Department only). Source of Funds: Fees and licenses - \$5,250 CHS - \$37,893	"Junk autos," general nuisance, food service, lodging, incinerator, housing, swimming pool, garbage, general health (inspection of food stores).	After substantial growth in '60's, program has now stabilized and no major expansions are planned; serves city only; services available to county on request.
Winona County/'78	Sewage treatment control, water supply testing, vector control, nuisance control, environmental education.	Community Health Services.	(1980) \$26,510/1 FTE Source of Funds: CHS - \$20,000 Taxes - \$ 2,670 Fees - \$ 3,840	Zoning (sewage systems), solid waste.	Program under supervision of planning director; reports to CHS Administrator. Well construction may be added in '80; considering food, lodging inspections for '82-'83; presently negotiating contracts for service to several cities.

Table 1. A PROFILE OF SIX LOCAL ENVIRONMENTAL HEALTH PROGRAMS  
(Continued)

Jurisdiction/ Year Program Started	Program Scope	Responsible Organization Unit	Budget/ Prof-Tech Personnel	Ordinances Adopted	Program Current Status
Cook County/'77	Solid waste management; nuisance control; sewage control; water supply testing.	Planning, zoning, and sanitation.	(1980) \$33,385/2 FTE Source of Funds: CHS - \$ 8,805 Taxes - \$23,174 Fees - \$ 1,406	Health (solid waste, private water systems, sewage disposal).	May expand to swimming pool and recreational beach inspection in 1980; will implement "non-community water supply" service in 1980.
Faribault, Martin, Watonwan Counties/'77	Food inspection; lodging inspections; water supply testing; solid waste management; sewage control.	Community Health Services (three-county human service board).	(1980) \$21,432/.7 FTE (Does not include approximately .4 FTE zoning and planning staff time.) Source of Funds: CHS - \$ 7,186 Taxes - \$11,246 Fees - \$ 3,000	Food, beverage, lodging; subdivision; zoning; building; solid waste; sewage; mass gatherings; nuisance control (cities). Some ordinances not adopted by all three counties.	Program still developing; may move into mobile home park and campground inspection area in '81, but no substantial expansion planned.

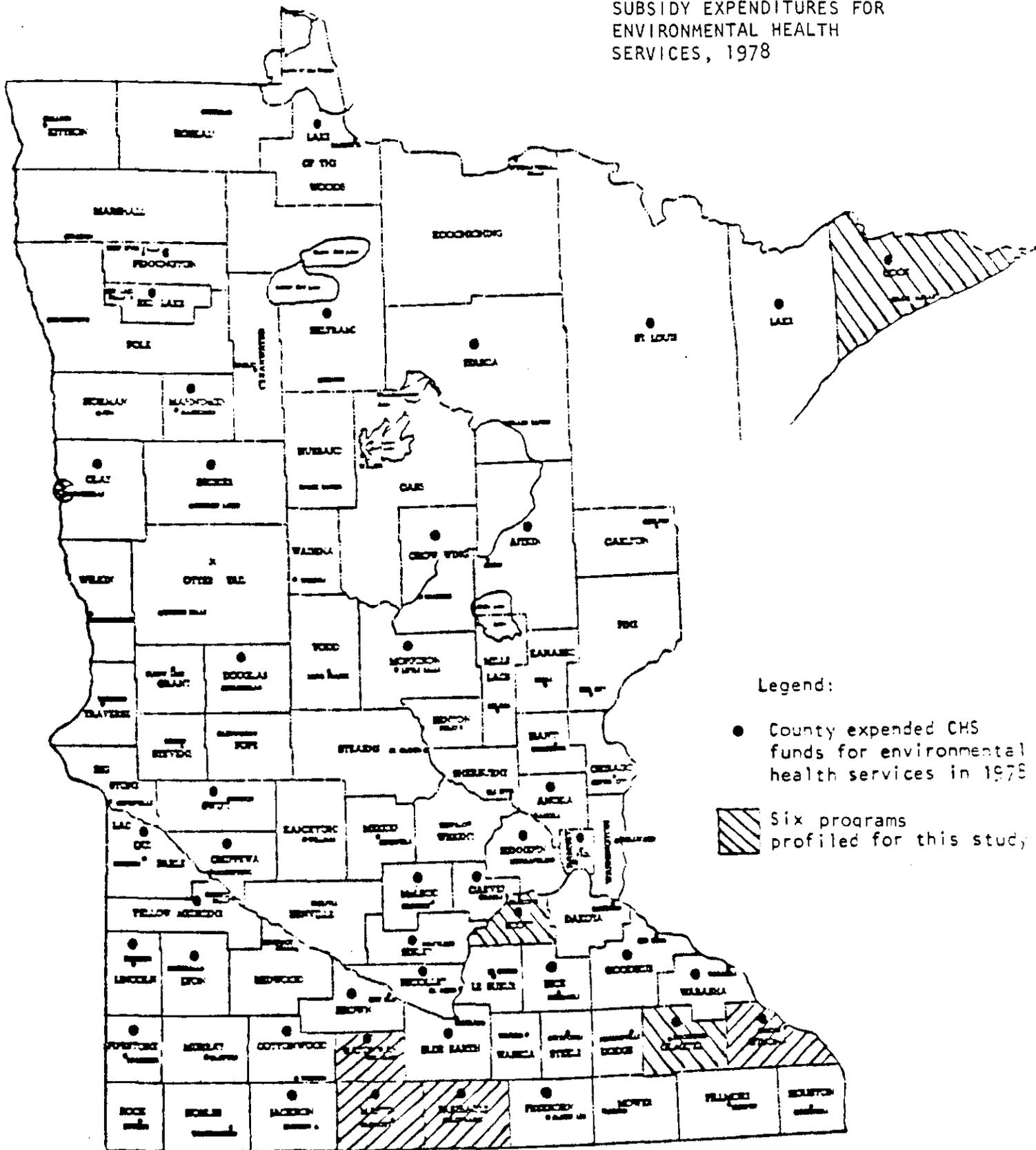
Table 1. A PROFILE OF SIX LOCAL ENVIRONMENTAL HEALTH PROGRAMS

(Continued)

Jurisdiction/ Year Program Started	Program Scope	Responsible Organization Unit	Budget/ Prof-Tech Personnel	Ordinances Adopted	Program Current Status
Scott County/'78	Water supply testing; food inspections; sewage control; nuisance control; solid and hazardous waste management; education.	Planning and Zoning Office.	(1980) \$24,000/1 FTE (Does not include approximately 1.2 planning and zoning office staff time.) <u>Source of Funds:</u> CHS - \$24,000	Solid waste; well construction; sewage systems; zoning (nuisance control).	Planning to expand services in solid and hazardous waste management; food inspection; well construction control.
Olmsted County/'52	Food control; solid and hazardous waste management; water supply sanitation; waste water (sewage disposal control); air pollution control; mosquito control; boarding and lodging inspection; recreational and swimming pool sanitation; nuisance control.	Health Department, Environmental Health Division.	(1980) \$193,879/7 FTE <u>Source of Funds:</u> CHS - \$47,097 Taxes - \$52,488 Fees - \$60,610 Other - \$33,684	Solid waste; food and lodging; swimming pools; air pollution; water supplies; sewage disposal; well construction.	Program has generally stabilized; last substantial addition was swimming pool inspections in '77; no definite plans to expand or reduce services.

-98-

Figure 2 - COUNTIES WITH CHS  
 SUBSIDY EXPENDITURES FOR  
 ENVIRONMENTAL HEALTH  
 SERVICES, 1978



Legend:

● County expended CHS funds for environmental health services in 1978

▨ Six programs profiled for this study

Source: Minnesota Dept. of Health

on page 27 identifies counties which expended CHS state subsidy funds for environmental health services in 1978.

Some type of environmental health service is provided by nearly every local government. Although the role of townships is prominent in some counties, township environmental services are generally very limited. Relatively few county and city governments have substantial programs involving a number of service elements. Still fewer have comprehensive environmental health programs. Appendix C indicates that 35 of Minnesota's Community Health Service agencies budgeted funds for environmental health programs in 1979. This is a total agency figure. Some counties within multi-county agencies may not have budgeted funds for environmental health. As indicated in Figure 2, 44 counties expended CHS subsidy funds for environmental health programs in 1978. However, only 35 of these made expenditures over \$1,000. Another 14 counties reported expenditures of local funds only in amounts ranging from \$2,040 to \$217,579. In considering these figures, three limitations should be noted: 1) some counties with local expenditures only may not be reporting these expenditures to the Minnesota Department of Health; 2) because of confusion or misunderstanding concerning the definition of environmental health services in the CHS Act, expenditures for services may not be included in county reports, and 3) municipal expenditures may not be included in some county reports.

Because of definitional and reporting problems, it is not possible to accurately determine the number of city governments with substantial environmental health programs. However, 24 cities are known to provide a broad range of services. Approximately half of these cities are located in the seven-county metropolitan area.

The following summary presents the picture of environmental health resource commitments within the total Community Health Services Program for 1978. Figures are in \$ millions:

Total State CHS	\$55.2
Total State EHS	11.9 (21.5%)
Total State CHS excluding Hennepin and Ramsey Counties	22.2
Total State EHS excluding Hennepin and Ramsey Counties	3.0 (13.5%)

In comparing these figures for 1978 with the 1979 budget figures in Appendix C, it should be noted that, because of reporting guidelines, budgets of local governments (largely cities) not under the administrative control of county CHS agencies are not shown in Appendix C. They are included in the above figures.

The program summaries in Table 1 present an interesting contrast. Two programs, Moorhead and Olmsted, have been in operation for many years and are relatively stable. The other four, Scott, Cook, Winona, and Faribault-Martin-Watonwan, are new and still developing. Two programs, Scott and Faribault-Martin-Watonwan, are in counties which have a human service board structure. Two programs, Olmsted and Moorhead, are operated by "traditional" health departments. Two other programs are administered by planning and zoning offices, and two programs are administered by CHS agencies. The six programs are described further below.

#### City of Moorhead

The Moorhead program, which was started 40 years ago, is administered by the City Health Department. Services are provided only within the city. Although the city provides informal technical assistance to Clay and Wilkin Counties

the intergovernmental relationship is quite limited. The 1980 program budget does not include city tax support. However, the city did provide approximately \$6,700 in 1978. Department staff believes that their most substantial challenges today are abandoned/junked autos and apartment building garbage accumulations. There has been a tendency to place new environmental health programs in other city departments.

#### Winona County

The Winona County program emerged from the CHS planning process during 1977-78. Although the program is presently located in the planning and zoning office, it will be moved into the CHS agency in 1980. Services are presently provided only in unincorporated areas of the county, but contract negotiations are now underway with several cities.

#### Cook County

This county's relatively new program was designed as part of a four-county CHS planning effort in 1977. Approximately half of the program's resources are devoted to sewage system control, with about 30% going to solid waste management and the balance to water system control and nuisance control. Some expansion into swimming pool and recreational beach inspection is expected in 1980. The program serves all areas of the county except the City of Grand Marais and the Grand Portage Indian Reservation.

#### Faribault-Martin-Watonwan

In these counties, solid waste management, feedlot, and sewage system control services are assigned to the planning and zoning offices, while the sanitarian, who is part of the three-county Human Service Board CHS Division, handles food, beverage, and lodging inspection, water testing, and nuisance complaints. The program is still developing to meet current goals, and no significant further expansion is contemplated at this time.

### Scott County

Scott County's program was the result of an extensive needs assessment done by the Human Service staff in 1978. The new increment of an already existing environmental health effort (1 to 1.5 FTE in planning and zoning office), is funded entirely with CHS state subsidy funds. The sanitarian now is accountable to Human Services for program and budget, but program control will move to the planning and zoning office in 1980.

### Olmsted County

The Olmsted County program is comprehensive and well staffed. The present program emerged from a joining of the City of Rochester's program, which had started in the 1920's, with the limited county program, which had been started in 1952. In 1969, the city program was largely phased out (although the city does provide some services). In 1976, state CHS funds replaced some local levy funds supporting the program. Inflationary increases have been supported with CHS funds since then. In 1980, local funds (tax fees) will support 72% of program expenditures. The high level of user fee revenue is of particular note. The program is generally stabilized and no substantial expansion is expected in the near future.

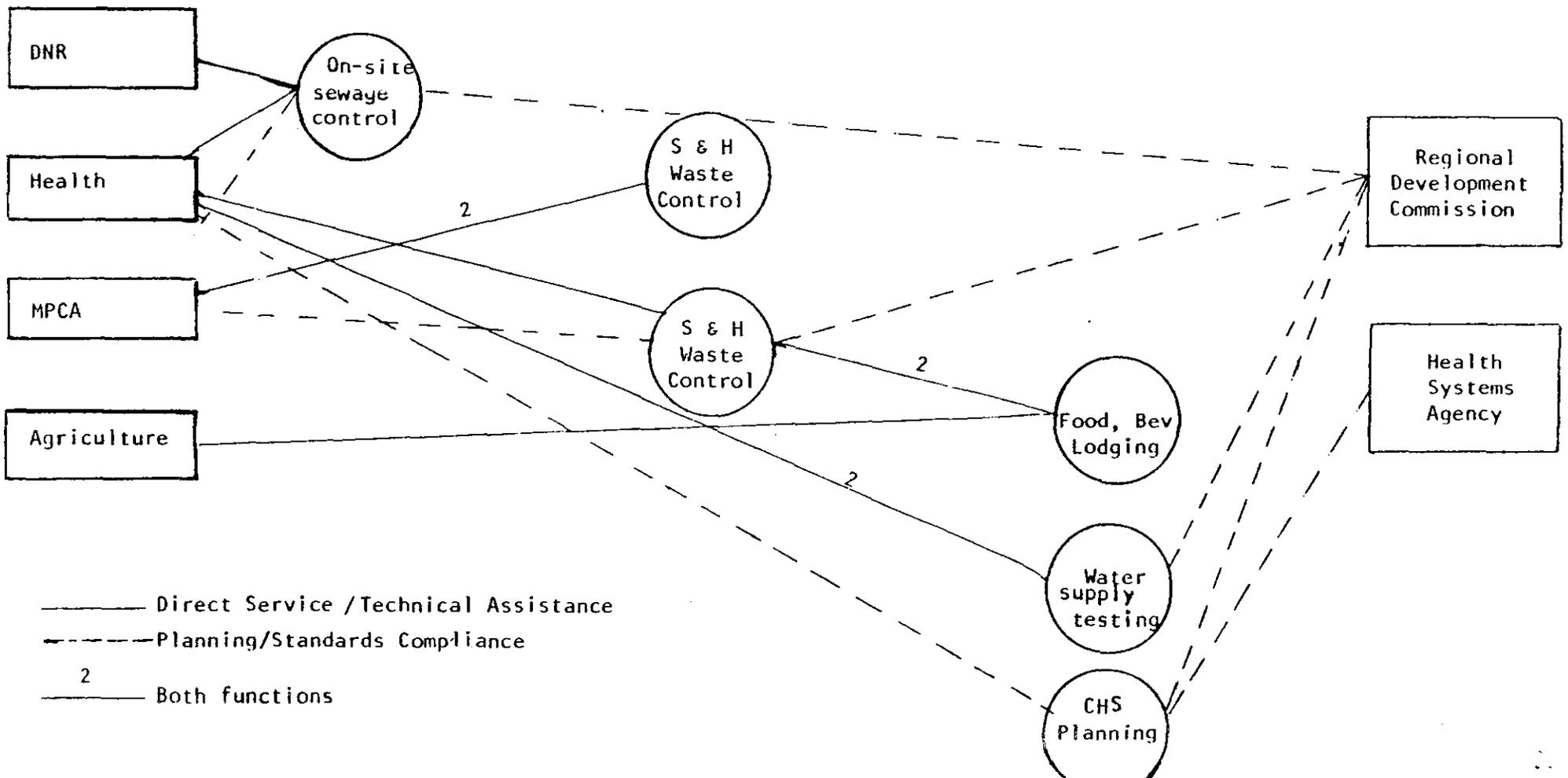
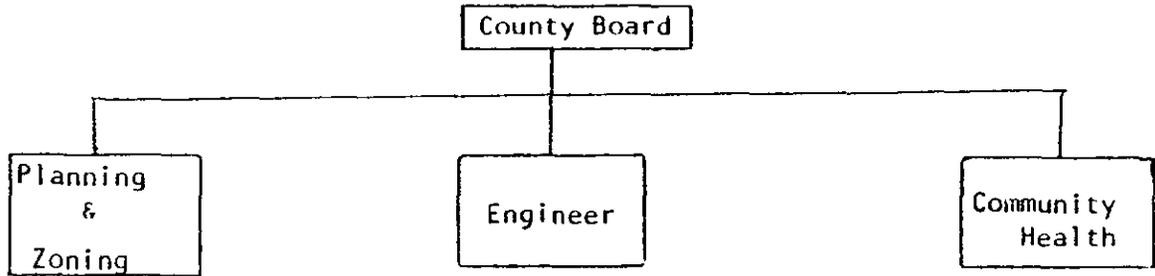
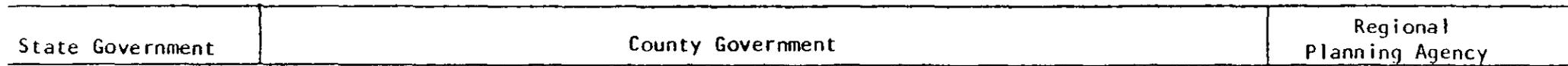
### Organization of Local Government Services

County and city governments provide environmental health services using a variety of organizational approaches and professional disciplines. While the study has not attempted to gather extensive data on organization at the local level, sufficient data has been obtained to briefly describe the approaches used at each level. The schematic on the following page shows a typical county government organization, with responsibilities assigned to the community health agency, the planning and zoning office, and the

county engineer. Data obtained during the study indicates that this pattern has many variations. However, in most counties, two or more organizational units share responsibility for environmental health service delivery.

