TOWARD AN ENVIRONMENTAL HEALTH PROGRAM

A Report by

The Commissioner of Human Services

To

The 109th Maine Legislature

January 15, 1980

STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
AUGUSTA, MAINE 04333

MICHAEL R. PETIT
COMMISSIONER

January 15, 1980

Honorable Joseph Sewall
President, Maine Senate

Honorable John Martin
Speaker, Maine House of Representatives
Maine Legislature
State House
Augusta, Maine 04333

Dear Mr. President and Mr. Speaker:

I am pleased to transmit to you my report regarding the need to establish an environmental health program. This report has been prepared to fulfill the requirements of Chapter 18, of the Resolves of 1979 and has also been transmitted to the Joint Standing Committee on State Government.

The report includes a brief description of the key elements of an environmental health program, a discussion of the activities being conducted within Maine to identify and address environmental health problems and a discussion of the environmental health problems identified by other Northeastern States and the programs they have developed in response to them. It concludes with a set of recommendations regarding the steps which I believe should be taken to establish an environmental health program.

Briefly, I have made the following findings and recommendations:

(1) The contamination of our environment by the products of our advanced industrial society constitutes a significant threat to not only our own health but that of future generations as well;

(2) At this time no State agency is either charged with or equipped to assume responsibility for maintaining an organized effort to detect, evaluate and respond to environmental factors which pose a threat to our health;

(3) Although a number of State agencies are either directly or indirectly engaged in activities which address environmental health problems our individual and collective efforts offer the people we serve insufficient protection;

(4) An environmental health unit should be established within the Department of Human Services' Bureau of Health to provide the Department with the capability to detect, evaluate and effectively respond to environmental health problems and assist other State agencies such as the Department of Environmental Protection and the Department of Agriculture in determining the implications of their respective actions:

(5) The Commissioner of Human Services should be authorized to appoint a Medical Advisory Committee to aid the Department in the design and conduct of an environmental health program; and

(6) The Commissioner of Human Services should be authorized to contract with other private and public organizations whenever doing so would serve to strengthen the environmental health program.

As you know, Governor Brennan has already indicated his support for the establishment of such an environmental health program. The Department of Human Services strongly urges that the necessary enabling legislation be enacted by the 109th Maine Legislature.

Sincerely,

Michael R. Petit

Michael R. Petit
Commissioner

CC: Governor Joseph Brennan

INTRODUCTION

The past decade has been marked by an increasing commitment to protect our environment from contamination by the products of our advanced industrial society. That commitment can be traced to a number of factors ranging from an appreciation of the beauty which can be found in nature to a pragmatic assessment of the threat such contamination poses to our ability to sustain a style of living to which we have aspired and grown accustomed. Not the least of those factors, however, has been our growing recognition of the fact that such contamination can be pernicious to our health in ways both known and unknown. Recent events such as the chemical poisoning of the Love Canal and its impact on the health of the individuals living in adjacent areas have served to underscore the threats our past practices may have created. Similarly, events such as the discovery that asbestos, once thought inert and protective of our health in its use as a fire proofing agent, can be linked to thousands of cancer deaths have served to dramatize the limitations of our knowledge and suggest that in our present practices we may be unwittingly threatening not only our own health but that of future generations as well.

During the First Regular Session of the 109th Legislature, a perceived need to provide additional assistance to the Department of Environmental Protection in assessing the public health implications of environmental problems led to the introduction of a proposal to authorize the Department to retain an "environmental doctor", a physician with special knowledge in the field of environmental medicine.[1]

[1] L.D. 1090, "AN ACT to Provide for an Environmental Doctor in the Department of Environmental Protection", presented by Mrs. M. Nelson of Portland and cosponsored by Ms. Lund of Augusta, Mr. Baker of Portland and Mrs. Masterton of Cape Elizabeth (Exhibit 1)

As described in that proposal, such a physician would (a) act as a consultant to the Department, the Department of Human Services and other departments which deal with public health problems, (b) establish a "data bank of information obtained from local and state agencies regarding industrial and environmental activity throughout the various states", (c) "correlate statistically established profiles and identify geographic areas where unusual clustering or incidence of disease is shown", (d) organize "the assorted data on all public drinking water supplies", (e) establish "disaster plans for hospital, police and rescue workers and other individuals involved in disaster relief and rescue work to provide plans of action in the event of a catastrophe and identify public health episodes dealing with drinking water, air pollution and land disposal which may affect public health" and (f) exchange information with medical experts in other states.

In the work sessions which followed the hearing held by the Committee on State Government to receive testimony regarding the proposal, several individuals suggested to the members of the Committee that although such medical input might clearly be needed, it was highly unlikely that any one physician could possess the expertise in the related fields of toxicology, genetics, onocology and epidemiology which some considered essential to a truly effective environmental health program or could satisfactorily discharge the responsibilities identified in the proposal without consideration assistance. It was also suggested that it might be desirable to assign such responsibilities to the Department of Human Services; the Department's Bureau of Health had already been assigned or had already assumed similar responsibilities and was therefore a logical place where physicians with complementary training and individuals capable of providing the administrative and technical support

which would be needed might be employed. On May 15, 1979, Michael R. Petit, the Commissioner of the Department of Human Services, met with the members of the Committee to discuss such suggestions and offered to conduct a study of the need for an environmental health program. That offer was accepted and ultimately incorporated in a formal resolution.[2]

This report has been prepared in response to that resolution. It includes:

A. A brief description of the key elements of an environmental health program;

B. A discussion of the activities being conducted within Maine to identify and address environmental health problems;

C. A discussion of the environmental health problems identified by other Northeastern States and the programs they have developed in response to them; and

D. A set of recommendations regarding the steps which should be taken to establish an environmental health program.

[2] L.D. 1627, "RESOLVE, to Study the Need for an Environmental Health Program. (Exhibit 2)

A. ENVIRONMENTAL HEALTH PROGRAM

For the purposes of this report an environmental health program can be defined as an organized effort to detect, evaluate and control environmental factors which are known or suspected to be injurious to our health. Such an effort can be divided into three types of activities:

(1) activities carried out for the purpose of monitoring the incidence of certain health problems such as birth defects, pulmonary disorders and cancer which are believed to be related to environmental factors;

(2) activities carried out for the purpose of evaluating hypothesized associations between specific environmental factors and health problems; and

(3) activities carried out in response to the acute contamination of the air, water or land by toxic substances.

An accurate understanding of disease incidence rates is crucial to the identification of environmental health hazards. Without such an understanding it is frequently difficult or even impossible to detect the health problems caused by the contamination of the environment until they have grown to significant proportions. Such an understanding is also crucial to both the formation and the evaluation of hypotheses regarding the association between identified health problems and environmental factors. Without it the task of determining whether the health problems are indeed occurring in unusual numbers or clusters or could reasonably be expected given the characteristics of the populations under scrutiny is greatly complicated.

In addition to being suggested by data regarding disease incidence rates hypothesized associations between health problems and environmental

factors can also be formed on the basis of the known or suspected toxicity of certain environmental contaminants. For example, the discovery of a toxic substance in the water supply of a community can form the basis of an hypothesis that the incidence of a certain disease has been or will be greater than would otherwise be expected.

Regardless of their origin it is obviously important that such hypotheses be systematically evaluated. While causal relationships may be extremely difficult to prove or disprove, such evaluations may yield information which confirms the presence of a problem, defines its nature and scope, suggests appropriate remedial action and either allays the fears of those involved or enables them to seek needed medical attention.

Unfortunately, incidents involving the acute contamination of our air, water or land are reported almost daily by the national press. Toxic and potentially toxic substances are introduced to the environment as a result of accidents during their manufacture, transportation and use. Moreover, there is a considerable body of evidence to suggest that the methods by which they are disposed are often grossly inadequate and the contamination of the environment by substances emanating from disposal sites is almost certain to be a widespread and recurring problem. In either case, the ready availability of information regarding the toxcity of such substances, the signs and symptoms of toxicity, immediate protocol for decontamination of personnel and treatment of exposed persons and their potential for causing cancer or birth defects is crucial to the management of such environmental hazards and efforts to minimize their impact on the public's health.

B. CURRENT PROGRAMS AND RESOURCES

At this time no State agency is either charged with or equipped to assume responsibility for maintaining an organized effort to detect, evaluate and respond to environmental factors which pose a threat to our health. Several agencies do, however, carry out activities which either directly or indirectly address environmental health problems. The majority of such activities are carried out in fulfillment of responsibilities assigned by legislative or administrative action. Others have simply evolved in response to a problem or set of problems. The balance of this section of the report is devoted to a discussion of those activities.

The DEPARTMENT OF ENVIRONMENTAL PROTECTION is the State agency which has been assigned the principal resonsibility for protecting our environment from contamination. The three Bureaus of the Department are each responsible for the protection of a particular aspect of the environment.

(A) The Bureau of Air Quality is responsible for assuring compliance with established air quality standards;

(B) The Bureau of Water Quality is responsible for assuring compliance with established standards for the types and amounts of wastes that can be released into our surface waters; and

(C) The Bureau of Land Quality is responsible for regulating the disposal of liquid and solid wastes on land.