In city government, a typical alignment can be seen in the Moorhead organization. Those functions normally performed by a sanitarian are assigned to a health department. A public service or public works unit may assume responsibility for solid and hazardous waste management, housing code administration, and animal control. Animal control services may also be provided by the police department.

**TYPICAL COUNTY ENVIRONMENTAL HEALTH ORGANIZATION**  
 Showing Relationships with State and Regional Planning Agencies



### III. ANALYSIS OF MAJOR PROBLEMS

This section reviews study findings concerning major problems or deficiencies within the environmental health service system. The problems discussed fall under three categories:

- public awareness, commonly referred to as education or lack of support for addressing environmental needs.
- environmental threats, or factors in the environment which present dangers to the public health.
- management problems, or those aspects of the service system which negatively impact on system policy development, resource allocation, and service efficiency and effectiveness.

The problem analysis approach utilized included four phases:

1. System standards, ranging from general and non-quantifiable, to specific and quantifiable, were adopted in the areas of legal authorities, communications, planning, assignment of functions, and service delivery. Service standards were developed by project staff in consultation with state agency staff, with special consideration of standards adopted by federal agencies and the State of Illinois.
2. Data describing the existing service system was assembled to obtain a good understanding of existing resources and needs. Much of this data is described in Section II. and several Appendices. A number of interviews were conducted with individuals possessing insight into service functions and needs. Finally, the technical work group of the study advisory committee conducted a two-hour group review of major needs and problems.



3. Project staff analyzed the resource and needs data in light of accepted standards.
4. The full advisory committee reviewed draft problem statements which emerged from Phases 1 - 3. The committee then assigned priorities to 11 management problems described in the draft.

The findings of the work performed in these four phases is described below. These findings provide the foundation for the goals and recommendations presented in Section IV. of the report. Table 2 on page 37 summarizes the standards, needs, current efforts, and deficiencies discussed in the four major environmental threat problem areas.

#### Public Awareness

This problem carries many labels and is often difficult to separate from other problems which inhibit the ability of state or local government to effectively identify or respond to environmental needs. It is clear that the lack of hard, convincing evidence concerning environmental needs is a major cause of the problem. Another cause may be that needs perceived by a specific segment of the citizenry are not effectively communicated to public decision-makers, that is, there is "no-one to talk to" concerning the need. The problem may be viewed in other ways:

- Elected officials may have difficulty in grasping identified needs.
- Elected officials may need more technical assistance to help define and address needs.
- Community health program administrators may lack a good understanding of how environmental health services can contribute to the total public health effort.
- Local elected officials' attention may be diverted to other major problem areas.

- A local government may be reluctant to become involved in regulatory activities.
- There may be excessive competition for community health subsidy funds from other service programs.
- Other local governments may resist entry of county government into a countywide regulation and service effort.
- Existing county government staff may feel threatened by the possible emergence of a new program.

However the problem of public awareness may be viewed in a particular community, it is clear that the major service improvements envisioned by this report cannot move forward without a comprehensive and sustained effort to improve public awareness and develop increased sensitivity to environmental problems on the part of public decision-makers in Minnesota.

#### Environmental Threats

The major threats to community health and the high quality of Minnesota's environment have been well documented by numerous technical studies, legislative investigative body reports, and news media reports.<sup>4</sup> This report will not attempt to re-state their extensive findings and recommendations. Environmental threats faced by each community will vary substantially from region to region of the state. They include the entire spectrum described in the definition of environmental health problems and services presented in Section II. However, the four major threats analyzed below will be present to some extent in every region and every county of the state. Thus, each local government must possess the resources and organizational strategies necessary to address each threat.

<sup>4</sup> For example, see the report of a Minnesota Public Health Association Task Force in Appendix G. Also, see Counties and Safe Drinking Water, National Association of Counties Research, Inc. (1979); "Official Report from the Minnesota Medical Association of Water and Health" (1978); Toward Efficient Allocation and Management, Minnesota Water Planning Board (1979); "Status of Food-borne Disease in the United States," Journal of Environmental Health (Sept./Oct., 1975).

Table 2. SUMMARY ANALYSIS OF CURRENT STATEWIDE ENVIRONMENTAL HEALTH SERVICE DEFICIENCIES

Service Standard	Need Indicators	Current Effort	Deficiency
<u>On-site Sewage Disposal Control</u> Average of two inspections per installation/modification	12,600 installations/modifications per year statewide; requires 50 FTE	30 FTE	20 FTE
<u>Private Water Supply Sanitation</u> Average of two inspections per installation	12,000 installations per year statewide; requires 60 FTE	25 FTE (state = 6 FTE)	35 FTE
<u>Food, Beverage, Lodging</u> Minimum two inspections per establishment per year	18,000 establishments; requires 120 FTE	62 FTE (local 1.5 inspections per year; state .8 per year)	58 FTE
<u>Solid and Hazardous Waste</u> As specified in approved county management plan	188 landfills (counties only); requires minimum .2 FTE per county	26 FTE	7 FTE

Explanation Notes:

- . Food, beverage, lodging service includes plan review, inspection, investigation, education. See Appendix E for definition of other services.
- . Current local government effort in Private Water Supply Sanitation is generally limited to well location regulation and water testing.
- . Workload estimates used to compute total manpower needed: On-site sewage - 250 installations/FTE; Private water supply - 200 installations/FTE; Food, beverage, lodging - 150 establishments/FTE; Solid and hazardous waste - see Appendix H.
- . In computing solid and hazardous waste deficiency, it was assumed that 43 counties required .15 FTE each additional manpower.

### Inadequate On-site Sewage Systems

Inadequate construction and poor maintenance of on-site sewage systems can result in contamination of ground and surface waters. Only 53 of Minnesota's 87 counties presently have countywide sewage system regulatory programs. Thus, development is sometimes controlled only in the shorelands and flood-plain areas as mandated by state law. As indicated by the data in Appendix E, a number of counties (both with and without countywide regulation) do not have sufficient manpower or inspection procedures to provide adequate inspection of new and modified installations, based on the service standards adopted by the advisory committee and shown in Table 2.

Data in Table 2 indicates that adequate control of on-site system installation requires an average of two inspections per installation/modification. It is estimated that there were 12,600<sup>5</sup> new or modified systems installed in the state during 1979, largely in rural areas, lake areas, and areas just outside city boundaries. For the entire state, using a workload figure of 250 installations (and other related activities described in the service definitions) per full-time equivalent inspector, adequate regulation of these systems would require a total of 50 FTE. At present, only 30 FTE's (excluding an unknown amount of small outstate city and suburban manpower) are committed to the inspection function statewide. Thus, the state service deficiency for on-site sewage disposal control is 20 FTE's.

### Inadequate Private Water Supply Systems<sup>6</sup>

Improperly located, constructed, and maintained private wells can produce contaminated water. At present, counties generally regulate only location of

---

<sup>5</sup> This figure was obtained by totaling the figures provided by each county and adding 20% to that total to compensate for unregulated and city installations, for which no data was available.

<sup>6</sup> This discussion also applies to "public non-community" water supplies, which serve at least 25 non-residents at least 60 days a year.

new wells.<sup>7</sup> Construction is generally not regulated. Although statewide, the local manpower effort in water supply sanitation totals 19 FTE, it is believed that only a small portion of this manpower, perhaps 9 FTE, is committed to well installation regulation. The Department of Health has an additional 6 FTE committed to this function. It is estimated that 12,000 new wells are installed annually. Application of the standards and workloads indicated in Table 2 to this need would result in a manpower deficiency of 35 FTE.

#### Food-borne Illnesses and Unsanitary Lodging

Without adequate regular inspection services, contaminated food and unsanitary and unsafe public accommodations can result in widespread and debilitating illness and injury. At present, a number of cities in Hennepin County and Ramsey County, and several cities and counties in the outstate area provide a relatively high level of inspection services. However, about two-thirds of the state's 18,000 food, beverage, and lodging establishments are being inspected only once every 15 months. This is considerably below the two inspections per year recommended by the U.S. Public Health Service's Food and Drug Administration. Totaling the present manpower commitments of the MDH and local governments, the service deficiency is still 58 FTE.

#### Solid and Hazardous Waste Surveillance and Planning

Without adequate solid waste disposal practices and facility and hauler inspection, substantial contamination of water supplies, air, and soils can result. The safety of entire communities can be jeopardized by inadequate handling and disposal of hazardous wastes. Although most counties regulate landfill development and operation (see Appendix D), very few have up-to-date

---

<sup>7</sup> Figures in Appendix D showing only 29 counties regulate well location are believed to understate the extent of location regulation.

solid and hazardous waste management plans. Appendices E and F and Appendix H contain data on current manpower commitments to this service area and the minimum level of manpower required to perform surveillance and planning functions. Since a number of counties are currently involved in intensive solid and hazardous waste planning efforts, much of the manpower shown in Appendices E and F is believed to be committed to the planning function. A total of 43 counties are presently committing .1 FTE or less to the surveillance and planning function. Approximately 90% of these counties have one or more landfills. Assuming that the manpower requirements (Appendix H), developed for purposes of this project with MPCA staff, are reasonably accurate, it would appear that there is a manpower deficiency of 7 FTE in this area.

#### Health and Safety Hazards Resulting From Nuisance Conditions

A nuisance is any environmental condition which is injurious to the health, offensive to the senses, or interferes with public or private use of property. Problems falling into this category might also be labeled as solid waste, vector, animal control, or air pollution problems. Although Appendix D indicates that only 35 counties have nuisance control ordinances, it is believed that most counties do provide some type of assistance to residents troubled with nuisance conditions. The level of manpower committed to this function is apparently quite low, as indicated by the "other" column in Appendix E. Only 38 of 80 outstate counties show manpower commitments to "other" environmental health functions, which would include nuisance control. Four metro counties were not asked to indicate their manpower commitment to the "other" category. However, it is believed that at least five of the seven metro counties have some manpower performing nuisance control.

No service standards were established for this function. However, the State of Illinois specifies a standard of 1 FTE for a population of 25,000. Using any figure close to the Illinois standard as a measure, the deficiency in Minnesota would appear to be substantial.

#### Management Problems

A total of 11 separate but closely related problems involving system policy development, planning, coordination, accountability, organization, legal authority, and service efficiency were identified and reviewed by the advisory committee. The five highest priority problems are reviewed in detail below. The other six areas are then outlined briefly.

#### Lack of Integrated State Government Environmental Health Strategy

At present, state government environmental health policy and services are developed and executed by four major independent agencies with varying impacts. The responsibilities assigned to these agencies have been developed over a period of many years. The strategies and goals inherent in each assignment have generally been developed independently by both the legislative and executive branches. Although efforts have been made through the State Planning Agency and the Environmental Quality Board (EQB) to coordinate agency activity, each agency generally "does its own thing" when developing intergovernmental policies required to carry out its mission. As state programs and agencies expand, the impact of this phenomenon on local government becomes more confusing. There is a tendency on the part of state agencies to communicate with only one local government organizational unit without regard

to related activities of another unit or without regard to communications flowing to the local government from another state agency. This practice makes it difficult to develop cohesive and effective local government environmental health programs. Thus, there is a need for the development of coordinated state agency local government policies and operating procedures.

#### Poor Coordination of State Fiscal Policies and Intergovernmental Legal Mandates

Mandated state programs (see Appendix B) such as the shorelands management program of the Department of Natural Resources, require resources at the local level if mandates are to be effectively carried out. State fiscal policy in recent years has generally been directed at lessening the burden of local property tax levies. This has severely limited the powers of local government to generate additional resources locally. Although many environmental health services could, in the future, be supported by user charges, state support is currently necessary for undertaking mandated responsibilities. State policy support will also be necessary to increase user charges at the local government level.

#### Lack of Understanding of Legal Authority and Enforcement Powers of Counties

The Community Health Services Act gave counties which opted to come under the provisions of the Act, broad general authority to adopt environmental ordinances with countywide applicability which are not in conflict with state standards. However, in relation to cities, that general power is confused and perhaps limited to some extent by the home rule authority of some cities and the broad public safety regulatory authority of all cities. The issues concerning the impact of the CHS Act on cities which are apparently causing the most confusion are:

- (1) Does a city have the authority to adopt environmental ordinances which pre-empt county ordinances?
- (2) May a city (or is a city required to) maintain its own board of health?

In addition to their regulatory powers, counties possess the authority to exercise a range of enforcement procedures. A county can enforce the various regulations and standards by adopting a system of citations and fines for specific violations, similar to that currently in use in Hennepin County. Further, since violation of any rule or order of the Commissioner of Health (and enforceable by a local health department) is punishable as a misdemeanor (Minnesota Statutes Section 144.49 (1978)), a county sanitarian or other local public health official can gather and present evidence of such violation to the county attorney for prosecution.

Many counties and cities apparently do not understand where county authority stops and city authority begins. Many counties are also uncertain about their authority to use authorities and tools. These two issues are retarding a higher level of intergovernmental cooperation, service expansion, and service effectiveness. Thus, a major effort is needed to carefully document existing legal authorities, correct any existing conflicts in state law, and educate local officials concerning their authorities and responsibilities.

#### Local Government Organization

Most counties are presently not equipped organizationally to handle the maze of intergovernmental relationships and service functions dictated by current state agency structures and state mandates. To some extent, this observation also applies to small cities. In many small counties and cities,

there is no central management mechanism and limited technical expertise. In counties, decision-making must come together in a county board which has been confronted with a number of new responsibilities in the last 10 years. Environmental health service delivery may be assigned to two, three, or four separate individuals or units, as shown by the organization chart in Section 11. This splintered organizational approach, combined with limited or little central coordination, has made it difficult for counties to develop the necessary policy initiatives and develop new services.

#### Service Duplication

There are several types of duplicatory efforts in the environmental health service system. The first occurs in the area of state technical assistance to, and communications with, local governments. Although the amount of manpower committed to these functions may be quite limited, the impact of multi-communications, whether for purposes of specific problem-solving or general assistance, can be substantial in terms of lost time and misunderstandings. Where two state agencies are pursuing the same local government goals in the same service areas, those agencies should attempt to centralize communications with local government.

The second type of duplication occurs when the Department of Agriculture and a local government perform the same type of inspections in the same facilities. At present, although the Department of Health and the Department of Agriculture coordinate their respective food inspection functions, this is not true with Agriculture and local governments. The Department of Agriculture believes that the existing mode of operation is not duplicatory, since its efforts often result in the discovery of violations not found by a local government inspector. However, a number of local governments do not agree and believe Agriculture's activity is unwarranted.

### Other Management Problems

Several other management problems documented during the course of the project may have a significant impact in some jurisdictions.

Intergovernmental relationships between counties and neighboring counties and between counties and cities can be substantially improved. At present, the relatively low level of intergovernmental cooperation is hampering the development of economic and optimum impact environmental health programs.

Poor planning and needs assessment methodology and data at both the state and local government levels have prevented the articulation of environmental health problems and objectives to the public and key decision-makers. A closely-related problem is the lack of sufficient problem or planning orientation within state government. The agencies appear to be day-to-day action oriented. In a rapidly changing policy environment, this tends to inhibit responsiveness to fundamental system and organization problems and the ability to clearly understand the policy and political backdrop to state agency operations.

Development of a sound accountability framework for both local government services and state services is severely hampered by the lack of performance standards required to evaluate programs, document outputs for the public, and establish clear objectives.

Sound environmental health program development requires the skills and coordinated efforts of several disciplines (sanitarians, environmental specialists, nurses, planners, engineers). The ability of local governments to develop cohesive organizational relationships and delivery systems may be handicapped by the tendency of several professional disciplines to communication only within the discipline and to shape delivery systems to meet the needs of the discipline.