In fulfilling its responsibility to protect the environment each Bureau is also acting to protect our health. The Federal air quality standards, for example, are largely based on information regarding the adverse impact of various types and levels of pollution on our health and the State standards are even more stringent. In protecting our surface waters the Bureau of Water Quality is helping to assure the safety of our drinking

water supplies as is the Bureau of Land Quality whose activities are of crucial importance to the protection of ground water supplies. Thus, while the Department's principal focus may be the protection of the environment the public health implication of its activities are significant and clear.

Unfortunately, for several reasons, the information and counsel required to adequately identify and weigh those implications is not always readily accessible to the Department and the Board of Environmental Protection. Many of the acute toxicological problems which arise are relatively new and remain less than fully understood. In such instances Federal or State standards may not exist or, if they do, may be open to considerable debate. Also, while the health implications of exposures to large quantities of toxic substances during a short period of time may have been well documented and understood the implications of exposures to small quantities of the same substances over years and perhaps even decades frequently remain uncertain. Ironically, an abundance of data can pose as great a problem as a paucity of data. The Department does not employ individuals with the training and experience to evaluate the voluminous and often contradictory medical and toxicological data on the health effects of certain substances which are proposed to be released to the air or water or disposed on the land. Of at least equal and perhaps even greater importance, the Department does not employ individuals with the medical expertise to carefully weigh the available information and render an opinion upon which action can be predicated. It was, of course, precisely such a gap which the sponsors of L.D. 1090 sought to close.

The DEPARTMENT OF HUMAN SERVICES has a broad mandate to protect the health of the people of the State as well as a number of specific

responsibilities which are directly or indirectly related to environmental health problems. Activities associated with those responsibilities are conducted by the Bureau of Health, particularly its Division of Health Engineering. For example, the Department is responsible for assuring the quality of our public water supplies and the staff of the Division of Health Engineering routinely monitors their purity and is empowered to take appropriate action to protect them. Originally monitored to determine their bacteriologic purity and later for the presence of inorganic substances such as nitrates and iron, public water supplies are now monitored for an increasing number of chemicals, particularly organic compounds such as halogenated hydrocarbons and other products and by-products of the manufacture and use of chemicals. The Division of Health Engineering's responsibilities also include the monitoring and evaluation of all sources of ionizing radiation ranging from medical X-rays to nuclear power plants and providing consultation to the Department of Manpower Affairs and industry in general regarding occupational health and safety.

The U.S. Public Health Service's Center for Disease Control has assigned an Epidemic Intelligence Service Officer to the Department, Stefan Zineski, M.D. Like his predecessors, Dr. Zineski has been of great assistance to the staff of the Bureau of Health in the investigation and control of outbreaks of communicable diseases as well as the investigation and response to environmental health problems such as the spill of the carcinogen TRIS into the Piscatquis River.

The contribution that any Epidemic Intelligence Service Officer can make to an environmental health program is, however, limited by a number of factors, not the least of which is that he or she is on loan

to the State and may be reassigned by the Center for Disease Control to another part of the nation or world which is considered to be in greater need. Furthermore, the Epidemic Intelligence Service Officer is generally not an experienced epidemiologist but is instead assigned to the State for the primary purpose of gaining practical experience in the field. Finally, and of perhaps greatest importance, no matter how well qualified the Officer may be, their two year assignment is not a long enough time to assure needed stability for the program or conduct the long-term studies characteristic of environmental epidemiology.

The Department of Human Services is also responsible for the collection and maintenance of vital statistics. Its Bureau of Administration's Division of Research and Vital Statistics routinely collects required birth and death records as well as other data regarding the health of Maine's residents. Unfortunately, disease incidence rates are either unknown or the data is so incomplete or questionable that it is of little or no use in epidemiologic studies. The only data regarding the incidence of birth defects, for example, is obtained from birth records. Such data are incomplete since many serious problems including cardiac and neurological disorders are not apparent at birth and are not recorded in the birth record. Similarly, since there is no statewide cancer registry the only data regarding the incidence of cancer is obtained from death records. Since many cancers are cured such data is incomplete. Even for such predictably lethal cancers as lung, pancreatic and esophageal cancers there is no capability to analyze spatial or temporal clusters which might occur or even determine whether they are occurring. Data regarding pulmonary diseases are even more remote since other definitions and diagnostic categories are not standardized making it impossible to compare the rates of chronic lung diseases in various parts of the State or between groups who have differing environmental exposures.