#### IV. GOALS AND RECOMMENDATIONS

This section describes overall program goals and specific recommendations for action which the advisory committee believes are responsive to the environmental health system problems discussed in Section III. These goals and recommendations form the framework of an improved environmental health service system. Also included is a brief review of the alternative program structures considered by project staff and the advisory committee. These alternatives were considered to be basic elements of the proposed framework and thus deserve special attention

##### Goals and Alternative Structures

The following three goals must be addressed in building a quality environmental health service system. These goals are believed to be consistent with current county and city policies (see Appendix I).

GOAL #1. BY 1986, DEVELOP THE FOLLOWING SERVICES IN EVERY MINNESOTA COUNTY: ON-SITE SEWAGE DISPOSAL CONTROL; PRIVATE WATER SUPPLY SANITATION; FOOD, BEVERAGE, AND LODGING INSPECTION; SOLID AND HAZARDOUS WASTE SURVEILLANCE; NUISANCE CONTROL.

GOAL #2. IMPROVE STATE AND LOCAL GOVERNMENT ENVIRONMENTAL HEALTH POLICY DEVELOPMENT AND PLANNING PROCESSES.

GOAL #3. DEVELOP EQUITABLE AND ECONOMICAL FUNDING MECHANISMS FOR IMPROVING ENVIRONMENTAL HEALTH SERVICE DELIVERY.

In addressing these goals, several alternative state-local program structures for the development of improved services have been considered:

- (1) Establish the proposed program within the framework of the existing Community Health Services Program administered by the Department of Health.
- (2) Develop a new state-local initiative independent of any one of the state agencies which currently administer environmental health programs, but linked to each through a coordinating mechanism (for example, another state agency responsible for coordination of state services).

The advantages of utilizing the current CHS framework are: (1) it is an existing mechanism which local governments are now accustomed to; (2) the program has been generally well received by local government; (3) a natural linkage between environmental health services and other health services would be maintained. The disadvantages are: (1) the program is tied to one agency, whereas local governments must work with several state agencies in conducting environmental health programs; (2) environmental health policy and service development would tend to be dominated by the health disciplines, whereas it is recognized that the commitment of several disciplines is required for effective service delivery.

The disadvantages of developing a new program independent of any one of the major state environmental health service providers are: (1) the interests of each agency can be considered on "neutral" ground; (2) each discipline has an equal opportunity to participate in policy and service delivery development. The disadvantages are: (1) an entirely new mechanism, probably administered by new personnel, would have to be developed, with accompanying start-up costs and independent reporting, etc.; (2) the administering agency would have to develop expertise in environmental health and would have to develop new interagency coordinating mechanisms; (3) a special effort would have to

be made to ensure coordination of the new program and existing and future CHS-funded environmental health programs.

Considering the advantages and disadvantages of each approach, the Advisory Committee believes that use of the existing CHS mechanism would achieve the best results, and it is thus recommended that the proposed program become an integral part of the CHS program.

#### Recommendations

Recommendations of the Advisory Committee are briefly described below under eight components of the proposed program.

#### Division of Service Responsibility

In considering the primary focus of environmental health service delivery, the alternatives are (1) state government primary service provider; (2) local government primary service provider. At present, Minnesota state government is committed to a policy of decentralizing as many services as possible at the local level. The basic rationale behind this policy is the belief that services should be as close as possible to the impact of problems. The Advisory Committee believes that this policy should be continued and clarified. In assigning responsibilities for the provision of services at each level, careful consideration must be given to a number of factors. It is proposed that the following criteria be used to assign responsibility to state and local government:

1. The degree of special expertise and equipment required and the opportunities for maximizing the efficiency of these resources.
2. The relative uniformity or lack of uniformity of need for the service in various regions.
3. The degree of accountability which must be maintained by either level of government in providing the service.

4. The level of consequence, both in terms of intensity (number of people involved) and geographic scope, of the problem.

5. The degree of efficiency each level can achieve in service delivery.

Using these criteria, the service assignments outlined in Table 3, page 50, would result.

Recommendation #1. Primary responsibility for environmental health service delivery should be assigned to local government, as shown in Table 3, page 50.

It must be recognized that in implementing the assignment structure described in Table 3, it will be necessary for state agencies and local government to jointly develop detailed service activity descriptions. This will allow for the analysis and resolution of specific problems which will emerge as the transfer of functions begins.

#### Fiscal Support

It is proposed that a system of state fiscal incentives for the development of improved environmental health programs in local government be established. The program would be permissive, that is, local governments would participate on a voluntary basis. Funding would flow to community health service boards. It is estimated that the costs for the first year of the program, assuming participation by all 87 counties, and full implementation of the basic service components, would be at least \$7.3 million (see chart on page 53). This figure is based on the specific service needs described in Section III. The precise cost would vary with the funding formula used.

Table 3. ASSIGNMENT OF ENVIRONMENT HEALTH FUNCTIONS

Local Government <u>Primary<sup>8</sup> Provider</u>	State Government <u>Primary<sup>9</sup> Provider</u>	Shared <u>Responsibility</u>
Food Protection	Hazardous Product Safety	Hazardous Waste Management
Water Supply Sanitation	Occupational Safety and Health	Water Pollution Control
Sewage Disposal Control	Radiation Control	Air Pollution Control
Solid Waste Management	Water Supply Sanitation (Municipal Supplies Only)	Noise Pollution Control
Vector Control		
Recreational Sanitation		
Housing Safety and Sanitation		Institutional Sanitation
General Nuisance Control		

<sup>8</sup> The term "primary" includes the following activities: monitoring, permits issuance, plan review, inspection, enforcement, technical assistance/consultation, planning, training and public education. Where local government is the primary provider, state support services would include: state policy development, technical assistance, standard setting, evaluation, public education, training.

<sup>9</sup> Where the state is the primary provider, local government support would include: reconnaissance, reporting, and local planning.

Since not all counties would enter the program the first year, and since it will take several years for most counties to fully implement the basic services, the actual first year cost would likely be considerably less than the above figure. As certain services now provided by state government were assumed by local government, a state government cost offset would occur. The amount of this offset is unknown. Basic services would be supported at 50% of cost during the first year, with local user charges, established under state guidelines, or other local revenue, funding the balance of the cost of the following services: on-site sewage disposal control; private water supply sanitation; food, beverage, and lodging inspection; and solid and hazardous waste surveillance. Funding equal to 20% of the cost of the above four services would be provided to support nuisance control costs and other costs not recoverable from user charges. Over a five-year period, state support would be reduced at the rate of 10% per year and local governments would be expected to increase user charges or provide local tax dollars up to the 100% of cost level. State funding would be eliminated after five years. Funding for nuisance control and other costs would also be phased out after five years. Counties would be expected to replace these funds with funds received under the current CHS program or with local funds. Counties could enter the program any time during the first three years and would still be allowed a five-year user charge phase-in period.

This program would be considered a targeted supplement to CHS subsidy funds. Counties would be free to use regular CHS funds to develop services beyond the basic services funded by the supplement. The program would also include:

- a special one-time planning grant of \$5,000 to each county to support the development of an improved environmental health component of the existing CHS plan.

- \$225,000 annually for training programs in private water supply sanitation, solid and hazardous waste surveillance, and food, beverage, and lodging inspection, to be developed and administered by a state interagency team.
- \$175,000 (first-year cost) for a program of public environmental awareness, to be administered by a state interagency team, with funds distributed primarily to contractors, including local governments, who can demonstrate broad program impact and the involvement of local communities affected by the program.

Recommendation #2. The state should provide supplemental funding to existing CHS funds to support the planning of environmental health programs and development of five basic services in every county, on a permissive basis. Funds should also be provided to the several state agencies for undertaking a public environmental awareness program and training programs in the basic service areas.

#### Revenue Base

Current state revenue policy attempts to avoid added burdens on the local property tax base. Thus, support for the proposed program must come primarily from state revenues and user charges. There has been sufficient experience with user charges at the city level and in several counties to provide assurance that user charges can be utilized to fund services which directly benefit individuals or organizations. It would appear that such

PROJECTED FIRST-YEAR  
STATE FUNDING REQUIREMENTS

#1	Sewage Disposal Control; Water Supply Sanitation; Food, Beverage, and Lodging Inspection; Solid and Hazardous Waste.	\$ 4,602,500
#2	Nuisance Control and Other Supportive Services.	\$ 1,841,000
#3	Planning.	\$ 435,000
#4	Training and Public Awareness.	\$ 400,000
	TOTAL	\$ 7,278,500

Explanation of Costs:

#1 - Four Services - This is computed at 50% of the total costs for on-site sewage disposal control, private water supply sanitation, food and lodging inspection, and solid and hazardous waste surveillance functions. The total cost figure was obtained by using an FTE cost of \$35,000 and multiplying this by the total FTE need, which is 263. (See Table 2.) The \$35,000 figure consists of basic staff salaries (\$20,000), fringe (\$5,000), and support (\$10,000).

#2 - Nuisance Control and Other Supportive Services - This would include funding for all costs, including nuisance control, which could not be recovered from user fees. It is computed at 20% of the total service costs in #1.

#3 - Planning - This would include a \$5,000 one-time grant to each county for development of an environmental health component of the Community Health Services Plan.

#4 - Training and Public Awareness - This would support training efforts such as the current on-site sewage systems program. The unreimbursed cost for three programs in private water supply, food, beverage, and lodging, and solid and hazardous waste is estimated to be \$75,000 each. The first-year cost of a public awareness program is estimated to be \$175,000.

charges could be used to support at least 80% of the total cost of local programs, and 100% of the costs of four of the five basic services. However, such fees, to gain public acceptance, must be phased in over a period of years.

Recommendation #3. Local user charge schedules, based upon state guidelines, should be implemented statewide to support, where desired by local government, the full costs of: on-site sewage disposal control, private water supply sanitation, food, beverage, and lodging inspection, and solid and hazardous waste surveillance. Local governments would retain the option of supporting all or a portion of such services with local revenues.

In considering state funding for this program, the three alternatives available are: (1) use of the existing CHS Act formula, (2) use of a general environmental needs formula, (3) use of a specific environmental needs formula. These alternatives reflect a range of funding philosophies and cost impacts.

Use of the existing CHS formula, which includes population, income taxable value, and local expenditures, would not be as responsive to individual county needs, since environmental health needs (especially the basic needs identified by this study) are not necessarily related to these four factors. The CHS formula would also be more costly and would be more difficult to coordinate with implementation of a user charge system.

Project staff undertook a comparison of funding levels which would result from: (1) application of the existing CHS formula, assuming an add-on to the existing per capita allocations; and (2) distribution of funds based upon the estimated cost of the FTE's required to provide current or minimum service levels set forth in Section III (Table 2). These two approaches reflect alternatives (1) and (3). The cost of (2) would likely fall somewhere between the two.

The comparison was undertaken by analyzing the minimal service FTE requirements of Sibley County, then calculating the per capita rate which would be necessary to fund this service level under the CHS formula. Cost estimates for specific FTE's required by Hennepin and Ramsey Counties were then compared to the allocations these two counties would receive under the CHS formula, assuming the existing ratios between the per capita rates for the two large counties (\$2.47 and \$2.65) and Sibley County (\$2.16). The result was approximately \$1 million more to the two large counties using the CHS formula. This would mean that the total program cost would probably be \$1.3 to \$2 million greater if the CHS formula was used.

The Advisory Committee has not recommended a specific funding formula. However, it is recommended that an environmental needs-based formula be utilized. Such a formula should include population and land use factors, in addition to specific need indicators.

Recommendation #4. Funding for local programs should be based upon environmental health needs, as defined by specific indicators and population and land use factors, rather than the existing CHS formula.

## State Role and Organization

Local government effectiveness in delivering environmental health services can be substantially improved by consistent state agency policies and communication patterns which let local government know what is expected of it and how state government will support local government efforts. As defined in Table 3, this support includes policy development, technical assistance, standard setting, evaluation, public education, and training. The capability of state government to achieve a high level of performance is enhanced by sound organization, well understood interagency planning and service coordination procedures, and sensitivity to the local government environment. Thus, the Advisory Committee believes that state agencies should review both internal organization and interagency linkages to determine if improvements in existing patterns can be accomplished. This conclusion, however, should not be construed to mean that reorganization is the only method to achieve improved performance.

Recommendation #5. State government should improve coordination among agency programs by reviewing existing organizational patterns and developing new interagency linkages. This recommendation should be referred to the Governor for action.

In addition, state agencies should act to clarify existing direct service decentralization efforts. This will facilitate movement toward the assignment of responsibilities outlined in Table 3. The Advisory Committee believes that responsibility for the following direct services could now

be moved to the local level if necessary resources were provided. The decision whether these services would be delivered by a specific local government would, of course, be made by each jurisdiction:

1. Food, beverage, and lodging inspection (Health).
2. Food inspection (sanitation) (Agriculture).
3. Private water supply sanitation and on-site sewage disposal system regulation (Health).
4. Swimming pool inspection (Health).
5. General nuisance control (Health).
6. Landfill inspection (MPCA).
7. Dump closing (MPCA).
8. Complaint investigation (MPCA).
9. Open burning enforcement and fire permits (MPCA).

Each state agency should establish suggested timetables for service decentralization. These timetables would take into consideration the readiness and willingness of individual local governments to provide the several services. Those local governments which decide to assume service delivery responsibility could deliver the service directly or through a contractor, including a state agency.

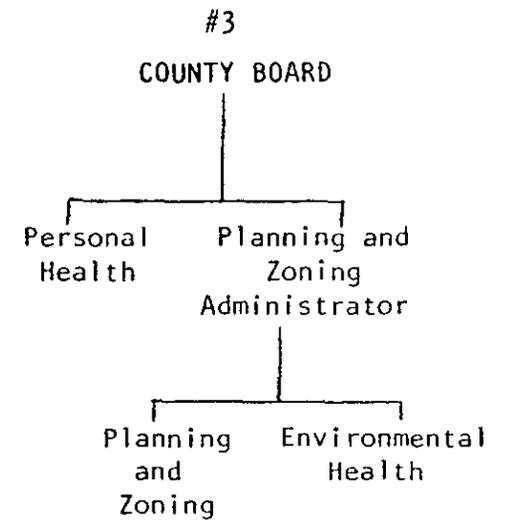
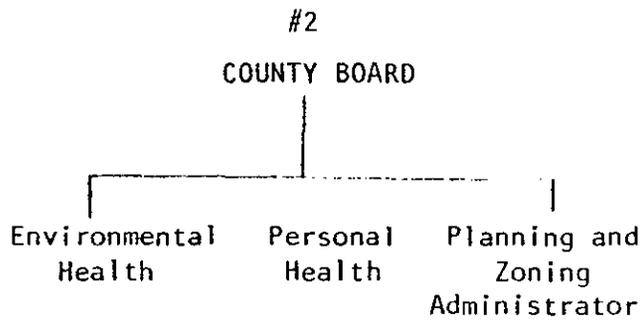
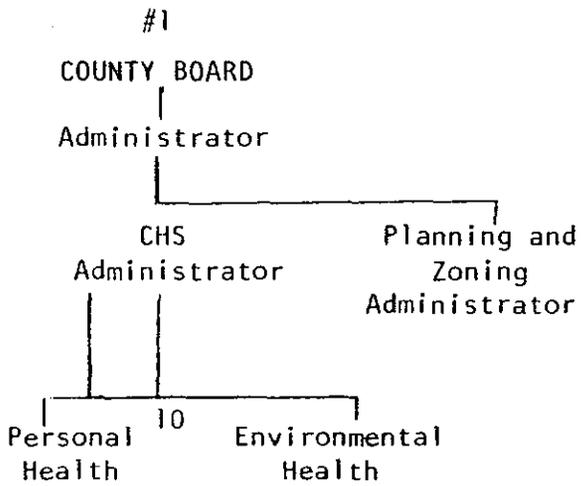
Recommendation #6. State agencies should establish suggested timetables for the decentralization to local government of services listed in Table 3.

### County and City Organization

County government environmental health organization problems were discussed in Section III. The chart on the following page shows six organizational options currently available to county government. These options, which attempt to focus on operating level organization, include both "health-oriented" and "development-oriented" structures. Some of the benefits and disadvantages of each are listed below the charts. It should be understood that these lists are based on general organization principles. Factors peculiar to a specific unit of government could effectively negate either a benefit or a disadvantage. Counties should review existing environmental health organization and identify potentials for improvement. If at all possible, some type of mechanism should be established to centralize accountability for environmental health service delivery. The advantages of either a "health" approach or a "development" approach should be carefully weighed. Data reviewed during the course of the project indicate that either approach can be effectively utilized.

Recommendation #7. Each county government should evaluate existing organizational strategies for the provision of environmental health services.