The DEPARTMENT OF AGRICULTURE is responsible for the registration of pesticides and possesses the authority to assure that they are used in a manner which is consistent with the terms of their registration and labelling. The BOARD OF PESTICIDE CONTROL, which is tied administratively to the Department and includes representatives of a number of State agencies,[3] is responsible for the licensing and certification of pesticide applicators and generally assuring that pesticides are applied in accordance with accepted practices. Although the registration process does include a review of toxicological information neither the Department nor the Board currently employs individuals with the training or experience to conduct independent evaluations of the safety of various pesticides or investigate the impact of their use on the health of individuals who have been exposed to them.

The DEPARTMENT OF MANPOWER AFFAIRS is responsible for the conduct of an occupational health program for public employees. The Department's Bureau of Labor enforces established health and safety standards in the places where they work and attempts to investigate the health problems they may suffer. Since there are no established standards regarding literally thousands of the chemicals presently found in industry it becomes necessary from time to time to review the literature and make judgements regarding their potential effects. The Bureau of Labor relies heavily on the Industrial Hygienists employed by the Department of Human Services' Division of Health Engineering. However, those individuals lack the medical expertise necessary to make some of the judgements which must be made.

The DEPARTMENT OF DEFENSE AND VETERAN SERVICES' Bureau of Civil Emergency Preparedness is responsible for the development and implementation

[3] Department of Agriculture, Conservation, Environmental Protection, Human Services, Inland Fisheries & Wildlife, Marine Resources, Public Utilities, and Transportation.

of plans to respond to emergencies precipitated by man-made and natural disasters.

RESPONSE OF OTHER STATES

Seven Northeastern States were surveyed in an attempt to identify common classes of environmental health problems and the responses they had elicited. Five classes of problems were reported:

(1) The pollution of public and private water supplies by toxic chemicals, usually as a result of the illegal dumping of toxic wastes, inadequate disposal methods or agricultural and industrial practices;

(2) The detection of polychlorinated biphenels (PCB's) which had not been disposed properly at reclaimed disposal sites and in edible aquatic organisms;

(3) The decay of asbestos insulation in public and private schools as well as commercial establishments;

(4) The release of formaldehyde fumes by improperly mixed urea-formaldehyde foam insultation; and

(5) Fires and accidents involving toxic chemicals.

As in Maine, the responsibility for addressing such problems rarely fell within the jurisdiction of a single agency.[4] Thus, each of six states which responded to our queries indicated that their current environmental health programs either had recently been evaluated and reorganized to remedy their deficiencies, were now being evaluated for that purpose or would be in the near future. The balance of this section is devoted to a brief discussion of their respective reports.

VERMONT

Vermont officials identified the contamination their surface and ground waters by leachates from landfills and the threat it posed to their use for both domestic and recreational purposes as the environmental

[4] New Hampshire did not respond.

health problem of greatest concern to them and the people of their State. In addition, although Vermont is obviously not a major industrial State, a task force established by its Statewide health systems agency recently identified hazardous conditions in its workplaces as an environmental health problem of potentially significant proportions.

The Commissioner of the Vermont Department of Health is responsible for the coordination and direction of the emergency response to all conditions affecting the health of the public. The Department has recently expanded its Epidemiology Section to include an epidemiologist, an Epidemic Intelligence Service officer, and a nurse epidemiologist. Chronic disease studies (mortality studies based on data developed by the Department's Division of Public Health Statistics) will be conducted by the staff of the Section on an ad hoc basis as will assessments of the risk assocatied with toxic substances.

The Vermont Environmental Conservation Agency, Department of Water Resources and Department of Public Safety each conduct programs which are intended to either prevent or respond to environmental health problems. The Department of Water Resources, for example, is currently cooperating with the Department of Health's Public Health Laboratory in a major effort to identify toxic chemcials in the State's surface and ground waters. The Environmental Conservation Agency has developed an "Oil and Hazardous Materials Pollution Contingency Plan for the Water of the State of Vermont" which involves the U.S. Environmental Protection Agency, U.S. Coast Guard, Department of Water Resources, Department of Public Safety and Department of Health. The Department of Public Safety is responsible for the development of a "Hazardous Materials Resource Plan" and an "Oil and Hazardous Materials Contingency Plan".

MASSACHUSETTS

Massachusetts officials also identified the contamination of water supplies by leachates from landfills and hazardous wastes which have been improperly disposed as the environmental health problem of greatest concern to them, a number of public water supplies having already been rendered unusable as a result of such contamination. In addition, a recent investigation of the health effects of formaldehyde led to the imposition of restrictions on the installation and use of urea-formaldehyde foam insulation.

The responsibility for addressing environmental health problems is shared by the Department of Public Health and the Department of Environmental Quality Engineering. The two Departments are currently engaged in a cooperative effort to investigate the possible contamination of public water supplies. In that effort the staff of the Department of Environmental Quality Engineering's Laboratory collect and analyze samples and the staff of the Department of Public Health assess the risk associated with various contaminants and levels of contamination.

Two major developments are expected within the coming year. It is anticipated that the Department of Environmental Quality Engineering's Division of Solid Waste Disposal will be merged with its Division of Water Pollution Control (which administers a program which is intended to control the illegal disposal of hazardous wastes) to form the Division of Hazardous Waste Control. It is also anticipated that legislation creating a statewide tumor incidence reporting system will be enacted, the participants in the Cancer Planning Project, a cooperative effort of the Sidney Farber Cancer Institute's Regional Cancer Control Committee and the Department of Public Health's Office of Health Planning, having concluded that there is a "need for improved

identification of cancer incidence and morbidity trends in the Massachusetts population".

RHODE ISLAND

Rhode Island officials identified the use of asbestos insulation in schools and the disposal of hazardous wastes as the environmental health problems of greatest concern to them. The Rhode Island Health Department has sponsored a voluntary program to identify public and private schools in which the use of asbestos insulation has created a health hazard. Nine schools have been identified as requiring corrective action. The Department of Environmental Management has the statutory authority to plan and regulate the disposal of hazardous wastes.

Rhode Island appears to have developed a strong research program. The Health Department maintains an Epidemiology Section which routinely monitors communicable disease incidence reports and hospital discharge data. A computerized population-based tumor registry has recently been established. It is maintained by the Department of Radiation Oncology of Rhode Island Hospital and is partially funded by a Statewide Cancer Control Program created by Executive action. The Health Department's Division of Occupational Health and Radiation Control employs an environmental health specialist who studies the geographic patterns of mortality in an attempt to identify environmental links. The Division of Occupational Health and Radiation Control has also launched the "Occupational Carcinogen Project", an effort to identify the carcinogens used in Rhode Island's industries which may have etiological significance in cancers of the lung, breast, cervix, colon and rectum.

Research efforts related to environmental health problems are not limited to the Health Department. The Department of Environmental

Management is currently seeking a planning grant from the National Cancer Institute which would be used to establish a system designed to control environmental carcinogens.

CONNECTICUT

While the environmental health problems identified by Connecticut officials did not differ appreciably from those identified by their counterparts the State of Connecticut appears to be better organized to identify, evaluate and respond to such problems than any of the other states surveyed. The Connecticut Department of Health Services includes three Bureaus, the Bureau of Health System Regulation, the Bureau of Health Promotion and Disease Prevention and the Bureau of Health Planning and Resource Allocation. The Bureau of Health Promotion and Disease Prevention is itself divided into several divisions, one of which is the Preventable Disease Division. The Preventable Disease Division includes three sections, each of which is involved in efforts which either directly or indirectly address environmental health problems, the Epidemiology Section, the Toxic Substances Section and the Chronic Disease Control Section.

The Toxic Substances Section is the focal point for all activities involving toxic hazards. It is directed by an individual with a doctoral degree in toxicology and staffed by four epidemiologists, each of whom has an advanced degree in public health, a community relations representative and clerical personnel. The following listing of the programs conducted by the Section appears in the spring, 1979 issue of the Connecticut Health Bulletin.

1. School Asbestos Program - the Section has developed guidelines which define hazardous conditions and outline procedures for the removal of asbestos insulation. In cooperation with local

Boards of Education schools containing sprayed-on asbestos are being identified and tested with appropriate remedial action being taken when hazardous conditions are found.

2. Environment Contamination Program - the Section is responsible for the assessment of the health risk due to exposures to toxic chemicals as a result of an accident or the mismanagement of the disposal of toxic wastes. The Section's staff of epidemiologists is used as a field investigative unit during such incidents. Their use of questionnaires, report forms and contaminant sampling provide the data needed to supplement the available toxicological information and allow the Section's director to establish the nature and extent of the hazard.
3. Polychlorinated Biphenels Program - the Section is currently cooperating with the staff of the Department of Health's Laboratory and the Connecticut Department of Environmental Protection in the analysis of fish and bottom sediments of the Housatonic River.
4. Urea-Formaldehyde Foam Insulation Program - the Section is cooperating with the staff of the Connecticut Department of Consumer Protection in the regulation of the use of the product, investigating individual complaints, determining levels of formaldehyde and their health implications and recommending corrective action when necessary.
5. Regulation of Medical X-rays - the Section has been active in the development of regulations designed to prevent the excessive use of diagnostic X-rays.
6. Regulation of Carcinogenic Substances - all commercial operators who use any of sixteen carcinogenic substances are required by Statute to file an inventory report with the Section.