Figure 3. SIX ALTERNATIVES FOR COUNTY ENVIRONMENTAL HEALTH ORGANIZATION



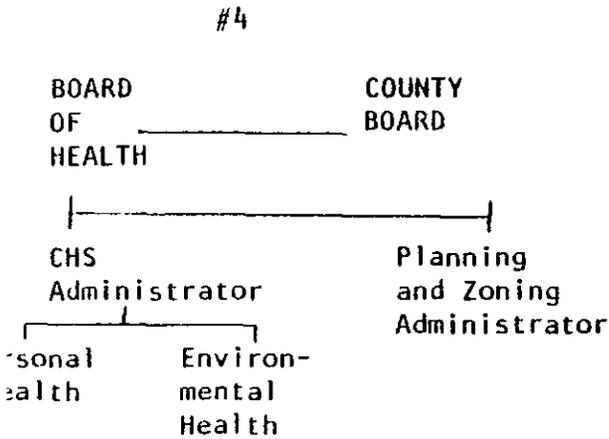
- . Coordination with Personal Health
- . Limited Access to Board
- . Coordination with Planning and Zoning (with Administrator)

- . Direct Access to Board
- . Wide Span of Control for Board
- . Health Functions Separated
- . Weak Coordination with Planning and Zoning

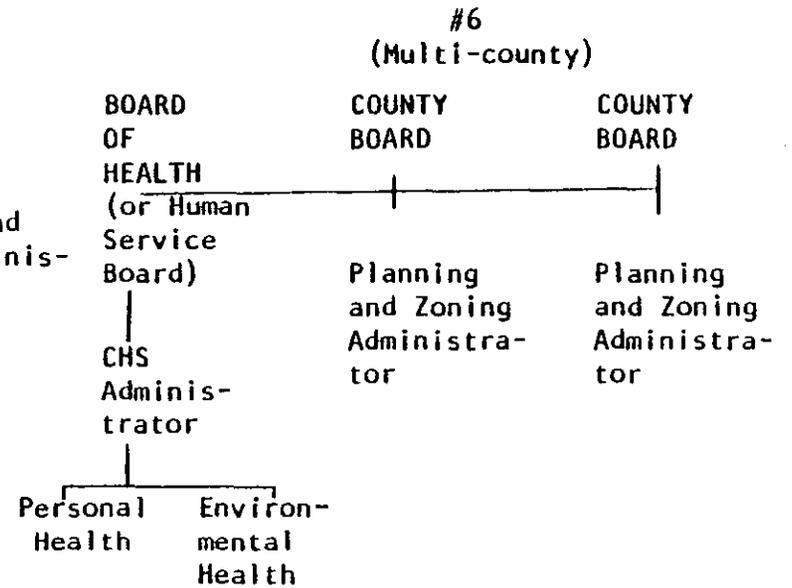
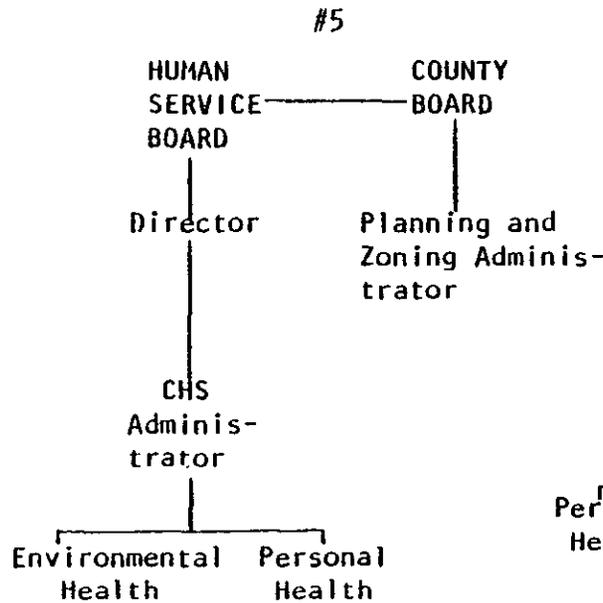
- . Coordination with Development Planning
- . Limited Access to Board
- . Health Functions Separated

<sup>10</sup> Personal Health includes Emergency Medical Services, Disease Prevention and Control, Home Health, Community Nursing, and Health Education

Figure 3. SIX ALTERNATIVES FOR COUNTY ENVIRONMENTAL HEALTH ORGANIZATION  
(Cont'd.)



also could consist of variations as in #2 and #3.)



(Could consist of variations as in #2 and #3 or could consist of health services delivery independently in each county.)

- . Coordination With County Board Required
- . Special Focus on Health Policy

(See #1 also)

- . Strong Management Support
- . Limited Access to Either Board
- . Coordination With Personal Health
- . Weak Coordination With Planning and Zoning

- . Coordination With Several Counties Required.
  - . Special Focus on Health Policy
  - . Economies of Multi-County Service Delivery Possible
- (See #1 also)

## Intergovernmental Cooperation and Legal Authorities

Counties and cities should intensify their efforts to jointly provide environmental health services. This would maximize the use of scarce talent and achieve economies of scale. Counties should also consider the use of district or other joint power arrangements to provide basic services. However, to achieve improved intergovernmental cooperation, the legal authorities of counties and cities to adopt and enforce environmental ordinances need to be clarified. Thus, the following recommendations are presented:

Recommendation #8. Counties and cities should intensify the use of intergovernmental mechanisms to enhance environmental health service delivery.

Recommendation #9. The Minnesota Department of Health, Association of Minnesota Counties, and the League of Minnesota Cities should develop a joint position concerning the legal authority of counties and cities to adopt and enforce environmental ordinances. These organizations should develop a program of technical assistance directed at local government utilization of legal authority and enforcement mechanisms.

## Integrated Planning

State agency program or plan requirements for local governments should be linked together into an integrated planning system. This should achieve a degree of coordination between agencies and programs both at the state and local levels. It will also enable county boards and city councils to develop more cohesive environmental policies.

Recommendation #10. State Agency requirements for local government planning should be linked together into one integrated planning system for use by local governments. This recommendation should be referred to the Governor for action.

## Performance Standards and System Evaluation

In order to assure the development of improved services, and to demonstrate the payoffs to be obtained from increased service investments, environmental health system performance and evaluation strategies must be developed. Although the Department of Health has made some progress in this area, a stepped-up effort is needed.

The service standards utilized in Section III. to assess current service deficiencies represent one approach to system evaluation. Several other approaches are also available. These are outlined in the chart on page 64.

A multi-component approach to evaluation ensures that the system is being assessed from a "total systems" perspective - that is, a perspective which recognizes the fact that many individual elements of the service system are

A PROPOSED ENVIRONMENTAL HEALTH SYSTEM  
EVALUATION FRAMEWORK

COMPONENTS	ELEMENTS	COMMENTS
I. RATE OF PROGRAM DEVELOPMENT	<ul style="list-style-type: none"> <li>. No. of Local Governments With New Services</li> <li>. No. of Residents Using Service</li> <li>. % of Population Served</li> </ul>	Relatively easy to establish data base and report; monitoring of implementation of Study Advisory Committee recommendations could be included.
II. SERVICE PERFORMANCE AND COST EFFICIENCY	<ul style="list-style-type: none"> <li>. No. of Units of Service Delivered</li> <li>. Cost Per Unit of Service</li> </ul>	Good standards available for basic services included in report; standards similar to those used in report could be adopted.
III. ORGANIZATIONAL PERFORMANCE (Structure and Organization)	<ul style="list-style-type: none"> <li>. Qualifications/training of Staff</li> <li>. Organizational Linkages</li> <li>. Policies and Procedures</li> </ul>	Staff qualifications development already underway; flexibility required in each element.
IV. PROCESS PERFORMANCE	<ul style="list-style-type: none"> <li>. Service Activity Quality</li> <li>. Communications Quality and Quantity</li> </ul>	Requires agreement on <u>how</u> and <u>what</u> activities should take place; flexibility and careful documentation required.
V. PROGRAM RESULTS	<ul style="list-style-type: none"> <li>. Reduction of Incidence of Disease, Deaths</li> <li>. Population Health Status Measurement</li> <li>. Other Impact Measurement</li> </ul>	Indicators available but difficult to measure; long-term effort needed starting with simple indicators.

responsible for the performance of the whole, and each merits a separate (but coordinated) evaluation. The proposed components of a comprehensive environmental health evaluation framework are as follows:

I. Rate of Program Development

This component looks at how the system is expanding to reach the needs of the state's communities. It stresses new services, number of persons in the population served, etc.

II. Service Performance and Cost Efficiency

This component examines the quality of a service delivered, using accepted standards as a measuring stick for performance. It also looks at the cost per unit of service delivered, using accepted unit cost standards as a measuring stick.

III. Organizational Performance

This component would examine how the service provider organized its program, what type of staff were employed in terms of qualifications, and what policies and procedures were used to deliver services. The standards used would be based upon established relationships between certain structures, skills, etc., and the service results desired.

IV. Process Performance

This approach is closely related to III. It examines how a specific service activity is performed (for example, an on-site sewage system inspection), using accepted standards required to assure desired service results.

## V. Program Results

The program result component attempts to measure the outcome of service delivery using available indicators such as those described in the chart. Gathering data on outcome is perhaps the most difficult challenge to evaluation system development. Generally, development of this component will require more resources than any of the other four.

Agreement on the content of an evaluation system is perhaps the easiest part of system development. The most formidable challenge to evaluation lies in the strategies utilized to develop the system. The following are some suggested strategies for use in environmental health evaluation system development:

- (1) Initial evaluation efforts should be directed at the basic service needs described in this report, in order to keep the effort simple, and to focus on those services with broad support.
- (2) Because the system will impact on the interests of several state agencies and many local governments, the developmental process must consist of a partnership approach.
- (3) A sound system cannot be developed quickly. System development must be based on a multi-year work plan, addressing the simplest and most widely comprehended elements of the system first.
- (4) Each state agency involved in the development effort should examine its current staff commitment to system evaluation and identify ways in which that commitment could be improved.

- (5) Technical assistance and educational mechanisms should be used to explain the proposed system to those who will be affected. For example, a technical manual on evaluation could be prepared and workshops could be conducted.
- (6) In order that system development represent the expertise and sensitivities of a broad spectrum of professionals, participation from such organizations as the Minnesota Environmental Health Association and the Minnesota Public Health Association should be sought.
- (7) The Department of Health should make a special effort to work with CHS agencies to improve the evaluation components of CHS agency plans.
- (8) Each state agency should make a special effort to incorporate an evaluation component (similar to the local CHS plan component) in its biennial budget.

Recommendation #11. The Minnesota Department of Health, in cooperation with other state agencies and local governments, should develop a system of service performance standards and a comprehensive environmental health evaluation system embracing both state and local service delivery.

APPENDIX A

APPENDIX A  
ENVIRONMENTAL HEALTH POLICY STUDY SUMMARY WORK PROGRAM

The project work program used to guide committee and staff activities consisted of 57 work tasks undertaken between August 23, 1979, and February 29, 1980. The work program was based upon an MDH-MCRF contract executed in August.

The following is a summary of the four phases of the project, showing the products of each phase.

Phase I - Project Organization and Work Program Preparation (8/23-10/10)

This work involved defining the roles of MDH and MCRF staff, developing a work program, and conducting a preliminary literature search.

Phase II - Organization of Advisory Committee and Provision of Staff Support (8/23-11/28)

This phase included developing a charge to the committee, selecting the membership, defining a mode of operation, and orienting committee members.

Phase III - System Analysis (8/23-12/20)

This phase included documentation of the existing state and local government services and analysis of current system problems. The products included:

- documentation of legal authorities and responsibilities;
- a report identifying current deficiencies in the state's environmental health delivery system.

Phase IV - Program Development (11/1-2/29)

This phase involved the development of a framework for future environmental health service delivery, an analysis of system cost implications, and development of a system performance evaluation framework.

The products included:

- a description of future roles for state and local government in the delivery of environmental health services;
- a proposed management structure for the delivery of environmental health services, including changes required in legal authorities, cost implications, potential funding sources, and approaches to evaluating the proposed structure.

APPENDIX B

## APPENDIX B

### MINNESOTA ENVIRONMENTAL HEALTH LAWS AND RULES

#### Environmental Health Laws

Several state agencies have been charged by statute with responsibility for statewide administration of the laws, rules, standards, and policies related to environmental health service delivery. These statutes typically encourage or mandate local government involvement in service delivery. Local government ordinances may not conflict with any state statute or rule.

The following statutes either 1) designate state agency responsibility for administering services, or 2) govern local governmental activities within a given service area. Only those statutes which serve as an introduction to a subject or service area are included, with certain specified exceptions. All references herein are to Sections of Minnesota Statutes, 1978.

#### GENERAL

116B.01-.12: Environmental Rights Act. Gives citizens certain rights to participate in, and seek review of, decision-making that affects the environment.

116D.01-.07: Environmental Policy Act. Establishes state policy regarding protection of the environment (the EIS process).

116C.03: Environmental Coordination Procedures Act. Establishes Minnesota Environmental Quality Board to insure coordination among agencies in matters affecting the environment.

Chapter 116: Gives broad authorities to the Minnesota Pollution Control Agency.

116C.51-.69: Power Plant Siting Act. Gives Environmental Quality Board authority to regulate location of plants and lines.

116G.01-.14: Critical Areas Act. Establishes process for planning and regulating certain areas of historic, cultural, aesthetic, or natural value.

145.911-.922: Community Health Services Act. Authorizes creation of community health services programs under local administration within a system of state guidelines and standards.

145.915: Authorizes a county having a board of health organized under the Community Health Services Act to adopt and enforce minimum standards for services to be provided under the act; provided, however, that no county regulations shall conflict with state legislation or with higher standards established either by regulation of a state agency or by the provisions of the charter or ordinances of any city health agency organized under the provisions of the Community Health Services Act.

145.912: "Environmental Health Services" means those services designed to achieve an environment conducive to man's health, comfort, safety, and well being. These services include food protection, hazardous substances and product safety, water supply sanitation, septic tank and soil absorption type sewage disposal, water pollution control, occupational health and safety, radiation control, air pollution control, waste pollution control, vector control, institutional sanitation, recreational sanitation, including swimming pool sanitation and safety, housing code enforcement for health and safety purposes unless the enforcement is performed by another city or county agency designated by the county board or city council, and general nuisance control.

#### FOOD, BEVERAGE, AND LODGING

157.01-.14: Mandates regulation and licensing of hotels, resorts, and restaurants by the Commissioner of Health; authorizes the Commissioner to promulgate food, beverage, and lodging regulations.

145.01: Creates local board of health, i.e., towns, statutory cities, home rule charter cities, counties.

145.03: Specifies duties of local boards of health to act in place of the Commissioner; provides penalties for violations.

145.013: Commissioner of Health may enter into any agreement with any city, county, or multi-county agency to perform licensing, inspection, and enforcement duties for food, beverage, and lodging establishments.

145.04: Grants the right to state and local boards of health to enter any building to inspect premises.

145.075: Authorizes Commissioner of Health or local board of health to seek injunctions against violators.

145.17: Prohibits engaging in offensive trades injurious to the public health without permission of local board of health.

145.35: Prohibits common drinking cups in public places.

28A.01-.16: Minnesota Consolidated Food Licensing Law. All producers, processors, packagers, labelers, handlers, distributors, and vendors of food shall comply with all applicable regulations of the Minnesota Commissioner of Agriculture.

28A.09: Either a home rule charter or statutory city or a county but not both may impose a food vending machine license or inspection fee only if inspections are made. State inspections and licensure will be discontinued upon notification to the Minnesota Department of Agriculture of a local inspection program.

17.045: Commissioner of Agriculture authorized to investigate complaints against an establishment licensed by state allegedly violating any regulations of a federal, state, or local agency relating to meat, fish, poultry, dairy, or other food products.

30.002-.201: Commissioner of Agriculture to administer and enforce laws and regulations relating to sale of potatoes.

31.002: Policy of state to be uniform with federal government and other states regarding the regulation and control of the manufacture, distribution, and sale of food in Minnesota. The Commissioner of Agriculture is granted inspection and enforcement powers.

31A.01: Commissioner of Agriculture authorized to regulate the distribution, labeling, packaging, etc. of meat and meat food products for the protection of consumer's health and welfare.

32.021: Commissioner of Agriculture charged with enforcement of provisions of Chapter 32, and has the authority to regulate and license.

32.104: Local government inspection permitted, but must not conflict with any state law or rule.

144.05: Commissioner of Health responsible for protecting, maintaining, and improving the health of the citizens.

144.075: Commissioner of Health to provide for inspections relating to cup vending and other devices.

144.08: Relates to powers and duties of hotel inspectors to make inspections and investigate reports of violations of food laws and sanitary standards.

144.12: Authorizes Commissioner of Health to adopt rules relating to issuance of permits and licenses governing various sanitation, pollution, and radiation activities in schools, lodging, houses, and public institutions.

#### HAZARDOUS WASTE

116.07: The Minnesota Pollution Control Agency to adopt standards for the identification of hazardous waste and for the labeling, classification, storage, collection, transportation, and disposal of hazardous waste. No local government shall set standards for hazardous waste control which are in conflict or inconsistent with those set by the PCA.

400.161: All counties outside of the seven-county metropolitan area may regulate hazardous waste management activities, including labeling, classification, handling, collection, transportation, storage, and disposal of the waste. Permits or licenses may be required of hazardous waste generators.

473.149: The Metropolitan Council shall be responsible for establishing a hazardous waste policy plan for the seven-county metropolitan area. All facilities located in this area shall be constructed and operated in accordance with the plan.

473.801-.823: Requires metropolitan counties to regulate hazardous waste management.

#### SOLID WASTE

116.07: The Minnesota Pollution Control Agency to adopt standards for control of the collection, transportation, storage, and disposal of solid waste.

400.16: All counties outside the seven-county metropolitan area may regulate the location, operation, and maintenance of a solid waste management facility, as well as the collection, transportation, storage, and disposal of solid waste. Permits or licenses may be required of solid waste management facilities.

473.149: The Metropolitan Council shall be responsible for establishing a solid waste policy plan for the seven-county metropolitan area. All facilities located in this area shall be constructed and operated in accordance with the plan.

473.801-.823: Requires metropolitan counties to regulate solid waste management.

#### OCCUPATIONAL HEALTH AND SAFETY

Chapter 182: Occupational Safety and Health Act. Creates occupational safety and health program in the state administered by the Department of Labor and Industry.

182.65: Commissioner of Labor and Industry is authorized to promulgate and enforce mandatory occupational safety and health standards applicable to employers and employees in the State of Minnesota.

182.67: Department of Labor and Industry has the authority and responsibility for the administration and enforcement of occupational health and safety standards.

144.34: Mandates reporting by physicians of occupationally-caused diseases; assigns Department of Health the duty to investigate such reports and make recommendations to employer.

## WATER SUPPLY SANITATION

156A.01-.08: Authorize regulation and licensing of water well contractors and adoption of well construction code; imposes penalties for violation of rules.

156A.03: Commissioner of Health to establish standards for the design, location, and construction of water wells.

156A.07: No political subdivision shall require any water well contractor holding a Minnesota water well contractor's license to pay any license or registration fee.

145.34: Makes it a felony to allow a water supply to become contaminated.

115.71-.82: Commissioner of Health to classify all water supply systems and Minnesota Pollution Control Agency Director to classify all wastewater treatment facilities. Both Commissioner and Director to certify water supply system operators and wastewater treatment facility operators respectively. Division of Environmental Health administers water supply portion of the program. The MPCA administers the wastewater portion of the program.

326.37-.45: Commissioner of Health authorized to adopt a plumbing code and to regulate licensing of plumbers. Local government regulations not in conflict with standards prescribed by Commissioner of Health may be adopted in certain situations.

326.57-.66: Commissioner of Health to adopt water conditioning installation standards and to regulate licensing of water conditioning equipment, contractors and installers. Local government regulations not in conflict with standards prescribed the Commissioner of Health may be adopted in certain situations.

144.381-.388: Safe Drinking Water Act. Commissioner of Health authorized to promulgate rules and to regulate public water supplies.

144.145: Mandatory fluoridation of municipal water supplies as prescribed by the Commissioner of Health.

## WATER POLLUTION CONTROL

115.01-.09: Water Pollution Control Act. Minnesota Pollution Control Agency charged with responsibility for administering and enforcing laws relating to the pollution of any of the waters of the state.

115.03: The Minnesota Pollution Control Agency is authorized to establish rules relating to the pollution of any of the waters of the state.

116.07: Any county board may, by resolution and with approval of the Minnesota Pollution Control Agency, assume responsibility for processing applications for such permits as may be required by the MPCA for livestock feedlots, poultry lots, or other animal lots.

144.12: Authorizes Commissioner of Health to adopt rules relating to issuance of licenses governing various sanitation and pollution activities, i.e., streams and other waters.

144.35-.37: Commissioner of Health authorized to order any person to desist from polluting rivers and streams to extent such pollution might affect health. Order may be appealed to district court.

#### SEWAGE DISPOSAL

105.485: Local governmental unit required to adopt a shoreland conservation ordinance in accordance with standards of the Commissioner of Natural Resources, i.e., placement and construction of sanitary and waste disposal facilities.

104.04: Local governmental units required to adopt flood plain management ordinance in accordance with rules and regulations of the Commissioner of Natural Resources, i.e., building codes, sanitary regulations, and flood warning systems.

104.36: Local governmental unit, where applicable, required to amend its local ordinances to comply with the Commissioner of Natural Resource's standards and criteria for a designated wild, scenic, or recreational river area.

144.12: Authorizes Commissioner of Health to adopt rules relating to issuance of permits and licenses governing various sanitation and pollution activities, i.e., disposal of sewage.

155.03: Minnesota Pollution Control Agency authorized to promulgate rules concerning the design, location, installation, use, and maintenance of individual sewage treatment systems.

115.28: Authorizes regulation of privies, cesspools, and septic tanks by sanitary districts, and authorizes prohibitions against use, provided such facilities do not have an MPCA permit.

361.29: Mandates promulgation by the Department of Health of rules pertaining to on-land disposal facilities for sewage and other wastes from marine toilets equipped with retention devices.

## RADIATION CONTROL

144.12: Commissioner of Health may adopt and enforce regulations concerning matters relative to radiation, including the handling, storage, transportation, use, and disposal of radioactive isotopes and fissionable materials.

144.121: Provides for the registration and periodic inspection of x-ray machines and radium by the Commissioner of Health.

## AIR POLLUTION CONTROL

116.05: Within a designated air quality control region, the Minnesota Pollution Control Agency may, by contract, delegate its administrative powers to local government authorities, to be exercised by such authorities within the region and within their own jurisdictional boundaries.

116.07: Minnesota Pollution Control Agency to adopt standards of air quality. No local government to set standards of air quality which are more stringent than those set by the MPCA. However, local units of government may set emission regulations with respect to stationary sources which are more stringent than those set by the MPCA.

144.411-.417: Minnesota Clean Indoor Air Act. Prohibits smoking in public places and at public meetings except for designated smoking areas. Commissioner of Health to adopt rules to implement the Act.

## NOISE POLLUTION CONTROL

116.07: Minnesota Pollution Control Agency to adopt standards prescribing the maximum levels of noise in terms of sound pressure level which may occur in the outer atmosphere. No local governing unit to set standards prescribing the maximum levels of sound pressure which are more stringent than those set by the MPCA.

## RECREATIONAL SANITATION (Camping, Mobile Home Park, Children's Camp, Swimming Pools, and Mass Gatherings)

327.10-.29: Provides for regulation and licensing of recreational camping areas and mobile home parks by the Commissioner of Health.

327.15: Each mobile home park and each recreational camping area within the state to obtain a license from the Commissioner of Health.

327.26: No city, town, or political subdivision in Minnesota may impose any license upon any mobile home park or recreational camping area licensed by the state.

327.24: Minnesota Department of Health to enforce rules of the department applicable to mobile home parks and recreational camping areas.

145.031: Commissioner of Health may enter into an agreement with any city, county, or multi-county agency to perform licensing, inspection, and enforcement duties for mobile home parks, recreational camping areas and children's camps.

144.05: Commissioner of Health responsible for protecting, maintaining, and improving the health of the citizens, i.e., establish and enforce health standards for the protection and promotion of the public's health.

144.72: Commissioner of Health authorized to issue permits for children's camps.

144.74: Commissioner of Health authorized to adopt reasonable regulations and standards for children's camps.

144.12: Commissioner of Health authorized to adopt and enforce reasonable regulations throughout the state for the preservation of the public health. Under authority of this statute, rules relating to public swimming pools have been promulgated.

#### GENERAL NUISANCE CONTROL

144.12: Authorizes Commissioner of Health to adopt rules relating to issuance of permits and licenses governing various sanitation and pollution activities. Under authority of this statute, rules relating to migrant labor camps have been promulgated.

145.22: Health officer has the authority to have nuisances abated.

## Environmental Health Rules

The following is a list of environmental health-related rules. Ordinances adopted by local governments must be consistent with these rules.

The present system of citing rules is being revised. The proposed new citation is noted in parenthesis.

### MINNESOTA DEPARTMENT OF HEALTH

- Public Swimming Pools MHD 141
- Minnesota Plumbing Code MHD 120-134 (7 MCAR 1.120-1.134)
- Plumbers Licensing Provision 7 MCAR 1.139
- Public Water Supplies 7 MCAR 1.145-1.150
- Food, Beverage, and Lodging MHD 151-165 (7 MCAR 1.151-1.165)
- Radiation, X-rays MHD 181-185 (7 MCAR 1.181-1.185)
- Mobile Home Parks, Recreational Areas, Children's Camps,  
Migrant Labor Camps MHD 187-204 (7 MCAR 1.187-1.204)
- Laboratory Certification MHD 143 (7 MCAR 1.143)
- Licensing of Water Well Contractors and Water Well  
Construction Code MHD 210-224 (7 MCAR 1.210-1.224)
- Operator Certification (6 MCAR 5.001-.003)
- Roller Towels, Vending Machines, Enclosed Sports Arenas MHD 231-233  
(7 MCAR 1.231-1.233)
- Water Conditioning Installers Licensing (7 MCAR 1.135)
- Water Supply Regulations MHD 136-138, 140,144,325 (7 MCAR 1.136-1.138);  
(7 MCAR 1.140-1-144)
- Water Haulers MHD 150 (7 MCAR 1.150)
- Minnesota Clean Air Act MHD 441-445 (7 MCAR 1.441-1.445)
- Marine Toilet Waste Disposal MHD 142 (7MCAR 1.142)

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

Shorelands Areas Management CONS 70-77; NR 78-81 (6 MCAR 1.0070-1.0081)

Wild and Scenic Rivers System NR 78-81 (6 MCAR 1.0078-1.0081)

Management of Municipal Shorelands Areas NR 82-84 (6 MCAR 1.0082-1.0084)

Flood Plain Area Management NR 85-92 (6 MCAR 1.0085-1.0092)

MINNESOTA POLLUTION CONTROL AGENCY

Air Pollution Control APC 1-31 (6 MCAR 4.0001-4.0031)

Noise Pollution Control NPC 1-4 (6 MCAR 4.2001-4.2004)

Solid Waste Pollution Control SW 1-83 (6 MCAR 4.5001-4.5083)

Water Pollution Control WPC 1-41 (6 MCAR 4.8001-4.8041)

Individual Sewage Treatment System Standards (6 MCAR 4.9001-4.9010)

Procedural Rules MPCA 1-13 (6 MCAR 4.3001-4.3013)

MINNESOTA DEPARTMENT OF AGRICULTURE

General (Part A) AGR 1-5303 (3 MCAR 1.0001-1.5303)

Dairy Industry (Part B) AGR 975-1330 (3 MCAR 1.0975-1.1330)

Meat and Fish Industries (Part C) AGR 1650-2324 (3 MCAR 1.1650-1.2324)

Food Industry (Part D) AGR 4000-5303 (3 MCAR 1.4000-1.5303)

APPENDIX C



APPENDIX C  
1979 ENVIRONMENTAL HEALTH PROGRAM BUDGETS  
COMMUNITY HEALTH SERVICE AGENCIES

CHS Agency	Source of Funds			Total
	Other	Local	CHS Subsidy	
Aitkin-Itasca-K	\$	\$ 33,700	\$ 43,914	\$ 77,614
Anoka		131,265	5,000	136,265
Becker-Mah-Norman			2,292	2,292
Beltrami-LOW		24,012	10,025	34,037
Blue Earth		23,827	4,615	28,442
Brown-Nicollet		2,500	21,715	24,215
Carlton-C-L-St. Louis		763,135	153,767	916,902
Carver		1,425	875	2,300
Cass-T-W-M		12,025	3,868	15,893
Chippewa-LQP-S-YM	14,930	1,500	1,700	18,130
Chisago-Kanabec			478	478
Clay-Wilkin		3,734	25,000	28,739
Cottonwood-Jackson		11,037	10,000	21,037
Crow Wing	4,353	5,500	5,629	15,482
Dakota			80,000	80,000
Dodge-Steele		30,086	2,500	32,586
Douglas-G-S-T			5,000	5,000
Faribault-M-W		19,772	7,770	27,542
Freeborn		50,013	13,260	63,273
Goodhue-Wabasha		334	929	1,263
Hennepin	11,500	2,205,907	296,722	2,514,129
Kittson-Marshall-Pennington Red Lake-Roseau	5,000	8,485	7,347	20,832

APPENDIX C (cont'd.)

CHS Agency	Source of Funds			Total
	Other	Local	CHS Subsidy	
LeSueur-Waseca	\$	\$ 3,000	\$ 37,694	\$ 40,794
Lincoln-Lyon-Pipestone		25,605	32,442	58,047
McLeod-Sibley	300	6,747	5,827	12,874
Mower		49,041	2,350	51,391
Olmsted	20,500	163,703	35,140	219,343
Otter Tail		6,720	20,147	26,867
Ramsey		559,945	272,800	832,745
Rice		23,266	15,000	38,266
Scott			21,740	21,740
Stearns		24,527	145,000	169,527
Washington		50,658	3,000	53,658
Winona	7,000	25,282	16,400	48,682
Wright		32,533	30,649	63,182
Total	\$62,583	\$4,299,384	\$1,340,595	\$5,703,562

Source: Minnesota Department of Health. Figures taken from original 1979 Community Health Services Plans submitted by CHS Agencies and approved by MDH. Budget revisions submitted during the year are not included. Actual expenditures will vary somewhat from the budget figures.

APPENDIX D



APPENDIX D

COUNTY ENVIRONMENTAL HEALTH SERVICES

November, 1979

COUNTY	FOOD, BEVERAGE, LODGING REGULATION NO. OF FACILITIES	Regulatory Programs																	
		Vending Machines	Ret/Whsle Food	Mobile Home Pks/ Rec. Camps	Childrens Camps	Swimming Pools	Well Location	Well Const.	Non-Comm. Water Supply	On-Site Sewage (Cty wide)	Landfills	Nuisance Control	Open Burning	Feedlot Permits	Housing	Air Pollution	Noise Control	Haz. Waste	Rabies
kin									X										X
oka	F(362) L(28)					X				X	X	X						X	X
cker									X				X						X
eltrami										X	X			X			X		X
anton									X	X		X							X
ig Stone										X									X
lue Earth									X	X	X	X	X						X
rown	F(274) L(12)					X		X					X						X
arlton							X		X	X			X				X		X
arver							X		X	X	X	X	X				X		X
ass							X		X	X		X	X						X
hippewa									X	X									X
hisago									X	X		X	X						X
lay									X	X	X	X							X



APPENDIX D



APPENDIX D (Continued)

COUNTY ENVIRONMENTAL HEALTH SERVICES

November, 1979

COUNTY	FOOD, BEVERAGE, LODGING REGULATION NO. OF FACILITIES	Regulatory Programs																		
		Vending Machines	Ret/Whsle Food	Mobile Home Pks/ Rec. Camps	Childrens Camps	Swimming Pools	Well Location	Well Const.	Non-Comm. Water Supply	On-Site Sewage (Cty wide)	Landfills	Nuisance Control	Open Burning	Feedlot Permits	Housing	Air Pollution	Noise Control	Haz. Waste	Rabies	Water Testing Service
Cook							X			X	X	X								X
Cottonwood										X	X	X	X	X						
Crow Wing										X	X		X							X
Dakota							X				X		X							X
Dodge																				
Douglas							X			X	X									X
Faribault	F(196) L(24)					X						X								X
Fillmore							X			X	X		X	X						X
Freeborn										X		X	X	X				X		X
Goodhue										X	X		X	X						X
Grant											X									X
Hennepin							X			X	X	X	X	X				X		X
Houston							X			X	X		X	X	X		X		X	X
Hubbard											X		X	X	X			X		X







APPENDIX D (Continued)

COUNTY ENVIRONMENTAL HEALTH SERVICES

November, 1979

COUNTY	FOOD, BEVERAGE, LODGING REGULATION NO. OF FACILITIES	Regulatory Programs																	
		Vending Machines	Ret/Whsle Food	Mobile Home Pks/ Rec. Camps	Childrens Camps	Swimming Pools	Well Location	Well Const.	Non-Comm. Water Supply	On-Site Sewage (Cty wide)	Landfills	Nuisance Control	Open Burning	Feedlot Permits	Housing	Air Pollution	Noise Control	Haz. Waste	Rabies
McLeod							X		X	X			X						X
Mahnomen													X						X
Marshall												X		X					X
Martin	X <sup>1</sup>				X	X			X	X	X	X	X						X
Meeker										X									
Mille Lacs									X	X		X	X						X
Morrison										X		X	X						X
Mower	F(175) (City of Austin only)	X	X	X <sup>2</sup>					X	X	X	X	X		X		X		X
Murray										X	X								X
Nicollet	X <sup>3</sup>				X			X			X								X
Nobles														X			X	X	X
Norman						X			X	X		X	X						
Olmsted	F(240) L(335)		X			X	X	X	X	X	X	X		X	X		X	X	X