7. Anesthetic Waste Gas Survey in Connecticut Hospitals - the Section is conducting a study to determine what action, if any, is needed to control the leakage of hazardous anesthetic gases which have been linked to various reproductive problems of operating and delivery room personnel.

8. Public Education Program - the Section conducts an ongoing campaign to educate the general public, the press and elected and appointed officials regarding the health hazards posed by toxic substances.

In addition, the Section's staff is routinely involved in research efforts conducted by the Epidemiology Section or others using data produced by the Connecticut Tumor Registry, the Occupational Disease Surveillance Program and other public and private efforts.

NEW YORK

The Director of the New York Health Department's Division of Epidemiology identified the following environmental problems as having significant ramifications for the health of the people of his State:

A. Toxic chemical dumps, particularly in the Love Canal, Guns Falls and greater Niagara/Buffalo areas;

B. Contamination of water supplies and landfill areas by polychlorinated biphenels;

C. Contamination of groundwater supplies by gasoline spills;

D. Contamination of water supplies by leachates from landfills;

E. Improper mixing and installation of urea-formaldehyde foam insultation;

F. Contamination of water supplies by septic tank cleaners which contain triparomethanes; and

G. Contamination of water supplies by Aldicort, an insecticide used heavily on the potato fields of Long Island.

Unlike most states New York has the scientific research capabilities to analyze disease rates with environmental influences. The Cancer Control Section of the New York Department of Health's Division of Epidemiology alone has approximately six epidemiologists on its staff. Epidemiologists employed by the Division's Occupational Health and Chronic Disease Research Section also make use of the statewide tumor registry and other computerized data sources to study the relationship between environmental factors and disease.

The Department of Health's Division of Environmental Health includes a Toxic Substances Unit which is currently cooperating with its counterpart unit in the New York Department of Environmental Conservation in a major study of sites at which toxic substances have been disposed. More than five hundred abandoned sites have already been identified and teams are now being developed to undertake the monumental task of assessing the hazard each represents.

NEW JERSEY

Like New York a populous and industrialized state, New Jersey maintains an extensive epidemiology and environmental health program. A Coordinator of Special Epidemiology Projects within the New Jersey Department of Health's Division of Laboratory and Epidemiology Services is the initial contact during any environmental crisis. His responsibilities include the field investigation of incidents to provide information needed to complement that provided by the Division's epidemiologists and toxicologists to enable its physician director to assess the risk to the health of the residents of the affected area. Despite a period during which some

difficulties were encountered coordination between the Department of Health and other State agencies responsible for addressing environmental health problems such as the New Jersey Department of Environmental Protection is now described as excellent. The reversal in attitude is attributed to a realization on the part of all concerned that their respective responsibilities were not in conflict and the "team approach" helps to assure a safe and effective response to incidents.

D. RECOMMENDATIONS

As previously indicated, no State agency is either charged with or equipped to assume the responsibility for maintaining an organized effort to detect, evaluate and respond to environmental factors which pose a threat to our health. Although several agencies do carry out activities which either directly or indirectly address environmental health problems their individual and collective activities do not constitute an adequate environmental health program. There is no continuing effort to seek out and evaluate environmental health problems and their consequences. Instead, problems tend to arise and elicit responses from agencies which are often inadequately equipped to address them. No meaningful data is available regarding the incidence of disease conditions such as birth defects, cancer and pulmonary disorders making it almost impossible to identify trends or clusters which may be related to environmental factors. The present capability to conduct the epidemiological research necessary to assess the threat posed by identified environmental problems is very limited as is the capability to review the available toxicological information and make informed decisions regarding the risks associated with exposures to various toxic substances. Although assistance is available from the Center for Disease Control, most notably in the form of an Epidemic Intelligence Service Officer, its continuity is less than certain and it is not assured in the common situation in which political leaders are called upon to make judgements in areas which a Federal agency may not consider suitable for investigation.

There is no evidence to suggest that the public health implications of environmental problems are any less real or significant in Maine than they are anywhere else. On the contrary, events such as the contamination of the water supplies of a number of families in East Gray by wastes emanating from an inadequately managed disposal site or the contamination

of the Piscataquis River by the accidental spill of a known carciogen provide recent examples of the type of problems we can expect to surface with disturbing regularity. Questions regarding the safety of asbestos and urea-formaldehyde foam insultation or certain pesticides are certainly no less pertinent to our situation than they are to the people of Worcester or Long Island. Consequently it is our recommendation that the following steps be taken toward the establishment of a needed environmental health program.

(1) ESTABLISH WITHIN THE DEPARTMENT OF HUMAN SERVICES' BUREAU OF HEALTH AN ENVIRONMENTAL HEALTH UNIT STAFFED BY INDIVIDUALS WITH TRAINING AND EXPERIENCE IN ENVIRONMENTAL MEDICINE, EPIDEMIOLOGY, TOXICOLOGY, STATISTICS AND RELATED FIELDS.