APPENDIX D (Continued)

COUNTY ENVIRONMENTAL HEALTH SERVICES

November, 1979

-98- COUNTY	FOOD, BEVERAGE, LODGING REGULATION NO. OF FACILITIES	Regulatory Programs																	
		Vending Machines	Ret/Whse Food	Mobile Home Pks/ Rec. Camps	Childrens Camps	Swimming Pools	Well Location	Well Const.	Non-Comm. Water Supply	On-Site Sewage (Cty wide)	Landfills	Nuisance Control	Open Burning	Feedlot Permits	Housing	Air Pollution	Noise Control	Haz. Waste	Rabies
St. Louis	F(763) L(339)				X	X			X	X	X	X			X		X	X	X
Scott							X		X	X	X	X					X		X
Sherburne									X	X		X	X						
Sibley									X	X		X	X						X
Stearns									X	X		X	X		X				
Steele									X	X	X	X	X						X
Stevens													X						X
Swift													X						X
Todd									X	X		X	X						X
Traverse												X							
Wabasha									X	X									X
Wadena									X	X	X	X	X						X
Waseca	F(75) L(10)					X	X		X	X	X		X						X



APPENDIX D (Continued)

COUNTY ENVIRONMENTAL HEALTH SERVICES

November, 1979

COUNTY	FOOD, BEVERAGE, LODGING REGULATION NO. OF FACILITIES	Regulatory Programs																		
		Vending Machines	Ret/Whsle Food	Mobile Home Pks/ Rec. Camps	Childrens Camps	Swimming Pools	Well Location	Well Const.	Non-Comm. Water Supply	On-Site Sewage(Cty wide)	Landfills	Nulsance Control	Open Burning	Feedlot Permits	Housing	Air Pollution	Noise Control	Haz. Waste	Rabies	Water Testing Service
Washington	X <sup>4</sup>						X		X	X		X					X		X	
Watonwan							X		X	X	X									
Wilkin									X				X							X
Winona							X		X			X								X
Wright							X		X	X	X	X		X						X
Yellow Medicine							X	X		X	X	X		X						X

NOTES

- . See Faribault for No. of Establishments
- . County Only
- . See Brown for No. of Establishments
- . See Faribault for No. of Establishments



APPENDIX E  
APPENDIX E-1



APPENDIX E

COUNTY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
OUTSTATE COUNTIES, 1979

County	Manpower <sup>1</sup> (FTE)					Personnel <sup>2</sup> (No.)					Activity <sup>3</sup>		
	F/B/L	S.D.	W.S.	S.W.	Other	San.	P & Z	Engr.	Other	Sewage Inst.	Wells Inst.	L.F.	
Aitkin	-	.80	.10	.20	.05	-	F-2	-	P-1	360	300	7	
Becker	-	.40	-	-	.60	-	P-1	P-1	-	412	-	4	
Beltrami	-	.30	.30	.30	-	-	F-1	-	-	100	-	1	
Benton	-	.50	-	.05	-	-	F-3	-	-	130	-	0	
Big Stone	-	.01	.01	.02	-	-	P-1	P-1	-	11	5	1	
Blue Earth	.25	.85	.05	.10	-	F-1 P-2	F-1	P-1	P-1	85	-	-	
Brown <sup>4</sup>	1.	.50	.25	.25	.25	F-1	P-2	-	T-1	-	-	1	
Carlton	-	.50	.15	.25	-	-	F-2 T-2	-	-	150	-	3	
Cass	-	.40	.20	-	.40	-	F-1	-	-	400	100	3	
Chippewa	-	-	-	-	-	-	P-1	-	-	-	-	1	
Chisago	-	.35	-	.10	.35	F-2	F-1	-	-	205	-	1	
Clay	-	.15	-	.50	.05	T-1	F-1 P-1	F-2 P-3	-	78	-	1	
Clearwater	-	.10	-	.10	-	-	F-1	-	-	14	-	1	
Cook	.10	.75	.15	.33	.10	F-1	F-1	-	P-1	52	-	3	
Cottonwood	-	.40	-	.25	.40	F-1	F-1	-	-	35	-	1	
Crow Wing	-	1.90	.10	.80	.10	-	F-4	-	-	-	-	7	
Dodge	.10	.10	.25	.25	.30	-	F-1	-	-	40	60	1	



## APPENDIX E (Continued)

COUNTY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
OUTSTATE COUNTIES, 1979

County	Manpower <sup>1</sup> (FTE)					Personnel <sup>2</sup> (No.)				Activity <sup>3</sup>		
	F/B/L	S.D.	W.S.	S.W.	Other	San.	P & Z	Engr.	Other	Sewage Inst.	Wells Inst.	L.F.
Douglas	-	.60	.05	.05	-	-	F-3	-	-	180	154	2
Faribault <sup>5</sup>	.40	.10	.20	.10	.15	-	F-1	F-1	-	-	-	1
Fillmore	-	.10	-	.25	-	-	F-1	-	-	160	42	1
Freeborn	-	.50	.20	.10	.30	-	F-3	-	-	82	-	4
Goodhue	-	.20	.10	.02	.10	F-1	F-1	-	-	70	-	4
Grant	-	.10	-	.15	-	-	F-1	-	-	13	-	-
Houston	-	.15	-	.10	.10	-	F-1	-	-	23	-	1
Hubbard	-	.55	.10	.15	-	-	F-1	-	-	124	97	2
Isanti	-	.50	-	.10	-	-	F-2	-	-	300	-	1
Itasca	-	2.90	.30	1.00	.30	F-1 T-4	F-2	F-1	-	492	-	25
Jackson	-	.10	.20	.10	.05	F-1	-	-	-	40	-	1
Kanabec	-	.55	.05	.01	-	-	F-1	-	-	110	115	1
Kandiyohi	-	.25	.25	.15	.05	F-1	F-2	F-1	-	240	-	2
Klittson	-	-	-	-	-	-	-	-	-	-	-	2
Koochiching	-	.20	.10	.50	.10	F-1	F-1 P-1	F-1	F-1	48	-	8
Lac Qui Parle	-	-	-	-	-	-	-	-	-	-	-	-
Lake	.30	.50	.50	.15	.25	F-1	F-3	F-1	-	84	-	1



APPENDIX E (Continued)  
 COUNTY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
 OUTSTATE COUNTIES, 1979

County	Manpower <sup>1</sup> (FTE)					Personnel <sup>2</sup> (No.)				Activity <sup>3</sup>		
	<u>F/B/L</u>	<u>S.D.</u>	<u>W.S.</u>	<u>S.W.</u>	<u>Other</u>	<u>San.</u>	<u>P &amp; Z</u>	<u>Engr.</u>	<u>Other</u>	<u>Sewage Inst.</u>	<u>Wells Inst.</u>	<u>L.F.</u>
Lake of the Woods	-	.35	.10	.10	.05	-	F-1	-	-	31	26	2
LeSueur <sup>6</sup>	.50	.30	.15	.05	.20	F-1		F-1	-	88	-	2
Lincoln <sup>7</sup>	-	-	1.00	-	-	F-1 P-5	-	-	-	-	-	5
Lyon <sup>8</sup>	-	.20	-	.20	-	-	F-1	-	-	34	-	2
McLeod	-	.05	.01	.05	-	-	F-1	-	-	86	84	1
Mahnomen	-	.85	-	.15	-	P-1	P-1	F-1	-	12	-	-
Marshall	-	-	-	-	-	-	-	-	-	-	-	-
Martin <sup>9</sup>	-	.10	-	.20	.10	-	F-1	-	-	22	-	1
Meeker	-	.10	.05	.10	-	-	P-1	P-1	-	100	-	2
Mille Lacs	-	.90	-	.01	-	-	F-1	-	-	100	-	-
Morrison	-	.65	.10	.25	.25	P-1	F-1	-	-	225	141	1
Mower	.10	.50	.40	.20	.20	F-1 P-1		-	-	82	-	3
Murray <sup>10</sup>	-	.20	.05	.05	-	-	F-1	-	-	51	2	1
Nicollet <sup>11</sup>												
Nobles	-	.05	-	.01	-	-	F-1	-	P-1	30	-	1
Norman	-	.03	-	-	-	-	P-1	-	-	25	-	-



APPENDIX E (Continued)  
 COUNTY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
 OUTSTATE COUNTIES, 1979

County	Manpower <sup>1</sup> (FTE)					Personnel <sup>2</sup> (No.)				Activity <sup>3</sup>		
	F/B/L	S.D.	W.S.	S.W.	Other	San.	P & Z	Engr.	Other	Sewage Inst.	Wells Inst.	L.F.
Olmsted	1.5	1.	1.5	.80	2.20	F-7	-	-	-	180	65	3
Otter Tail	-	3.	-	.10	-	T-2	F-5	-	-	347	-	8
Pennington	-	-	.10	.05	-	-	-	-	F-1	6	-	-
Pine	-	1.	-	.25	-	-	F-2	-	-	75	-	1
Pipestone <sup>12</sup>	-	-	-	.20	-	-	F-1	-	-	-	-	1
Polk	-	-	-	.05	-	-	-	F-1	-	81	-	1
Pope	-	.40	.01	.01	.01	T-1	F-1	-	-	110	26	-
Red Lake	-	-	-	-	-	-	-	-	-	-	-	-
Redwood	-	.07	-	.05	-	-	F-1	-	-	45	-	1
Renville	-	.40	.10	.10	.40	-	F-1	-	F-1	-	-	1
Rice	-	.60	.15	.15	.30	F-2	F-1	-	F-1	150	-	1
Rock	-	-	-	.10	-	-	P-1	P-3	-	-	-	1
Roseau	-	-	-	.05	-	-	-	P-1	-	-	-	1
St. Louis	7.	8.	6.	3.	5.	F-29	T-1	-	-	884	-	16
Sherburne	-	.75	.25	.25	.25	F-1	F-2	-	-	250	-	1
Sibley	-	.40	-	.05	-	P-1	P-1	-	-	31	-	1
Stearns	-	2.	-	.50	1.	F-4	F-2	-	-	500	-	4



APPENDIX E (Continued)  
 COUNTY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
 OUTSTATE COUNTIES, 1979

County	Manpower <sup>1</sup> (FTE)					Personnel <sup>2</sup> (No.)				Activity <sup>3</sup>		
	F/B/L	S.D.	W.S.	S.W.	Other	San.	P & Z	Engr.	Other	Sewage Inst.	Wells Inst.	L.F.
Stearns	-	.25	.25	.25	.25	F-1	-	-	-	73	-	1
Stevens	-	-	-	-	-	-	-	-	-	-	-	-
Swift	-	-	-	-	-	-	-	-	-	-	-	2
Todd	-	.50	-	.25	-	-	F-1 P-1	-	-	200	-	2
Traverse	-	-	-	-	-	-	-	-	-	-	-	-
Wabasha	-	.40	.01	-	-	-	F-1	-	-	40	-	-
Wadena	-	.15	.01	.01	.03	-	F-1	-	-	46	-	2
Waseca <sup>13</sup>	.50	.20	.15	.05	.20	F-1	F-1	F-1	-	30	-	1
Watsonwan <sup>14</sup>	-	.10	-	.20	-	-	F-1	F-1	-	18	-	1
Wilkin	-	.10	-	.05	.05	-	P-1	-	-	19	-	1
Winona	-	.35	.30	.10	.15	F-1	-	-	-	123	-	2
Wright	.03	.39	.25	.13	1.25	F-2	F-1	-	-	626	345	4
Yellow Medicine	-	-	-	.20	-	-	F-1	-	-	15	-	1
<b>TOTAL</b>	11.78	24.80	14.54	14.75	15.89	F-63 P-11 T- 9	F-76 P-14 T-2	F-12 P-11	F-4 P-4 T-1	8773	-	170



APPENDIX E (Continued)

Notes

1. FTE - Full-time equivalent  
F/B/L/ - Food, Beverage, Lodging Inspection  
S.D. - Sewage Disposal Control  
W.S. - Water Supply Control  
S.W. - Solid and Hazardous Waste Management
2. San. - Sanitarian and Other Health Personnel  
P & Z - Planning and Zoning Personnel  
Engr. - Engineering Personnel  
F, P, T - Full-time; Part-time; Temporary
3. L.F. - No. Landfills and Demolition Fills  
Sewage Inst. - No. of New or Modified On-site Sewage Systems Installed  
Wells Inst. - No. of New Individual Wells Installed

4. Includes 2-County Staff

5. Includes 3-County Staff

6. Includes 2-County Staff

7. Includes 4-County Staff

8. Also See Lincoln

9. Also See Faribault

10. Also See Lincoln

11. See Brown

12. Also See Lincoln

13. Also See LeSueur

14. Also See Faribault

Sewage Disposal Control - Review plans; issue permits; inspection; investigate malfunctioning systems; enforce nuisance laws and state rules for abatement and construction; information and technical assistance.

Water Supply Sanitation - Well construction inspection; issue permits; review plans; investigate complaints related to present water supply; surveys of existing wells; analyze well water samples; inspection of public non-community water supplies; information and technical assistance.

Solid and Hazardous Waste Management - Technical assistance for development and operation; planning; inspection of landfills and demolition fills, transfer stations, chemical storage facilities, tailing pits, lagoons, and other types of disposal and recovery facilities; work on bringing facilities into compliance; permits for facilities and haulers.

Definition of Environmental Health Services - Services which address environmental health problems, including surveillance and enforcement for: food protection, hazardous substances and product safety, water supply sanitation, sewage disposal, water pollution control, solid and hazardous waste management, occupational health and safety, radiation control, noise pollution control, vector control, institutional sanitation, recreational sanitation, including swimming pool sanitation and safety, housing safety and sanitation, and general nuisance control.



APPENDIX E-1  
 CITY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
 OUTSTATE COUNTIES, 1979 <sup>1</sup>

City	Manpower					Personnel				Activity		
	F/B/L	S.D.	W.S.	S.W.	Other	San.	P & Z	Engr.	Other	Sewage Inst.	Wells Inst.	L.F.
Albert Lea	.5	-	.25	.25	1.8	2	-	-	1	-	-	-
Fergus Falls	.30	.05	.25	.02	2.38	3	-	-	-	4	-	1
Moorhead <sup>2</sup>	.50	-	.25	unk	.65	3	-	-	unk	-	-	unk
St. Cloud	1.50	-	-	-	2.50	4	-	-	-	1	-	-
Winona	-	-	-	-	1.00	-	-	-	1	-	-	-
<b>TOTAL</b>	<b>2.8</b>	<b>.05</b>	<b>.75</b>	<b>.27</b>	<b>8.33</b>	<b>12</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>-</b>

<sup>1</sup> See Notes Under Appendix E.

<sup>2</sup> Estimates by Project Staff.



APPENDIX F



APPENDIX F

COUNTY AND CITY ENVIRONMENTAL HEALTH MANPOWER AND SELECTED ACTIVITY  
METRO COUNTIES, 1979

County	Manpower					Personnel				Activity		
	F/B/L	S.D.	W.S.	S.W.	Other	San.	P & Z	Engr.	Other	Sewage Inst.	Wells Inst.	L.F.
MINNAPOLIS	1.90	.35	.35	1.	.50	F-5	-	-	-	1000 <sup>6</sup>	1000	8
CARVER	-	.40	.05	.60	-	-	F-3	-	-	40	unk	unk
DAKOTA	-	.5 <sup>1</sup>	-	1.1	-	-	F-3	F-1	-	8 <sup>2</sup>	unk	7
MINNEAPOLIS <sup>3</sup>	30.75	.5	.5	4.0	9.5	unk	unk	unk	unk	500 <sup>7</sup>	500	2
RAMSEY <sup>4</sup>	2.40	.5	2.5	3.25	11	F-19.5	-	-	-	unk	unk	unk
SCOTT	.10	.90	.25	.33	-	-	F-3	-	-	unk	unk	unk
WASHINGTON	-	2.25	.25	1.	-	-	F-4	-	-	249 <sup>5</sup>	unk	unk
TOTAL	35.15	5.40	3.90	11.28	21	-	-	-	-	1797	-	-

1 - Includes Water Supply FTE

2 - Shorelands Area Only

3 - 14 cities provide F/B/L service; Minneapolis manpower included in other categories; S.D. - .5, W.S. - .5, S.W. - .5, Other - 9.5; data complete for F/B/L only.

4 - 4 cities provide F/B/L service; St. Paul manpower included in other categories; S.D. - .5, W.S. - 2.5, S.W. - 1.5, Other - 11; data complete for F/B/L only.