There are several reasons for establishing an environmental health unit within the Department of Human Services' Bureau of Health rather than another State agency such as the Department of Environmental Protection or the Department of Agriculture. First, the Bureau's principal purpose is identical to that for which the environmental health unit would be created, the protection of the health of the people of the State. Second, a close tie between the Bureau's present surveillance and disease control programs and the environmental health program would be likely to enhance both. Third, the Bureau's staff, particularly the staff of the Division of Health Engineering and the staff of the Public Health Laboratory, would be available to assist the staff of the environmental health unit. Finally, the Department's Bureau of Health Planning and Development and Bureau of Administration now collect a great deal of information about the health of the people of the State and it is their efforts which will have to be redirected and strengthened if the type of data base required for epidemiological research is to be

created.

The environmental health unit's responsibilities should include:

A. Monitoring the health status of the people of the State;

B. Identifying the prevalance and distrubition of health problems including those which may be related to environmental factors;

C. Conducting investigations necessary to determine whether problems including those which may be related to environmental factors;

D. Advising the Commissioner of the Department as well as other State agencies such as the Department of Environmental Protection regarding the potential health implications of their actions, the nature and extent of identified problems and the steps which can be taken to address them.

In order to effectively discharge such responsibilities the staff of the environmental health unit should include:

A. An epidemiologist (M.D./D.O.) with training and experience in the application of epidemiological research methods to environmentally related health problems, particularly chronic diseases;

B. A toxicologist (M.D./D.O.) who would be responsible for assembling and analyzing the medical and toxicological literature regarding the impact of potentially toxic substances used within the State and their impact on the health of those exposed to them;

C. A biostatistician (Ph.D./M.P.H.) who would be responsible for establishing a Statewide disease surveillance system;

D. A research associate; and

E. Necessary administrative and clerical personnel.

(2) AUTHORIZE THE COMMISSIONER OF THE DEPARTMENT OF HUMAN SERVICES TO APPOINT A MEDICAL ADVISORY COMMITTEE TO ASSIST THE DEPARTMENT AND THE ENVIRONMENTAL HEALTH UNIT.

A medical advisory committee could assist the Department and the staff of the environmental health unit in the design and conduct of the environmental health program by helping to identify areas of concern and establish priorities for their research and investigative activities as well as by providing counsel regarding the threats posed by specific environmental problems and the development of effective responses to them.

(3) AUTHORIZE THE COMMISSIONER OF THE DEPARTMENT OF HUMAN SERVICES TO CONTRACT WITH PRIVATE ORGANIZATIONS FOR ASSISTANCE AS NECESSARY AND APPROPRIATE.

There are, of course, a number of private organizations such as Maine Medical Center's Poison Control Center, the Foundation for Blood Research and the Center for Human Genetics which are capable of serving as valuable contributors to an environmental health program. Under certain circumstances it may be desirable to contract with one or more of them for the conduct of a particular study or the provision of certain services. For example, consideration might appropriately be given to contracting with the Poison Control Center to enable it to serve as a resource for medical and toxicological literature, a repository for all information on potentially toxic substances authorized for use within Maine and a source of continuous medical consultation and opinion relative to specific incidents. The staff of the Poison Control Center has already advanced a proposal to serve in such a capacity. An excerpt from that proposal which provides their description of how a hypothetical incident might be handled is attached to this report.

It is estimated that the cost of implementing these recommendations would be slightly greater than $200,000 per year.

Personnel (6)	$137,000
Capital Expenditures	7,000
All Other (including contracts)	57,000
	$201,000

EXHIBIT I

FIRST REGULAR SESSION

ONE HUNDRED AND NINTH LEGISLATURE

Legislative Document No. 1090

H. P. 880 House of Representative, March 7, 1979

Referred to the Committee on State Government. Sent up for concurrence and ordered printed.

EDWIN H. PERT, Clerk

Presented by Mrs. M. Nelson of Portland.

Cosponsors: Ms. Lund of Augusta, Mr. Baker of Portland and Mrs. Masterton of Cape Elizabeth.

STATE OF MAINE

IN THE YEAR OF OUR LORD NINETEEN HUNDRED SEVENTY-NINE

AN ACT to Provide for an Environmental Doctor in the Department of Environmental Protection.

Be it enacted by the People of the State of Maine, as follows:

38 MRSA § 350 is enacted to read:

§ 350. Environmental doctor

The Commissioner of Environmental Protection shall employ, within the department, a physician with special knowledge in the area of environmental medicine. The duties of the environmental physician shall be:

1. Consultant. To act as consultant on health matters to the department, the Department of Human Services, Division of Health Engineering and other departments which deal with public health problems;

2. Data bank. To establish a data bank of information obtained from local and state agencies regarding industrial and environmental activity throughout the various states;

3. Correlate profiles. To correlate statistically established profiles and identify geographic areas where unusual clustering or incidence of disease is shown;

4. Organizing data. To organize the assorted data on all public drinking water supplies;

5. Disaster plans. To establish disaster plans for hospital, police and rescue workers and other individuals involved in disaster relief and rescue work to provide plans of action in the event of a catastrophy and to identify public health episodes dealing with drinking water, air pollution and land disposal which may affect public health; and

6. Information from other states. To exchange information with medical experts in other states.

STATEMENT OF FACT

The purpose of this bill is to provide for an environmental doctor in the Department of Environmental Protection.

STATE OF MAINE

H. P. 1422 — L. D. 1627

RESOLVE, to Study the Need for an Environmental Health Program.

Commissioner to conduct study on environmental health. Resolved: That the Commissioner of Human Services shall conduct a study of environmental health in Maine and shall prepare a report which shall include, at a minimum the following:

1. **Current programs.** A description of current State Government programs for, and capabilities to respond to, problems or potential problems caused by human activities and natural phenomena which cause health hazards;

2. **Other jurisdictions.** A description of significant environmental health problems, programs and capabilities of other states;

3. **Recommendations.** Recommendations by the commissioner for implementing and conducting an environmental health program for the State over the next 5 years, with specific assignments of responsibilities and an indication of cost, taking account of programs and capabilities of other levels of government and the private sector; and

4. **Other views.** The views of other participants in the study, including private individuals and groups.

In conducting the study, the commissioner shall consult with other state agencies including the Department of Manpower Affairs, Department of Environmental Protection, Department of Educational and Cultural Services, the Workers' Compensation Commission and the State Medical Examiner. State agencies shall provide to the commissioner whatever assistance is requested. The commissioner shall consult with and solicit the views of private individuals and organizations, including the health community as represented by physicians and others.

The report shall be submitted to the Legislature's Joint Standing Committee on State Government not later than January 15, 1980.

EXHIBIT 3

HYPOTHETICAL INCIDENT AND RESPONSE UNDER PROPOSED RECOMMENDATIONS

INTRODUCTION

The following scenario of a hypothetical situation illustrates how the Poison Control Center would interact with various agencies and emergency medical personnel in dealing with environmental contamination.

(1) A tank truck transporting Substance X is involved in an accident and overturns. The tank ruptures and a portion of the contents are released into the air and into the principle water supply of a Maine town.

(2) The driver, law enforcement official or rescue personnel notifies the Poison Control Center.*

(3) The Poison Control Center immediately notifies the Department of Environmental Protection, the Environmental Protection Agency, the Department of Human Services and any other critically needed agencies not already notified.

(4) On file at the Poison Control Center would be all information related to the potential hazards of Substance X from a human health point of view. These would include the already existent acute toxicity rating, signs and symptoms of toxicity, immediate protocol for decontamination of personnel and treatment of exposed persons, potential for causing cancer and birth defects. In addition, the solubility in water, the environmental persistence in water and soil under various conditions would be known. In place, through prior interagency coordination and with

*The Poison Control Center has a toll-free 24 hour per day existent service tied in with state, fire, police and emergency medical services.

cooperation with the agency which had purchased the agent, would be a plan of action to provide for cordoning off of a specified area, rerouting of traffic, type of equipment needed for decontamination, route of ambulance and casualty traffic and plans for possible evacuation of residents.

(5) Armed with all of the necessary information on Substance X the Poison Control Center would contact all area hospitals and, if necessary, emergency medical rescue services, detailing signs and symptoms of toxicity, methods of treatment and aid in coordination of shipment of specific antedotes and necessary medical supplies from supplier depot areas to the accident or hospital site.

(6) Specific plans would be made in conjunction with the Maine Health Department relative to recommendations to the affected community about ingestion of water, use of water for washing, crop irrigation, etc. Monitoring programs would immediately be set up at the accident site to ascertain initial levels of contamination. Such monitoring would continue until the involved area and the affected water system was clear of contamination and declared safe for humans and animals.

(7) Inland waterways and fisheries personnel would be notified to gain their input as to potential effects on the aquatic environment and inhabitants.

Any other hypothetical incident ranging from herbicidal drift or radioactive contamination would be handled in a like manner, the key and constant feature being prior study of the potential environmental contaminant, a plan of action, and a working agreement between all necessary agencies.