5 - Excludes 4 cities

6 - Estimate

7 - Estimate



APPENDIX G



The Role of the Minnesota Public Health  
Association in Environmental Health

The Report of the Environmental Health Task Force

August, 1978

## CONTENTS

INTRODUCTION.....	98
ENVIRONMENTAL HEALTH NATIONALLY.....	99
ENVIRONMENTAL HEALTH STATE LEVEL.....	101
LOCAL ENVIRONMENTAL HEALTH.....	105
THE ROLE OF LAW IN ENVIRONMENTAL HEALTH.....	110
RECOMMENDATIONS.....	113
APPENDIX - ENVIRONMENTAL HEALTH TASK FORCE MEMBERSHIP.....	116

## INTRODUCTION

During the past few decades increased emphasis has been placed on the regulatory aspects for the control of environmental contamination and pollution. This is evidenced by the number of specific federal legislative acts which followed the Water Pollution Control Act, the Clean Air Act, and the Atomic Energy Act. These include the Resource Conservation and Recovery Act (solid, chemical, and hazardous wastes); Noise Control Act; Federal Insecticide, Fungicide, and Rodenticide Act; Safe Drinking Water Act; Occupational Safety and Health Act; Toxic Substances Control Act; and the Radiation Control for Health and Safety Act. Additionally, legislative responsibility has been given to the Food and Drug Administration for the control of potentially carcinogenic substances added to foods. The Consumer Product Safety Act is concerned with motor vehicle safety, home appliance safety, hazardous toys, wearing apparel safety, etc. All of this federal legislation relates to the identification and control of a variety of agents potentially hazardous to the ecological system and man and to the implementation of environmental and occupational health control measures to minimize health risks to susceptible population groups.

This federal legislation has placed responsibilities on a number of state agencies to carry out the federal mandates and some states have been granted "primacy" to enforce these federal laws as they apply to the given state. As indicated, these responsibilities have been assigned to various agencies and coordination of efforts, particularly as they relate to health, have not been effective in some instances and have been unrecognized or ignored, in other instances.

Much of this legislation relates to the presence of chemical agents in the environment. Thus, there has been a shift from the conventional role of the state and local health agencies primarily in the control of infectious and communicable disease to that of the non-communicable, non-infectious diseases. Our concerns are with ill-defined effects resulting in many instances from long-term exposure. Emphasis has also shifted from control of the acute exposure situations to long-term, low-level chronic exposures.

Accordingly, the Environmental Health Task Force has identified two broad areas which should be addressed by the Minnesota Public Health Association in the next five years. These areas include the maintenance and improvement of local health services to 1) predict and improve the control of infectious diseases, and 2) to control hazardous substances and prevent non-communicable diseases.

More recent statements from some of the federal regulatory agencies have indicated the possibilities of a move toward more positive emphasis on prevention rather than the curative or

problem-solving role currently emphasized. This goal is laudatory and in keeping with the basic premise of public health, namely a preventive approach to the control of disease and to provide for the well being of the population.

This introduction has served to provide a background for the role of this Environmental Health Task Force in meeting the objectives specified by the 1977-1978 Governing Council of the Minnesota Public Health Association. The Council requested that the Task Force identify the major environmental health issues which should be addressed by the Minnesota Public Health Association in the next five years; to document why these are environmental health issues; and to recommend approaches or actions by the Minnesota Public Health Association. This report attempts to satisfy the request of the Governing Council.

### ENVIRONMENTAL HEALTH NATIONALLY

A number of federal regulatory acts have been promulgated in the last few years concerned primarily with the identification and control of a number of chemical agents, both organic and inorganic, and released to the environment. These agents are found in our water, air, and food supplies. These federal acts address the protection of the occupationally-employed worker and the population as a whole from these agents and from various stress factors, e.g., community noise. Since much of this legislation relates to the control of a number of toxic substances, hazardous products, and materials, and to their carcinogenic, mutagenic, and/or teratogenic potential, we are concerned in the main with substances or conditions responsible for non-infectious and non-communicable diseases. Part of this has come about as shown in Tables 1 and 2, which rank the leading causes of death in the U.S. in 1900 and in 1970.

An examination of these data shows that 42 percent of the deaths in 1900 were identified as due to the infectious disease process, whereas in 1970 only 5.4 percent of the reported causes of death were identified as being infectious diseases. With regard to non-infectious diseases, the situation is markedly different. In 1900, 22.1 percent of the causes of death were due to non-infectious, non-communicable diseases, whereas in 1970, 77.4 percent of the causes of death were identified as non-infectious with diseases of the heart and malignant neoplasms accounting for 55.5 percent of the deaths. The control of both of these diseases is difficult, and dependent to a considerable extent on the personal habits and behavior of the people involved.

The data presented in Tables 1 and 2 illustrate most effectively the benefits derived from the application of sanitation and immunization as preventive control measures for reducing the mortality due to infectious disease. There is a need to develop similar or alternative control measures nationwide to control mortality associated with non-infectious disease.

Table 1  
 Leading Causes of Death by Rank, U.S., 1900.\*

Rank	Cause of Death	Deaths per 100,000 Population**	Percent of All Deaths
	All causes	1,719.1	100.0
+1	Influenza and pneumonia	202.2	11.8
+2	Tuberculosis (all forms)	194.4	11.3
+3	Gastritis, etc.	142.7	8.3
4	Diseases of the heart	137.4	8.0
5	Vascular lesions affecting CNS	106.9	6.2
+6	Chronic nephritis	81.0	4.7
7	All accidents	72.3	4.2
8	Malignant neoplasms (cancer)	64.0	3.7
+9	Certain diseases of early infancy	62.6	3.6
+10	Diphtheria	40.3	2.3

\*From Lerner and Anderson (1963, p. 16). Rates apply only to the death-registration states of 1900.

\*\*Note: The population at risk was the total U.S. population, 75,994,575 persons (Linder and Grove, 1943, Table II, 872).

+Infectious or related to the infectious process.

Although the data above indicate that the mortality from infectious disease has been controlled to a considerable extent, it does not mean that these diseases have been eliminated, except for smallpox which is now believed to be nearly completely controlled.

### ENVIRONMENTAL HEALTH STATE LEVEL

The data given in Table 3 are recent morbidity data reported in the Disease Control Newsletter, Minnesota Department of Health. In examining these data, it will be seen that there have been: 1) major increases in gonorrhea, giardiasis, histoplasmosis, and salmonellosis; 2) some increases for infectious hepatitis, shigellosis, and for ascaris; 3) and that certain diseases such as influenza, malaria, syphilis, tuberculosis, typhoid fever, and whipworm still occur. Whether these findings truly represent morbidity changes in the population or are due to better reporting and detection is difficult to ascertain at all times.

The incidence of some of these diseases can be reduced through the application of the principles of sanitation as they apply to water supply, waste water disposal and food sanitation. With diseases such as infectious hepatitis and gonorrhea the incidence can be reduced through education and changes in behavioral patterns. Others are cyclical and can be prevented or controlled most effectively through immunization.

Of considerable interest to Minnesota, since recreation is a major tourist industry, is the presence of Giardia lamblia, which is responsible for giardiasis. A recent report on the prevalence of intestinal parasites in the various states shows that of the number of stool specimens examined, Minnesota had a high percent of stool specimens positive for Giardia lamblia. A number of questions should be asked about this statistic because it can be interpreted in different ways: Is the true incidence of giardiasis in Minnesota higher than in other states? Because Minnesotans spend a considerable amount of time outdoors in all seasons, what kinds of habits may account for the high incidence? Are follow-up procedures for identification of the disease and collection of stool specimens better in Minnesota than in other states? Are laboratory methods used more sensitive thus guaranteeing recovery of the cysts if they are present?

Non-infectious diseases also pose a problem in Minnesota as they do in many other states. Several agents of specific health concern to Minnesota are asbestos-like particles, organic mercury, polycyclic aromatic hydrocarbons, and polychlorinated biphenyls. These contaminants are of interest from the standpoint of ingestion, accumulation in specific tissues of the body, and as recognized potential carcinogens, since they have been associated with cancer

Table 3  
Selected Morbidity\*

(First quarter of indicated year)

<u>Diseases</u>	<u>1978</u>	<u>1977</u>	<u>1953</u>
Adenovirus Infec.	18	19	NR+
Ascaris	17	51	1
Gonorrhea	2,143	1,966	157
Giardiasis	103	173	1
Hepatitis A	181	113	174
Hepatitis B	68	67	
Herpes simplex	33	32	NR
Histoplasmosis	16	16	0
Influenza	228	40	700
Malaria	2	4	2
Measles (Rubeola)	12	921	2,186
Rubella	4	16	
Rabies in Animals	41	41	36
Salmonellosis	83	101	36
Shigellosis	36	44	25
Syphilis	37	44	83
Tapeworm	0	2	0
Trichinosis	0	0	16
Tuberculosis	46	41	371
Typhoid fever	3	1	2
Whipworm	9	11	2
Whooping cough	0	2	30

\*Disease Control Newsletter, 5(3): 1 April 1978, Minnesota Department of Health.

+N = no records available.

production in man or animals. These substances have been responsible for the contamination of our surface water supplies--vital resources for Minnesota's capability to survive as a tourist attraction, and have contaminated ground and surface water supplies used for potable purposes.

Protection of our water supplies is a key issue in Minnesota and some current practices in waste disposal should be reevaluated to determine their role in the contamination of ground and surface waters. Two areas of interest pertain to the use of sanitary landfills and the practice of storing liquid and solid wastes or accumulated tailings in lagoons. Essentially the sole, currently-approved method for the disposal of commercial, industrial, and household wastes is land burial in approved sanitary landfills. Since these landfills may contain a variety of toxic substances generated by individual householders, by industry, by water and wastewater treatment plants, they are of health concern.

The second area of concern results from the planned or accidental releases and infiltration of chemical and hazardous wastes stored in lagoons. The multiplicity of these industrial storage sites creates difficult problems of control. Identification of a suitable state-owned and operated or contracted facility for handling, storing, processing, and/or disposal of these wastes is a requirement for minimizing health risks associated with these materials.

Another practice that should be evaluated in relation to its potential for ground and surface water contamination is the consideration (as a required alternative by the U.S. Environmental Protection Agency) of using the land for the disposal of effluents and solid wastes generated by water and wastewater treatment plants. Great care should be taken in determining the feasibility of this method of handling effluents and sludges, because the presence of toxic trace metals which may translocate to and accumulate in portions of plants consumed by animals and man.

These practices, and those of utilizing commercial fertilizers as well as pesticides, should be reviewed in terms of their potential for ground and surface water pollution as identifiable non-point sources.

Occupational exposure, and the epidemiology of industrial discharges, viz a viz, effect on population exposures, requires additional study and evaluation. Exposure to toxic substances in the occupational setting provides an opportunity for earlier identification of the potential for disease and for extrapolation of the effects of long-term, low-level exposure to populations. Of interest in evaluating occupational exposure effects are the synergistic influences of the use of alcohol and drugs, of smoking, of diet, and other behavioral factors.

In assessing exposure from environmental contaminants, we must be concerned with the contribution of these agents from all

environmental sources--local as well as remote--and on the role of water, air, and food as the transport routes of exposure to animals and man. The sum total of all exposure levels has to be evaluated in the susceptible populations of concern. In some cases, since many of these substances are cumulative, and concentrate in aquatic or terrestrial food chains, they may require long-term continuous monitoring. Besides, many do not show effects until some twenty or more years after initial or continuous low-level exposure.

Since many different agencies are involved in the regulation of contaminants from the sources indicated, it becomes imperative that a major coordinative effort be made to assess potential health effects. State agencies have long maintained the ultimate authority for the planning, development and delivery of environmental health services. They have been given broad statutory authorities governing the nature, extent, and type of state-local relationships, and are given specific program authorities for promulgating rules concerning the levels and quality of program areas. The authority for environmental health services among state agencies is generally assigned as follows:

#### Minnesota Department of Health

- Food protection in resorts, restaurants, bars, places of refreshment
- Boarding care and lodging facilities
- Institutional facilities and nursing homes
- On-site sewage disposal and water supply systems
- Occupational safety and health
- Swimming pools
- Children's camps and recreational camping areas
- Mobile home parks
- Clean indoor air
- Plumbing
- Municipal water supplies

#### Department of Natural Resources

- Zoning and shoreland management
- Environmental education

#### Department of Agriculture

- Food protection in manufacturing, processing, warehousing, distribution and retail

#### Minnesota Pollution Control Agency

- Air quality
- Water quality
- Noise
- Solid waste

The enactment of the Community Health Services Act of 1976 (CHSA) placed a new focus on public health services in Minnesota, and provided new authority and mechanisms by which local governments could develop comprehensive public health service systems. The legislation has enabled the Minnesota Department of Health to distribute subsidy funds to local governments for the provision of a broad range of eligible services including environmental health services. The CHSA is now generally considered the primary impetus for the development and maintenance of local environmental health services throughout the state. Local governments may supplement or supplant, through delegation of authority agreements, environmental, health services currently provided by the state agency.

### LOCAL ENVIRONMENT HEALTH

Environmental health services are those services designed to achieve an environment conducive to man's health, comfort, safety, and well-being. The program areas defined in the Community Health Services Act include:

food protection; hazardous substances and product safety; water supply sanitation; septic tank and soil absorption type sewage disposal; water, air, and noise pollution control; occupational health and safety; radiation control; vector control; institutional sanitation; recreational sanitation including swimming pool sanitation and safety; housing hygiene; and general nuisance control.

The Minnesota Department of Health (MDH) has made subsidy funds available to counties to develop and operate county or municipal-based environmental health programs. To assist with program development, MDH has provided technical assistance and consultation to local governments. In June, 1978, MDH adopted a policy clarifying the relationship with local governments desiring to assume certain statutory responsibilities of MDH. MDH also issued a policy regarding the discontinuance of well-water testing services to local agencies receiving subsidy funds.

Several counties and many of the larger metropolitan or rural municipalities had operational environmental health programs prior to the Community Health Services Subsidy Program. At the present time seven counties and seventeen municipalities are currently planning for or delivering local environmental health services to their residents.

In reviewing the impact of the CHSA on local environmental health services several problems have been identified:

-lack of knowledge of environmental health concerns by citizens and elected officials

- few existing programs have used subsidy funds to develop new program activities or expand existing ones
- large geographic areas of the state currently do not have local environmental health services available (the MDH continues to provide services to meet its statutory responsibility)
- the nature and extent of environmental health problems vary throughout geographic and population areas of the state
- the level and types of services provided by local agencies vary substantially in personnel, funding, programatic philosophy, and support services
- the Community Health Services Act only identifies program areas eligible for subsidy funding and does not deal with the issue of program responsibility between state and local agencies

Four of these issues are briefly discussed below.

#### Local Program Development Considerations

Current environmental health programs at the municipal and county levels of government have traditionally provided general sanitation programs, e.g., food sanitation, water supply sanitation, etc. Professional engineers and sanitarians, under the auspices of the state health agency, promulgated ordinances for general sanitation programs, conducted inspections, provided consultation and education, and enforced these ordinances.

In recent years federal and state agencies have shifted emphasis from general sanitation programs to environmental control programs, e.g., air pollution, water supply, noise pollution, solid waste management, water pollution, etc. Some local governments have initiated similar actions, but few have expanded their service role beyond traditional general sanitation services and little has been done to influence or participate in the provision of non-traditional programs. These non-traditional areas in which some local community health agencies have become involved include institutional facility environmental health and safety, consumer product safety, environmental toxicology, environmental epidemiology, and emergency preparedness. Local environmental health professionals should examine these environmental control programs and determine their role in delivering these services to the community.

Environmental health programs have traditionally dealt with the curtailment of the acute diseases carried by food, water, milk, and vectors. However, those programs have not been uniformly applied across the state. Laws, ordinances, and regulations have been developed without regard for continuity and consistency in interpretation of similar rules formalized in other communities. Similarly, uniformity has been compromised and influenced by special interest groups.

The process of legal action available to sanitarians and other health professionals to resolve environmental problems range from lengthy hearing procedures directed toward license revocation to violation tags issued on the spot which lead to court appearances. It is unnecessary in most cases to take legal action, yet the likelihood that a hazardous condition will be corrected promptly may depend on the investigator's legal clout. A wide range of enforcement tools must be made available to every sanitarian and environmental health specialist.

### Personnel Development

There are numerous personnel problems affecting workers who wish to advance their careers in environmental health. Lack of uniformity of opportunity, is of major concern.

Through the assistance of the federal and state governments, training should be provided to all staff members to upgrade their competencies and to provide opportunities for advancement. Such training can be provided through long-term, in-residence course work for advanced degrees; similar opportunities through University Continuing Education activities; through workshops, short courses, and seminars sponsored by various agencies, professional societies, and other groups; and through opportunities for self-study. This training should provide the basis for certification, and for obtaining "continuing education units" for participation in professional training and other activities for the maintenance of certification.

### Education and Awareness

On the local level (counties and municipalities) many of the public service programs result from the public's expectations. Needs are established by citizen participation in planning groups, citizen requests to public agencies, and participation of citizens in governance (e.g., county commissioners). With a lack of understanding of what constitutes a cohesive environmental health program, many needs go unmet and others are met only partially and in a fragmented manner.

The public's image of an agency is often related to the direct services it received from that agency, e.g., family planning, tuberculosis clinics, immunization clinics, public health nursing services. Other images result from reports in the public media and relate to disease outbreaks, poor housing, inadequate sanitation, and contamination of water supplies. The public is not aware of the positive preventive aspects of day-to-day programs which include milk and food sanitation, water hygiene, housing maintenance, liquid and solid waste control, occupational safety and health, and radiation protection. Although not all of these programs are carried out at the local level, the public should be aware of their

positive preventive aspects and that there is one focal point for coordinating these efforts within the community, that being the local environmental health program.

The environmental health professional must accept a share of the responsibility for the lack of public understanding of environmental health programs. There has been a tendency for persons in this field to be content with working behind the scenes and not to develop aggressive educational programs to alert the public to the need for environmental health protection services. In the future, professionals in environmental health must be more actively involved with developing strategies to draw public attention to the effect these programs have on controlling diseases in the community.

### Organizational and Financial Considerations

With the passage of the CHSA, many local elected officials and administrators have been addressing the broad issue of the best organizational and financial structure to provide environmental health services at the local level. Because the nature and extent of environmental health problems vary throughout the state, each county or group of counties must examine these issues from their perspective.

In order to determine the most suitable organizational structure, a number of questions should be studied. Examples are:

- 1) What are the environmental health problems in the area? (MDH has data for geographic areas to identify the problems found in restaurants, children's camp, boarding and lodging facilities, etc.)
2. What is the estimated number of person - hours required to adequately meet the problems?
3. How would the distribution of problems affect economies of scale? (e.g., travel time, type of equipment needed, etc.).
4. What is the estimated revenue which can be generated from license fees?

Table 4 shows an analysis of the state-local government responsibilities for environmental health activities. Many local elected officials may be reluctant to undertake new local regulatory activities where it is currently the state responsibility. In addition, the necessity for many counties with small populations are low service requirements to form joint powers organizations to provide services may be locally very difficult or unacceptable. In some geographic areas of the state, the MDH may well be the most appropriate service delivery agency.

Table 4

## Program Control Criteria for Environmental Health Services\*

	Technical Skills- Equipment Required	Level of Government Most Familiar with Total Value of Prob- lem in local Area	Impact on Geographic Area	Health Conse- quences	Need for Uniformity	Economic Consequences of Non- control	Level of Government with Greatest Efficiency of Inspection
Air Pollution	Moderate	Local-State	Regional	Moderate	High	High	Complex sources--State Smoke detection--Local
Radiation Control	High	State	State-wide	High	High	Moderate	State
Occupational Health	High	State	State-wide	High	High	High	State
Water Supply	Moderate	Local-State	State-wide	Moderate	High	High	State-Local
Hazardous Substance Control	High	Local-State	State-wide	High	High	Moderate	State
Solid Waste	Moderate	Local	State-wide	Moderate	Moderate	Moderate	Local
Accommodation Regulation (resorts, hotels, youth camps, mobile home parks)	Low	Local	State-wide (mobile pop.)	Low	Moderate	High	Local
Food Establishments	Low	Local	State-wide (mobile-pop.)	Moderate	Moderate	High	Local
Water Pollution Control	Moderate	Local-State	Local	Moderate	High	High	State
On-site Sewage	Moderate	Local	Local	Moderate	Moderate	High	Local

\*Prepared by the Environmental Health Division, Minnesota Department of Health, January, 1978.

## THE ROLE OF LAW IN ENVIRONMENTAL HEALTH

The role of law in the area of environmental health is pervasive, and problems of a legal nature surface in many forms and forums: in the drafting of federal and state legislation; in rulemaking proceedings or adjudications by state or federal administrative agencies; and in court adjudications of suits brought by agencies, by industries, and by private citizens. With regard to toxic or hazardous substances, the topics with which the law must deal range from the production of such substances to their transportation and their disposal. Issues in these areas, though often characterized as legal ones, are always colored by economic and political considerations, such as the financial effects on industry of prohibiting the production of certain substances, or the social implications of those land use decisions associated with the selection of waste disposal sites. Thus, any discussion of the role of law in environmental health can only hope to deal with a few problems. For an indication of the breadth and complexity of this subject, see 7 Ecology Law Quarterly 207-677 (1978), a 450 page issue of a major environmental law publication devoted entirely to "Hazardous Substances in the Environment: Law and Policy."

Several major problems concerning the regulation of substances that pose a potential danger to the public health have been identified by legal commentators. Among the most important problems are those associated with the lack or complexity of information about such substances and the frequent absence of any meaningful test data before those substances are introduced into the stream of commerce. Several factors render meaningful information on carcinogenic, mutagenic or teratogenic substances difficult to obtain. These include problems posed by latency periods which may delay the manifestation of adverse health effects until long after exposure; by the fact that adverse health effects may be produced by two or more substances acting synergistically; by our frequent inability to evaluate the hazard of a single substance out of the context of the total environmental exposure; by the tendency of some hazardous substances to remain in food chains for extended periods of time; and by the increased mobility of individuals in our society, which often makes it difficult to ascertain sources of exposure. See Kraus, "Environmental Carcinogenesis: Regulation on the Frontiers of Science," 7 Environmental Law 83 (1976). Gelpe and Tarlock identify several categories and subcategories of ecological information which differ substantially in their implications for legislative, administrative, or judicial decision-making.

1. Information which is available and definite
2. Information which is available and indefinite.

3. Information which is unavailable but theoretically obtainable.
  - a. Information which is practically obtainable without significant commitment of resources.
  - b. Information which is practically obtainable with significant commitment of resources.
  - c. Information which is practically unobtainable.
    1. Necessary resource commitment is too great.
    2. Necessary time is too long.
4. Information which is unavailable and theoretically unobtainable.

See, Gelpe and Tarlock, "The Uses of Scientific Information in Environmental Decision-making," 48 S. Calif. L. Review 371, 394 (1975).

Other problems complicating this absence or complexity of information include a lack of resources to conduct sufficient tests, a frequent lack of either statutory or judicial criteria to guide agencies in their response to the various kinds of information that may be available to them, and the necessity for (and ability of) agencies to introduce unarticulated social and political judgments into their regulation of substances with certain or potential effects on the public health. See, Kraus, supra.

This lack of statutory and judicial guidance often results in a continued and impractical adherence by courts and agencies to a traditional legal concept of "cause." This is to say that under customary notions of due process, an agency should not be permitted to regulate a substance or an action posing a threat to the public health, or a citizen should not be permitted to obtain an injunction against such a substance or action, until each has shown that the disputed substance or activity "causes" or "contributes" to adverse effects on health. In the area of toxic pollutants, however, where information is often unobtainable or obtainable only with great cost, and where latency periods may delay actual injuries for years, the proof of "cause" or actual "injury" is often difficult, if not impossible. "If regulation in the area is to be preventive, then the time constraints of regulatory activity also require the rejection of a scientific notion of cause." Kraus, supra, at 107. A more appropriate legal model to employ in this area, where action must continually rest on probability judgments, would be one embodying the concept of "risk" and explicitly enabling courts and agencies to engage in risk-benefit analyses in their decisions to impose injunctive or other regulatory measures. Such a model would establish a system whereby courts or agencies could take action after proof of risk, rather than only after proof of injury. See, e.g., Ethyl Corp. v. EPA, 541 F.2d 1 (D.C. Cir. 1976). A second

response to this problem might be to shift the burden of proof in some instances to the industry or individual wishing to introduce a substance or to engage in an activity, and to require him thereby to prove that the substance or activity will not be harmful. See, e.g., Page, "A Generic View of Toxic Chemicals and Similar Risks," 7 Ecol. L.Q. 207 (1978); but cf., Gelpe and Tarlock, supra, at 415-17. See also, Frier, "Environmental Litigation and the Burden of Proof," in Law and the Environment 104 (J. Page & M. Baldwin, eds., 1970).

To a certain extent, steps have been taken in this direction. The new Toxic Substances Control Act (TSCA), for example, permits the EPA to act if it concludes that a substance "presents or will present an unreasonable risk of injury to health or environment," and if the substance is or will be produced in substantial quantities or result in significant human exposure. Nevertheless, the statute fails to define "unreasonable risk" or to indicate how various factors should be balanced in the mandated risk-benefit analysis. Moreover, before the Act may be employed to control a substance, the EPA must determine that the public interest will be served by applying TSCA rather than some other federal law; if another statute can reduce the risk, the EPA must allow whatever other agency is concerned to decide whether or not to regulate. See Kraus, supra, at 114-122. Similarly, in Reserve Mining Corp. v. United States, 514 F.2d 492 (8th Cir. 1975), the Court of Appeals for the Eighth Circuit recognized that preventive action was justified on the evidence of potential harm, but delayed the injunctive relief of which it approved, partially because the potential harm was not "imminent." In this regard, it thus failed to note that, because of latency periods, harm occurring far in the future may be attributable to present events. See, Note, "Reserve-Mining-- The Standard of Proof Required to Enjoin an Environmental Hazard to the Public Health," 59 Minn. L. Rev. 893, 919 (1975). See also, Note, "Imminent Irreparable Injury: A Need for Reform," 45 Calif. L. Rev. 1025 (1972); Leubsdorf, "The Standard for Preliminary Injunctions," 91 Harv. L. Rev. 525 (1978). In a risk-benefit analysis, agencies and courts should be permitted to explicitly balance the cost of a wrong decision against the gains of a correct one.

A third measure, and one suggested by Kraus, supra, with regard to the regulation of carcinogenic substances, is the necessity for legislative bodies to shoulder the burden of making those policy judgments which must be made with regard to certain risks. For example, Kraus suggests with regard to carcinogens that Congress must decide (1) whether any risk of cancer is justified when its cause is preventable, and (2) if so, what should be considered a socially acceptable risk and what type and quantify of benefits should justify that risk. Such explicit policy judgments by legislatures would provide clear guidance to courts and agencies; would encourage them to act in those situations requiring action,

rather than hesitate because of their own appropriate reluctance to make such political judgments; and impart to the resulting regulatory decisions a greater credibility and authority derived from their basis in policies established by a elected body.

A second problem with the present system of controlling hazardous and toxic substances is the overlapping of jurisdictions among the numerous administrative agencies with regulatory mandates. While the Pollution Control Agency may generally be in control at the state level, at the federal level numerous agencies are involved in the regulation of toxic substances--e.g., the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. Such a quilt of regulatory agencies may produce both duplication of regulation, with resulting frustration and lack of respect on the part of the regulated, and gaps in regulation, with resulting harm to the public. Efforts should be made to identify those areas of concurrent or absent jurisdiction, and to develop, where necessary, efficient and coordinated regulatory procedures, including some uniform system of establishing priorities for testing and control and some uniform method of assessing risk and taking actions on that assessment.

A third set of legal problems associated with the control of toxic substances are those land use problems associated with the siting of hazardous waste disposal sites and similar potential environmental health hazards. The recent dispute over the powerline in central Minnesota, where adverse health effects were alleged, as well as the current dispute over the siting of a waste disposal site in Minnesota, see, "Report of Joint Legislative Committee on Solid and Hazardous Waste," Phillips Legislative Service (July 20, 1978), indicate a possible need to reassess the state's siting processes to ascertain whether the processes are capable of producing decisions that are based on an adequate assessment of potential health risks, and an adequate regard for their political and social ramifications.

#### RECOMMENDATIONS

The Minnesota Public Health Association, as the primary professional public health organization in Minnesota, should:

1. Promote environmental health as an area of involvement for the Association and encourage membership of environmental health professionals from various specialty groups. Liaison should be established with groups concerned with environmental health activities such as the Environmental Health Committee of the Minnesota Medical Association, the Minnesota Environmental Health Association, the Science and Technology Project and their Resources Council, etc., to recognize and support meaningful environmental health projects. Other professional

groups involved in environmental health activities include the American Society of Civil Engineers, the American Water Works Association, the Water Pollution Control Federation, the Manufacturing Chemists Association and the American Industrial Hygiene Association. Most of these organizations, if not all, have local chapters.

2. Establish a number of task forces to function within the environmental health area, identifying problem areas and suggesting how these problems may be resolved through the political process.
3. Organize an educational forum for local officials and public health professionals on the relationship and need to consider environmental health as a part of local community health services. This activity could be carried out jointly with the Minnesota Environmental Health Association and other organizations to increase awareness regarding environmental health problems.
4. Mount a strong educational program indicating how changes in personal behavioral patterns can modify and control specific degenerative and other long-term chronic diseases.
5. Assume a leadership role in recommending the continuous upgrading of practitioners in the field of environmental health by suggesting, where feasible, requirements for maintenance of certification, kinds of training required and how this training is to be credited.
6. Minimize potentials for the ground and surface water contamination and plant uptake by expressing concern for the use of the land for the uncontrolled disposal of chemical and hazardous wastes (e.g. sanitary landfills and storage lagoons and the use of wastewaters containing toxic chemical agents for irrigation).
7. Maintain, through committee activities, an active role as a voice for legislative action in matters related to environmental health, including technological and professional concerns.
8. Bring to the attention of the legislature that water resources--ground and surface--are limited, and that every effort should be made to control possible pollution of these resources from any source.
9. Encourage the state legislature and the various agencies involved in environmental health activities to enter into dialogue with neighboring states and Canada to evaluate the effect of non-indigenous sources on possible health problems in Minnesota.
10. Promote coordination of the delivery of all environmental health services provided by state and local agencies and to reduce currently fragmented systems.

11. Work with the Minnesota Department of Health to require local environmental health services as a necessary component of all Community Health Service Plans.
12. Encourage state agencies involved in the various aspects of environmental health to coordinate their monitoring activities to permit a more meaningful assessment of potential health risk to the population groups in Minnesota.
13. Encourage appropriate state agencies to identify and report the usage of toxic materials by industry, agriculture, and others, and to develop a plan of action for the handling, treatment, recycling, or disposal of those toxic and hazardous chemical substances.

APPENDIX

MEMBERSHIP

ENVIRONMENTAL HEALTH TASK FORCE

MINNESOTA PUBLIC HEALTH ASSOCIATION

Conrad P. Straub, Ph.d. Chair, School of Public Health,  
University of Minnesota  
Peter Ashbrook, Regional Copper-Nickel Study  
Duane Beckstrom, St. Cloud Health Department  
Richard G. Bond, School of Public Health, University of  
Minnesota  
Roger Carlson, Minnesota Environmental Health Association  
Roger DeRoos, Ph.d. School of Public Health, University of  
Minnesota  
Roger Mustalish, Regional Copper-Nickel Study  
Jim Payne, J.D., Dayton, Herman, Graham and Payne  
William Poblette, Olmsted County Health Department  
Dale Schroeder, St. Louis County Health Department  
John Urbach, Hennepin County Community Health Department  
Richard Wade, Ph.d. Minnesota Department of Health  
Douglas Wood, Ramsey County Community Health Department



APPENDIX H

APPENDIX H  
ANALYSIS OF MANPOWER REQUIREMENTS FOR PERFORMING  
SOLID AND HAZARDOUS WASTE SURVEILLANCE AND PLANNING ACTIVITIES

A joint Minnesota Pollution Control Agency - project staff analysis yielded the following findings concerning manpower required to perform environmental health activities of a county solid waste management program.

Note that the following listing of activities does not include all activities which would be undertaken, but rather only those which require significant manpower inputs.<sup>1</sup>

Planning - Using MPCA draft guidelines, it was estimated that 38-50 man-days are required to prepare a solid waste management plan which does not involve the development of complex components (such as resource recovery systems). Depending upon consultant/staff participation in plan development, this would result in a total cost of \$7,500 - \$12,500. This cost would only be incurred every 5 - 10 years. However, some annual plan maintenance activity would be required (perhaps 3 - 5 man-days).

Well Monitoring - It is estimated that 1.5 to 4 man-days annually is required to perform this function, assuming 3 wells per landfill. (Travel time would have to be added to this and all other activities.)

Inspection - This is estimated to require 1 - 2 hours monthly per landfill. (Inspection of vehicles must be added to this.)

Technical Assistance and Information to Landfill Operators - This would require 6 - 12 man-days annually.

Annual Permit Review and Renewal - This activity requires .5 to 3 man-days annually.

Bringing Existing Landfills and Dumps Into Compliance With State Laws - This activity is not required in every county. There are approximately 10 counties with 20 non-complying landfills and 100 non-complying dumps. Each of these 120 sites would require 5 - 10 man-days of effort to achieve compliance. This is a non-recurring activity.

<sup>1</sup> The following assumptions were made in developing these estimates: Frequency of landfill cover = 1/week; Annual review and renewal of permits; A relatively "simple" system with no resource recovery operations.